

MENSTRUATION AND ITS ANOMALIES.

MENSTRUATION.

DEFINITION.—The flow of the menses. A periodic function of the female generative organs, consisting in a bloody discharge from the uterus. It occurs, on the average, every twenty-eight days, and continues from one to six days. Menstruations extend over from thirty to thirty-five years of woman's life, and this time is known as the period of the "genital life."

SYNONYMS.—It is popularly known by the following names or expressions: "being unwell," "periods," "turns," "courses," "flowers," "terms," "sickness," "the reds," "menstrual flux," "troubles," "monthly illness," "the flow," "the catamenia," "the monthly purification."

REGULARITY AND DURATION.—The average time of the reappearance of menstruation, counting from the beginning of one period to that of the succeeding one, is twenty-eight days. This interval is not fixed; it is very elastic. In many cases it is less than twenty-eight days; in others, longer than four weeks, appearing however with punctuality. One woman may menstruate every calendar month or twelve times each year, while another may menstruate sixteen or seventeen times each year, yet both may be normal. Again, a woman may always have irregular intervals between her flowing and yet be perfectly well. A woman in good health, who asserted that her menses always appeared regularly, was directed to keep an accurate record of the intervals for one year. At the end of that time her report showed that they varied from twenty-four to thirty-five days. Being healthy and never having had her attention directed to the matter before, she had always called herself regular. The general rule, however, is that women menstruate every twenty-eight days.

Occasionally the menses appear at very irregular periods—*e. g.* two to five times in one year. One woman, in apparently good health, gave a history of an average of only two menstruations

annually for over seventeen years, her flow having no regularity; the two periods sometimes occurred within thirty days, no other menstrual flux appearing till the following year. Such cases are altogether unusual. A few women have been known to menstruate only in warm weather.

A normal menstruation may last from one to six days. Each woman is a rule unto herself in the matter of the duration of her monthly flow. Whatever her experience in this direction may be when she is in an otherwise healthy condition, is normal for her—a condition that cannot necessarily be laid down as the normal one for another woman. Three stages characterize the flow: 1st, the fluid is slimy and odorous, colored light or dark red by a small number of blood-corpuscles in a proportionately large amount of mucus; 2d, the fluid is almost pure blood; 3d, the fluid becomes lighter colored, its constituents being similar to those of the first stage. Exceptionally, the third stage is followed by another flow of pure blood lasting one day, to be followed by a light-colored mucus discharge, lasting thirty-six to forty-eight hours.

Very commonly, in girlhood, the approaching menstruation is heralded for two or three years by certain disorders occurring with monthly periodicity. It is not at all rare at this age to meet with very obstinate symptoms, such as headaches, epileptic fits, digestive disorders, or cutaneous affections, for whose treatment the usual remedies fail. The writer encountered in a girl of fifteen years of age, before the menses had appeared, an attack of facial erysipelas which recurred every twenty-eight days for a period of fourteen months. For such maladies medical men are in the habit of prophesying a cure when menstruation is established—a fact that experience verifies. As the time for the appearance of the flow draws nigh the nervous system becomes more irritable; there is general uneasiness and an alteration of the moral character. Commonly there is much languor, flushing, sensation of fulness, and disturbed or unnatural, heavy sleep, these symptoms continuing for a longer or shorter period. Immediately preceding the first flow there is much pain and weight, with fulness in the head and pelvis, and throbbing and swelling of the mammæ. Often the discharge is not at all regular to the month for the first half year or so, passing over a month or longer; yet the usual prodromic disturbances, enumerated above, are found to observe the lunar intervals quite regularly. In many young women the precursory

PLATE XI.

Fig. 1.

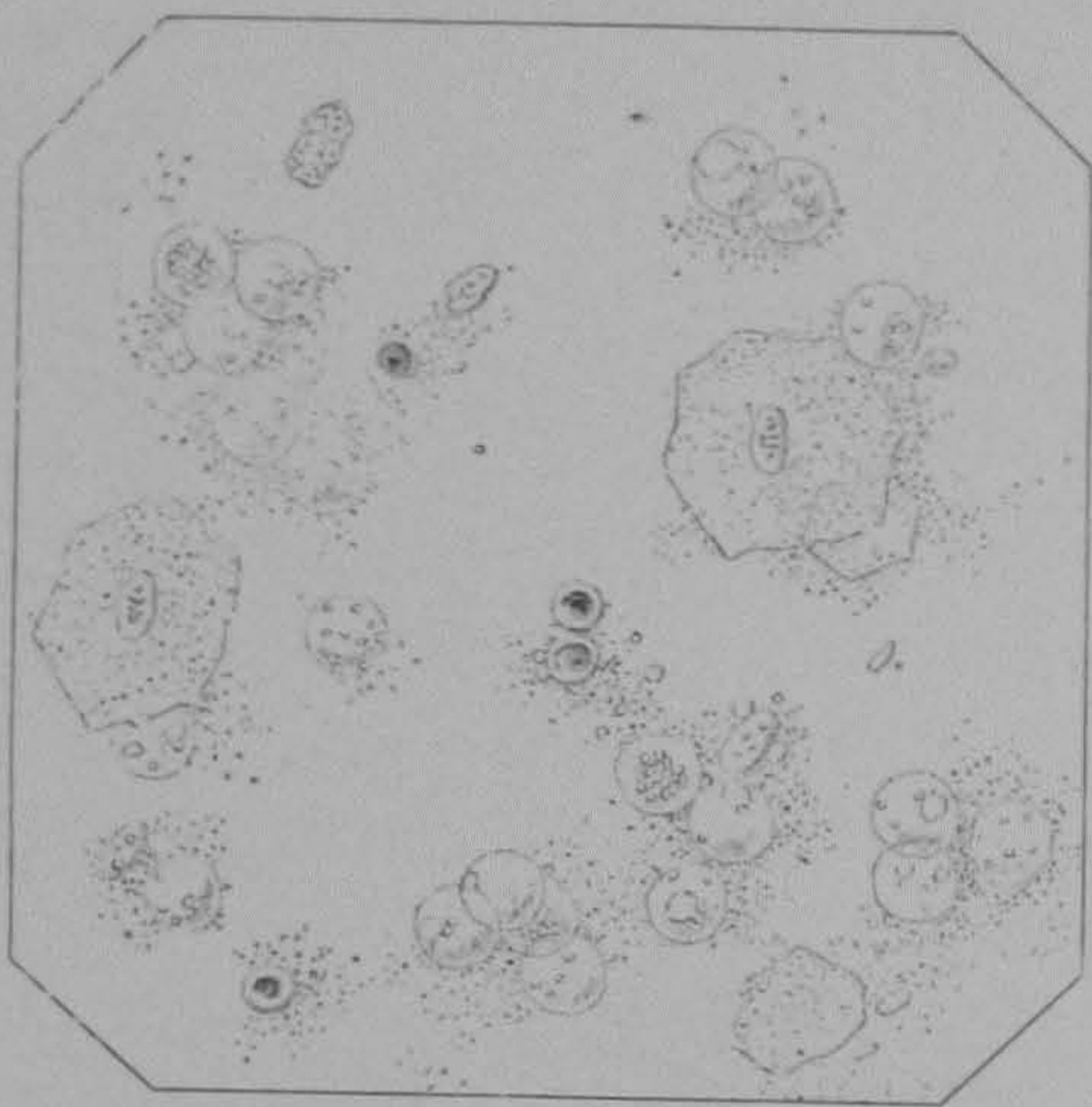


Fig. 2.

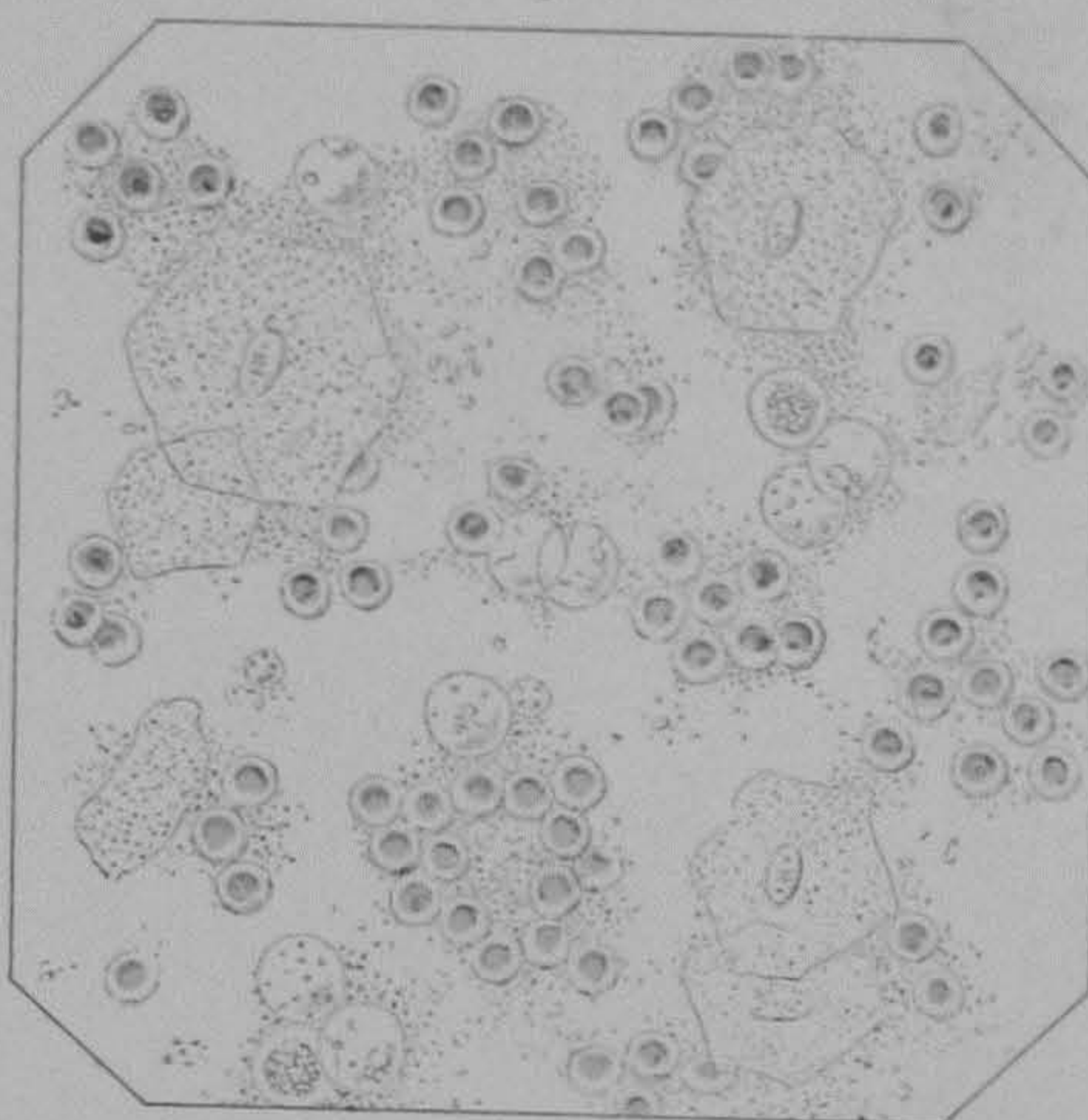


Fig. 3.

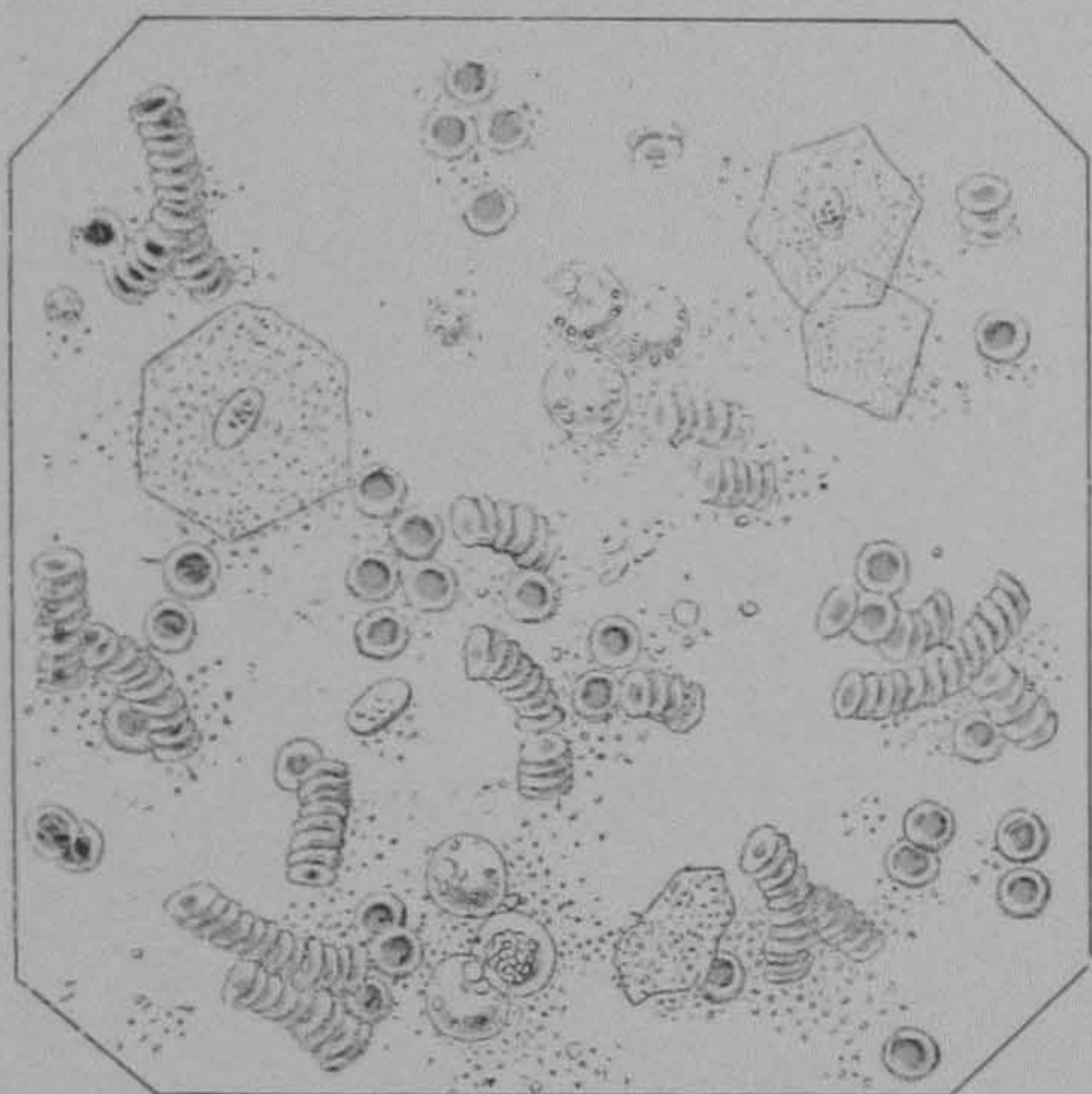


Fig. 4.

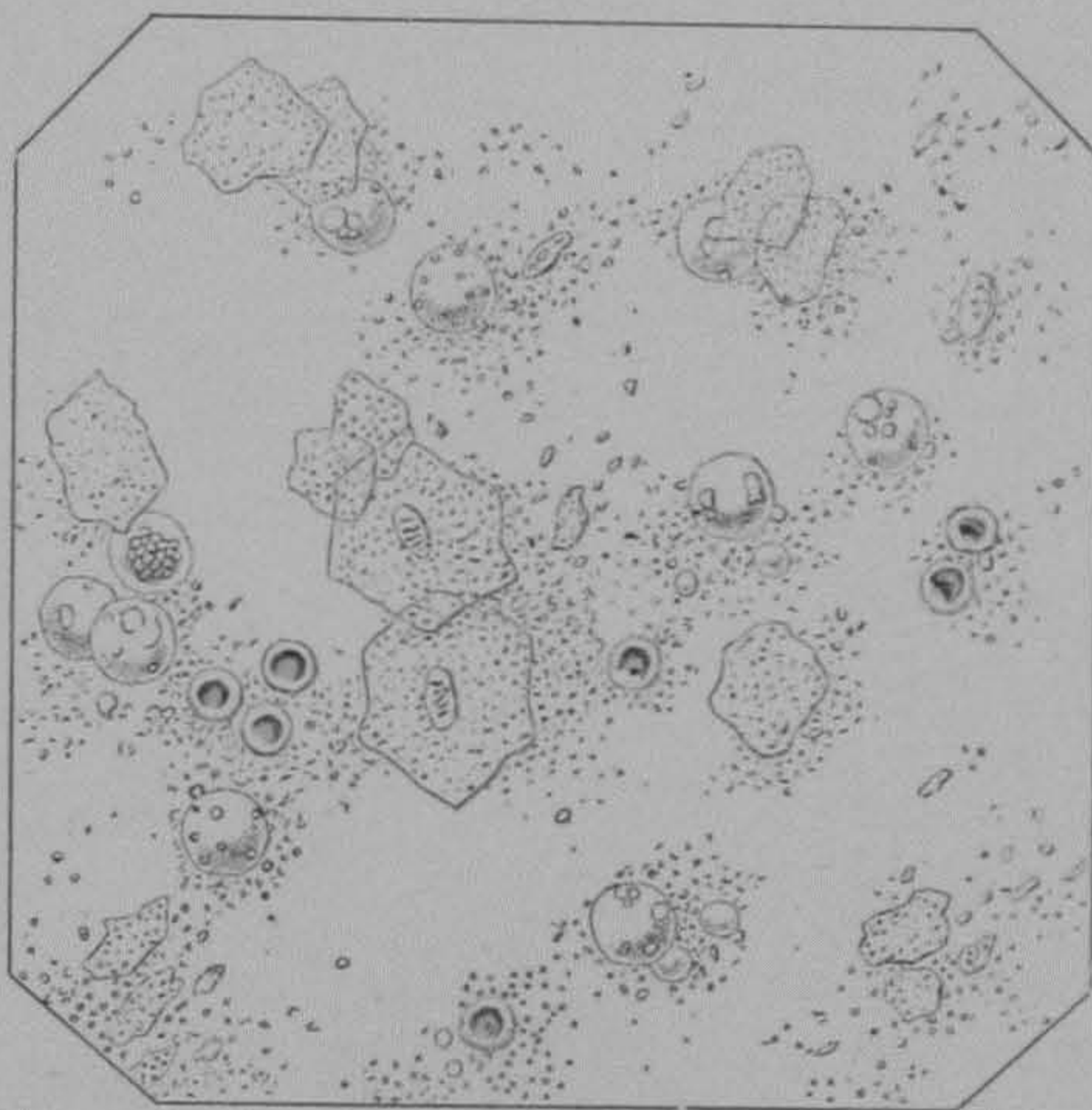


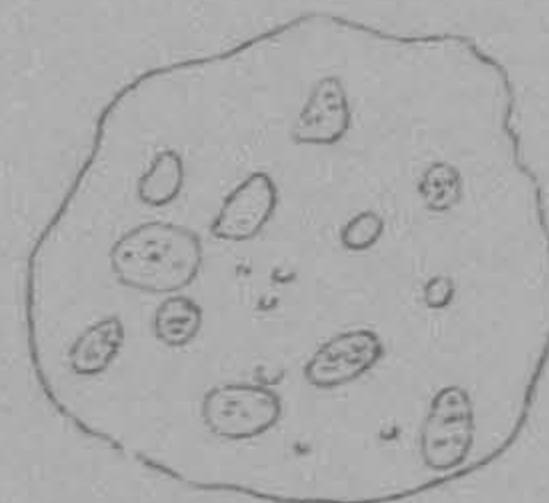
Fig. 5.



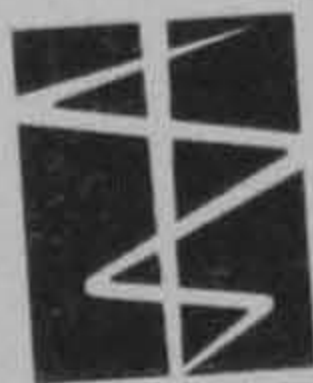
Fig. 6.



Fig. 7.



Microscopic view of Menstrual Fluid at different periods of Menstruation (Figs. 1, 2, 3, 4). Fragments of Endometrium cast off ten days after Menstruation (Figs. 5, 6, 7).



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phenomena above mentioned are so slight or evanescent that no attention is paid to them. Slight choreic movements and an elevation of temperature may accompany the first menstruation.

The menses usually appear in American women at the fourteenth year. The colder the climate the later does menstruation become established. The average time of its appearance in temperate climates has been set at between twelve and eighteen years, from thirteen to twenty-one for cold climates, and from eleven to fifteen for hot climates. City girls menstruate earlier than girls who live in the country. Brunettes are said to menstruate earlier than blondes. Precocious menstruation is often seen at ten, nine, and even as early as eight years of age. Cases of much earlier appearance have been frequently reported. One case is recorded in which the menses appeared within the "first few months after birth" (Charpentier). On the contrary, there are women in whom menstruation is delayed.

MENOPAUSE, OR CHANGE OF LIFE.

DEFINITION.—The cessation of the menses is called the "menopause." By the term is meant that period in a woman's life when she stops menstruating.

SYNONYMS.—Its synonyms are the "critical time," the "turn," the "change of life," the "dodging-point," and the "climacteric."

DESCRIPTION.—The menopause includes a very elastic period of time in a woman's life. It may be very brief and abrupt, or it may extend over a long period of time, as three or more years. The typical development of the menopause consists in the irregular occurrence of the menstrual flow. Instead of appearing at the usual time, it will be delayed a few days or will pass over to a second period or longer, and then occur about as usual in the amount of the flow and accompanying symptoms. This menstruation will be followed by similar irregularity, or perhaps by one or more flowings, regular as to the intermenstrual interval and to the amount of the discharge and with the usual accompanying symptoms. This irregularity of the discharge may continue for a period of over one year, or to three, or even five years, when the flow disappears entirely, never to be seen again.

Occasionally it happens that women, menstruating regularly, almost to the day, experience a sudden and complete disappearance

of this function. Such an experience in the change of life is altogether exceptional.

The menopause may be said to include all of that period of time, intervening between the beginning irregularity of menstruation and the complete cessation of the flow, with the subsequent restoration of health. At this time the vague nervous symptoms which accompany the disturbances incident to the change of life are ushered in. Where these exist, depending upon the approaching menopause, they must be included in this period. During this space of time, very often, different symptoms are produced in different women.

These symptoms include manifestations or perversions, especially of the nervous system, and are shown in the form of vertigo, faintness, flushes, cold hands and feet; in the digestive system, by gastric fermentative dyspepsia, tympanites, constipation or diarrhea; in the circulatory system, by palpitation, syncope, and vicarious hemorrhages; in the cutaneous system, by sudden, severe and oftentimes offensive sweatings; in the mental realm, by loss of memory, irritability of temper, fear, apprehension, melancholia, and hysteria; by changes in the physique, the development of hair on the chin and face, flaccidity of the breasts, and the great increase of omental and abdominal fat. Very many other symptoms might be mentioned. Pelvic and lumbar pains, such eruptive conditions of the skin as appear at the age of puberty, pruritus vulvæ and colic, are often encountered.

A sallow, chlorotic, or plethoric state, or a nervous condition entirely unusual in the patient, may characterize her at this period. Leucorrhea is one of the most common symptoms during the change of life. An awakening of sexual desire, quite unknown during previous years, which is often looked upon with a sense of shame and degradation by its possessor, is not uncommon in women undergoing the menopause.

It must be distinctly understood that the symptoms enumerated above are not all to be found in every woman at the change of life. They include the principal disturbances observed at this time in a large number of women. The ones most commonly encountered are the manifestations exhibited by the nervous system. The one symptom of all those enumerated that seems to be well-nigh universally experienced at this period, is flushes; few women escape them. Next to them in frequency may be mentioned the disturbances of the alimentary tract.

Some women experience a multitude of these symptoms, while others seem to escape nearly all of them. Their cause would seem to reside in the sudden congestions of certain areas of the nervous system, through the non-escape of the customary monthly bloody discharge. Their relief is often experienced by vicarious hemorrhages from the nasal mucous membranes, from hemorrhoids, by a free diarrhea, or a profuse leucorrhea.

The sudden cessation of the menses is frequently associated with an abrupt invasion of the nervous system, as fright, shock—mental or moral—or by some septic malady, as uterine and tubal disease, the essential fevers, gout, or rheumatism.

The symptoms accompanying artificial menopause following the removal of the uterine appendages are usually more prolonged, lasting often for years. The change is more stormy, all the symptoms being exaggerated.

A stormy, irregular, or delayed menopause should excite in the attending physician the suspicion of some pathological condition. This is the time of a woman's life when malignant disease of the uterus or its appendages is most likely to manifest itself, and usually the first indication that there is any abnormal condition, is seen in the behavior of the establishment of the menopause. When this has once become established, all the tissues being healthy, there should never be a return of the bloody show. Not only should the periodical bleeding cease, but all vaginal discharges become abolished. If uterine bleeding occurs after the establishment of this condition, one of two diseases is most likely to be found—either fibroma or malignancy, with the chances largely in favor of malignancy, especially if the woman be a multipara. In such cases the attending physician should carefully exclude these conditions by physical and microscopical examinations.

The importance of carefully watching a woman through this stage of her life cannot be dwelt upon too emphatically. It is commonly the practice for physicians to attribute all the ills and complaints of such a patient to the menopause. If untoward and unusual symptoms appear, they must be studied carefully and their cause discovered if possible. Whatever pathological condition is found must be dealt with as it would be at any other period of a woman's life.

The time of the cessation varies with the climate, to a certain extent; the colder the climate, the later does the menopause occur.

The average time of the termination of a woman's menstrual life is in her fifth decennium. Variations from this, in recorded instances, extend from the twenty-second to the eighty-second year. Such extremes are altogether exceptional and unusual.

Women who begin early in life to menstruate usually pass the "climacteric" late in life. Those who begin late to menstruate pass the menopause comparatively early. Exceptions to both these statements exist, but they compass the rule in a large range of observations.

Heredity seems not to be free from influence in determining the time of the menopause. As the mother was in this particular, so the daughters are very apt to be. Compliances with this rule are more numerous than are the exceptions.

PATHOLOGY.—The involutional changes in the pelvic organs at the menopause are precisely the reverse of what is seen at puberty. The vulva becomes flattened and shrivelled through absorption of its subcutaneous fat. The dimensions of the vagina become contracted in every direction, and, in the majority of women, the hour-glass contraction is seen at the junction of the middle and upper thirds of this canal. The uterine walls atrophy, the cavity diminishes, and the cervix contracts greatly, sometimes almost disappearing. The Fallopian tubes diminish in size in all dimensions and even become obliterated. The ovaries shrivel and shrink in every diameter, even to the point, apparently, of their complete disappearance. Their envelope becomes wrinkled and folded in, contracting and pinching the walls of the Graafian follicles, which appear as little grayish pouches. The mammary glands shrivel and become greatly flattened in the majority of women.

DIAGNOSIS.—It is an easy matter to make a diagnosis of the menopause. There is one pathognomonic indication of the presence of this condition which is invariably found in all cases. If every disease or condition requiring the skill of a physician had but one symptom so clearly pathognomonic as the climacteric possesses, the practice of medicine would be infinitely easy. In all cases of the change of life this one indication, never absent, is the interruption to the regular and stated appearance of the menstrual flow. This interruption does not always present itself in the same manner. It usually appears in lapses, of greater or lesser degree, in the appearance of the flow. The habit of each woman as to the regularity of her menstruation must be learned, and from that habit

comparison instituted. Women often consult their physicians, supposing themselves to be passing through this period of their lives, so much feared, when inquiry reveals the fact that their menstruations are perfectly normal in the date of appearance, the amount of discharge, and the accompanying symptoms. Such patients, irrespective of their age, can always be assured that the much-dreaded period has not yet arrived.

The symptoms of the climacteric are multiform. The principal ones have been enumerated under the description. The test of the pathognomonic value of these symptoms is shown by the relief experienced by a profuse flow after a protracted amenorrhea of several weeks or months. These flows relieve the congestive state which is so productive of perturbed functional conditions. Following them is a cessation of a number of those symptoms that have become gradually established during the period of amenorrhea.

Organic diseases must carefully be excluded in the diagnosis of the menopause. For instance, to attribute a pyrosis and vomiting to the nervous aspect of the change of life, when an incipient gastric carcinoma is present, would be an unfortunate exhibition of diagnostic carelessness. The most careful and painstaking examination should be made in every case. Methodical examination of each organ is demanded. In this way only can organic disease wholly foreign to the climacteric be excluded. Failure to detect incipient pathological developments may result in disaster and death.

PROGNOSIS.—The prognosis is generally good. Where the germs of disease have existed previously, organic disorders may be started into activity and developed at this time. This is perhaps especially true of dysplasmatic growths. It is frequently observed, in highly neurotic women, in whom an hereditary taint of insanity has been previously recognized, that this disorder may develop at this time.

Generally speaking, the prognosis is satisfactory. It is exceptional that the troubles of the menopause are anything more than temporarily active.

TREATMENT.—The treatment is governed wholly by the indications present, and thus becomes symptomatic.

The axiomatic principle of the treatment of all disorders holds true in the management of the menopause, and that is to make waste and repair as nearly equal as professional skill will permit. This involves a most careful attention to the secretions, the excretions, and the blood state. Women suffering from a deficiency of

secretions, from a retention of excretions, or from impoverished blood, are sure to present many serious symptoms at the menopause.

The state of the alimentary tract demands particular attention. The fermentative dyspepsias are productive of more symptoms at the change of life than at any other period. Gastric lavations, creasote, salicine, corrosive sublimate, and other antiseptic remedies are indicated. A tender liver and chronic constipation call for daily laxatives. Cascara, compound liquorice powder, Hunyadi salts, Rochelle salts, and other salines are highly useful. The salines are especially indicated when anemia is not too profound, because their depletory action lessens congestion, an effect greatly needed at this period of a woman's life. Daily defecation should be insisted upon. Constipation, producing numberless reflexes and leading to fecal anemia, is a most deplorable condition and should not be tolerated.

The renal system is carefully to be considered. Renal insufficiency must be corrected. Lithemia may be eliminated by the free use of lithic-acid solvents, as the citrate of potassium or lithium. Lithic acid is the parent of many neuralgias and mucous-membrane disorders. Ignoring its presence frequently defeats the physician's treatment.

The cutaneous system should not be ignored. Frequent warm baths are useful. Above all, the skin should be protected from changes of temperature by suitable underwear. Chilling the surface of the body facilitates many minor internal congestions, which can be avoided by proper attention to the clothing. The systematic use of general massage and Turkish baths invites the blood to the skin, tending thus to equalize the circulation and to relieve internal congestions.

The condition of the heart demands attention in many cases. One of the most common complaints is paroxysmal tachycardia, which comes and goes erratically, lasting when present from minutes to days, the intervals of absence varying similarly. The attacks come on without warning, even during sleep, accompanied by violent action of the heart, pulsation of the carotids and aorta, cephalalgia, and flushes. A consuming fear of apoplexy or sudden death prostrates the patient. Her general state becomes demoralized by repetitions of the attack. Sleep is disturbed by horrible dreams, and she becomes the victim of general nervous depression. Occasionally œdema without albuminuria is observed. These at-

tacks generally do not depend upon organic cardiac disease, but upon local congestion of the heart-centre in the medulla oblongata, doubtless a reflex, in the majority of cases, from the alimentary tract. This statement is confirmed by the relief following the use of remedies addressed to the digestive apparatus.

All cases complicated with cardiac symptoms demand a most careful examination of the heart. Severe and long-continued menorrhagia is often associated with feeble heart. A fatty heart, as well as a feeble heart, is attended with impeded circulation, as is shown by œdema, albuminuria, dyspnea, and palpitation. It is a grave error to attribute such symptoms to nervousness or hysteria or to the change of life.

The blood state frequently demands attention. Anemia is often caused by the dyspepsias and constipation. When it arises from hemorrhages, especial attention should be given to the most absolute quietude in bed and to hemostatic measures. Blood-poverty is the cause frequently of the most annoying and obstinate functional disturbances of the nervous system; hence its correction is of the utmost importance. Where plethora exists venesection is in many cases most urgently demanded. Bloodletting is a lost art to-day; where it is inadmissible, saline cathartics can freely be used. Bleeding from the arm or from the cervix uteri gives more speedy and protracted relief than any other measure; it rarely does harm. Leeches can be used over the region of the round ligament at the external abdominal ring, or at the anus, in cases of ovarian or uterine congestion.

Mental therapeutics should not be ignored. The depressing emotions exert a deleterious influence on woman at this period of life. Hence worry, care, anxiety, and unnecessary responsibilities should be cast aside as much as possible. Social diversions, amusements, and congenial occupations ought to be encouraged. Opportunities for depressing introspection should be guarded against sedulously.

The nervous symptoms so common at this time, as flushes, tremblings, headaches, etc., dependent on local congestion of certain areas of the nervous centres, are best relieved by the bromides. These agents decongest and benumb, hence their wonderfully satisfactory action in women passing through the change of life. The effects of these preparations cannot be too highly praised. The choice of a bromide is not altogether inconsequential. The ammonium bromide

is very speedy in its action, but it is far too evanescent. The potassium bromide is much slower and more permanent in its effect, but its depressant influence on the heart in large doses is objectionable. A more pitiable combination than a woman suffering from severe nervous manifestations in the menopause, combined with an induced cardiac debility, is difficult to imagine. The sodium bromide is the best of all bromides to use. It is markedly diuretic and does not materially depress the heart. The tendency of the bromides to produce acne can be largely averted by the use of arsenic, in the form of Fowler's solution, after meals. The effects of the bromides are wonderful in relieving pains, flushes, nervousness, and mild melancholia. Used in combination with camphor, their anaphrodisiac action, where needed, is most gratifying. Too much caution against the miscellaneous use of narcotics and diffusible stimuli cannot be entertained. The use of opium and chloral is especially objectionable, unless the suffering becomes unendurable, when they should be used for the briefest period of time and interdicted by the physician's specific ordering. The objection to their use is the fear of establishing the opium or chloral habit at this impressionable time, when a woman will resort to anything to secure relief, irrespective of consequences.

From the foregoing remarks it will be seen that the object of therapeutic attack must be sought for, chiefly, outside of the pelvic organs. It is understood that uterine, tubal, and ovarian congestions, when found, are to be treated *secundum artem*. The remainder of the treatment of women at the climacteric is purely symptomatic. There is no specific treatment of the menopause.

Composition and Quantity of the Menstrual Discharge.—The flow at first is mucous in character, gradually changing color till it becomes distinctively sanguineous. It has an acid reaction from phosphoric and lactic acids; a peculiar odor, due to fatty acids; and consists of blood (venous), serum, ciliated vaginal epithelium, and the débris of an endometrium necrosis, mixed with pigment, broken-down blood-disks, and granular detritus. It is ordinarily non-coagulable, owing to the mucus that it contains. When there is disproportionately too large a quantity of blood present, as in menorrhagia, coagulation is common. Hence, when women flow too freely, as from a diseased condition of the pelvic organs, it is exceedingly common to see coagula discharged; therefore, the attempt to

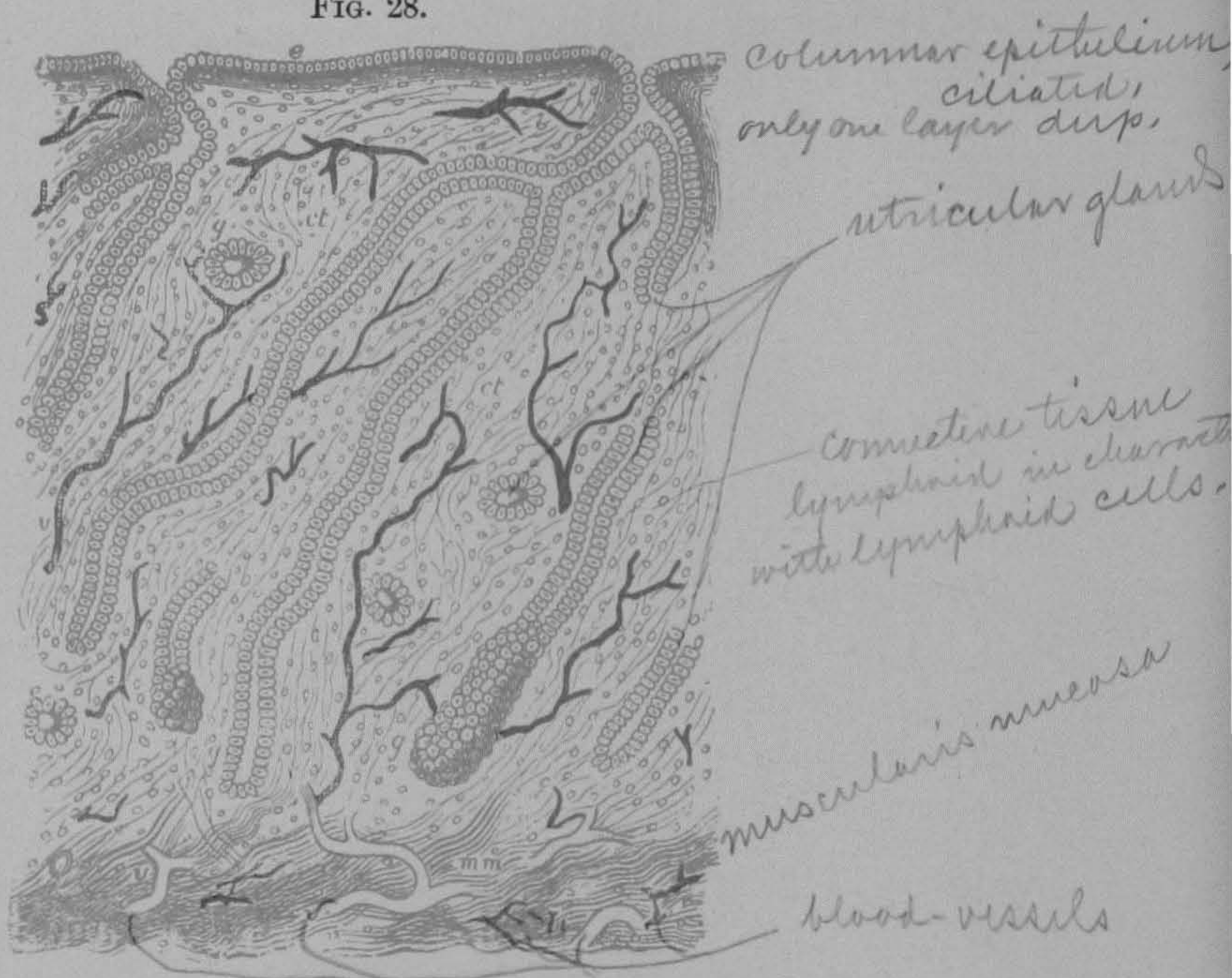
prove that coagula in the menses indicate an abortion is fallacious. At first in normal women the discharge is pale, at the height of the flow, deep red, and toward the last, again pale. In chlorotic women is seen the pale flow, or *menstruatio alba*. It is erroneous to say that the discharge is poisonous, having an injurious effect on living things, as men, animals, and plants. Its mucous element possesses at times an injurious and irritating effect on the male urethra, causing a peculiar chronic urethritis. One can but be impressed by the wisdom of the Mosaic edict forbidding cohabitation with a menstruating woman.

Some women are said to be free from the function of menstruation. Close inquiry, however, usually reveals the fact of a periodic white discharge occurring from their genital organs.

The amount of the discharge varies from four to eight ounces. The recorded observations of extremes vary from two to eighteen ounces. Many conditions cause variations in the amount in the same women, as health, diet, exercise, climate, and sexual excesses: consequently there is nothing fixed. Hippocrates thought the Grecian women shed twenty ounces at each period. Galen averred that the Romans lost eighteen ounces. Meigs, stated fifty years ago that many healthy American women lose twenty-one ounces as the normal and regular elimination. Such amounts must be regarded as far above the average.

The source of the menstrual discharge is the endometrium. It is the consequence of hyperemia of the pelvic organs: the uterus, tubes, ovaries, and broad ligaments. The contraction of the muscular fibres of these organs compresses the veins, retarding the flow of blood and increasing the tension in the capillaries, which rupture and give rise to the appearance of the menstrual flow. Under the influence of this congestion, the volume of the uterus increases a quarter, a third, and sometimes more. At this time the pampiniform plexus becomes so distended that in lean women it can very often be detected by conjoined manipulation. The turgid uterus undergoes a true anorthosis. The cervix becomes larger and softer. The endometrium swells, becoming folded and mammillated. The epithelia become loosened and pushed off. The hypertrophied mucous glands become the seat of an abundant secretion. The lining membrane of the fundus yields the largest part of the catamenial discharge, because of its looser anatomical texture, while the cervical canal, having more resisting vessels, which do not burst,

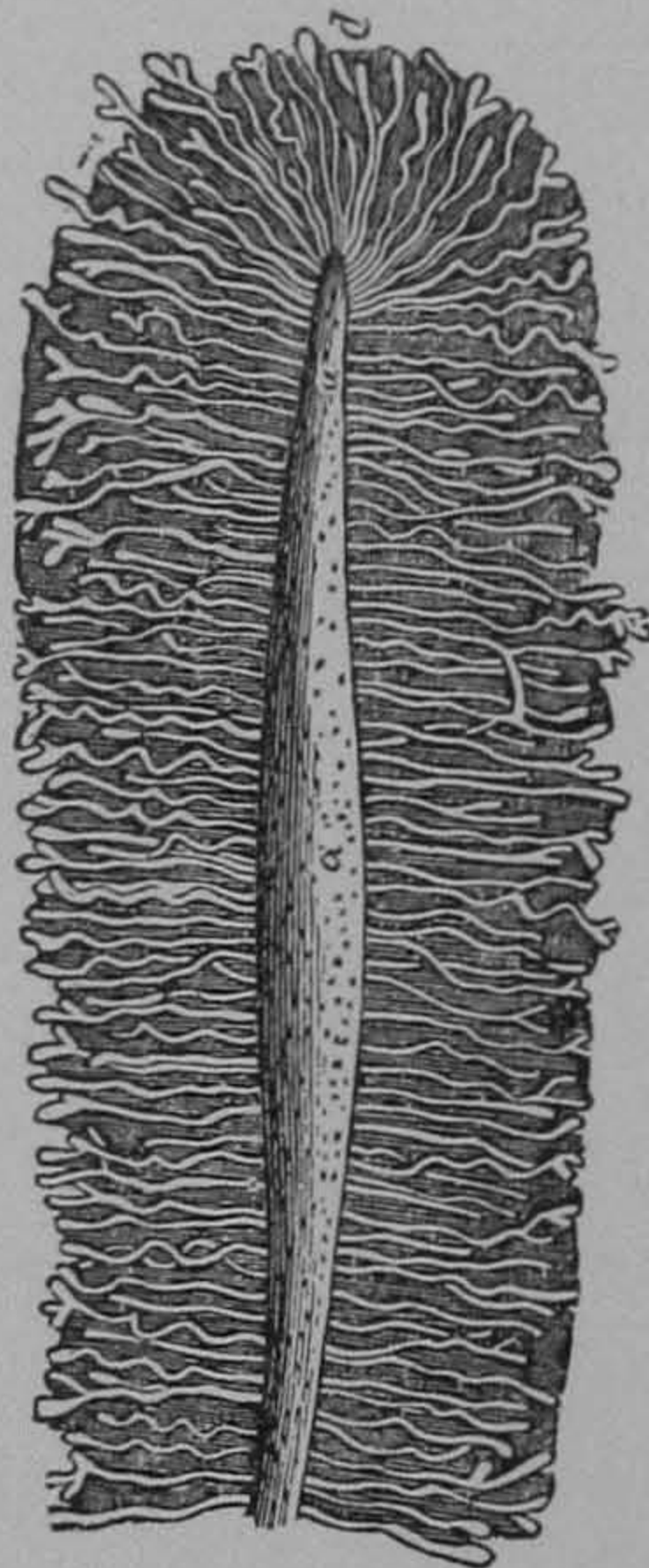
FIG. 28.



Vertical Section through Normal Mucous Membrane of the Uterus: *e*, columnar epithelium, the cilia not represented; *gg*, utricular glands; *ct*, *ct*, connective tissue; *vv*, blood-vessels; *mm*, muscularis mucosæ.

yields a purely mucous discharge. The canals of the tubes are sometimes filled with blood likewise, thus increasing the menstrual flow. The vagina becomes darker in color and the increased vascularity causes the mucous membrane to swell and to shed an increased

FIG. 29.



Menstrual Endometrium.

amount of mucus, having more or less odor. The vulva often becomes tumefied, and is sometimes the seat of mild pruritus, thus explaining the frequently experienced micturition.

The menstrual discharge, composed of blood, mucus, serum, epithelia, and the débris of granular detritus, is a very complex fluid. The endometrium, undergoing rapid degeneration, is shed in patches and shreds. It is called the *decidua menstrualis*. This decidua is developed from the upper part of the uterine mucous membrane, and does not involve the Fallopian tubes or cervix uteri. The shedding and the redevelopment of this decidua are matters involving much speculation. It is generally conceded at present that it is cast off in fragments—sometimes in one or two large pieces. Within a few days it is re-formed, and its shedding again repeated. Should conception occur, the *decidua menstrualis* becomes the *decidua vera*. The *decidua menstrualis* is a very important factor in membranous dysmenorrhea.

The *syndroma menstrualis* includes the attendant phenomena of a menstruation, preceding and accompanying it. They are both general and local.

General.—The entire glandular system is stimulated. The sudoriparous glands secrete increasedly, and in many women the odor of the perspiration becomes characteristically pungent. The bronchial glands secrete more actively. The alimentary secretions are increased in many women to such a degree that they are inclined to eat voraciously, while many other women have diarrhea at the outset of the menstrual flow. Pigmentary deposit under the eyes and on the nipples, genitals, face, and neck is common. An increased deposit of fat beneath the skin in most parts of the body very commonly accompanies the establishment of the genital life of woman, and all the contours become more rounded and graceful. The volume of blood is augmented and cardiac action and arterial tension are increased. Malaise and lassitude supervene. Many girls experience a nervousness bordering upon uncontrollableness. Alternate subjective sensations of heat and cold are often experienced.

Local.—The vulva becomes more prominent and filled out. The uterus and vagina enlarge. Pubic and axillary hair appear. The mammary glands increase in size and become sensitive, the nipples grow larger and darker. The pelvis becomes broader. The mental changes exhibit the occurrence of sexual desires, by the

development of more reserve and the abandonment of hoydenish ways. Increased micturitions, yawnings, cramps, and hiccough are common. Hemorrhages occurring at the same time from other parts are known as supplemental menstruation. Piles, if they exist, are more congested and *nævi* are deeper colored.

Vicarious or *ectopic menstruation*, or *xenomenia*, consists of a bloody discharge from some other organ than the uterus, either with or without a minimum menstrual flow at the same time. When the minimum menstrual discharge occurs, vicarious or supplementary menses takes place from the lungs, the nose, the alimentary canal, or the subcutaneous cellular tissue. Where there is no uterine hemorrhage, the vicarious menstruation may arise from the lungs, nose, alimentary canal, mouth, the surface of a sore, from an erectile tumor, the skin, the conjunctiva, the nipples, the gums, the bladder, the ear, or the stump of an ovarian cyst. The nose is the most frequent seat of vicarious menstruation. In menstrual hemoptysis it is of vast importance to exclude tuberculosis. Occurring from the skin, vicarious menstruation is called "hematidrosis" or "sweating blood."

Retention of menses, or *hematometra*, is an accumulation of the menstrual flow within the uterus, its exit being prevented by a defect of formation of the uterus, cervix, vagina, or vulva. Such cases may be denominated apparent amenorrhea. At first they are regarded as amenorrhea. Much pain characterizes them, and they may be regarded as practically to occupy a place between amenorrhea and dysmenorrhea. Every month the patient presents painful disturbance centering in the hypogastrium. Cephalalgia may occur, with flushing, accelerated pulse, emesis, intestinal and vesical disturbance, and leg pains. In a few days these phenomena subside, only to reappear in about twenty-eight days. The general health at length deteriorates. Sooner or later the abdomen swells. A mild degree of sepsis may occur, commonly hastening to a climax. Soon thereafter the physician is called to investigate, and an atresia is discovered.

Cases of *uterus bicornis* have been reported where one cornu was patulous while an atresia of the other existed, causing a retention of the menses. Decés reported in 1854 such a case wherein rupture and a fatal peritonitis occurred.

Cases of retention may be congenital or acquired. In the former there is some congenital defect or some condition acquired in child-

hood. In the latter the atresia most commonly follows parturition or syphilitic invasion.

The intermenstrual molimen consists of the presence, in some women, of all the discomforts of a menstruation without a bloody discharge, occurring midway between two monthly periods. Many women experience it in full intensity, while others have it in only a slight degree. Oftentimes therapeutic measures are necessary to control these intervening pains.

Menstruation and Ovulation.—Till within a few years these two functions were considered as one, the flow being regarded as the external manifestation of ovulation. At present this view is opposed by many writers. Formerly no one felt disposed to question the accepted theory that the ovaries controlled menstruation. After the removal of the ovaries became a common operation, it was found that nearly all women undergoing this procedure ceased menstruating, and then the conclusion was confirmed that the ovaries presided over the function of menstruation. Later it was observed that occasionally a woman was found who continued to menstruate after oöphorectomy. This led to questionings which threatened to uproot the time-honored theory of the interdependence of menstruation and ovulation. Very soon thereafter one prominent laparotomist boldly announced his belief that the Fallopian tubes controlled the function of menstruation, his argument being, that when the ovaries and tubes were completely removed, menstruation never appeared thereafter. He thus explained that menstruation after oöphorectomy occurred because not all of the tubes was removed. In time it was found that even after the removal of ovaries and tubes cases of menstruation or of monthly flow were occasionally reported; hence the true explanation of the cause of menstruation seemed not to have been supplied. Further speculation followed. The latest theory of causation advanced, is, that neither the ovaries nor the tubes control menstruation. Instead, it is the tubo-uterine plexus of sympathetic nerves which causes the appearance of the menses. Removal of the ovaries does not always annihilate the integrity of this plexus, nor does every case of removal of the tubes; therefore where this plexus remains uninjured the monthly flow will continue to appear. Speculation on this much-mooted question is still rife. The following statements may be accepted as the status of professional opinion on this subject at this time: 1. That ovulation and menstruation are closely associated, but not necessarily

interdependent; 2. That ovulation may occur without menstruation; 3. That conception very often occurs without menstruation.

Pertinent to the last statement may be mentioned the fact that many women go for years without menstruating, while they are bearing children in rapid succession and suckling them. One case, reported in 1879, showed that a peasant-woman married before menstruation began, became pregnant and bore and suckled sixteen children in the succeeding twenty-one years, when, at the age of thirty-six, she menstruated for the first time. Afterward in her widowhood she menstruated regularly. It is claimed that ova are developed in the earliest infancy, during lactation, and even after the menopause. Evidence has repeatedly been adduced, in reported cases, of ovulation occurring during pregnancy. Facts such as these supply irrefragable evidence that ovulation occurs without producing menstruation. The final settlement of the relation existing between menstruation and ovulation is still waiting unassailable demonstration.

Menstruation during Pregnancy.—When a woman is pregnant her menstruation does not appear; that is a rule, to which, however, there are exceptions. The exceptions are atypical: some women menstruate once after conception, some twice, and others oftener. Whether the flux is a pure and simple menstrual flow has perhaps been questioned, but the fact is indisputable that it has appeared promptly on time and has acted just like a genuine menstrual flow. Such discharges of blood have been called “accidental hemorrhages,” and not the typical bloody flow of menstruation. The writer recalls a woman whom he has attended in five out of her six confinements, and in whom the calculation of the time of her delivery was always computed from the date of quickening, it being impossible to determine when conception occurred, because she always had her monthly flow up to the fifth month of gestation.

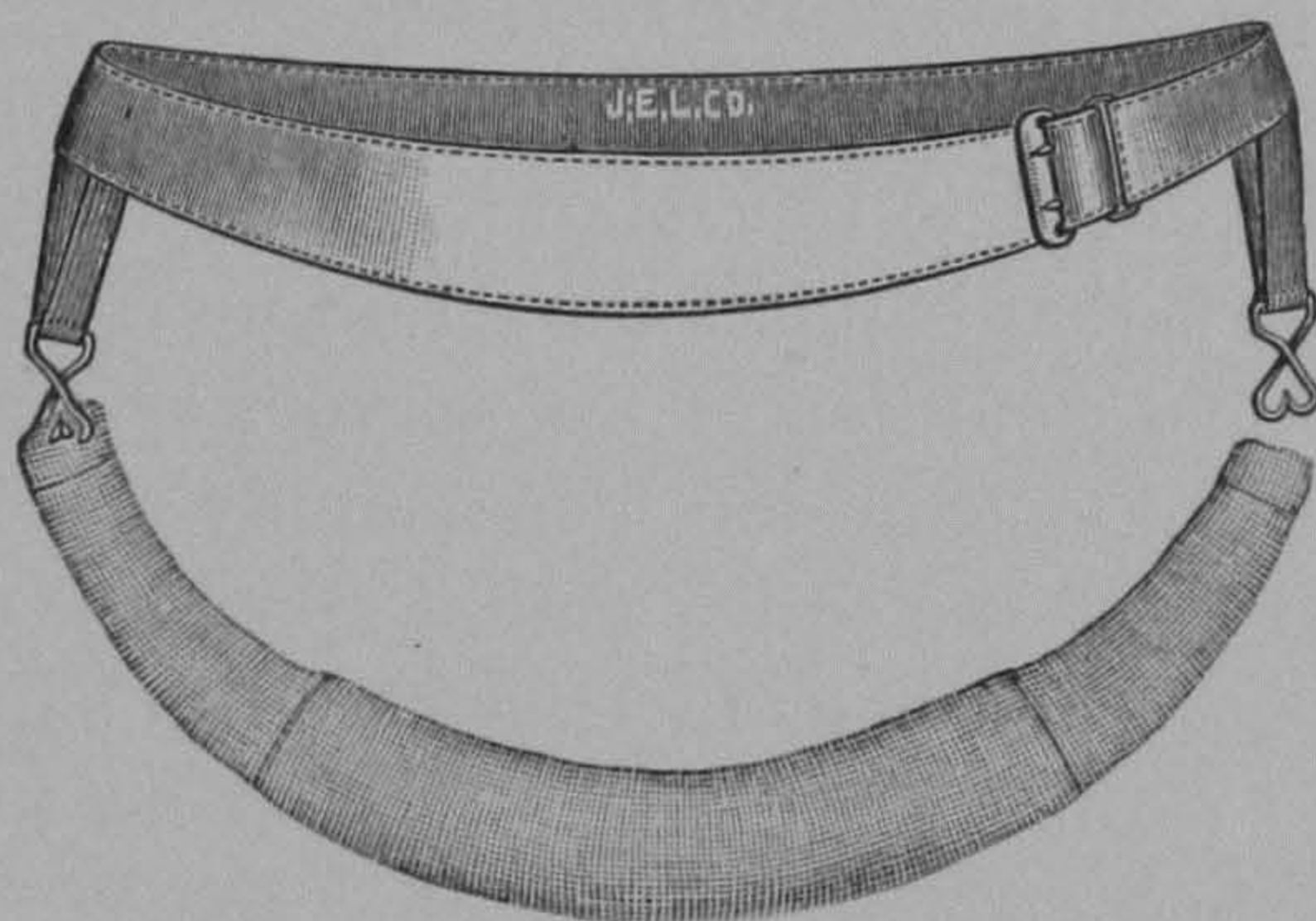
The *decidua vera* and the *decidua reflexa* do not coalesce and occupy the entire uterine cavity till the end of the third month of gestation. Till that time it is easily understood whence arises the flow—namely, from the uninvaded endometrium. After the third month, however, the menstrual flow must arise from the cervical canal, and it will be small in quantity—a fact which comports with observations. These remarks in no way apply to cases of bloody flow in pregnant women who have uterine cancer, an inflammatory or

congested cervix, a polypus or cardiac disease, nor to cases of extra-uterine pregnancy. Cases are related in which patients habitually menstruate only when pregnant. That a woman can menstruate and ovulate after fecundation is shown by superfetation.

MANAGEMENT OF MENSTRUATING WOMEN.

Physicians should instruct mothers to secure rest and quietude for the girl entering on her menstrual experience. Ignorance of this function on the part of the girl is highly culpable in the mother. Many a young woman has injured herself irreparably by attempts at concealing her flow, supposing it to be something disgraceful. Thus, washing in cold water, in brooks and streams, has been done to conceal a supposably shameful condition.

FIG. 30.



Menstrual Pad.

Where it is practicable the young woman should remain in bed two or three days or longer during her menstruation. She is the better for such enforced quietude and freedom from the usual wear and tear of her nervous energy, incident to active youthfulness, at a time when her system is learning to accommodate itself to a new experience. Books, magazines, and pictures can entertain her during these days of restraint. She becomes accustomed to the monthly quietude and accepts it without a murmur. Every woman is better off for such resting, and it should, whenever possible, be secured for girls, during the first year, at least, of their menstrual life. Where it is impracticable, her duties should be rendered as light as possible, and everything in the way of severe exertion should be avoided. It is, unfortunately, only too often the case that no rest nor lessening of arduous duties can be secured to young women. Such women grow old too soon.

AMENORRHEA.

DEFINITION.—Amenorrhea is the absence of the menses in adult women who are not pregnant, have not passed the menopause, or do not suffer from retention of the menstrual flow. It is not, *per se*, a disease. It results from a variety of causes which may affect either the system at large, or the genital organs in particular. Thus we may have amenorrhea resulting from general as well as from local causes.

Complete amenorrhea is the total absence of menstruation, whereas *comparative amenorrhea* is that condition in which the menstruation appears only occasionally. *Primary* or *permanent* amenorrhea is the expression used to describe cases wherein menstruation has never occurred. *Secondary, transitory* or *accidental* amenorrhea has been called *suppressio mensium*.

CAUSES.—To simplify the causation of all amenorrheas the etiology may be reduced to the following:

Normal menstruation requires the following conditions:

1. A normal condition of the nervous system;
2. A normal state of the blood-supply;
3. Integrity of the entire genital apparatus.

With these three conditions in existence a woman will menstruate normally and regularly. Serious interference with one or more of them will produce amenorrhea.

The nervous system presides over all functions of the body. When it is disordered seriously, the functions are in turn seriously disordered. Menstruation must be regarded as a reflex act. Any break or interference in the cycle of the reflex movement may suspend the menstrual flow entirely. Hence amenorrhea may arise through defects in the nervous system.

It is almost unnecessary to state that there must be enough good blood present in the system before a woman can menstruate normally. Its absence is one of the most prolific causes of the cessation of the flow.

That the entire genital system must be in a normal condition to permit menstruation is self-evident. The organs must all be present, free from stenoses and from degenerative structural changes. In enumerating the following causes of amenorrhea it will readily be observed that each bears upon one or more of the three conditions. Therefore, bearing them in mind will enable the stu-

dent and practitioner to arrange the various causes systematically and in order. The popular idea that amenorrhea is productive of dangerous constitutional conditions, as consumption, dropsy, chlorosis, nervous prostration, and the like, will clearly be understood to be a reversal of cause and effect.

Whatever seriously affects the general nutrition may stop the menses temporarily. Thus, an attack of typhoid fever or any other serious disease may cause amenorrhea for several months. Through such illnesses the function of hematosis is impaired, preventing the general nutrition of the system. Thus the nervous system with its infinite reflexes fails to perform all of its functions. Menstruation, doubtless a reflex, shares the neglect whenever the general nervous system is not well nourished. The diseases that most frequently cause amenorrhea are chlorosis and pulmonary tuberculosis. It is produced by the anemia that follows the essential fevers, pneumonia, Bright's disease, diabetes, morphinism, cancerous or malarial cachexia, alcoholism, hydrargyrisms, acute or chronic surgical affections, and the onset of profound syphilitic invasion.

Extreme mental emotion, as fright, grief, anxiety, or great anger, may suspend the function of menstruation. Women anxious, from misconduct, to menstruate, will often fail to do so. Conversely, cases of cure by some sudden emotion have been recorded. Prisoners and insane women are often victims. *Hysteria gravior* is frequently characterized by the cessation of the menses. The emotional amenorrhea of the newly-married is well known. The anxiety of the woman intensely desirous to become a mother will cause a cessation of the menses, often accompanied by tympanites.

Pelvic disorders may cause amenorrhea, as imperfect or rudimentary development; absence of the ovaries or uterus; cystic ovarian degeneration; pelvic peritonitis with its resultant adhesions, deforming and displacing the general aspect and position of the pelvic organs; acute metritis and endometritis, chronic diseases of the uterine parenchyma and parametrium, and hyperinvolution of the uterus following pregnancy.

Girls who, during the period of active development of the generative organs, are urged on in intellectual studies without a sufficiency of active exercise, fresh air and good healthy hygienic surroundings, very commonly suffer from amenorrhea. The *vis nervosa* necessary to physical development is perverted and expended in mental work, resulting in delayed or imperfectly de-

veloped generative organs. Being the last developed, these organs are the first to fail in fulfilling their function.

Great changes in the mode of living often develop this condition. Thus, nurses in training-schools at times cease to menstruate for a period of two to six months after entering upon their new mode of life. There is often a suppression of menstruation following a sea-voyage.

Rapidly increasing obesity with its resultant anemia, insufficient exercise, and luxurious living, are all well-recognized causes of comparative amenorrhea.

One of the commonest causes of acute amenorrhea is exposure to cold during a menstrual period; cold bathing, sitting or lying in currents of cold air, sitting on cold stone steps, and a change of linen, are common modes of such exposure.

Traumatic injuries can also cause this condition. Nearly every physician of experience can recall some case of amenorrhea caused by a blow or injury.

Renal insufficiency is often a cause. Embryologically, the urinary and the generative organs arise from the mesoblast in the ovum. It is an easy matter to understand that interruption to the physiological action of one set of these fundamental organs may lead to the interruption of that of the other. The logical sequence of cause and effect, herein, may be assailed, but the therapeutic proof is brilliant and incontestable. The writer has repeatedly seen cases of comparative amenorrhea, with no other discernible cause than renal insufficiency, corrected by the use of stimulating diuretics.

DIAGNOSIS.—All cases of amenorrhea must be carefully examined, even under complete anesthesia.

First, it should be definitely settled whether the case is primary or secondary. Primary amenorrhea, where menstruation has never occurred, at once leads to questioning whether the uterus, tubes, and ovaries be present in their entirety. If present, it becomes necessary to ascertain whether an atresia of the cervical canal, vagina, or vulva exists. If the prodromic symptoms of a menstruation have never been present, the suspicion of the absence of one or more of the generative organs will strongly obtain. If these prodromic symptoms have been present, repeatedly, at lunar intervals, with no succeeding menstrual flow, the suspicion is at once excited that an atresia exists, and that the menstrual flow is retained within the genital passages.

If the case be one of secondary amenorrhea, the cause must be sought for both within and without the pelvis. Primarily, pregnancy and lactation must be excluded. Within the pelvis there may exist hyperinvolution of the uterus following pregnancy—*i. e.* a senile uterus. Acute metritis, acute endometritis, or an intense chronic metritis may be found. There may be atrophy or cystic degeneration of both ovaries. Pelvic peritonitis may be present. Either one or more of these pelvic maladies may cause an amenorrhea, although the reverse usually obtains in the inflammatory conditions.

Without the pelvis will be found the larger proportion of causes of the cessation of the menses. Interferences with hematosiis through disease and perversions of digestion and nutrition, are the commonest of all causes of secondary amenorrhea. A careful and minute inquiry as to the anamnesis of this condition will lead to the particular line of approach of the causal anemia. This inquiry should be particular, systematic, and exhaustive, because without it the practitioner will only too frequently fail to learn the cause, and consequently to institute the proper treatment.

After securing the completest possible case-history, confirmation thereof will be afforded by a thorough physical examination. Sometimes such an examination will reveal an organic valvular heart-lesion, to the astonishment of the physician. If the investigations are carried no further the treatment will *not* include a slowly-advancing Bright's disease, for example, which has led to the cardiac lesion, and the physician will fail in restoring the menses as, perhaps, have other practitioners in the same case. Such physical examination should include *the entire system*; especially the thorax and abdomen. Only the superficial observer will confine his examination to the pelvis. It is surprising to note how often a hydrothorax or a tuberculous kidney will be found as causative factors in amenorrhea. The urine should always be analyzed. The systematic examiner of his gynecological cases will be astonished at the discoveries oftentimes in his patients—discoveries that have so easily eluded former medical attendants—discoveries that shed an entirely new light in the way of cause and effect.

The PROGNOSIS depends entirely upon the cause. Amenorrhea from the absence of pelvic organs is incurable. Pulmonary tuberculosis and other incurable disorders, as advanced Bright's disease or diabetes, present a gloomy prognosis. In cases of hyperinvo-

lution of the uterus the prognosis is unfavorable. Pelvic inflammations, amenable to treatment, afford a more promising prognosis. In short, only where the cause can be removed is there reasonable hope of restoring the menstrual flow.

TREATMENT.—It must be borne in mind that many cases of amenorrhea exist without producing any kind of disturbance of health. The absence of menstruation is simply a part of a constitutional state. There is no local treatment that will re-establish this function. In patients rapidly progressing along the way of recovery through general treatment, local treatment will often be followed by the restoration of the menses, but this is not *post hoc propter hoc*. The uterus can easily be made to bleed, but this must not be confounded with menstruation. In truth, we cannot predict positively in any given case of amenorrhea that our treatment will restore the menses.

Our patient must be regarded as an entity possessed of a multiplicity of organs, and any and all treatment must include their functions and interdependence. The moment the physician loses sight of this general fact, his treatment becomes the merest empiricism. The fact ought not to be ignored that a remedy given to a woman progressively improving under general treatment, and who is about to menstruate, will unjustly be pronounced an effective emmenagogue when in reality it had nothing whatever to do with the restoration of the menses. It is incontestable that many drugs have thus been endowed with a virtue never possessed.

The cause always determines the treatment. When pregnancy exists, no treatment is to be instituted. Upon this point the practitioner must ever be on his guard. Designing women often consult the physician for amenorrhea when they know that they are pregnant, hoping that something will be done "to bring on their courses" and thus interrupt the gestation. In all cases when in doubt the physician should either decline to give local examinations and treatments, or simple tonics may be administered with the instruction that the patient return in a month. The patient, seeing the object of her desire so far removed, will not call again.

The necessary anamnesis obtained and examination having been made, the point of therapeutic attack will, as a rule, have been exposed. Cases amenable to treatment should be treated ever and always with the one fundamental object in view—viz., to restore the normal physiological balance, and to render waste and

repair equal. To this end it is necessary to restore functions where needed; to increase the activity of the skin, kidneys, bowels, liver; to augment the volume of the blood with hematic remedies; to improve and invigorate the energy of the general circulation by out-door exposure and exercise; to secure the needed daily regeneration of the nervous power by sufficient sleep, and to protect from undue exposure an already enfeebled system by a sufficiency of simple and sensible clothing. A gynecologist doing this sort of work invades the wide domain of the general practitioner.

A daily laxative, like the extract of cascara sagrada, or the compound liquorice powder, at bed-time, and a tonic after meals, as the elixir of iron, quinine, strychnia, and phosphorus, or arsenic, or the mineral acids, will be required in the majority of cases. If renal insufficiency exists, a stimulating diuretic must be added to the laxative and tonic. A good diuretic is the combination of the potassium acetate with digitalis, or a quarter of a grain of calomel, before meals, and the effervescing granular salts of lithia citrate or carbonate, after meals.

With the reconstruction of the general health the menses will usually return where no organic perversion or defect remains.

From time immemorial remedies have been vaunted for restoring the menses. To-day, with an improved knowledge of the pathology of amenorrhea, the number of emmenagogue remedies has become greatly diminished. Iron, manganese, and electricity enjoy the largest amount of favor as possessors of emmenagogue properties. Ergot, rue, savine, and the essential oils are now rarely used to restore the menstrual flow.

The use of iron has been mentioned. The binoxide or lactate of manganese or the permanganate of potassium, in one-grain doses, three or four times daily after food, has found favor as an emmenagogue; it is alleged to determine an increased flow of blood to the pelvic organs. Santonine, in ten-grain doses at bed-time, has been used with success in chlorotic subjects where manganese has failed.

Electricity has been used to restore the menses by a number of gynecologists in the past decade. Its successes and failures do not yield the most unqualified enthusiasm in its use. Faradism may give gratifying results. Static electricity is commended in chloro-anemic girls. The continuous current is used with the positive pole over the lumbar or iliac regions and the negative

pole in the uterine cavity. Thus applied, it often produces an uterine hemorrhage, which is not always a true menstruation. In cases where the uterine changes, leading up to a menstrual flow, are present without apparently sufficient menstrual energy to eventuate in a normal periodical discharge of blood, electricity will undoubtedly precipitate the desired result. Unable to determine positively the presence of such uterine changes in a given case, the use of this agent must more or less be empirical.

Galvanic intra-uterine stem pessaries are oftentimes efficacious in relieving amenorrhea: they consist of alternate beads of zinc and copper arranged on a stem.

Intra-uterine stem pessaries have been successfully employed in restoring the menses. The mechanical irritation and cervical dilatation have doubtless contributed to impel more blood to the uterus and its adnexa.

Guaiacum has been strongly recommended in amenorrhea in subjects of marked rheumatic diathesis. The well-known action of capillary stimulation by this drug doubtless accounts for its efficacy in restoring the flow.

The allegation has been made that as strychnia favors muscular contractility, and thus can aid in rupturing the Graafian vesicles most advanced toward maturity, it favors ovulation. Its use as an emmenagogue in amenorrhea has been favorably reported.

Sodium salicylate has been successfully employed because of its power to produce pelvic congestion.

Oxalic acid, in half-grain doses three or four times a day, has been highly recommended and is very effective. It has been known to bring about a miscarriage when accidentally given during pregnancy.

Indigo has recently been very highly recommended in the treatment of this condition. It cured 13 out of 14 cases; the fourteenth was a failure because it was a case of pregnancy. Under its use the os uteri becomes soft and patulous, admitting the index finger.

The latest advocated method of treatment of amenorrhea is by psychotherapy. Every month brings reports of cures by hypnotism. These cures are obtained by the induction of the hypnotic state and subsequent suggestion. It is alleged that results truly marvellous have been obtained with the expectant attention induced by suggestion. In the present chaotic condition of the entire subject of psychotherapy, the writer is content with barely calling attention to hypnotism in this connection.

Marriage has been recommended as a suitable stimulant in some cases of amenorrhea. In view of the fact that we have no positive data upon which to base a prognostic success, such advice is questionable; its failure would entail mental misery on both parties to the marriage. Whenever we are consulted in regard to the marriage of an amenorrheic woman, a thorough pelvic examination is imperative. Should such a woman marry upon medical advice without an examination, she may discover, when too late, that she is unfortunately deformed, by the lack of a normal development of the generative organs. Such an eventuation has led to more than one tragic termination. It has also caused tribunals to declare nullity of marriage on the ground of error as to the sex of one of the parties.

Amenorrhea is merely a symptom of some general disease, except in those rare cases of malformation, and as such, requires no local nor constitutional treatment directed solely to the pelvic organs. In the vast majority of cases it causes no trouble whatever, the patient applying for treatment simply for the reason that the usual flow has failed to appear. The mere absence of the menses should be ignored, especially when no other symptoms arise.

MENORRHAGIA AND METRORRHAGIA.

DEFINITION.—The first of these two words is used to express an excessive menstruation; the second, for a flow of blood not only at the menstrual time, but between menstruations. Neither condition is a disease; both are symptoms of some well-defined pathological condition. The latter may be profuse or moderate. The patient who menstruates too freely is said to have menorrhagia, while one who sheds blood between the menstrual periods is said to have metrorrhagia. Women differ in the amount of the normal flow. What would be normal flow in one woman would be hemorrhage in another; accordingly, whatever the amount of flow a woman may have in health, during the first few years of her menstrual life, may be regarded as normal for her. In this particular each woman is a rule unto herself.

FREQUENCY.—Both of the above disorders are commonly met with. They may arise from many varying conditions. Any reliable attempt at the expression of the percentage of women who have menorrhagia or metrorrhagia cannot be made.

CAUSES.—The numerous lesions causing too great a discharge

of blood from the uterus demand most careful inquiry for their rational treatment. Each case of hemorrhage should be investigated independently for its cause. Indeed, all successful treatment will depend upon the finding of the cause. Frequently the same cause produces the two conditions. When the cause is an aggravated one it may occasion the continuous discharge of blood—metrorrhagia; during its process of disappearance, under treatment, it will be found that the metrorrhagia may be converted into menorrhagia, and that, in turn, may give way to the normal menstruation when the cause is entirely removed. It will thus be seen that it is a particularly difficult matter to differentiate between the causes of menorrhagia and metrorrhagia.

All causes of uterine hemorrhage may be classed under two heads, general and local.

The *general* causes involve general conditions, and are the following: purpura, plumbism, severe icterus, scorbutus, Bright's disease, the spanemia of obesity, phosphorus-poisoning, malarial poisoning, the early stages of tubercular invasion, cardiac disease, and oftentimes, plethora. Hemorrhage may occur in the progress of an acute fever. In the majority of the above-named general causes, the plasticity of the blood is so diminished that clot-formation is seriously impaired, and for this reason the loss of blood continues indefinitely. Such patients very often have periods of amenorrhea of indefinite duration, alternating with hemorrhages.

The *local* causes may be reflex or direct. In the former category actual disease may exist or be absent. Among these cases may be classed the hemorrhages incident to puberty and the menopause, to the first intercourse, to lactation, and to any powerful emotion. The direct causes of all menorrhagias and metrorrhagias are the ones that demand our attention in the vast majority of all hemorrhages. They include nearly every disease of the uterus and its appendages, as metritis, endometritis, subinvolution, granular cervix, retained secundines, retro-displacements of the uterus, fibroids, cancer, polypi, pressure outside of the endometrium, as from fibroid tumors and fecal accumulations, ovarian tumors, chronic ovaritis, chronic salpingitis, and acute pelvic inflammation.

Attention is called to another form of hemorrhage from the uterus, occasionally seen, where pregnant women shed blood from the second to the sixth month without miscarrying, and apparently without endangering the life of the child. Speculum examination

carefully made fails to reveal the cause. The gestation is not necessarily interrupted, especially under conservative treatment, if prolonged rest and quietude and careful abstinence from too active curative measures be observed. Women who have an habitual flow at what would be the menstrual period if they were not pregnant are not included in this class. The hemorrhage comes on at any time, and persists indefinitely, from a day to weeks, without interruption, apparently uninfluenced by anything that can be done.

PATHOLOGY.—From the conditions enumerated above it will be seen that whatever lesion induces too free a flow of blood to the uterus may become the cause of hemorrhage. Any one of these disorders existing alone may produce the flow; with several coexisting conditions the flow is still more certain to appear. Occasionally violent hemorrhage will be witnessed from the uterus, when a careful examination will fail to determine the cause.

PROGNOSIS.—If the cause can be found and removed, the prognosis is good. If the cause cannot be found, the treatment must be symptomatic and the prognosis uncertain. If the cause can be ascertained, but cannot be removed, its natural history will determine the prognosis.

Many conditions result from these hemorrhages. We thus have general anemia, sterility, extreme emaciation, neurasthenia, wrecking of the health, and occasionally, death.

TREATMENT.—The treatment of uterine hemorrhage is determined by the cause. It is not always possible to determine the cause; in which case it is necessary to treat the hemorrhage empirically. The treatment of cases when the causes are known will be taken up in their order.

When the causes are general, general treatment is required without interruption between the hemorrhages. For the treatment of these general causes the reader is referred to a work on general practice; therefore no attempt will be made to direct their management.

When a well-defined local cause is discovered, its treatment should be outlined according to the directions given for treatment in the appropriate article elsewhere in this volume. Thus the treatment of metritis, subinvolution, cancer, chronic salpingitis, retained secundines, and fungosities of the endometrium will be found fully described under their appropriate headings.

For the emergency of hemorrhage the number of remedies rec-

ommended in the past is very large. First of all, the patient should be put to bed, and compelled to remain in the horizontal position, with the hips and lower extremities elevated. The more severe the hemorrhage the more imperative is this measure. It will oftentimes be found that a hemorrhage nearly stopped will be brought back in all its fury upon the patient arising from the bed to answer, for instance, the calls of nature. Cold applied to the lumbar and sacral regions contributes to diminish and check hemorrhages. In very severe cases of uterine hemorrhage, cording the arms and legs close to the body will be found of service: by this means large volumes of blood will be kept in the extremities for a sufficient length of time to permit clotting of the blood in the openings of the blood-vessels within the uterus.

Of remedies used internally, the following may be mentioned: ergot, in twenty-drop doses, frequently repeated by the stomach, or in drachm- or two-drachm doses, with a drachm of deodorized tincture of opium by the rectum; ergotin given in pill form, or cannabis indica given to the point of producing mild hallucinations.

Various vegetable astringents containing tannic and gallic acids as their base, as catechu, kino, and hematoxylon, have been recommended.

The mineral astringents like alum, iron, and lead have also been used.

In the moderate, persistent, erratic hemorrhages occasionally observed in parturient patients, digitalis is perhaps the best remedy that can be suggested. It operates by increasing the arterial tension, thus diminishing the amount of blood going to the part suffering the hemorrhage. Ergot in such cases is to be avoided for fear of interrupting the pregnancy. Hydrastis canadensis, quinine, hamamelis, strychnine, and especially atropia, are remedies that have been used to control hemorrhage in the non-pregnant uterus. Atropia is administered in doses of $\frac{1}{100}$ of a grain three times daily for several days, or in smaller doses if the patient be very susceptible to the drug. These drugs are all alleged to exercise an influence upon the uterine muscles. Oil of erigeron and oil of cinnamon are at times effective where other remedies fail.

Mineral acids have been recommended. The dilute sulphuric acid is the safest and best.

Treatment between Periods.—Women anemic from hemorrhage must be treated with tonics, protected from fatigue, and placed in the

best general hygienic conditions regarding rest, fresh air, and sleep. Due attention should be paid to the secretions and excretions. The marital relations are to be avoided.

In very severe cases of hemorrhage, where the action of medicines cannot be awaited, immediate resort to mechanical measures is imperative. Rapid dilatation of the cervix and tamponing the uterine cavity with iodoform gauze are usually efficient in these cases. Occasionally, in especially spanemic patients, an oozing hemorrhage will continue through the iodoform-gauze tampon—a thing that is not likely to occur frequently, but when it does is an indication of too loose packing.

Hot vaginal injections oftentimes control hemorrhage. They should be exceedingly hot and their use protracted. The effect of the heat is to produce a stimulation of the vaso-motor constrictor nerve, thus narrowing the blood-vessels contributing to the hemorrhage.

It has been recommended, in cases of profuse menorrhagia occurring in slender, anemic women, to resort to tamponing the vagina at each menstrual period for several consecutive months—a proceeding which does not stop the menstrual flow entirely, but which seems to do away with the excessive loss of blood. Should the amount of blood still be excessive and exhausting in spite of the vaginal tamponing, no hesitation need be entertained in resorting to uterine tamponade. Under this treatment women frequently regain their color, strength, and flesh.

In cases of hemorrhage from lacerated cervix or cancer in the cervix uteri, the use of the persulphate of iron, with iodoform or boracic acid, is an excellent treatment. Where these fail vaginal tampons may be relied upon.

DYSMENORRHEA.

DEFINITION.—Dysmenorrhea means painful menstruation. Normal menstruation is painless. The mild degree of discomfort and uneasiness experienced by many women is not included in this disorder. Many women suffer pain during menstruation upon moving around, but are free from it while lying down. Women experiencing mild suffering only can scarcely be included under the head of dysmenorrheic patients.

DESCRIPTION.—The different manifestations of pain in dysmenorrhea are very numerous. Some women experience pain until the flow is fully established, when all suffering ceases. Others have the

prodromic suffering, which extends through to the second day of the flow. Others have the prodromic pain and that of the first day or two, to be followed by complete relief for a time, when it will again reappear during, for example, the last day of the flow. With some the pain occurs suddenly with the flow, extends through the whole period, and gradually disappears as the flow ceases. Again, other women have painful menstruation every second month, having no pain at the alternate period.

The *seat* of the pain varies in different women. In the vast majority of cases, the pain occurs in the hypogastric region; in other cases it invades both the hypogastric and iliac regions. In still other cases it is circum-pelvic, starting from the lumbo-sacral region. Still other women have the pain located in one iliac region only. In severe cases it extends down one or both legs or up to the waist, or even to the axilla.

In the vast majority of cases of dysmenorrhea the pain is not severe enough to demand the attention of the physician, quietude and domestic remedies sufficing to relieve the suffering. Some cases are so severe as to demand medical interference. In the severest cases the general health is undermined, the nervous system yielding the most urgent manifestations, such as *hysteria gravior*, mania, and even epilepsy. One case came under the writer's observation many years ago, where it was necessary to perform artificial respiration for several hours during the flow. Some cases are so intractable as to defy remedial measures, necessitating the operation of oöphorectomy.

A certain phenomenon occasionally observed has been denominated intermenstrual dysmenorrhea. It is characterized by spasmodic pains in the iliac regions, occurring in the interval between the menstruations. It is only occasionally met with, is rebellious to treatment, and has been so severe as to demand the removal of the ovaries for its abolition.

In one form of dysmenorrhea the pain is slight in the beginning, and progressively increases until it reaches a climax, suddenly terminating in a gush of blood from the vaginal orifice. It is followed by a period of comparative relief from pain, which, in a few minutes or an hour or two, is succeeded by another similar paroxysm of suffering. This variety is seen in many cases of uterine flexions. It has been characterized, perhaps erroneously, as tubal colic.

VARIETIES AND PATHOLOGY.—Writers have described many varieties of dysmenorrhea. While the tendency of this sort of teaching, unqualified, may be misleading, it is perhaps best to subdivide the subject into varieties for convenience of description. Above all, it must be borne in mind that dysmenorrhea is always a symptom of some pathological condition which utterly precludes the possibility of routine treatment. Indeed, any attempt to treat all cases alike is the merest charlatanism. The names given to express the different varieties of dysmenorrhea imply the leading pathological conditions. It must be understood that one or two, or even three varieties of causes may be found in the same patient; therefore it is possible for one patient to have one or more varieties of dysmenorrhea, just as any person may have one or two or three different kinds of headaches. It will be seen that the completest examination of each case is absolutely necessary in order to intelligently institute treatment. Like amenorrhea, menorrhagia, and metrorrhagia this condition is merely a symptom, not a disease. The following varieties have been described by authors: 1. Neuralgic; 2. Congestive; 3. Mechanical; 4. Ovarian; 5. Membranous.

1. NEURALGIC.—This variety may not be associated necessarily with any disease of the pelvic organs. It manifests itself chiefly in the class of patients of nervous or neuralgic temperament.

CAUSES.—Any constitutional condition which tends to develop the neuralgic disposition, as anemia, chlorosis, gout, rheumatism, syphilis, malaria, and the like, will precipitate neuralgic dysmenorrhea. This form of the complaint includes cases from the very lightest to the very gravest variety.

2. CONGESTIVE.—During menstruation the pelvic organs are congested. When it is normal no pain exists. When there is a state of chronic inflammation, or distorting and deforming adhesions from pelvic inflammation, the normal congestion becomes an abnormal one, and pain results, constituting what is known as congestive or inflammatory dysmenorrhea. Even in conditions of chronic endometritis the menstrual congestion is sufficient to produce this form of dysmenorrhea. The various forms of tumors, as fibroids and polypi, may also constitute a cause.

This form of the malady is seen most frequently in women who have borne children or have aborted, and in women who began the menstrual life and maintained it for a given length of time without

pain. It is the variety which is nearly always traceable to some disorder of which the patient will give the history.

3. MECHANICAL.—In this class of cases there is some obstruction to the ready outflow of the menstrual fluid. It can come from a great variety of conditions. It may occur from stenosis of the cervical canal, produced by any mechanical cause, as severe inflammation, pressure from tumors in the neck of the uterus, or from excessive use of caustics. It may arise from flexion or version of the uterus. It may spring from an intra-uterine polypus acting as a ball-valve at the internal os, or from a stricture of the vagina, or from an imperforate hymen.

In this variety the commonest characteristic symptom is the paroxysmal pain accompanied by a gush of blood from the genital passage. However, the pain is by no means always paroxysmal.

4. OVARIAN.—In this class of cases a careful examination will almost always discover some enlargement or tenderness of the ovaries, and reveal a condition which is called chronic ovaritis. As chronic ovaritis is never wholly free from some pelvic peritonitis, it is easy to understand how the congestion of the menstrual epoch will produce a great amount of pain both before and during the flow. By careful examination through the conjoined manipulation, one or both ovaries can be detected prolapsed somewhat, and perhaps nearer to the uterus than is normal. They are characterized by their increase in size and by their excessive tenderness. The inaccessibility of these organs to treatment indicates the extremely grave prognosis for such patients.

5. MEMBRANOUS.—Patients of this class shed, with the flow, a membrane which is the *decidua menstrualis*. This membrane, when whole, consists of a sac representing the cast of the triangular cavity of the body of the uterus with its three openings, of the Fallopian tubes and the os uteri. It may come away whole or in the shape of shreds and fibres. Microscopically, it is found to be what might be denominated hypertrophied *decidua menstrualis*. The blood-vessels are easily seen increased in size, capacity, and number; the interglandular substance is greatly increased; there is a great development in the utricular glands, whose mouths are visible even to the naked eye. Pregnancy is excluded by the entire absence of the chorionic villi.

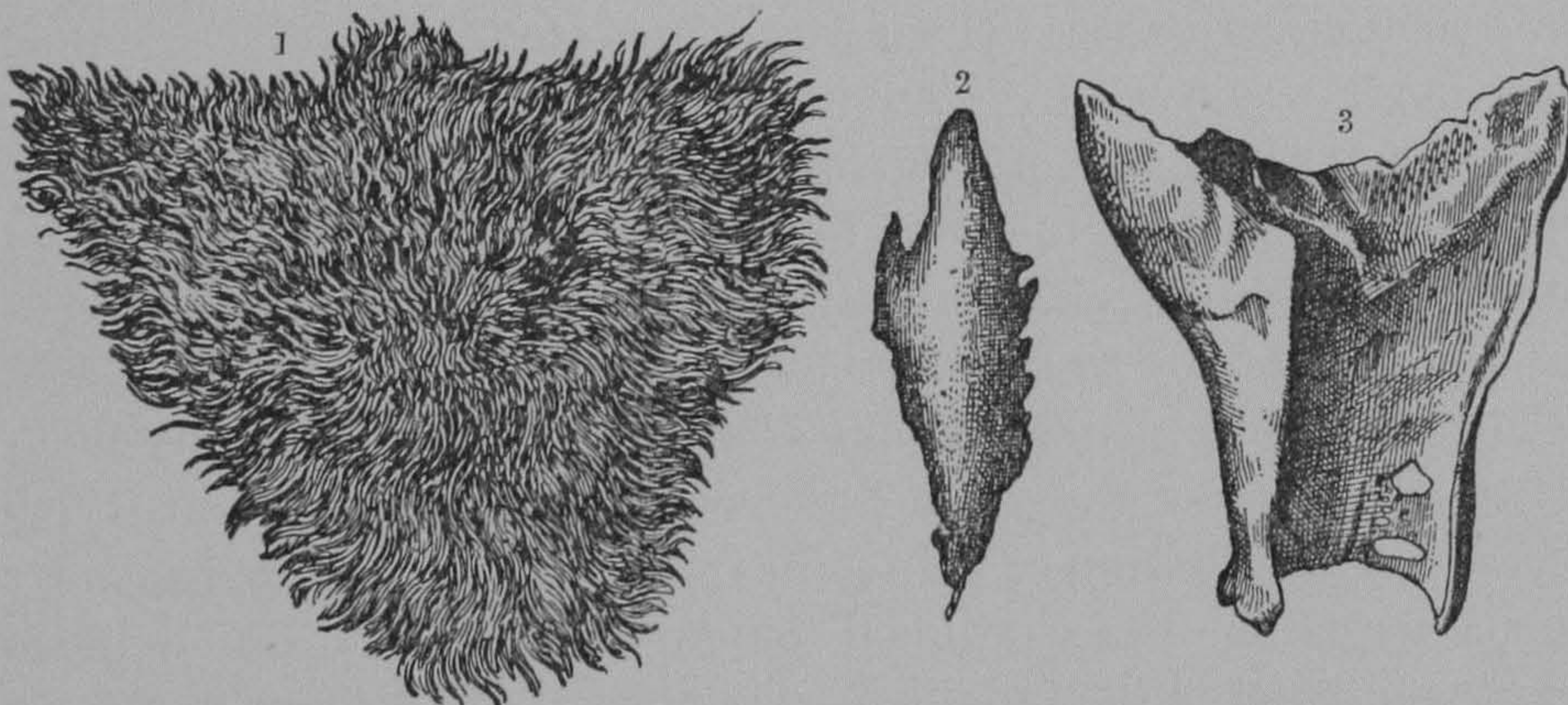
The pathology of the dysmenorrheal membrane has received a vast amount of attention. Many varying theories have been advanced,

maintained, and abandoned. The theory which is, perhaps, the most favored to-day, is that it is an exaggeration of a physiological process with a varying pathogeny. In other words, the membrane is regarded as an exaggerated *decidua menstrualis* of inflammatory origin. It would seem that the therapeutic proof of this theory affords the most convincing argument. Whatever cures the accompanying endometritis in cases of membranous dysmenorrhea is certainly, to-day, its most reliable and satisfactory treatment.

SYMPTOMS.—Pain is the one symptom characterizing every variety of dysmenorrhea. A few of its variations are so greatly pathognomonic that observation of them is sufficient for a correct diagnosis.

In the neuralgic variety the undulatory character of the pain is always pathognomonic. In addition to this characteristic of the

FIG. 31.



Membranes of Membranous Dysmenorrhea. 1. Membrane viewed under water; 2. Small piece of membrane; 3. Smooth cast of uterus.

pain, a marked degree of hyperesthesia of the cutaneous surface of the lower abdomen will always be found present. The coexistence of neuralgia in other localities and the identification of Valleix's painful points will facilitate the diagnosis. The pain in this variety shows itself before the flow has been established, and disappears as soon as it comes on, or continues through to the end of the flow, coming and going with no apparent cause. It is in this form of dysmenorrhea that we find the largest number of incoercible cases. The pain may become so agonizing as to make the patient delirious; its severity before, during, and after the flow may be so demoralizing to the physical strength of the patient as to ruin her health

entirely. More cases of destruction of the general health occur in this variety than in all the others combined.

The symptoms of the *congestive variety* are observed chiefly in patients who have previously menstruated painlessly. The pain, coming on suddenly, is very severe in this class of cases, seems to be confined to the pelvis, and is accompanied by a diminution or cessation of the discharge. The constitutional symptoms are always marked: the pulse is increased in frequency, the temperature elevated, the skin hot and dry, and the eyes suffused. There is severe headache, occasional delirium, marked diminution in the renal secretions, and general restlessness. In this variety of the complaint the patient usually experiences pain upon walking, is easily fatigued, has leucorrhea and an irritable bladder, not only at the time of the flow, but during the intermenstrual periods. There is a marked contrast in this class of patients to the women suffering from neuralgic dysmenorrhea. The pelvic malady seems never to leave them between menstruations, whereas women who suffer from a purely neuralgic dysmenorrhea experience trouble chiefly at the time of menstruation. The syndroma of this form of the disease can readily be perceived by bearing in mind the fact that the uterus possesses a pathological congestion, not only between the menstruations, but also throughout all the menstrual flow.

The symptoms of the *mechanical or obstructive form* of dysmenorrhea are peculiar and very characteristic. What has been styled *uterine colic* is the kind of pain most frequently encountered. After the menstruation has continued for several hours, and some blood has accumulated in the fundus uteri sufficiently to distend it, uterine contractions are set up which increase in intensity, until the accumulated blood is forced out of the uterus in a gush. Then the severe pain ceases for a time until the distention from re-accumulation occurs, which is followed by another series of uterine contractions, terminating in the expulsion of the blood. The obstruction to the outflow of the blood may exist in the cervical canal, in the vagina, or the vulva. When the obstruction exists in the cervical canal, the uterine contractions will expel a small clot of blood, followed by a gush, affording complete relief from suffering for the time being. The symptoms are so marked that the diagnosis of this form can be made without any hesitancy, as a rule. The physician must be on his guard, however, not to be deceived by the accumulation of the menstrual fluid in the vagina, and its

periodic expulsion in gushes, according as the patient assumes various positions, or the cul-de-sac becomes filled.

The symptoms of *ovarian dysmenorrhea* are characterized by a period of prodromic suffering extending over several days. The pain is dull in character, confined to one side when originating from one ovary only, extends around the pelvis, over the nates, and down the thighs, and is peculiarly liable to be accompanied by an invasion of the general nervous system and depression of spirits. Painful and tender mammary symptoms often occur in this variety. Inter-menstrual dysmenorrhea is observed more frequently perhaps in this than in any other form of the complaint. Sometimes it occurs on the ninth, sometimes on the fifteenth, sometimes on the twelfth, and sometimes on the seventh day after cessation of the menstruation. Occasionally it is seen only after every second menstruation. A pelvic examination often reveals an enlarged, tender, and prolapsed condition of one or both ovaries. It must not, however, be supposed that in all cases of enlarged and tender or prolapsed ovaries, ovarian dysmenorrhea will be found. Not every case of ovarian dysmenorrhea presents a detectable pathological condition of the ovaries.

In membranous dysmenorrhea the pains usually begin with the flow. After being ushered in they increase as the flow progresses, until the type of veritable labor-pains is reached. During the repetitions of these contractions the os uteri dilates, and the membrane is shed in its entirety or in shreds from the vaginal orifice. Usually the pain ceases at this time; then ensues a moderate menorrhagia, which soon disappears. This is followed by a purulent or sero-purulent discharge, continuing indefinitely from a few days up to the ensuing menstruation. Sterility is the rule in this class of patients, and the women are of an extremely neurotic tendency. The one characteristic of membranous dysmenorrhea is the membrane.

DIAGNOSIS.—The diagnosis of *neuralgic dysmenorrhea* involves the consideration of the entire nervous system. The neuralgic temperament or diathesis is unmistakably present. Valleix's tender points are easily determined. The undulating characteristic of the pain is always present. The pain is not like labor-pains, as in membranous dysmenorrhea, and the suffering is not continuous, as it is in the congestive variety. There are no constitutional disturbances between the menstruations; there are no signs of endo-

metritis, of ovarian or perimetritic disturbances. The pain is habitual, and not paroxysmal. Between the menstruations there are no pains, and no leucorrhea, and the patient appears to be in ordinary good health. In the severer forms invasion of the general health often occurs, presenting, in degrees of varying intensity, neurasthenia, hysteria gravior, delirium, mania, or epilepsy.

In the *congestive variety without* a conspicuous endometritis or general metritis the attack of pain is sudden. There is an absence of constitutional disturbances, and the pain ceases after the flow stops. In the congestive variety *with* a marked uterine inflammation there is always constitutional disturbance, such as rise of pulse and increase of temperature, and the patient is never wholly free from pelvic suffering between the menstruations. This characteristic is in marked contrast to the dysmenorrhea from neuralgic origin.

The diagnosis of the *mechanical* or *obstructive* form of dysmenorrhea is made chiefly from the expulsive and paroxysmal occurrence of the pains. A physical examination is necessary to complete the diagnosis and to discover what is the underlying pelvic condition present. Conjoined manipulation will easily disclose the presence of anteflexion. Tumors in the cervix may easily be discovered by the finger. Deflections of the uterine canal can be demonstrated by the use of the sound. Should the obstruction exist in the vagina, it will soon become apparent upon a digital examination. Occasionally it will be found that the only obstruction existing in the uterine canal is an unusual reduplication of the lining membrane of the uterus at the internal os, and a spasmodic constriction of the muscular fibres at the opening.

PROGNOSIS.—Dysmenorrhea has usually a favorable prognosis. In the vast majority of cases of the neuralgic variety the prognosis is entirely favorable. Occasionally it will be found that an incoercible case of neuralgic dysmenorrhea will be encountered, wherein all medical treatment will prove utterly unavailing. In such cases there seems, unfortunately, to be but one cure, and that is to induce artificially the change of life by the removal of the ovaries. Where there is one case demanding resort to this operation, there are many thousands that need nothing of the kind.

Of the congestive variety, the prognosis is almost always favorable, the cure of the patient depending upon the success of the treatment instituted for the inflammatory condition present.

The prognosis of cases of mechanical and obstructive dysmen-

orrhea depends wholly upon the success of the treatment instituted to abolish the obstruction.

In ovarian dysmenorrhea where organic degeneration of the ovaries exists, the prognosis is favorable only in case of removal of these organs. Where such degeneration is absent, the treatment of ovarian congestion or of ovaritis, when successful, will cure the dysmenorrhea.

Membranous dysmenorrhea presents a not very favorable prognosis in the greatest number of cases. Occasionally patients will be seen whose general health is so degenerated that all treatment of this form of the malady proves utterly fruitless.

TREATMENT.—The variety of the dysmenorrhea always decides the treatment. No case is intelligently treated wherein an attempt at satisfactory diagnosis is not made. In general, it may be said that the routine treatment of any form of dysmenorrhea by means of the preparations of opium and diffusible stimuli, is to be condemned. There is no question that opiophagists and drunkards have been made by this line of inconsiderate treatment. This assertion may be disputed, and is disputed, by some physicians, but their observations must be considered too limited to be reliable. This general statement may be made concerning the use of these two remedies in dysmenorrhea: He who is compelled to resort frequently to opium and stimulants, must be considered devoid in diagnostic ability, and consequently ought not to be entrusted with the management of such cases.

Neuralgic Variety.—The treatment of this form may be subdivided into general and specific treatment. In the beginning of the treatment the physician must carefully ascertain the general state of the patient. If she be of the rheumatic, gouty, or syphilitic diathesis, this must be met by the usual remedies; in other words, the physician must treat assiduously the systemic condition which seems to predispose to the development of this neuralgia. The daily free administration of laxatives and diuretics is advisable. Should a local cause for the constipation be found in the anus or rectum, it should be removed by surgery or otherwise. Free daily evacuations of the bowels are indispensable to the restoration of the physiological balance of these patients. Constipation may lead to fecal anemia. In women thus affected neuralgic dysmenorrhea is extremely common. Rheumatism should be treated with colchicum, guaiac, the salicylates, and the preparations of potash. Gout

requires the administration of minute doses of calomel, as one-twentieth of a grain three times a day, and with the citrate of potash or lithia. Syphilis calls for mercury and iodides. An anemia demands tonics. An underlying fermentative dyspepsia, which may be one source of degenerated general health, requires gastric lavations, creasote, glycozone, and other antiseptic remedies.

When the first consideration of the treatment of the patient—namely, constitutional treatment—has been provided for, then attention should be turned to remedies specially addressed to the relief of the suffering. In this class of patients purely antineuralgic remedies oftentimes yield most brilliant results. Phenacetin and antipyrine will relieve a large number of these cases. Many remedies have been recommended to be given a week before the flow comes on, to prevent the pain arising in neuralgic dysmenorrhea. Apiol has been given as a preventive of these pains, five minims in a capsule three times a day for one week before the flow appears. Five drops of the tincture of pulsatilla, in water, three times a day, are similarly recommended. If given for a week beforehand, guaiac or the sodium salicylate will oftentimes prevent an attack of neuralgic dysmenorrhea in women of the rheumatic diathesis. For the treatment of the pain, when it has occurred, auxiliary measures should not be neglected, such as rest and the application of warmth to the skin. The best results are perhaps yielded by ten or twenty grains of antipyrine or phenacetin, repeated hourly, until two or three doses, if necessary, are given. The best effect from these remedies is obtained when the patient lies with closed eyes in a quiet, darkened room for half an hour after taking them. Usually one dose of phenacetin is sufficient; sometimes a second or third dose is necessary. The well-known depressant cardiac action of the remedy can best be anticipated, if necessary, by the administration of twenty or thirty drops of the tincture of digitalis. This remedy, digitalis, is occasionally necessary. Nitro-glycerin and amyl nitrate, given until flushing arises, oftentimes produce excellent results. Six-grain doses of the oxalate of cerium every hour have been recommended. The tincture of cannabis indica, in twenty-five-drop doses every three hours, given even to the production of hallucinations, is oftentimes effective. Chloral hydrate in ten-grain doses, repeated hourly until three or four doses have been given, will often relieve pain. Where the spasmodic element appears to exist,

as will be indicated by a great diminution of the flow, the solanaceæ will be extremely useful. Thus belladonna, hyoscyamus, or stramonium given to the production of mydriasis is often very effective.

A general hot bath, from twenty to thirty minutes, frequently produces great relief.

Occasionally the paroxysms of pain are so terrible that we are justified in using hypodermic injections of morphine and atropia, but they should always be the last resort.

The treatment of the patient, in cases so severe, should be most assiduous and careful, to ascertain if it be not possible to avoid the further use of opium. Very rarely a case of incoercible dysmenorrhea, mentioned above, will resist the treatment—even that of hypodermic injections—when the removal of the ovaries for the artificial induction of the menopause will be imperatively demanded.

The Congestive Variety.—Herein the treatment must be directed by the diagnosis of the cause of the congestion. If it be due to the plethora of a retro-displacement of the uterus, the organ must be properly sustained. A wool tampon soaked in glycerin, adjusted with the patient in the genu-pectoral position, will suffice to thrust the fundus forward into its proper place, where the organ can empty itself satisfactorily. If upon examination the uterus is found to be decidedly congested, as shown by the distended condition of the blood-vessels or by the purple appearance of the cervix, leeches or scarification will suffice to relieve. Should the attack be precipitated by catching cold, the use of the saline cathartics, a diuretic, and a diaphoretic will be indicated. When the congestion arises from the pressure of an extraneous growth, either within or without the uterus, the case will be cured only upon the removal of the cause.

Mechanical or Obstructive.—The best-recognized treatment of ordinary cases of cervical constriction, whether acquired or congenital, is forcible dilatation. If this be decided upon, the patient should be thoroughly anesthetized, placed in the lithotomy position, the cervix exposed by the use of retractors, seized with the vulsellum forceps and drawn down toward the vaginal orifice. The direction of the uterine canal should be determined by the use of the uterine sound. If the cervical orifice be too small to admit the blades of the Goodell dilator, a narrow dressing forceps can first be passed within the internal os, and its blades sufficiently separated to enable the Goodell dilator to be subsequently introduced.

With the set-screw this dilator can be opened to the extent of an inch or an inch and a half, five or ten minutes being consumed in its accomplishment. If any evidences of endometritis exist, the endometrium should be mildly curetted. Should granulations be brought out, then the curetting must be very thorough and the entire endometrium gone over systematically. It is not necessary to wash out the uterine cavity with an antiseptic liquid, because it can be thoroughly emptied with the curette. The irrigation can, however, do no harm, and should be practised. A narrow piece of iodoform gauze should then be packed into the uterine cavity until it is filled, and allowed to remain for a space of two days. Subsequent pain of uterine contractions can be held in check by the use of moderate doses of opium in some form. This method of relieving mechanical dysmenorrhea is remarkably successful in the majority of cases, but not in all. Direct electrolytic treatment of the cervical canal, in a manner similar to that used in the treatment of the male urethra, has been urged as absolutely certain, in preference to the dilatation measures.

Sponge, laminaria, and tupelo tents have been used a great deal in the past. Progressive gynecologists rarely resort to their use at present, because of the possibility of sepsis following. Forcible dilatation has been found much preferable.

When the constriction does not exist within the cervical canal, it is usually the result of some severe inflammation, as from the use of caustics or from some cervical laceration occurring in labor. In such cases it is necessary to lay open the internal os by cutting with a knife or scissors. In order to keep the os patulous the use of the intra-cervical stem pessary for two or three months generally suffices. When the constriction arises from flexion, the favorite method of treatment is the use of an intra-uterine stem pessary, constantly worn for a year or longer. In married women the use of this stem pessary is often followed by conception. If the gestation go on to term and end in a normal labor, the involution of the uterus is usually followed by a return of the flexion. In this manner it is shown that uterine flexions are oftentimes in reality incurable. To meet this condition the operation for the formation of an artificial os uteri upon the convex side of the cervix has been devised. It consists of the division of the cervix up to the point of the flexion and the turning in of the mucous membrane to form an artificial os uteri. This surgical procedure is of such

recent introduction that the verdict concerning its merits is still held *sub judice*.

When the obstruction arises from an intra-uterine polypus, its removal constitutes the only relief.

Obstruction residing in the vagina must be treated by dilatation either by large bougies, tents, or incision.

Should the obstruction arise from syphilis, constitutional treatment must be conjoined.

Where the obstruction is produced by an imperforate hymen, the only relief consists in its division.

If a fibroid tumor constitutes the cause of obstruction, one of the methods for disposing of this condition must be employed.

The Ovarian Variety.—The treatment of this class of cases is perhaps the least satisfactory of all classes of dysmenorrhea. Should pregnancy occur, the nine months of rest secured to the ovaries may become of signal service. However, in such cases sterility is the rule. It is especially in this class of cases that opium and alcohol should be avoided. Remedies to soothe the local irritation and to decongest the pelvic organs are to be resorted to. The use of the wool-glycerin tampon accomplishes this object most effectually of all known means. During the flow complete rest in bed and low diet, and the free use of bromides for a few days before the flow begins, will make many of these patients quite comfortable. Hyoscyamus, cannabis indica, exalgine, and stramonium oftentimes give satisfactory results. Internal medication in this variety of cases is more often unsatisfactory than otherwise.

Where unmistakable evidences of organic ovarian disease exist, the operation for the removal of the ovaries is demanded. Even the removal of the ovaries will at times fail to give the expected relief. Whatever is done to relieve the pain of this variety, short of oöphorectomy, must, as a rule, be repeated monthly.

Membranous Variety.—The uncertainty of the pathology of this disorder has led to the most astonishing variety of treatments. Indeed, it can be said that the same uncertainty of treatment exists to-day that existed a quarter of a century ago. The largest number of successful treatments of cases has followed the repeated dilating and curetting of the uterus. Many times these treatments fail; many more times they are successful. Internal treatment for its cure is wellnigh abandoned. A few years ago large doses of iodide of potassium were used; this is now abandoned. All varieties of

constitutional treatment have been tried and abandoned. The consensus of opinion is now centred chiefly upon the treatment by dilatation and curettement, in conjunction with the application of chloride of zinc or carbolic acid, for the purpose of destroying the portion of membrane left behind by the curette.