

pleasantly flavored. A number of troches are official in the United States Pharmacopœia.

VINEGAR (Latin, *Acetum*).—Vinegars were formerly preparations made by extracting the virtues of a vegetable drug with vinegar, but now, though the old title of the preparation is retained, *diluted acetic acid* is used instead of vinegar for the making. Vinegars do not keep so well as tinctures, and are rather superfluous preparations.

WATER (Latin, *Aqua*).—Medicated "waters" were originally the preparations resulting from distilling water from an herb containing an aromatic volatile oil, whence the common name *distilled waters* applied to such preparations. Aqueous solutions of volatile oils still constitute the majority of medicated waters so called, but nowadays, most commonly, the oil previously extracted is dissolved directly in the water, in place of the cruder process of distillation. The aromatic waters form a well-defined class of drugs, characterized especially by the feebleness of their medicinal activity, due to the very slight solubility of volatile oils in water. Hence the dose of an aromatic water is commonly at least a tablespoonful, and many of such waters are only of service as pleasantly flavored aqueous bases for extemporaneously prescribed fluid mixtures. The aromatic waters of the United States Pharmacopœia are those, severally, of bitter almond, anise, orange flowers, cinnamon, fennel, peppermint, spearmint, and rose. Besides these aromatic waters, the United States Pharmacopœia establishes under the title *waters*, aqueous solutions, respectively of camphor, creosote, ammonia, chloroform, hydrogen dioxide, and chlorine—substances, it may be noted, all volatile, like the aromatic oils.

WINE (Latin, *Vinum*).—Medicated wines consist of a medicine in solution in white wine, or of a tincture of a vegetable drug diluted with white wine. Medicated wines are of comparatively poor keeping qualities, and, generally speaking, are not very eligible preparations.

Edward Curtis.

¹ Stelwagon: American Journal of the Medical Sciences, October, 1885.

MELÆNA NEONATORUM. See *Hæmophilæ*.

MELANIN. See *Coloring Matters, Animal*.

MELANOMA. See *Sarcoma*.

MELANOSIS. See *Addison's Disease*, and *Sarcoma*.

MELROSE SPRING.—Blount County, Tennessee.

POST-OFFICE.—Maryville. Hotel (seventy-five guests). ACCESS.—From Knoxville via Southern Railroad (Knoxville and Augusta branch) to Maryville, thence eight miles by stage to springs. This resort is located among the picturesque mountains, at an elevation of 1,500 feet above the sea-level. It is kept open from May 15th to the end of October. The springs are four in number, No. 1 being known as the "Chalybeate," and No. 2 as the "Yellow Sulphur," while the last two are freestone springs, with no special medicinal properties. No analysis has been made, but the chalybeate water is said to be one of the best and strongest in the State. In addition to its internal use, it is used locally for its astringent effects.

James K. Crook.

MÈNIÈRE'S DISEASE. See *Auditory Nerve, etc.*

MENINGITIS. See *Brain: Simple Meningitis*.

MENOPAUSE. See *Change of Life*.

MENORRHAGIA.—This term signifies an excessive loss of blood at the time of the monthly period. The blood may be discharged from the uterus alone, or it may proceed from one of the other openings of the body, from the mouth, nose, or anus, or it may appear upon the skin in the form of numerous spots or petechiæ which may be no larger than a pin's head or may be as large as a five-cent piece. This latter variety is sometimes known as

vicarious menstruation, which seems to me a bad term, and I have substituted the term *atopomenorrhæa* (ἀτόπος, out of place, μήρος, by the month, monthly, ροία a flowing or discharge, from ρεῖν to flow).

This form of hemorrhage has many elements in common with that which is known as metrorrhagia, and the reader is referred to the article under that heading for a comparison of the two conditions.

The simplest or typical form of menorrhagia is that which occurs merely as an exaggerated form of the customary monthly flow. It also occurs as an occasional accompaniment of the menopause or the impending menopause, as the result of disease of the endometrium, as the result of displacement of the uterus, as the result of pregnancy, as the result of neoplasms of the uterus, as the result of acute or chronic general disease, and as the result of change of residence.

In all these varieties of menorrhagia we must remember that the underlying cause is the disturbance of an exceedingly sensitive function which is characterized by the monthly recurrence of congestion of the pelvic circulation with a decided increase in the tension of the blood-vessels.

1. In the *simplest form of menorrhagia* we may have a great increase in the quantity of blood lost during the usual number of days of menstruation, or the duration of the flow may exceed the usual number of days, the quantity lost on each day not being much greater than is customary during an average menstruation. It may be unaccompanied with pain, its principal symptoms being the annoyance attending the prolonged use of the napkin and the weakness from an excessive loss of blood. The cause for this irregularity may be entirely obscure, it may be a peculiarity of an individual or family, and it may be impossible to trace it to any disease, either local or general. It may be continued for months and years, and it may make no apparent inroads upon the patient's health, if she is of a robust constitution, or it may result in constant anemia and weakness. It does not seem to me wise to allow such a condition to continue, and it has always been my practice to advise that measures be taken to remedy it.

The treatment of this condition is not usually difficult. An examination of the patient should be made in the dorsal position; a bivalve speculum having been introduced into the vagina, the condition of the portio vaginalis is determined by ocular inspection. If the os is eroded and granular and the lips are everted, this may be the source of the trouble and is to be remedied by the operation of trachelorrhaphy. A probe or a small dull curette should then be introduced into the uterus and gently drawn over every portion of the endometrium. If the latter is unduly soft or if bleeding is excited a curettage will be indicated. If none of these symptoms is present and there is no evidence of disease in the uterine appendages, I have usually found it good practice to make applications of Churchill's tincture of iodine or a strong solution of nitrate of silver to the interior of the uterus two or three times a week, except during the menstrual period. Such treatment may be necessary for a period of two or three months. If the patient is very anæmic, it will sometimes be found useful to plug the uterine canal during menstruation, thus checking the flow mechanically. The patient should be kept in bed during the period of menstruation and a tonic of some approved preparation of iron, or strychnine, or cinchona administered until the strength is restored.

2. In the *menorrhagia which occurs during or just before the menopause* we usually have a decided hypertrophy of the endometrium, and this may be the case whether the menstruation continues after monthly intervals or after longer and irregular ones. The hemorrhage in such cases is often profuse and alarming, and it is neither good practice nor common sense to dismiss the matter with the opinion that it is the change of life and that therefore one must wait until it is over. The condition of the endometrium must be determined by careful examination. As a rule the operation of curettage with the sharp curette

will be indicated, and this must be repeated should the hemorrhages recur, as they not infrequently do after the lapse of six months or a year. It is a useless waste of time to treat such cases by the internal administration of drugs, and the application of astringent or caustic substances to the endometrium is only a trifle better.

3. *Menorrhagia from Disease of the Endometrium*.—This is in distinction, of course, from the conditions which have been described, for the endometrium may be the seat of disease apart from the menopause, and there are many conditions which may cause such disease. One of the most frequent of such causes is gonorrhœa, by which an acute or a chronic inflammation may be produced. The inflammation of the endometrium is but an incident in the history of the disease, for when that tissue has been invaded other tissues have already been attacked. It is not pertinent to this article to refer to the other symptoms, the excessive bleeding with the monthly flow alone concerns us. The menorrhagia may be present with only one monthly sickness, or it may be repeated with an indefinite number of them, especially if the infectious elements of the disease progress to the uterine appendages and the peritoneum. Also when the appendages are affected with other diseases of an inflammatory nature the endometrium may be inflamed and menorrhagia be one of the consequences. Such inflammations are usually, perhaps always, of an infective character, and though the infection usually progresses from the endometrium to the appendages, the menorrhagia appearing after the appendages have become diseased, it may also proceed from the opposite direction, inflammation passing from the peritoneum to the appendages, and thence to the endometrium, and menorrhagia resulting. The hemorrhage in such cases may be of long duration; it usually ceases if the diseased appendages are removed, and it may continue for many months if such an operation is not performed. Curettage of the endometrium in such cases is only a palliative measure, the hemorrhage recurring for as long a time as disturbance in the appendages persists. Menorrhagia also results when the endometrium is diseased as the consequence of masturbation or excessive sexual intercourse. Prostitutes are especially subject to this form of hemorrhage, although it is a fact that in such cases the uterine appendages are usually the seat of gonorrhœal disease.

4. *Menorrhagia due to Displacement of the Uterus*.—This condition arises from a disturbance of the pelvic circulation caused by the unnatural relations resulting from the displacement, stasis and overfilling of the veins being noteworthy symptoms. It is unnecessary to say that menorrhagia does not occur with all cases of displacement. The only variety with which it is at all frequent is the retrodisplacement. With retroversion it is less common than with retroflexion. The more complete the retroflexion the greater the disturbance of the circulation and the more probable the occurrence of menorrhagia. Hypertrophy of the endometrium frequently results, and it is not unusual that the physician is obliged to resort to curettage in order to afford the patient the desired relief. This relief, however, is apt to be only temporary. The only permanent relief is that which follows secure replacement of the organ by operative procedure with consequent restoration of the normal conditions of the circulation.

5. *Menorrhagia Resulting from or coexisting with Pregnancy*.—It is not an unusual occurrence that a monthly loss of blood should persist during a portion of the period of pregnancy, or even during the entire period. This phenomenon has been explained by the assumption that in these particular instances the uterus has kept up the menstrual habit. While this explanation may occasionally be a valid one, it is more reasonable to believe that in such cases the endometrium, especially that of the cervix, is diseased or at any rate is so greatly congested that it finds relief in this manner. There is also the hemorrhage which arises with the vicious implantation of the placenta, known as placenta prævia, which occurs during the later months of pregnancy, but which may

deceive one by its occurrence at the time when menstruation was expected to make its appearance. It is needless to say that in all these cases a careful examination must be made, and it will usually be desirable to tampon the vagina to check the bleeding. The uterus should not be tamponed except as a last resort, for it will result in the dilatation of the soft uterine tissues, the production of contractions, and the expulsion of the uterine contents.

6. *Menorrhagia due to Neoplasms of the Uterus or of the Abdominal Viscera*.—A number of conditions produce this form of menorrhagia: myomata of the uterus, especially the submucous and intramural varieties; carcinoma of the uterus, especially that form which first invades the corpus; sarcoma of the uterus, tuberculosis of the peritoneum, carcinoma of the intestine, or of any of the abdominal viscera. The result in all these cases is a highly congested condition of the uterus with more or less hypertrophy of the endometrium, and the monthly period is characterized by an excessive loss of blood. The bleeding may not be limited to this periodical function, but may recur at irregular intervals, being then denominated metrorrhagia. The treatment for this condition is at best only palliative. Curettage of the endometrium may check the bleeding for a time, but it will soon recur. The removal of the source of the trouble will alone produce radical results. With the benign diseases such an operation is most desirable; with the malignant diseases, especially those in which great areas of tissue are involved, a radical removal is usually impossible.

7. *Menorrhagia from some Acute or Chronic General Disease, including the Nervous Diseases*.—In the case of some of the general diseases the menses are unaffected. Even in the severe forms of paralysis we often see little variation from the normal. In hysteria, on the other hand, the uterus may be congested, and it is also likely to be so in acute and chronic diseases of the kidneys, liver, peritoneum, etc., in anæmia, tuberculosis, and syphilis, and probably in certain cases of continued fever or of intermittent fever.

The treatment consists mainly in the treatment of the underlying cause. Occasionally curettage or the tamponade of the vagina will be efficacious, but such treatment fails to strike at the root of the disease.

8. *Menorrhagia from Change of Residence*.—This implies, of course, a change in the blood tension such as results when one removes to an altitude several thousand feet higher than that to which one is accustomed. Hemorrhage of this variety is usually not alarming and subsides when the equilibrium of forces has been re-established, i.e., when the patient becomes habituated to the new conditions. There is scarcely any occasion for treatment in such cases or for comment upon that phase of the subject. Finally, a few words should be said concerning the vicious hemorrhage which occurs in unusual or unaccustomed parts of the body (atopomenorrhœa), either coincidentally with the monthly hemorrhage or in place of it. The fundamental consideration, of course, is that during menstruation there is an increase in the blood pressure. If, for any reason, the resistance in the uterine vessels is too great to permit adequate relief for this pressure, the blood current will necessarily be diverted to other parts where the resistance is less. Such a part may be the mucous membrane of the anus, the stomach, the nose, or the mouth, or the blood may transude through the capillaries of the skin. The loss of blood in such cases may be considerable and always calls for an examination of the uterus. It may be that no anatomical fault in the uterus can be discovered, or there may be a flexion in the organ which can be relieved by appropriate measures. In some cases such a diseased condition of the blood or of the blood-vessels exists that the hemorrhage can be attributed to this cause, its occurrence during menstruation being only incidental.

Andrew F. Currier.

MENSES, RETENTION OF THE.—The menstrual flow, menstruation, or the menses, signifies the discharge from the uterus of blood, epithelium, and mucus, an oc-

currence which takes place normally in every woman during the child-bearing period, that is, from puberty until the menopause, unless there is some bar or hindrance which prevents such an occurrence. The expression "retention of the menses" indicates or implies that there is an attempt on the part of nature to accomplish this function, but that it is rendered ineffective from one cause or another.

It is necessary to differentiate this condition from that in which the menses fail to appear, the blood failing to flow from the uterus by reason of some cause, physiological or pathological, which prevents such an occurrence. Such a condition is known as amenorrhœa. An example of the physiological absence of menstruation is to be found in pregnancy. Should menstruation take place during pregnancy it would be abnormal and would require investigation to ascertain its cause. An example of the pathological absence of menstruation exists in the wasting diseases, such as tuberculosis, in which the body has no blood to spare, nature taking this means of cutting off one of the avenues by which vital force is dissipated.

When there is true retention of the menstrual blood nature is endeavoring to perform her usual function, but a hindrance is offered and the design of nature is thwarted. The causes of this condition are few in number and are perfectly well known. They are entirely of a mechanical nature. They may be located at the vulva, within the vagina, at the os uteri, or within the uterine canal. The obstruction may be complete or partial; that is, the avenue of exit for the blood may be entirely closed so that not a drop of blood will escape, or a slight opening may be present so that when the tension and pressure are sufficiently great a small quantity of blood will find its way out, the greater portion, however, being retained within the vagina or uterus or both.

At the vulva the obstruction consists in an impervious condition of the hymen, which may be thick and fleshy or thin and membranous. When the accumulation of blood within the vagina and uterus is considerable, the pressure upon the hymen is usually sufficient to convert it into a thin membrane and it may even bulge outward from the vulva. In some cases it may rupture, thus effecting a spontaneous cure for the condition.

The obstruction may also be at some point within the vagina. It may be in the form of a membranous septum crossing the vagina from side to side, or diagonally from the os uteri to the vulva. Such septa are due to faults of development during the foetal period of existence and are of quite rare occurrence. An obstruction of this character might cause either complete or partial retention of the menstrual blood. Obstruction in the vagina might also be due to the presence of a fibroid tumor proceeding from the uterus and gradually filling the entire vagina. Such an obstruction is as effectual a plug to the escape of fluids from the uterus and vagina as is a cork in a bottle. It is quite possible in such cases for the blood to be shed by the uterine mucous membrane, but it is quite impossible for it to get out. The fibroid tumors or polypi in question are prone to spring from the lower portion of the uterus, or even from the cervical canal, so that quite a cavity may remain above their origin for the accumulation of menstrual blood. The obstruction may also be at the os uteri or within the uterine canal. That which is within the uterine canal has already been alluded to in referring to the fibroid tumors which may fill the vagina.

Of course, it is quite possible that the tumor may not encroach upon the vagina to a great extent. It may fill the lower portion of the uterine canal, and may include the cervical canal, in either case preventing the exit of menstrual blood; or the blood may escape slowly and with difficulty, more or less of it remaining above the tumor in the cavity of the uterus. The uterus may also be effectually plugged by the presence of a membranous tissue over the os uteri, the blood accumulating within the uterine cavity and possibly regurgitating into the Fallopian tubes and peritoneal cavity. Finally, the obstruction may consist of a complete absence of the vagina, the development of the genital organs having been de-

fective in this respect, though in all other particulars they may be normal. In such cases there is no possible means of escape for the menstrual blood, and it must accumulate within the cavity of the uterus.

CLINICAL HISTORY.—In any case of obstruction from such causes as have been mentioned the ordinary symptoms which accompany menstruation, called menstrual molimina, apart from the discharge of blood, are usually present. Such symptoms are backache, bearing-down pain, headache, etc., and they may occur with as great regularity as in ordinary menstruation. As the quantity of blood increases, the pain in the abdomen and pelvis may be very severe, and it is quite possible that peritonitis may result either from the blood which finds its way into the peritoneal cavity or from some injury which may be received from without. The vagina may become greatly distended, and the uterus may become enlarged so that a very perceptible abdominal tumor is present. I have seen a uterine tumor of this variety which extended to the umbilicus. Nausea, vomiting, and constipation are also symptoms which are pronounced and troublesome; the bladder may become irritable and the desire to pass urine may be persistent and annoying. Except for the possibility of peritonitis the general health is seldom greatly disturbed, and during the intervals between the recurring attempts at menstruation the patient may be in a very fair state of health. It is hardly necessary to say that this condition usually occurs in very young women. Should it occur in those who have borne children (I have seen one such case), it is usually due to an injury received during parturition, the uterus or vagina being sealed as the result of the ensuing inflammation.

TREATMENT.—There is but one successful mode of treating this condition, apart from the very rare spontaneous cure which may result from the rupture of the offending obstruction, and that consists in freely opening the tissues which have caused the obstruction and evacuating the retained fluid.

The patient should be placed in the lithotomy position with the hips raised three or four inches higher than the remainder of the body. The pubes should be shaved and thoroughly scrubbed with a 1 to 5,000 bichloride-of-mercury solution, alcohol being then poured liberally over the entire surface. If the obstruction is at the vulva, it is then pierced with a trocar and the retained fluid slowly drawn off through a cannula. The vulvar orifice is then dilated with a steel dilator, a double-current catheter is introduced into the uterus, and both this cavity and the uterus and vagina are irrigated with a hot 1 to 5,000 bichloride-of-mercury solution, the irrigation being continued until the water returns perfectly clear. A strip of five-per-cent. iodoform gauze is then introduced into the uterus as a drain, but not as a tampon, and another into the vagina. This must be renewed daily until all discharge has ceased. The patient must be kept quiet in bed for at least a week, for not until this period of time has elapsed will the dangers of sepsis and peritonitis have passed. The bowels should be opened daily, an enema of half an ounce of sulphate of magnesia in a pint of hot water being used if necessary. If the membranous obstruction is within the vagina or at the os uteri, the treatment should be the same as when it is at the vulva.

If the obstruction consists of a tumor in the vagina or uterus, the spot from which it originates must be reached, the tumor removed, and the uterus and vagina irrigated as already described.

If the tumor fills the vagina, it may be necessary to deliver it with obstetric forceps before the pedicle can be reached. It may also be necessary to divide the cervix on either side in order to get at the pedicle. The pedicle may be cut with strong scissors or with the thermocautery. It may also be removed with the wire cræsure. The conditions in a given case will govern the mode of removal. If the cervix has been divided, a suitable number of interrupted chromicized catgut sutures must be used to close the wounds after the tumor has been removed. In the rare cases in which there is congenital absence of the vagina or in which the vagina has become

closed as the result of an inflammatory process, the tissues must be torn or cut until the uterus is reached when the latter may be opened with a trocar, or, if possible, with a steel dilator. It is very important in doing such an operation that a finger be constantly kept in the rectum as a guide to the proper direction of the knife or scissors. With the improved methods of operating which are now in vogue such operations can be performed with a minimum of danger, whereas in former years the danger of septic infection and even of fatal peritonitis was considerable.

Andrew F. Currier.

MENSTRUATION.—INTRODUCTORY.—The period during which a girl passes from childhood to young womanhood is a comparatively extended one, and brings about many changes. According to recent literature the term *puberty* is given to the initial period of development of the reproductive organs, while to the whole term, from the beginning to the completion of the reproductive function, is applied the broader term, *adolescence*.

The changes which take place during puberty are marked by both external and internal manifestations; by both physical and mental development. The outer physical signs are the swelling of the breasts, the widening of the pelvis, the enlargement of the thighs, and the growth of hair upon the pubes. The mental development is characterized by the desire for change, the longing to accomplish something, the oncoming of doubts, and the general assertion of individuality. The inner physical change consists in the growth and development of the two organs essential to woman, namely, the ovary and the uterus. With this development come the functions of ovulation and menstruation.

OVULATION.—Under ovulation let us consider the phenomena which take place in the ovary and which include the maturing of the ovum, the bursting of the vesicle which contains it, and the departure and migration of the ovum.

The Graafian vesicles, which until puberty form a uniform, smooth layer in the ovary, begin with the development of this organ to assume a different appearance. Instead of growing uniformly as before, a few of the vesicles make a much more rapid growth than the others, and finally one becomes even more active than these and develops until it reaches the size of a hazelnut and has forced itself through the ovigenetic layer to the epithelial surface. With the distention of the vesicle the walls become thinner and finally burst, liberating the ovum which is forced into the pavilion of the Fallopian tube. The tube being applied to the vesicle at the moment of its bursting, the ovum when expelled enters the pavilion and is carried by the tube to the uterus by a continuous current of serous fluid set up by the cilia which line the tube and by the peristaltic contractions of the tube itself. If for any reason the ovum when expelled does not enter the pavilion, it enters the abdominal cavity and is lost; or, if fertilized, it may cause extra-uterine pregnancy. The journey from the pavilion of the Fallopian tube to the uterus occupies from twelve to fifteen days. Ovulation may or may not be coincident with menstruation; while it is usually so, instances of intermenstrual ovulation are not unknown. However, ovulation begins with puberty and ends with the menopause, being probably suspended during pregnancy and lactation, although the not infrequent cases of pregnancy occurring during lactation would seem to disprove the latter. The two ovaries supply the ova alternately, excepting in occasional instances when one ovary may furnish several successively. Although ovulation is spontaneous and results from a congestion in the Graafian follicles, it may be affected and augmented by the presence of the male and may be precipitated by copulation.

MENSTRUATION.—Menstruation is a periodic discharge of blood from the uterus and Fallopian tubes. It is periodic, occurring every twenty-eight days (or, according to Dubois and Courty, thirty days), and lasting only during the term of a woman's sexual activity, *i.e.*, from puberty to the menopause.

The child-bearing period may be divided into menstrual cycles, each of which is subdivided into periods each occupying a given portion of the cycle and each following the other in regular sequence. Marshall names these stages the constructive, destructive, reparative, and quiescent stages.

1. The Constructive Stage. During this stage the uterus is prepared for the reception of the ovum by a swelling of the mucous membrane. This swelling is caused by a growth of the connective tissue and a filling up of the veins and capillaries with blood. Just why the mucous membrane swells in this way is not known, but the swelling is so marked that it doubles or trebles the thickness of the membrane. Then by a diapedesis through the capillaries, perhaps assisted by a bursting of the capillary walls, blood passes into the connective-tissue spaces below the mucosa. The mucous membrane becomes thick, swollen, dark in color, and very soft, and the uterine glands are lengthened. The superficial layer remains for the most part intact. A fatty degeneration of the epithelium follows the diapedesis and with the bursting of the capillaries the blood and epithelial cells pass out. This stage occupies about a week, and when conception does not occur is followed by the second stage.

2. The Destructive Stage. This stage is the result of the active changes of the constructive period. During this time the degenerated material is carried off and brings about the menstrual flow. After five days the third stage follows.

3. The Reparative Stage. Now sets in the reparation of tissue broken down by the previous stages. This is done by a process of growth from below and continues for about four days.

4. The Quiescent Stage. This is the period of rest occupying the remaining twelve or fourteen days of the cycle.

The Theory of Menstruation.—Just what causes the phenomenon of menstruation is not definitely decided, but that there is a positive relation between ovulation and menstruation can scarcely be doubted. Sigismund, Löwenhardt, and Reichert believed that menstruation occurred because the ovum just previously discharged had not been impregnated and, therefore, the uterine mucosa could not continue its development; instead, it underwent degeneration, accompanied by bleeding from the mucosa. Hirst attributes menstruation to a nervous influence proceeding from the sympathetic ganglia in the lower abdomen stimulating and congesting the sexual organs. Jewett names ovulation as the cause of menstruation. Pflüger considers that the "constant growth of the ovarian cells and the consequent swelling of the ovary subject the ovarian nerve fibres, and through them the spinal cord, to a constant slight stimulation. Through the summation of the stimuli within the cord a reflex dilatation of the vessels in the genital organs is produced; the excessive blood supply leads in turn to a tumefaction of the uterus and frequently to the ripening of a Graafian follicle. Bleeding follows, and at the same time, or slightly later, the rupture of the follicle occurs. The menstrual flow and ovulation are therefore two phenomena conditioned by the same cause, namely, the menstrual congestion, yet either may occur without the other." Most recent writers agree that ovulation and menstruation are in the main independent and may or may not occur simultaneously; that the growth of the uterus and its mucosa is a preparation for the reception of the fertilized ovum. If an ovum is fertilized and carried to the uterus, it attaches itself to the inner wall, usually near the fundus; pregnancy follows and the mucosa is not shed. If, however, fertilization is not accomplished, the decidua is shed as the decidua menstrualis in the menstruation which follows.

Inasmuch as the uterus during the constructive stage is best prepared to receive the ovum, it cannot be for the ovum discharged at the time of the accompanying menstruation, as it requires at least a week for the passage of the ovum from the ovary to the uterus. Marshall and