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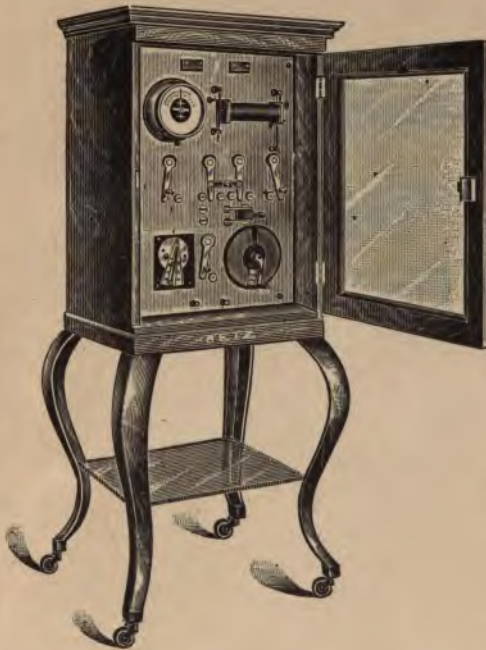
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LAURENCE WELLS  
THE  
PRACTITIONER'S GUIDE  
TO THE  
DIAGNOSIS AND TREATMENT  
OF  
DISEASES OF WOMEN

BY

DR. GUSTAVUS M. BLECH

PROFESSOR OF OPERATIVE SURGERY, JENNER MEDICAL COLLEGE,  
SURGEON-IN-CHIEF AND ATTENDING GYNECIST MAIMONIDES  
POLYCLINIC, MEMBER AMERICAN MEDICAL ASSOCIATION,  
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AND EX-SECRETARY WEST CHICAGO  
MEDICAL SOCIETY, ETC.



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PROFESSOR OF SURGERY IN BARNES MEDICAL COLLEGE

AND TO

ROLLIN C. BLACKMER, C. M. M. D.

PROFESSOR OF OBSTETRICS IN BARNES MEDICAL COLLEGE

THIS BOOK IS DEDICATED  
AS A TOKEN OF ESTEEM AND RESPECT

BY THE AUTHOR.



## PREFACE.

It was with great reluctance that I accepted the invitation on the part of the publishers to write a small, concise work on so important a branch of surgery as is gynecology.

I realize that the market is already overfilled with excellent treatises and text-books, atlases, student's manuals and quiz-compendes.

Why, I asked myself, add one more?

Nevertheless, I have reason to believe that this little book will be welcomed by not a few, for all theoretical discussions have been sacrificed in order to serve the every day needs of the general practitioner.

During my career, short as it is, I have met many older practitioners who were satisfied to prescribe a douche or to paint the pubic region with iodine for pain located in the pelvis. Some have diagnosed retroflexion when there was decided anteflexion and introduced a bad fitting pessary, which aggravated the symptoms. I know of at least one case of carcinoma of the cervix which was treated by a family physician for six long months as an "ulceration of the womb."

I could cite examples like the above *ad nauseam*. In conversation these practitioners admitted their inability to follow the larger works, for lack of either preparatory training or time.

The book, therefore, has been written, for general practitioners who have had no clinical advantages as students. . .

If it serves as a stimulus for further study, if it will prove helpful to the reader to make correct diagnoses, to institute more effective treatment and to recognize when to refer certain patients to surgeons of established reputation, the midnight oil burnt while writing the book, though weary from the day's hard toil, was well spent.

In conclusion I wish to ask for the indulgence of the readers for many shortcomings, this being my first larger literary attempt.

Suggestions and corrections will be thankfully received.

DR. GUSTAVUS M. BLECH.

Chicago, February, 1903.



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FIG. 1.—Author's examining and operating room.





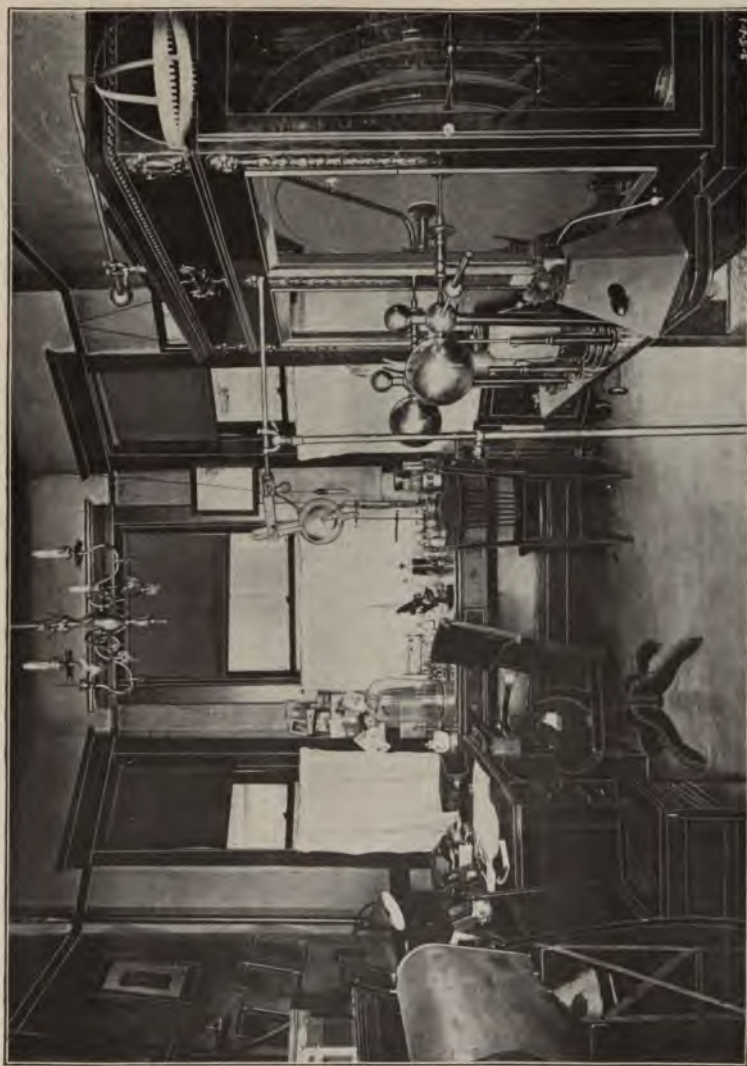


FIG. 2.—Author's laboratory.



## CHAPTER I.

### THE OFFICE AND EQUIPMENT OF THE GYNECIST.

The physician who desires to diagnose and treat diseases of women must equip his office for that purpose, according to certain scientific principles.

The time when a physician's "consultation room," differed from that of the lawyers only in the library, has passed. The practitioner of to-day is expected to be a scientific craftsman; he needs in addition to his "study" and reception room a workshop, or, if you please, a laboratory.

The golden (?) era when the Doctor Medicinæ, sat in his comfortable arm-chair, dressed in a neat Prince Albert suit, listening to the complaints of his clients and handing out prescriptions, has vanished, to return no more.

To-day, the doctor must work—and seriously at that, with bared arms and surgically cleansed hands, with delicate, sterilized instruments. He must furthermore make chemical and microscopic examinations of the se- and excretions of the various organs, of the blood, etc.; he cannot expect to cure his cases with the fountain-pen and prescription blank exclusively, but he will have to use his fingers and hands, electric apparatus, mechanical appliances, etc., leaving but the smallest portion of labor to be done by the pharmacist.

No fixed rules can be laid down how an office should be arranged for gynecic work.

The physician who is ready to treat women, no doubt, will also do nose and throat, rectal, genital (male) and general minor surgical work, and the arrangement will have to be made to suit these needs, the details of which will greatly depend on the means and taste of the individual physician.

The following practical suggestions will prove of some value:

1. Decorate your waiting room and study, in any way you like, but have your room for all examinations and treatments of women as simple as possible.
2. Allow no carpets or draperies in this room. They are "dust catchers" and an abomination before the god of asepsis.
3. When purchasing office furniture, buy none of those expensive, fancy, upholstered examining chairs and tables so widely advertised, but use such as will retain no filth and dust, but which can be easily cleansed, and if necessary, sterilized.

4. Purchase a cheap sterilizer (a fish-kettle or a flat agateware pan will do) if you must be economical.

5. Keep your instruments in a case which can be easily kept clean.

6. A small table for the various chemicals and instruments, as may be necessary for each examination or treatment, a few wash basins, a slop jar, a stand for gauzes, towels, cotton, etc., is all that is needed for ordinary work.

7. No office is properly equipped without a good farado-galvanic battery. A good static machine is desirable but not essential.

The accompanying cut shows the authors workroom in which many plastic and minor gynecic operations have been performed without a single case of infection. (See Fig. 1.)

All work of a character apt to cause filth is done by me in a separate room, which for reasons of economy must serve also as a study.

In this study X-ray examinations are made, static treatments administered, cases of fracture dressed in plaster of Paris, stomach lavage performed, etc.

In one corner a table and necessary utensils are set apart for the treatment of acute gonorrhoea in the male, in another corner, near a window, a large table serves as a "laboratory" for chemic and microscopic examinations. (See Fig. 2.)

In country towns where rent is cheap and "flats" unknown, the physician could no doubt afford to use four rooms and have a separate room for each class of work, which, of course, is very desirable.

But no matter what arrangement is decided upon, the room in which the women are to be treated, should be so arranged as to permit of its being kept in the cleanest possible condition. The more the physician will copy the smaller operating rooms of modern hospitals, the nearer he will have his examining and operating room to the ideal.

## CHAPTER II.

### ANTISEPSIS AND ASEPSIS.

Every intelligent physician and surgeon is supposed to be familiar with the rudimentary principles of antiseptics. It is sad indeed to see many younger practitioners violate the cardinal rules of surgical cleanliness in their daily work.

Carl Beck, the famous New York surgeon, in his book on surgical asepsis, relates how an old prominent physician pushed aside a nail-brush, offered him by an assistant, and holding up his fingers exclaimed, "My fingers are clean, what's that for?"

The same author tells of a practitioner about to introduce an old, dirty catheter, who replied to an expressed doubt about the cleanliness of the instrument, "Sure, look! I can blow through it, there are no incrustations." These are examples of instances occurring daily.

While it is true that some surgeons never become aseptic operators simply because surgical cleanliness is not born within them, yet, if certain rules would be strictly followed, a great deal of the mischief so frequently produced would be prevented.

There still reigns confusion in the minds of most practitioners in regard to the exact meaning of the terms: antiseptics and asepsis, nor is the same definition given in all standard works on surgical subjects.

Etymologically the following definitions are undoubtedly the correct ones:

*Asepsis* means an ideal condition, free from pathogenic germs.

*Antiseptics* is the application of any efficient means to get rid of the germs.

The agents used for the removal and destruction of germs are:

1. Mechanical: Scrubbing, washing with soap and water, etc.
2. Chemical: Carbolic acid, bichloride of mercury, lysol, formalin, peroxide of hydrogen, etc.
3. Thermic: Boiling water, condensed steam, dry heat, etc.

In former years surgeons depended greatly on carbolic acid and similar chemicals, which as is well known, are very toxic agents, and have done much damage by irritating wound surfaces and by poisoning the patients. It is but natural that scientific surgeons should have strived to discover

ways and means to destroy the germs without destroying animal cells or harming the patient at the same time, with the result that the use of toxic chemicals (antiseptics) was reduced to a minimum and less harmful agents substituted, which change some surgeons baptized: aseptic surgery vs. antiseptic surgery.

Thus, in many works, when the authors speak of "aseptic precautions" they really mean non-toxic antiseptic precautions.

The above explanation is essential to prevent confusion and to render the terms used in this book intelligible.

Limited space forbids the author from describing in full the modern technique of antiseptics. It will be time usefully spent to study special monographs on the subject. (See bibliographic list.)

The following suggestions, condensed as they are, must necessarily be incomplete. They will answer the purpose, however, if the reader will rigidly follow them in his practice.

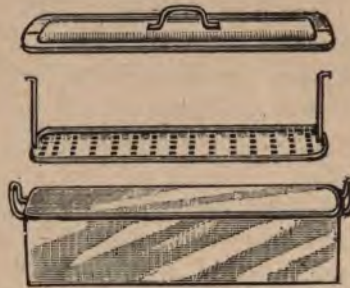


FIG. 3.—"Fishkettle" boiler-sterilizer.

1. *Sterilization of Instruments.* All instruments such as specula, retractors, catheters, knives, tenacula, dressing forceps, applicators, dilators, sounds, etc., should be constructed of metal only. Wooden handles are to be condemned. (Glass catheters are cheap and can be employed but are apt to break.)

The simplest way of sterilizing metal and glass instruments is by boiling them for fifteen minutes in a 1 per cent solution of carbonate of soda. The soda prevents rusting. It matters very little in what container the instruments are boiled. Any metal or tin-pan, kettle, boiler, even those usually found in the household, will do.

The container should first be thoroughly scrubbed with Sapolio and rinsed out with water.

All sorts of "trays" and "fish-kettles" are sold in the instrument shops for that purpose.

"Baking" the instruments in a dry-heat sterilizer has been recommended by European surgeons. This method has never become popular in this country.

Sterilization by steam is quite a favorite in this country. Steam and boiling have only one drawback, they dull the edges of knives.

This objection is overcome by a method of sterilization with formaldehyde gas.

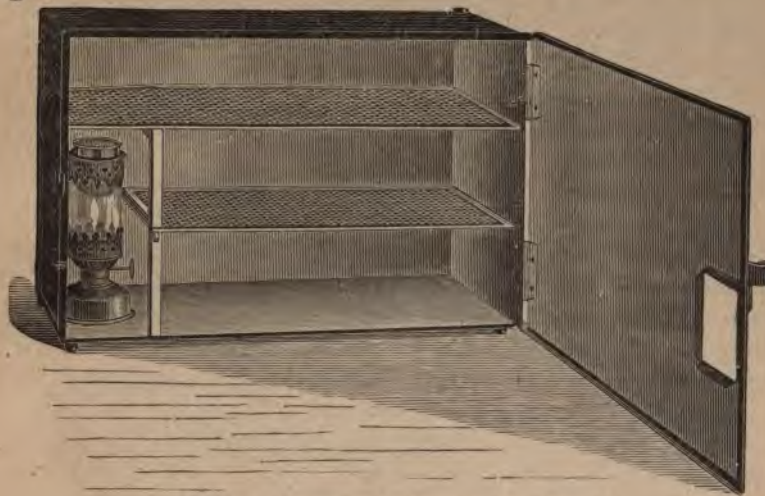


FIG. 4.—Schering's formalin sterilizer.

Fig. 4 illustrates the simplest and yet most efficient formaldehyde sterilizer. It is sold in this country by Schering & Glatz, of New York, who also furnish the formaldehyde pastils necessary for the generation of the gas.

The best fuel for the lamp is wood-alcohol, which is not only cheaper than pure alcohol, but gives a more intense flame.

The instruments are placed on the perforated shelves in the sterilizer, the lamp lit, two or three pastils put in the metal dish over the lamp and the door closed. After ten minutes everything in the sterilizer is aseptic. The fumes of formaldehyde are irritating to the conjunctiva and mucous membrane of the nose, but do no harm.

The moment an instrument comes in contact with anything that cannot be considered aseptic after it has been sterilized it is unfit for use and must be sterilized anew.



2. *Sterilization of Gauzes and Cotton.* These materials can, of course, be sterilized the same way as instruments. For obvious reasons, however, sterilization of gauze and cotton by boiling is impracticable. They can be sterilized in a steam sterilizer preferably in one, which enables their subjection to dry hot air after their saturation with steam. They also can conveniently be sterilized in Schering's formaldehyde sterilizer.

The average surgeon will hardly care to spend time and labor on the sterilization of dressings, unless he uses large quantities. Gauzes marketed in hermetically sealed glass jars or cartons are reliable, provided they come from firms of repute. In this the physician should be particularly careful. Of late many small dealers have sprung up who manufacture medicated and plain gauzes. I have seen one wash out the container with hydrant water, dry it in the air and pack the gauze in it with hands which have not been washed, though he had just finished his lunch.

It is self evident that when the physician wishes to keep in stock gauzes and cotton in an aseptic condition it is essential that they be preserved in hermetically sealed glass containers which, too, must first be sterilized.

4. *Sterilization of the Hands.* The surgeon, his assistants and nurses must take special pains in the preparation of their hands, even when the most trivial operation is to be performed. Although the same rule should hold good with reference to examinations, in practice this cannot be carried out.

Many authors claim that the human hand can never be rendered absolutely sterile, no matter what method be adopted, although this hypothesis has been disputed.

The chief difficulty in the cleansing of the hands lies in the finger nails.

The following is an excellent description of how to cleanse the hands and forearms, given by Dr. Carl Beck, in his work entitled "A Manual of the Modern Theory and Technique of Surgical Asepsis," as follows: "The hands and forearms of the surgeon are best cleansed according to Furbringer's and Kummel's methods, which depend more upon mechanical thoroughness than upon the choice of any special antiseptic. The skin must be brushed energetically with very warm water and green soap for three to five minutes, and then be dried with a sterilized towel. Scrupulous cleansing of the finger nails with a small metal nail-cleaner is of the greatest importance. Not less than one minute, preferably longer, should be devoted to the nails. The surgeon should have his nails cut short and rounded. Nail-files must be avoided, as they form irregular surfaces from which the microbes cannot so easily be removed as from a sharp cut done with a scissors. The wearing of rings during an operation shows a misconception of the principles of asepsis. Even if the rings be exceptionally clean, the little

folds of the skin beneath them can shelter micro-organisms. After cleaning the finger nails the skin must be rubbed for about one minute with a sterilized gauze tampon dipped in pure alcohol (80 per cent).

“This procedure is followed by washing and rubbing with a bichloride solution (1-1000) for another minute. If contamination with especially infectious material shortly before the operation was inevitable, the whole procedure recited above must be repeated. The entire process of disinfection should consume from five to ten minutes.”

Instead of green soap, the author would recommend the use of synol soap which has decided antiseptic properties and does not injure the skin.

For ordinary examinations it will suffice if the hands are thoroughly cleansed with synol soap and water by means of a brush (which should al-



FIG. 5.—Surgeon's rubber glove.

ways be kept in an antiseptic solution), followed by an ablution with alcohol or by dipping the hands in a bowl containing an antiseptic solution. Freshly laundered towels can be looked upon as aseptic for purposes of drying the hands when an examination only is to be made.

It should always be remembered that after a thorough mechanical cleansing of the hands, they can be at once rendered thoroughly aseptic by slipping a pair of sterile rubber-gloves over them. The gloves should always be used when the physician has recently handled infectious cases or septic material.

Many surgeons operate without exception with gloves, while others use them only in septic cases.

For digital examination of the rectum and vagina, finger cots made of fine rubber are very useful.

The tactile sense is interfered with but very little by the use of rubber gloves or cots, provided the rubber is of the finest possible make.

Fig. 5 represents a glove made by the Miller Rubber Mfg. Co.

5. *Disinfection of Suturing Material.* Four forms of suturing material are employed in gynecic operations; silk, silkwormgut, catgut, and silver wire.

Silk is not only the cheapest but also the most reliable suturing material, although the number of surgeons giving silkwormgut the preference is very large.

Both can be sterilized by boiling or steam. Whichever method is chosen the material can be cut in suitable lengths, wound around a spool or a piece of narrow glass tubing or twisted in skeins, placed in a stout test tube, which should be loosely stoppered with a piece of cotton and then either thrown in the boiling water or placed in the steam sterilizer for fifteen minutes. When through, the cotton is pressed very tight into the tube with either a sterilized pair of forceps or with the thoroughly disinfected hand, when the tube can be placed aside until needed.

Catgut is very valuable in abdominal operations, but can be spared in plastic operations or in minor gynecic surgery. It is rather a difficult thing to properly sterilize this suturing agent and the usual methods will not suffice. Prolonged and complicated procedures must be instituted which space prevents from reciting. Those who are interested are referred to larger works on surgery. The best advice that can be given the general practitioner is not to prepare catgut himself but secure ready made and prepared catgut from sources which are known to be trustworthy.

Silver wire is but rarely used at present in gynecic operations. It is best sterilized the same way as the other metallic instruments, just before each operation.

## CHAPTER III.

### EXAMINATION OF PATIENTS.

No intelligent and rational treatment can be suggested and carried out in any case, in which no diagnosis has been made. A diagnosis in gynecic practice can only be made after a thorough and systematic examination.

The physician should insist on a thorough examination in each case, and where objections are offered, after an explanation, pointing to the necessity of an examination, has been presented, it will undoubtedly be better for the physician to altogether decline to treat the case.

Each case should be recorded in a special book or the "card system" can be employed, whichever the physician prefers.

The examination is oral and physical. The latter can be divided into physical proper and chemical, histo-pathologic and bacteriologic.

#### (A) ORAL EXAMINATION.

It is advisable to permit the patient to narrate the story of her affliction in her own way. Many irrelevant things will be told, to be sure, but the physician will gain an idea in regard to the nature of the ailment and know in what direction to look for further details.

The following questions should be asked and recorded in each case. (Variations to suit each individual case can of course be introduced at the option of the examiner.)

- (a) *Name?*
- (b) *Address?*
- (c) *Age?*

The exact age of the woman is not essential. All the physician cares to know is whether the patient has reached puberty or whether she has reached the end of her sexual career.

The doctrine that certain diseases attack people only when "old" or "young" is erroneous, cancer, for instance, having been observed in young unmarried girls, and women over fifty have given birth to children.

(d) *Occupation.* The influence of certain occupations on the genital system is too well known to need any discussion here. Women who make a living by sewing are apt to suffer from congestion of the pelvic organs. Again the constitution is frequently undermined in the various sweat-shops and in factories where dust or unhealthy vapors have to be inhaled.

(e) *Social Condition.* (Single, married, divorce or widow?) A reply to this question should be taken by the physician *cum grano salis*. Not every single woman is necessarily a virgin, while a married woman may have to be classified among the "single" women. A knowledge of the *sexual history* of the patient, will enable the physician to form his own conclusion under what category to place the patient.

(f) *Questions Concerning Menstruation.* A complete history of menstruation should be obtained by the physician. The following questions suggest themselves as essential to obtain satisfactory information:

"Have you been menstruating at all?"

"Do you menstruate regularly?"

"How long does each period last?"

"What is the character and quantity of the discharge?"

"Is there any pain preceding or accompanying the flow?"

"Of what character are these pains?"

(g) The physician should next ascertain the *number of childbirths and miscarriages*. He should inquire whether the labors have been normal or instrumental, when each took place, and whether the miscarriages, if any, were spontaneous or induced. Although no positive conclusions can be drawn from answers to these questions the physician will often be able to trace to these events, the origin of many affections.

(h) *Discharge.* In former years the physician was satisfied to make a diagnosis of "whites" or leucorrhœa, to prescribe a wash, and then he considered his duty well done. To-day we know that any kind of a discharge, either from the vagina or uterus, is an indication only, a symptom of an existing disease.

A full description of the importance of this symptom will be found in a subsequent chapter. It will not suffice for the physician to interrogate his patient in regard to the nature of any discharge she might have, but he will have to form his own opinion by personal inspection, and if necessary, by a microscopic examination.

(i) *Special Questions.* Before closing the verbal examination, the examiner should note the character and locality of any pains, he should also inquire about the condition of the bowels and bladder, in fact, of all important organs, such as the nervous, circulatory, respiratory and digestive apparatus.

If the above be carried out systematically, valuable data can be secured which may prove of great service to the physician at any future time as means of comparison and observation.

A diagnosis should never be made from an oral examination alone, and the physician should in every case proceed to the

(B) PHYSICAL EXAMINATION.

The order of a physical examination should invariably be as follows:

1. Inspection of the external genitalia.
2. Examination of the vagina and cervix with one or two fingers.
3. Bimanual examination of the uterus and adnexa.
4. Examination of the abdomen.
5. Examination of the uterus and cervix with speculum and instruments.
6. Microscopic examinations.

POSITION OF PATIENT IN PHYSICAL EXAMINATIONS.

When a physician is called to a patient's house, a gynecic examination of the patient can be made while the patient is in bed or on a couch, in a way to be described later on. Whenever possible, it is more convenient to



FIG. 6.—Two kinds of legholders.

the surgeon to place her on a kitchen table. In order to hold the legs in a proper position any kind of a leg-holder manufactured for that purpose or a long towel will do. (See Fig. 6.)

In his office the gynecist should have an operating or examining table, especially constructed for such purposes. There are many kinds advertised, ranging in price from about twenty to one hundred dollars or more. If they are made of wood and upholstered, they should not be used, for the simple reason that fluids and blood are retained by these tables, so that they cannot be kept clean.

In the writer's opinion an ideal table should be made of material which can be easily cleansed and sterilized (glass or iron). It should permit the

physician to place his patient in any position he may see fit; it should be built substantially so as not to roll away at the least jarring and, last, but not least, it should not be expensive.

The author uses in his office a "Ferguson Table," which is constructed entirely of metal and answers all practical purposes. It can be washed with antiseptic solutions without detriment. (Fig. 7.)

The "positions" usually adopted by the physician are three: The dorsal, Sims' and the genu-pectoral.



FIG. 7.—Ferguson's aseptic chair-table.

In order to get the full benefit of the *dorsal position* the patient's perineum should be an inch over the front of the table, and the heels placed in the stirrups and brought as close to the buttocks as is consistent with the patient's comfort; the knees must be kept wide apart. (Figs. 8 and 9.)

Every woman will greatly appreciate if a clean sheet be thrown over her extremities and abdomen. A slit in the sheet will enable the examiner to reach the genital apparatus without subjecting the patient to useless exposure.

The dorsal position will be found the most useful for the practitioner, for he can get along without assistants, which is not the case with Sims' position, which requires the presence of some person to hold a Sims' speculum

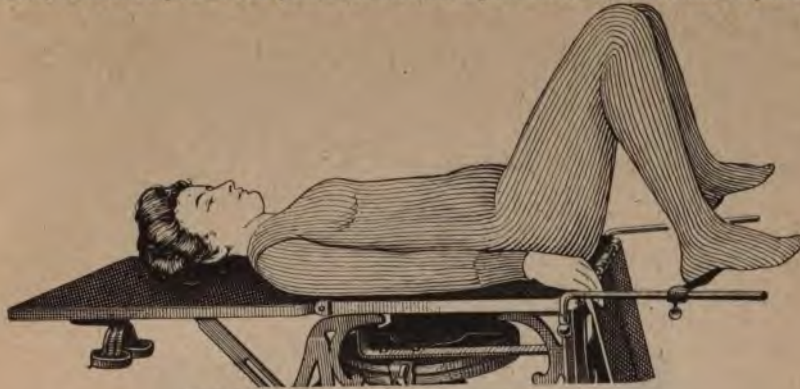


FIG. 8.—Dorsal position for examination.

or retractor. The author can see no advantage to be had from Sims' position which is becoming obsolete.

The genu-pectoral or knee-chest position, is to be employed when it is desired to change the position of the uterus from backward to forward (see chapter on Retroflexion and Retroversion) and in cystoscopy (Fig. 10).



FIG. 9.—Dorsal position for operation.

The reader can gain a far better idea of the various positions by observing the photographs, which have been taken by the author for this book, than from lengthy descriptions, hence, the above remarks will have to suffice.



## I. INSPECTION OF THE EXTERNAL GENITALS.

The examiner sits on a low stool or chair between the feet of the patient and through the slit in the sheet, thrown over the patient, who is in the dorsal position, exposes the external genitals and anus to full view. In day time the light should come from a window behind the examiner so that the rays fall obliquely over his shoulders. In night time any good light (prefer-



FIG. 10.—Knee-chest position.

ably a white Welsbach light) should be reflected by means of an ordinary head mirror.

The examiner, remembering the normal anatomy of the genitals, will at a glance note the condition of the clitoris, urethral orifice, labia majora, labia minora, hymen, perineum and anus. He will detect the presence of discharges from the urethra and vagina, chancres, fissures, tumors, abscesses and other congenital or acquired abnormalities.

## 2. DIGITAL EXAMINATION OF THE VAGINA AND CERVIX.

The next step in a systematic examination is the exploration or palpation of the vagina and vaginal cervix by means of the index finger, or, as may sometimes prove necessary by the index and middle fingers combined.

The physician should early accustom himself to employ either hand, for frequently the position of the patient while in bed, or an injury to the right hand may necessitate the use of the other. It goes almost without saying that in no instance should an examination be made unless the hands have been rendered surgically clean.

As the examiner is apt to infect his hand when there is the slightest abrasion of the epidermis, sterilized rubber gloves or cots should be slipped over the hands or fingers.

The exploring finger should be oiled with some sterilized lubricant (glycerine, oil, vaseline, etc.) and introduced into the vagina by a slight boring and pressing motion. Unless there be a condition described as "vaginism" or severe inflammation, the exploration of the vagina should be painless. If the examination elicit pain a maximum of gentleness is necessary. Sometimes in severe cases no satisfactory examination can be made and general anesthesia has to be resorted to.

Not infrequently the examination of the vagina awakens sexual desire in sensual women. The examiner is cautioned to be as stern as possible with such patients.



FIG. 11.—Author's way of arranging hand for vaginal examination and massage.

In virgins, care should be taken not to tear the hymen and a rectal examination may have to suffice, unless there be imperative indications to the contrary. In such cases the physician had best first secure the permission of the patient and her relatives.

The position of the fingers is of some consequence for a successful examination. Fig. 11 shows the correct way to arrange the hand.

What can the examining finger detect? The condition of the anterior and posterior walls of the vagina, the vaginal cervix and frequently many abnormalities in Douglas' space.

Sweeping the finger alongside the walls, any tenderness, tumor or ulceration present will be detected. The cervix can be palpated for its shape, position, size and consistency, the os will show whether the woman is a nullipara or otherwise; if pregnancy be present a peculiar soft, doughy, velvety feel is experienced by the finger when touching the lips of the cervix.

Tears of the cervix are more readily recognized by the examining finger than by direct inspection through a speculum. Fistulæ will be suspected

when an unevenness, feeling like an indentation is detected in the vaginal wall.

Extra-uterine pregnancy, exudates and abscesses in the parametrium can frequently be recognized by the examining finger while pressing against the fornix.

### 3. BIMANUAL EXAMINATION.

The author must express his astonishment at the attempt of some otherwise brilliant surgeons and writers on gynecic practice, to discourage the routine bimanual examination. It is true that many of them have made correct diagnoses by a simple digital examination, but what does this prove? Nothing, it is feared.

The author knows of many medical celebrities and of many obscure practitioners who have the ability to make diagnoses of pulmonary tuberculosis, typhoid fever or pneumonia on entering the sick room even before feeling the pulse of the patient.

Certainly there is something in the facial expression which tells the tale. But is this scientific and absolutely reliable? The majority of physicians who have had even a limited experience will answer in the negative. Without examination of heart, lungs, spleen, liver and intestines,—no diagnosis. This is, and should be a law, not to be transgressed.

The same holds good with reference to bimanual examination of the uterus and its adnexa, which should be practiced in every first examination in order to either positively exclude or detect certain pathologic changes. The unaided exploring finger in the vagina cannot always recognize tumors or inflammation of the tubes, ovaries and of the supra-vaginal part of the uterus.

The other, free hand has to be placed over the pubic (hypogastric) region and its four fingers gently, but firmly pressed into the abdominal wall in order to meet the finger in the vagina, thus pressing down the uterus and adnexa, the location and condition of which organs can frequently be recognized almost as clearly as if the abdominal wall had been opened, particularly so in lean women.

It is true that this is not always the case, in fact, in very painful affections the abdominal muscles are contracted to a stage of rigidity not easily overcome by pressure, but a great deal can be accomplished in the majority of cases by patience and perseverance. In all cases when a bimanual examination meets with difficulties the physician should instruct the patient to breathe deeply or engage her in a conversation, in order to cause a relaxation of the abdominal muscles.

It is self evident that in excessively obese women a bimanual examination can never be altogether satisfactory, but even in such women, fibroid tumors of medium size have been diagnosed without much difficulty by beginners in the author's class.

By means of the bimanual examination, the position of the entire uterus can be easily made out, the finger in the cervix pressing against the external os, while the fingers of the hand on the abdomen try to find and grasp the fundus. By pressing alongside the uterus this organ can be mapped out in its entirety and the ovaries and tubes pushed down to be easily palpated by the finger in the vagina, which naturally must change its position depending which side is to be palpated.

#### (4) EXAMINATION OF THE ABDOMEN.

The abdomen should be subjected to special examination, when the presence of a tumor in the pelvis has been ascertained and in all cases of suspected pregnancy. The examination consists of inspection, palpation, percussion, auscultation and mensuration.



FIG. 12.—Miller's bivalve speculum.

*Inspection.* The abdomen should be well exposed, and all tight garments loosened and pushed out of the way. The trained eye, will, at a glance detect any abnormal enlargement, irregularity in the contour of the abdomen, changes in the pigmentation (the so-called *striae albicantes*) and any abnormality of the navel. The diagnosis of abdominal dropsy can, as a rule, be made by inspection alone.

We next proceed to *palpate* the abdominal walls. By lifting up the abdomen we can judge of its thickness and mobility. Pressing in deeply with the tips of all fingers we gain valuable information in regard to the form, size and consistency of the tumor or tumors in the pelvis.

*Percussion* is of great help to the examiner. Solid and liquid masses are characterized by a dull, flat sound, whereas the intestines give a tympanitic sound.

*Auscultation* aids in the establishment of the diagnoses of pregnancy and aneurism. In the former we may hear the fetal heart sounds, and a blowing sound in the large vessels alongside the uterus, in the latter a peculiar noise, which of course is not conclusive evidence of the presence of aneurism and must be supported by other clinical evidence.

*Mensuration* is accomplished with an ordinary tape measure placed around the most prominent part of the tumor. The distance between the navel and symphysis pubis or ensiform cartilage, also the girth at the level of the navel, etc., are ways of estimating the extent of the abdominal enlargement. Such measurements have no particular diagnostic value, but are useful when we wish to watch whether a swelling increases or decreases in time.



FIG. 13.—Cavana's short speculum.

#### (5) EXAMINATION BY MEANS OF INSTRUMENTS.

In order to see the entire vagina, cervix and the uterine canal, special instruments must be employed to make these parts accessible. The number of so-called specula invented, is legion. Many a would-be gynecist seems to consider it the acme of fame to invent or rather modify a speculum, even though this invention or modification consists only in the addition of a screw or mechanism, complicating the little instrument and making it less useful. One need only glance at the illustrated catalogues of the various instrument houses to be convinced of this truth.

For purposes of examination, application and even operation the so-called bivalve speculum is the best because it is the simplest and allows not only an inspection of the cervix, but of the fornix as well.

Figs. 12, 13, 14, illustrate three bivalve specula which in the author's opinion are the best. Either of them can be introduced into the vagina and opened by pressure on the handles to full capacity, thus allowing the surgeon perfect control.

The so-called tubular and tri-valve instruments, in fact, all other specula are either useless or difficult of handling. These instruments are to be used



FIG. 14.—Grave's speculum.

in dorsal position. When the examiner sees fit to employ Sims' position, either Sims' speculum or any appliance constructed like ordinary retractors will do. The bivalve specula should be introduced while closed, with the blades in a horizontal position, the labia majora and minora are held apart with the thumb and middle finger of the other hand and the blades pushed



FIG. 15.—Uterine endoscope.

in, directing the speculum towards the os, the position of which has been ascertained by the preliminary digital examination.

When the blades are all in they are opened to any desired degree and held fast in this condition by whatever contrivance the speculum possesses.

Should the cervix not appear in the speculum, the latter should be pressed up or down until the os occupies a space between the two blades.

It is then we can observe the condition of the vagina and vaginal cervix. If we wish to go a step farther and directly inspect the uterine cavity, this can be accomplished by a special uterine endoscope depicted in Fig. 15. Of course, when the external os and uterine canal are very narrow this cannot

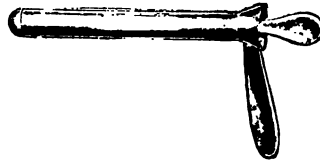


FIG. 16.—Kelly's cystoscope.

be easily done, if at all, and the cervix will have to be dilated first. (See the chapter on Curettage for the technique of dilatation.)

The bivalve specula are now manufactured in several sizes, the smallest of which can be used for virgins.

Kelly's cystoscope (Fig. 16) is also an excellent instrument for the inspection of the vagina and cervix in virgins.

## CHAPTER IV.

### MICROSCOPIC EXAMINATION.

No general practitioner can afford to be without a good microscope. How is he going to demonstrate without one the presence of casts in the urine or tubercle bacilli in the sputum? No blood examination, furthermore, is complete without a microscopic examination.

Although good diagnoses in gynecic practice can be made by the various methods of examination as described in the preceding chapter, the microscope is, nevertheless, of great value, particularly when malignant disease is suspected, or infection to be demonstrated. When the clinical evidence leaves us in doubt, it is the microscope which settles all disputes and acts as a reliable adviser in regard to the steps to be taken.

The reader is warned, however, not to depend in all cases on the microscope exclusively as it is only in conjunction with all other methods of examination that it is of great value and help.

Those who have used the microscope before will find very little trouble in acquiring such technique as is required in gynecic practice. Those who have never handled the microscope before but who mean to do scientific work in gynecic practice and want to equip themselves accordingly, will find this chapter of great value inasmuch as the same materials can be employed for the examination of bacilli and abnormal growths found in other portions of the human anatomy.

This chapter is primarily intended for such practitioners who have not had the opportunity of a training in microscopy. It is self evident that our remarks must therefore be limited to the examination for bacilli and cocci. The examination of tissues requires skill and experience and cannot very well be acquired by reading.

I would advise every one not familiar with histo-pathology to transmit specimens to pathologists of recognized ability. Every large city has several special laboratories for just such work. In Chicago excellent and strictly scientific work is done in the laboratories of Profs. A. W. Evans, Maximilian Herzog or Carl Theodor Gramm, either of whom supplies directions for the collection, preservation and transmission of specimens.

We will now briefly consider the instruments necessary and some methods now in vogue.



The *microscope* used by the author is manufactured by Beck of London (sold by Frank S. Betz & Co., Chicago, at \$69), and is satisfactory in every respect. More expensive ones are not essential.

It has 2 eye pieces, 3 lenses (one 1-3 inch, one 1-7 inch and one 1-12 inch "oil immersion"), coarse and fine adjustment, an Abbé condenser with iris diaphragm, and a double reflector. It can be reclined in any angle desired.

The various *stains* (formulae for which will be found later on) are best preserved in ordinary glass-stoppered bottles. Some prefer such that are stoppered with a rubber cork into which is fitted a pipette.

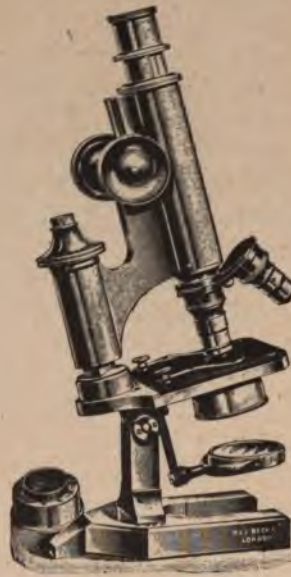


FIG. 17.—Beck microscope.

It would require too much space to describe in detail every bit of glass-ware and metal apparatus needed for microscopic work.

The reader will gain a better idea as to what he needs for his laboratory table, for at least one class of work by carefully reading the following description how to examine a drop of pus or sputum for tubercle bacilli.

A drop of the sample is taken up with a *wire-loop* (made of platinum and attached to a glass rod), which must first be heated to a red heat in the flame of either an *alcohol lamp* or a *Bunsen gas burner*, in order to be rendered absolutely sterile.

The bit of pus or discharge caught on the loop is deposited on an absolutely clean *cover glass* (a round or a square thin piece of glass). This glass should be dipped in alcohol and ether and is best cleansed with a piece of clean *silk* or *Japan paper*. Cloth should not be used, as particles of the texture are apt to stick to the glass and confuse the microscopist when he views his object through the microscope.

The drop as placed on the cover glass is usually too thick for a microscopic examination. Another cover glass, which, naturally, should be as clean as the first one, is placed on top and then gently slid apart. In this way the original drop is spread as thinly as possible and divided over the entire areas of both cover glasses. Both cover glasses with the specimen on top are placed on any clean object (preferably white filter paper) and left for a few minutes to dry. They should be protected from contamination with bacilli found in the air by a watch glass placed over them. Each cover glass is then grasped near its margin with a pair of delicate forceps (preferably with Stewart's cover glass automatic forceps; costs about 15 cents), specimen on top and is slowly passed through the flame of an alcohol lamp three times.

The specimens are now ready to be "stained." By "staining" is meant nothing else but coloring or dyeing of the specimen and the germs it contains, to enable us to easily recognize them under the microscopic lenses.

In order to examine the pus or any other liquid for tubercle bacilli we need two stains and a decolorizing agent. (See formulary below.)

The staining process is called Ziehls' method or carbol—fuchsin stain. From this solution a few drops are taken up with an ordinary medicine dropper, and dropped over the object on the cover glass, covering it completely with the stain. The cover glass is held for 3 to 5 minutes, about four inches over the flame, which causes the superfluous staining fluid to evaporate, the object itself becoming thoroughly stained. Care should be taken not to permit the staining fluid to "boil" in which case the cover glass must be removed for a few seconds to cool. The staining fluid should not be allowed to evaporate too rapidly as otherwise the bacilli will not become thoroughly dyed. To prevent this, more staining fluid should be added from time to time, sufficient to keep the cover glass fully covered, during the **maneuvre**.

The specimen is now washed off with sterile water and **decolorized** as follows:

The decolorization is accomplished with a **15 to 25 per cent** sulphuric acid, either by dropping a few drops on the **specimen** immersing the latter in a small dish containing the **decolorizin**

decolorizer is allowed to act on the specimen for about thirty seconds, or rather until the red color is just extinguished.

By this process the red color is removed from the cells and debris but *not* from the bacilli, which retain the red dye.

The specimen must next be washed off with *sterile water*. A special "*water-bottle*" is very useful for that purpose as a small stream of water can be turned on the subject by blowing into the air-tube.

The decolorizing agent thus having been removed, the specimen is best stained again (counterstained) with a strong watery solution of *methylene blue*. This is done by simply covering the specimen with the stain for thirty seconds, and then washing with sterile water until a very faint blue remains. When the specimen is dry it is ready to be examined under the microscope.

A drop of *Canada Balsam* is placed on a clean *slide*, the cover glass (specimen, or, as it is frequently called, film-side down) placed on the drop which spreads and holds the cover glass tight to the slide (microscopists call this *mounting* in Canada Balsam). The specimen can now be examined with either the 1-7 inch or the oil immersion (1-12 inch) lens. Owing to the two stains the field will appear blue, the tubercle bacilli, red.

#### GABBET'S MODIFICATION.

Gabbet modified the above procedures by decolorizing and counterstaining at the same time. The solution he uses is given in the "Formulary" below. He first stains the specimen with carbol-fuchsin, washes with distilled water and then treats the specimen with his solution for thirty seconds, washes until a faint blue color remains, dries and mounts in the way as described above.

The above descriptions are so detailed that even a beginner in microscopy by following closely the directions given could not fail to examine sputum, pus or any liquid for tubercle bacilli. In addition to this he has become acquainted with the paraphernalia necessary for the work, which are simple and inexpensive.

The most important of all germs in gynecic practice is the gonococcus.

The microscopic examination of pus or discharges for gonococci is simpler yet. The method to be pursued consists in the staining of the specimen with methylene-blue solution only. The superfluous stain is washed off with sterile water. If gonococci are present they can be seen as a rule in the pus-cells and appear like small organisms in pairs, resembling the head of a screw, or like a large period cut in two. Germans see in the organisms a resemblance to their popular biscuit called a "semmel."

In very doubtful cases special stains should be employed but their description cannot come within the scope of this book.

A word in regard to histo-pathologic examination. As already mentioned such work cannot be successfully done by physicians who lack laboratory training and even if the structures be very plain, they will hardly be able to properly interpret them, unless they resort to such methods as: "hardening" "block-mounting," "cutting" and "staining" of the parts.

Nevertheless the beginner should lose no opportunity of examining the scrapings from the uterus, etc., in the following way, which is the simplest and most practical known—the "teasing" method:

Select the thinnest films (they must be fresh) and put them in any so-called "*isolating*" or "*maceration*" fluid (I use Ranvier's, see Formulary) for from 12 to 24 hours, after which, by shaking, it is easy to separate the cells; or the tissues can be "teased" to minute particles by two needles, inserted in needle holders, all of which should be done on a clean glass slide.

The specimen is now stained for from 1 to 3 minutes with hematoxylin, a drop of Canada Balsam placed on top and over it a clean cover glass. The preparation is now ready to be examined. Begin all histo-pathologic examinations with the lowest power (1-3 inch) lens and use the higher power glasses to study details of structure.

## FORMULARY.

### I. CARBOL-FUCHSIN STAIN.

Fuchsin (15 grains).....	1 gram
5 per cent aqueous sol. carbolic acid (20 drachms)...	80 c. c.
95 per cent alcohol (5 drachms).....	20 c. c.
Or:	
Fuchsin .....	1 part
5 per cent aqueous sol. carbolic acid.....	100 parts
Alcohol .....	10 parts

### 2. METHYLENE-BLUE STAIN.

Methylene blue (10 grains).....	0.6 grams
Distilled water (1 ounce).....	30. grams
Or:	
Methylene blue .....	2 parts
Alcohol .....	15 parts
Distilled water .....	85 parts

## 3. MART'S COUNTERSTAIN AND DECOLORIZER.

Methylene blue	2 parts
Hydrochloric acid	25 parts
Distilled water	73 parts

## 4. ISOLATING OR MATURATION SOLUTION.

(a) Ferric chloride	28 vols.
Distilled water	72 vols.
(b) A weak aqueous solution of chromic acid (1:5000).	

## 5. HEMATOXYLIN STAIN.

To 100 c. c. of a saturated solution of ammonia alum, a solution of one gramme of hematoxylin dissolved in six c. c. of absolute alcohol, is added, drop by drop. The solution is exposed to the air and light, in an unstoppered bottle, for three or four days; it is then filtered, and twenty-five c. c. of glycerine and twenty-five c. c. of methylic alcohol are added. The mixture is allowed to stand until its color becomes dark, and is again filtered and preserved in a bottle with a closely fitting stopper. It keeps well, but should not be used for two months after it has been prepared.

## CHAPTER V.

### DISORDERS OF MENSTRUATION—INCLUDING HEMORRHAGE FROM THE UTERUS.

Woman's life, sexually, can be divided into three stages:

First, from birth to puberty.

Second, from puberty to menopause.

Third, from menopause to death.

The period from puberty to menopause, which is designated as the period of sexual life, characterizes itself by a periodic function, consisting in a bloody discharge from the ovaries and uterus, lasting on the average three days, and occurring about every twenty-eight days: *Menstruation, periods, catamenia, monthlies, etc.*

Constitutional or local derangements may cause anomalies of this function. While such an anomaly could not be considered a disease per se, any menstrual disorder must be treated as such, the treatment, of course, being principally directed against the disturbing cause whenever this is possible or practicable. We have three anomalies of menstruation: amenorrhea, dysmenorrhea and menorrhagia. We will consider each of them separately.

#### (A). AMENORRHEA.

*Definition.* Lack of the menstrual flow (or a very scanty one) in the mature woman.

It is physiological in pregnancy and during lactation, in all other cases pathological.

*Causes.* They are either local or constitutional. Defective development of the ovaries or uterus make this function impossible and in such cases we speak of *primary* amenorrhea, primary meaning that menstruation never occurred before. As a rule amenorrhea due to defects of the genital organs is also permanent.

We cannot call amenorrhea a condition where menstruation is delayed on account of retarded puberty. The beginning of menstruation at an advanced age cannot be regarded as amenorrhea proper, as this is found to be characteristic and hereditary in some families and even nations. The time when menstruation is first to appear depends upon habits, disposition, climate and surroundings, as does also the cessation of this function.

*Secondary or transitory amenorrhœa* is the term applied to cessation of the menstrual flow after it has occurred once or several times. It is sometimes called "suppression of the menses" but we would rather see this term applied to a real suppression, i. e. when a woman is menstruating, the flow ceasing at an usually early time, perhaps abruptly as frequently happens with patients who expose their feet to wet cold during their periods.

So-called *vicarious* menstruation, which means periodical hemorrhage from other organs than the uterus, as the nose, ear, rectum, lungs, stomach or even open sores in association with amenorrhœa and regarded as a substitute for menstruation, is not believed to exist by many eminent authorities. At any rate it is exceedingly rare, and then other diseases must be borne in mind (haemophilia).

If the absence of the flow is due to mechanical occlusion of the uterus, vagina or vulva so that the menstrual blood *cannot* flow out, such retention cannot be regarded as amenorrhœa proper.

Two of the principal diseases causing amenorrhœa (and delaying puberty) are anemia and chlorosis. But a great many other grave constitutional diseases may produce amenorrhœa—tuberculosis, typhoid fever, etc.

Certain affections of the ovaries or uterus causing atrophy or partial destruction of these organs, are responsible for the cessation of the menstrual flow. In fact all diseases causing general malnutrition are apt to suppress or diminish the monthly flow. Nervous disturbances, excessive mental strain, fright, grief and similar conditions are frequently to be held responsible.

The *diagnosis* is comparatively easy. The patient calling our attention to the total absence of the flow, or its scantiness, we will have to discover the causing factor. Pregnancy and lactation must first be excluded. Certain unfortunate and even married women complain of amenorrhœa, well knowing that they are pregnant in order to mislead the surgeon, and to cause him to produce abortion by an instrumental intra-uterine examination. We always have to be on our guard in this direction.

A careful history of the case must be taken, lungs, urine, etc., examined, anemia sought for and if no constitutional disease be found, a careful examination of the entire genital apparatus, will reveal the cause at last.

The *prognosis* depends entirely on the cause. If this can be removed or remedied the prognosis is good.

The *treatment* consists in the therapeutics of the causing disease. One of the general rules is to restore nutrition by tonics, food, moderate exercise, rest, massage, electricity, etc. In anemia and chlorosis iron in easy digestible form should be prescribed.

When due to atrophy of the ovaries and uterus, tonics and sensible local treatments (see respective chapters) are indicated.

Suppression of the menstrual flow due to exposure to cold wet, must be treated with hot baths or dry heat applied to the lower extremities and diaphoretics internally. If amenorrhœa be due to defective development of the ovaries or uterus, very little, if anything can be done. The so-called emenagogues—drugs which are supposed to produce the menstrual flow (savine oil, ergot, permanganate of potassium, quinine) are rarely used, at this time, as there is hardly any indication for them. They are dangerous drugs and frequently taken with the intention of producing abortion.

(B). DYSMENORRHEA.

*Definition.* Physiologically the function of menstruation is associated with some pain. When the pain becomes excessive or when other disagreeable reflex symptoms (nausea, vomiting, headache, etc.) occur, we have abnormal menstruation and term it dysmenorrhœa. The pain sometimes precedes or follows the flow only or both takes place.

*Causes.* Similar to amenorrhœa this affection can be caused by local disorders of the sexual apparatus and by general constitutional diseases.

Certain affections like congenital stenoses of the internal or external os of the cervix or of the entire uterine canal, or acquired narrowing of their caliber due to versions and flexions of the uterus or tumors, prevent the flow. Stronger contractions, and therefore painful ones are necessary to expel the menstrual blood. In such cases we deal with so-called *mechanical dysmenorrhœa*.

Inflammatory diseases of the uterus and its neighboring tissues (metritis, endometritis, perimetritis, parametritis) and ovaries (chronic ovaritis and perioophoritis) are apt to cause dysmenorrhœa. The periodical congestion in menstruation causes but little pain and inconvenience in otherwise healthy ovaries or in the uterus but increases in inflammatory diseases of these organs the already existing abnormal amount of congestion, thus causing also excessive pain—*ovarian and congestive dysmenorrhœa*.

Dysmenorrhœa is sometimes met with in neurotic and hysteric women, or in young anaemic virgins, in whom no pathological change can be detected in either the uterus or ovaries. In such cases we have to consider the deficient nutrition of the whole body and the deranged function of the nervous system as the immediate cause of the menstrual abnormality—*neuralgic dysmenorrhœa*.

In addition to these four varieties we have another that characterizes itself by the shedding away of a membrane from the uterus, which is the decidua



menstrualis—*membranous dysmenorrhea*. The causes of this form of abnormal menstruation are not established beyond doubt as yet.

Inflammatory conditions of the uterus seem to be one of the principal causes.

*Diagnosis.* The diagnosis of dysmenorrhea, as such, is easy enough, but we do not gain much by it for intelligent treatment. It is essential that the *variety* be recognized and the causes, if possible, discovered. A careful examination of the vagina, uterus and ovaries will demonstrate the presence or absence of any local affection liable to cause dysmenorrhea. If the latter be the case, it is neuralgic dysmenorrhea due to either general malnutrition or a deranged nervous system.

The diagnosis of membranous dysmenorrhea offers no difficulties. The finding of the expelled membrane is sufficient to recognize it as *decidua menstrualis*.

The treatment is either palliative or curative. The physician is often consulted to relieve pain or to arrest reflex symptoms during an attack. Of course, the rational way is to make a correct and full diagnosis and to remedy the cause, but in case of emergency we are often compelled to resort to palliative treatment. The physician who promptly relieves the poor sufferer has a fair chance to be entrusted with the treatment of the case in order to prevent another attack.

The hypodermic injection of morphine and atropine in suitable doses is very popular and effective. It is too popular almost to be administered by a physician. The administration per os is to be preferred. Haydn's *Viburnum comp.*, a teaspoonful in  $\frac{1}{2}$  glass of hot water every hour, has proven satisfactory in our hands. It is to be preferred to opium, which stupefies the patient. Patients should not know when they get an opiate for they might resort to it frequently and that deplorable condition known as "morphinism" would result. Rest in the horizontal posture is to be recommended, a hot sitz bath should be taken, the bowels kept regular by some saline cathartic or *cascara sagrada* in palatable form. Vomiting requires pepsin, menthol, small pieces of ice and as a last resort cocaine.

The curative or rational treatment of dysmenorrhea is, the treatment of the cause. In mechanical dysmenorrhea the cervical canal should be dilated frequently with steel sounds or with special uterine dilators as described in Chapter XIII. Flexions and versions of the uterus must be corrected. Intra- or extra-uterine tumors should be extirpated, in short, all should be done to bring the uterine cavity and the cervical canal in shape and caliber, so as to admit free passage of the flow.

The congestive variety requires antiphlogistic, diuretic and diaphoretic internal therapeutics. Locally we will scarify the cervix, administer prolonged hot douches, or treat the inflamed uterus itself after a manner to be described later. The ovarian form, is the one that gives the least satisfactory results. Constitutional, combined with local antiphlogistic treatment, counter-irritation, applied to the ovarian region, rest and sedatives are about all the therapeutic means at the physician's disposal. In severe cases oophorectomy may be considered.

The *neuralgic* variety requires much judgment on the part of the physician. The general malnutrition must be remedied, any existing organic or functional derangement treated according to the principles of general medicine and such remedies prescribed that have a beneficial influence on the nervous system. In *membranous dysmenorrhea* any existing inflammation of the uterus must be treated. A method that promises the most satisfactory results is curettage of the uterus to be followed by frequent intra-uterine applications of full strength hydrozone, tincture of iodine, or a mixture of iodine and carbolic acid. In our experience zinc and other escharotics have not proved satisfactory.

#### (c). MENORRHAGIA.

*Definition.* Menorrhagia is the term applied to excessive menstrual flow. Hemorrhages from the uterus, non-menstrual in character, are termed metrorrhagia. Both are not diseases *per se*, but symptoms of either a general or local affection.

*Causes.* General. The number of constitutional diseases apt to produce either menorrhagia or metrorrhagia is large. We will name the most important ones, abstaining from further detailed description (see resp. text-books): Bright's disease, obesity, phosphorus poisoning, malaria, cardiac disease, tuberculosis, icterus, plumbism, purpura, etc. Menorrhagia from the uterus may also accompany acute fevers. Local: Almost all pelvic affections can produce menorrhagia and metrorrhagia—principally all inflammatory diseases of the uterus or its appendages, tumors, flexions and versions of the uterus and others too numerous to mention. Retained placenta pieces and adherent secundines after abortion almost always produce uterine hemorrhages.

Metrorrhagia is also often observed in pregnant women, who shed blood in the earlier part of pregnancy, without miscarriage. A *diagnosis*, we would first of all, call attention to the fact that hemorrhage from the female generative passages is from the uterus.

A hemorrhage can also come from the urethra, vulva or vagina.

Another question to be answered is: Is the flow (we refer to the menstrual, of course) really excessive? As no standard amount can be fixed, only one rule can be suggested: that the first few periods are to be considered as the normal gauge for each particular individual, for what would be a normal flow in one woman may be a menorrhagia in another. These two questions being answered, pregnancy must be excluded and last but not least, the local or constitutional cause discovered. We admit that this is sometimes very difficult.

*Prognosis* depends entirely on the cause and constitution of the patient.

*Treatment.* Removal of the cause is the first law in rational therapy. However, in all kinds of hemorrhages, the first law is: stop the hemorrhage, and next remove the cause. A consumptive who is attacked with a pulmonary hemorrhage would hardly have reason enough to be thankful to his "cause-hunting" medical attendants, who will prescribe creosote and cod-liver oil, without first attempting to arrest the hemorrhage. Let modern scientists call it palliative treatment only, it is, nevertheless, to be considered first.

The first thing to be ordered is perfect rest in the horizontal position. It is advisable to have the hips and lower extremities elevated. Towels, wrung out in cold water should be applied to the abdomen and lumbar and sacral regions. Internally the fluid extract of ergot (25 drops every hour, to be diminished gradually) should be given. Among other remedies, for internal use, which are very beneficial in milder cases are the following: Oil of cinnamon, oil of erigeron, diluted sulphuric acid. Care must be taken not to use any of those remedies during pregnancy, as they are apt to produce abortion. In such cases besides rest and cold externally, opiates can be administered.

In metrorrhagia, sometimes, though rarely, the bleeding may be so profuse that life might be destroyed in an hour's time. In such cases mechanical means must be resorted to. Vaginal injections with exceedingly hot water, practiced for ten minutes continuously, sometimes control the hemorrhage. If this prove a failure the uterine canal must be tamponed with iodoform gauze. These tampons should be removed after 24 hours. Meanwhile internal remedies, as described above, should be given. Tonics and stimulants are indicated in almost all cases of menorrhagia and metrorrhagia. The arrest of the bleeding, however, must not satisfy us. We must next make a careful diagnosis and treat any existing general disease, as outlined in standard works on the principles and practice of medicine. Local diseases

must be treated, in a manner to be described in the following pages. Retained secundines must be removed by curettage. As a rule profuse or repeated hemorrhages depress the vitality of the patient and undermine her constitution. Such patients should be put on maltine, iron, quinine, strychnine, hypophosphites and light but nutritious food.

## CHAPTER VI.

### LEUCORRHEA.

The older physicians understood under the term leucorrhœa a white discharge coming from the vagina. It was conceived by them as an independent disease, to be treated by astringent washes. Since pathology has become a more exact science and the microscope a valuable aid in gynecic diagnosis that idea had to be abandoned for a more rational one.

We know now that the very word is a misnomer, as are also its synonyms "fluor albus" and the lay expression "whites." Perhaps such simple words as vulvar, vaginal or uterine discharge would be best, but an old term cannot be easily eradicated, hence we must stick to "leucorrhœa."

Any discharge found in the vagina is abnormal, for while it is true that the vaginal tract is moist and slippery when in a normal condition, not even a drop of discharge can be detected with the naked eye.

When we study the various discharges as they appear to the naked eye, we observe that they are either thin (serous) or thick (purulent) and in color either white, yellow, brown or red, depending on the presence of pus, blood, epithelial cells, etc. The discharge may come from the vulva, vagina or uterus.

Authors vary in the classification of leucorrhœa. For practical purposes it is perhaps best to divide it in specific and non-specific forms. In the light of modern pathology it is utterly impossible to look upon leucorrhœa as an independent disease. It is a symptom accompanying either a local or constitutional disease. True, frequently, leucorrhœa is the only symptom present and in spite of a careful (?) local and general examination, no cause can be discovered. The fault in such cases lies with the examiner, not with science.

As a rule the clinical picture, supported by the history of the case will suffice to enable the examiner to make a correct diagnosis.

In such cases the examination of a drop of discharge by means of powerful lenses will throw much light on the nature of the case (see Microscopic Examination).

Leucorrhœa is a symptom accompanying constitutional as well as genital diseases. Among the former those are prominent which have a tendency to weaken the constitution, thus, not only such grave affections as tuber-

culosis and chlorosis will be found to cause leucorrhœa, but also nervous affections and even the so-called psychoses.

Worry, excitement and fatigue due to overwork are all factors to be considered. It is the poor, hard-working shop-girl who suffers from leucorrhœa, though no organic disease can be demonstrated.

Among the local affections producing leucorrhœa, all inflammatory affections of the vagina and uterus are apt to produce a white discharge which may vary in regard to its consistency and virulency, depending upon the exact nature of the infection.

In the man acute forms of inflammation of the genital tract we frequently see the discharge tinged with blood, while in the woman, in certain infections, the discharge will assume a darker hue, which is undoubtedly due to the admixture of decomposed blood and broken down organic material.

Under the specific forms of leucorrhœa the discharge due to gonorrhœa are the only ones to be considered. As regards the *treatment* of leucorrhœa common sense dictates that a washing out of the discharges from the vagina will do but little good as long as the cause is permitted to remain undisturbed.

Thus frequently the physician must feel that his services could be spared were some rich philanthropist to provide hard working girls who toil until exhausted without sufficient recompense to feed the body properly.

Here the physician can do but little good and but resort to such measures as are known to build up the constitution. Iron, strychnine, manganese, are to be prescribed. The physician who is expected to be enlightened on all topics pertaining to the welfare of mankind should earnestly endeavor to familiarize himself with the nutritious value of foods so as to be able to properly advise such of his clients with whom economy is of paramount issue. Recommend rest and fresh air. The physician should teach the patients to make every effort to inhale fresh air day and night, and finally should recommend cold ablutions to the back to be followed by friction with a course towel, which procedure can be practiced every morning and evening.

It has been the author's lot to see many young shop-girls, mostly orphans, thrown on the resources limited to the starvation wages, paid by the millionaire owners of department stores, in whom a regimen as described, carried out systematically from five to eight weeks, result in a gradual disappearance of the leucorrhœa while at the same time their vitality improved correspondingly.

When it is noticed that there is a disposition to pulmonary tuberculosis, the leucorrhœa will not disappear permanently unless the condition of the lungs and the entire system can be improved.

It is just the gynecist who can do a great deal towards preserving life by searching and finding evidence of incipient consumption when called upon to treat the "whites," by extinguishing the flame before it has taken firm root and consumed too much of lung tissue.

Guaiacol carbonate, methylene blue and other antiseptics, inhalation of antiseptic vapors, tonics, cough-mixtures, should be used freely, but above all as much as possible the so-called open-air treatment must be instituted at once. Other constitutional diseases call for appropriate treatment. When the leucorrhœa is due to local affections these must be treated according to the methods described in this book in the various chapters.

## CHAPTER VII.

### STERILITY.

Case: Some years ago when quite a young practitioner a woman applied to me for relief of her barrenness. She had been married six years and was suffering keenly. She pleaded that her husband had turned against her and unless she became pregnant her existence on earth was not worth while.

I examined this woman as carefully and as systematically as I was then capable of. I could detect nothing abnormal on bimanual examination or with the speculum. She had been treated by prominent surgeons, several of whom had promised a cure—all in vain. I tried hard to make a diagnosis, but the rosy colored cervix told me: Shame, you dare not say even catarrhal endometritis without lying.

Borrowing a microscope from a kind colleague I secured some of her husband's fresh semen—and behold, there was not a spermatozoon in sight. Thinking that my microscopic technique was at fault I consulted my friend, whose skill could not be doubted, and he too agreed with me that the man was absolutely sterile.

I requested her to come to an understanding with her husband, with the result that the latter knocked her down and called me an insane imposter. Result, divorce. Marriage four months later. Ten and a half months later I delivered the woman of a healthy baby girl.

If this case were the only one in my practice I would have omitted it from this book. I have seen at least ten similar ones since.

The lesson such cases teach are plain, viz.: in all cases when the physician's advice is sought for the relief of sterility, the husband should be examined *first*. The number of women suffering from the after-effects of a subacute gonorrhoea, contracted in wedlock, is enormous. These women are regular visitors in the gynecist's office. They are blamed for their barrenness when it is the husband first of all who needs the doctor.

The examination of the man becomes therefore, one of prime importance. The following questions, the examination is expected to answer:

1. Is the husband built normally?
2. Is he suffering from any constitutional or specific diseases (tuberculosis, diabetes, carcinoma, syphilis, etc.)?



3. Has the first morning urine passed gonorrhœal shreds?
4. Is he capable of performing the sexual act (*potentia coeundi*)?
5. Is his semen free from pus cells and are spermatozoids present, and if so, alive?

All these questions have got to be ascertained by an oral conversation with both husband and wife, for the husband, in the majority of cases hates to tell the entire truth. All answers should be taken by the physician with caution, as both man and woman will sometimes lie often with the intention to deceive, sometimes out of ignorance. It is for this reason that a physician should depend only on what he discovers by means of a physical examination. In 95 per cent of all my cases in men, gonorrhœa was at fault, many of whom denied ever having been afflicted. The characteristic shreds exposed their statements as falsehood.

Physicians should remember that there is but one truthful thing, and that is the microscope.

Each individual should be examined in regard to the condition of the genital apparatus. The heart, lungs, and kidneys will have to be subjected to the most thorough search for disease.

The cure of sterility of the male naturally depends on the causative factor.

If this can be remedied the prognosis is good, if not the prognosis is bad.

It is impossible on account of limitation of space to consider the treatment of sterility in the male, our intention having been only to direct the attention of the reader towards the husband as the frequent cause of the sterility of his partner. When satisfied that the man is healthy, the woman should be subjected to the most thorough gynecic and general examination.

It is astonishing how frequently insignificant causes are at fault which have been overlooked by experts and successfully treated by painstaking beginners. At least one such a case has contributed considerably towards my reputation as a gynecic surgeon.

The woman had been married five years, had seen many prominent surgeons who told her that there was nothing wrong with her and that eventually she would become pregnant. Disgusted with the profession she declined to have anything to do with doctors, until a close friend directed her to seek my advice.

True to my principle, I subjected both the husband and wife to the most rigid examination without being able to discover even a trace of an affection in either, for which the sterility could be held responsible. Of course, I

thought of consanguinity, but all laws, as far as known to science, seemed to be obeyed in the pair.

In a sort of an off-hand way, I took a slip of litmus paper, and tested a very slight discharge of the vagina, and behold! the blue paper turned bright red. I have done for this woman nothing else, save, the mopping out of the entire vaginal canal with a strong solution of bi-carbonate of soda, and she conceived promptly, causing no little astonishment in the neighborhood.

It is needless to say that many envious colleagues were puzzled and chagrined, and unless this book falls into their hands they will never know what treatment it was which cured the woman.

It must not be concluded from this case that the cure of sterility is always an easy matter, on the contrary it is frequently a very difficult thing, taxing the skill of the surgeon to the utmost, nor can it truthfully be said that all cases are curable even when no morbid condition is found. It is a well-known fact that occasionally, without any apparent reason, a healthy woman will live for years with a healthy man, and never conceive.

Death of the husband or divorce will permit this healthy woman to marry someone else and may be, a man who cannot come up to the physical standard of his predecessor, and the woman will become a mother of several children.

In such cases the underlying causes cannot be discovered by the physician, no matter how scientific he may be. There is a something in this, the nature of which can only be surmised, but which cannot be scientifically demonstrated as yet.

Almost every disease with which woman may become afflicted has been cited by recognized authorities, as the cause of sterility. To enumerate them all means really to write a text-book or monograph on the subject, which latter the author hopes to present to the profession in the near future.

The following rules for the guidance in the treatment of sterility must suffice for the present:

1. Discover whether the woman suffers from constitutional diseases, apt to undermine her general health. Diabetes, tuberculosis, anemia, obesity, nervous prostration, etc., are all diseases which are known to interfere with conception and reproduction and must be remedied if possible.

It is needless to add that when grave organic diseases of the heart, liver, lungs or of the nervous system are present, a cure of sterility should not be thought of or undertaken.

2. Subject the woman to a thorough oral and physical gynecic examination and remedy whatever abnormality of her genital apparatus is found. It is self-understood that when there is a maldevelopment or absence of im-

portant genital organs, surgery can do little or nothing. In a grave organic disease such as cancer of the vagina or the uterus it would be folly to think of anything else but to save the woman from this frightful disease.

Stenosis of the uterine canal has been cited by authors as a cause of sterility and dilatation is known to have been followed by conception. Since the spermatozoids are microscopic organisms, it is against common sense to assume that they cannot find a passage where a sound could pass. It seems to the author that in such cases it is not the stenosis itself, a much as the retained discharges and, perhaps, the inflamed mucosa, which act as a barrier and which are removed by dilatation.

Tumors and flexions may prove, mechanically speaking, real barriers and should be removed.

For further details the reader is referred to the following chapters.

## CHAPTER VIII.

### DISEASES OF THE VULVA.

#### I. ADHESIONS OF THE LABIA.

Adhesions of the labia majora are often met with in small girls, rarely in adults. Mild forms of inflammation, uncleanliness and irritating discharges may result in labial adhesions. The treatment in children consists of forcible separation of the labia, a simple procedure accomplished by stretching both labia asunder with both thumbs. In order to prevent recurrence a strip of aseptic gauze should be placed between the labia and absolute cleanliness maintained, which can be accomplished by sponging the vulva with warm water to which any mild antiseptic, such as boric acid, can be added. Sometimes the vaginal discharges require attention. In children a solution of one (1) part of hydrozone to 5 parts of warm water injected by means of medicine dropper will prove satisfactory. In adults, if there can be found a small opening just under the vagina, which is mostly the case, a strong director, the handle of a bistouri or any suitable instrument should be inserted and dragged out between the labia, effecting in this manner, a separation. If an opening cannot be found, await menstruation when the labia will be stretched by the retained fluid. The bladder should be emptied and the catheter left in situ, a finger introduced into the rectum and a bistouri plunged into the fluid mass, in the median line, a little below the urethra. The opening should be enlarged with any blunt instrument until the finger can be introduced into the vagina when separation can be completed. Reunion must be prevented by cleanliness and gauze strips until the raw surfaces have completely healed.

#### 2. HYPERPLASIA OF THE VULVA

is the smooth and uniform enlargement of either the labia majora, labia minora or the clitoris. As a rule the enlargement of the nymphae is due to masturbation, which has been practiced from early youth. In many cases this affection produces no symptoms and should be left alone.

In others the labia, which by the way, are pigmented dark brown, are so large as to cover the entrance to the vagina and prove an obstacle to

sexual intercourse or are the cause of irritation when the patient is walking, riding a wheel or sewing.

I have found eight out of nine to complain that sexual intercourse had lost its charms for them, which however is due to the past overstimulation and subsequent nervous exhaustion rather than to the enlargement of the *nymphae*.

The labia can be amputated when they are obnoxious. The operation is easy.

After a preliminary thorough douching of the vagina and vulva (the pudendal hair should be shaved off) each labium is grasped with any kind of a self-locking forceps or volsellum and the enlarged portion amputated with a stroke of a sharp pair of scissors or with a sharp bistouri. The raw edge is best sewed together with fine silk or silkworm gut. Nosophen, xeroform, or any other antiseptic powder is blown over each wound and a piece of antiseptic gauze placed over the wounds in such a manner that the urethral orifice is left exposed.

The patient should stay in bed for a few days during which time the bladder must be emptied with a catheter. The patient should not be permitted to urinate to prevent soiling of the dressings.

A general anesthetic is not necessary. Local anesthesia is produced by injecting a drop or two of a 2 per cent solution of hydrochlorate of cocain with a hypodermic syringe along the line in which the incision is to be made.

### 3. INFLAMMATION OF THE VULVA—VULVITIS.

We have three distinct clinical forms of inflammation of the vulva, viz.: simple or traumatic, specific, septic or infectious and finally follicular vulvitis.

*Causes.* Simple vulvitis is caused by local irritation and trauma; acrid vaginal discharges, dirt, dribbling urine, parasites, scratching, friction, masturbation, etc., are causative factors.

*Specific vulvitis* is caused by venereal (gonorrhoea, syphilis) or septic diseases (cancer, erysipelas, diphtheria).

*Follicular vulvitis* is the term for inflammation of the glands of the vulva. The causes of this affection are about the same as in simple vulvitis, but inasmuch as it has been met with in pregnant women and in patients with a low vitality, these two conditions must be borne in mind as predisposing factors.

*Diagnosis.* The diagnosis is easy. All three forms have the same subjective symptoms, viz.: increased redness with tumefaction and discharges

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of a serous, mucous or muco-purulent character, elevated local temperature and sensitiveness to touch. The objective symptoms are persistent itching, burning pain, especially upon the passage of urine. All these symptoms are intensified in the specific or infectious form. The diphtheritic and erysipeloid forms show the same characteristic appearances as diphtheria and erysipelas on other parts of the body. The follicular form differs as far as the objective and subjective symptoms are concerned, but little from the others, and characterizes itself by papillae upon the surface of the labia and prepuce, which are nothing else but the projecting sebaceous and peliferous glands. Thus the only difficulty in differentiating the different forms of vulvitis is apt to present itself between the severe forms of simple vulvitis (which occasionally may be very angry looking and purulent in character) and a gonorrhoeal or syphilitic vulvitis in the early stage. The history of the case as given by the patient, is not always trustworthy, as many will deny sexual intercourse for reasons of their own. A few days observation of the course of the disease will suffice to clear up the difficulty. The microscope is of exceedingly great value in such cases.

*Treatment* consists of rest and local antiseptics. Everything that causes friction, bad habits like scratching and masturbation must be stopped, parasites, accumulated secretions and other matter should be removed. Cleanliness is produced by a rigid employment of mild antiseptics. The old way of injecting strong solutions of carbolic acid or mercury is to be rejected. Washing with and injections into the vagina of normal salt solutions will suffice in most cases of simple vulvitis. In the infectious form no better remedy can be recommended than hydrozone, and should be applied undiluted. Such irrigations can be made once or twice daily. A constant application of borated cotton moistened with lead-water will hasten healing. Excoriations and ulcerations occurring in neglected cases of vulvitis, will heal rapidly under the above treatment. The "caustic" so frequently recommended in modern text-books, in our opinion, is a useless drug.

In the follicular form, the follicles should be opened and touched with tincture of iodine.

The erysipelatous and diphtheritic forms require the same treatment, as would be instituted if the affection were anywhere else. Practically we have no experience with these two forms and theoretically we are strongly inclined to believe that the antiseptic treatment, as mentioned for the other forms will suffice even in the latter two forms. It is self evident that when

the diagnosis of diphtheritic vulvitis has been established beyond doubt by means of the microscope, antitoxin injections can and should be employed.

#### 4. GANGRENE OF THE VULVA.

*Definition.* An infectious affection of young girls, similar to noma in the mouth.

The *diagnosis* is difficult in the beginning, when the disease can be mistaken for vulvitis, although only one labium is affected. The inflammation is accompanied by a discharge of ichorous serum. Later sloughs of a grayish-green color are formed and gangrene proceeds rapidly.

*Prognosis.* Very unfavorable, unless diagnosis be made early and prompt treatment instituted.

*Treatment.* Excision of the parts should be made, if the case is seen and recognized early. It is not advisable to close the wound by sutures, as it is rarely apt to heal kindly. A much better plan is to keep a wet dressing, moistened with a weak solution of permanganate of potassium (1:1000) or glycozone (diluted with 2 parts of glycerine) constantly applied to the wound.

As this disease is most frequently met with in poorly nourished children living in unhygienic surroundings, care should be taken to remove them, if possible, to a clean place where there is abundant fresh air and proper ventilation (hospital). The vitality of the unfortunate little patient should be sustained and stimulated as much as possible. Remedies that will improve digestion, tonics and stimulantia are indicated and should be given abundantly.

#### 5. SEQUELAE OF INFECTIOUS VULVITIS—VULVAR ABSCESS.

Neglected cases of inflammation of a specific or septic character are apt to infect the vulvo-vaginal glands, causing a swelling on the inside of the lower part of one or both labia, terminating in an abscess. The symptoms vary but little from acute abscesses in other places, the pain being perhaps more intense here.

The treatment consists of poulticing at first. As soon as pus is detected or even suspected, an early incision will not only relieve the painful condition at once, but will prevent its spreading. Occasionally it may be best to excise the whole gland, to wash out the wound with hydrozone (full strength) and to close it with deep sutures. If excision cannot be practiced the incised wound should be treated with a sharp curette and packed with iodoform gauze. Hydrozone should be injected into the deep-seated

sinuses with a wound syringe, which can be easily improvised by attaching a closed atomizer bulb to an eye-dropper. The pus, no matter how deeply seated, will be searched for by the hydrozone and destroyed.

#### 6. SYPHILIS OF THE VULVA.

Chancres, chancroids, venereal warts, condylomata, mucous patches appear on the vulva. These affections have the same characteristics as those appearing on other places. For an exact description we must refer the reader to special works on syphilis.

The *treatment* is constitutional and local. Internally, mercury iodide of potassium, or the gold combinations should be given, locally the usual treatment should be instituted. Chancres, chancroids and warts may be touched carefully with nitric acid and then treated with iodoform, hydrozone, etc. Condylomata, should be cut off and then cauterized with nitric acid and treated antiseptically.

#### 7. PRURITUS VULVAE.

*Definition.* Itching of the vulvar region (sometimes including the vagina) occurring at irregular intervals—paroxysms—with remissions during which this inconvenient and troublesome affection is altogether absent. It is a symptom only and not a disease per se.

*Cause.* Many theories have been advanced but nothing definite has been offered as yet. Almost every disease of the female generative organs, such as flexions and versions of the uterus, ulceration of the os, tumors, inflammatory diseases, discharges from the vagina, ascarides of the rectum, inflammation of the vulva and certain constitutional diseases (diabetes) have been reported by different authors as immediate causes. Others classify it among the neuroses.

*Diagnosis.* There is no difficulty in establishing the diagnosis of pruritus vulvæ. But little is gained thereby, however, and a systematic search should be made for the cause. Inspection may reveal no perceptible change of the parts around the vestibule, although after the affection has existed for some time, the frequent scratching, by which the unfortunate patients vainly hope to relieve the disagreeable sensation, may lead to excoriations, induration, inflammation or œdema of the vulva.

*Treatment.* If the cause can be found, the treatment naturally consists in its removal. If it cannot be found, and this is quite frequently the case, the treatment can be empirical only. From what was said under "*Causes*" it is plain that any existing local affection should be treated accordingly.



Cleanliness is hygienic treatment and curative sometimes. Everything that causes congestion (heavy bedcovers, tight underwear) friction, sexual intercourse, should be avoided. Irrigation of the vagina with mild antiseptic solutions do much good. If the pruritus be due to diabetes, the parts should be protected from the urine by the application of carbolized vaseline.

I have observed in my private practice a case in which applications of a saturated solution of bicarbonate of sodium has not only relieved each attack, but finally produced a permanent cure.

The following two prescriptions offer temporary relief:

℞

Cocaini muriatici .....gr. xxv

Mentholis .....gr. xxx

Ungt. oxidi zinci, q. s. ad.....℥ ij

M. F. Ungt. Sig. Apply externally.

Or:

℞

Chloroformii .....℥ ss

Tinct. iodii comp.....℥ j

Liquor. plumbi. acet.....℥ iij

Aquae menth. pip., q. s. ad.....℥ iv

M. F. Liniment. Sig. Shake and apply on absorbent cotton.

The nervous system being frequently at fault, strychnin, arsenic, hypophosphites, bromids are indicated. Sleeplessness must be combated with sulfonal.

Ascarides call for the internal administration of calomel and santonin and rectal injections of salt solution, or infusion of quassia (℥ ij ad. Oj).

I warn the readers not to resort to opium. The danger of acquiring the drug habit is great in such cases.

#### 8. TUBERCULOSIS OF THE VULVA.

Tuberculosis of the vulva which is a very rare affection, occurs, as a rule, in the form of lupus. In an extensive private and dispensary practice, I have seen only one case in ten years. While it is true that lupus here, resembles very much, as regards microscopic appearance the same affection as seen, for instance, on the face, the diagnosis, nevertheless, is very difficult at times.

I know that many authors categorically dismiss the subject with a short description of the ulcers, but even an expert is very apt to make an error.

The microscope is unreliable in the majority of cases according to no less an authority than Prof. Schroeder of Berlin.

Lupus may be suspected when other tubercular lesions are found in the genital tract. The diseases with which lupus is apt to be confounded with are: *cancer* and *syphilis*. When we are able to exclude both affections with certainty, and the ulcers on the vulva, have irregularly jagged edges with a bright red indurated base and very small grayish red spots over it, accompanied by a purulent discharge, the diagnosis of lupus can be made with justification. The presence of tuberculosis in the lungs as demonstrated by physical examination and by the microscopic examination of the sputum will strengthen our diagnosis. In every instance the discharge from the ulcers should be examined for tubercle-bacilli, according to the method described in Chapter III.

The prognosis of lupus although spontaneous cures have been reported is unfavorable. The *treatment* consists in the prompt excision of all ulcers. The raw surfaces should not be sutured together but dusted over with iodoform. It goes without saying that the constitution of the patient must be sustained with tonics, wholesome food, fresh air, etc., while internally, such remedies as are known to possess antitubercular properties should be prescribed.

Among those are to be mentioned creosote and carbonate of guaiacol.

The ultra-violet rays as discovered by Finsen and modified by Minin, have yielded excellent results in the treatment of lupus of the face but I have no experience with this agent in lupus of the vulva.

It seems, theoretically at least, sound practice to employ either the violet rays or the Roentgen rays when after the excision there is a recurrence of the ulcers. All cauterizations with caustics or the Pacquelin cautery, in my opinion, are to be condemned.

#### 9. TUMORS OF THE VULVA.

Tumors of the vulva are either benign or malignant. Both become surgically important for even an otherwise harmless fatty tumor (lipoma) of either labium may interfere mechanically with coitus, calling for extirpation on that ground.

Malignant tumors must be extirpated as soon as seen and recognized. Alas, when the practitioner does see them, neighboring glands are as a rule already infiltrated.

The diagnosis of a tumor of the vulva, as such, is child-play. But to establish the nature of the tumor requires diagnostic skill. In doubtful cases a small particle should be excised and subjected to microscopic examination.

Whenever a tumor is seen to spring from either labium great care should be taken in differentiating it from a possible *inguinal hernia*.

I was once called by a young surgeon who commenced to operate on what he had diagnosed a cyst of the vulva. After the incision was made he realized that he had blundered. It is needless to add that such an error could have never occurred had this young man borne in mind the possibility of the tumor being a hernia.

As is well known *herniæ* which descend into the labium majus have the same characteristics as ordinary inguinal herniæ. An attempt at reposition will usually confirm the suspicion, the impulse on coughing and the tympanitic sound on percussion will leave no further doubt as to the diagnosis.

*Fatty tumors* are as a rule very small, however tumors reaching as far down as the knees are reported to have been removed.

The extirpation of a lipoma offers no difficulties. An incision is made across the tumor, which, as soon as exposed is shelled out with the handle of the knife or a Kocher dissector. The skin is united with either continuous or interrupted silk or silkworm-gut sutures and dressed. Local anesthesia with a 4 per cent cocain solution makes the operation painless. General anesthesia is not required.

*Cysts* can be easily recognized because of the feel of a sort of fluctuation imparted to the palpating fingers. This is due to the liquid contents.

In doubtful cases a sterile hypodermic syringe should be pushed into the mass when, on withdrawing the piston, the barrel will become filled with liquid contents.

The patient gives a history of long standing (sometimes several years) during which time the tumor increased gradually. In nine out of fourteen of my cases the patients were multipara and had been delivered by forceps. I have seen one case in a virgin of about seventeen years of age.

Aspiration will cause the tumor to shrink only to fill again within a short time.

The entire sac should be extirpated to insure a permanent cure. The incision is best made over the tumor, the sac exposed and shelled out with a dull instrument. This is not as easy a procedure as in the removal of fatty tumors, but should offer no particular difficulties. The raw surfaces are united by interrupted sutures. It has been my experience that when the sutures are drawn too tight, local inflammation is apt to follow.

*Fibromyomata*, when attaining a large size, on account of their own weight form a narrow pedicle with the skin of the labium, not unlike a

polypus. They can be easily amputated or extirpated in the same way as a cyst.

*Sarcoma* of the vulva is exceedingly rare.

*Carcinoma* can attack either labium majus, clitoris or the small labia. Pain is more or less constantly present and becomes intense when ulceration has taken place. Excision should not be delayed. The line of incision should embrace healthy neighboring tissue. If the neighboring glands appear infiltrated they should be removed too. To apply any caustic or the Pacquelin thermocautery after excision seems to me superfluous.

Should there be any recurrence, the x-rays are indicated.

## CHAPTER IX.

### DISEASES OF THE VAGINA.

*Introductory.* The vagina is a membranous canal connecting the vulva with the cervix. Normally the vagina, when at rest, is in a collapsed condition so that the anterior wall lies on the posterior wall. The posterior wall is the longer one.

The vagina is always moist with a secretion of slightly acid reaction, which is a natural lubricant for the purpose of sexual congress.

The examining finger of the surgeon when palpating the vagina will find that the mucous membrane forms many wrinkles known as "rugae," which disappear when the vagina is put on the stretch. Thus when the speculum is introduced the vagina is smooth.

The entrance to the vagina is closed by a membrane called the *hymen*, which normally has a small opening permitting the menstrual blood to escape. In the majority of cases the well-oiled index finger can be introduced through this opening without rupturing the hymen, provided the surgeon use a maximum of gentleness. In others the opening may not be larger than a pin head. Sometimes, the hymen, which normally has a variety of shapes (circular, crescent, etc.) closes the vagina entirely. It is then designated as an imperforate hymen. The hymen is a thin membrane, easily torn and in the popular mind the proof of virginity. Physicians should know better. Personally I know of several instances where frequent coition left an intact hymen, because the membrane was originally but a narrow fold, very elastic, while many women are either without a hymen or with but a rudimentary one—congenital absence of the hymen.

When the surgeon is called upon as an expert to establish whether or not a girl's claim to have been raped is true, the hymen *per se* can in no way be considered the "seat of proof." Of course it might be torn and bleeding—and this certainly would seem to shown recent injury.

While a practitioner in St. Louis the police brought in a girl for examination before arresting the young man in question. The girl, who was a domestic about nineteen years old told a straight story. The hymen was found torn in one corner and bleeding. My suspicions having been aroused I asked her whether the young man completed the act? she said yes, for he

held her down for fully ten minutes and said afterwards that he wanted her to become pregnant.

I found no semen or spermatozoids. Looking at the girl's fingers, which I noticed were very clean for a maid of the kitchen and particularly after such a struggle and excitement I accused her directly of having ruptured the hymen herself. I concluded that she had washed off the blood stains from her finger. She broke down and confessed. She loved the young man and had decided to gain him by hook or crook.

#### I. IMPERFORATE HYMEN AND HEMATOCOLPOS.

Whenever the hymen is so tough that the penis is unable to enter the vagina, the surgeon is compelled to make a few cross incisions with a sharp bistouri. Care should be taken not to wound the vagina. Hemorrhage is usually not troublesome but if it prove so, tamponade with sterile gauze will arrest it quickly.

That an imperforate hymen proves an obstacle to the escape of menstrual blood goes without saying.

The following case will illustrate the diagnosis and treatment of imperforate hymen (atresia) producing retention of the menstrual blood in the vagina (hematocolpos).

Miss S. L., age 18, stenographer, in otherwise good health complained of periodic pains in the back and groins. At certain times the pains would be worse. She has never menstruated. Her family physician had told her that she was anemic and that the pains would disappear as soon as menstruation was established; he had prescribed iron and tonics.

Her family physician being out of town she visited another physician who showed his superior knowledge of gynecology by prescribing a preparation containing viburnum prunifolium and advising hot sitz-baths.

Three months of such treatment failed to accomplish the desired results.

I insisted on an examination. Her mother, who was present, consented, provided I promised not to "rupture her maidenhead."

On separating the labia majora and minora I was astonished to find the entrance to the vagina filled by what, at the first glance, appeared to be a fluctuating tumor. Careful examination showed that it was the hymen closing the vaginal orifice entirely, without any opening, behind which, no doubt, there was accumulated blood. The mother grasped the situation easily and permitted me to insert a trocar. Clotted blood came away in large masses. I attached a fountain syringe to the canula and irrigated in this way until no more blood came away. The puncture was prevented

from closing by the frequent introduction of sounds and the patient made a good recovery.

Certain authors warn not to make a large incision in such cases, as sepsis is very likely to occur—a large opening permitting the free ingress of pathogenic germs which find a suitable soil in the blood-filled vagina for development. Such talk is nonsense and does not reflect much credit on the quality of the gray matter of the writers. We might just as well argue that in intraperitoneal hemorrhage from, say, a ruptured, pregnant tube, the incision through the abdominal wall should be very small for fear of infection. On the contrary, we make an opening sufficiently large to permit the insertion of both hands, if necessary, lift out the accumulated blood and attend to the source of the hemorrhage.

It is but reasonable to assume that in cases of accumulated blood due to an imperforate hymen, this organ should be opened, and if necessary a piece of it excised, the accumulated, clotted and decomposed blood removed, the vagina copiously irrigated with a warm, antiseptic (mild) solution and packed with iodoform gauze, until the wound has entirely healed.

## 2. ABNORMALITIES OF THE VAGINA.

Limit of space prevents us from discussing the many abnormalities of the vagina. Sometimes there is only a rudimentary one, sometimes not only the vagina, but the uterus and adnexa are absent, again I have seen a woman who was blessed with two vaginæ and several who had that organ divided into two compartments, a membrane—septum—crossing the vagina in a similar manner as does the septum of the nose. In the latter class of cases, small retractors expose this partition to full view and it can then be excised with knife or scissors alongside its two attachments to the vaginal walls. The after treatment consists in the packing of the vagina with a strip of iodoform gauze with frequent douching. I have found it necessary to administer chloroform for this trivial operation, to insure absolute quiet on the part of the patient.

## 3. ATRESIA OF THE VAGINA.

Any portion of the vaginal walls or the entire vagina may be firmly adherent, as if glued together. A vaginal atresia may be easily confounded with a congenital absence of the vagina.

When the diagnosis of atresia has been established, three questions must be answered before any intelligent plan of treatment can be decided upon:

1. Is the atresia congenital or acquired?

2. If acquired what was the cause?

3. If congenital, is there a uterus and ovaries fully developed and functioning?

If the atresia be congenital and no functioning uterus can be detected, nothing can and should be done. It is self evident that such persons are practically sexless and should not marry.

I knew of one married woman in Europe. Her husband loved her intensely and copulated per rectum.

If, by rectal examination or laparotomy, a functioning uterus and ovaries are detected the question of operation becomes a vital one.

I would not advise a beginner to undertake the operation, who had best refer the case to a competent man, should he be fortunate enough in ever seeing one, for vaginal atresia is rare.

Acquired atresia is ascribed to inflammatory diseases, violence, injuries of all sorts, hot douches (?) caustics, etc.

The operation has as its object the separation of the existing adhesions. To prevent injury to the bladder and rectum, a catheter is introduced into the bladder and a rectal bougie into the rectum, which objects serve as "landmarks" or "guides" during the forcible separation of the adherent walls. This should be accomplished best with the fingers of both hands or dull instruments.

The vagina must be kept open and the walls prevented from becoming adherent anew by the introduction of suitable glass or hard rubber tubes, which should be kept in the vagina a few weeks. After the first week it will suffice if the plug is kept but several hours daily. Cleanliness should be insured by frequent removal and sterilization of the tubes and irrigation of the vagina with hot salt water (a teaspoonful of salt to each pint of hot water).

#### 4. VAGINISMUS.

Vaginismus is the term for a condition of hyperesthesia and painful spasm of the sphincter vaginæ particularly when an attempt is made to enter the vagina for purposes of coitus. A similar result is observed by the surgeon when attempting to insert the fingers for examination. The condition is met with in women of a neurotic predisposition. Cold, heat, excitement, in fact anything apt to irritate the vulva and vagina may produce such spasms.

Coitus becomes horrible to these women.

In some cases the spasm ceases as soon as the penis enters the vagina,



The *diagnosis*, as can be seen from what has been said, is easy.

The *prognosis* as regards life good.

Cures can be expected when the patient is willing to submit herself to systematic treatment for a prolonged period.

The *treatment* is constitutional and local.

The constitution must be built up by such tonics as strychnin and the hypophosphites, sedatives in the form of bromids should be administered freely.

The value of general galvanization and faradization cannot be over-estimated in such cases. The subjection of the patient to the "static charge" has proved highly satisfactory to me.

The local treatment consists in forcible stretching of the vagina with a large bi-valve speculum and the introduction of large glass plugs, which should be worn for some time.

Hot antiseptic douches do good. Cotton tampons saturated with a 10 per cent ichthyol-glycerin solution are invaluable.

General anesthesia may become necessary the first few times to accomplish complete dilatation.

##### 5. INFLAMMATION OF THE VAGINA-COLPITIS-VAGINITIS.

Much that has been said about inflammation of the vulva holds good for inflammation of the vagina.

The practitioner, as regards treatment, need only answer one question when treating a case of colpitis, viz.: is the inflammation acute or chronic?

The majority of cases of acute colpitis are due to infection by the gonococcus, and may be primary or subsequent to a gonorrhoeal vulvitis.

Though the microscope can settle the diagnosis without much difficulty I am frank enough to admit that not much is to be gained by such "scientific investigations."

My advice to every physician is: make your diagnosis of acute colpitis and proceed to treat the affection as if you were positive it is gonorrhoea, for then the physician will do real good not only by curing the disease but by preventing its spread to the uterus and what is worse—to the tubes and ovaries.

The *diagnosis* is easy. It is based on the symptoms and local findings.

The vagina is very sensitive and hot. The woman cannot bear the examining finger. She complains of a burning sensation. There is a yellowish purulent discharge, which again infects the vulva and urethra, producing a desire to micturate frequently. Urination is painful and described

burning. The patient may have chills—temperature rises several degrees and the pulse is increased in frequency correspondingly.

*Treatment.* Internally an antipyretic—pulvis acetanilid compositus in five grain doses every three hours is best—and a urinary antiseptic should be prescribed. Urotropin in eight grain doses three to four times daily in half a glass of water is the best remedy yet discovered.

The patient should be advised to drink alkaline drinks to render the urine bland.

Bushong recommends the following prescription for the irritability of the bladder:

℞  
 Tinct. hyoscyam ..... ℥ j  
 Potass. acet. .... ℥ vj  
 Tinct. gent. comp., ad. .... ℥ vj

M. S. Two teaspoonfuls three times daily in half a glass of water.

That the patient should be ordered to bed and only liquid diet allowed need hardly be mentioned.

The local treatment consists in copious vaginal irrigations with certain antiseptic solutions, which should be administered by the physician, his assistant or a competent nurse, and then, as a matter of precaution, the attending doctor should supervise the work at least the first time.

My own method is as follows:

First day: Irrigation of the vagina with a gallon of a 3 per cent solution of lysol at 115° F.

Injection with a glass vaginal syringe of full strength peroxide of hydrogen, preferably hydrozone. I await a few minutes until the liquid has about ceased bubbling. Irrigation with a hot normal saline solution.

Introduction into the vagina of a narrow strip of moist bichloride gauze.

The above procedure is repeated every three hours.

Second day: Same treatment, only twice, at about 8 a. m. and 3 p. m.

Third day: Same treatment as second day.

Fourth day: Treatment is changed somewhat. Instead of lysol solution I irrigate the vagina with a quart of 1-1000 formalin solution and stop the gauze-packing.

The formalin is apt to produce pain for a few minutes, but a sort of anesthesia takes place after the pain ceases.

Fifth day: Treatment as on 4th day administered only once, which treatment recovery takes place.

Special symptoms call for symptomatic treatment. I cannot close the treatment of acute colpitis without warning the reader to look after the condition of the bowels—and to insure daily evacuations either with effervescent magnesium solution or with enemata.

*Chronic colpitis* either follows an acute attack or starts as such from the beginning. Infection may occur from without or from a discharge from the tubes and uterus.

The *symptoms* are somewhat similar to those observed in acute colpitis, but of course much milder. The discharge is as a rule thin. In short we have to deal with a milder form of infection.

The *diagnosis* is based on the clinical history and on direct examination. The mucous membrane, as observed by a speculum, is somewhat reddened and may show small follicles or ulcers.

The *treatment* consists of douches with warm solution of permanganate of potassium. Solutions should be prepared fresh every time.

Patients should be instructed to dissolve a few crystals in a glass pitcher. When the solution assumes a deep red color the proper strength has been achieved. These douches can be administered by the patients themselves. The patients should be instructed to douche only when in the reclining posture.

In the office the physician starts to swab out the vagina with a 2 per cent solution of silver nitrate and increases the percentage up to five every other treatment. Treatments should be given thrice weekly.

After a while the treatment with silver nitrate should be stopped and injections of the following mixture made:

℞	
Hydrozone .....	ʒ <sup>ss</sup> ss
Aquae menth. pip. ....	ʒ <sup>ss</sup> iss
M. S. For injection.	

The injections are best made with a glass vaginal syringe.

The patient should be admonished not to exert herself too much and to abstain from sexual intercourse.

The general condition should be looked after.

If on examination with the speculum it is demonstrated that the infection is due to a discharge coming from the uterus or tubes, these organs must be treated so as to remove the cause.

## 6. TUMORS OF THE VAGINA.

Diagnosis and treatment same as described in tumors of the vulva.

Only one word in addition concerning cancer. When seen by the physician, as a rule, either the cervix or the parametrium are already attacked. The most radical operation only holds out some hope for the prolongation of life.

If a radical operation is refused, curetting the ulcerated area, applications of very strong antiseptics and the use of the galvano-cautery or Pacquelin thermocautery should precede a systematic course of treatment with the x-rays.

## CHAPTER X.

### DISEASES OF THE UTERUS.

1. *Malformation.* The uterus, with or without the tubes and ovaries, may be totally absent or present only in a rudimentary way. In such cases the bladder rests on the rectum, as there is practically no organ between. That the sexual function of the woman remains undeveloped can be easily imagined. The physician must make a diagnosis after a thorough bimanual examination only. Frequently it becomes necessary to introduce a catheter into the bladder and a sound in the rectum when the absence of a uterus and adnexa can be recognized with certainty.

There can, of course, be no question of therapy. Not much more can be done for an *infantile uterus* or for the *primary atrophy of the uterus*, as described by Virchow. Their main feature is arrested development so that the adult patients have organs of the same size as found in infants—hence the name infantile uterus.

2. *Atresia uteri*, which can only be diagnosed after puberty has been established, resembles clinically the atresia vaginæ. Atresia uteri may be present even though the vagina be normal. In such cases an examination per vaginam will reveal the presence of an occluded uterine canal.

There is great danger from the accumulated menstrual blood which not only dilates the uterus but also the tubes—hematometra. These enlarged organs can be palpated as tumors in the pelvis. The diagnosis is clear when there exists also an atresia of the vagina, in which case a rectal examination will warn us of the enlargement of the uterus and tubes.

If the blood is not permitted to escape, rupture of either the uterus or the tubes is bound to follow sooner or later with effusion into the peritoneal cavity with subsequent sepsis and death.

The operation for the relief of hematometra requires considerable skill and should be undertaken only by men who are prepared to do abdominal surgery. Not that an operation through the abdominal wall is always necessary, but such a one may become imperative any time. The opening of the blood-mass requires an exact knowledge of the anatomy of the female pelvis. If certain precautions are not observed, the tubes may rupture, an accident which will prove disastrous if the surgeon be familiar only with the minor gynecic operations.

3. *Stenosis of the uterus.* When the ordinary uterine sound with a head not thicker than three mm. cannot pass either the internal or the external os or any portion of the uterine canal without the employment of undue force, that is to say when the lumen of either mouth of the cervix or portion of the uterine canal is so narrow in calibre as not to permit the free passage of the ordinary uterine sound, then we have an either congenital or acquired stenosis of the cervix or uterus.

On examination with a speculum the vaginal portion of the cervix, in the majority of cases, appears rather peculiar, the organ being elongated and terminating in a narrow point. The external os looks not much larger than a pin head. The *diagnosis* can usually be made when such a cervix is seen, although it should never be made without an attempt to pass the sound.

Stenosis *per se* has no symptoms, though many authors associate it with anemia, neurasthenia and a host of constitutional troubles.

I believe the relation of stenosis to constitutional diseases has been over-rated.

It is a fact, however, that it causes mechanical dysmenorrhœa and is frequently responsible for sterility, as has been alluded to in the respective chapters.

The frequent dysmenorrhœic attacks, retained secretions, etc., may eventually lead to inflammation of the uterus.

The *treatment* of uterine stenosis is mechanical and electrical.

Among the mechanical methods the following are popular: (1) Forcible dilatation with Palmer's and Goodell's dilators. (2) Gradual dilatation with (a) steel sounds, (b) sponge or slippery elm tents, (c) inflatable rubber bags. (3) Introduction of stem pessaries and drains.

But two of these methods need be considered here, the others, for one reason or another being either impracticable or risky, viz.: forcible divulsion or gradual dilatation with steel sounds. The forcible method requires, general anesthesia and intra-uterine treatment, frequently curettage after the completed divulsion, for the tissues are sure to be injured by the great force. Surgeons of great experience, can afford to resort to this method, which, has one advantage, in that it does not consume as much time as the gradual method, which latter should be the treatment of choice by beginners.

The technique is simple. The vagina, hands of the surgeons and instruments must be rendered as aseptic as possible. The cervix is grasped with a fine volsellum hook or forceps and steadied and the smallest size sound inserted into the uterine canal. By palpation through the abdomen we can ascertain whether the sound has reached the fundus. Great care should be exercised not to push the instrument too hard when trying to pass the

inner os, as the fundus of the uterus can be easily perforated. There is usually quite a resistance at the inner os and the passage of the sound is easily felt in the fingers, even though one does not see the instrument slip in.

Treatments should be given every other day. At each subsequent sitting a sound of the next larger number should be chosen. It is prudent to advise the patient to rest as much as possible after such treatments and to employ a hot vaginal douche every evening to counteract the effects of the irritation.

For the description of the electric treatment see Chapter XII.

4. *Inflammation of the uterus or metritis* is either acute or chronic. In the acute form as a rule all structures of the uterus including the peritoneal covering are involved. Depending which part of the uterus is attacked by the inflammation, we distinguish between *endometritis*, when the mucous membrane only is attacked, *parenchymatous metritis* when the muscular layer and *perimetritis* (as the word implies) when the peritoneal covering is inflamed.

*Symptoms.* Acute inflammation of the uterus, no matter to what cause it may be due is always accompanied by fever. The author has observed that many cases of acute gonorrhoeal infection of the uterus are ushered in by chills. The patient complains of a sensation of heat in the pelvis, uterine "cramps," pain in the small of the back, painful urination and frequently of nausea and vomiting.

*Causes.* Exposure to wet and cold during menstruation. In such cases there is also a suppression of menstruation. Recent abortion, injuries of all sorts, irritation following foreign bodies, such as pessaries, any and all operations and instrumental manipulation of the cervix and uterus by the surgeon, particularly when the strictest asepsis has not been maintained and infection by pathogenic micro-organisms.

Acute metritis is frequently observed accompanying certain acute infectious diseases, but this is so rare as to lose all practical importance.

*Diagnosis.* The diagnosis of acute metritis is very easy. The symptoms point to pelvic trouble, the presence of fever and increased pulse show that whatever inflammation exists—it is of recent date, hence acute. The abdomen is tender (palpation causing pain) and tympanitic. The tongue is furred.

Examination with the cleansed finger shows a hot, tender vagina kept very moist by the discharges. The cervix feels soft and swollen, the os patulous.

In the majority of cases the digital examination is sufficient. Examination with the speculum causes a great deal of pain and must frequently be omitted on that account. In doubtful cases the microscope must be used to establish the diagnosis of gonorrhoeal infection.

The *treatment* of acute metritis depends on the cause and sometimes also on the individual.

For purposes of treatment acute metritis can be divided in four classes:

1. A. M. due to suppression of menses subsequent to exposure of cold and wet.
2. A. M. following abortion and instrumentation (sepsis).
3. Infection by the gonococcus.
4. A. M. accompanying constitutional diseases.

In A. M. due to suppression, *heat* is our *mainstay*. Hot douches should be administered, a hot water-bag applied to the hypogastrium, and hot sitz baths advised. The douches can be made every two to three hours. Two sitz baths daily one in the morning and one in the evening will suffice. Hot lemonade should be given freely. The bowels should be kept open with laxatives, the pains relieved by opium and hyoscyamus rectal suppositories. Internal medication is unnecessary, unless the fever is very high, when an antipyretic can be resorted to.

In metritis due to abortion, we have frequently hemorrhage from the uterus caused by retained membranes; in such cases curettage is a rational procedure. In sepsis following operation, uterine irrigation with a hot 2 per cent lysol solution, cauterization of the endometrium with equal parts of carbolic acid and iodine are useful. In metritis due to gonococcal infection, the author irrigates the vagina in the manner described under the heading: acute colpitis, the endometrium is then mopped out with a cotton applicator dipped in tincture of iodine. A strip of iodoform gauze is packed loosely in the uterine canal and changed every day following each treatment.

The acute metritis accompanying constitutional diseases requires but little local attention. Vaginal douches with a hot 2 per cent lysol solution is all that is necessary. It is needless to add that all our attention should be directed to the constitutional treatment.

Probably no infection of the female sexual apparatus is of greater interest to the ambitious gynecist than *chronic metritis*.

Volumes could be easily filled with a description of the symptoms, local and reflex, the pathology, macro- and microscopic appearances of the structural changes, the causes, varieties and last but not least the diagnosis and treatment.



The writer admits that he considers the discussion of this particular subject his most difficult task. Compelled to use as little space as possible, how is he to simplify so important a subject, at once so complex and yet very simple?

The subject is of particular interest to the gynecist because 95 per cent of all office consultations will undoubtedly be cases of chronic inflammation of the uterus. On the cure of a large number of such clients depends his success as a gynecist, if he wishes his services to be eagerly sought by a large clientele—after all a beginner's fondest dream.

And yet chronic metritis of whatever form, is far from being an affection easily cured, though not an incurable one.

Everything depends upon the surgeon's tact, keen insight and above all patience and systematic work.

In trying to simplify the classification, diagnosis and treatment of chronic inflammation of the uterus, the author must necessarily sacrifice a great deal of what ought to be said, but these omissions must not be criticized too harshly, for after all I have in mind the most urgent needs of the gynecist who intends to *practice* gynecic surgery and not to make pathologic investigations.

It may help to quiet our conscience somewhat when we know that the greatest authorities fail to agree that the term "chronic inflammation" is a correct one "areolar hyperplasia," "sclerosis" "diffuse interstitial hypertrophy," "uterine infarct" having been advanced as correct designations and of course, representing the diverse views held by the various authorities in regard to the pathology of this affection.

Schroeder is satisfied with the words: "chronic metritis" and cares little whether we have to deal with a real chronic inflammation or a connective tissue hyperplasia of the hyperemic uterus.

The knowledge of the causes of chronic metritis is essential. Here are the most frequent ones:

1. Poor involution of the puerperal uterus.
2. Abortions and miscarriages.
3. Congestions, produced by excessive masturbation, frequent interrupted copulation (premature completion on the part of the husband, withdrawal of the penis before ejaculation to prevent conception).
4. Dysmenorrhea when due to stenosis or flexion of the uterus, the retained blood producing irritation and indirectly contractions of the uterine walls.
5. Neglected or poorly treated acute metritis.

6. Venous stasis due to retroflexion and prolapsus, tumors, habitual constipation and prolonged retention of urine in the bladder (not infrequently due to faulty habits of the patients).

*Symptoms.* The patients, particularly such who recently gave birth or had a miscarriage, complain that their previous good health is gone and that they suffer either constantly or especially about the time of menstruation from a variety of symptoms, not severe enough to compel them to go to bed and yet sufficient to make their lives miserable. They complain of pains in the sacral region, abdomen, groins which sometimes radiate to the thighs, a sensation of pressure in the pelvis, constipation, leucorrhœa, excessive menstrual flow (menorrhagia) and a desire to micturate frequently (irritable bladder). The reflex symptoms are many. The patients have headache, are at times nauseated, have loss of appetite, bad digestion, eructations, neurasthenia and frequently "spells of melancholy."

The examination shows a large, congested uterus, and in the early stages of a soft consistency, resembling very closely a uterus pregnant about eight or nine weeks. The introduction of a sound in the uterine canal produces pain and frequently causes the membrane to bleed. The examining finger, aided later through a speculum, easily detects lacerations and erosions of the cervix.

*Treatment.* A glance at the causes of chronic endometritis and metritis (inflammation of the uterine mucosa alone does hardly exist—we always have to deal with a metritis) suggests the treatment of uterine stenosis, retroflexion, prolapsus, if such exist, and the regulation of the patient's faulty habits as the first rational steps to be taken whenever the cause has been ascertained.

The local treatment of the inflamed or hyperemic uterus is either anti-phlogistic, antiseptic or electric.

We frequently find the cervix studded with little cysts (ovula Nabothi) which are best pricked open with a sharp bistouri and then painted over with tincture of iodine.

The same treatment can be employed for the relief of the congested cervix. Instead of scarifying the cervix I prick the tissues with a sharp pointed knife and permit the escape of several drachms of blood.

Glycerin-tampons are then inserted against the punctured cervix and permitted to remain for twenty-four hours.

Tincture of iodine, painted around the cervix has a slight revulsive effect. Its antiseptic value is doubtful, when applied in this manner.

**Applications** can be made directly to the endometrium by cotton applied with the liquid we may desire to distribute.

I apply one day tincture of iodine, the next treatment is changed to silver-nitrate solution (3 to 5 per cent). If there is a tendency to hemorrhages (menorrhagia and metrorrhagia) applications of tinctura ferri chloridi are to be made.

I have seen bad results from the use of the intra-uterine syringe and from the uterine irrigator. These instruments should be used only when the entire uterine canal has been thoroughly dilated.

When the cervix appears spongy, tampons of tannic acid and glycerin prove efficient.

A lacerated cervix should be repaired, a granulating endometrium requires curettage (see Chapter XIII).

The galvanic current however, acts better than any astringent drug in the treatment of erosions of the cervix and the swollen endometrium (see Chapter XII).

Hot douches are useful and should be recommended. I use a powder containing thymol, bicarbonate of soda and tannic acid (see Appendix).

#### 5. MALPOSITION OF THE UTERUS.

A great deal has been written on the subject of abnormal positions of the uterus. The number of theories especially dedicated to these conditions, the number of theories advanced, the number of methods of cure announced, the number of operations and mechanical devices for the cure of the forward and backward dislocations of the uterus described, is countless.

After several years of experience the physician trained to use his faculties for purposes of critical observation must ask himself two main questions:

First, what really is the normal position of the uterus? and 2nd, when must digression from that position be corrected?

The first question is very difficult to answer in spite of the fact that many well-known authorities have arbitrarily agreed on a certain position as the normal standard.

The second question permits in my estimation of only one rational answer, viz.: if there are no other pathologic lesions and conditions present save a pronounced deviation from the uterus, commonly accepted as normal, and if there are symptoms present inconveniencing the patient and pointing to trouble in the pelvis then only should such a malposition be corrected.

The diagrams of the normal uterus and its relation to adjacent organs as found illustrated in most text-books on diseases of women are palpably false and untrue to nature.

It would require too much space and useless labor to copy some of these

diagrams and ask the various authors whether they have ever seen a living woman as represented in their drawings.

Sections made through frozen bodies, while of great interest to the anatomist have no practical value to the practicing gynecist.

The conception most young graduates have in regard to displacements of the uterus are so erroneous that at the least provocation they hasten to irritate the vagina and uterus with all sorts of useless and nonsensical pessaries only to produce infection and inflammation. I consider it my duty to warn my readers to be more independent in their own conclusions and to be conservative in the treatment of the conditions referred to.

We speak of a normal uterus when the cervix is situated almost in the same axis as the vagina, while the body itself is slightly curved forward. It must be remembered that this position is apt to vary, depending whether the bladder and rectum are full or empty. In order to appreciate the character of malposition of the uterus we must recapitulate the support of this organ as we have learned it in our anatomy. We know that the uterus is held in position by ligaments, the strongest and least yielding of which are the utero-sacral ligaments. These are attached to the sacrum at their posterior ends, and to the uterus on either side at about the place where the internal os can be found.

Next in importance are the broad ligaments which are attached to each side of the uterus and the bony pelvis; the round ligaments act like a pair of cords also springing from the sides of the uterus and losing themselves in the labia majora.

The piece of peritoneal fold between the uterus and bladder amounts to very little as a support. Motion of the uterus is possible in every direction.

The displacements are called *flexions*, when the body of the uterus is bent on its own axis, *versions*, when the entire uterus is displaced. Depending upon which direction the displacement takes, we speak of:

- A. Antelexio (forward bending).
- B. Anteversio (forward turning).
- C. Retroflexio (backward bending).
- D. Retroversio (backward turning).
- E. Latero-flexio (sideward bending).
- F. Latero-versio (sideward turning).
- G. Prolapsus (downward displacement).

#### A. ANTEFLEXION.

Normally the uterine canal from the os to the cervix is either absolutely straight or curved but slightly. If the body of the uterus is so tilted for-

ward that the canal of the uterus forms an exaggerated curve or an angle, we speak of ante flexion or a forward bending of the uterine body.

In many text-books these flexions are described as being in either the first, second or third degree, depending upon the angle formed by the body and cervix. This is neither scientific nor exact.

Acquired ante flexion is caused by inflammation of the uterus or its adnexa, fibroid tumors, within the uterine wall or is the result of general malnutrition.

The *symptoms* do not differ from those which are produced by uterine inflammation. Ante flexion is frequently responsible for habitual abortion and unpleasant reflex phenomena during pregnancy.

The *diagnosis* must be made by a careful bimanual examination. The position of the cervix alone will not be sufficient to enable us to form an opinion concerning the position of the body of the uterus. The body must be felt by the hand placed on the hypogastrium, while the fingers of the other hand steady the organ by pressing on it from within the vagina. Finally the uterine sound, bent to an angle approximately equal to that formed by the uterine canal, will leave no doubt. The sound has also the additional diagnostic value in that the uterus can be differentiated from fibroid tumors, whose size and position may stimulate a displaced uterus. Care should be taken not to introduce the sound after a recent acute attack of inflammation of the uterus or its adnexa, as the extinguished fire may be rekindled.

*Treatment* should be directed towards the inflammation. When there is no excessive sensitiveness, that is to say, when the inflammatory process has subsided I commence massaging the uterus back to a more normal position.

Intra-uterine galvanization and faradization is very helpful.

Pessaries, whether vaginal or intra-uterine are worse than useless, being not infrequently the cause of additional irritation, consequently intensifying the inflammation.

#### B. ANTEVERSION.

Uterus and cervix form one line, the entire organ assuming the appearance and position of a straightened finger. There is no bend in the canal. On digital examination with the finger the cervix is found pointing against the rectum (promontory), the finger striking the posterior lip of the cervix, the body leaning more forward than is conceded to be normal, thus the body has tilted forward and the cervix correspondingly backward.

Causes and symptoms are practically the same as in ante flexion. Perhaps the bladder becomes more irritable than is usually observed in ante flexion.

*Treatment.* Sims suggested an operation for the relief of anteversion and many pessaries have been devised for the relief of this malposition. Personally I have no faith in either. In the light of clinical experience the pessary is becoming an obsolete instrument in almost all uterine dislocations.

The first thing our attention must be directed to is the existing inflammation. All that has been advised for the treatment of chronic metritis should be instituted. Depletion, hot douches, iodine painted around the cervix, will do good. Right from the beginning pledgets of cotton soaked in 5 to 10 per cent ichthyol-glycerin can be placed behind the cervix, with a view of exerting a mild but prolonged pressure on the cervix in the direction toward the vulva, at the same time utilizing the antiphlogistic and dehydrating properties of the two drugs.

Of course, when the inflammatory condition has improved, more forcible methods may be cautiously employed consisting mainly in a sort of pressure-massage with the fingers. If it is found that there exist adhesions, great care is necessary to prevent a relighting of the old inflammation.

Our mainstays are, however, the tampons, properly inserted. It goes without saying that the tampons should be made larger from time to time, depending on the amount of reduction achieved in the course of treatment.

#### C. RETROFLEXION AND RETROVERSION.

Owing to the similarity of both conditions as regards diagnosis and treatment they are considered together.

Retroversion and retroflexion, roughly speaking, are the opposites to anteversion and anteflexion, although not quite so as regards the cervix. In retroversion the fundus inclines backward without any bend of the uterus—in retroflexion the uterus bends over its posterior surface. The cervix in either condition may remain in a fairly normal position or be tilted upwards.

The *diagnosis* is to be made by a careful bimanual examination. In aggravated forms of retroflexion the fundus can be felt in Douglas' cul-de-sac by the examining finger in the vagina, but care should be taken not to confuse the uterus with a possible tumor, mistakes which have often been made by competent gynecists and which could have been avoided, had they used more care in the examination. Like in all other malpositions a diagnosis can be made with certainty only, when the entire uterus has been mapped out with the examining fingers of both hands.

In retroflexion this is not an altogether easy task, much depending how relaxed the abdominal muscles are during the examination, for the fingers

must be pressed in deeply in order to feel the body of the retroflexed uterus.

In doubtful cases, particularly when we do not know whether we have to deal with a simple case of retroflexed uterus or a fibroid tumor springing from the posterior uterine wall, we may have to resort to general anesthesia to clear up the diagnosis.

As regards the *causes* of retroflexion and retroversion, the acquired form, in most instances seems to follow parturition. An overfilled bladder will easily crowd the fundus downwards while relaxed utero-sacral ligaments and a pelvic floor, weakened in its tone by traumatic injury during childbirth will keep the uterus in the abnormal position or at least permit it to remain so as they offer no support. Add to this inflammation of the uterus and its neighboring space, and adhesions are soon formed so that the uterus becomes firmly inbedded in a mass and cannot be lifted out.

The *treatment* is not based so much on the cause of the trouble as on the question: can the uterus be replaced or not? Reposition is possible, if there are no adhesions. Great care must be exercised in manipulating the uterus with or without instruments when recent inflammatory disease of the adnexa and parametrium is suspected.

All attempts at reposition should be very gentle at first.

Reposition can be accomplished in two ways. The woman is in the dorsal position with somewhat elevated hips. The index and middle fingers of the left hand are introduced in the vagina and press against the retroverted or retroflexed uterus, while all fingers of the right hand, pressing deeply through the abdominal wall, try to grasp and lift up the uterus. In order to aid somewhat this procedure, one of the fingers in the vagina can depress the cervix to secure a sort of lever action.

Another way is to place the patient in the knee-chest position. All constricting garments particularly corsets and corset-waists should be loosened. If we now retract the perineum either with fingers or with a retractor, air is allowed to enter and fill the vagina and in ordinary cases the uterus will now gravitate towards the abdomen without any trouble. In some cases we must introduce a finger in the vagina or rectum and give the uterus a push.

If we have succeeded in reducing the uterus the therapy is directed towards the repair of any existing pathologic condition of the uterus or cervix and towards the retaining of the uterus in a normal position.

If, however, reduction is impossible, that is to say if the uterus is bound down by adhesions, then our first aim, naturally is to try to overcome these adhesions. In order to cause the adherent mass to absorb we must paint the vaginal vault three times a week with liquor ferri persulphatis, followed by tampons of glycerin. If the iron produces inflammation or ulceration of the

skin, treatments should be given less often and tincture of iodine applied instead.

Much good can be expected from the galvanic current. Inflammation of the uterus is treated in the usual way.

We know of but one recommendable way to prevent the reduced uterus from falling back to its abnormal position and that is by the insertion of cotton pledgets, pressing against the lower vaginal fornix and over the cervix.

I am decidedly opposed to the use of any pessary even for a few weeks, for the simple reason that when the woman wears one she imagines she can keep away from the doctors care for some time, meanwhile the pessary can do all sorts of mischief. The safest among all pessaries is the inflatable ring pessary. I have seen a woman in whom a Hodge pessary, so much made of in many books, ulcerated almost through the vagina.

The physician who introduced the instrument enjoyed an excellent reputation. This happened in Detroit.

In many cases, however, in spite of prolonged systematic efforts with non-surgical methods no success is achieved. It is in such cases, particularly when the symptoms have not abated that we must resort to surgical measures. Many are the methods suggested but not all are equally useful. I invariably open the abdomen preferring this to the so-called Alexander operation in which the round ligaments are shortened by extraperitoneal operation.

Plastic operations, in which an incision is made through the vagina and the anterior wall of the uterus sutured to the vagina are, of course less risky, but are apt to cause disturbances as soon as the patient gets pregnant. The mortality of the abdominal operation, however, almost being nil, it is my operation of choice.

#### D. LATEROFLEXIO AND LATEROVERSIO.

I recollect to have seen but one case of lateroversio.

This was a young, slim Jewish woman, born in Russia but raised and educated in this country. She was married about four years and was sterile, for which she had had her uterus dilated and curetted by a New York surgeon.

The cervix in her case pointed in an oblique direction towards the left side of the pelvis while the fundus proceeded in a direct line opposite. As I did not promise relief for her sterility positively, she did not come again.

I cannot say whether the malposition was congenital or due to trauma.

As I have no personal experience with such cases I can express no opinion. The literature is very scant on the subject.



Should any of my readers meet with such a case I will be grateful for a detailed report.

It seems to me that the treatment should not be any different than the one described in the previous section.

#### E. PROLAPSUS UTERI.

Downward sinking of the uterus is usually chronic and rarely met with in nullipara. The injuries sustained during childbirth, enlargement of the uterus making this organ heavier than normal, loss of tone of the ligaments, a torn perineum, are all causative factors. The support of the uterus weakened above and below—the organ itself is driven downward by abdominal pressure.

The uterus in its downward descent drags along the vagina, which, too in the severer forms might become inverted and prolapsed.

It is frequently impossible to recognize a descent of the uterus, when such displacement is not very great, while the patient is in the recumbent posture. Such cases can be easily recognized when the woman is examined while standing.

The prolapsus may be so severe that the entire uterus comes out of the vulva and hangs between the thighs. Such a condition is met with mostly in old women. In younger women the uterus is usually observed to be at the vulva.

The *diagnosis* is easy enough. An unusually elongated cervix might simulate prolapse, though the fundus be in about the normal position, a polypus might occasionally mislead. The uterus might be inverted, that is to say the fundus might go through the uterine canal not unlike a glove turned outside in. To differentiate from these conditions should not be difficult.

A good rule to follow is never to make a diagnosis of uterine prolapse until the protruding mass shows the external os, permitting the introduction of a sound, while the fundus should be palpated bimanually.

*Treatment* is either mechanical or surgical.

Reduction of a prolapsed uterus being very easy in almost all cases, pessaries of all sorts have been devised to hold the uterus back. The only one to be recommended is a cup-shaped pessary attached to a rod-like piece from which several strings lead to an abdominal belt.

The greatest cleanliness must be observed. The pessary should be removed and disinfected every evening. A hot, antiseptic douche administered every day is essential.

It is needless to say that any ulceration or other pathologic condition found in a prolapsed uterus should receive due attention.

*Surgical* treatment consists in the repair of a lacerated perineum, or colporrhaphy and a surgical operation to fasten the uterus by similar methods as mentioned under retroversion. If a large hypertrophic cervix was one of the primary causes—the cervix should be amputated.

The result of all operations mentioned, singly or combined are far from ideal.

In old women, hysterectomy, or extirpation of the uterus may become justifiable.

### 3. TUMORS OF THE UTERUS.

*Mucous polypus* are frequently seen protruding from the os externum on examination with a speculum. They are very soft in structure. The patients complain of "whites" and the frequent appearance of "a flow." Sometimes they cause pain.

They are easily recognized as such, as they resemble in structure and appearance the polypus seen in the nasal passages. And who has not seen a nasal polypus?

They are attached to the mucous membrane of the cervix or uterus by a narrow pedicle.

There is only one treatment for them, viz.: to seize them as near their seat of attachment as possible with a pair of artery or clamp forceps and twist them off.

If their base is very broad the uterine cavity should be thoroughly curetted with a sharp curette when they will come away.

*Fibro-myoma.* Small tumors may be present in the uterus without giving rise to any symptoms. The shape of the womb is not sufficiently altered to be detected by any of the methods of examination.

Sometimes the presence of a tumor must be suspected on account of certain symptoms. When the tumors reach any considerable size they can be easily detected.

Depending on the locality of their growth fibro-myomata are described as submucous, intramural and subserous.

They have either a broad base of attachment or a narrow pedicle. The submucous ones, as a rule grow into the uterine canal, the subserous ones into the abdominal cavity.

The intramural fibro-myomata enlarge the uterus itself. If several equally formed tumors be evenly distributed in the uterine walls the enlargement will appear to the examining finger uniform, not unlike the enlargement observed in pregnancy.

From this condition it can be easily differentiated by the absence of the classical objective (soft, purple cervix, purple vulva, etc.) and subjective symptoms (cessation of menstruation, morning sickness, etc.) and the *hardness* of the uterine walls. This hardness has a special diagnostic value.

There are no *symptoms* especially characteristic of uterine fibroid—in fact symptoms may be absent altogether. The symptom which drives the patients to seek medical aid is: metrorrhagia. These hemorrhages may become so frequent and excessive that, unless arrested, they may lead to complete exsanguination.

Painful urination (dysuria), painful sexual intercourse (dyspareunia), backache and leucorrhœa are frequently observed in fibroid of the uterus.

As regards the *prognosis* it must be borne in mind that fibroid *per se* is a comparatively harmless growth. I do not know of one authentic instance in which the tumor itself has become malignant. Of course, malignant disease may come on as if there was no fibroid.

The hemorrhages, however, must be stopped. This can be accomplished by the administration of the fluid extract of ergot internally and the topical application to the uterine mucosa of the tincture of iron.

Curettage, whenever this can be done, should be performed. I say, advisedly, whenever this can be done, for frequently the irregularly shaped tumor or tumors make the uterine canal so tortuous that not even a sound can be successfully passed.

The methods of treatments for the growth itself are many.

Among the medicinal ones ergot is the oldest. Its value is doubtful.

Prof. Garrigues of New York kindly advised me in a private letter that mammary extract in 5 grain doses (prepared by Armour & Co.) has been successful in his hands in at least one case. The patient, a relative of a physician had already determined to undergo hysterectomy by a surgeon of national reputation when Dr. Garrigues suggested the use of this extract. The results were astonishing. In a few months the tumor shrunk two-thirds.

Dr. Garrigues is too great a surgeon not to command the respect of every physician and though this information came at so late a date that I have had no opportunity of testing it personally, I strongly urge the readers to remember this agent when they undertake to treat uterine fibroid and to give it a thorough trial.

*Apostoli* has suggested a method of treating by galvanic electricity. A sharp, spear-shaped electrode is pushed into the tumor at its most prominent place (either through the vagina or abdomen) and an indifferent, dispersing electrode applied to the back and hypogastric region.

This method, which caused quite an excitement in the surgical world soon after its birth, has lost considerably the confidence it once enjoyed. The method permits of many objections. The value of the galvanic current, providing it be applied differently, however, cannot be denied. It will be more fully discussed in Chapter XII.

The surgical treatment consists in either the extirpation of the tumors—myomectomy, or the removal of the entire uterus—hysterectomy.

Myomectomy is the operation which should be preferred, if an operation be decided upon at all, but alas, is not always possible. Hysterectomy is so formidable an operation that the practitioner might well think twice before suggesting such a step.

The comparatively less harmful operations of ligating the uterine arteries and of oophorectomy are still favored by some surgeons, particularly when extirpation of the uterus on account of extensive adhesions is impossible. The former operation is performed with a view of shutting off the blood supply of the uterus and thus “starve” the tumor or tumors, the latter produces an artificial menopause and with it—cessation of the menstrual function and—it is believed—an impossibility for the occurrence of uterine hemorrhage.

That these two operations do not always arrest the hemorrhages produced by uterine fibroid is now a well-established fact. The theory that the natural menopause will silence these growths has also proved to be erroneous.

When should the patient be operated on? is the question of vital importance.

There can be but one answer, viz.: when with the medical methods or electricity we have failed to arrest the hemorrhages.

In those cases in which the tumor grows very rapidly in spite of all treatments, operation is the only rational procedure.

Finally repeated attacks of peritonitis call for the surgeon’s knife.

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Among *malignant* growths *cancer* is the most frequent one. Other malignant growths, sarcoma for instance, may attack the uterus, but they cannot be considered here.

The best description of cancer I have seen is given by Dr. Chas. H. Bushong in his book “Modern Gynecology.” It reads as follows:

“Cancer of the cervix has some peculiar characteristics that will at least lead to a more thorough investigation. The cervix is usually the seat of laceration which has been neglected for a number of years. There is hypertrophy, which is frequently at the lowest point, giving a “cauliflower” shape to the cervix. The consistency is not so dense as that of simple

hypertrophy, and the hard resistance given by fibrous growth is absent. Instead of these there is a spongy impression given by the examining finger, as if the parts were saturated with fluid and ready to break down at any time. At the highest limit of this softer tissue a zone of quite hard tissue is frequently felt. The cancerous growth in the cervix may be limited to a small spot or it may involve its whole circumference. When the body of the uterus is invaded by the disease it is hard and unyielding to the finger at the side, and nodules and irregularities are frequent. These must not be mistaken for multiple fibroids of the uterine wall, which are smoother over each individual tumor, while the malignant tumors are irregular in form and broken by depressions and elevations. When the entire uterus is involved in a cancerous growth it may be smooth and uniform in size."

A *positive diagnosis*, in all doubtful cases, can be made from the microscopic findings of a small piece, removed for that purpose.

*Treatment.* When cancer of the uterus is seen and recognized in its earlier stage, while the growth is localized, and before adjacent structures are involved or a cachexia due to general infection present, there can be but one advice to give: to secure the services of a conscientious and skillful operator and have the uterus totally removed. An ordinary hysterectomy will not suffice, for the operator will have to carefully scrutinize the vessels and lymphatics, which, if in the least involved will need careful dissection and removal.

When the disease, however, has become too far progressed, or when operation, though advisable, has been declined, then palliative measures must suffice.

Curettage of all diseased tissues, followed by application of strong antiseptics, particularly with a solution of equal parts of creosote and tincture of iodine, destruction of the ulcerated and sloughing tissues with the Pacquelin thermo-cautery, followed by the creosote-iodine solution have proven very useful.

Of course a good many drugs, such as strong solution of carbolic acid, silver-nitrate, zinc sulphate can be used. Dusting powders, such as iodoform, nosophen, aristol, dermatol, xeroform, etc., may be frequently blown on the raw surfaces.

There is no internal remedy for cancer. The treatment is purely symptomatic. Pain and sleeplessness should be combated with codein, morphin, sulfonal, etc., while the strength of the patient should be supported by tonics and judicious diet.

The x-rays directed towards the uterus through cylindrical vaginal specula of celluloid should be tried in every instance of inoperable cancer.

## CHAPTER XI.

### DISEASES OF THE OVARIES AND FALLOPIAN TUBES.

As even skilled and old gynecic practitioners are in the majority of cases unable, by physical examination, to positively demonstrate whether it is the ovaries or tubes which are afflicted by inflammatory disease, we deem it best to describe *inflammation* of both organs together in one chapter. Inflammation of the ovaries is technically called *ovaritis* or *oophoritis*, inflammation of the Fallopian tubes *salpingitis*. If the tubes are filled and distended by pus we speak of *pyo-salpinx* and if there be serum instead of pus, *hydro-salpinx*.

Practically all that has been said in regard to metritis holds good in both ovaritis and salpingitis. Both conditions can be acute or chronic. The acute cases are usually extensions of uterine disease, which has been permitted to exist without appropriate treatment.

The chronic forms are sequelæ to acute inflammation of the tubes and ovaries. They seldom start as such.

The symptoms of acute inflammation are practically the same as those described in acute metritis, save that they are more intense. The "uterine cramps" are substituted by "tubal colic" in salpingitis.

Digital examination through the vagina establishes the presence of inflammation. That is as much as can be done, for any attempt to make a bimanual examination, produces intense suffering. It leads to nothing and should not be undertaken. I would not even give chloroform for the sake of a correct diagnosis. It must be remarked that even while the patient is under the influence of the anesthetic, the palpation of the ovaries and tubes, should one succeed in this, will not aid us materially, even though we suspect and establish so grave an affection as pyo-salpinx.

Operation of any sort is not to be undertaken during an acute attack so that instead of wasting time with examinations the physician had better make a provisional diagnosis resting between, pelvic peritonitis, ovaritis, salpingitis, or metritis, or two or more together and proceed to *local and general treatment*.

*Rest* is absolutely essential. An ice-bag should be placed on the hypogastrium. Nothing but a piece of flannel should intervene between the skin and the bag.

To relieve the intense pain nothing is better than the hypodermic injection of morphin and atropin. Immediately afterwards saline laxatives should be freely administered. Perhaps it is best to at once catheterize the patient and administer a soapsud enema.

No vaginal applications of any kind should be made during the first four or five days.

Throughout the entire attack the bowels should be kept open by magnesium sulphate and enemata. Instead of morphin injections suppositories containing opium and hyoscyamus should be inserted in the rectum.

The ice-bag should be applied for an hour and then removed for an hour, to be replaced again for another hour and so on.

The diet should be light. Milk is sufficient while there is fever. When the fever has subsided soups, oat meal and soft eggs are permissible.

*Chronic ovaritis* and *salpingitis* are treated in the same way as a chronic endometritis, which, usually co-exists. Glycerin or better still ichthyol-glycerin tampons should be applied to the vaginal fornix every other day. The bowels should be kept open. Hot douches can be administered when there are no tampons. The vaginal vault and cervix should be painted with tincture of iodine several times a week.

Internally the so-called "mixed treatment" can be given. It consists of a solution containing bichloride of mercury and potass. iod.

When, in spite of careful and conscientious prolonged treatment the results are not satisfactory or the patient is subject to repeated exacerbations, the question of surgical operation has arisen. As it usually means the unsexing of a young woman, consultations with surgeons known to be conservative and painstaking should be held. That the practitioner must aid the consultant by submitting to him an exact history of the case goes without saying. The patient should be fully advised in regard to the seriousness of the step.

In such cases I always favor laparotomy, for when the abdominal cavity has been opened the adnexa are open for direct inspection and palpation. More than once has the abdomen been closed again, because the findings were at variance with the symptoms, without operating on the adnexa, and non-surgical methods advised continued—to the great benefit of the patient.

Thus every abdominal operation can be considered to be preceded by an exploratory laparotomy.

## CHAPTER XII.

### ELECTRO-THERAPY.

Electricity is of great value in the treatment of diseases of women. Aside from its utility as a tonic and sedative for the general and nervous systems it has a distinct value in the treatment of a variety of affections of the female pelvis.

Three forms are used, viz.: static, galvanic, faradic.

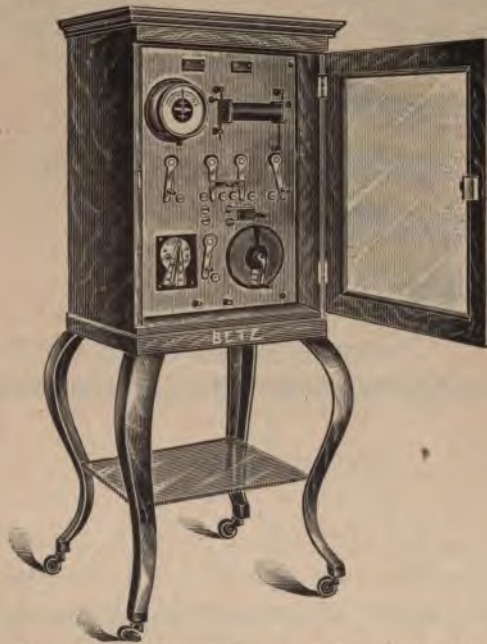


FIG. 18.—Betz's galvanic-faradic office "roller" battery.

Static electricity, also known as Franklinic electricity, although very useful, is not absolutely essential for the successful treatment of diseases of women. I have met in my practice cases of backache which could not be relieved after prolonged local treatment by competent men. The application of static electricity to the sacral region in the form of the "breeze" followed by mild "sparks" resulted in permanent relief. Static electricity, of course,



can be utilized for the treatment of the neuroses so frequently met with in women of a neurotic tendency and usually accompanying pelvic disease.

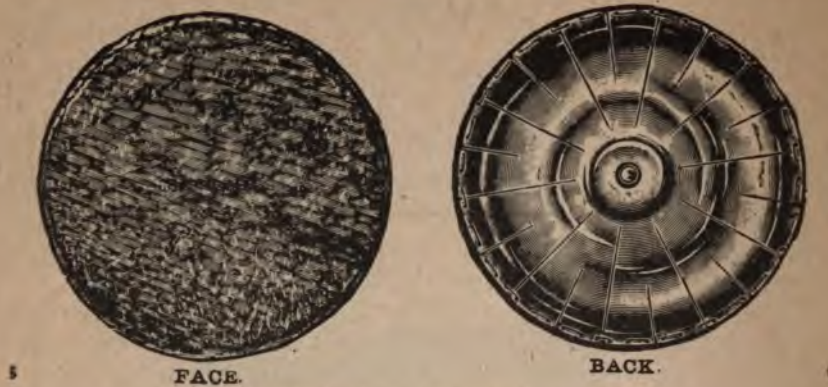


FIG. 19.—Abdominal "dispersing" electrode.

Static currents are gained from a so-called static machine and are produced by friction of glass plates. The patient sits on an insulated platform which is connected with the static machine by a metal rod or chain. It has

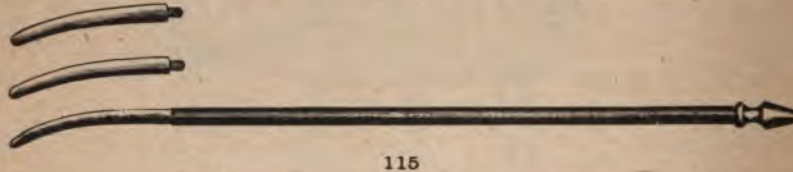


FIG. 20.—Goelet's "dilating" electrodes.

the advantage over faradic electricity in that it does not necessitate the removal of clothing from the patient. Any metal in the clothing such as hair-pins, corsets containing steel ribs, etc., should, however, be removed first,



FIG. 21.—Martin's double copper electrode.

as their close contact to the skin is apt to produce a certain amount of sparking, which may disagreeably surprise the patient.

Static machines at this date are no "rare bird" any longer, enterprising manufacturers having distributed, broadcast circulars all over the continent. Competition has bought down the machines from high prices to sums within the means of every successful physician who cares to completely equip his office. Nevertheless, I would not advise to expend any money on a static machine if it was to be used in gynecic practice exclusively.



FIG. 22.—Fitzhugh's electrode for erosion of cervix.

The main value of the static machine lies in its usefulness as a producer of x-rays and is undoubtedly the best means for malignant growths. In these respects the static machine is even superior to the x-ray coils.

The *galvanic* current is the most important one.

The galvanic *battery* used by the author can be connected with the 110 volt direct current by means of a special attachment furnished with the ap-

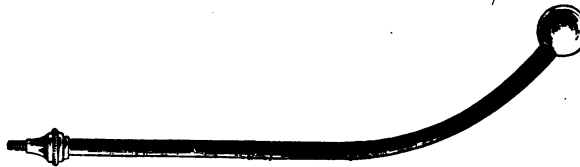


FIG. 23.—Goldspohn's vaginal ball electrode.

paratus, or the source of electricity can be obtained from a number of dry cells which can be conveniently placed in a compartment of the cabinet.

It is a stationary office battery but can be easily moved about the room, a feature which must not be underrated.



FIG. 24.—Block tin electrode (uterine) for positive galvanic current.

The battery has a graphite rheostat, a milliampèremeter, a pole-changer and a galvanic interrupter. The last-named feature, though very useful in the treatment of nervous affections, is seldom, if ever, required in gynecic practice, for on the contrary, in the use of the galvanic current on the female

genital apparatus great care must be exercised to avoid "shocks" or interruptions of the galvanic current. Both an increase or decrease of the current must be as gradual as possible, which can be accomplished with the *rheostat*.

My experience with rheostats in the past has not been a very pleasant one. The composition has been poor, the graphite became soft and brittle and after some time the current could be increased only in jerks. The rheostat on my present battery is far superior in every respect to any I have had—



FIG. 25.—Vaginal electrode.

being durable, hard in consistency, smooth and permitting of fine, uniform gradation of both the galvanic and faradic currents.

The pole-changer is certainly a great convenience. By means of a simple switch either electrode can become the positive or the negative, at the will of the operator. Thus if we wish to change for instance the uterine electrode from negative to positive or *vice versa*, this can be easily accomplished without disturbing the position of the electrode or its connections with the bat-



FIG. 26.—Goelet's bi-polar vaginal electrode.

tery by simply changing the switch on the board. Care should be taken to first turn off the current, that is to say, to put the handle of the graphite rheostat on the starting point, before making the change, as otherwise the current is suddenly interrupted and just as suddenly turned on, producing two "shocks" which are as painful as they are unpleasant.

The milliampèremeter is to the electro-therapist what the scales and graduate are to the chemist—an instrument for the purpose of measuring the galvanic current.

In the older batteries so-called "cell-selectors" have been attached, consisting of a number of buttons arranged in a circle, each connected with a

cell. All of the buttons used meant that all the cells were employed. By means of special handles any desired number could be utilized. We therefore frequently read in older articles of estimates of the intensity of the current by the number of cells employed.

This is as unscientific as it is unreliable. Five cells used to-day will give



FIG. 27.—Apostoli's bi-polar uterine electrode.

off a stronger current than after a few days, because these cells lose their strength. Different portions of the body are differently affected by the galvanic current, depending of course on the amount of resistance to the current. The nature of the electrodes and rheophores is also to be reckoned with.

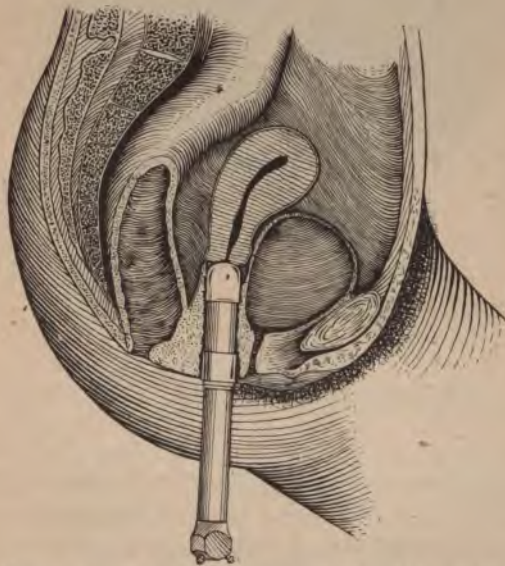


FIG. 28.—Faradization of vagina with bi-polar electrode.

The milliamperemeter, which registers the amount or intensity of the current is the only reliable guide, and these facts are appreciated by manufacturers of electrical apparatus and the cell-selectors are done away with. The rheostat has taken its place. When cells are used, they are now con-

nected among themselves the zinc of the first and the carbon of the last being connected by two wires with the "switchboard." The rheostat can be compared to a damper on a piano. Though all cells work whenever the current is used each one is called upon to furnish an equal share.

In order to demonstrate the use of the galvanic battery let us assume that we have a case of fibroid tumor, which gives rise to hemorrhages and which we desire to destroy.

Two electrodes are needed for that purpose, a *dispersing* or *indifferent abdominal electrode* and a suitable *intra-uterine electrode*.

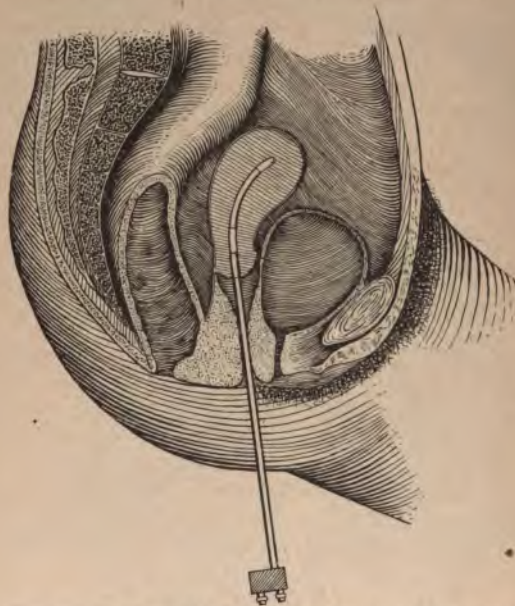


FIG. 29.—Faradization of endometrium with bi-polar electrode.

The dispersing electrode must be wide and large to minimize the local effects of the current. It is usually made of a sort of felt attached to a metal sheet. Clay-electrodes have also been manufactured.

In the selection of an intra-uterine electrode we must remember that the negative current does not affect the metal, if we use the positive current all metals will be decomposed save platinum and carbon.

Of course sometimes the decomposition of the metal is what we are after.

The patient is now placed on the operating table. The vagina is disinfected and a vaginal speculum introduced and the cervix exposed. The dispersing electrode is now made wet with a warm solution of bicarbonate

of soda (3j:Oj) and applied over the hypogastrium or sacrum, as the operator sees fit.

The disinfected intra-uterine electrode, made of copper is put into the uterine canal as far as it will go without any undue force. If there be resistance we stop and throw the switch so that the dispersing electrode is positive. The current is now started by means of the graphite rheostat handle. It is of course essential that all switches are in their right place.

The milliampèremeter needle begins to move which shows that the galvanic current is actually flowing. It can be noticed now that the uterine electrode enters the uterine cavity much easier and soon it has reached the fundus.

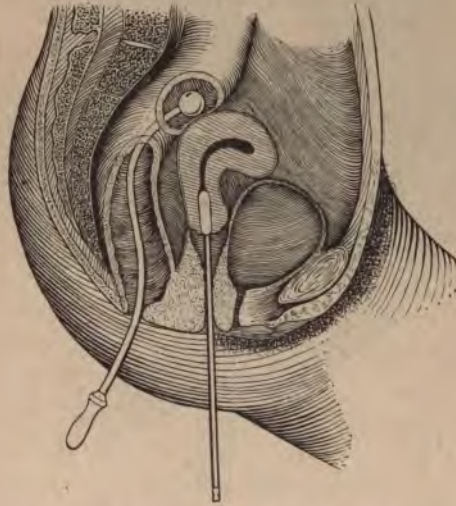


FIG. 30.—Tripier's method of faradization for ante flexion.

We now continue to move the rheostat handle until the milliampèremeter shows the desired strength.

Sometimes the patient cannot tolerate what we consider even a weak current and complains of a burning pain. It is best to desist for a while and perhaps to decrease the current one or two milliampèremeters, when the patients will be satisfied.

We now wish to make the intra-uterine electrode positive with a view of arresting the hemorrhages, that is to say we wish to influence the mucous membrane of the uterus.

The current must be turned off gradually by means of the rheostat handle first of all. When the current is off whatever changes we see fit to make can be made without danger to the patient.

The pole-changer is now switched to the opposite side—the uterine electrode is now positive. The current is turned on as before. After the required time is over the current is turned off again.

Now it will be found that the uterine electrode cannot be removed from the uterus. The decomposition of the electrode has “glued” the instrument to the uterine mucosa.

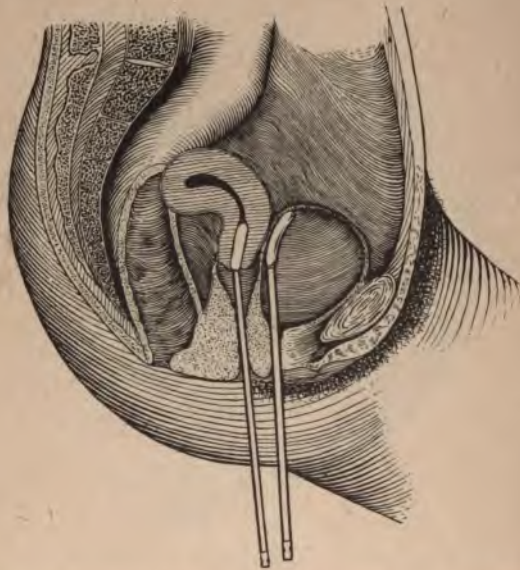


FIG. 31.—Tripiet's method of faradization for retroflexion.

In order to “loosen” the electrode, it is changed again so as to become negative, a weak current turned on for a few minutes when it will be found that it can be easily removed. Of course the electrode should not be removed until the current is completely shut off, to avoid shocks.

The above case represents the *technique* of *intra-uterine galvanization*, in all its details, at least as far as the handling of the battery and electrodes are concerned. It can thus be seen that those gentlemen who make a specialty of electro-therapy surround their work with a halo of mystery that tends to frighten away the novice. In reality, however, the technique of electro-therapy is very simple indeed. If any special skill is needed at all it

is required in the determination what particular electrode to use, how long and at what strength.

Gradually a sort of electric "materia medica" has been evolved by certain writers.

Lists of diseases have been published, along side of each an enumeration of the particular current, strength, length of time, etc.

An example of such a list follows:

"Chronic endometritis: galv. neg. 15 ma. 10 minutes three times a week."

Nothing tends more to undermine the value of a given therapeutic agent than an attempt to prescribe for its use iron-clad rules.

All such writings are misleading and unscientific.

Though, we know for instance, the difference of the action of the negative and positive currents, it frequently happens that no results are achieved with

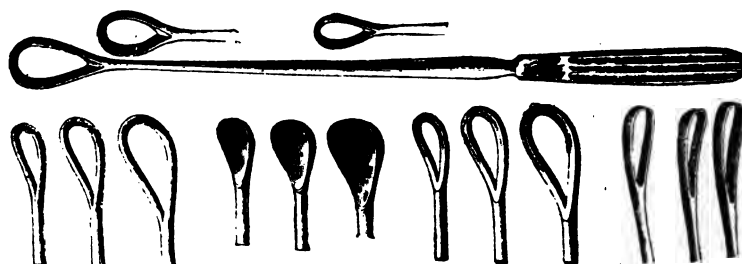


FIG. 32.—Different forms of uterine curettes.

the one which seemed indicated while excellent progress is made after a change of treatment with the other pole has been instituted.

Thus, it can be seen, that a little experimentation to which should be added a little common sense, will do more good than all rules and regulations laid down by so-called authorities.

The trouble seems to be that electro-therapy has become a specialty in the hands of many physicians, whose education and abilities or rather lack of both, unfit them for any other scientific work.

These men are usually not pathologists, not even good diagnosticians. They never dare to take a surgical instrument in their hands and have become regular monomaniacs on the subject of electricity.

Electricity, like any other agent, has its limitations, but in the hands of a liberal-minded man it will do real good in selected cases.

It is first of all important to know the *contra-indications* to galvanism and faradism.



Electricity should never be applied in acute inflammatory disease of the sexual apparatus. This is an axiom.

It is also contra-indicated in pyo-salpinx (chronic).

Of course the presence of a chronic pyo-salpinx cannot always be surmised.

A good rule is that when a woman complains of chills and fever, and has an increased temperature a day or two after intra-uterine galvanization or faradization, the presence of pus somewhere in the pelvis is established beyond a doubt. Further treatments are decidedly contra-indicated.

The galvanic current is an excellent agent in the treatment of *stenosis* of the uterine canal. Goelet's dilating electrodes consist of an insulated handle with nickel-plated intra-uterine stems of three different sizes. The



FIG. 33.—Skene's volsellum forceps.

smallest one is used at first. The indifferent electrode is connected with the positive pole. The uterine electrode is naturally connected with the negative pole. The electrode is introduced through the external os as far as it will go and the current turned on to 15-35 milliampères, depending on the sensibility of the patient. The first two or three treatments should not last longer than three minutes. The first half minute is devoted to the gradual turning on of the current. When the seance is over the current is turned off in a few seconds.

Gradually the treatments can be made stronger and longer in duration. The size of the electrode should be increased as soon as the smaller one is found to pass without difficulty.

*Chronic metritis* is treated in a similar way as stenosis, aided of course by other agents. When there is leucorrhœa and a tendency to hemorrhages the positive current is to be applied to the uterus.

For this purpose special electrodes made of platinum, carbon or block tin are to be chosen.

Copper and zinc electrodes are chosen when we wish to deposit either chemical on the uterine mucosa which is accomplished by electrolysis.

The technique is the same as described for fibroid tumors.

The immediate effects of intra-uterine galvanization are not always pleasant. In many cases the patients complain of colic a few hours after the treatment, sometimes as late as the following day.

Patients should be forewarned against such complications which is of little moment. All that is needed is rest and the pains will disappear.

The patient should also be advised that the first few treatments are apt to aggravate the trouble, the pain, leucorrhœa, etc., becoming worse.

It is only after four or five treatments have been administered that improvement commences.

In the treatment of chronic ovaritis, the negative electrode should be the vaginal-ball electrode, which should be covered with cotton. It is introduced

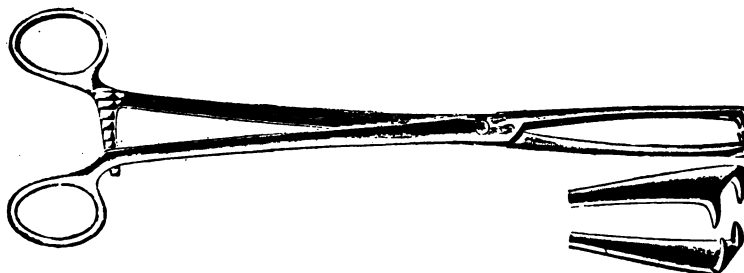


FIG. 34.—Heavy uterine volsellum forceps.

into the vagina and pressed towards the affected ovary. The indifferent electrode is best placed on the abdomen.

The *faradic* current is either primary or secondary, depending whether the current is going through the outer-primary coil or whether it is induced in the inner-secondary-coil.

As regards the application of the faradic current, the same electrodes used for the galvanic current can be used.

The following description of the therapeutic action of faradism is taken from Garrigues masterly work on Diseases of Women:

“If the primary current goes through a thick and short wire, it has a great quality of electricity; and if the second current is induced in a very long thin wire, it requires a very high degree of tension. Such a current of tension has great power in subduing pain (~~ovaralacia~~ abdominal pain in hysterical women, vaginismus and pain arising from ~~menstrua-~~ menstruations). It is also an emmenagogue.

"The faradic current is, as a rule, applied three times a week, sometimes daily; each sitting lasts from ten to thirty minutes. The electrodes should be applied first, and then the current turned on very slowly, the patient's feelings serving as a guide as to the strength applied. At the end the strength of the current is again gradually decreased until it stops before the electrodes are withdrawn. The reason for so doing is that the vulva is much more sensitive than the vagina or uterus and that a strong current is more endurable when it is increased and decreased gradually than when it begins and ceases suddenly. The cervix is also much more sensitive than the body of the womb."

The so-called bi-polar electrodes are so constructed that both the positive and negative poles are connected with the same electrode. As they are usually made of ordinary metal they cannot be utilized for the galvanic cur-



FIG. 35.—Palmer's uterine dilator.

rent. They are therefore intended for the faradic current exclusively. Their advantage over an ordinary vaginal or uterine electrode (which requires the use of an indifferent or dispersing electrode in order to produce a complete circuit) lies in the fact that the faradic current can be better localized, and is therefore to be used when a localized, topical application of the faradic current is desired.

Goelet's bi-polar vaginal electrode (Fig. 26) is the best because it permits of an application of faradism to the most proximal and distal ends of the vagina. Unless a given vagina is very roomy and relaxed, it is an almost self-retaining instrument, a feature which is not without some importance, as it is very desirable not to shift a bi-polar electrode after a current has been turned on. This holds good also for applications to the endometrium, for which purpose Apostoli's bi-polar uterine electrode (Fig. 27) is the most popular and perhaps the only one in vogue. Figs. 28 and 29 illustrate the faradization of the vagina and uterus with the bi-polar electrodes.

It is needless to say that all electrodes should be disinfected before use. As the insulating material will not stand boiling, they can be sterilized by

trodes should first be rinsed off with sterile (boiled) water before use, in off the current, threw the switch on the galvanic bottom and turned on the order to prevent the contact of the irritant and toxic chemicals with the mucous membrane.

I have seen one physician lubricate an electrode with oil. The patient seemed to like the treatment very well in spite of the fact that he had brought the handle of the rheostat to the extreme end. I suggested that he use the galvanic current. He objected on the ground that one metal part of the electrode connected with the positive rheophore will become decomposed and "stuck." I told him to go on and try. With a smile he turned formaldehyde gas or by antiseptic solutions. If the latter be used the electro-galvanic current. Imagine his surprise when the milliampéremeter refused to register, although all connections proved to be correctly made.

The doctor will now remember that oil is a non-conductor as long as he lives.

The best lubricant is a mild solution of bicarbonate of soda, which has the advantage that the current becomes more intense. Soap foam is ideal when mildness of the current is desirable.

As regards the indications for the employment of the bi-polar instruments they have proven serviceable in my hands in:

1. Subinvolution.
2. Relaxed vaginal outlet, not due to a torn perineum.
3. Cystocele.
4. Rectocele.
5. In chronic metro-endometritis producing "neuralgic" pain.
6. Dyspareunia, when not due to inflammation or ulceration of the vagina, and
7. Vaginismus.

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A method of treating anteversion and retroversion of the uterus by means of the faradic current, which has been introduced by Tripier, and which is well worthy of a trial in such cases in which inflammation is absent, is depicted in Figs. 30 and 31.

The reader must, however, not expect too much from this treatment as it is hardly likely that the malposition will be corrected by the faradic current. Symptomatic cures have been reported.

His directions are as follows:

The first thing to be done is to lubricate the rectal probe, although it is the last thing to be used, as later the operator would have no disengaged hand to do so. Then a towel should be placed within reach.

"The uterine exciter, having been dried by the left hand, is inserted into the uterus, using for this purpose the left forefinger as a conductor. After this the rectal probe is inserted; this is the most delicate part of the operation; if not well done it might be very painful. The olive must pass the internal sphincter, leaning a little on its upper edge, the concavity of the instrument pointing downward; after this it should be pushed forward, below, and a little to the left. When the olive has thus reached the bottom of the concavity of the sacrum a pause should ensue, then turn the probe while elevating its pavilion so that the concavity of the curvature is turned upward, and in this way cause the olive to face the rear wall of the uterus. It would naturally seem that, on account of the development to the left of the rectal ampulla, the rotation would be easier on that side, but this is not the case; I have always found it infinitely easier to the right, and I have tried it both sides. After pushing the olive from right to left in the concavity of the sacrum, it must be brought back to the right, while turning the concavity of the probe more and more toward the right. The pavilion, being held in the hand of the rectal probe, must be slowly elevated during this rotation movement until it has been completely effected. This precaution is necessary, first in order not to use the uterus roughly; then, that the movement of the rotation may be more freely effected.

"When the curvature of the probe has been brought parallel to that of the sacrum, then only can the hand be gently lowered, pushing lightly so that the olive may come up, sliding against the wall of the uterus.

"This last motion, however, must only be accentuated when the faradization has begun, in order to give it strength and assure a sufficient contact. The rotation movement just described is not always accomplished without meeting with some resistance: this is sometimes easily overcome, but at other times it may be difficult. The operator should be able to judge according to the impression received by the hand controlling the probe. The most ordinary obstacle to this maneuver is the presence of a fecal mass, hard or soft, and it is something that cannot be foreseen. The best way to avoid it is to give the patient an injection of oil before the application.

"The rectal exciter, once placed, should be held in position; then the conducting-cord must be attached with the right hand, which must, at the same time, hold the uterine exciter. It is necessary to get accustomed to manage these two exciters with the same hand, the other being free to control the faradic battery and to govern its action. This hand directing the apparatus must, however, be able now and then to assist the other one, if any cause should present itself to modify the connection of the two probes, in accentuating the motion of the rectal probe. The fact is that a definite

position cannot always be given at once to the rectal probe. I have already described one obstacle to its progress: the existence of the fecal mass in the intestine. If this should happen to be of any considerable size and a little soft, it might cover the posterior wall of the uterus as with a plaster, which could only be penetrated little by little during the application. Muscular contractions form another obstacle to placing the probe. These alter the form of the cavity where the evolutions take place. They are of a flexible nature, and give way under the influence of faradization; however, the resistance they present cannot be overcome at once, and it is by interrupting the rotation during the application that this can be avoided.

"In retroversion and retroflexion the anterior wall of the uterus must be acted upon and vesico-uterine faradization employed. The patient being in the dorsal position, the uterine exciter is first inserted, then the positive vesical, which is previously lubricated. After this the contacts are established and the apparatus put in action; the same hand then places the two probes in the required contact. The insertion of the vesical exciter is made like that of any ordinary probe, the handle must be raised at the time of operating, but only at that time, so to lean the active tips on the anterior wall of the uterus.

"The application should not last longer than three minutes, to avoid fatiguing the muscular structures."

## CHAPTER XIII.

### CURETTAGE.

Curettage is an operation consisting of scraping of the uterine mucosa by means of long handled, spoon-shaped instruments, known as curettes. Many varieties of curettes have been offered to the profession, some of which, such as the Recamier curette, are not only impractical but dangerous. The accompanying illustrations show the most frequently-employed curettes.

There has been going on quite a controversy in current medical literature whether the dull or sharp instrument should be used. In my opinion the dull instrument has no place in gynecic surgery and I have discarded it long ago. The sharp instruments are "dull" enough to prevent too much tissue being scraped off.

The curette is frequently used as a diagnostic instrument when we wish to obtain scrapings for microscopic examination as for instance in cases of suspected carcinoma.

The operation is usually described as a minor operation and the belief is prevalent among general practitioners that it can be performed by anyone without special training. While it is true that it is not a major operation it is, nevertheless, a very important one. In the hands of a competent surgeon, who knows the indications and contra-indications of curettage the benefit to the patient is immense, if, however, performed in a haphazard way, without a previously made careful diagnosis, it will not only do no good but frequently prove the cause of much harm.

The operation itself cannot be taught by ocular demonstration, for no teacher can impart manual dexterity and delicacy of touch to his students in the amphitheatre.

Practice, a desire to do right and careful observation are the requisites for the achievement of successful surgery. The following is the technic employed by me.

*Anesthesia.* General ether or chloroform anesthesia is *always* to be used, save when there is grave organic disease of the heart or profound sepsis following incomplete abortion.

*Asepsis.* The most rigid antisepsis is to be maintained from beginning to end. The hair of the pubes should be shaved or removed by means of a chemical depilatory. The external genitalia and neighborhood should be

scrubbed with green-soap and warm water, which procedure must be followed by ablution with antiseptic solutions. The vagina should be cleansed in a similar way by an assistant who introduces several fingers in order to thoroughly remove all the discharges which can be better accomplished when the vaginal canal is put on the stretch.

As soon as the antiseptic preparations are finished, the surgeon, who in the meantime has disinfected his hands and forearms, makes once more a final bimanual examination, which can now be made much better, as the woman is completely under the influence of the anesthetic and the abdominal muscles are relaxed. It is very important to know whether there are present pus-tubes or other evidences of pelvic inflammation or not.



FIG. 36.—Goodell's dilator.

The surgeon dips his hands once more in an antiseptic solution for a minute, rinses them in sterile water, puts on a pair of sterilized gloves and is now ready to begin the operation proper.

*Operation.* In order to expose the cervix, I use either a bivalve speculum or two vaginal retractors. If the latter be used the assistant sits or stands to the operator's left and grasping the handles of each retractor with several fingers, inserts one retractor handle, presses down the posterior wall of the vagina and executes the same manoeuvre on the anterior wall in the opposite direction with the other retractor.

When the cervix is brought into view a fine tenaculum forceps is hooked on the posterior lip of the cervix and by means of an applicator, on the end of which is wound a piece of sterile absorbent cotton, the uterine canal is mopped out with any desired antiseptic. (In my own practice, I prefer the compound tincture of iodine.)

This procedure is of additional value to the surgeon for it enables him to form an estimate of the direction of the uterine canal as well as of its depth.



Should the surgeon encounter difficulties in the passage of the applicator behind the inner os on account of flexion, the applicator must be bent to a suitable angle.

Frequently small fibroid tumors will stand in the way in which case, of course, only the canal of the cervix can be disinfected.

The small tenaculum forceps is now withdrawn and each lip of the cervix firmly grasped with a heavy tenaculum forceps.

The uterus is now pulled down gently but firmly as far to the front as can be done without undue traction. The speculum or retractors can then be removed.

The assistant keeps the uterus firmly in front of the vulva holding the tenacula in such a way that the upper one rests on the os pubis and the



FIG. 37.—Uterine "irrigator."

lower on the perineum which position of course must be moved from time to time in order to enable the surgeon to introduce his fingers whenever he so desires.

Palmer's uterine dilator is now introduced into the uterine canal a little behind the inner os and the blades expanded sideways as far as they will go. Care should be taken not to press the blades apart suddenly in order to prevent injury to the mucous membrane and to the other tissues of the uterus.

The blades are now closed again and the instrument turned ninety degrees and opened in the new position in a similar way. Goodell's dilator, which is much larger and heavier, is now used the same way as described for the small dilator.

The dilatation with the larger instrument should be more gradual yet and no surgeon will regret having spent an additional minute or two, for the desired results will be better while the injury to the tissues will be reduced to a minimum.

The uterine canal is now ready to be curetted. The curette is grasped on the handle with four fingers of the right hand, the index fingers resting on

the shaft in a similar way as one holds a pencil when writing. The curette is introduced carefully up to the fundus, the sharp edge pressed on the posterior wall and pulled out, maintaining the same amount of pressure throughout. Surgeons, who have had an extensive experience can tell by this first stroke the pathologic condition of the uterine mucosa. The "feel" imparted to the fingers on the handle, is something that can be appreciated only and not described. Surgeons can judge without difficulty whether they have to deal with healthy mucosa, granulations, fungosities, etc. If retained membranes be in the way of the curette they will be brought out without difficulty. Proceeding either to the right or left, as the surgeon sees fit, strip after strip of the uterine walls is thus subjected to the scraping of the

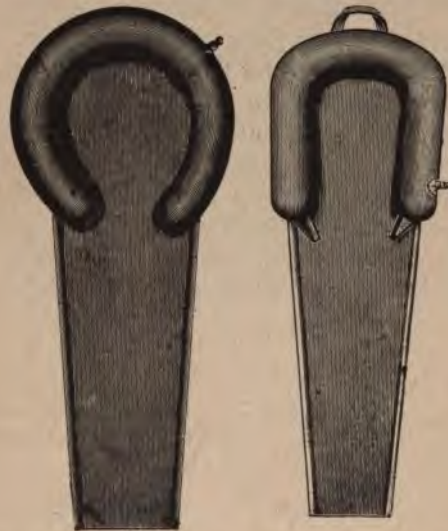


FIG. 38.—Kelly's Perineal and operating pads.

curette until the original starting place is reached. The greatest care must be exercised in starting on "the next tour" for frequently it is essential for success that the entire endometrium be removed and no strips of the mucosa left. The fundus must next be subjected to the same procedure.

But even with the greatest care it is utterly impossible to curette the cornua. This is to be deplored, particularly when it is desired to permit drainage for the Fallopian tubes. To overcome this difficulty I have devised a uterine cornua curette, which has a thin oblong, narrow spoon bent in such a curve that the corners of the uterus around the opening of the Fal-

lopid tubes can be easily reached. It has been manufactured for me by Frank S. Betz & Co., of Chicago. The curettage finished, the uterine cavity is irrigated with any mild, hot antiseptic solution by means of a double-current uterine irrigator, attached to a glass-container or fountain syringe by means of a long rubber-tubing. Care should be taken to permit first a little solution to flow out before inserting the irrigator, in order to expel all air, dust and rubber particles.

If curettage be properly performed with due regard to antisepsis, there should be no bad consequences. I have seen reports that curettes have been pushed through the fundus into the peritoneal cavity. Such an accident, the reporters claim, were rarely if ever followed by bad results.

I can only warn my readers to look out for such accidents. Peritonitis and death may be the consequences. That many women have died from an improperly performed curettage there can be no doubt.

To avoid this accident I can offer but one suggestion, viz.: that throughout the operation the surgeon utilize his free, left hand to acquaint himself with the position and size of the uterus by pressing the hand against the uterus through the abdominal wall in the hypogastric region.

The operation of curettage is best performed with the patient in the recumbent posture and the legs securely fastened with any desired leg-holder. The buttocks of the patient should rest on a Kelly-pad, which permits the escape of blood and fluids into a slopjar without soiling the patient, table or floor.

## CHAPTER XIV.

### MASSAGE IN DISEASES OF WOMEN.

*Massage* (from the Greek word "masso," to knead [dough], to work manually, or from the Arabian "masso," to press [softly]) is best defined as a therapeutic method of treating certain affections by means of systematic manipulations. In the majority of instances the physician's or attendant's hands are the "instruments" used—but of late machines have been invented to replace the human hand.

It is self evident that all mechanical devices can be used only in cases not requiring special delicacy of touch.

Massage is not a very popular remedy with physicians, probably because it requires time and physical exertion. In larger cities special masseurs and masseuses abound, among whom can be found good and reliable attendants, ready to execute the commands of the physician.

Since the introduction of massage in diseases of women by Major Thure Brandt of Sweden (who was a layman) surgeons of great repute, stimulated by the many cures brought about by the major and his pupils, have investigated the method and have put it on a rational basis.

The man who has done more in this direction than anyone else is Prof. Robt. Ziegenspeck of the University of Munich, who has written an excellent monograph on the subject. My friend, Dr. F. H. Westerchulte of Chicago has translated his work in English, from which I have freely quoted in the preparation of this chapter. A perusal of the work will prove of great benefit to those who desire to attain the best possible results with massage.

*Indications and contra-indications.* In order to better appreciate when massage is indicated I deem it best to first enumerate the contra-indications.

Acute inflammatory affections, malignant diseases, acute infectious and septic diseases and pus.

Pus offers an obstacle to the employment of massage only when accompanied by an acute inflammatory process.

In chronic cases of pyo-salpinx massage is not absolutely contra-indicated, but should be employed with great care. If the pain becomes intense and there is a rise of temperature, further treatment has to be

suspended for a few weeks; an ice-bag should be applied over the hypogastrium and opium suppositories (see Appendix) inserted in the rectum.

Pregnancy is no contra-indication for massage. Ziegenspeck says that massage is indicated in every case in which pressure on any part of the internal genitals causes sudden and perhaps persistent pain, or in which we want to disperse a swelling or effusion.

The patients should always be warned that massage treatments are apt to increase the pain at first. If after the first few sittings the pain diminishes, recovery can be looked for.

If fever is provoked after a second seance, as described above, the treatment must be postponed for at least a month and meantime other measures resorted to.

Judiciously employed, massage is a harmless remedy and invaluable particularly in chronic, painful affections of the uterus, ovaries, tubes, parametrium, and peritoneum (pelvic).

It is decidedly indicated in subinvolution of the uterus.

In chronic inflammatory processes resulting in shrinking and adhesions, massage should be combined with "stretching."

*Technic.* The patient is best placed on an ordinary examining table or chair in the recumbent posture. The heels are placed in the stirrups to relax the abdominal wall.

Special massage tables, couches or benches as recommended by Brandt are unnecessary.

The patient's corset and garments should be so loosened to permit easy access to the abdominal wall. Rubber gloves are not to be recommended, but the fingers which are to be introduced into the vagina can be protected by soft rubber cots.

Strict cleanliness should be observed. Long finger-nails of the physician's hands are apt to cause injury. It is well to lubricate the right hand with some fatty substance. I prefer ordinary olive oil to which a few drops of peppermint oil has been added. Most patients like the cooling effect of the peppermint.

The index and middle fingers of the left hand are introduced into the vagina and remain stationary after pressing the organ to be massaged against the right hand, with which all manipulations on the abdominal wall are performed.

The position of the surgeon is immaterial. Some prefer to stand at the left side of the patient, others in front of the table between the patient's legs. The physician soon finds out which position permits the greatest convenience and will change position whenever he likes.

The right hand is placed very lightly upon the abdominal wall and with the finger tips, describes large circles in the beginning, gradually the intestinal coils give way and the hand penetrates deeper and deeper into the pelvis. The circles become smaller the deeper the hand advances and depend finally upon the size of the organ, which we intend to massage. Each seance should last about ten minutes, and brought to an end by gradually relaxing the pressure, at the same time increasing the size of the circles.

The force of the pressure to be used depends upon the sensitiveness of the patient. Too much pressure should be avoided by either hand, as we cause unnecessary pain and only aggravate the trouble. If, however, we use too little pressure, the patient gains nothing from such treatment.

Ziegenspeck recommends to increase the pressure until some pain is felt, when the patient shows that the milder treatment is sexually exciting her.

*Stretching* is employed for the separation of parametritic adhesions, which appear to the fingers in the vagina as bands which run along the uterine or spermatic veins or both. Before resorting to stretchings, a few massage treatments should be given.

We place both fingers of the left hand against the left side of the uterus in the left vaginal vault and do the same with the finger tips of the right hand from above. We then push the uterus with both hands to the right as far as the sensitiveness of the parametric band will permit. This stretching of the band produces renewed pain, which we remove by massage. By alternate stretching and massage (for the removal of sensitiveness and swelling) we stretch the band, although it may require a great many sittings sometimes, and remove it finally, perhaps in its entirety, by massage. One can be satisfied if he succeeds in pressing the uterus, without any special effort or without causing pain against the opposite pelvic wall.

The above description is intended for a left parametritis.

If the pathologic condition is met with in the right side, the right side of the uterus is to be treated and pushed against the left side.

After some sittings the bands can be stretched by the two fingers in the vagina while the external hand is describing circles over the band, as in ordinary massage.

Massage is also an invaluable remedy in constipation. Stroking, squeezing and rubbing movements can be employed along the course of the ascending, transverse and descending colon.

APPENDIX.

I. *Drugs, which are needed in the office for applications to the vagina and uterus:*

- a. Tinctura iodii.
- b. Tinctura iodii composita.
- c. Tinctura iodii.  
Acidi carbolici aa.
- d. Tinctura iodii.  
Creosoti aa.
- e. Sol. argenti nitr. 3 per cent.
- f. Sol. argenti nitr. 5 per cent.
- g. Sol. argenti nitr. 10 per cent.
- h. Acidum aceticum.
- i. Tinct. ferri. chloridi.
- j. Glycerin.
- k. Ichthyol 10 parts.  
Glycerin 100 parts.
- l. Boracic acid gr. xv.  
Glycerin ℥ j.

(Note: Boro-glyceride is expensive—this formula is sufficient.)

- m. Acid. tannic. ℥ j.  
Glycerin. ℥ j.
- n. Dusting powders:  
Sod. bicarb., acid. boricum, nosophen, xeroform or aristol.

2. *Some prescriptions, not given in detail in the text:*

A. Vaginal Douche-Powders.

a. *Alkaline, antiseptic*

B

Thymolis .....gr. xv

Natr. biborat.....

Natr. bicarb., aa.....℥ ij

M. f. p. S. Teaspoonful to quart of hot water.

b. *Antiseptic, cleansing.*

℞

Zinci sulphurici.....gr. x  
 Acidi borici.....℥ ij

M. f. p. S. Teaspoonful to quart of hot water.

c. *Astringent.*

℞

Alum .....℥ jss  
 Acidi tannici .....℥ j  
 Acidi borici .....℥ ij

M. f. p. S. Teaspoonful to quart of hot water.

B. *General Tonics.*

a. *Nerve tonic and tissue-builder*

℞

Strychnin sulph. ....gr. ¼—gr. ss  
 Syr. hypophosph. comp.....℥ ij

M. S. ℥j, t. i. d. before meals.

c. *Appetizer:*

℞

Tinct. nucis vom.....gtt. xx  
 Tinct. cinchonae comp.,.....℥ ij

M. S. ℥j before meals.

c *Fat-builder.*

Any palatable cod-liver oil preparation.

Russel's Emulsion.

d. *Sedatives*

Syrup bromid. comp.; trional, sulfonal, etc.

(Note: When we wish to relieve pain, whenever there is no unusual urgency the hypodermatic syringe should not be used but codein sulphate prescribed in doses of 2 grains every 3 hours, or the following rectal suppository:)

℞

Extr. gelsemii .....gr. iv  
 Extr. opii .....gr. iij  
 Ol. theobrom. qu. s. ut. fiat suppos No. vj.

Sig. Insert one every 2—3 hours.

e. *Anti-constipation.*

To insure a thorough evacuation of the bowels, a tablet containing aloin, belladonna, podophyllin and strychnin, as put up by manufacturing chemists, is ideal in gynecic practice. Its prolonged use is to be rejected, however, because a tolerance for the drug or drugs (aloin is the main ingredient) is



soon established. In chronic constipation, the tone of the intestines must be improved by massage, faradism and galvanism.

Patients suffering from chronic constipation should be instructed to take a glass of cold water or seltzer the first thing in the morning and make it a rule to go to the closet at a given hour every morning and at least make an attempt to have a bowel-movement for a few minutes. Even if they obtain no results, this regularity should be observed for a prolonged time when, in the majority of instances, it will be found that the bowels will become accustomed to move at the fixed hour.

A semi-liquid diet should be tried for several weeks. Fruits of all sorts should be partaken of freely while tea is to be interdicted.

## BIBLIOGRAPHIC LIST.

The following is a list of the books from which the author has **freely** drawn in the preparation of this work. Those interested in special subjects, or desirous of widening their knowledge in gynecology will find the list **sufficiently** large for their purpose:

1. A Manual of the Modern Theory and Technique of Surgical Asepsis, by Carl Beck. (W. B. Saunders, Philadelphia.)
2. The Venereal Diseases including Stricture of the Male Urethra, by E. L. Keyes. (William Wood & Co., New York.)
3. Excessive Venery, Masturbation and Continence, by Joseph W. Howe. (Bermingham & Co., London.)
4. The Pathology and Surgical Treatment of Tumors, by N. Senn. (W. B. Saunders, Philadelphia.)
5. Atlas and Epitome of Gynecology, by Oscar Schaeffer. (W. B. Saunders & Co., Philadelphia.)
6. Sexual Impotence in the Male, by William A. Hammond. (Bermingham & Co., New York.)
7. The Technique of Surgical Gynecology, by Augustin H. Goelet. (International Journal of Surgery Co., New York.)
8. Conservative Gynecology and Electro-Therapeutics, by G. Betton Massey. (The F. A. Davis Co., Philadelphia.)
9. Massage Treatment in Diseases of Women, by Rob. Ziegenspeck. (F. H. Westerschulte, Chicago.)
10. The Pathology, Diagnosis, and Treatment of the Diseases of Women, by Graily Hewitt. (Bermingham & Co., New York.)
11. Modern Gynecology, by Charles H. Bushong. (E. B. Treat, New York.)
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14. Medical Gynecology, by Alexander J. C. Skene. (D. Appleton & Co., New York.)
15. A Text-book of the Diseases of Women, by Henry J. Garrigues. (W. B. Saunders, Philadelphia.)

16. Manual of Gynecology, by Henry T. Byford. (P. Blakiston, Son & Co., Philadelphia.)
17. Handbuch der Krankheiten der Weiblichen Geschlechtsorgane, von Carl Schroeder. (F. Vogel, Leipzig.)
18. Medical Microscopy, by Frank J. Wethered. (P. Blakiston, Son & Co., Philadelphia.)



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As a treatise on gynecology the work is good, and, to those interested in the electrical treatment of the diseases of women, invaluable.—*Cincinnati Lancel-Clinic.*



