Obstetrical nursing for nurses and students.

OBSTETRICAL NURSE.

SECOND EDITION, REVISED AND REWRITTEN

OBSTETRICAL NURSING

FOR

NURSES AND STUDENTS

BY

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WITH 73 ILLUSTRATIONS

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1910

To the Memory of the late

ERVIN ALDEN TUCKER, M. D.

of New York City,

Whose Brilliant Career as an Obstetrician was so Untimely Ended,

this Book is Dedicated.

PREFACE TO THE SECOND EDITION

THE first edition of this little book was published in 1902, in response to the demand for an outline of the subjects covered in a series of lectures delivered before the training schools for nurses of the John N. Norton Memorial Infirmary and of the Louisville City Hospital. Owing to the fact that the publishers of the first edition have discontinued the publication of books, and the original plates were destroyed, it became necessary to re-set the type, and advantage was taken of this necessity to completely revise it and to re-write a large portion of it.

Unfortunately obstetrics seems to have no attraction for the average nurse, and comparatively few graduates are willing to include this class of cases in their practice, hence there has been an endeavor to make the text of this book as attractive as possible, and to arouse the interest of the pupil nurse, as well as the graduate, in this important subject. The needs of the nurse in training have been the first consideration, however, and only such knowledge as was thought to be absolutely necessary for her intelligently to practice obstetrical nursing has been included. Much has been written in regard to the over-training of the trained nurse, and of her usurping the prerogatives of the physician. No thought of this has been allowed to

enter into the preparation of these pages. What is given should be known by the nurse, to enable her to intelligently assist the physician in the preparations for labor and the details of that trying time. A busy doctor has no time to go into the details of the preparation of the layette or the supplies and necessities for the delivery room, and a nurse should be able to attend to all of these.

The student in medicine will find the book of some assistance to him as a guide to further study in more elaborate works.

New illustrations have been added, and many of the old retained.

We are indebted to W. B. Saunders & Co. for permission to reproduce several cuts from their publications, and for the terms included in the glossary; and to Miss Alice Lee Ford for valuable assistance in the preparation of the manuscript and the revision of the proof-sheets. Our thanks are due to the publishers for their courtesies in the publication.

HENRY ENOS TULEY.

February 15, 1910.

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OBSTETRICAL NURSING

FOR

NURSES AND STUDENTS

CHAPTER I.

ANATOMY OF THE FEMALE GENERATIVE ORGANS.

THE BONY PELVIS.

BECAUSE of the likeness of the pelvis to a basin, the name "pelvis" was given it. The pelvis is composed of four bones, the two *ossa innominata, sacrum,* and *coccyx.* The os innominatum in infancy is composed of three bones, which in adult life become closely united, forming the one innominate bone. These bones are the *ilium,* the wide, flaring top of the pelvis; the *ischium,* upon whose tuberosity the body rests in the sitting position, and the *pubic bone,* the front of the pelvis.

The Joints.—The junction of the pubic bones is called the symphysis pubis; the junction of the ilium and sacrum, the sacro-iliac sychondrosis, or sacro-iliac joint; the junction of the sacrum and coccyx, the sacro-

coccygeal joint, and that of the last lumbar vertebra and sacrum the sacro-vertebral joint. The sacro-coccygeal joint is movable in pregnancy and labor,

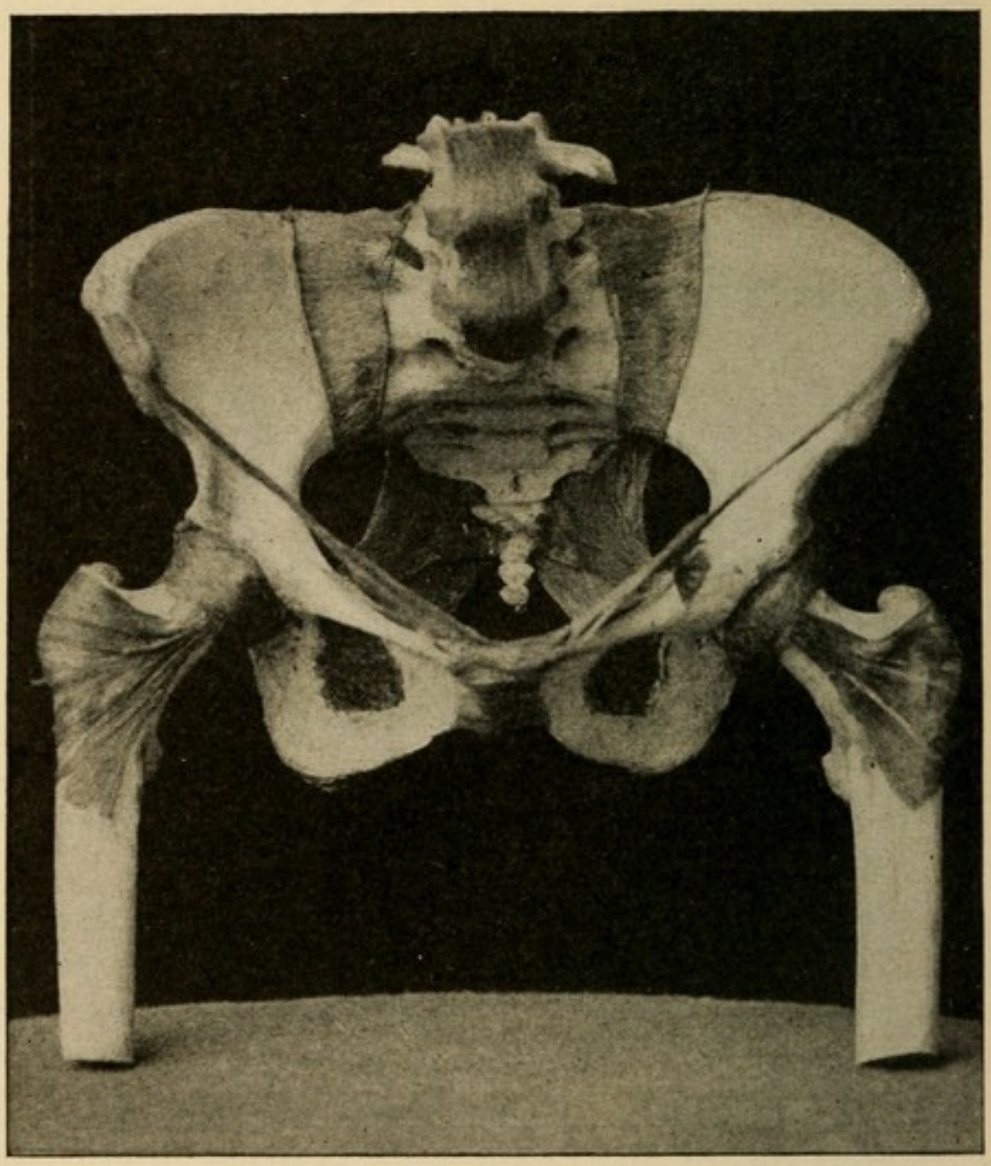

FIG. 1. FEMALE PELVIS, SHOWING SUPERIOR STRAIT.

allowing the tip of the coccyx to be pressed backward as the head is born, thereby increasing the antero-posterior diameter as much as one-fourth to half an inch. Should a fracture of the coccyx occur and an ankylosis follow with its tip pointed forward, a severe

deformity of the pelvis would result, causing a difficult birth because of the shortened distance between the coccyx and pubes. This joint becomes ankylosed as the woman grows older, and because of this the birth of the first child is apt to be more difficult after thirty years of age.

FIG. 2. FEMALE PELVIS, SHOWING OUTLET.

Upon the upper articulating surface of the sacrum rests the spinal column, and immediately below and on its anterior surface is located the promontory of the sacrum. From this point, the promontory of the sacrum to the posterior surface of the symphysis pubis, is measured the antero-posterior or conjugate diameter of the inlet of the pelvis.

On the inner surface of the pelvis, running around at the base of the ilium, beginning at the promontory of the sacrum and ending with the top of the symphysis,

can be seen a distinct ridge or line, which is called the *ilio-pectineal line*. This line divides the pelvis into two parts, all that above being the *false* pelvis, that below the *true* or bony pelvis. The latter is also referred to as the cavity of the pelvis. That part of the pelvis above the ilio-pectineal line is called the brim, the superior strait, or the inlet; that below this line the true or bony pelvis, the inferior strait, or the outlet.

The dried pelvis of the skeleton is called the static pelvis, and the pelvis of the living, child-bearing woman the dynamic pelvis.

Diameters.—The distance between two given and fixed points of the pelvis is called a diameter, and these are generally measured at the brin and at the outlet. There are four diameters at the brim, or inlet, and a like number at the outlet. They are the antero-posterior or conjugate diameter, the transverse, the right oblique, and the left oblique. Practically the only diameter at the outlet with which we are concerned is the antero-posterior or conjugate.

By means of the pelvimeter (Fig. 3) these external measurements can be easily taken.

The antero-posterior diameter of the inlet is measured from the promontory of the sacrum to the middle of the posterior surface of the symphysis pubis; the transverse diameter between the widest points of the pelvis; the right oblique from the right sacro-iliac synchondrosis (sacro-iliac joint) to the pectineal eminence of the opposite side; the left oblique from the left sacro-iliac synchondrosis to the opposite pectineal eminence. It must be borne in mind that the oblique diameters take their names from their starting point behind. In the dynamic pelvis the transverse diameter at the inlet is the longest, but when the true pelvis is reached, because

of the room taken up by the muscles located on its sides, the oblique diameters are longer. At the outlet the antero-posterior or conjugate diameter is the longest, because the coccyx is displaced backward as the head is born through the outlet.

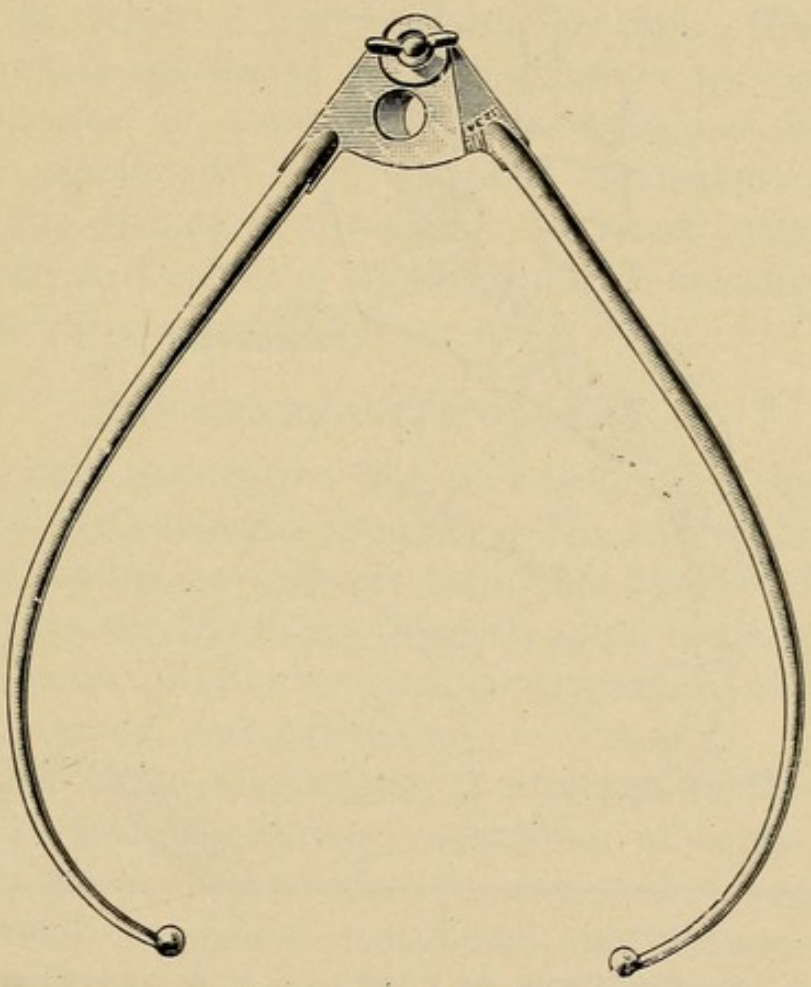

FIG. 3. PELVIMETER.

It is essential in the study of obstetrics to remember that Nature provides that the shortest diameter of the child's head shall occupy the longest diameter of the pelvis, and this substituting of diameters and rotating of the head into longer ones is called the *mechanism of labor*. The slightest deviation will oftentimes cause serious trouble, a complicated, abnormal labor, or *dystocia*. A normal labor is called *eutocia*.

If a piece of paper is cut so as to float on the surface of water in a basin and to closely touch all edges of the basin, we have the *plane* of this surface. If in like manner we fit a card to the inlet of the pelvis, touching all

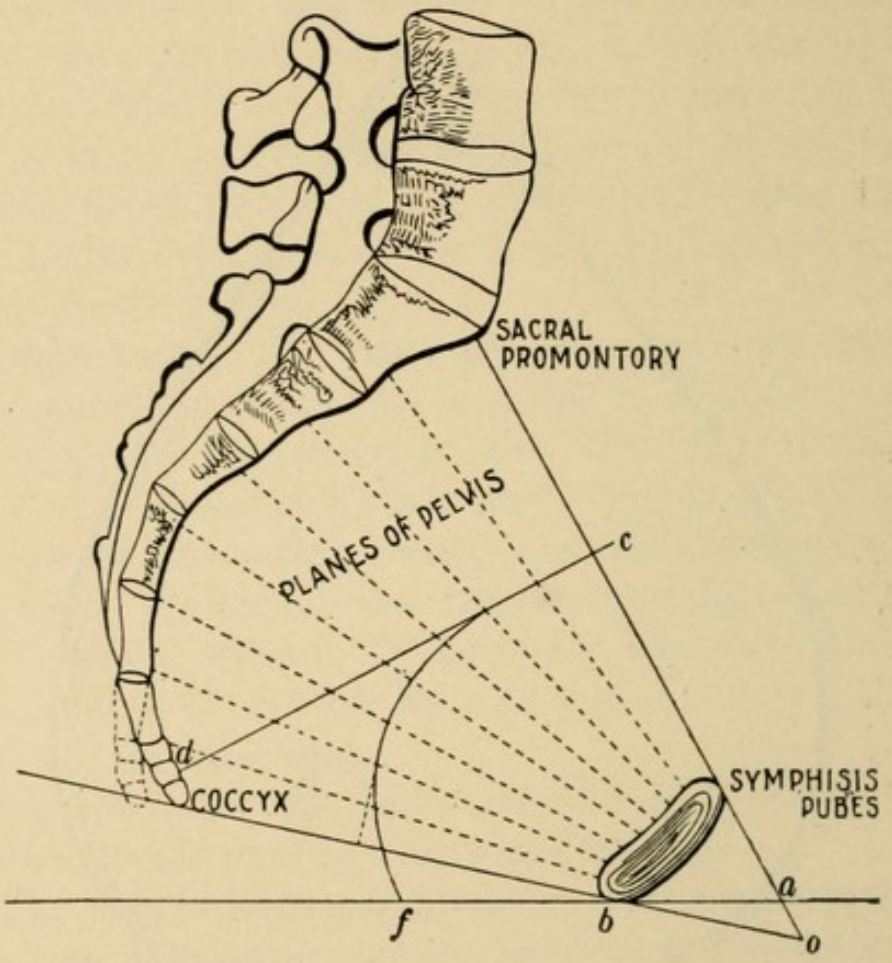

FIG. 4. C—F=CURVE OF CARUS (A. T. B. OBSTETRICS).

its sides, we have the plane of the inlet, and these imaginary planes can be placed at different levels throughout the cavity of the pelvis. If a perpendicular line is let fall upon each of these imaginary planes of the pelvis, the result is a curved line, the course the child must take as it is born, and is called the *curve of Carus.*

The pelvis of the female differs from that of the male in several important points; it is shallower and roomier,

the bones are lighter, and the arch of the pubis is shorter and wider.

Deformities.—Owing to bony disease in early life, the pelvis may be misshapen or flattened sufficiently to interfere with the passage of the child, or even to necessitate its delivery by Cæsarean section. The most frequent pelvic deformity is the flat pelvis, in which the antero-posterior or true conjugate diameter is quite markedly shortened. Any marked deviation in the length of the diameters revealed by external pelvimetry should cause a shortening of the internal measurements to be suspected at once.

THE GENERATIVE ORGANS.

The female generative organs are divided into two groups, the external and internal. The external organs are classed under one generic term, the *vulva*. The external organs are the mons veneris, labia majora, labia minora, clitoris, vestibule, meatus urinarius, glands of Bartholin, hymen, and perineum.

Mons Veneris.—Beginning at the top is the mons veneris. This is an eminence composed of fatty tissue, situated on top of the symphysis pubis, and covered with hair. It is of no special obstetrical significance except as a landmark.

Labia.—From the mons veneris running backward are the labia majora and labia minora. The labia majora are external to the labia minora, larger, and approximate on their inner surfaces. They are covered with skin and hair externally, and with a modified smooth skin on the approximating surfaces. In the skin covering the inner surfaces are many minute sebaceous glands, which secrete a mucus-like material which aids in lubricating the parts during labor. These labia

coalesce anteriorly in the mons veneris, and at the posterior junction form the posterior commissure.

At the lower junction of the labia majora and labia minora on each side are located the glands of Bartholin. They are of the compound racemose variety, and secrete much mucus at the time of labor. If infected with pus-producing organisms an abscess may form in them.

Nymphæ.—The labia minora, or nymphæ, normally lie inside the labia majora, though they may become much elongated and prove very uncomfortable in walking. Their outer coat is mucous membrane, which is covered with pavement epithelium. Imbedded in the mucous membrane are sebaceous glands.

Clitoris.—Anteriorly where the labia minora coalesce they embrace the clitoris, a very sensitive organ located below the junction of the labia majora. The upper folds of the labia minora form the prepuce of the clitoris, the lower folds the frenum.

Vestibule.—Below the clitoris and between this organ and the vagina is a triangular, smooth area, covered with mucous membrane, called the vestibule, the apex of the triangle being at the clitoris.

Meatus.—In the middle of the lower border of the vestibule is the opening of the urethra, the meatus urinarius. This is a little prominence and can ordinarily be easily felt; but in catheterization after labor it should never be located by touch. Because of the swollen and congested state of the vulva following labor the meatus is displaced and not easily located. The urethra is about one and a half inches long, the size of a small lead pencil, and leads from the meatus to the neck of the bladder.

Hymen.—The orifice of the vagina in the virgin is partly covered with folds of mucous membrane from the

labia minora, called the hymen. The opening in the hymen is of several kinds, the annular, cribriform, etc. The hymen is ruptured at the first intercourse, or by violence, but after the birth of the first child there result from the pressure a number of small prominences around the orifice of the vagina, inside the labia minora, called the *caruncula myrtiformes.*

Perineum.—The space between the vagina and the rectum, behind, is the perineal space or perineum, and the triangular mass of muscular and connective tissue extending from the skin upward between the vagina and rectum, the base of the triangle at the skin, is called the perineal body. This body is of great obstetrical importance, as it must be greatly stretched as the head is being born and frequently is torn at this stage of labor. It is very essential, if possible, to preserve this body, as it acts as a support to the pelvic organs. If it is torn it should be repaired at once by suturing, or a secondary operation, called perineorrhaphy, is necessary at a later date. It may be done at once or after the expiration of several hours, when the patient has rested from her labor. It may be torn very superficially, deep into the muscle, or the tear may extend through the sphincter muscle into the rectum, this constituting a complete tear. The tear may also extend up in the vagina, and no case is complete without a thorough investigation being made of the perineum and vaginal walls after delivery.

Breasts.—The breasts are generally classed among the external generative organs. They are two in number, situated on the anterior chest wall between the second and ninth ribs. They are compound racemose glands, composed of fifteen or twenty milk lobes and milk ducts, the latter ending at the nipples. The breasts vary in size in different individuals, but always enlarge

as the result of pregnancy. After having suckled a child the breasts generally are flabby, and always are much smaller when lactation is stopped. In the center of the breasts are the nipples, which are surrounded by a darkened area, called the areola, dark in brunettes and lighter in blondes. The nipples contain erectile tissue, becoming prominent when irritated. Supernumerary breasts may be found upon other parts of the body. In the areola are located fifteen or twenty glands, the glands or tubercles of Montgomery, which become larger as pregnancy advances.

INTERNAL GENERATIVE ORGANS.

The internal generative organs are the *vagina,* the *uterus, Fallopian tubes,* and *ovaries.*

Vagina.—The vagina is a musculo-membranous tube lying in the pelvic canal, between the bladder in front and the rectum behind. Its orifice is partly closed by the hymen in the virgin, and embraces the vaginal portion of the uterus, the cervix, at its upper extremity. It has two coats, the mucous and muscular. The mucous membrane is thrown into folds, which encircle the vagina, and is covered with squamous, or pavement, epithelium. Its anterior wall, in contact with the bladder, is shorter than the posterior, which is in contact with the rectum in its lower portion. The anterior and posterior walls of the vagina are in contact. If labor lasts a long time the pressure of the head resting in the pelvis may cause a death of the soft tissue and an opening into the bladder follows, through which urine flows into the vagina. This is called a vesico-vaginal fistula. If an opening results between the vagina and the rectum it is called a recto-vaginal fistula. The posterior wall of the vagina in its upper third is in contact with the perito-

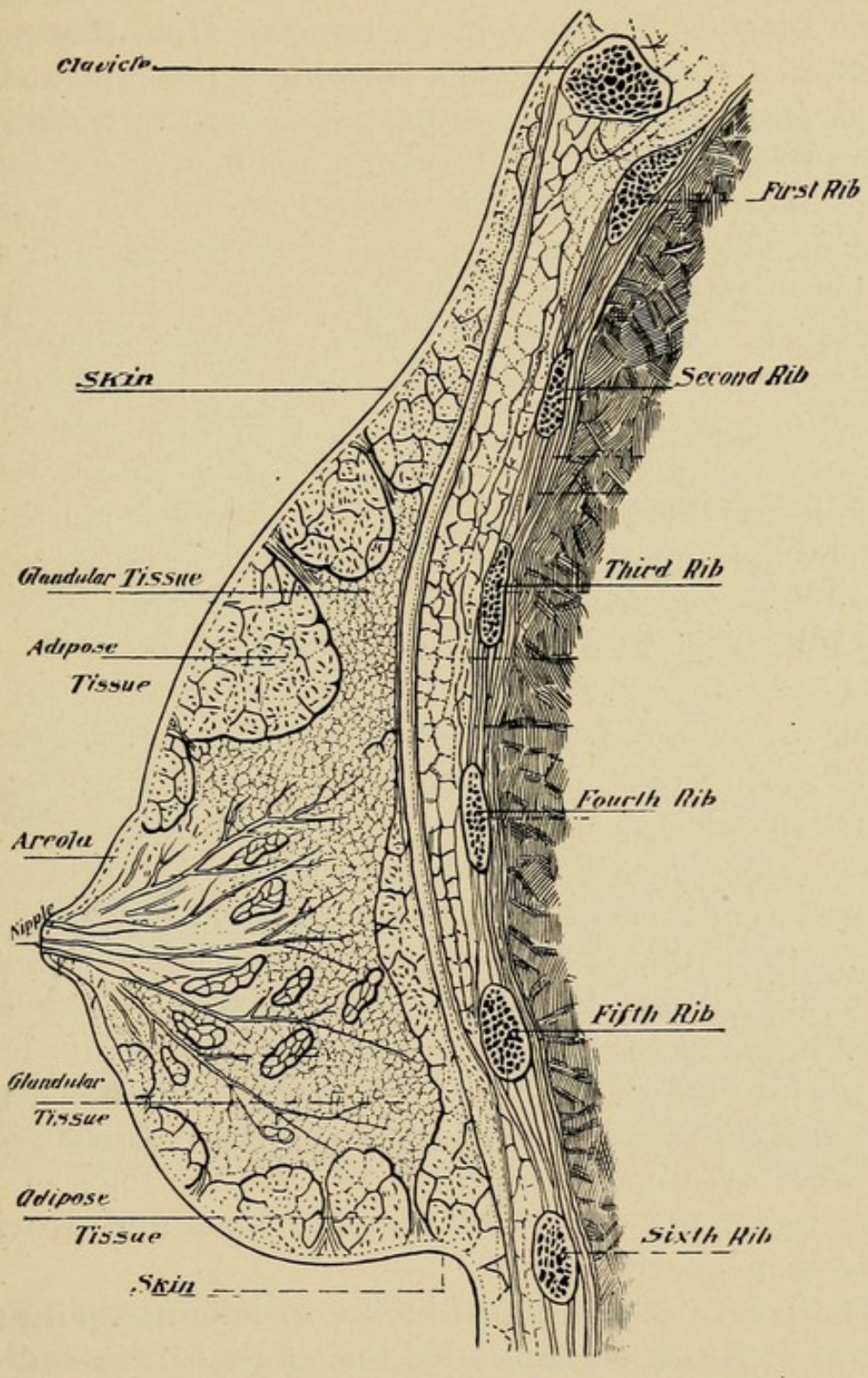

FIG. 5. FEMALE BREAST (A. T. B. OBSTETRICS).

neum, which is reflected down from the posterior wall of the uterus. The fold of peritoneum from this point is reflected on to the rectum, forming a pouch, which is called *Douglas' cul-de-sac,* or pouch. A collection of pus in the peritoneal cavity at this point can be drained by an incision through the vaginal wall. The middle third of the vagina is in contact with the rectum, and the lower third with the perineal body.

Uterus.—The uterus, or womb, is a pear-shaped organ, in which the child develops after impregnation of the ovum. It is divided into three parts, the fundus or top, the body, and the neck or cervix. It has three coats, the mucous, lined with columnar epithelium; muscular, its fibers arranged in three layers, and the peritoneum. It has three openings, one into the cervix and one in each Fallopian tube, those into the tubes being at the upper corners of the uterus, the right and left cornu.

The muscular layer of the uterus has three layers of fibers, the circular layer being the thickest. The outer coat of the womb is peritoneum, covering its anterior surface and reflected thence on to the bladder, covering the posterior surface throughout its extent down to the middle third of the vagina, from there being reflected on to the rectum, this fold being Douglas' cul-de-sac, above referred to. The two layers of peritoneum leaving the uterus on the sides unite and form the broad ligaments; these are attached to the ilium on each side and serve as supports to the womb. In the folds of the broad ligaments rest the Fallopian tubes and ovaries, one of each on each side.

The cervix is about two inches in length, the upper part of it being encircled by the vault of the vagina, leaving the major portion of it in the vagina, and is called the vaginal portion of the cervix. It has two

openings, with a canal between, the openings being called the external and internal os.

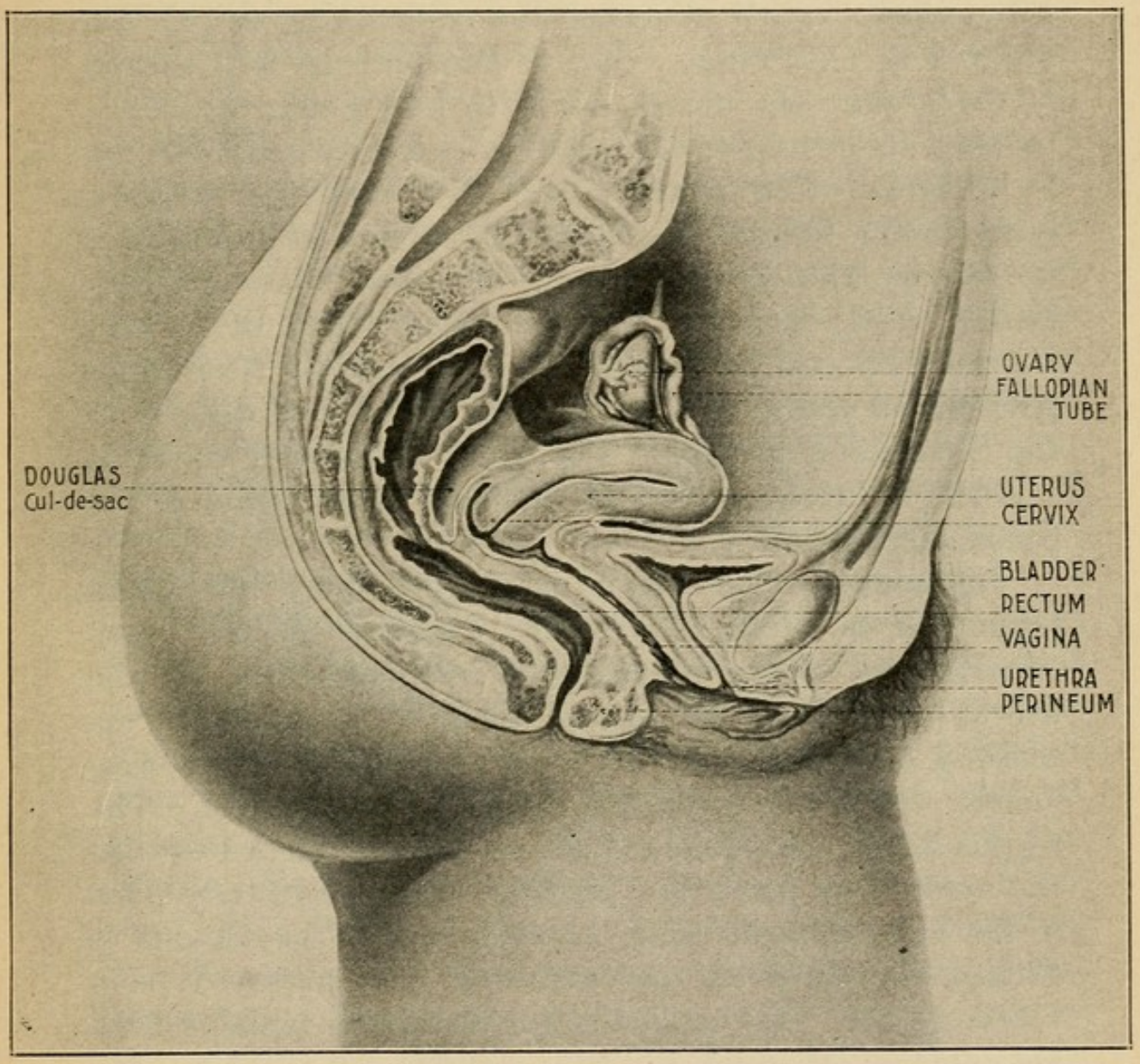

FIG. 6. FEMALE ORGANS OF GENERATION.

Fallopian Tubes. The Fallopian tubes are about six inches in length and about one-sixth of an inch in diameter. They have three coats, mucous, muscular, and peritoneal or serous. The mucous membrane is

lined with columnar ciliated epithelium, and it is thrown into many fine folds, called plications.

The free end of the tube has a number of finger-like projections, called fimbriæ, the end being called the fimbriated extremity. One of the fimbriæ is attached to the ovary; the others are free, and grasp the ovary to catch the ovum, or egg, when it is discharged monthly.

Ovaries.—The ovaries are almond-shaped organs, lying in the folds of the broad ligaments at the side of the uterus, and contain the ova or eggs. These are contained mostly in the outer zone of the ovary, or cortical portion, 125,000 to 150,000 in each ovary. The inner portion of the ovary, containing the blood-vessels, is the medullary portion. The fully developed ovum is 1-120 inch in diameter, and its home in the ovary is the Graafian follicle.

Ligaments.—The uterus is supported by the round ligaments in front, which are attached in the mons veneris and prevent backward displacements of the uterus; the broad ligaments, folds of peritoneum, extending to the ilia at the sides; the utero-sacral ligaments, which run from the uterus to the sacrum. The uterus lies in the pelvic cavity, the fundus turned toward the symphysis pubis and resting on the bladder. This is the normal position of anteversion; if the fundus is turned backward in the hollow of the sacrum it is a retroversion. The canal leading from the bladder with an external opening is the urethra. It is about the size of a lead pencil, one and a half inches in length, the external opening being the meatus urinarius.

Rectum.—The rectum is the end of the colon, and lies in the hollow of the sacrum on the left side, the uterus and vagina lying in front. The rectum is continuous with the sigmoid flexure above and ends in the

anus below. The internal and external sphincter ani muscles close the anal canal.

The rectum should give no trouble in labor, and generally does not, except just as the child is born. As a result of the stretching and pulling forward of the perineum the mucous membrane of the rectum protrudes, is caught by the external sphincter muscle, and if squeezed long enough the blood-vessels will become enlarged, forming hemorrhoids. This can generally be avoided if the prolapsed mucous membrane is anointed well with vaseline after the child is born, and with the palmar surface of two or three fingers pressed gently back inside the sphincter muscles. The employment of small enemas each morning before evacuation will prevent straining and prolapsus again. The movement of the bowels on a bed-pan in the recumbent position prevents much straining.

Peritoneum.—The peritoneum is the serous membrane covering the abdominal and pelvic organs and lining the abdominal walls. A fold of peritoneum coming down from the anterior abdominal wall is reflected over the anterior wall of the bladder, thence over its summit and on to the anterior walls of the uterus from the posterior surface of the bladder. The folds of the peritoneum coming together at the sides of the uterus constitute the broad ligaments. From the posterior wall of the uterus the peritoneum extends downward, covering the upper third of the posterior wall of the vagina, and is then reflected on to the rectum. This fold of peritoneum is called *Douglas' pouch* or *cul-de-sac,* and is of importance from a surgical standpoint, as pelvic secretions may collect here and be drained by an incision through the posterior upper third of the vagina.

CHAPTER II.

Physiology of the Reproductive Organs.

Menstruation.—The mucous membrane of the uterus is lined with columnar ciliated epithelium, and each month this is shed during menstruation, there being four periods to this function—the stage of congestion, during which the membrane is swollen and thickened, the vessels being enlarged; the stage of destruction, in which the membrane is shed down to the muscular layer, along with blood from the dilated and ruptured vessels; the stage of repair, during which the mucous membrane is formed; and the stage of quiescence and rest, before the next period is due. This function of menstruation recurs every twenty-eight days, though it may recur with greater frequency, the stage of destruction and flow lasting from three to seven days. Menstruation generally begins about the fourteenth year, recurring once a month unless pregnancy exists, this period in a girl's life being called *puberty*. In some women even after impregnation a monthly flow of blood occurs with regularity throughout pregnancy, or during the first few months, though they are quite rare. The cessation of the menstrual function later in life is called the *menopause*.

Ovulation.—This is the periodical discharge of the mature ovum from the ovary. Just how often an ovum is thrown off is not known. While not an accompaniment of menstruation, it may be coincident with that function. The home of the ovum is the Graafian follicle, and when it ruptures the egg is discharged on the surface of the ovary and is at once grasped by the fimbriated extremity of the Fallopian tube. If this egg is impregnated, the cavity of the Graafian follicle, which

after the escape of its contents is filled with blood, continues to enlarge until about the seventh month of gestation. This clot turns yellow, forming the yellow body, or *corpus luteum,* of pregnancy. The corpus luteum of ovulation forms simply a scar on the surface of the ovary.

Impregnation (fertilization, fecundation, conception).—This is the junction of the male spermatozoön and the female ovum, and generally takes place in the outer third of the Fallopian tube; from thence, with the aid of the motion of the tube itself, and the cilia of the columnar epithelium, the fecundated ovum falls into the uterus, where it is held by the folds of the mucous membrane comprising the decidua reflexa. It may lodge in the tube and grow there, constituting a tubal pregnancy, or ectopic gestation. The tube can only be stretched to the size the ovum obtains at about six weeks, when it ruptures, resulting in hemorrhage, and if in the abdominal cavity, unless an operation is performed and the bleeding tube tied off, the patient will probably die.

The spermatozoön, the male element, is shaped like a tadpole, with head, neck, and tail, and of the many present and capable of impregnating an ovum, only one penetrates it. As soon as the head of the spermatozoön, the only portion which enters the ovum, has penetrated its wall, this cell divides into two equal portions, each containing half the yolk. These two subdivide into four, the four into eight, and so on indefinitely until the ovum is full of many smaller cells. This process is called *segmentation.* The ovum at this stage is called the *morula,* or mulberry body. These cells shortly begin to bank themselves into a mass at one side of the ovum, leaving a space opposite. This is called the stage of the *blastula,* or blastodermic vesicle.

The cells now arrange themselves in layers, at first two, then these two form the third; from these three layers all of the tissues of the body are made. From the outer layer, *ectoderm,* are formed the nervous system, skin and its appendages—the hair, nails, etc.—the chorion, amnion, and placenta; from the middle layer, *mesoderm,* the bony framework and muscles of the body, the blood, lymphatic system, and peritoneum; and from the inner layer, *entoderm,* the intestines and epithelial lining of the organs of the thoracic and abdominal cavities.

At the end of four weeks the ovum is the mulberry-shaped body described above, but during the next four weeks the ovum, now called the embryo, assumes shape, with recognizable head and body. At the end of the third month it takes the name of *fetus.*

At the end of two weeks the ovum is 2 mm. in length; at four weeks, 8 mm.; at eight weeks, 25 mm.; at five months, 200 mm.; at seven months, 370 mm.; at nine months, 500 mm.

At the end of the third month the fetus weighs about four ounces; the head is the largest part of the body; the extremities are formed and the fingers present, the sex can be determined, and the placenta is formed.

At the end of the sixth month the fetus weighs about a pound, and at the end of the seventh month it weighs about three and one-half pounds. The hair of the scalp, the eyebrows and lids are present, the vernix caseosa is present, and from this time, if born prematurely, the child is *viable,* or able to maintain an existence without the mother's nourishment.

EMBRYOLOGY.

The child is generally spoken of as the *embryo* until about the third month, when the placenta is formed, and as the *fetus* after this period.

Membranes.—There are two sets of membranes formed during pregnancy which play an important part in gestation; one set, the *amnion* and the *chorion,* is derived from the embryonic structure, the ovum; the other, the *decidual membranes,* from the mother.

There are three deciduas, all formed from uterine mucous membrane; decidua vera, decidua reflexa, and decidua serotina. The lining membrane of the uterus, which as the result of impregnation is swollen, congested, and thrown into folds, is the *decidua vera,* or true decidua. When the ovum is impregnated it falls into the uterus from the Fallopian tube, where impregnation is supposed to take place, into one of these folds of the decidua vera. Very soon these folds are reflected up and unite over the ovum, holding it in place. They are called the *decidua reflexa.* At the point where the ovum lodges on the decidua vera, the placenta is formed afterward, and this area is called the *decidua serotina.*

Lochia.—The decidua reflexa, as the ovum grows, is pressed against the decidua vera, and finally disappears. The decidua vera and serotina come away in the form of the *lochia,* after the birth of the child. The lochia during the first two or three days is mostly made up of pure blood, and is called *lochia rubra.* It is usually necessary to change the pads worn at this time about every two hours. During the next week the lochia becomes paler pink in color, and is much less profuse. This is the *lochia cruenta.* During the last of the puer-

perium the discharge becomes very pale or colorless, and is called *lochia alba*. The lochia usually lasts from three to four weeks.

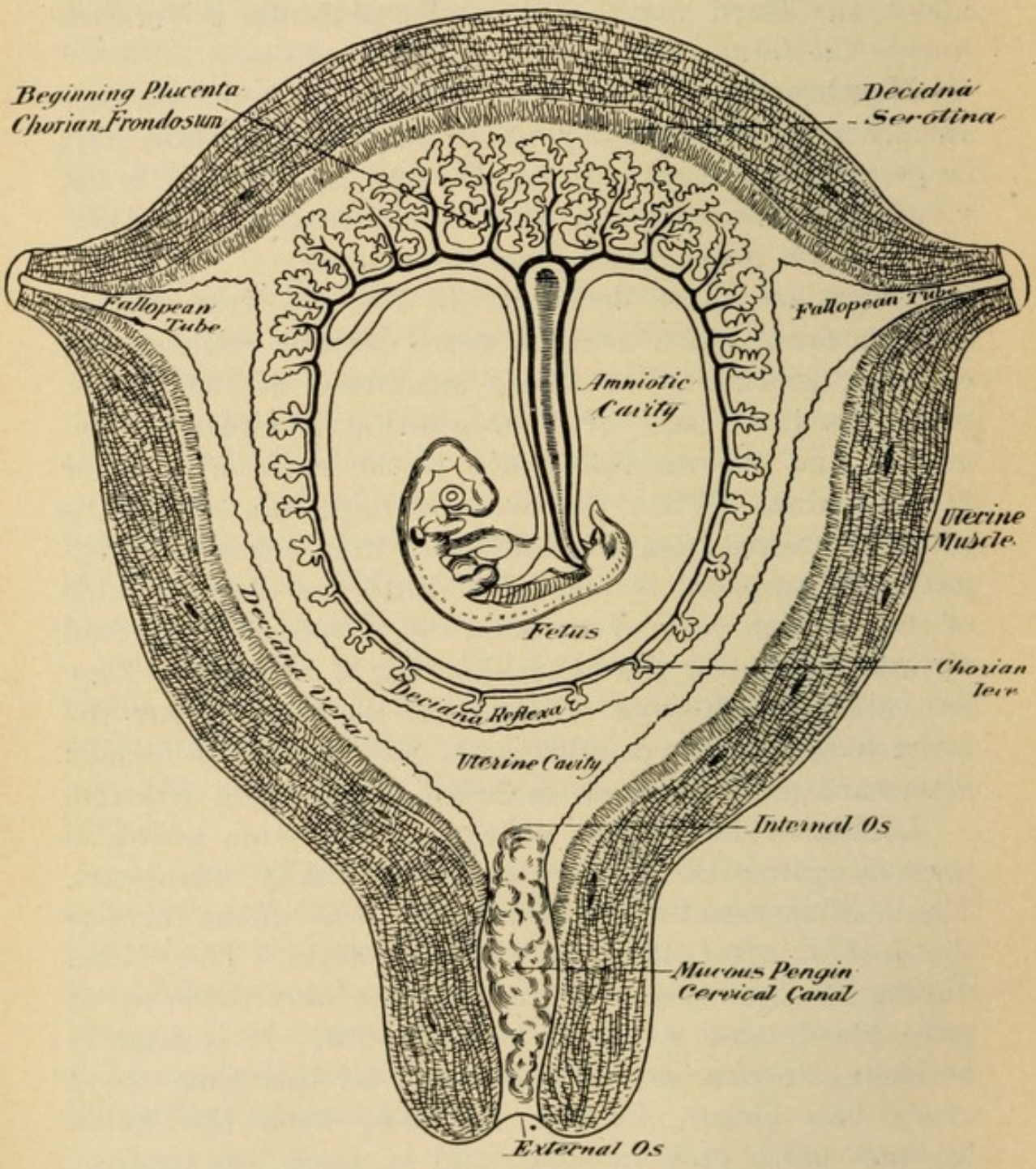

FIG. 7. PREGNANT UTERUS AT SEVENTH WEEK (A. T. B. OBSTETRICS).

Amnion.—Very soon after the ovum is impregnated the cells form a membrane, enclosing the embryo entirely. This is called the amnion; the cavity inside the amnion is the amniotic cavity, and is filled with a fluid, the *liquor amnii* or amniotic fluid, and in this fluid the embryo floats. It also serves the purpose of protecting the embryo from jolts and jars, supplies it with some

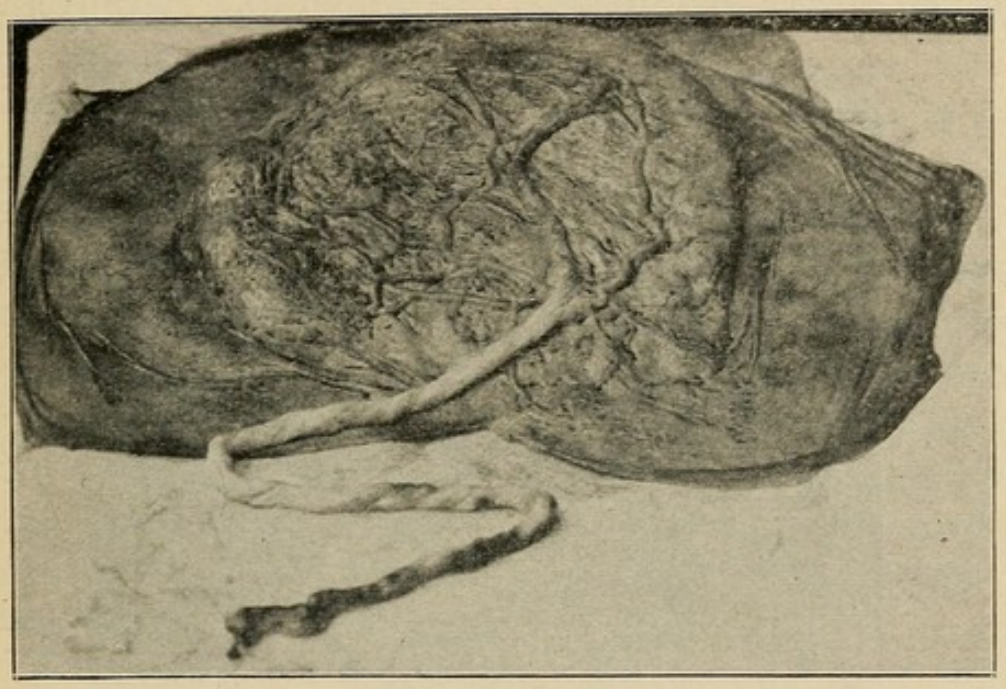

FIG. 8. FETAL SURFACE OF PLACENTA.

water, and later, at the time of labor, the amnion acts as a wedge or dilator to the cervix. When there is a very small quantity of liquor amnii the condition is called oligohydramnios, and when present to an excessive amount is called hydramnios. When the membranes rupture and the liquor amnii, which is in front of the presenting part, escapes before the beginning of labor, or very shortly after the first pain, it is called a dry labor.

Chorion.—The other embryonic membrane is the chorion, which is an important structure, as through it

the embryo obtains nourishment until the formation of the placenta. Numerous little finger-like projections form on the surface of the chorion, called villi. Through these the nourishment is absorbed. Those villi that touch the decidua serotina form the placenta, and the rest of the villi touching the decidua reflexa disappear.

Placenta.—The placenta is the organ of respiration and the source of nutrition for the child. It grows upon

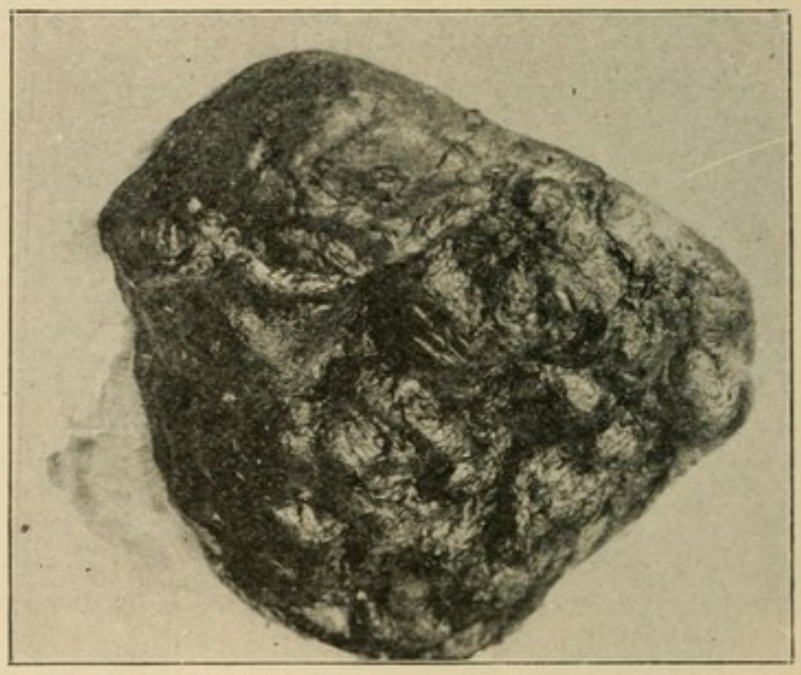

FIG. 9. MATERNAL SURFACE OF PLACENTA.

the decidua serotina, dipping down into depressions in the uterus. The mother's blood here gives off oxygen and the necessary nourishment and takes on carbon dioxide from the child's blood, the pure blood being carried to the child through the umbilical cord. It must be remembered that there is no admixture of maternal and fetal blood. This interchange of gases and nourishment for the fetus goes on through a very thin membrane by a process of osmosis, the two blood-currents not mixing at all.

The placenta is generally round or oval, about twelve inches in diameter, about an inch in thickness, and weighs about a pound. It has two surfaces, the fetal and maternal; the fetal surface is smooth and covered with amnion, and into it is inserted the umbilical cord. The maternal surface is rough like raw beef, is divided into many sections by sinuses. These sections are cotyledons, and fit into corresponding depressions in the uterus.

Cord.—The umbilical cord, or *funis,* varies in length from fifteen to forty inches, and is attached generally about the center or to one side of the fetal surface of the placenta. It contains three blood-vessels—two arteries and one vein. These vessels are imbedded in a gelatinous substance called Wharton's jelly, which protects them from pressure. The vein carries arterial blood from the placenta to the child, the arteries carry venous blood from the child to the placenta. The cord contains no lymphatics or nerves, hence there is no pain when the cord is cut.

When the cord is inserted in the center of the placenta it is a central implantation; on the side, a lateral implantation; on the edge, a battledore insertion, and when attached by the blood-vessels, a velamentous insertion.

The cord may become wrapped around any part of the child—neck, arms, body, or leg—and may become tied into a knot. The large dilated veins on the cord are varicosities.

Because of the possibility of a hemorrhage from the cord occurring after it has been tied, the cord should be inspected frequently during the first few hours after birth, and retied if bleeding occurs. The use of a rubber ligature invariably prevents hemorrhage.

MULTIPLE PREGNANCY.

It has already been stated that but one spermatozoön gains entrance to an ovum to accomplish fecundation. This is true if the ovum contains but one nucleus and nucleolus. If there are two nuclei and nucleoli and two spermatozoa gain entrance, twin pregnancy will result. These twins will be of the same sex, and there will be but one placenta with two umbilical cords. If two ova with single nuclei are discharged, one from each ovary, and both are fecundated, twin pregnancy will result; the children will be of opposite sexes, and there will

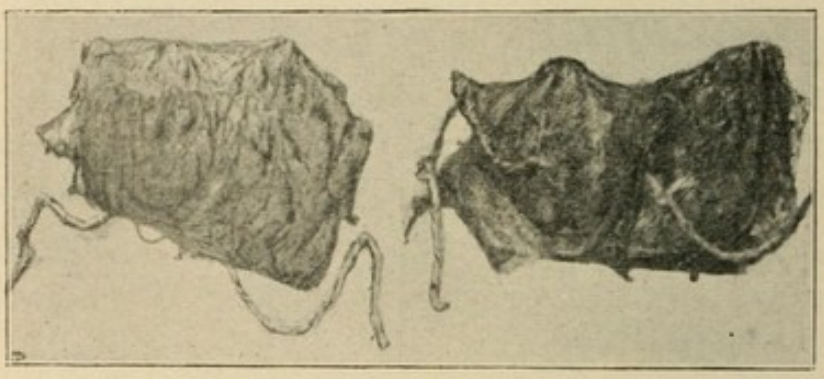

FIG. 10. PLACENTA OF TWIN PREGNANCY.

be two distinct placentæ. According to a late theory in regard to the cause of sex, if two ova are discharged at the same time from one ovary and both fecundated, the children will be of the same sex. Triplets may result from the fecundation of three separate ova discharged at the same time, or two ova, one containing a double nucleus and nucleolus. Quadruplets result from fecundation of four distinct ova, the two ova containing a double nucleus and nucleolus, or two single ova and one containing a double nucleus and nucleolus.

CHAPTER III.

Pregnancy.

SIGNS OF PREGNANCY.

The signs of pregnancy are divided into *positive* and *presumptive*. The positive signs are the fetal heart and ballottement.

Fetal Heart.—The fetal heart is heard over the abdomen of the mother as soon as the child grows to

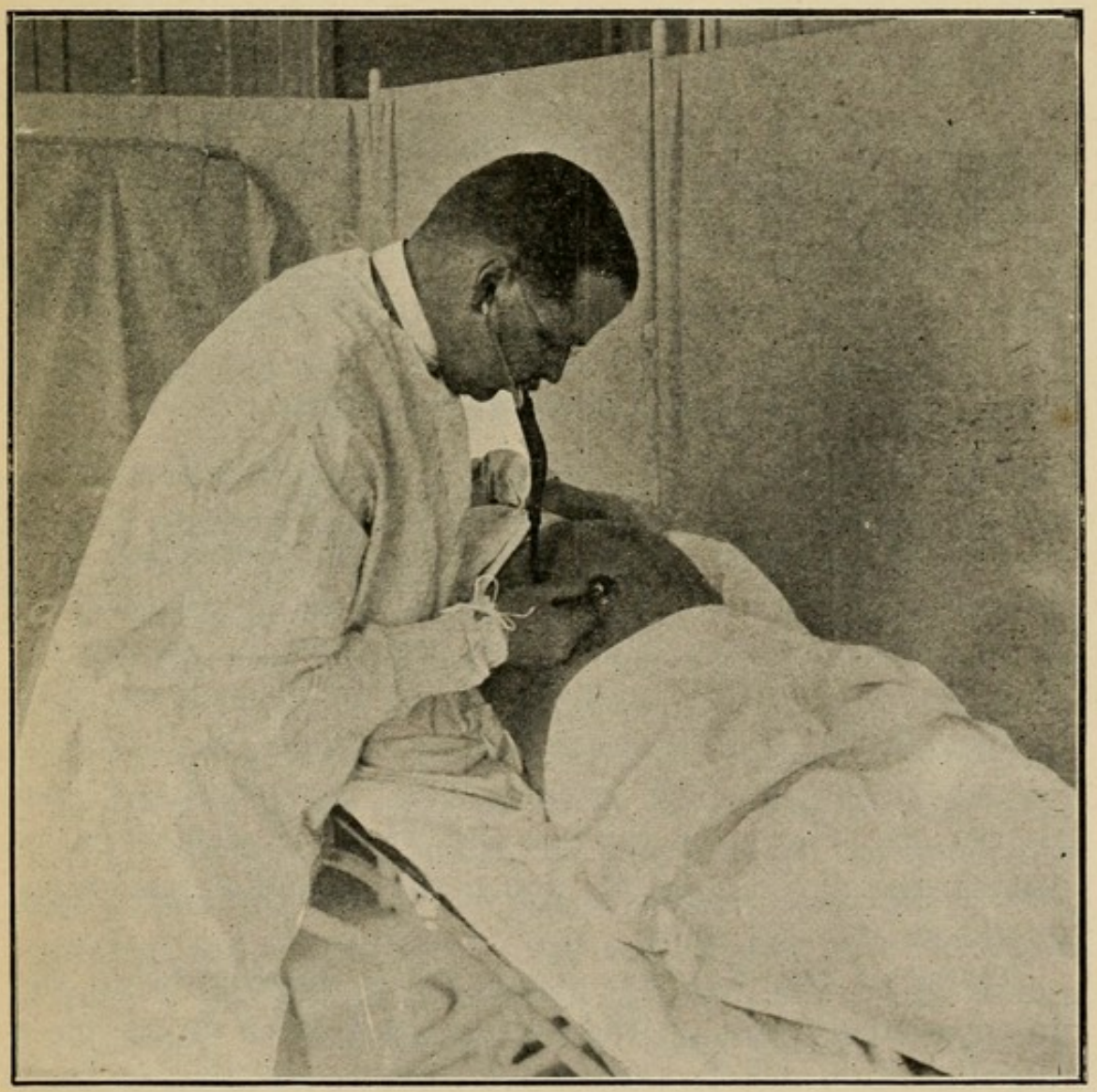

FIG II. LISTENING FOR THE FETAL HEART.

sufficient size to touch constantly the wall of the uterus, this occurring about the fourth and a half to the fifth month of gestation. It beats from 120 to 160 times to the minute, and its sound has been likened to the ticking of a watch under a pillow.

Ballottement is produced somewhat earlier, and is performed by placing the index and middle fingers in the vagina against the anterior or posterior wall of the uterus; a quick movement of the fingers upward causes the fetus to be dislodged, float in the liquor amnii, and gravitate back against them. This passive movement of the fetus, felt by the examining fingers, is ballottement.

Presumptive Signs.—The presumptive or probable signs of pregnancy are many, but because they are present in other conditions besides pregnancy they are not positive signs. These signs can be best remembered when they are grouped according to the various systems of the body, namely, those affecting the genito-urinary system, the digestive system, and the skin.

GENITO-URINARY SYSTEM.

Menses.—Cessation of menstruation occurring in a woman previously perfectly regular is one of the earliest signs of pregnancy. This may, however, be caused by other conditions than pregnancy, as an altered mode of living, change of climate, exposure to cold, or illness of an acute nature. A woman may be pregnant and menstruate regularly during the whole of gestation, or during the early months; hence this is not a pathognomonic or positive sign.

Color of the Vagina.—Soon after impregnation the mucous membrane of the vagina and labia takes on a purplish hue, due to obstructed venous circulation from the pressure of the enlarging uterus. The cervix be-

Souffle.—The uterine souffle or bruit, a whirring sound heard over the uterus, differs from the fetal heart-sound in that it is synchronous (occurs at the same time) with the mother's heart-beat. It may also be found in large fibroid tumors of the uterus. It is caused by the rush of the maternal blood through the dilated uterine vessels.

A whirring, blowing sound, not nearly so loud as the uterine souffle, is caused by the rush of blood through a constriction in the umbilicus, or cord, and is called the umbilical or funic souffle. It is synchronous with the fetal heart-sounds.

Bladder.—Irritability of the bladder, frequent desire to urinate, is one of the first symptoms, and is due to pressure on the neck of the bladder by the enlarged and heavy uterus.

THE DIGESTIVE SYSTEM.

Morning Sickness.—A pregnant woman may be subject to a slight nausea on arising in the morning, nausea associated with vomiting, either of the first meal only or a vomiting of everything ingested, or there may be a constant vomiting of fluid and mucus. The first named is alluded to as the *morning sickness,* and is present in a great many pregnant women, beginning immediately after conception or occurring at any time during the first six weeks of pregnancy. It generally lasts about six weeks, but when present constantly, with retching and vomiting of fluid and mucus, the condition is called *pernicious vomiting,* the patient's life being endangered. This requires the most careful attention and treatment.

Heartburn, or an eructation of an acid solution into

the mouth, is a frequent occurrence and is generally due to hyperacidity of the gastric juice. It can be combated by antacids, soda, aqua calcis, aromatic spirits of ammonia, and the magnesia preparations, either the milk of magnesia or the ordinary cubes of carbonate of magnesia being very effectual.

Salivation consists in an increased secretion of the salivary glands, which may become so severe as to keep a patient constantly housed because of the profuseness of the flow. If this saliva is swallowed in great amounts it is frequently the cause of indigestion. It may be associated with morning sickness.

Cravings.—Patients frequently have peculiar cravings for unusual things to eat, fruits out of season, sweets or acids, either of which may be unusual; chalk, magnesia, or starch. She may make a meal of a single article of diet which ordinarily is not cared for at all.

SKIN.

Striæ.—On the skin of the abdomen and thighs there develop small lines, due to the stretching of the skin; they are the *striæ,* or technically the *linæ albicantes.* In a primipara they are blue and wide; after birth they become narrow and pearly white. They never disappear. They are not found on some pregnant women whose skin is lax and stretches easily.

Pigment.—There is a deposit of *pigment* in the skin of the abdomen in its median line, from the pubis to the umbilicus, and also in the umbilicus. The umbilicus, as the abdomen enlarges, becomes flattened instead of depressed. Sometimes a deposit of pigment occurs in spots upon the skin of the body and face; this is called *chloasma.* It disappears soon after labor.

OTHER CHANGES.

As a result of the enlarging uterus the movement of the diaphragm downward in *respiration* is interfered

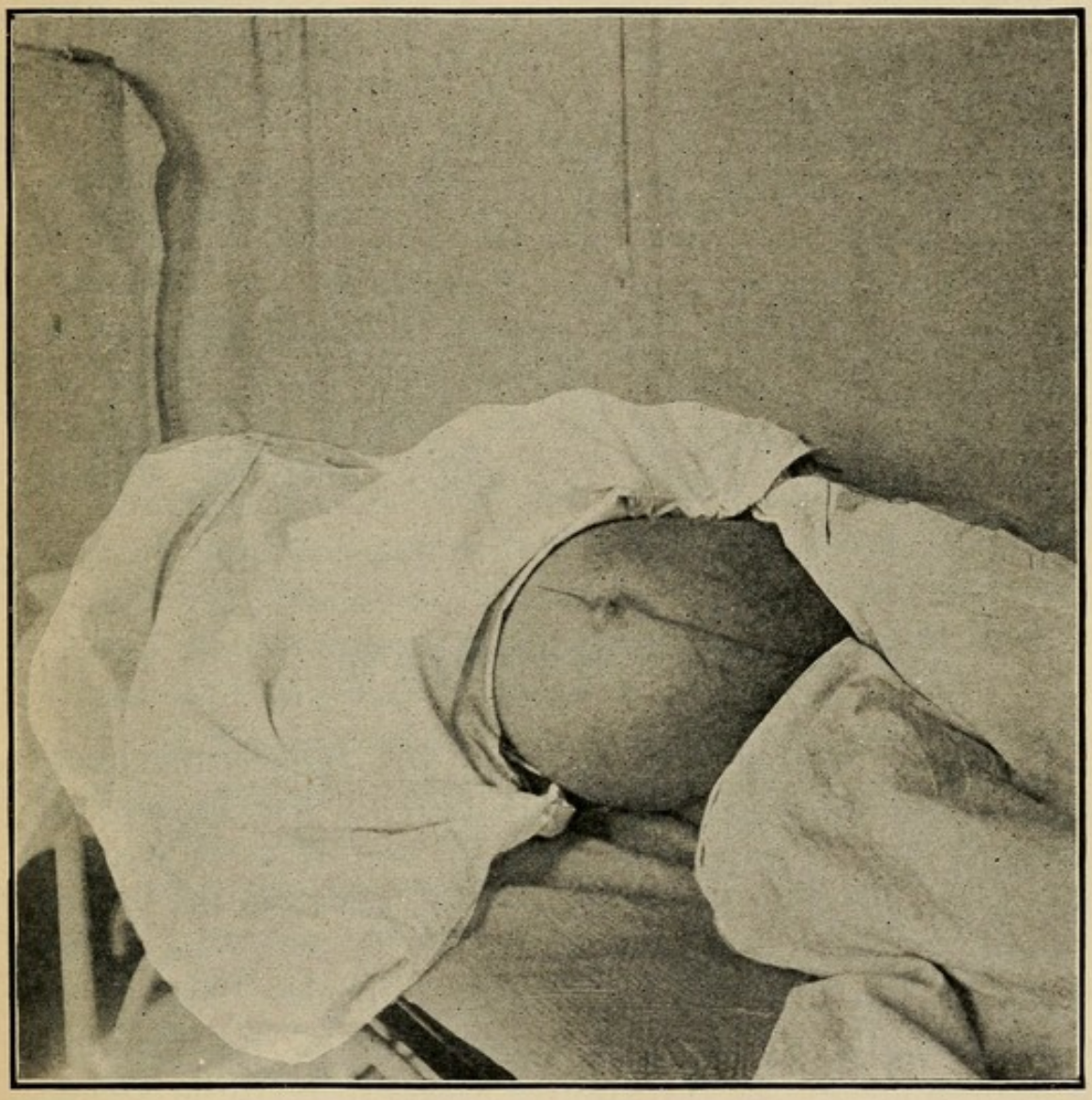

FIG. 13. PIGMENTATION AND STRIÆ.

with, and during the last month difficulty in breathing may be experienced.

There is an increase in the quantity of *blood* in the system. The superficial veins of the body are frequently quite markedly enlarged—varicose veins developing oftenest in the legs and vulva.

The *kidneys* are much overworked during pregnancy. The quantity of urine is increased, and as the uterus enlarges pressure on the kidneys and their vessels causes a congestion and a condition called "pregnancy kidney." Albumen in the urine is a danger signal of considerable importance, and is indicative of serious trouble if persistent and abundant.

The *teeth* during pregnancy soften and break down. Fillings become loosened and fall out, and by exposure the nerves become painful. *Neuralgias* are frequent, especially of the face, even though the teeth may not be involved. The patient may evince many signs of nervousness; she may be morose, erratic, or irritable.

The *thyroid gland* frequently enlarges during pregnancy.

DURATION OF PREGNANCY.

A nurse having been selected for the confinement, at the first interview with the patient her inquiry is likely to be, "From what time do you wish to engage me?" and she may be called upon to assist in the count. Pregnancy lasts, as a rule, from 278 to 280 days, forty weeks or ten ordinary menstrual intervals, but if, as is occasionally the case, a known intercourse resulted in impregnation, the duration is about thirty-nine weeks.

It is very important that all menstrual records be kept accurately, as it is of assistance to the physician in checking up his calculation, but it is surprising how often it occurs that women forget the date of their last period. Not only should a memorandum of the first day of the last menstruation be kept, but any change which may be noticed in its character, duration, amount

of flow, etc., as it frequently happens if an impregnation occurred just prior to a menstrual period it may not stop that period but shorten it, or the amount of the flow may be much less. No method of calculation is infallible, but the one which is most often correct, if the date of the last menstruation be known, is as follows: To the first day of the last menstruation add the number of days the period generally lasts, and from this date count back three months or forward nine months.

Take as an example December 1st as the first day of the last period; adding seven days, the usual length of the flow, brings it to December 8th; counting forward nine months or back three months makes the date of probable delivery the 8th of the following September.

There are many tables for reckoning the date of delivery, but these are all based upon the date of the last menstruation being known, this being given on one line, the date of labor on the next.

If the date of the last menstruation is not known, or if a patient conceives while suckling an infant, the menses having never been re-established, there are two fairly accurate methods of determining the duration of pregnancy. One of these is by counting four and a half months from the date quickening is first felt, or by an examination of the abdomen. The fundus of the uterus reaches the umbilicus at the sixth month; by dividing the distance from the umbilicus to the ensiform cartilage into three parts, we find the fundus at the lower third at the seventh month, at the middle third the eighth month, the fundus touching the ensiform cartilage and ribs at eight and a half months, and drops back to where it was at eight months a short while before full time.

Two hundred and seventy-eight days can be counted from the date of impregnation, if this be known.

THE CARE OF PREGNANCY.

A woman during pregnancy should exert more than usual care to observe the common laws of health as relates to her diet, exercise, rest, clothing, bathing, stomach, bowels, kidneys, and her mental condition.

Diet.—Her diet should be the most nutritious and varied possible. A pregnant woman is subject to peculiar cravings of appetite of an abnormal nature, which under ordinary circumstances are never present. She craves magnesia, chalk, pickles, or some article which is usually distasteful or never eaten, and if it is shown these articles do not upset the digestion they need not be especially withheld. Regular meals are important; sweetmeats and eating between meals should be discouraged.

There is no special or restricted diet during pregnancy which can exert any effect in the production of an easy or painless labor. Even if this could be accomplished, it would in every instance be at the expense of the newborn infant, which would, unquestionably, be the subject of some nutritional disorder.

Meat should not be eaten to excess, nor more than once, or at the most twice a day; fruit can be eaten freely, for its laxative effect. Vegetables are good for the pregnant woman, especially spinach, peas, beans, and tomatoes.

Teeth.—The teeth during pregnancy are liable to become defective, and if troublesome symptoms arise, or if they become painful, only that dentistry should be done which is necessary for comfort. Temporary

cement fillings, if they can be inserted without prolonged sittings, for the protection of the tooth only, are entirely within the limits of safety. Prolonged dentistry is so wearing upon the nervous system as to make possible a miscarriage, and teeth should not be extracted unless absolutely necessary.

Exercise is essential to the well-being of the pregnant woman, and as a general rule it can be stated that the woman who gets most out-of-door exercise during gestation will have the most vigorous child and the easiest labor. The amount of exercise taken will depend on the individual, but as a general rule it may be said the exercise must be short of fatigue and never violent. A woman who does her own housework will not be so much in need of exercise as her more favored sister, as she is frequently tired out when the day's work is done, but she does need fresh air, and should obtain this in winter with windows open, while well wrapped up, and in a sunshiny room.

Violent exercise, as skating, tennis, golf, dancing, swimming, horseback riding, or sewing on the machine should not be allowed. The patient should not take long journeys, buggy or trolley rides, especially at the anniversary of a menstrual epoch.

The Clothing should be very warm in winter, wool predominating, and very light in summer. A freely acting skin is most important, and this can best be obtained by warm clothing in winter and frequent bathing both in winter and summer. Frequent baths in summer, when the skin is naturally more active, is most essential.

In winter the lower limbs need protection, the projecting abdomen preventing the close application of the skirts about the person, and even though close-fitting

warm drawers are objectionable, they should be worn under these circumstances if the weather is cold.

Great relief will be observed in many cases if the clothing is supported from the shoulders, because of the discomfort produced by the pressure of the skirt-bands around the waist. The question is frequently asked, "Are corsets not injurious during pregnancy?" If they exert any pressure, enough to feel tight, they are certainly injurious, and if worn should contain as few steels as possible, and worn only for the purpose of supporting the breasts and relieving the abdomen of the pressure of the skirt bands. The practice of wearing the corsets so tight as to crowd the enlarging uterus down into the pelvis in order to conceal the fact that pregnancy exists is reprehensible, and should never be done. Great harm can be done in this way to the pelvic organs and to the growing child.

Certainly no pressure should be exerted over the breasts; the nipples should be perfectly free, and if they are normally flat or depressed an effort should be made during the whole term of pregnancy to train them by massage and pulling until a good serviceable nipple is produced.

High-heeled shoes should not be worn, as they are distinctly injurious.

Varicose Veins.—One of the few complications that will prevent one from walking is a development, during the later months, of varicose veins of the leg, thighs, and perhaps of the vulva. This is frequently a very painful condition, but much relief may be obtained by wearing an elastic stocking made to measure by any good surgical instrument maker, or a flannel spiral bandage, the latter having to be replaced as often as it becomes loose. The elastic stocking can be washed frequently.

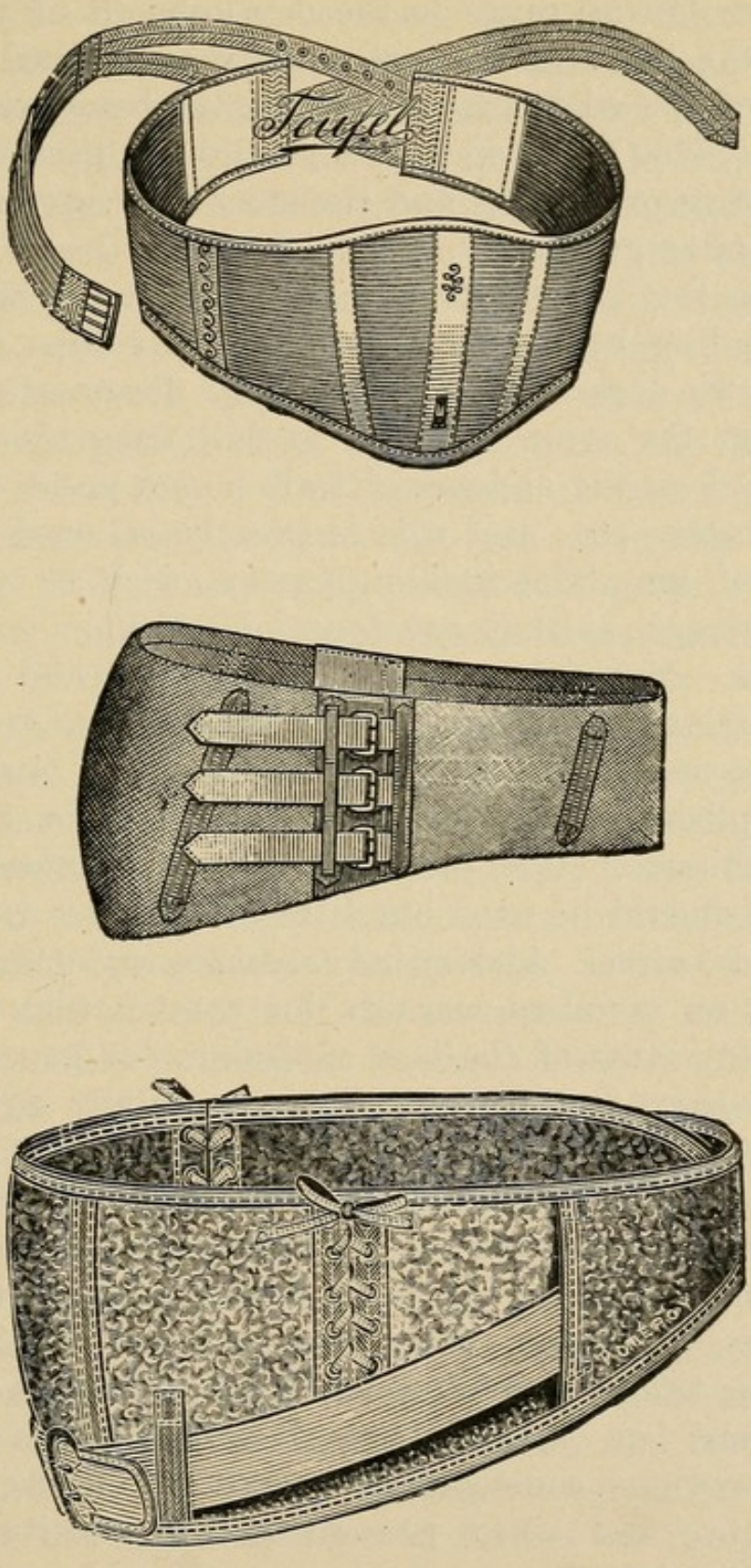

FIG. 14. TYPES OF ABDOMINAL SUPPORTERS.

A contributing cause to the development of varicose veins of the leg, and one not usually considered, is the wearing of the encircling elastic garter below or above the knee. This form of garter should be discarded entirely during pregnancy and the stockings supported by the suspender garter.

During the last month of pregnancy the pressure of the descending head interferes with the return circulation, and the legs become swollen and frequently painful. From the seventh month to full term the weight of the child on the abdominal wall causes great discomfort, backache, etc., and this is greatly relieved by the wearing of an abdominal supporter, with or without perineal straps, as they are found needed.

Bowels.—Most women are constipated, and especially so during pregnancy. Daily evacuations from the bowels are necessary for health and comfort, and must be accomplished either by diet, medicines, or enemas, or all combined. Those foods which tend to increase gas formation should be used but little; fruits are excellent as a mild laxative. Abdominal massage, under ordinary conditions an excellent measure for constipation, should not be used. One of the best medicines for general use is cascara sagrada, of which there are many agreeable preparations. Enemas should not be given too frequently, but they are occasionally of service. Glycerin suppositories are ordinarily quite effectual for emptying the rectum. A glass of water before breakfast is of service in obtaining daily evacuations. This can usually be taken, provided there is not much morning sickness or salivation. Diarrhea may occur from a previous constipation caused by indiscretions in diet, etc., and when present should receive early medical attention.

Kidneys.—It should be borne in mind that a pregnant woman excretes or throws off poisonous and excrementitious products from the blood for herself and for the child in the uterus, and should any of the avenues of escape for these products be interfered with her health will suffer in consequence. The principal avenues of elimination are the kidneys, bowels, skin, and lungs, and any impairment of function of any one throws extra work on the others, to their detriment. Should constipation exist for any time, the kidneys, already burdened by a double amount of excretory work and suffering from pressure by the enlarging uterus, may easily fail to accomplish their full quota of work, the woman suffering in consequence from retention in the blood of these excrementitious products.

These points should be carefully explained to the patient, and she will then realize the importance of sending her urine to her physician for examination. The urine should be examined every two weeks from the fifth month of pregnancy, and once a month, at least, the quantity passed in twenty-four hours must be measured and the result of the measurement sent to the physician, with a sample of the twenty-four hours' urine. The daily quantity should be at least forty ounces to be within the limits of health. The presence of albumen in the urine is a danger signal always, and a patient so suffering should be placed under the strictest surveillance as to her diet, exercise, bowels, etc.

Edema of the feet and ankles, alone, may occur from pressure, but if an edema of the hands and face is also present the urine should be closely and frequently examined, both chemically and microscopically.

One of the first evidences of failure on the part of the kidneys may be symptoms of toxemia, persistent

headache, dizziness, disturbances of vision, recurrent nausea and vomiting, and the occurrence of any of these symptoms should be reported at once and actively treated.

Rest.—It should be so arranged that a pregnant woman's rest is not disturbed by day or night. A nap during the day should be encouraged. During the later months, because of the pressure of the enlarged uterus on the diaphragm, she may have considerable difficulty in lying upon her back, and will have to be content with what rest can be obtained while propped up in bed. Sleep is often much disturbed also by the great activity of the child at night, and when this is the case sleep during the day, if the child is quiet, is necessary.

Mental Condition.—Our patient should have the most pleasant and cheerful surroundings possible; she is very liable to be despondent and "blue," and everything must be done to keep her thoughts off the trying ordeal she will soon have to endure. She should be guarded most assiduously against the gossiping women who, under the cloak of friendship and interest, detail to her all the disagreeable complications that have happened to friends or acquaintances for the past ten years. These stories create most decided impressions and retard progress greatly.

The patient should keep a close watch upon herself and report to her physician as soon as any of the ordinary symptoms of pregnancy become troublesome, but she should be encouraged not to become hypochondriacal in regard to herself. She should be able to strike a happy medium between the harm resulting from too great self-examination and the complications resulting from a neglect of important symptoms. She should be warned against indiscriminate reading of literature

bearing on pregnancy and labor, as there are very few books suitable for the average lay mind on these subjects.

A bright, cheerful room should be chosen for the bedroom, and the best room in the house is not too good for the lying-in room and should be selected. In winter the possibilities of heating and ventilation should be well considered.

Maternal Impressions.—Of the many superstitions which surround maternity, none is so deep-rooted in the laity, perhaps, as the belief that a mental impression can produce a deformity in the unborn child. Natural timidity in discussing this subject deters the average mother from consulting her physician in regard to it, and the nurse may frequently be able to set her mind at rest. Cases of deformity from maternal impressions have never been scientifically proven. If it is borne in mind that the child is practically fully formed before the end of the third month, before the mother is absolutely sure of her condition, the impossibility of a deformity being caused by the sight of a gruesome object should be apparent at once. Hence the nurse can in many instances reassure the mother, and banish this dread which keeps her nervous and in fear through the remainder of the gestation.

Bathing.—The skin is one of the principal organs of the body for the elimination of waste products, and during pregnancy it is most important that it be kept in good condition. The body should be protected from chilling as pointed out in the section on clothing. Daily baths are of the greatest benefit; a full tub bath if possible, a sponge bath if a tub bath can not be had. The temperature of the bath should be between 80° and 90° F., extremes of temperature being avoided. Cold plunges, even though the patient is accustomed to them,

should be prohibited, and a cool sponge, following the tub or warm sponge, substituted. A pregnant woman should never be allowed to take a surf bath.

Chilling of the body from exposure of any kind throws extra work on the kidneys, and serious consequences may result.

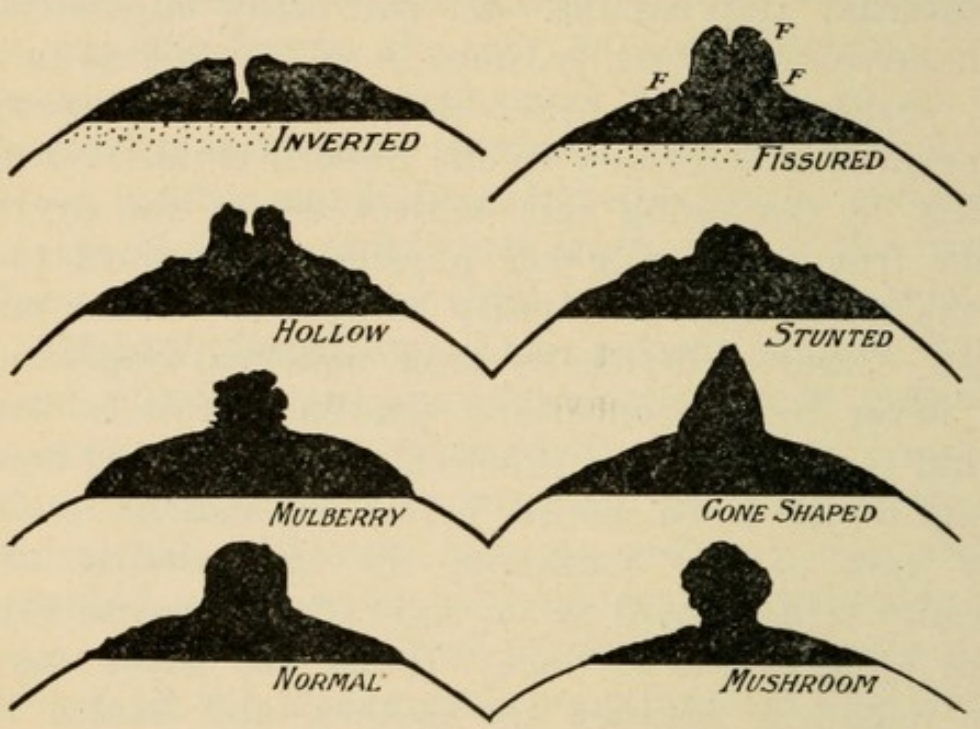

FIG. 15. VARIOUS FORMS OF NIPPLES (A. T. B. OBSTETRICS).

Care of the Nipples.—The failure of a mother to nurse her infant is a calamity, and every precaution should be taken to enable her to do so. The wearing of tight clothing before and after puberty, which makes pressure on the breasts and nipples, causes deformity of the nipples and prevents nursing.

The breasts of every pregnant woman should be carefully examined, and if the nipple is flat or depressed, instructions given in the massage of them so as to make serviceable ones out of them.

As there is no complication which can happen to a nursing mother so painful and troublesome as a cracked or fissured nipple, an effort should be made before confinement to prepare them for nursing. Alcohol or preparations containing alcohol are injurious rather than helpful. If the nipples are anointed every night with lanolin, and as part of the morning toilet rubbed with a soft nail brush or rough cloth and soap to remove the lanolin remaining, the nipples are much more pliable and resistant. This treatment was first suggested by Dr. J. Milton Mabbott, and has proven of great value.

CHAPTER IV.

Labor.

Labor is that process by which the fetus, placenta, and membranes are expelled from the uterus. Why labor should occur in 278 days from the time of conception is not known, though there are many attractive theories, yet unproved, in regard to it.

There are certain changes which take place about two weeks before labor, which indicate its approach. The fundus of the uterus, which has been touching the free border of the ribs, descends to the upper third division, between the navel and ensiform cartilage, before referred to. This descent of the uterus and its contents is called "settling," "dropping," "sinking," "falling," or "lightening," and is usually an important sign. The patient is much more comfortable, her waist bands are looser, and she breathes much more easily and freely. The head descending into the pelvis makes pressure on the recurrent blood-vessels and a damming back of the venous blood occurs, usually followed by swelling of the feet and legs, and perhaps of the vulva also. An irritability of the bladder and rectum also results from this pressure.

Pains.—Throughout the whole of pregnancy there is a rhythmical contraction and relaxation of the uterus, which can be plainly seen by close inspection of the bared abdomen after the uterus rises out of the pelvis. These contractions are painless, but at the onset of labor they become painful and are called *pains,* pain being used synonymously with uterine contraction.

At the eighth month, about the time for regular menstruation, contractions become painful, but they

are located generally in the abdomen, radiating perhaps to the thighs, but do not reach the back; these contractions are called *false pains,* and last but a short time as a rule. No other symptoms of labor are present.

True labor pains begin in the back and generally radiate toward the front, becoming shortly more frequent, lasting longer and of greater intensity. As the pains increase a vaginal discharge appears, at first colorless, later tinged with blood, which comes from the rupture of minute capillaries in the dilating cervix. This blood-tinged mucus is called the *show.*

Stages of Labor.—Labor is divided into three stages, called respectively first, second, and third. The first stage is the stage of dilation or preparation, when the cervix softens and stretches until it finally disappears; it begins with the first true pains and ends with the full dilation of the cervix.

The second stage is the stage of expulsion; it begins with the full dilation of the cervix and ends with the birth of the child.

The third stage is the placental stage, in which the placenta, membranes, and cord, all being spoken of as the "afterbirth" or "secundines," are born; beginning with the birth of the child and ending with the birth of the placenta.

In a primipara—a woman bearing her first child—the labor is longer than in a multipara—a woman who has borne at least one child.

The nurse is sometimes summoned to a case of labor before a doctor, but more frequently after he has been summoned and pronounced the patient in labor. If the nurse arrives first she should begin at once the preparation of the lying-in room. As before stated, the room selected for the accouchement must be the brightest in

the house, with no superfluous hangings to the bed—no canopy or valance. It is much better to have the delivery upon a cot or lounge and remove the patient to a clean bed when the labor is over.

Length of Labor.—In a primipara the first stage lasts from six to twenty-four hours, the second from one to two hours, the third stage from fifteen minutes to half an hour.

In a multipara the first stage lasts from two to ten hours, the second stage from a few minutes to an hour, the third stage fifteen minutes.

The dilatation of the cervix is accomplished in several ways: by the muscular action of the uterus, by the dilating action of the bag of waters, or amniotic sac, or if this ruptures early, by the presenting part. When the membranes rupture early in labor it is called a *dry labor,* labor under these conditions being generally slower than a normal one.

The contractions of the uterus force a small portion of the bag into the cervix, and this wedge being continuously forced down and becoming larger and larger, accomplishes finally the full dilatation.

The membranes, if they have not ruptured until full dilation has been accomplished, may rupture spontaneously or be ruptured artificially by the physician with his finger or a sharp instrument, when the cervix is fully dilated. If the child is born with the membranes unruptured and covering the head, it is said to have been born with a "caul," and this is considered a lucky omen.

Delivery may be accomplished with the mother lying upon her back (the dorsal or lithotomy position), or upon the left side, a position like the Sims' position.

Presentation.—The part of the child which first

presents at the inlet of the pelvis is called the presenting part; if the head is first, it is called a *vertex,* or head presentation; if the face presents, a *face* presentation; if the buttocks present, a *breech* presentation; if the shoulder is felt first, a *transverse* or *shoulder* presentation.

Attitude.—The attitude of the child is the relation which each of its members bears to its body; the chin is flexed on the chest, the arms are crossed upon the chest, the thighs flexed on the abdomen, the legs on the thighs, the feet turned up until the back of the foot touches the shin or tibia. This attitude is assumed so the child will occupy as little space in the uterus as possible.

Position is the relation which a fixed point on the presenting part bears to various fixed points in the mother's pelvis. Let the antero-posterior diameter and the transverse diameter of the pelvis divide the brim into four equal parts: there will be a right and left anterior quadrant, and right and left posterior quadrant. The presenting part enters the pelvis with the naming part directed toward one of these quadrants; if to the front on the left side it is called the left anterior position. The naming point of the vertex is the occipital bone or *occiput*; of the face, the chin or *mentum*; of the buttocks or breech, the *sacrum.* Hence we would say the vertex is presenting in the left occiput anterior position (L. O. A.) when it is directed to the left anterior quadrant; the child's back is on the left side of the mother, directed to the front.

If the face is presenting and the chin directed to the left posterior quadrant, it is the left mentum posterior, or L. M. P.; if the breech is directed to the left anterior quadrant it is the left sacro anterior, or L. S. A.

PREPARATION FOR LABOR.

Nurse.—The obstetrical nurse is usually engaged several months in advance of labor, and arrangement made as to when the engagement is to begin. It is obviously impossible to definitely state when the labor is to occur, but with the advice of the physician as a guide the nurse is usually engaged several days in advance of that date, and her fees begin at that time.

When an engagement is accepted for a confinement case it should always be with the understanding that no social or other pleasures shall interfere with a prompt response to the call, and full directions must be given when the expected time of delivery approaches where a call can reach her if away from home. She should not accept a case of contagious disease, or any engagement from which she can not be released on the first call from the patient in labor.

A social visit should be paid the patient for mutual acquaintance, and occasional visits made during the remainder of the pregnancy. During these visits many points will arise for discussion; the superstitions and fears in regard to which the patient through delicacy hesitates to consult her physician; the preparation of herself and room for the delivery, and the infant's layette. The nurse can do and say much to encourage the patient, can give her instructions as to the symptoms of the onset of labor, and in other ways assist her.

At this point it is appropriate that a word be said in regard to the nurse herself. The nurse who makes a good impression upon the patient whom she nurses through confinement, and upon her family, will have her reputation made as an obstetrical nurse, for there are but few expectant mothers whose choice of a nurse is not influenced to a great extent by the opinion of

her friends, even more than by the opinion of her physician. The physician can generally tell as to her professional qualifications and capabilities, but the friends can tell about her acceptability, and when these are weighed in the balance by the patient the acceptability outweighs the capability.

Most physicians when consulted in regard to the choice of a nurse generally select two or three, taking into consideration the household circumstances as well as the possible medical emergencies, allowing the patient to engage the one most attractive to her.

Qualifications.—What then can be said are the qualifications most necessary to make a good obstetrical nurse, other than her professional education? She should be, above all, tactful, adaptable, diligent, and cheery.

The tactful nurse is able to make a place for herself in the home of the millionaire or the three-room cottage without disturbing the usual routine, and with equal ease. She should be able to leave her charge bearing with her the good-will of the cook and the other servants of the house. She should be able to exclude visitors from the lying-in room without giving offense either to the patient or the visitor, until the physician has given his consent to the admission of company. She should cultivate an even temper, not easily ruffled by the annoyances which constantly arise in the sick-room and in the house, and in this way demonstrate her adaptability as well as tactfulness.

She must be diligent in her most exacting duties, but never strict enough to cause the patient to be out of humor, oftentimes being able to accomplish distasteful and disagreeable duties by the exercise of tact and patience. She should never be autocratic or dictatorial.

Cheerfulness, especially in the face of emergencies, always concealing by a cheerful exterior any trepidation or alarm which might be felt, is a most necessary qualification.

Uniform.—The nurse should appear in the lying-in room when summoned to the labor clad in full uniform, newly washed, with sleeves detachable or loose enough to be easily rolled up, and always wearing a cap, which is the badge of her authority. Graduate nurses too soon get into the bad habit of omitting this part of their uniform.

She should be amply provided with clean uniforms and aprons, never wearing a soiled apron or uniform. A dressing gown of soft washable material, which can be worn at night or placed by her bed after retiring, to be easily slipped on, is necessary, as she may expect to be called frequently after the baby's birth.

If she has arrived before the physician she should make inquiry in regard to the frequency, character, location, severity and duration of the pains, whether the membranes have ruptured and if the show has appeared. If she can judge from the description of the patient as to the necessity of summoning the physician at once, these facts should be written down and sent by messenger to the physician, or if there is but little time—evidenced by the great rapidity and bearing-down character of the pains—the physician should be summoned by telephone.

As soon as the nurse has arrived and donned her uniform (granted, of course, that she has time for this) and obtained the information for the physician, she should prepare the room, the bed, and the patient for the delivery, as detailed in the next chapter. If the first pains have wakened the patient after she has gone

to bed, the bedclothes must be removed and the bed made up fresh, as described elsewhere; the patient prepared, and the special articles needed in the room placed close at hand.

An obstetrical nurse must learn above all things the true meaning of cleanliness of her person and everything with which she comes in contact, both in and out of the lying-in room.

Supplies.—The supplies needed at the time of delivery should be gotten ready several weeks in advance, and if the delivery is to occur at home, much trouble and some money can be saved by purchasing an "Obstetrical Outfit"* containing most of the supplies needed. The outfit suggested by the author contains the following articles:

One-half dozen lochial pads.
Obstetrical bed-pad.
Five yards plain sterilized gauze.
One-half pound absorbent cotton.
One dozen large safety-pins.
One dozen small safety-pins.
Fountain syringe.
Nail brush.
Nail file.
Antiseptic soap.
Antiseptic tablets (bichloride).
Tube white vaseline.
Vaseline.
One ounce Squibb's chloroform.
Six ounces saturated solution boracic acid.
Sterilized tape for cord.

*This is prepared by C. E. Pfau, druggist, Third and St. Catherine Streets, Louisville, in a hermetically sealed box.

Cord dressing (Balsam Peru, m. xx; Ol. Ricini, oz. 1).

Credé eye solution (2 per cent nitrate of silver), 1 drachm.

Pipette.

Fluid extract ergot, 1 oz.

In addition to this, have at hand one dozen towels; one-half dozen sheets; a rubber sheet for the bed; two basins, one for urine or vomit, the other for placenta; two pitchers; one small bowl; an old carpet or rug, to protect the floor covering alongside the patient's bed; scissors; hot and cold water; ice; a small table; a blanket for receiving the baby; scales; a few napkins and soft cloths; slop jar, with top; chamber; abdominal binder; a pair of cotton leggins long enough to reach to the hips and large enough to be pulled on easily, with feet; tumbler; teaspoon; soap; boracic acid crystals and powder; hot-water bag; douche pan; rubber and glass catheter. When labor approaches the kitchen fire should be kept up, so that sufficient hot water may be had.

The Room.—It must be previously decided where the labor is to occur—in the brightest, cheeriest room in the house, warmest in winter and coolest in summer. It should be accessible to the bath-room, for convenience of the nurse. Let there be no superfluous hangings, and no cleaning or sweeping done in the room immediately prior to the delivery. An extra old rug or newspapers may be provided, to be placed at the sides of the bed or table to save the floor-covering from soiling by the blood or discharge. The room should contain no superfluous furniture; large easy-chairs replaced by straight-back ones; the washstand should be reserved for the physician, and contain nothing but the sterile nail-brush and a

bowl of solution, file, soap, hot sterile water, and a basin of lysol or bichloride solution, according to the preference of the physician. An extra small table must be provided for dressings, instruments, and other material necessary. A lounge can be placed in the room, to be used by the patient for resting, in order not to disturb the sterile bed when it is made.

The Bed.—The bed should be moved from the wall far enough to permit walking around it, and placed in the room so that the light falls upon the patient properly. Ample light is an essential, and should influence the selection of the room. It is much better to keep the bed fresh and clean for the patient to be moved to after the delivery, hence the delivery is best accomplished upon a lounge, single bed, or table. If delivered upon the bed the mattress must be firm—*never a feather bed*—and over this is placed a protecting covering made either of rubber sheeting, oil cloth, rubber sheet, a number of thicknesses of newspapers sewed together and covered with an old sheet, or several old but clean comforts or blankets. The protecting covering having been selected, the bed is made up as it will be after labor, a sheet covering the entire mattress, a draw-sheet folded in half and pinned on each side, and a folded sheet placed where the hips of the patient will lie. If the delivery is to be upon this bed, it is covered with a temporary or removable dressing, consisting of a rubber sheet which goes all across the mattress, a cotton sheet, and pad, all of which are withdrawn after labor. These are securely pinned, to prevent wrinkling and slipping. If a lounge is to be used for the delivery, only the first dressing named need be adjusted. For receiving the discharges of liquor amnii with the child, and the blood with the placenta, a pad made of absorbent cheesecloth filled with

bran can be used, and removed on the completion of the third stage.

While it is to be desired that the mother should not be disturbed after labor for the changing of her clothes, it may be necessary, and they should be kept warm and at hand. If care is taken in most cases the clothing can be kept from being soiled, as it is desirable that the mother be moved only so much as is absolutely necessary, because of the tendency to hemorrhage from the uterus when not perfectly quiet.

The nurse should have at her disposal as much shelf room and drawer space in bureau or chiffonier as needed, to have convenient the necessary bed linen, together with the mother's and baby's clothes.

The Patient.—As soon as the nurse arrives after the onset of labor and has prepared herself, if there is time the patient should always be given a full bath in the tub, no matter how recently she may have taken one, paying particular attention to the cleaning of the vulva. These parts should be sponged off, after the bath, with the antiseptic solution prepared for the hands. A warm soapsuds enema should also be given if there is time. If not time for both the bath and the enema, give the enema and omit the bath, but cleanse carefully the vulva. If the labial hair is very long, it will be difficult to keep clean of the bloody discharges after labor, and should be clipped close with the scissors. The nurse must also be sure that the patient has emptied the bladder during preparation. The shower bath is much better for the patient than the full tub bath, owing to the possibility of contamination of the vagina while sitting in the tub.

An undershirt is put on, stockings, and slippers which are easily removable, a night-gown, and wrapper

or kimona. The patient should be instructed not to touch the vulva after this preparation under any circumstances, and if bladder or bowels are evacuated the nurse should be allowed to cleanse the parts. A vulval pad is worn as a protection after this preparation.

A douche should never be given by the nurse, either in the preparation of the patient or after labor, without specific instructions to that effect by the physician, together with directions as to its character and temperature and the apparatus, nozzle, etc., to be used.

If the patient seems in active labor she had better be kept quiet, lying down, until the physician arrives and directs as to her being up. If he so directs, the patient's clothing should consist of stockings, felt or easily removable slippers, the gown which is to be worn at the time of delivery, and a dressing gown, with a vulvar dressing provided the discharge of mucus or water—if the amniotic sac has ruptured—is profuse. Her hair should be braided in two plaits if there is enough of it, as it is much more comfortable when lying down fixed in this way than when it is done up on the head. While waiting for the doctor the nurse should explain to the patient, if she be a primipara, the necessity of a vaginal examination. If the necessity for this is understood by the patient before it is attempted it will save her much distress of mind.

The Examination.—For the abdominal examination and measurement of the pelvis (if the latter has not already been made) the patient lies evenly upon her back close to the edge of the bed, and the abdomen from the ensiform cartilage to the pubes is bared. From the abdominal examination the position and presentation of the child is learned and the fetal heart is located. If the ear is used for this, the abdomen is covered with

a layer of gauze, and left bare if the stethoscope is used.

For the vaginal examination the nurse should inquire if the doctor uses his right or left hand, and place the

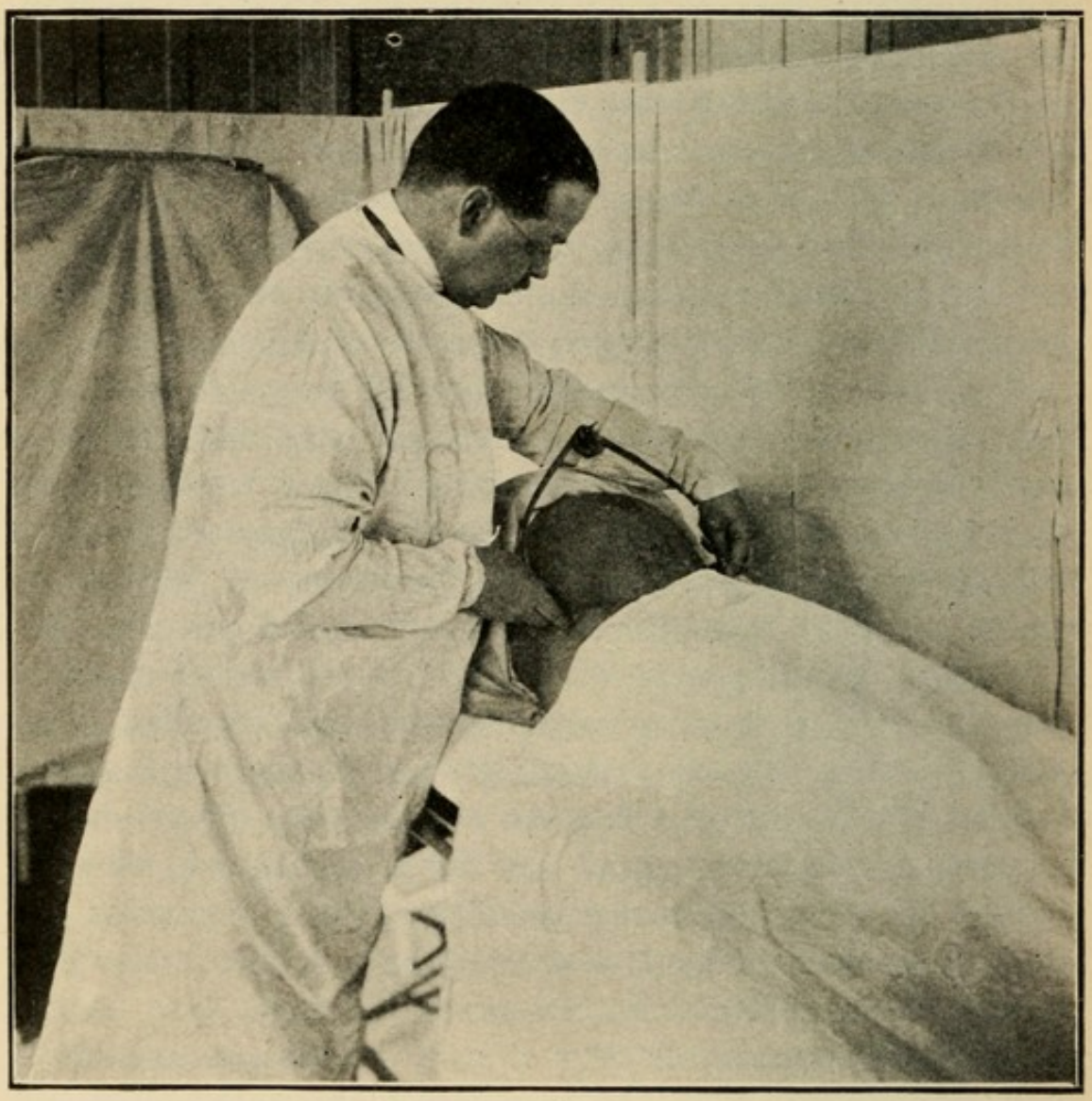

FIG. 16. PATIENT ON HER BACK—MEASURING TRANSVERSE DIAMETERS.

patient upon the proper side of the bed. The patient lies upon her back, knees drawn up and wide apart, and the vulva is thoroughly cleansed with absorbent cotton wet with an antiseptic solution. The patient is

best covered with two folded sheets which overlap on a line with her hips; when ready for the examination the lower sheet is slipped down, thus exposing the vulva,

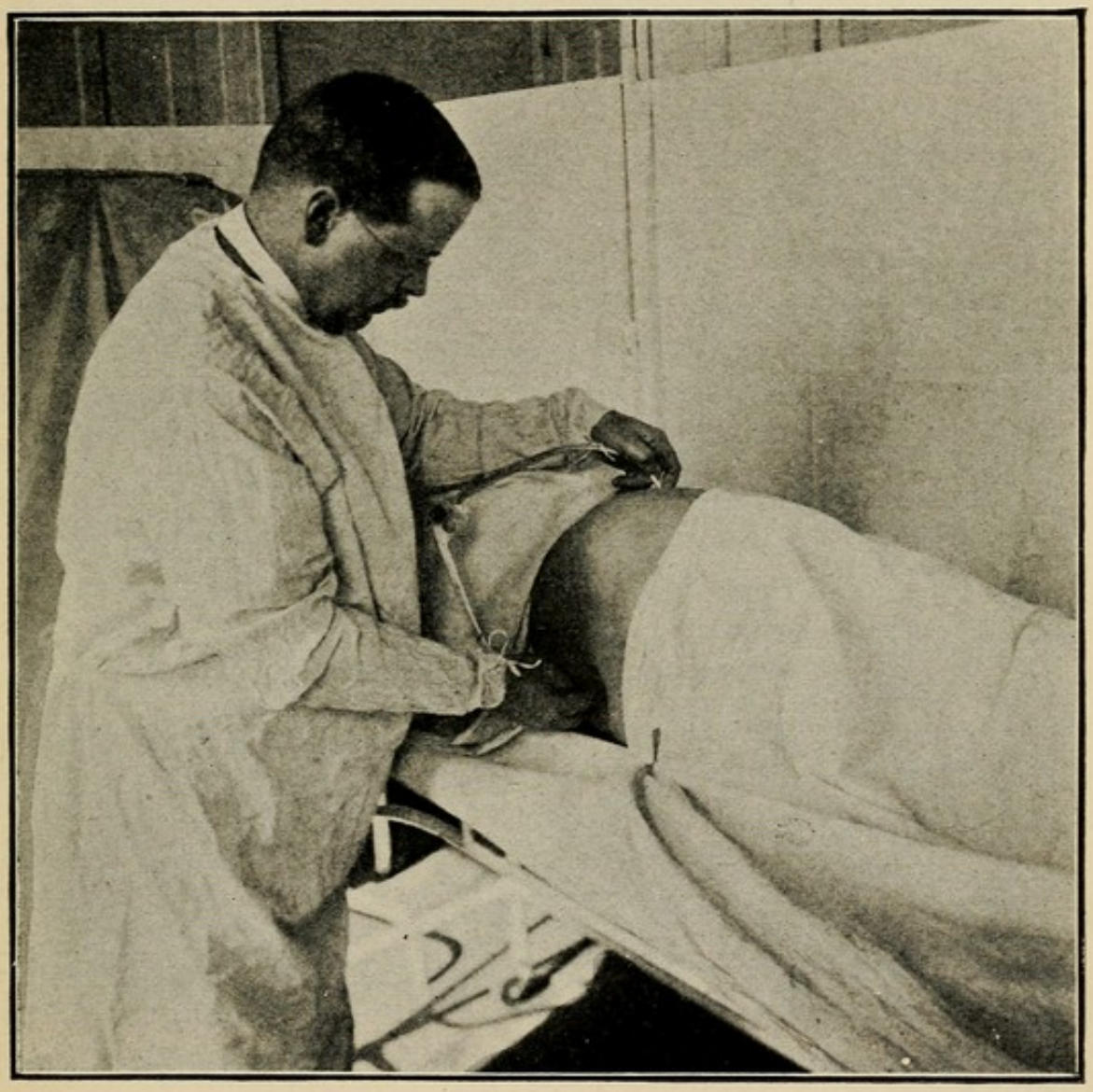

FIG. 17. PATIENT ON HER SIDE—MEASURING THE ANTERO-POSTERIOR AND OBLIQUE DIAMETERS OF THE PELVIS.

the upper sheet covering the thighs, or she may be covered entirely by one sheet, the vulva exposed when ready for the examination. Whenever lying down the patient's clothing should be pushed well up under her

shoulders, in order to protect them from being soiled by the escaping discharges.

A basin of warm, filtered, sterile water, or if this is not obtainable, boiled and strained water, must be provided for the physician to prepare his hands, with a sterile nail-brush, antiseptic soap, and nail file. Be ready to frequently change the water he uses, the nurse then to re-sterilize her hands. Place a chair by the bedside facing the head of the bed; have unguent ready for physician's examining fingers—sterile vaseline which is contained in the collapsible tubes being best. This is used only to protect the back of the fingers about the nails, the natural secretions of the vagina acting as a lubricating agent. Lard which has been placed in an unsterilized saucer should not be used. Many physicians use freshly sterilized rubber gloves in obstetrical work, and these must be boiled by the nurse while the physician's hands are being prepared.

Hands can be sterilized by the aseptic or the antiseptic method, or by a combination of both. By asepsis we mean the removal of germs by mechanical methods entirely—a brush and plenty of soap and water. By the antiseptic method cleanliness is obtained with soap and water, assisted by the use of antiseptic drugs.

The hands should be washed in running water where this is obtainable, and where it can not be had, washed through several basins of water. Special attention must be given to scrubbing of the finger nails and the spaces under them, which is the most difficult portion of the hand to sterilize.

It must be borne in mind that when the hands are once sterilized nothing should be touched which is not sterilized as thoroughly as the hands have been. A bowl of warm antiseptic solution should be kept convenient,

for frequent rinsing of the hands. This may be a solution of bichloride of mercury, 1-5,000; carbolic acid, 1-40; of creolin, a somewhat ill-smelling coal-tar prep-

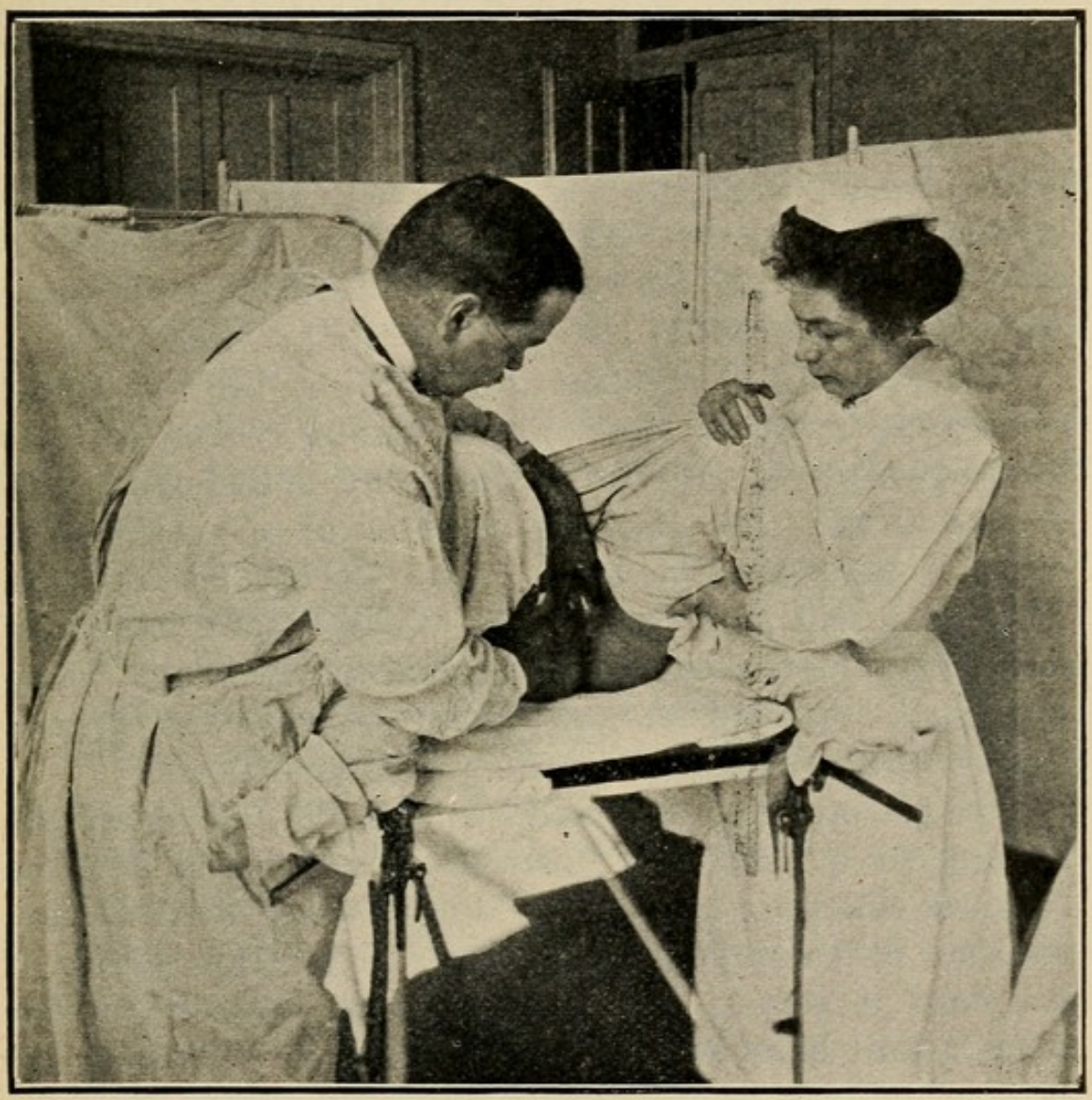

FIG. 18. VAGINAL EXAMINATION.

aration, but an effectual antiseptic; or a solution of lysol, which is a very convenient and efficient antiseptic. Because of the convenience of preparation, bichloride of mercury is generally used, being made by dissolving a bichloride tablet in one pint of water, thus obtaining a 1-1,000 solution, which can be diluted as desired.

If the nurse has any trouble with her hands which prevents their thorough scrubbing she should provide herself with a pair of sterile rubber gloves, to be worn during the delivery and whenever any vulvar dressings are done.

THE LAYETTE.

As soon as a woman decides she is pregnant for the first time her thoughts begin to dwell upon the preparations necessary for the little visitor, its basket and dainty *layette*. If she has borne children she will more than likely have saved the outfit of the previous child.

Clothes.—In designing the clothing for an infant everything must be loose, unrestraining to the motions of the body and extremities, and not interfering with its functions. The clothing must be of a weight sufficient to maintain the body heat, but not burdensome. This rule will not permit the use of tight bands on newborn babies, a barbarous custom which is still being practiced. Instead of preventing rupture or hernia, tight bands frequently produce this condition.

No attempt will be made to describe in detail the making of a baby's garment or to suggest a pattern, fashions changing in babies' clothes as they do in adults. As soon as the binder is discarded after the falling of the cord it should be dispensed with entirely; in its place a knit band with shoulder straps is worn next the skin, which can be kept from riding up under the arms by being pinned to the napkin.

Socks, the one article of wearing apparel with which a newborn baby is overwhelmed by its admiring friends, are about as useless as they are popular as a gift. They do no good, are never on properly, never fit, and are always being kicked off and getting lost. The skirts should be of sufficient length to protect the feet and legs.

A child should be undressed at night and attired in its nightdress, which with its shirt and napkin are all the clothes worn. It should be covered with sufficient bedclothes to keep it warm, these being secured by tapes or large safety-pins to keep it from kicking out, as babies are prone to do very early in life.

A box or special drawer should be provided for the baby's clothes. The outfit consists of the following:

Six straight bands, 18 inches long, 4½ to 5 inches wide, made of soft baby flannel. (These are to be worn until the cord drops off.)

Four dozen napkins, made of cotton birdseye, two sizes, 20 inches and 24 inches wide. Either square or double.

Six flannel skirts.

Four knit bands.

Four outing flannel gowns.

Nine white slips, nainsook or longcloth.

Three white cambric petticoats (to be worn only in summer, and not with flannel ones).

Two white baby-blankets or comforts.

Two knitted sacks.

Two or three quilted pads for baby's bed, one yard square.

One or more cloaks and caps—one veil.

Two pieces rubber cloth, one yard square.

Fine hair pillow, 10x12 inches, for buggy.

Six pillow slips.

Six sheets for bassinet.

Skirt stretcher.

Stocking stretcher, for drying these garments without shrinking them. If the directions for washing flannels given in Appendix are followed, stretchers will not be needed.

One flannel bag for tying about child's waist when out of doors.

The Basket.—The baby's basket may be made as elaborate as the means will allow, but a serviceable and dainty one may be made of any shallow basket, lined with muslin over any color, in which are pockets and pin-cushions filled with pins. A basket of the hamper pattern is very useful, the top containing the small articles, the bottom used for supplies. They may stand upon legs, the right height to make it easy to reach into while holding the baby upon the lap; if not on legs the basket can be placed on a chair in easy reach. The contents of the basket should be those things which are needed for the baby's first bath, among which are the following:

Pin-cushion, containing three sizes of safety-pins.

Soft hair brush.

Soap box, with white castile soap.

Talcum powder in box with perforated top. (Powder puff is unhygienic.)

White vaseline in tube.

Benzoinated oxide of zinc ointment.

Bath thermometer.

Hot-water bag, two-quart, with removable flannelette bag with draw-string.

Saturated solution of boracic acid.

One pair blunt scissors.

Absorbent cotton, wrapped in small towel.

Soft towels made of old damask.

Apron bath blanket of outing flannel, made of two thicknesses sewed together at the top only.

Wooden toothpicks, to be wrapped with absorbent cotton at one end and used as swab for cleaning nose.

Two or three thin flannel bands, six inches wide.

Soft linen of double thickness, or cheesecloth, for wash cloths.

Squares of sterile gauze for washing mouth.

Medicine dropper.

The double apron referred to may be placed in the basket for convenience, and before the bath is begun all the clothes to be put on the baby placed within easy reach.

The bath-tub most commonly used for babies is the tin tub the size of an adult's foot-tub, or one made of papier-mache, the latter having the advantage of lightness. The tub of the greatest utility is one made of rubber sheeting tacked to a wooden folding frame, the latter being easily made by any carpenter. This should be of a height which does not necessitate leaning over when giving a bath, and can be folded up and put away when not in use.

Care of Napkins.—Too great emphasis can not be laid on the importance of careful washing of the napkins, both when soiled with a movement from the bowels and when wet with urine only. They should be washed in hot water with soap and borax, followed by several rinsings in cold water, and dried outside of the nursery; then either folded smoothly by hand or ironed. We have seen several cases of severe eczema, limited to that part of the body covered by the napkin, where inquiry developed the fact that the napkin was being used after being wet three or four successive times and simply dried without washing.

As soon as a napkin is soiled it should be taken to the bath-room or closet and the movement scraped off with a knife kept for that purpose, wiping the scrapings on a piece of toilet paper and throwing it in the closet. The diaper is then put in a covered porcelain bucket or slop

jar, which should be provided, containing a weak formaldehyde solution or a 1 to 100 carbolic acid solution, in which the soiled napkins can be placed until washed.

The Nursery.—The nursery should be a bright, cheery room, with well screened open fireplace for winter heating, if possible. The temperature should not be over 70° F., and the air changed at least once daily, first removing the child and opening all windows for a half to one hour. It should have not less than 1,000 cubic feet of air space, and more if possible. Emphasis should be laid upon the importance of moist air in steam-heated or hot-air-heated houses.

The walls should by preference be painted and the floor uncarpeted, either hardwood or painted. This makes it possible for the floor to be wiped up and not swept, thus avoiding dust. The use of the Cleanator or other compressed-air cleaning devices in private houses should be recommended, especially where there are children. There should be plenty of light when the child is awake, with dark shades to darken the room when asleep, and the room should be at least five degrees cooler at this time. In favorable weather the child can sleep in its buggy out of doors, protected from the wind and its eyes protected from the light.

A baby's scale should be in every nursery—the grocer's balance scale being the most reliable.

In addition to this, the following conveniences should be in the nursery:

A screen for protection of child from light and draughts.

Low chair, without arms.

Basket for soiled linen (not the napkins).

Basin and pitcher.

Hot-water bag.

CONDUCT OF LABOR.

First Stage.—During the first stage the patient walks as much as possible, and the nurse should support her if need be, helping her to a chair, the foot of the bed, or other fixed object, for support at the onset of a pain. The pains of the first stage are generally more vigorous when the patient is walking about. When they begin she grasps any stationary object for support and ease during the pain. Instructions have already been given as to the preparation of the patient for this stage.

Her diet should be light—milk, milk-toast, cocoa or chocolate, and even if there is a distaste for food, if the first stage is prolonged she should be persuaded to take some nourishment. There may be vomiting during labor, but this does not usually occur until the latter part of the first or during the second stage.

Second Stage.—As soon as the second stage is reached, which generally is manifested by pains coming closer together, more bearing down and expulsive in character, of longer duration and much more painful, the patient is put to bed.

The patient during this stage may desire something to pull against, and the husband may be called upon to give his hand for this purpose. A folded sheet may be tied to the foot of the bed to relieve the nurse of this pulling. Rubbing the back, or simply the pressure of the hand on the back during the height of a pain, may give some relief.

As the head presses upon the bladder and rectum the patient complains of a desire to evacuate these organs, but she should not under any circumstances be allowed to get up, but told the bed is protected from soiling and to evacuate in the bed. During the perineal

stage (as the head is being forced over the perineum) the patient should have some chloroform to prevent any unusual effort at bearing down, as any sudden expulsive effort might tear the perineum badly. Chloroform is best administered on the Esmarch inhaler or mask, fifteen or twenty drops being dropped on the mask and then placed on the patient's face as the pain begins.

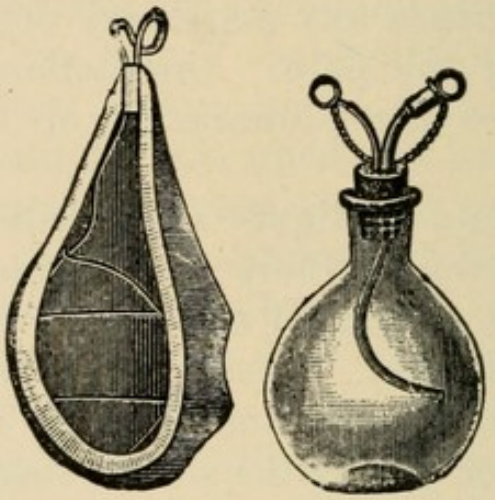

FIG. 19. ESMARCH CHLOROFORM INHALER AND BOTTLE.

This produces anesthesia to the *obstetrical degree* only, the patient's sensibilities being obtunded and the keen edge of the pain removed. If an obstetrical operation is performed the anesthesia is much more profound, being to the full *surgical degree.* A physician is usually called in to give the anesthetic if it is required for an operation.

One of the nurse's hands should rest on the fundus of the uterus, to cause it to contract down upon the body of the child as the head is being born. If this is not done the uterus does not contract, and when the body is born air enters the uterus with a rush; a blood-clot can easily be thus formed, taken up by the uterine circulation, and cause severe complications.

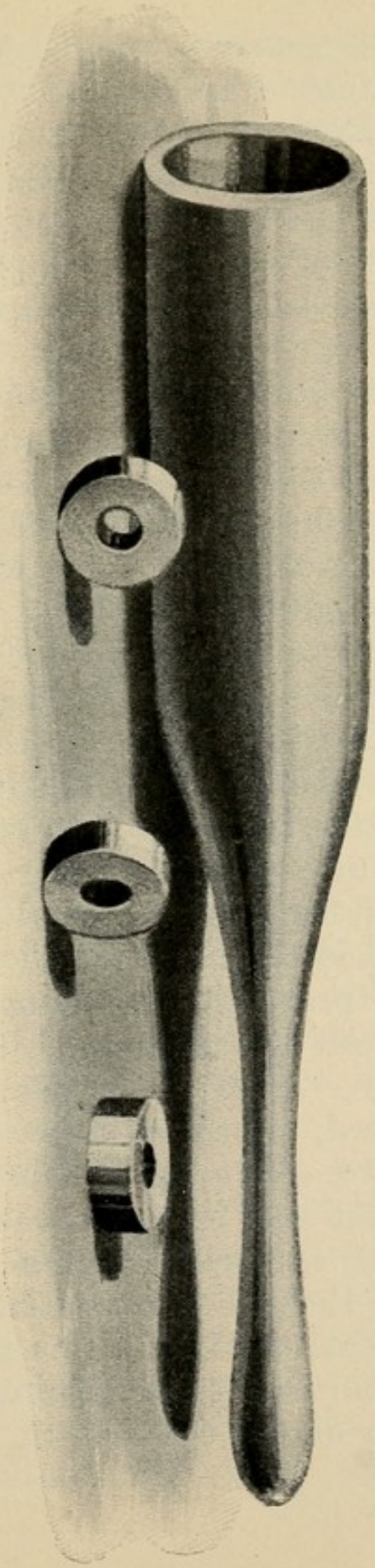

FIG. 20. FUNIS BAND APPLICATOR AND RUBBER FUNIS BANDS.

The patient is generally upon her back throughout the second and third stages of labor, especially in this country, but in England and on the Continent is generally upon the left side, a modified Sims' position. This is spoken of as a left lateral delivery. If upon the left side for the birth of the child, the patient is generally turned over on her back for the completion of the third stage.

As soon as the head is born the accoucheur feels for a coil of cord which is frequently around the neck of the child, and if found it is immediately removed, as traction enough to rupture the cord would be made if it is allowed to remain, or the traction might cause a premature separation of the placenta.

With the birth of the head, the chloroform mask is removed. While one hand still holds the uterus, the unengaged one reaches for the gauze with which the child's eyes and mouth are wiped out, hands the basin containing tape for tying the cord, or the funis band applicator and the scissors, to the physician. These should be close at hand on the small table, within easy reach. In addition to this a small foot-tub or large basin should be provided, containing warm water, in which the child can be immersed if it does not breathe and cry promptly. As soon as respiration is established the child is covered, to protect it from exposure.

Tying the Cord.—Two ligatures are generally placed on the cord, about half an inch apart, the cord being cut between these ligatures. The one next the child is tied in order to keep it from bleeding, that next the placenta to prevent the blood in the placenta and cord, which would drain out, from escaping and soiling the bed. The stump of the cord is left about two inches long.

The material for ligature may be either tape, strong twine, or rubber band, the latter being very much preferable as it exerts continuous pressure, continuing it while the Wharton's jelly is drying up.

As soon as the cord is severed the physician relieves the nurse of holding the uterus, and she is free to take the baby. If it has cried lustily it is wrapped in a blanket, laid on its right side, and placed in a warm place until the mother is put to bed—and *not* where it may be sat on.

Caul.—It happens very infrequently that the membranes rupture spontaneously high up beyond the dilated cervix, allowing most of the liquor amnii to escape, and when the child is born its head and face are encased in membrane, which is popularly called a *caul.* This may also happen with a small premature child, where we have a child, placenta, and membranes born together, the membranes unruptured. Should this occur the membranes must be ruptured at once, to enable the child to breathe.

Third Stage.—The third stage begins with the birth of the child and ends with the birth of the placenta and membranes. The placenta may be born fetal surface first and out, which is the most favorable way; edge first, fetal surface out; maternal surface first and out, or edge first, maternal surface out.

The uterus is held by the nurse, continuously, after the birth of the child, until relieved by the physician. It feels about the size of a cocoanut, and should remain firm and hard. If it becomes relaxed or soft, and there is a continuous flow of blood, the physician should be notified at once. Rubbing and kneading the fundus will usually cause it to contract again on the placenta and stop the bleeding. The pulse should be felt oc-

casionally, and if it becomes unduly accelerated the physician notified.

The placenta may be born spontaneously or be assisted by the Credé method, which consists in backward and downward pressure on the uterus during a contraction. The cord is never pulled upon to assist in the delivery of the placenta, as this may cause an inversion of the uterus, which is a turning of this organ wrong side out.

When the fundus of the uterus is felt to rise above the umbilicus and several inches of the cord seen to emerge from the vulva, it is a sign that the placenta has become separated, and the Credé method of delivery can be employed. This usually occurs in from fifteen to twenty minutes.

A basin is placed on the bed close to the vulva, the free end of the cord placed in it ready to receive the placenta, which with some fluid blood is caught and laid aside until the physician can examine it and the membranes to see if they are complete.

The nurse then bathes the mother, using a weak antiseptic solution, paying particular attention to the vulva and the hair of the labia. The blood is much more easily removed at this stage than later, when it has clotted upon the hair.

As soon as the placenta is born, the preliminary cleansing finished, and a fresh sterile sheet or towel spread under the buttocks, the physician investigates the perineum and posterior vaginal walls for possible lacerations. If a laceration is present it should be repaired immediately. This operation of perineorrhaphy is considered under the chapter on Operative Obstetrics.

The patient cleansed, the vulva is protected by a sterile gauze pad, which is changed often enough to

protect the bed from soiling. The flow is much greater the first few hours than afterward. The pads are gener-

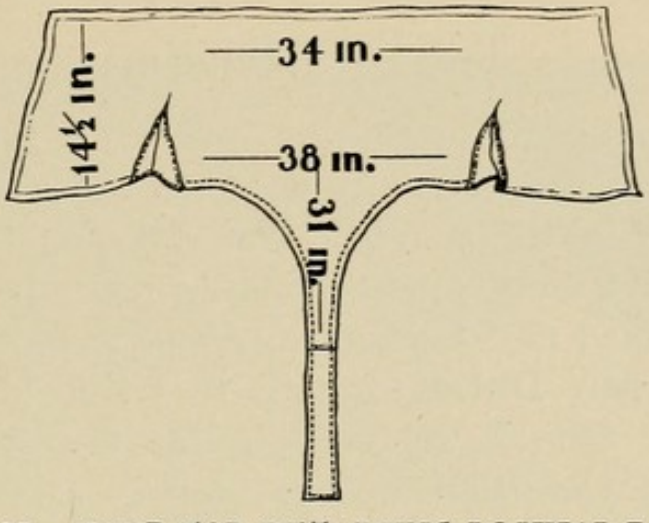

FIG. 21. BAND FOR RETAINING LOCHIAL PADS.

ally changed every two hours during the first twenty-four, and more infrequently after this.

With the completion of the third stage the labor is over, and the puerperium has begun.

CHAPTER V.

The Puerperium.

The puerperium, or lying-in period, is the time taken by Nature for the uterus to contract down until it rests entirely within the pelvis. Ten days or two weeks is generally the time spent in the recumbent position, though no hard and fast rules can be made as to this.

The Nurse's Duties during this time are manifold and varied. She is responsible for the lying-in room and for the condition of the mother and child. The mother, as soon as bathed and the vulvar dressing applied, is covered up in bed, as a physiological chill occurs in a large percentage of women at this time.

The nurse should sit by the bedside and hold the fundus of the uterus for at least an hour after delivery, to guard against postpartum hemorrhage. A contracted and empty uterus can not bleed to any dangerous extent. Temperature, pulse, and respiration are taken and recorded at this time, and a note made of the amount and color of the lochia.

The mother after this should be watched carefully, pulse taken occasionally, fundus felt, and water or very light nourishment given, while the room is being straightened up and the soiled things disposed of. An abdominal binder can then be applied if the patient desires it, or if the physician so orders. These are best made of coarse cotton about half a yard wide and long enough to go around the body and overlap. Enough large safety-pins must be provided to pin this up with—at least two dozen. If an abdominal binder is used, it is very convenient to pin the lochial pads to in front and

behind, and if not a small girdle is provided, such as is ordinarily worn by the patient during her menstruation, or one like that shown. (Fig. 23.)

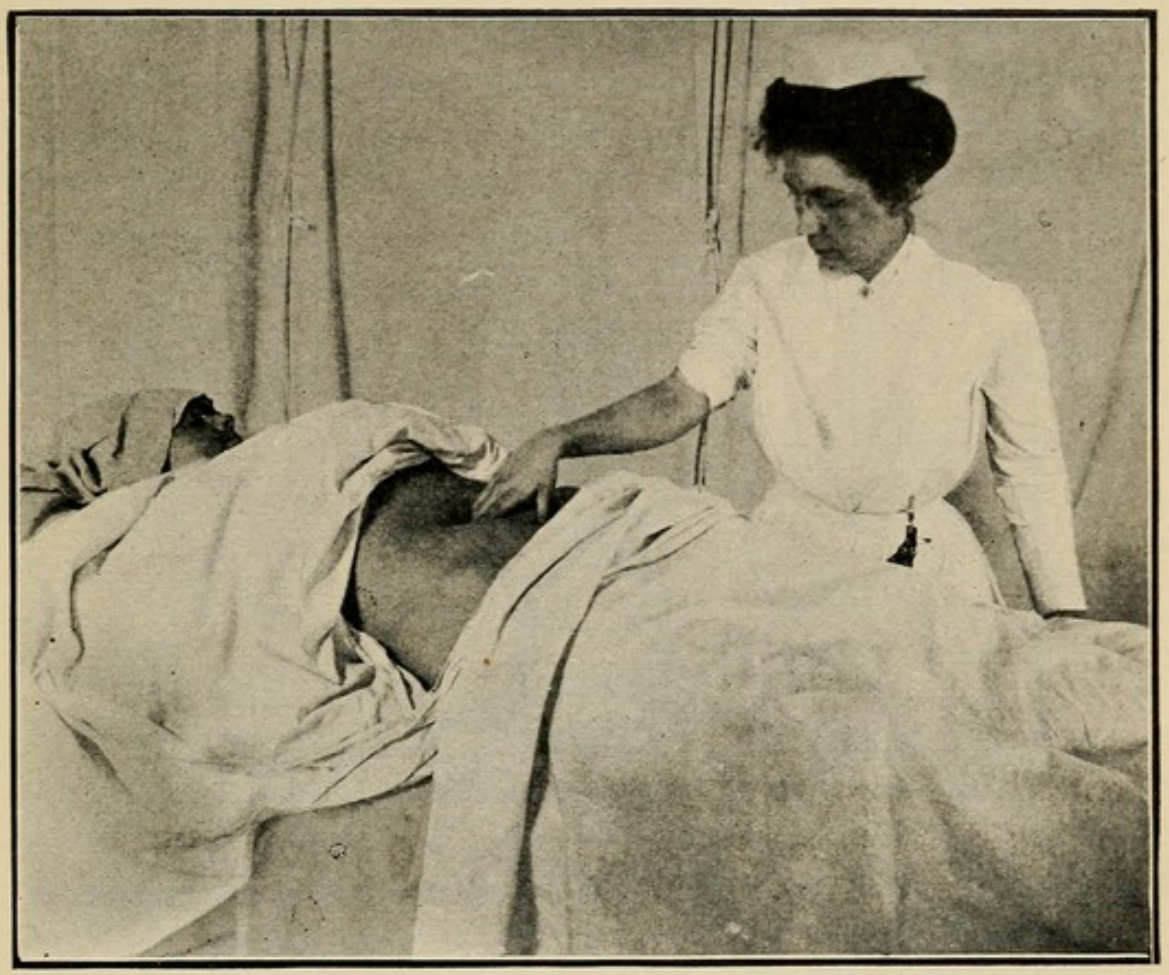

FIG. 22. HOLDING THE FUNDUS AFTER LABOR.

The Breasts and Nipples.—If the breasts are large and pendulous a breast binder, made after the following patterns, will give a great deal of comfort.

The breast and nipples of a nursing mother require the closest attention throughout lactation, but especially during the first few days, when the breasts are liable to become engorged and painful, and the nipples to become macerated, cracked, and fissured. The first important rule to establish is that the infant shall never be allowed

to lie with the nipple in its mouth after it has finished nursing, which generally takes about fifteen minutes. This softens and macerates the nipple, and fissures soon develop. The nipple should be washed with boracic acid solution before and after each nursing; kept thoroughly dry between nursings, and protected with a clean soft cloth over them. If the milk oozes from the

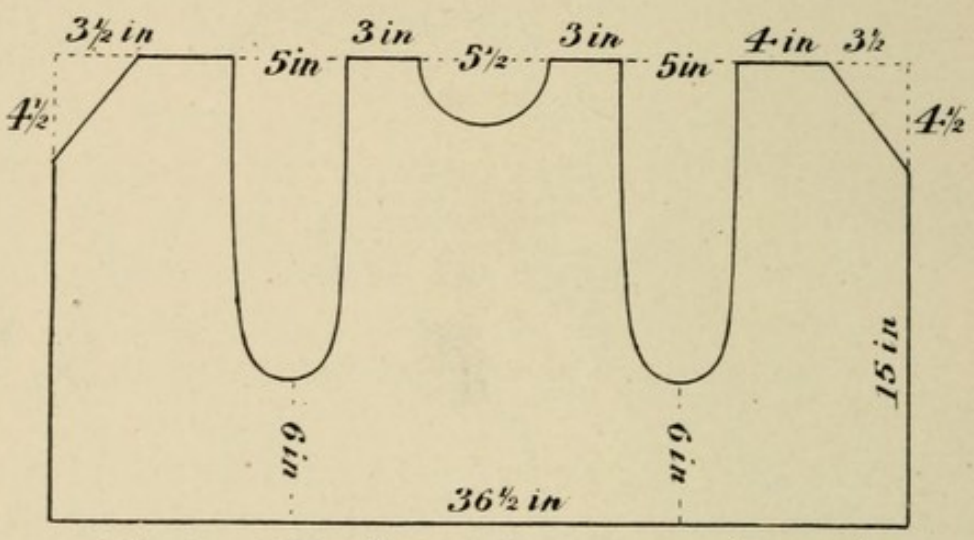

FIG. 23. BREAST BINDER PATTERN (COOKE).

breasts the cloth over the nipples will need to be changed frequently.

If the nipple becomes very tender a nipple shield should be used before a crack or fissure results. Most babies take the shield without trouble. The only practical one is the glass shield, on which is a small rubber nipple and ivory disc to prevent the child taking all the nipple in its mouth.

A crack soon results in a fissure, than which nothing is more painful in the puerperium. Nursing may be so painful as to cause the mother to dread and shrink from nursing whenever it is due. The fissures may be upon the apex of the nipples or at the base; may be very

small, or involve almost the whole area. There are several kinds of nipples, as shown in the accompanying illustration.

The depressed or flat nipples give the greatest trouble. If a fissure develops, the child should not be allowed to nurse from the breast without a shield. If nursing is very painful, the application of cocaine (3 per cent aqueous solution) just before the nursing will very often

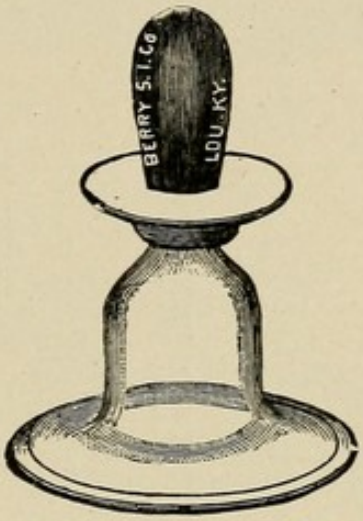

FIG. 24. GLASS NIPPLE SHIELD.

make it much less so. This should be carefully washed off before the child is put to the breast. Immediately after the nursing a 4 per cent solution of nitrate of silver is painted in the crack, which is held open. This, with the albumen of the blood, forms a pellicle over the surface and helps it to heal from the bottom. The nipple is then dried, powdered with boracic acid, starch or talcum, the child nursing from the nipple shield until the nipple is entirely healed.

Women who have large pendulous breasts frequently have much pain when the milk first comes, unless a breast binder is applied to insure its even distribution throughout the breasts; otherwise it will accumulate in the most

dependent portion, forming a "cake" or "weed," which is very painful. The binder is pinned up snugly after each nursing.

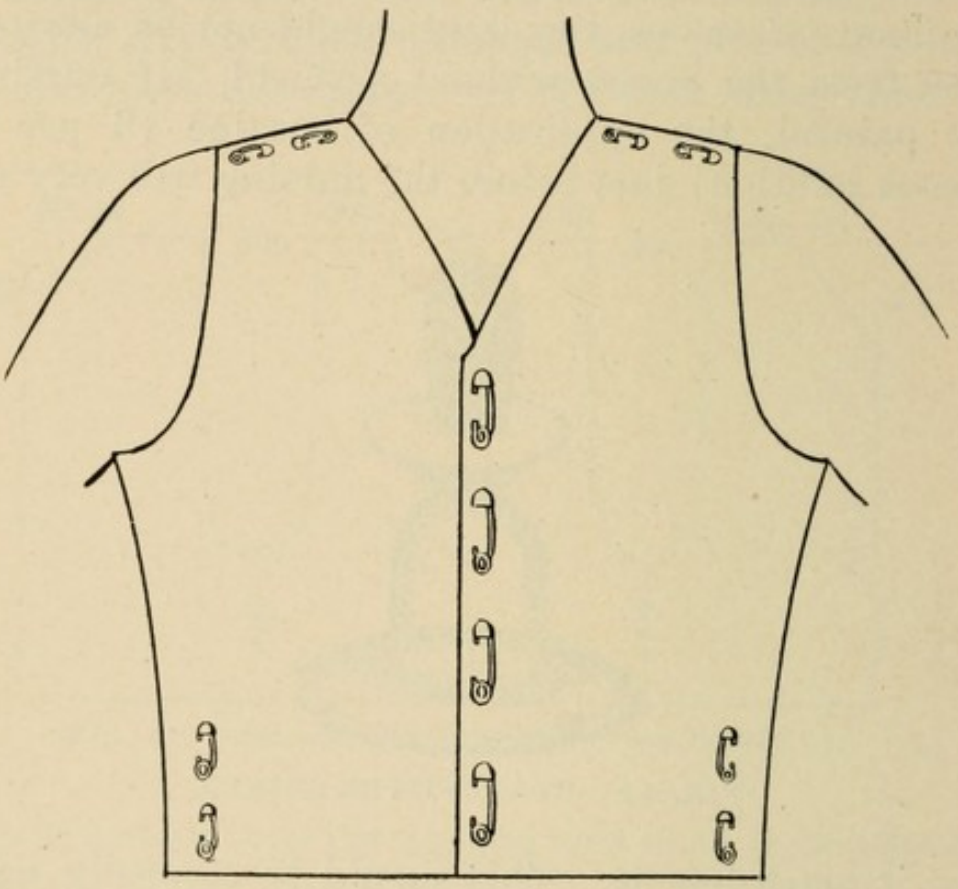

FIG. 25. BREAST BINDER.

The milk generally appears on the evening of the second or some time during the third day. Judicious massage, rubbing from the periphery toward the nipple with a gentle stroking motion, distributes the milk and presses some from the breast, giving great relief. Cocoa butter can be used as an unguent. Should this not be successful in relieving the engorgement, and if the child can not nurse it out, a breast pump can be used. The one with the rubber tube for suction by the mother or nurse gives less pain and discomfort than the other varieties.

Galactagogues.—The remedies sometimes given to increase the flow of milk are called *galactagogues.* Somatose is useful, given in teaspoonful doses three times a day; malt liquors and malt extracts in moderate doses act well with some patients, mostly by increasing

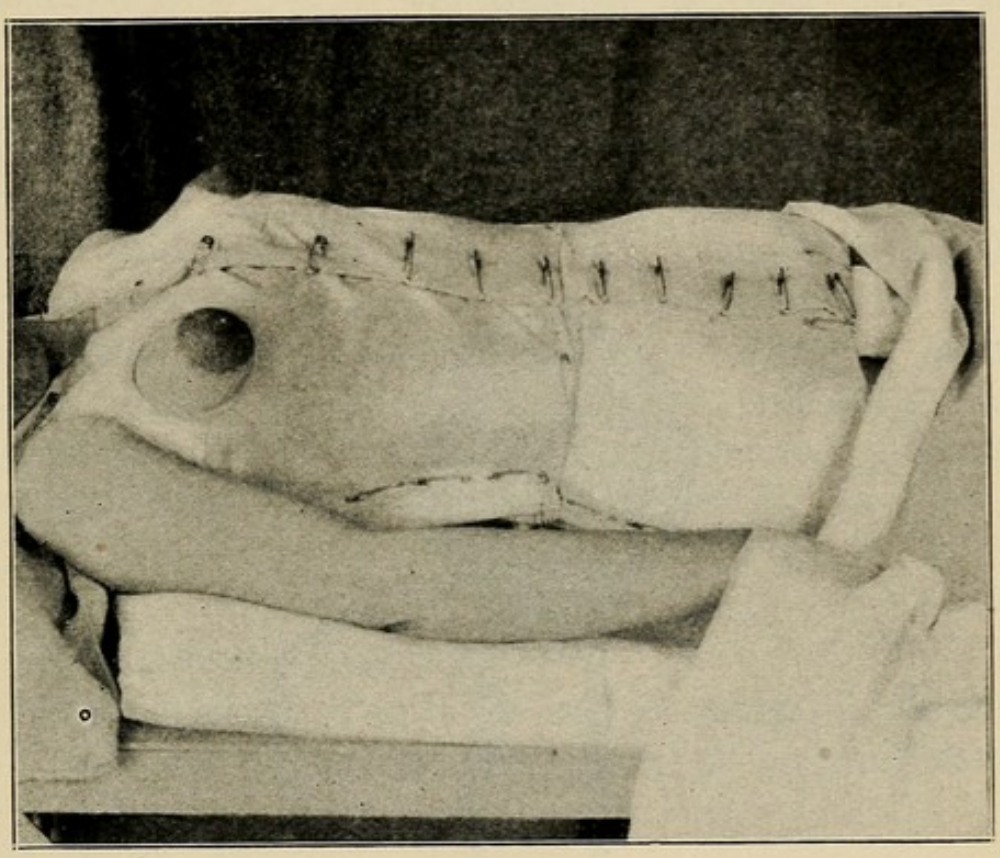

FIG. 26. BREAST AND ABDOMINAL BINDER.

the appetite and aiding assimilation; tea increases the quantity, but if taken in excess impairs the quality of the flow. Cow's milk is an excellent milk-maker, and should form the larger part of a nursing mother's diet. If she can not drink milk it can be taken in the form of cocoa or chocolate with each meal. A liberal general diet, plenty of fluids, and moderate exercise give the best results.

Only in a general way should the nurse question the patient regarding her appetite, never asking her what she wishes to eat. An invalid or one confined to bed

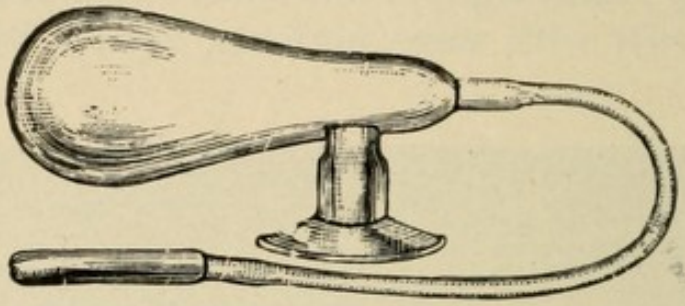

FIG. 27. BREAST PUMP WITH MOUTH SUCTION.

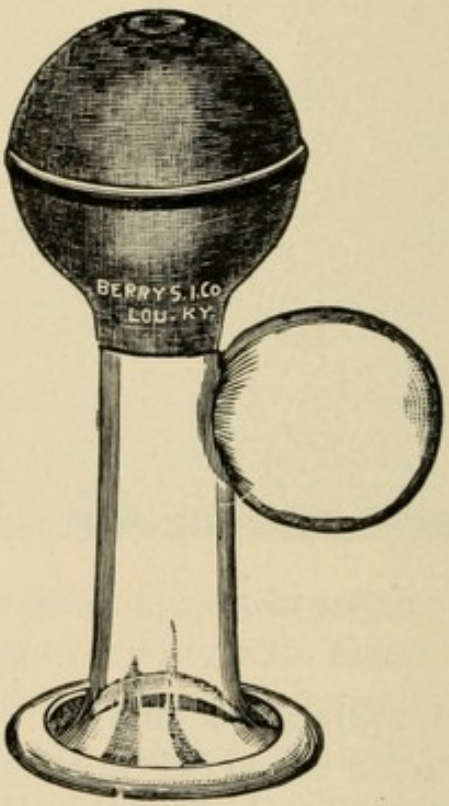

FIG. 28. ENGLISH BREAST PUMP.

will always eat more liberally if her meals are brought to her served in tempting manner, than if she has been personally consulted and knows what food she is to have.

The nurse's training should have included a course

in a diet kitchen, and this knowledge is of great practical value in caring for a lying-in woman. She will go to the kitchen and personally prepare her patient's tray, seeing to it that all dishes intended to be hot are not brought in cold or lukewarm.

Diet.—The diet of the mother is most important, and should be regulated carefully. The following dietary is suggested as a guide. It is not meant to be followed as an invariable rule, as individual likes and dislikes must be considered. It is a fact, however, that a too liberal diet, because of the recumbent position, sluggish bowels, etc., results in a fermentation or decomposition of the food in the intestinal tract, absorption of these products causing an intestinal autointoxication. This causes a temperature, headache, great intestinal distention and discomfort.

DIETARY.

One or two hours after labor—

Either a glass of milk or cup of cocoa or chocolate and wafer; cup of broth; cup of tea and slice of toast.

First day—

Breakfast: Cereal and milk, or soft boiled egg with dry or milk toast, tea or coffee.

Lunch: Clear soup or broth, crackers; baked potato.

Supper: Boiled rice with cream; baked or steamed custard; milk.

Second day—

Breakfast: Egg, soft boiled or poached; tea or coffee; milk; toast or bread and butter.

Lunch: Soup; rice; milk; toast.

Supper: Baked potato; milk toast; bread and butter.

Third day—

Breakfast: Cereal; sweetbreads or bacon; egg; bread.

Dinner: Soup; oysters (raw or stewed) or baked fish; potato; milk; bread; light pudding or jelly.

Supper: Cocoa or chocolate; rice; milk.

Fourth day—

Breakfast: Beefsteak or chicken, once; fruit (preferably cooked); egg; potato; cereals; coffee, tea, or milk.

As a general rule it may be stated that the diet which causes no discomfort in the mother will not change the character of the milk to cause it to disagree with the child. It is well, however, for the nursing mother to avoid acids and too free use of condiments in her diet.

Bowels.—The bowels of the mother generally do not act until a purgative is administered on the second or third day. The principal reason for this is because of the lack of abdominal pressure, due to the relaxed abdominal walls and empty uterus. The time-honored dose of castor oil on the third day is a most excellent remedy. It can be administered in orange juice, whisky, beer, salt placed on the tongue, or given without anything to disguise its taste. The oil can be omitted, getting the effect desired by the administration of cascara sagrada on the evening of the first and second days after the baby comes, assisting the bowels by the administration of an enema on the morning of the third day.

The question of the effect certain remedies given the mother may have on the child through the breast is rather an unsettled one, but a few drugs are believed to have more effect than others, notably the minerals and rhubarb. Salts should not be given as a purgative, as this decidedly lessens the quantity of milk.

Bladder.—Owing to the bruised condition of the urethra and vulva and the swelling which results from it, the lack of pressure in the abdomen (allowing the

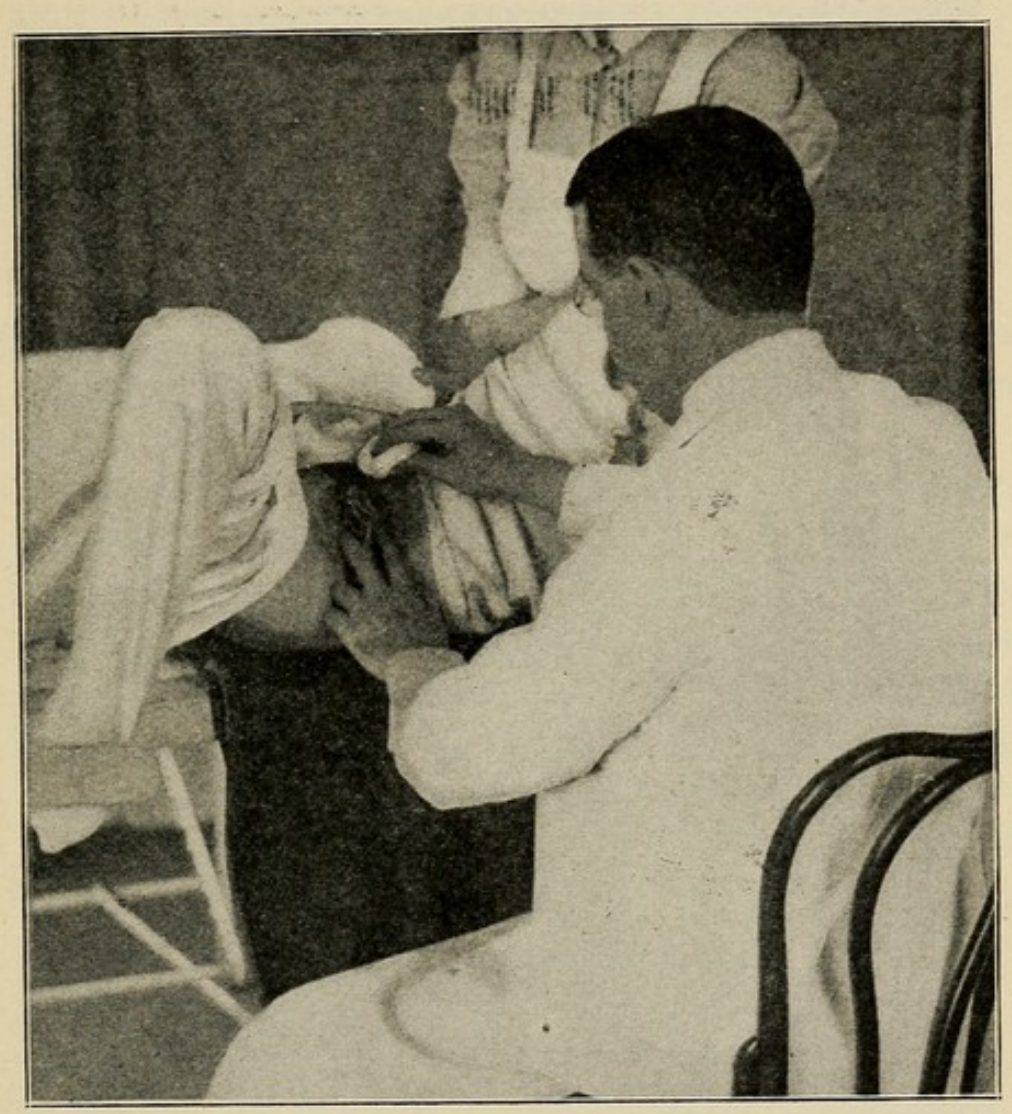

FIG. 29. CATHETERIZATION—FIRST STEP.

bladder to easily distend), and the horizontal position, voluntary urination is often impossible.

The urine should be voided every eight hours at least, and if the patient is unable to do so upon the bed-pan, unaided, and can not get up, the application of hot cloths over the abdomen in the region of the

bladder, allowing warm water to trickle down over the vulva, or a warm enema, will frequently start it. If

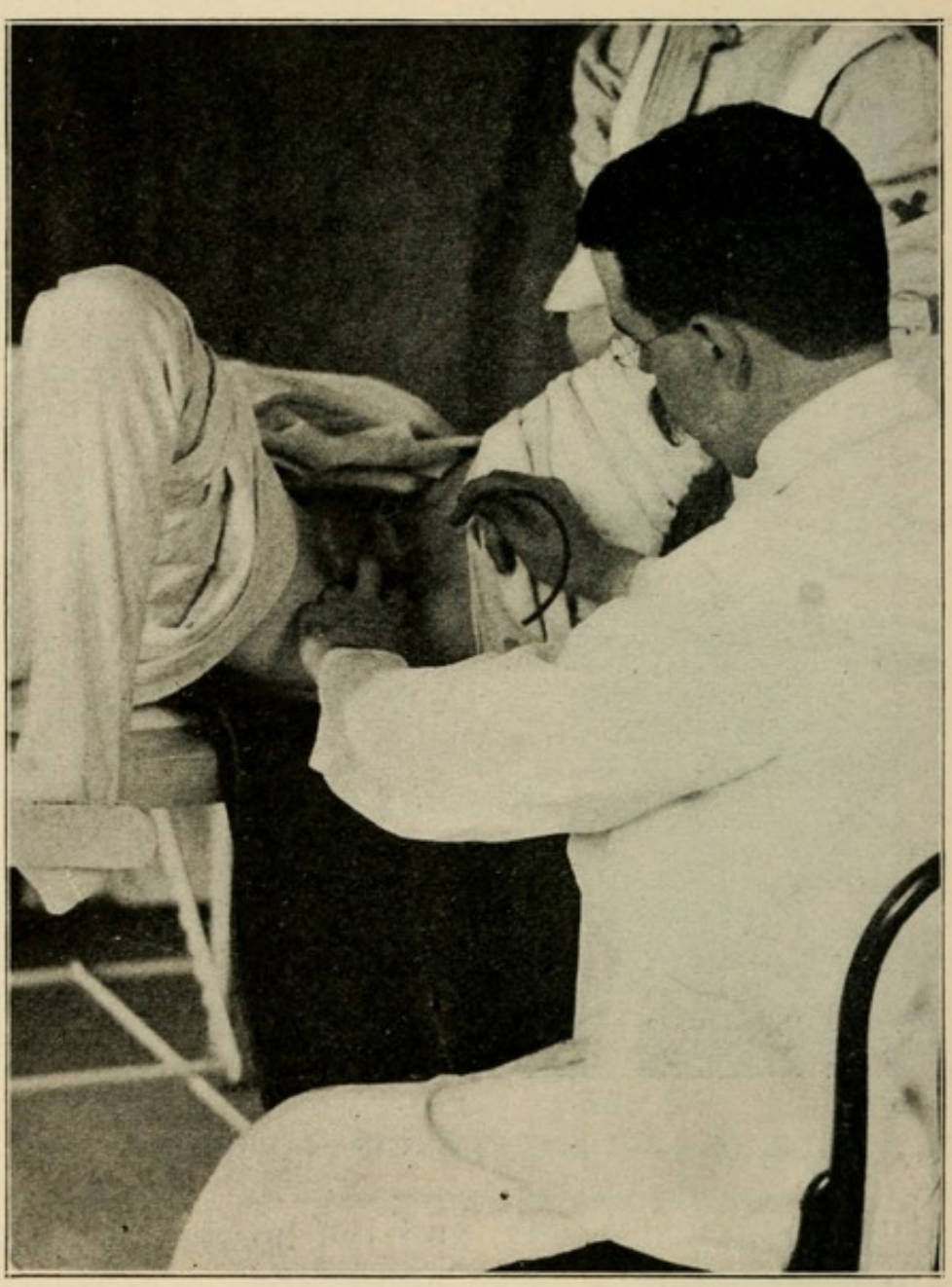

FIG. 30. CATHETERIZATION—SECOND STEP.

this is unsuccessful she must be catheterized. The amount of urine passed each time should be measured

if possible and recorded on the chart. During the first few days the urine when passed is normally colored red by the lochia.

Catheterization.—This must be done most carefully,

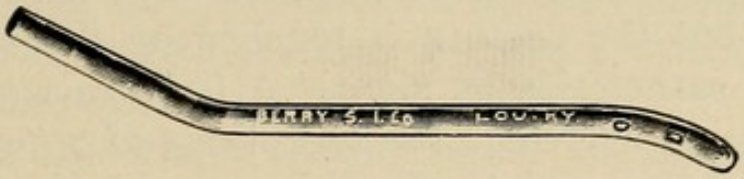

FIG. 31. GLASS CATHETER.

because of the danger of carrying foreign material into the bladder on the catheter. The labia are separated with the thumb and index finger of the left hand, the meatus located and wiped off with a cotton swab wrung out of a saturated solution of boracic acid, the catheter removed from the boric acid solution and passed directly into the urethra. A glass catheter is best used for this purpose, on the free end of which is placed a short piece of rubber tubing to prevent the trickling of the last drop of urine on the vulva. Glass catheters are more easily rendered and kept sterile than any other material, are cheap, and easily replaced if broken.

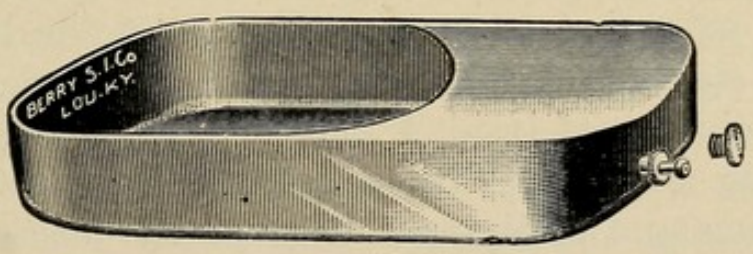

FIG. 32. DOUCHE PAN.

If a primary perineorrhaphy has been done it is well to catheterize for the first twenty-four hours at least.

We again emphasize the importance of locating the urethra by sight and never attempting to locate it by

the sense of touch under the bed-clothes. The swelling and turgescence due to the labor displaces the meatus and it can not be located by the ordinary landmarks, and even if it could be, because of the danger of causing a cystitis by carrying foreign matter into the bladder if anything but the urethra is touched by the catheter, it is wise to catheterize by sight. A little tact will generally suffice to overcome the objections of a patient who may have been used to the old methods of catheterization.

The Vulva.—The vulva is generally considerably swollen and quite tender after labor, and the application

FIG. 33. GLASS DOUCHE POINT.

of cloths wrung out of a hot antiseptic solution gives great relief. If this is not required the parts are irrigated externally with a warm antiseptic solution before applying a sterile lochial pad. No douche is given under any circumstances without explicit directions from the attending physician.

After urination or a movement from the bowels the vulva is cleansed by pouring over it from a pitcher a warm solution of lysol, 1 per cent, cleansing the anus and wiping away from the vulva, drying carefully with sterile gauze and applying a fresh sterile lochial pad.

Special attention is necessary when a primary perineorrhaphy is done. If catgut has been used the ends are usually short; if silkworm gut they are left longer, as the short ends prick the vulva or thighs and are very uncomfortable. If too long they may be pulled when the bed- or douche-pan is pushed under the patient.

If there has been a complete tear of the perineum and a primary perineorrhaphy, extra precautions are needed. Instructions should be asked of the attendant physician regarding catheterization, the bowels, diet, etc. The prior administration of an oil enema through a soft catheter introduced into the rectum will often aid greatly in the evacuation of the bowels.

Vaginal Injections should never be administered without specific instructions from the physician. The vaginal injection is best given with patient on a douche-pan instead of a bed-pan, the latter holding such a small

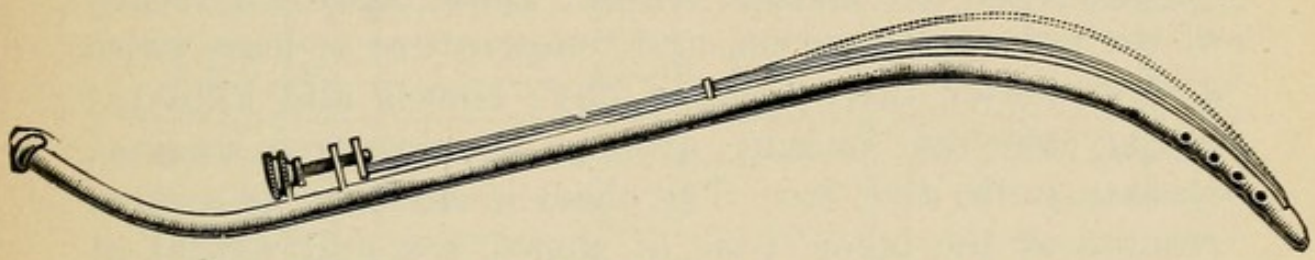

FIG. 34. INTRA-UTERINE DOUCHE POINT.

quantity of fluid. The douche point is first boiled for fifteen minutes and a new fountain syringe used, or one whose history the physician himself knows. The fountain syringe found in the ordinary home is always dirty and full of dust, hanging as it generally does in the bath-room behind the door. If a new one is used, care should be taken to rinse it thoroughly, in order to remove the white powder with which new rubber is covered. Never use a bulb syringe for administering a douche; its valves can not possibly be rendered sterile.

Intra-uterine Injection.—An intra-uterine injection after delivery is but seldom indicated and generally is given by the physician himself, and if by the nurse, under the physician's directions. Intra-uterine injections may cause a great deal of pain and are frequently

the cause of colic, and should be cautiously administered. When given, the irrigator is raised not more than twenty-four inches above the patient, and when the douche point is introduced one hand of the nurse holds the fundus of the uterus, in order to do no violence to that organ. The curved glass douche point is best because it is more readily cleaned, and has a large point which can not be easily forced through the softened uterine wall.

Bedside Notes.—A nurse should keep a careful record of all the findings and happenings to a lying-in woman upon her bedside notes. These include a record of the pulse, respiration, and temperature at least twice a day—better three times a day; bowels and kidneys; lochia, color and amount; after-pains; clots from vagina; breasts, milk, diet, etc. The chart is made up of a short résumé of the labor, time of stages, sex and weight of child, etc. A separate chart must be kept for the child, recording its temperature, weight, evacuations, urine, etc.

Rest.—The patient after her trying ordeal is in need of rest, and as soon as she has been cleansed and the protecting vulvar pad applied, the bed changed, a clean gown put on if needed, and all evidences of the labor removed, she should be allowed to rest and sleep, if that be possible. A close watch is kept over her, to guard against postpartum hemorrhage or other complications.

Above all is it essential that she see no company during the early days of the puerperium, and this rule can not be too strictly enforced. Her position should be upon her back for the first twenty-four hours, but after that time there generally is no contraindication to her turning for a short time upon either side, lying as

NURSE'S DAILY REPORT.

Date April 15th - 1910

Name Mrs H—— Physician Dr T—— Diagnosis Obstetrical.

Time	Temp.	Pulse	Resp.	MEDICINE	DIET	ORDERS AND REMARKS	U.	B.
PM 9						Labor pains began Starting at intervals of fifteen minutes lasting one minute.		
12:15						Began Chloroform		
AM	April 16th - 1910 - Saturday							
1:30						membranes ruptured by Dr T—		
2.15						Forceps applied		
2.30						Male child delivered (weight 7¾ lbs)		
2 45						Placenta delivered		
4					glass of milk	Lochia moderate Has quite severe after-pains		
7 30		88			Cup of tea Toast			
9 45						Voided	?	
						Irrigated, Lochia normal in color and amount, some small clots		
11					Egg-nogg. (whiskey ½)	Resting quietly		
PM 1					Bobillon and wafers			
5 30	98	60	20			Voided		
6.					milk, wafers and eggs	Lochia moderate, one large clot passed		
8.				Codiene, gr ¼		Has had quite severe after-pains all day		
AM 2				April 17th - 1910 - Sunday		Has not slept well so far Disturbed by pain —		
8.	97⅖	68	20.	Codiene, gr ¼		Slept after 4 A.M. Lochia moderate		
8.					Very light breakfast	Partial bath		
11.					milk.			
PM 1:30					Light dinner			
2.						Voided. Lochia normal in amount and		
3.					milk.	color	?	
7.	98⅖	66	20					
7:30					Supper			
9.						Voided		
						First twelve hours babe cried great deal. Gave warm water by mouth several times. Took breast only fairly well. Threw up (meconium) during night hours (meconium) during day ending 9 pm 17th. First twelve hours kidneys acted freely. Urine clear but next day voided scantily and napkins showed pink stain.		
				Babe		Morning of 18th was jaundiced. Temp 100°. Nurses readily. Stools thin and dark - averaging six during twenty-four hours		
A.M.				April 18th 1910 - Monday				
6.45	98°	64	20	Ol. Ricini ℥i				
8						Def. medium, formed	?	/
					Light Breakfast	Lochia very moderate		

FIG. 35. BEDSIDE NOTES.

long upon one side as the other. The uterus is large and heavy, and gravitates to the side upon which she lies.

Duration of the Lying-in.—The duration of the lying-in period or the puerperium depends mainly upon the individual. The average time is ten days, but if complications have occurred in the labor, or shortly after, this should be prolonged. The uterus during this time is contracting, the process by which it finally attains a size but little larger than before impregnation being called *involution*. When it has reached the brim of the pelvis, the fundus being no longer felt above the symphysis pubis, it is generally safe for the patient to assume the upright position.

The getting up should consume several days; at first an extra pillow, then the head-rest, then the chair, and in a day or so the first steps. When the first steps are taken most women complain of a pricking sensation in the feet, and often of the feeling as if all the pelvic organs would come away. The latter is due to a relaxation of the pelvic floor, and can be largely alleviated by wearing a wide napkin very snugly applied to the vulva. This support gives the greatest relief and comfort.

Not infrequently, as a result of too much exertion after getting up, the lochia alba becomes tinged, and this is an indication always that too much has been done. Rest should be insisted upon if this occurs.

Menstruation as a rule does not return until from the fifth to the seventh month after labor, if the child nurses; if it is not nursed it usually reappears about the sixth week.

After-pains.—A woman after the birth of her first child has very few uterine contractions which are pain-

ful. When present they are called after-pains. They are more painful in multiparæ. They may be very severe, and when so are generally relieved by gentle rubbing over the uterus, with slight pressure in the curve of Carus, which dislodges the blood-clot the uterus has been trying to expel, this effort being the cause of the pain. With each child the after-pains are more severe, requiring some anodyne frequently for their relief. These pains are always more severe when the child is put to the breast.

CHAPTER VI.

The Child.

A newborn infant is an object for special study. It should not be looked on as a miniature adult, as it possesses characteristics entirely peculiar to itself, not seen in later years of its life.

The Head.—The infant's head at birth is misshapen, usually elongated, this being possible because the bones

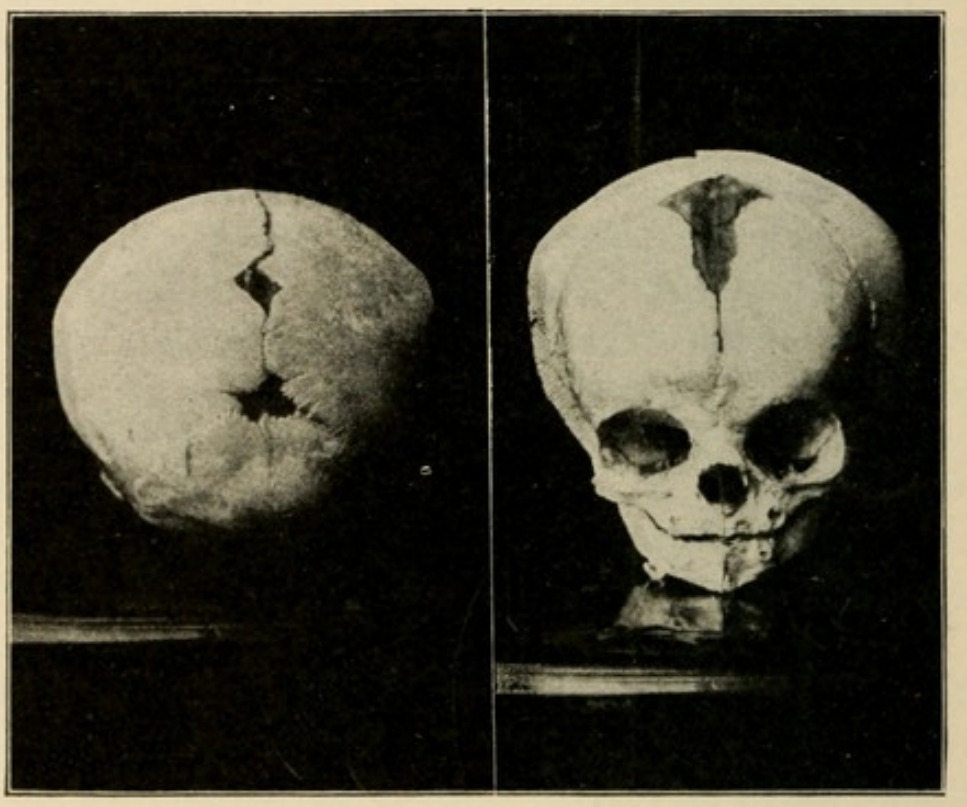

FIG. 36. FETAL SKULL.

are not united, thus allowing a molding so as to conform to the shape of the pelvis as it passes through. The open spaces between the bones of the skull are called sutures, of which there are four. The *lambdoid* suture separates the two parietal bones from the occipi-

tal bone; the *sagittal* separates the two parietals; the *coronal* is between the two halves of the frontal bone and the two parietals; the *frontal* between the two halves of the frontal bone. Where these sutures coalesce the area is called *fontanelle,* so named because the brain seems to rise and fall like a little fountain. There are two fontanelles, the anterior and posterior. The posterior is smaller, and is triangular in shape, having three branches of sutures running into it; the anterior is quadrilateral in shape, larger, and has four sutures running into it. The posterior fontanelle closes between the seventh and the ninth months, the anterior about the end of the second year. These fontanelles are of importance as landmarks to the obstetrician, as they tell the position of the child's head.

Fetal Circulation.—The blood comes from the placenta through the umbilical vein, and enters the abdomen through the umbilicus or navel; a considerable portion goes to the liver, and because this organ gets the first taste of arterial blood it is the largest in the body. The blood in the liver reaches the portal circulation through the hepatic veins; the other blood from the placenta goes direct to the ascending vena cava through the ductus venosus. From thence it goes into the right auricle of the heart. After birth this blood goes into the right ventricle and then into the lungs to be aërated, but the lungs of the fetus being closed no blood reaches them except enough to nourish them, and Nature sends it directly into the left auricle through the foramen ovale, guided by the Eustachian valve. From the left auricle it goes into the left ventricle, and then into the aorta. From the aorta it is distributed to the head and upper extremities and on through the descending aorta. The blood from the head and upper

extremities returns to the right auricle, then into the right ventricle. Normally the blood in the right ventricle should go to the lungs to be aërated, but as the lungs in the fetus are impervious, it goes directly through the ductus arteriosus to the aorta. From this point on we have a mixed arterial and venous blood. After the blood reaches the iliac arteries two branches are given off, which run forward over the summit of the bladder and under the abdominal wall to the navel. These are the hypogastric arteries, and when they reach the umbilical cord are called the umbilical arteries. The arteries of the cord carry the venous blood, the vein carrying arterial blood.

When the cord is severed the hypogastric arteries are obliterated, the lungs become pervious, and the blood formerly going to the aorta through the ductus arteriosus now goes to the lungs through the pulmonary arteries, where it is aërated. The foramen ovale soon closes and the ductus venosus also becomes impervious.

Eyes.—As soon as the child's first toilet is begun the eyes are washed and one drop of a 2 per cent nitrate of silver solution dropped in each eye, to prevent the development of an inflammation of the conjunctiva. This is Credé's treatment; it does not cause any trouble, and has been the means of preventing thousands of cases of ophthalmia neonatorum. The nitrate of silver is followed at once with some warm normal salt solution, which is squeezed into the eyes to neutralize any excess of the silver. The first evidence of swelling of the lids, or the presence of the smallest amount of secretion gluing the lids together in the morning, should be reported at once to the physician, not waiting for his regular visit. The statistics of the blind asylums all over the country show an alarming proportion of blind-

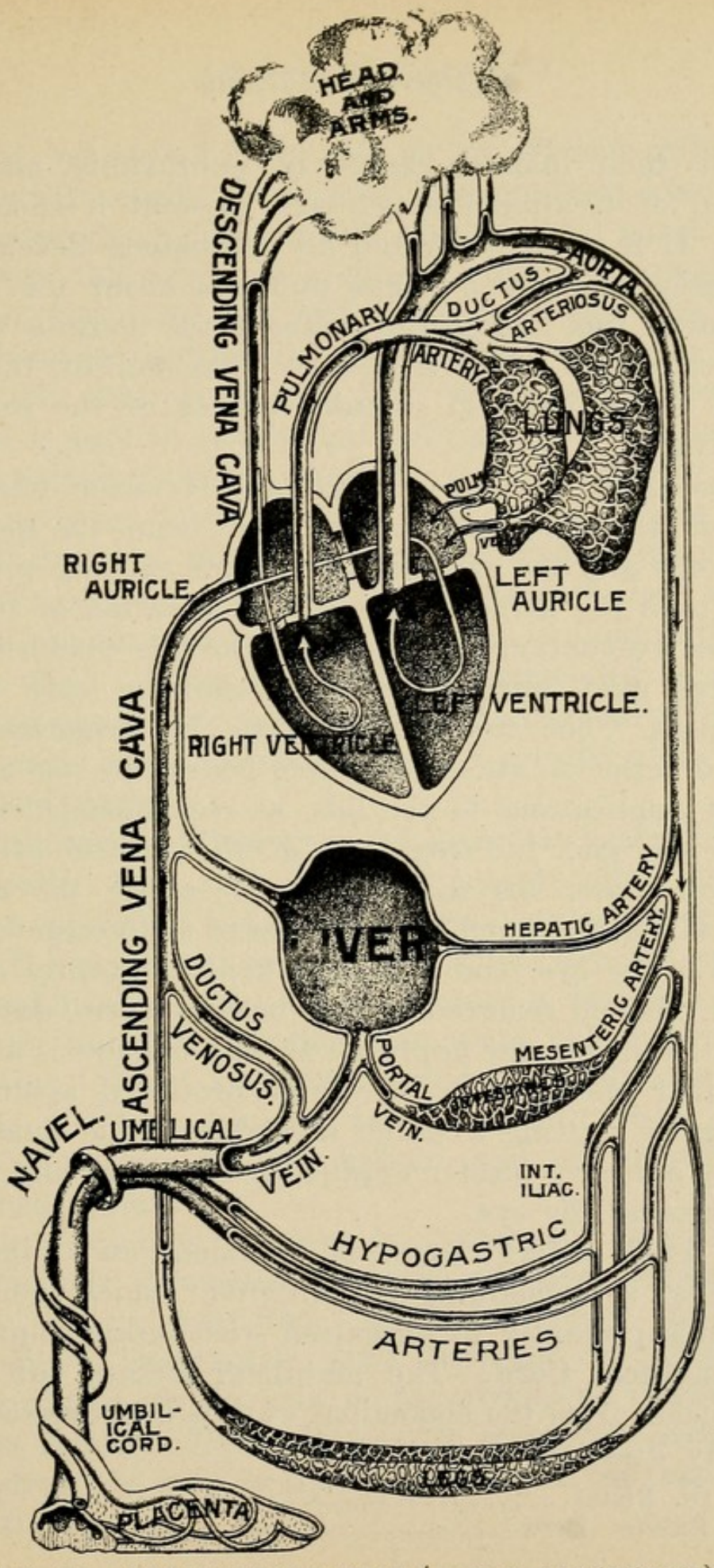

FIG. 37. FETAL CIRCULATION (A. T. B. OBSTETRICS).

ness of their inmates caused by ophthalmia, and any method of treatment which will prevent it should be used. If it is not used and an ophthalmia develops, it evidences itself by a slight puffiness about the upper and lower lids and secretion about the margins of the lids, especially after sleeping. Eversion of the lids shows a swelling and intense redness of the lid conjunctiva.

The danger to the eye is not only from the inflammation of the conjunctiva, but also from the pent-up secretions and the swelling of the lids causing pressure enough on the cornea to cause a perforation of the eye and the evacuation of the contents of the chambers. It requires most watchful and unremitting care in its treatment. The treatment consists in irrigation with normal saline solution every two hours, the use of cold or hot applications to the lids, as recommended by the physician, and judicious use of the nitrate of silver solution under his directions. To apply the cold a block of ice is covered with squares of cloth large enough to cover the eye, and these are kept constantly on the closed lids and removed as they become warm, destroyed and a fresh cold one applied. If only one eye is affected the other one must be carefully protected against infection by putting a watch crystal over the unaffected eye by adhesive plaster applied to the edges and to the skin around the eye.

A much milder degree of inflammation of the conjunctiva is sometimes encountered, which generally responds promptly to irrigation with saline solution.

Umbilical Cord.—The umbilical stump, cut about two inches from the abdominal wall, is best dressed with an oily dressing, as follows:

Ol. Ricini	oz. 1
Balsam Peru	min. 20

The balsam of Peru acts as an efficient antiseptic, preventing sepsis, which may develop from absorption of pus-producing organisms through the navel. The oil keeps the stump in a pliable condition, preventing it from becoming stiff and hard as it separates. The dry dressings ordinarily recommended make the stump unusually difficult to care for. A binder of very soft flannel is applied snugly, but not tightly, which prevents the cord being pulled when the child is handled. The dressing is not removed or touched, unless it is to renew the oil dressing, until the cord separates. This usually takes place from the fourth to the seventh day, though it may remain attached for two weeks without detriment to the child. Other substances recommended as a cord dressing are boracic acid powder; one part salicylic acid, three parts boracic acid; also talcum powder and boracic acid, and alcohol.

Umbilicus.—When the cord separates it should leave a smooth, dry, and depressed navel with the skin thrown in folds, but it sometimes happens that there are left some small vegetations, which are the ends of the umbilical vessels. These secrete a moisture which dries on the skin, forming thin scabs, which are quite irritating. They are best treated by application of a nitrate of silver solution, ten or twenty grains to the ounce, followed by the balsam and oil dressing on absorbent gauze.

If the umbilical stump is improperly cared for or inadequately protected against infection, sepsis may occur, which manifests itself by fever, sweating, tympanites, emaciation, and perhaps an erysipelas-like eruption on the skin of the abdomen; it generally results fatally. Hence it may be seen how essential it is to dress the cord so that infection can not take place.

Binder.—No undue pressure should be used in applying the binder or the waist-bands of the skirt. The binder, which is best made of thin flannel, is used only to protect the cord from being torn when the child is handled, and it is advised by many authorities not to reapply it after the cord comes off. In winter a knitted band can be worn if it is thought best to protect the bowel. It is our belief that all the protection needed by the bowels can be obtained with a shirt and the knitted band.

Bathing.—The child is allowed to remain undisturbed, except for an occasional inspection of the cord for hemorrhage, until some hours after birth, when it is given its first bath. A child should not be bathed at once, because of the danger of chilling; the temperature of the uterus is 98.5° F. to 99° F., and the temperature of the room generally not more than 80° F., hence the need of protection from exposure.

The baths, until the cord is separated, should be before the fire on the nurse's lap, the tub or basin being used for full bath after the cord drops off. When the bath is given, everything needed must be at hand before it is begun: a change of clothing, vaseline, talcum powder, cotton applicators, gauze wash-cloth, towels, boracic acid solution, and cotton. A double blanket or outing flannel apron will be found of service in bathing the baby, one fold to protect the nurse's lap, the other to cover the parts of the child not being bathed. The child should first be again thoroughly anointed with vaseline, and this rubbed off with a very soft cloth before any soap and water is applied. Extra care is needed for the cleansing of the flexures, under the arms and knees, elbows and groin, where the vernix is apt to be especially thick. The child may be put in the tub for its first bath, though this is not advised.

Not infrequently during the first month a child develops an eruption over the whole body, which on close inspection shows a minute red papule with a very slight area of redness at its base, surmounted by a fine white point. This is called *sudamina,* and is due to a clogging of the sweat glands of the skin, and is generally caused by the child being overheated. Tepid baths,

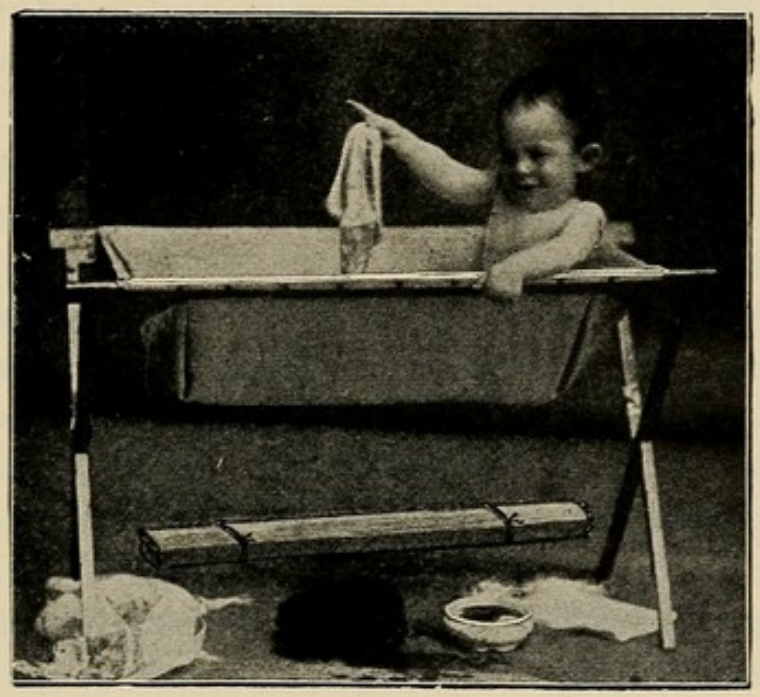

FIG. 38. COLLAPSIBLE BATH TUB.

followed by a thorough dusting with talcum powder over the whole body, generally cures it in a few days.

The Bowels.—The first discharge from the bowel is a black, tarry-like substance called *meconium,* and it irritates the skin very much if allowed to remain long in contact with it. A soft cloth in a bowl of warm water, without soap, should be kept convenient, with which the meconium can be removed whenever the parts are soiled. The movements by the end of the first week have generally turned yellow, losing their black color

gradually. They should be entirely smooth in consistency and without the presence of curds or mucus; if either of these substances are found they should be reported to the physician. The child generally has from four to ten movements in twenty-four hours the first week.

When the bowels are too free—the movements containing curds and mucus—a dose of castor oil, fifteen to twenty drops, will clear up the condition. An occasional warm saline enema is an excellent procedure. This is best given with a one- or two-ounce piston syringe, upon the end of which is attached about half of a small soft rubber catheter.

The child is laid on its side across the nurse's lap, its buttocks resting on a piece of rubber sheeting with a folded napkin between, the lower end of the rubber draining into a basin or slop jar. The child should not be exposed unnecessarily and the operation too much prolonged.

As soon as the child's bowels move, the napkin is removed, and the skin washed with a soft cloth wet with warm water without soap, thoroughly dried, then powdered with talcum powder. If the napkin is only wet, the skin can be powdered without washing. If these precautions are neglected, the skin of the buttocks and thighs becomes macerated and red, a condition called *intertrigo.* When present it is indicative of carelessness and neglect; in this condition the use of olive oil to cleanse the buttocks after an action is preferable to water. After the cleansing the stearate of zinc to this kind of skin is a valuable protective agent. It is dusted on in the same way talcum powder is used.

Young infants are especially prone to constipation, this being largely due to the anatomical arrangement of

the large bowel. The sigmoid flexure is much longer in proportion to the rest of the bowel at this age than later, and has a longer mesentery. The colon as it grows does so at the expense of the sigmoid. This makes it difficult for the child to have a movement unaided, and injections and suppositories are resorted to without detriment to obtain regular evacuations. The child should be carefully regulated as to habits of evacuation of the bowel by placing it upon a chair or vessel at the same hour each day as soon as it is old enough, and if an enema has to be given it should be administered at this time.

If a child passes nothing from the bowel for twenty-four hours after it is born it should be carefully examined to ascertain if it has an imperforate anus. If this exists it calls for immediate surgical intervention.

Urine.—The urine under normal conditions makes no stain, but contains a good many irritating substances, which if left in the napkin should never be allowed to dry on the infant after being wet, but should be carefully washed and laundered before again using. Too much stress can not be laid on the importance of careful washing of the baby's napkins whenever soiled with urine or with a movement from the bowels. The old idea that a napkin should be dried three times before being washed, when carried out, has resulted in eczema, intertrigo, and other troublesome skin lesions. Napkins should be boiled after every soiling before using again.

A child should be given water frequently during the day, either through a nipple, from a bottle with nipple attached, or from a spoon. This is far too often neglected. Just after birth this is especially important, because of the necessity of a thorough flushing of the kidneys during the first few days. There is often much pain caused by the passage of very fine sandy particles

from the kidneys, which stain the napkin red or brown in color. These particles are made up of uric acid, and if a large quantity of water is taken it is much easier passed and gives less pain.

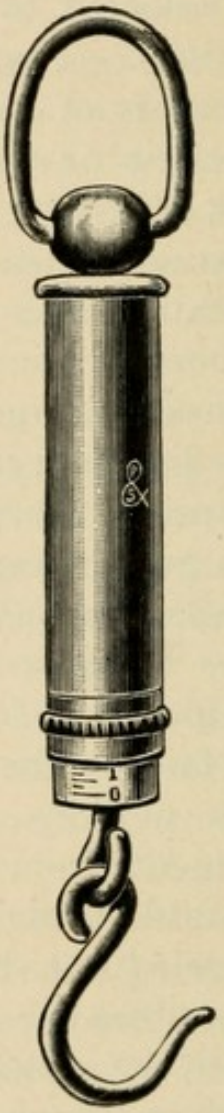

FIG. 39. STEELYARDS FOR FIRST WEIGHING OF BABY.

Weighing.—The baby should be weighed before its clothing is put on, either at the time of the first bath or just after its birth. It can not be emphasized too forcibly that to note the progress of a child it is abso-

lutely essential that its weight be known. This can only be done by regular weighings and an accurate record kept upon a chart like the one shown in the illustration.

The only accurate method of ascertaining the progress of a child is by regular weighing. This is a

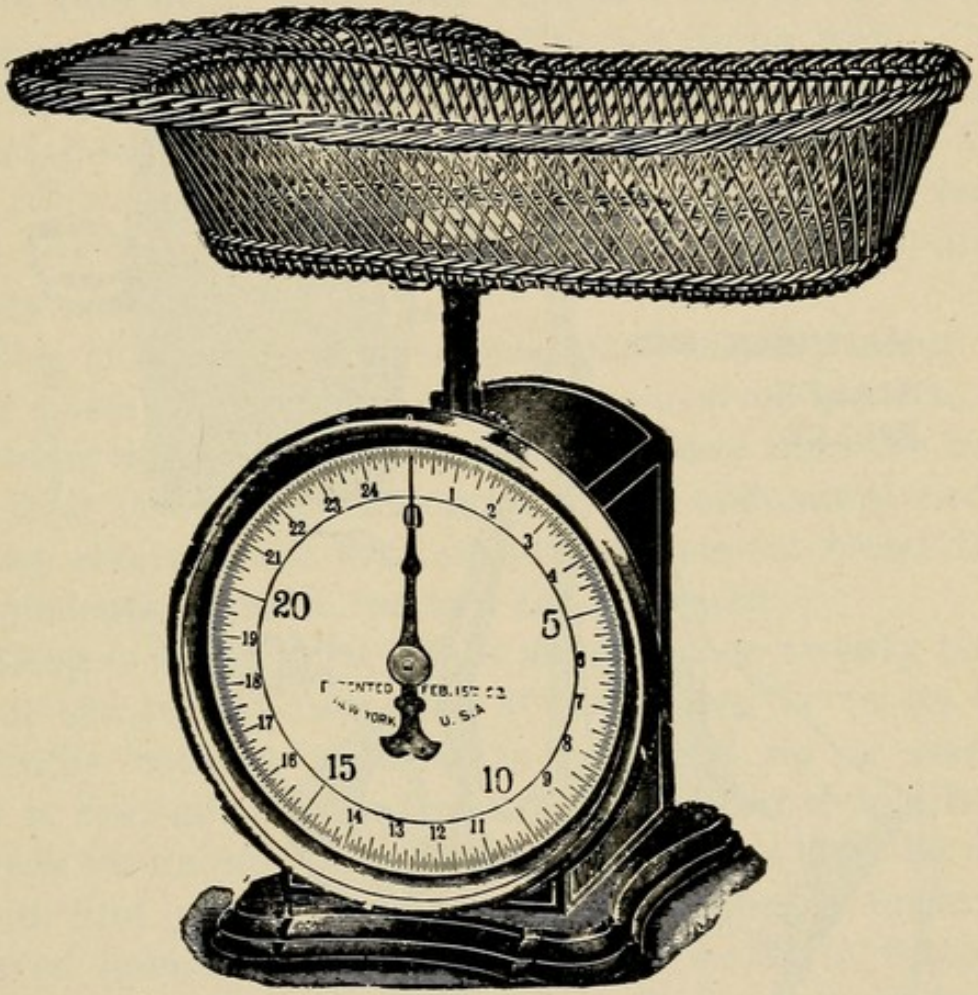

FIG. 40. DIAL SCALES WITH BASKET.

procedure generally neglected. A pair of scales or steelyards should be a part of every obstetrician's outfit, as well as in every household. The child is weighed once a week, under exactly similar conditions as to feeding, time of day, etc., and an accurate record kept for observation. The best scales for use in the home is the grocers' scales with balance arm and weights,

but the scales with platform, on which is anchored a basket for holding the infant, can be used to advantage

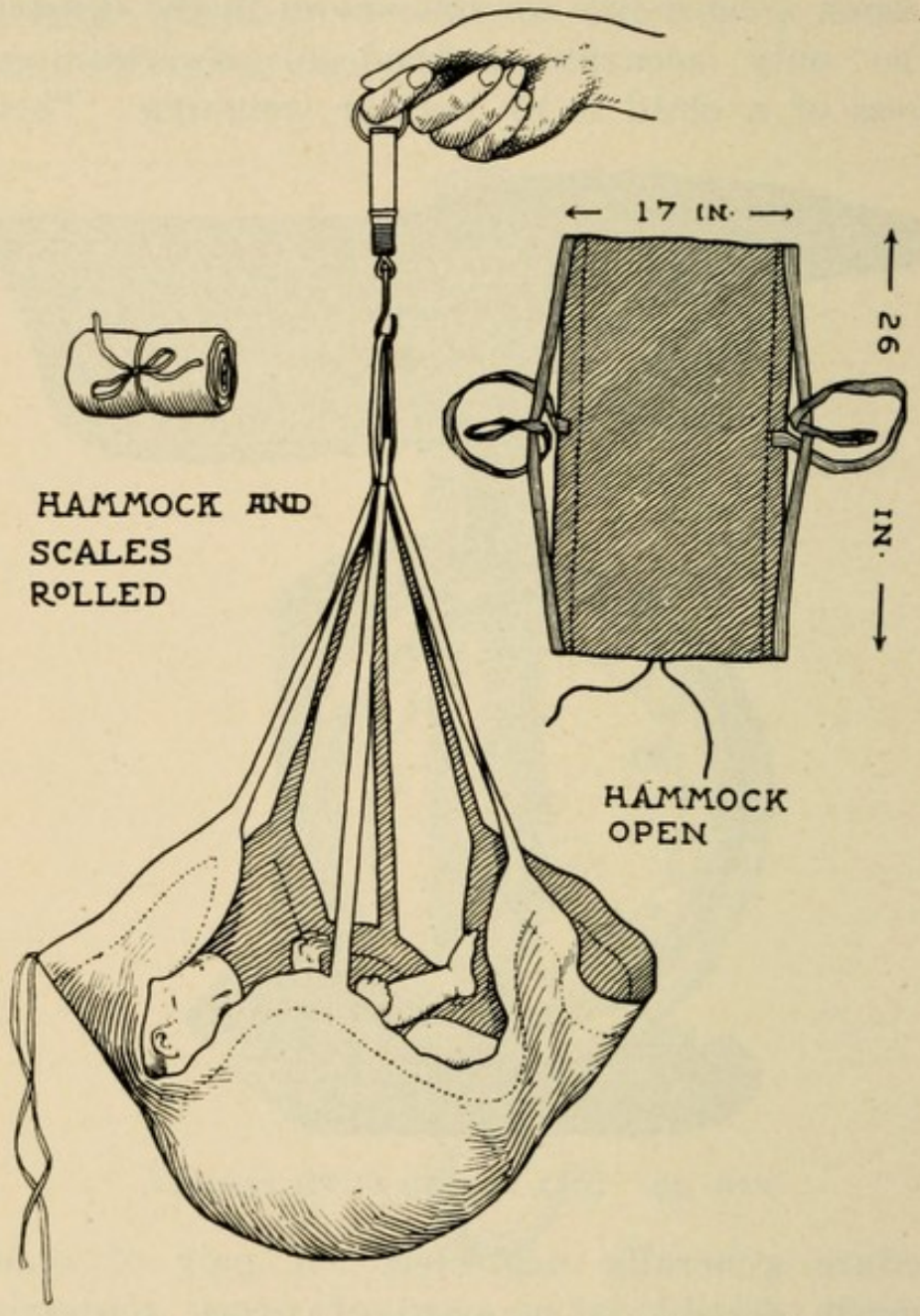

FIG. 41. HAMMOCK AND SCALES (COOKE).

provided the child is not too vigorous when in the basket. The advantage of this form of scales is that by a thumb-screw on the top the basket and blanket can be weighed by turning the pointer back to zero.

If weighed daily the child will be found to lose in weight for the first five days, but during the second week it begins to gain, and at the end of the second week should have reached its birth weight. The gain from this time should be progressive and steady, at the rate of at least four ounces a week. If it does not gain this amount the child is not doing well.

The average weight of a newborn infant is seven and a half pounds, boys slightly heavier than girls. Ten- and twelve-pound babies are extremely rare. It measures from the crown of the head to the heels about twenty inches.

The child's head develops more rapidly than the other parts of the body in its intra-uterine growth, the shoulders measuring less in circumference than the head. The liver is the heaviest organ in the abdominal cavity, having received the first supply of arterial blood from the placenta after it reaches the abdomen.

Sleep.—A newborn infant should sleep twenty hours out of the twenty-four, and if not asleep lie in its crib or cradle without wanting to be taken up or rocked. If it is remembered that as a baby is started in life, as regards its habits, sleep, feeding, etc., so will it be during its first year of life, we would encounter fewer ill-behaved babies. It takes about two weeks to establish a bad habit of rocking, walking, feeding at irregular intervals, etc., and a long time to break a child of it.

The baby should be provided with a crib or cradle without rockers, and never be allowed to remain in bed with the mother. If in the mother's bed it breathes the exhalations from the mother's skin, and is in danger of being overlaid and asphyxiated. A baby should not be held or coddled, but put in its crib after each feeding. Infants are creatures of habit, and can be trained

from their birth. They should sleep twenty hours out of every twenty-four, and when not asleep be neither restless or crying. A baby does not cry unless something is the matter with it.

Cry.—If a child cries a great deal the cause of it should be investigated. The cry is a language peculiar to itself, and to the trained ear conveys a great deal of information. If it begins to cry as soon as the breast is taken away from it, the supply of milk is usually insufficient; if very soon afterward, the quality is generally below the standard required; if it cries within half an hour afterward, doubling up its legs and arms, with a tense abdomen, the cause is likely colic. The cry of pain is different from that of hunger; if sharp and shrill, with short intervals of quiet, there is probably some inflammatory trouble somewhere; if accompanied with hurried and shallow breathing, with an expiratory grunt occasionally, some pulmonary inflammation is likely to be found.

What is known as "three months' colic" by the laity is entirely unnecessary, for if colic exists it can generally be corrected by attention to the mother's milk. An examination of it will show which of the various ingredients may be at fault, and an attempt should be made to correct the difficulty. If this is not possible the child should be put on modified cow's milk.

Respiration.—As soon as the child is born it inspires, and after two or three deep inspirations cries. As pointed out before, it is very necessary at this stage to cleanse the nose and mouth of mucus, to prevent its aspiration into the lungs. Frequently efforts at inspiration are made before the head is born, this being especially true in breech presentations. In these cases the body should be enveloped in a warm towel to protect it

from chill, the cold being a decided stimulus to respiration.

Artificial Respiration.—When the child does not breathe well at first, efforts must be made to cause it to inspire, this procedure being called artificial respiration. A tub or basin of water, at a temperature of about 100° F., should always be provided for this emergency, the child being put in the warm water as soon as the cord is severed. This will frequently cause it to make an inspiratory effort. A few drops of cold water on the chest as its body is held immersed in the warm water is a good agent also.

The Sylvester method consists in the following maneuvers: The infant is placed upon its back with a folded towel under its shoulders, the head thrown back. The operator stands at the baby's head; its arms are carried slowly well up over the head, which elevates the chest and causes it to expand, the lungs being in that way inflated. This is inspiration. The arms are then carried slowly downward across the chest, slight pressure being made on the chest, which causes the air in the chest to be forced out, or expiration. These movements should not be repeated oftener then fifteen times to the minute.

The Schultze method is as follows: After tying the cord the child is held suspended by the fingers in the axilla, back of child toward the operator, his thumbs grasping the shoulders. The child is then swung upward and toward the operator's face, the head down, the body doubling on itself. The weight of the lower part of the body being thrown on the chest causes the air to be forced out of the lungs—expiration; the child is then allowed to drop forward, the lower extremities drag on the chest, causing it to allow the entrance of

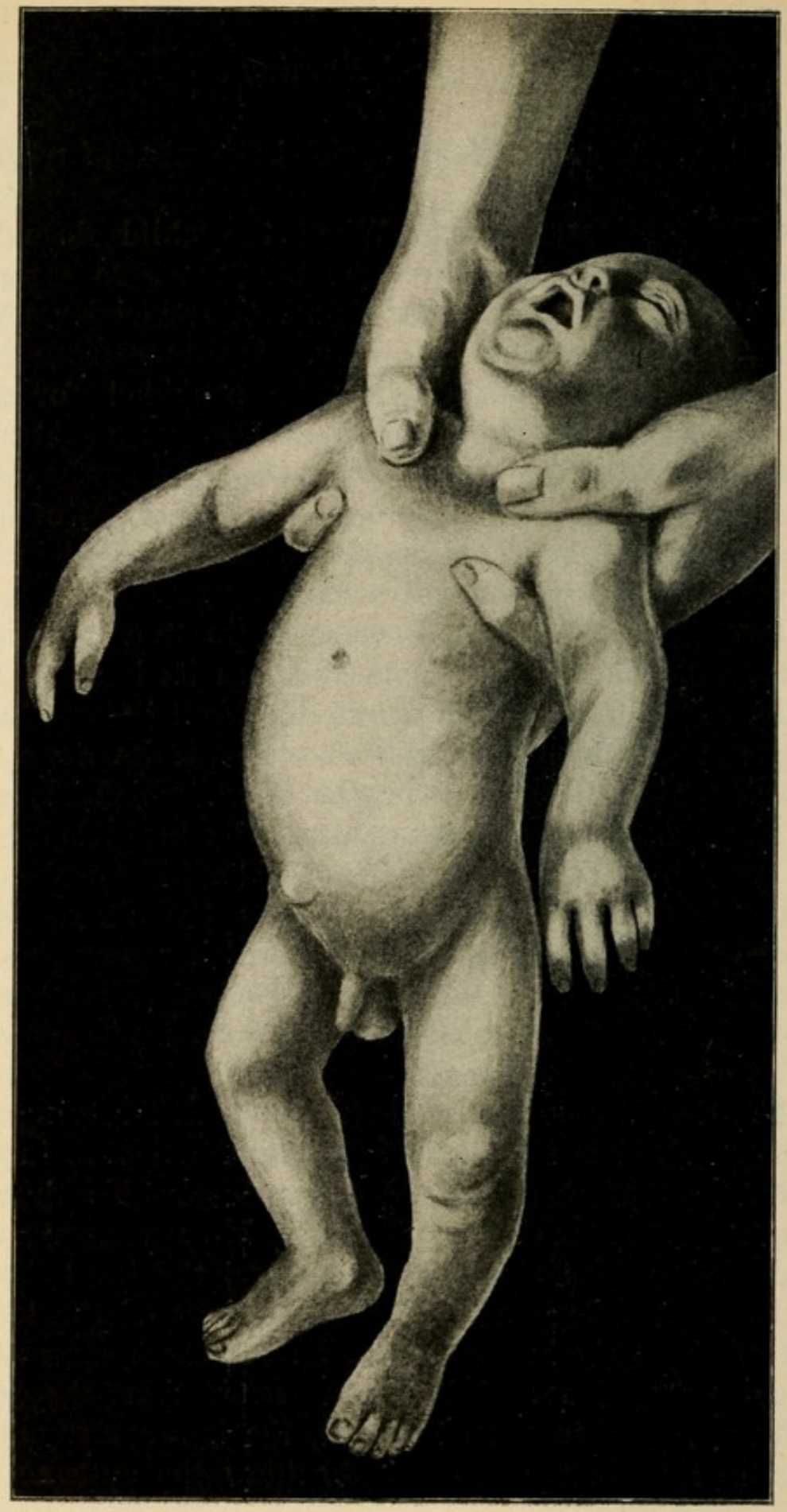

FIG. 42. SCHULTZE METHOD ARTIFICIAL RESPIRATION —FIRST STEP (A. T. B. OBSTETRICS).

air—inspiration. These movements are repeated fifteen times a minute. The advantage of the Sylvester method is that it can be done with the child in a warm bath.

FIG. 43. SCHULTZE METHOD ARTIFICIAL RESPIRATION —SECOND STEP (A. T. B. OBSTETRICS).

In the Byrd-Dew method the child is held upon its back in the open palms of the operator, and a series of movements made which alternately doubles the child

on itself, thus compressing the lungs, for expiration, and extending the spine by allowing the head to drop backward, for inspiration.

The Laborde method is the rhythmical traction on the tongue, fifteen or twenty times a minute.

The sphincter ani muscle may be stretched, also, as one method of reflexly stimulating the respiratory centers.

As long as there is a pulsation of the heart there is a possibility of finally causing respiration. The respirations are from 30 to 50, also more frequent when crying. Later, in childhood, respirations of 50 generally indicate some pulmonary disorder. The inspirations are not very deep, the breathing being largely abdominal and frequently irregular.

The Pulse of the newborn is quite rapid, 130 to 150, and remains so for a number of weeks. It is increased in frequency by crying. The pulse can be counted by feeling any of the larger superficial arteries, the radial or temporal especially.

The Temperature of a newborn child is between 99° F. and 100° F., and its temperature should be taken and recorded at least twice daily for the first week. A phenomenon frequently encountered during the first five or six days is a rise of temperature of several degrees, which is due to starvation, having been called *starvation temperature* by the author in a paper published simultaneously with one by Dr. L. Emmet Holt, of New York, in which he termed it "inanition fever."

If a child is restless and peevish, crying constantly, with a dry mouth, sucking ravenously on anything put in its mouth, even after being put to the breast, its temperature will be found to show a record of from

101° F. to 103° F. The following temperature chart is illustrative of this condition.

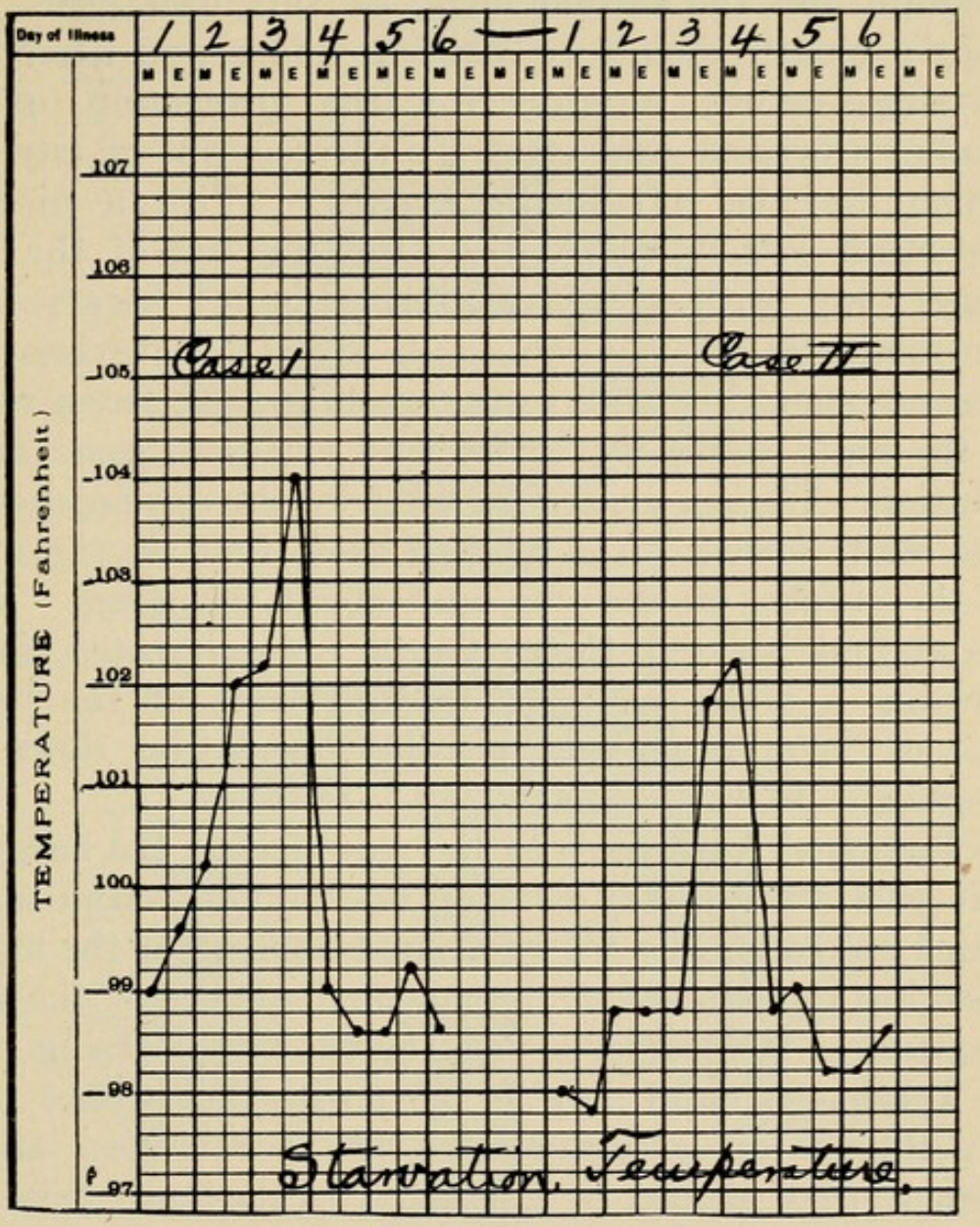

FIG. 44. STARVATION TEMPERATURE.

If it is given modified milk mixture it will take it ravenously, and in a short time its temperature will have dropped to normal.

Mouth.—The mouth needs constant attention during infancy to prevent the development of *thrush* or *sprue,*

which is produced by an organism called the *saccharomyces albicans,* milk being an excellent culture medium for the development of this organism. The baby's mouth should be washed before and after each nursing—before nursing for the protection of the mother's breasts, and after for the removal of any milk which may be left in the mouth. With a piece of absorbent cotton wrapped around the end of the little finger, wet with a saturated solution of boracic acid, the mouth is easily swabbed in all of its crevices. No violence should be used in the washing. No harm results if the child sucks the cotton and swallows some of the solution. Thrush evidences itself by the development of fine white specks on a reddish area, first on the inside of the cheeks, on the lips, and about the gums. These are at first isolated, then coalesce unless treated, finally forming a white covering to the whole of the buccal mucous membrane, and possibly extending down the esophagus to the stomach.

Bednars' Aphthæ.—At the junction of the hard and soft palate there may develop one or two round ulcers, which are caused by too vigorous cleansing of the mouth, breaking the surface of the mucous membrane, the ulcer resulting. It interferes very much with nursing.

Teeth.—A child may be born with one or two teeth, but this is an exceptionally rare occurrence, and if present they should be extracted if they are loose, because of the possibility of injuring the mother's nipple, and of being swallowed if detached while nursing.

The teeth are present in the tooth or dental sacs located in the gums at birth, and make their appearance at various times until the twenty deciduous or temporary teeth are cut. Fig. 45 illustrates the appearance of the first teeth.

Under normal conditions the gums are red and swollen when a tooth is cut, but the phenomenon may

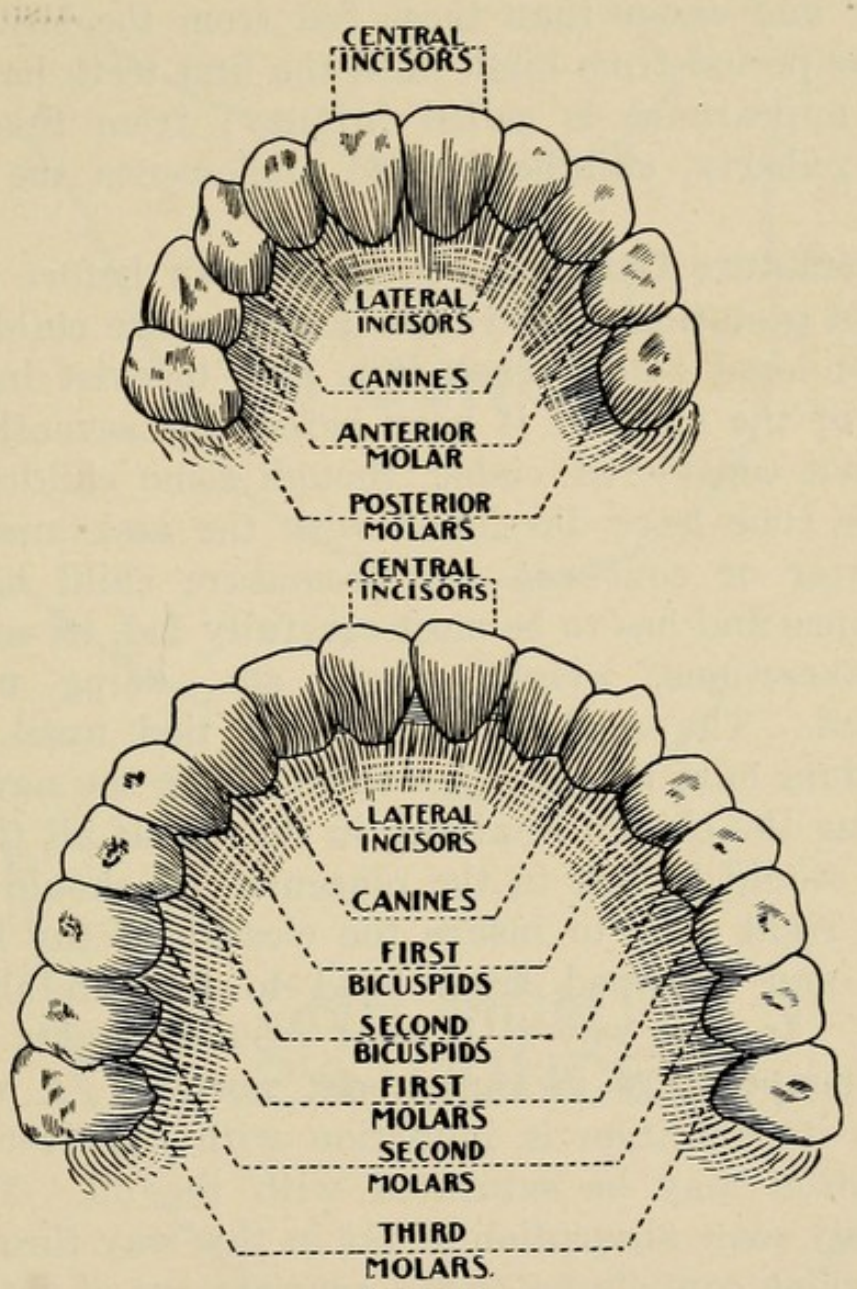

FIG. 45. DECIDUOUS OR MILK TEETH.
PERMANENT TEETH.

give rise to a number of symptoms. The child is restless, saliva flows freely from the mouth, and it bites upon everything that may be at hand.

A child the subject of malnutrition or rickets cuts

teeth very irregularly and much later than a normal well-nourished child. Nursing infants cut teeth much sooner and easier than those fed from the bottle.

The period from birth until the first teeth have made their appearance is called infancy; from this period until puberty, childhood; and adolescence the rest of life.

Premature Children.—A child born before the full term of gestation is said to be a premature child, and it is considered *viable* when it is able to exist independently of the mother; if born before the seventh month it is not considered viable, though some children born at this time have developed with the assistance of an incubator or *couveuse*. A premature child has little resistance and has to be most carefully fed, its secretions and excretions, weight, sleep, etc., being minutely watched. The cord should not be tied until all the pulsations have ceased a few inches from the navel, thus insuring the child's retaining in its vessels all the blood which would be left in the placenta. It should be laid on its right side, to insure the closure of the foramen ovale, and wrapped from head to foot in absorbent cotton. In this way it is kept from draughts and its body temperature is kept about normal. A valuable aid to its nutrition is inunction with cod-liver oil, or the cotton may be saturated with the oil. There is certainly some absorption of fat in this way through the skin, which contributes to the nourishment of the infant. These premature infants are frequently too weak to suck if put to the breast or given a bottle, and in this case the breast milk can be given by means of a medicine dropper. If breast milk can be obtained it will generally nourish better. The first milk withdrawn should be thrown away, the middle milk and strippings

being administered. If breast milk is unobtainable the child may be given modified milk of a very weak per-

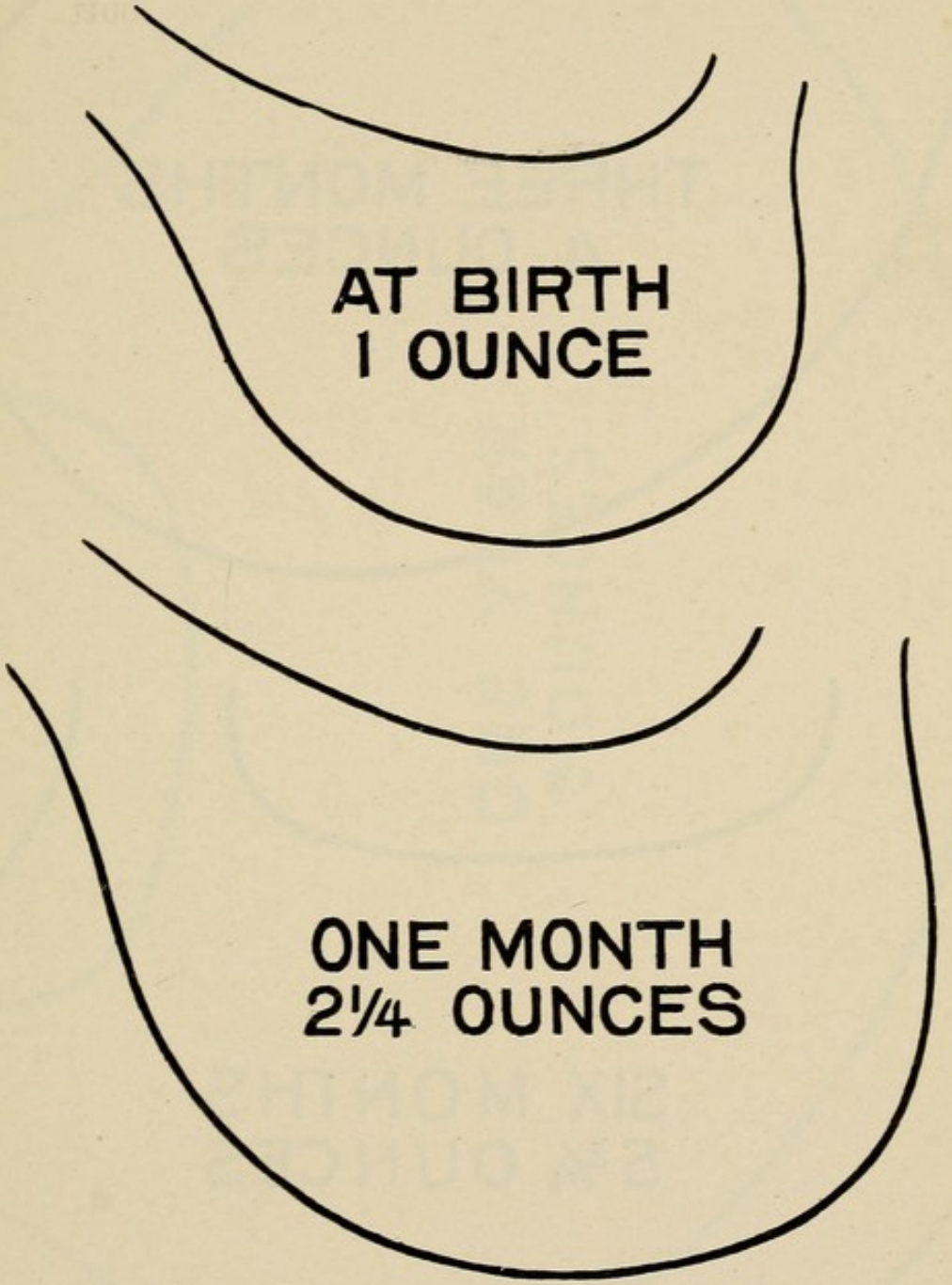

FIG. 46. TRACING OF INFANT'S STOMACH (KELLEY).

centage, care being taken not to give too large a quantity at a feeding. The stomach of a newborn child at full term holds about one-half ounce, and that of a

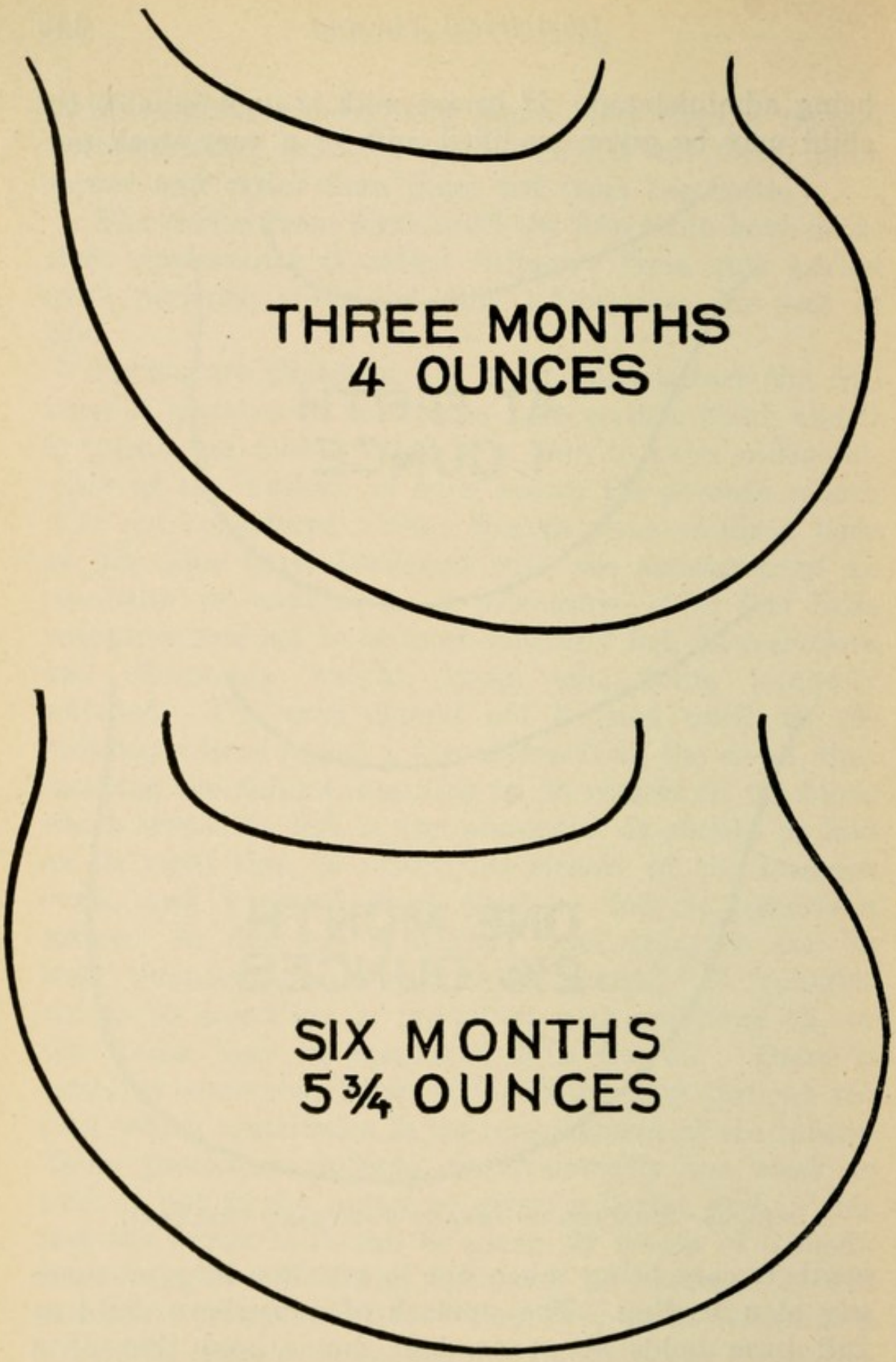

FIG. 47. TRACING OF INFANT'S STOMACH (KELLEY).

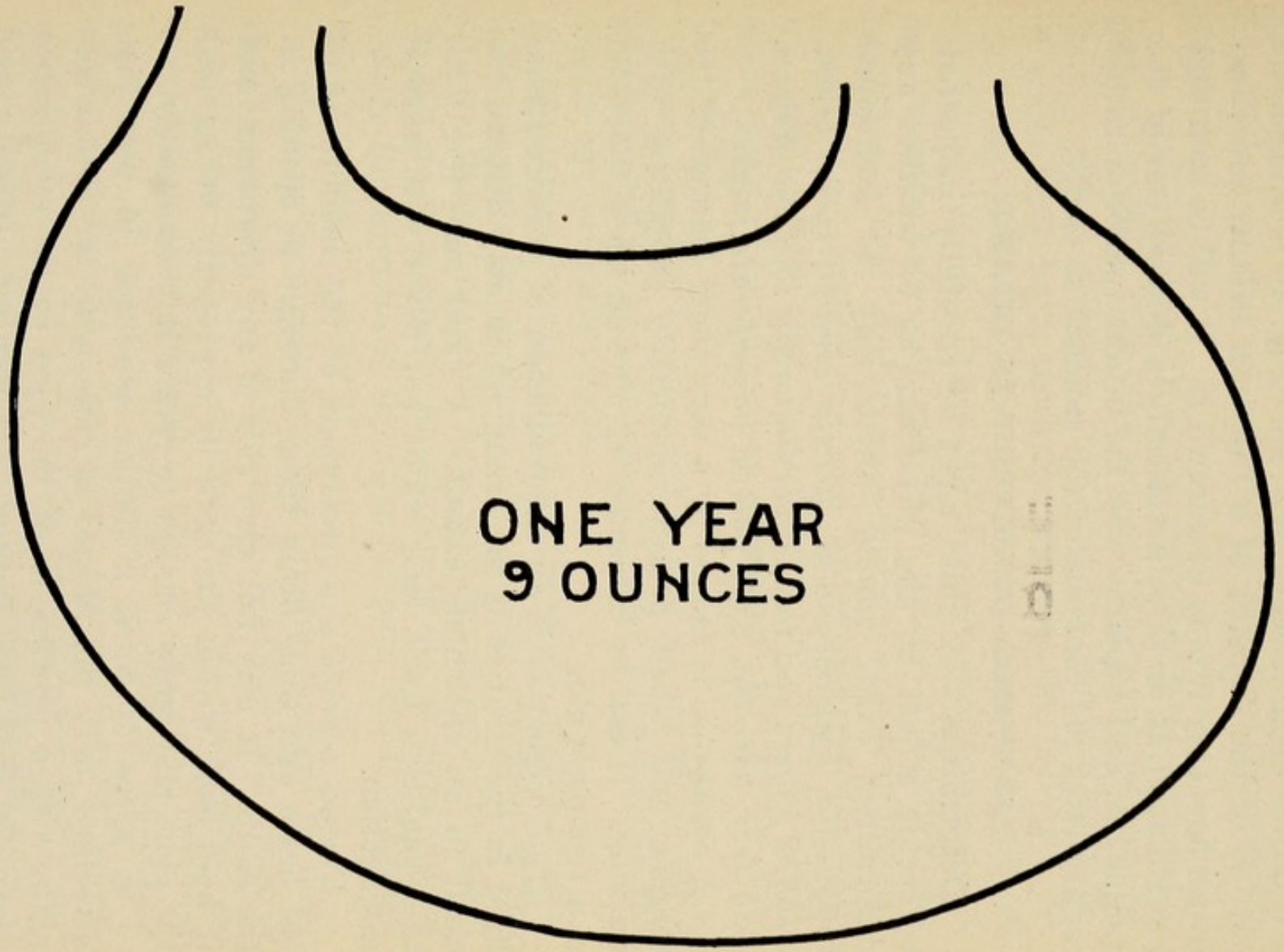

FIG. 48. TRACING OF INFANT'S STOMACH (KELLEY).

premature infant necessarily less. Fig. 46 is a facsimile outline of the stomach of a full-term infant, and illustrates how easy it is to overcrowd it. It will be seen that the stomach at birth is practically a dilated end of the esophagus, and explains why the infant vomits or rather regurgitates the contents of the stomach so easily.

ABNORMAL CONDITIONS IN INFANCY.

Deformities.—A child must be carefully inspected, before it is left by the physician, as to whether any deformities exist, among which may be mentioned *tongue-tie, hydrocephalus, hernia cerebri, spina bifida, webbed fingers and toes, supernumerary toes and fingers, club feet, hare-lip, cleft palate, imperforate anus.*

A *tongue-tie* is caused by a very short frenum of the tongue, and when present materially interferes with nursing. It can be corrected by cutting when the child is a few days old.

Hydrocephalus is an accumulation of cerebro-spinal fluid in the cavities of the brain, which may distend the skull to an enormous extent. A child may live with this condition for a long while, but never with normal intellection.

Hernia cerebri is a protrusion of the membranes of the brain and some brain tissue through an opening in the skull. It may not give rise to any symptoms, and if held back within the skull by a properly fitting pad the bone may grow enough to retain it permanently.

A *spina bifida* is a similar condition to that just described, only the failure to close is in the spinal column, with a protrusion of the cord or the membranes distended with fluid through this opening. It is a surgical condition.

Webbed fingers and toes and supernumerary fingers

and toes are of interest only as regards the possible time for their correction or removal by appropriate surgical treatment.

A *cleft palate* or *hare-lip* may interfere materially with the child's ability to nurse. The hare-lip may be double, with a projecting mass of the superior maxilla, in which may be a tooth, in between the cleft in the lip. The opening in the palate may be very slight in extent, involving principally the soft structures, or it may involve both soft and hard palates. Nothing can be done to a child with these conditions except to nourish it as well as possible and wait for several months until an operation looking to a closure may be performed. Some authorities advise an operation during the first few weeks.

Club feet can be corrected to a great degree by early massage and the application of proper splints while the tissues are soft and pliable.

Imperforate anus calls for immediate surgical interference, in order to restore the proper function of the bowel. Should the child have no passage from the bowel during the first twenty-four hours it should be examined closely to ascertain if the anus is open, and if not steps taken at once to open it.

If a newborn child can not breathe through its nose, or does so with an audible *snuffle,* and this gets progressively worse, it is a suspicious symptom and should be reported to the physician. One of the most frequent symptoms of inherited infantile *syphilis* is persistent snuffles, which with a hoarse cry, characteristic eruption, skin trouble at the anus, make the diagnosis fairly certain. Inunction of a 50 per cent mercurial ointment in lanolin is the best method of treatment. A piece of the ointment as large as a good-sized pea is rubbed in

one of the flexures every night. Each night a new site is selected for the inunction, first the popliteal spaces, the flexures of the elbow, the groin, lower abdomen, etc., in this way each site getting a short rest.

During the first week it is not infrequent to find the child's *breasts* enlarge from a secretion of milk. It is very rare for them to give much trouble, but they may be found to suppurate, necessitating free incision and drainage. When they fill up with milk they should be let entirely alone. If no pressure is applied or any lotion rubbed upon them Nature will absorb the secretion without difficulty.

At birth the *foreskin* of male babies is long and narrow, and for this reason, and because there are some natural adhesions between it and the penis, it can not be retracted. At the end of the first month or so the foreskin can be pushed back, in one or two attempts several days apart, the adhesions broken up, the accumulated secretion—called smegma—removed, and the mother instructed how to draw it back. Vaseline should be applied, and the same procedure gone through with once a week as part of the child's toilet. If this is done when the child is young it obviates the necessity for a circumcision later in life, an operation which would never be needed if these precautions were complied with.

Caput.—At birth the child's head is much out of shape, due to the molding it underwent in its passage through the canal. Because of the pressure on the scalp a free return of the blood from the part presenting is prevented, and there is poured out in the soft tissues of the scalp the fluid part of the blood, which forms a small projection or tumor called the *caput succedaneum*. This tumor is formed in the *cellular tissues* by the *watery parts* of the blood; it is present when the child

is born and disappears during the first twelve hours. It may be found on any presenting part.

Cephalhematoma.—Another tumor upon the head, the *cephalhematoma* (*cephal* meaning head and *hematoma* a blood tumor), is located between the periosteum and the bone; it is composed entirely of blood, due to rupture of capillaries in the periosteum. It is generally several days in making its appearance and continues to enlarge for several days, disappearing in two or three months. The caput may be present on any presenting part—face, vertex, or breech; the cephalhematoma is never found except upon the head and over one of the bones, generally either parietal bone, or both.

Jaundice.—During the first week of life the child's skin and conjunctiva often turn yellow from the deposit of biliary coloring matter. This is termed *jaundice*, and is present in a large percentage of cases. It is either very mild or quite severe, and when severe the child is listless, sleeping most of the time, and nurses poorly if at all. Its presence has been variously explained as entirely of liver origin, change in the blood itself, and dependent on the change in circulation of the infant.

Sudamina.—This vesicular eruption has already been referred to.

Colic.—The formation of gas in the bowel and its rapid movement through coils of intestines causes pain, crying, drawing up of the legs and thighs, and waving of the arms. The pressure of the weight of the hand on the abdomen may cause some relief, and the movement of the gas can be felt.

Errors in feeding or in the quality of the milk are the principal causes. Too frequent nursing, irregularity, too rapid emptying of the breast, milk too rich in proteids, caused by lack of exercise by the mother

and eating too much meat, are causes. Chilling of the child following nursing may cause it. It is often the case that crying after nursing is due to hunger from too little milk and not to colic, in which case the stools are smooth and normal and show no signs of indigestion.

The treatment is varied, no two cases being exactly similar. Holding the child on the shoulder, its weight pressing on the stomach and intestines, dislodges the gas; warm water containing a drop of essence of peppermint; a warm saline enema; heat applied to the abdomen by allowing the child to lie on a warm-water bag. Under no circumstances should whisky, Dewey's mixture, or paregoric or other form of opium, be given.

Vomiting.—Owing to the shape of the infant's stomach its contents are easily regurgitated, especially if the child is handled after nursing or the abdomen pressed upon. The amount regurgitated usually appears much greater than is actually lost. If blood is vomited the nipple must first be examined, and if found fissured the site of the bleeding is ascertained, but if the nipple is normal it more than likely comes from the stomach. Blood in the matter vomited should be reported at once to the physician.

Stools.—The normal stool, after the meconium disappears, is a smooth homogeneous mixture, bright yellow in color, and contains but few or no curds and very little mucus. After the first week they should not be more frequent than four in the twenty-four hours. Thin, frequent, and green stools are evidences of a diarrheal condition and should be at once reported.

If every napkin which is removed is stained with a spot of fecal matter, the condition is abnormal, and soon causes an intertrigo. A preliminary dose of castor oil, diminishing the length of nursing and increasing the

interval, and giving water after each nursing, will usually correct this abnormality. It may be necessary for the physician to give bismuth if it is not corrected.

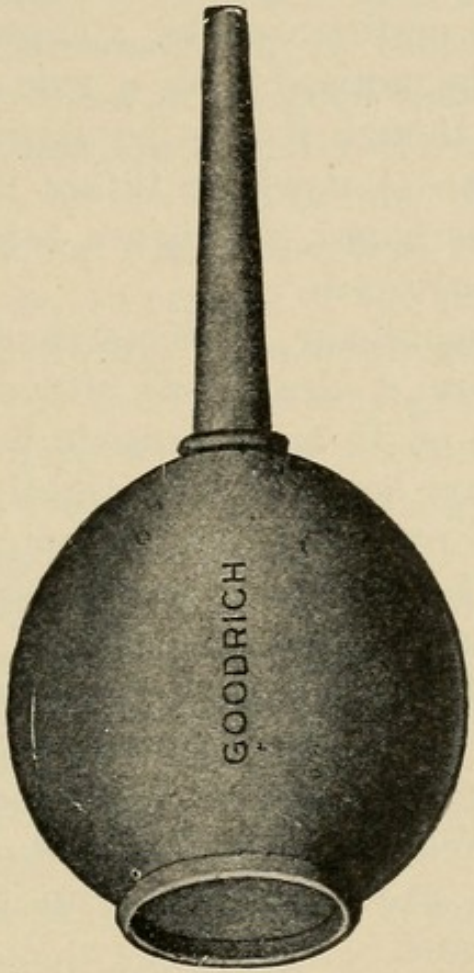

FIG. 49. INFANT'S BULB SYRINGE.

Cyanosis.—Persistent blueness of the skin after respiration is established and the child has cried, the blueness increasing when it does cry, is due to the failure of the foramen ovale to close. This is the opening in the wall between the auricles, and was necessary before birth, when the lungs were not being used. This opening, if it persists, allows the venous blood coming from the inferior and superior vena cava into the right auricle to escape into the left auricle, contaminating the

red, arterial blood with blue, venous blood. Babies so afflicted are called "blue babies," and they rarely live to the age of puberty.

Menstruation.—Infrequently in female infants, during the first two or three weeks, a slight bloody vaginal discharge may be noticed. As a rule it is very slight and temporary, though it may be very free.

Hemorrhages.—A newborn infant is specially prone to develop hemorrhages, which are referred to as *hemorrhages of the newborn.*

Umbilical hemorrhage, or hemorrhage from the cord, may occur before it drops off, either from a loosely applied ligature or from the vessels being cut through by a small ligature being tied too tightly. Both of these accidents can be prevented by the use of a rubber elastic ligature, in the form of a small rubber ring, of caliber smaller than the circumference of the cord, which is stretched and slipped over the severed end of the cord, by one of the appliances for that purpose. A ligature of this kind exerts continuous pressure on the vessels as the Wharton's jelly dries, and bleeding is more effectually prevented than can possibly be done by any other means.

Hemorrhage may occur from the umbilicus after the cord has dropped off, and in all such cases there is a tendency to hemorrhage, as is found in hemophilia or the "bleeders."

Pressure upon the bleeding vessels at this point is very difficult to accomplish. If there is but a small amount of oozing, the application of persulphate of iron may control it. Needles carried under the umbilicus at right angles and wrapped with a figure-of-eight suture should be tried in the severer cases.

The cause of the hemorrhages of the newborn is

obscure. The bleeding may occur from any organ, most frequently perhaps from the stomach and intestines. When the blood is passed from the intestine in the movement the condition is called *melena*. The treatment of this trouble is in many cases of no avail. The injection, subcutaneously, of a thoroughly sterilized solution of gelatin has given good results.

Granulated Umbilicus.—After the separation of the cord one or more of the vessels may be left as a small granular spot, from which there is a serous or sero-purulent discharge, an eczema of the skin of the umbilicus sometimes following. The application of a solution of nitrate of silver, thirty or forty grains to the ounce, followed by a dry, absorbent dressing, as powdered boracic acid and starch, equal parts, this being repeated once daily, is usually efficacious.

Umbilical Hernia.—The failure of the umbilical ring to firmly unite after the cord drops off is the chief cause. Contributory cause is the continuous crying of babies subject to colic, hunger, etc., or who strain from constipation. The tumor varies in size from a small knuckle to a large protuberance.

The contents of the sac may be omentum alone or gut, with or without omentum.

The treatment is either surgical or palliative. Cures can be obtained by the use of an adhesive strip two inches wide, and long enough to reach to the anterior axillary line on each side. The hernia is reduced, a pad is made of a button mold, covered with adhesive plaster, or of several thicknesses of plaster, and placed over the ring. One end of the plaster is applied and drawn over the umbilicus, the pad in place, and the skin over the umbilicus drawn up into small folds. When the adhesive plaster is changed, which should be

done every four or five days, the finger is placed beneath the pad and held until the new strip is applied.

In an irreducible hernia, resort should be had to surgery at once.

Atelectasis.—This is a condition of the lungs in which all of a lobe or a portion of one remains collapsed after birth, the lung remaining as in the fetal state.

The condition usually follows an attack of asphyxia neonatorum. If the primary wiping out of the mouth and nose is not done, mucus may be aspirated and mechanically plug up one of the bronchial tubes, permanently closing it, allowing all lung tissue supplied by it to remain collapsed.

The surface of the lung subject of atelectasis shows depressions, corresponding to the undilated portion, with air in surrounding tissue. These areas do not crepitate on pressure, and if part of the affected portion is excised it will sink in water. Much-dilated bronchioles, areas of compensatory emphysema, surround the collapsed portion.

Practically the only diagnostic sign of importance is the presence of cyanosis, with no heart lesion being found. The child does not thrive, is bluish in color, especially when crying, and the cry is feeble. Convulsions may rarely be seen. The *physical signs* are of little assistance in reaching a diagnosis. Owing to the emphysematous areas around the atelectasis, no dullness or bronchial breathing can be obtained. The respiratory murmur is feeble and slightly harsher than normal.

The principal treatment is that of prevention, by attempting to cause the child to take deep inspirations immediately after birth. The methods of artificial respiration mentioned elsewhere should be employed early.

Sepsis.—This condition is due to an infection of the newborn by one or more of the pus-producing organisms, the streptococcus or the staphylococcus being the most frequent form. The most favorable site for entrance of the organism is the umbilicus, either before or after the separation of the stump. The infecting organism may be carried to this point by the capillary action of an infected napkin; hence the necessity for an antiseptic dressing to the umbilicus until the navel has healed.

The following portals of entry of the organism may be mentioned: *Injuries* and *abrasions,* as in a forceps operation, with an infection after birth; abrasion of

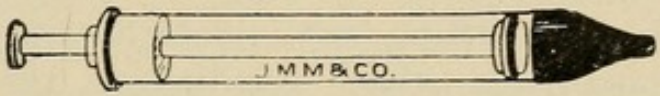

FIG. 50. NASAL SYRINGE WITH RUBBER TIP.

the *mucous membrane* of the *mouth; septicemia* of the mother during the later weeks of pregnancy; *putrefaction* of the *liquor amnii,* with ingestion or aspiration of this by the child before and during labor; or a violent *vaginitis* and *endocervicitis* of the mother before birth and infection of child in its progress through the canal; *suppuration* of the *mammary gland* during lactation and an infection of a milk duct, with a contamination of the milk, the infection being through the gastro-intestinal tract; or an infected wound following clipping of the *frenum linguæ* in tongue-tie or following *circumcision.*

The first evidence of the condition usually appears during the first week, and may be a failure of the child to nurse. If the infection has been at the navel and there is peritoneal involvement, or an inflammation of the

vessels under the anterior abdominal wall, there is *continuous crying,* distention of the abdomen, and the child lies with legs drawn up. The *temperature* is high but fluctuating; *jaundice* is present when the liver is involved; *pulse* rapid and small; *skin* hot and dry, and there may be petechial spots develop or large ecchymotic areas —frequently they appear on the part which is in contact with pillow and bed. The prognosis is very grave.

Support and nourishment offer the only possible hope of relief. If the child is unable to nurse, rectal feeding and gavage must be resorted to, using by the former completely peptonized milk, and by gavage, breast milk, if it can be obtained.

Injuries to the Newborn.—As a result of prolonged labor, pelvic deformities, with instrumental or manual delivery to overcome these conditions, the child may sustain fatal injuries, or injuries which may cripple it for life.

High Forceps is a capital operation, with very serious results in a large percentage of cases. Williams, in one hundred and nineteen collected cases of high forceps, found a maternal mortality of 40 per cent and an infantile mortality of 60 per cent.

As a result of *forceps operation* the following injuries may be named: lacerations of the skin by the blades; injury to eye, especially when a fenestrated blade is applied too far up on the head; facial paralysis; depressed cranial bone, or a fracture of the bones; cerebral hemorrhage from rupture of vessels in the meninges or brain.

Version may result seriously to a living child. Among the most frequent accidents are fractures of the long bones of the extremities and the clavicle; laceration or rupture or hematoma of the sterno-cleido-mastoid

muscle; fracture and depression of the cranial bones; rupture of vessels in the meninges or of the sinuses in the dura; Erb's paralysis from pressure on the brachial plexus of nerves; atelectasis from delayed delivery of the after-coming head.

Tetanus (Lockjaw).—Tetanus is due to the entrance of the tetanus bacillus into the circulation, its toxins exerting their effect particularly upon the central nervous system. The bacillus may enter at the umbilicus or an abrasion of the skin, carried through the medium of unclean hands, dressings, etc. The principal habitat of the bacillus is in the neighborhood of stables and stable yards, and dust and dirt from this locality may convey the infection.

In a majority of cases the symptoms appear during the first week after birth, though it may occur any time before the fourteenth day. It is rare during the third week.

The first symptom is a spasmodic contraction of the muscles of the lower jaw, which very soon becomes fixed, tightly closed. It is impossible to push the nipple between the child's gums. If liquids are poured into the mouth, swallowing is impossible, and the first few drops passing the pharynx may cause a reflex spasm of the pharyngeal muscles and a general convulsion. The child has an anxious, frowning look between the spasms, and a more or less general spasmodic contraction of the facial muscles during a convulsion. During a general convulsion the respirations are stertorous, and between they are hurried and superficial. The sphincters of bladder and rectum are relaxed, and involuntary passages are usual. As the case progresses the periods of rest between the convulsions are shorter, contractions begin, the spine becomes contracted, arching backward, the

opisthotonos being at times extreme, the child resting on head and heels. The temperature is usually very high, 104° F. to 106° F. In the latter period a convulsion may be induced by touching the child, especially about the face. Feeding is impossible.

The prognosis is very grave, as nearly all cases die. The younger the child the more hopeless the case. Escherich reports several recoveries.

The diagnosis is usually easy, and must be made from the meningitis and from the paralyses and contractions following cerebral hemorrhages of the newborn.

The most favorable results can be had from the use of the tetanus antitoxin, which, like the diphtheria antitoxin, gives the best results the earlier it is used. Five to ten cubic centimeters of the antitoxin may be injected, and repeated in from six to eight hours. The subcutaneous method is recommended rather than the injection into the spinal canal, owing to the difficulty of performing the latter operation. The influence upon the minds of the family by the lumbar puncture is very great, and a fatal result of the disease is usually attributed to the puncture by the average layman.

Prophylaxis is the chief treatment, strict cleanliness in tying the cord and its care afterward being an absolute essential. Upon the appearance of the symptoms, control the convulsions, if they are severe, by inhalations of chloroform.

Gavage should be resorted to, with the tube introduced through the nose, in those cases in which improvement is noted in the convulsive stage.

CHAPTER VII.

Infant Feeding.

Every mother should be encouraged to nurse her infant, unless some special and vital reasons exist why she should not do so. The following are among these *contraindications* to maternal nursing: prolonged illness before delivery; severe anemia; tuberculosis; depressed or severely deformed nipples; epilepsy; syphilis; chronic rheumatism; puerperal fever; an insufficient supply of milk; milk of bad quality, which continuously disagrees with the child, efforts at regulation by diet, etc., failing to correct it.

A newborn child should be fed every two hours during the day, and every three or four hours during the night. After the third month feed every three hours during the day and once at night. Feeding oftener at night results in indigestion and colic, and if fed whenever it cries or "wants it" during the day this is bound to result. It has been advised by some that if the baby is not put to the breast at all during the first two days and nights there is much less danger to the mother's nipples. By the pulling and tugging at the practically empty breasts the nipples are excoriated or cracked. This plan means disturbed rest for the nurse, but gives much comfort to the mother. If put to the breast early it should not be until after the first eight or ten hours, during which time the mother is enabled to a certain extent to regain her strength lost during the labor. If there is a tendency to hemorrhage from the uterus the nursing excites a uterine contraction and acts beneficially. This is the only indication, however,

for immediate nursing. The administration of sweetened water until the milk comes in the breast generally suffices to satisfy and sustain the infant.

The practice of feeding a newborn child catnip tea and other decoctions is pernicious. If Nature had intended the breasts to secrete a nourishment during the first two days it is reasonable to suppose there would be an appearance of milk with the beginning or end of labor. Water sustains an infant full well until the milk appears. There may be an oversupply of milk, called galactorrhea, milk constantly running from the breast, which necessitates the wearing of cloths for protection of the clothing. The milk when it first appears may come with a rush, filling the breasts quickly, perhaps causing much pain, the child being unable to nurse it out fast enough to give comfort. Ordinarily after the first rush of the milk is over it can be felt to come into the breasts with a prickling sensation when the child is taken for its nursing, or, if regularity in nursing has been early established, this sensation will be felt at the regular nursing hour without seeing the child.

The child will obtain ample nourishment by nursing from alternate breasts, taking at least ten minutes for exhausting the supply. It should be made to work while at the breast, waking it up if inclined to fall asleep, as babies are prone to do.

Examination of Breast Milk.—If the milk of a mother does not agree with the child it should be examined carefully by the physician, to ascertain the reason for its disagreement. The sample for examination is best obtained by either pumping it out or pressing it out by the hand in the middle of a nursing. The fore milk is poor in fat and rich in solids, the "strippings" very rich in fat, the middle milk being the average. Let the

child nurse for a few minutes from both breasts, then press the milk out, obtaining at least two tablespoonfuls (one ounce). This is placed in a clean bottle in a cool place, to be sent to the doctor, marked with name of patient and date.

Duration of Nursing Period.—Lactation usually lasts from eight to ten months, weaning being accomplished gradually as a rule, it being usually best not to change the baby's food during the heated term.

The average time for the reappearance of the *menses* is when the baby is seven months old, though it may reappear before that time. It is not infrequent for it to reappear during the second month and recur regularly during the whole of lactation. As colostrum frequently reappears in the milk during menstruation, and under stress of excitement, fear, anger, or any great emotion, it may cause some indigestion in the infant, acting as a laxative, perhaps causing vomiting.

Should a nursing mother conceive, the child at the breast must be weaned, as it is unjust to both children that nursing be continued. As soon as it is known another pregnancy has begun, a physician is consulted as to the proper course to pursue.

Wet-nurse.—Should a mother be unable to nurse her child a wet-nurse is the next best method of nourishing it, but there are many obstacles in the way of obtaining one; it is difficult to find one whose baby's age is near to that of the baby to be nursed, the danger of a good milk on the diet she is used to at home being so altered by her change of food, surroundings, habits, etc., as to make it disagree with both the babies.

Artificial Feeding.—Should artificial feeding be decided upon, the choice of food is of great moment. The consensus of opinion of all observers is that cow's milk,

modified for the individual child's needs, is the nearest approach to a good breast milk.

The following table gives the average percentage of the various ingredients in cow's and human milk:

	Cow's Milk.	Human Milk.
Water	87.41	87.30
Solids	12.50	12.46
Fat	3.66	4.00
Sugar	4.50	7.00
Proteids	4.00	1.50

It can be seen at a glance that cow's milk without some change can not be digested by the child because of the excess of proteids, or casein, which is the solid part of the milk.

Milk Modification.—A modification of the milk may be accomplished in several ways: by the accurate and scientific method in the milk laboratory, such as the Walker-Gordon or the Neill Roach adapted milk laboratories; or at home by the various formulæ devised by workers in this line. As these laboratories are only available in a few cities, the milk must often be modified at home.

By the term "modified milk" or "adapted milk" we mean the changing of cow's milk by its dilution and the addition of cream and milk sugar until its analysis approaches that of mother's milk.

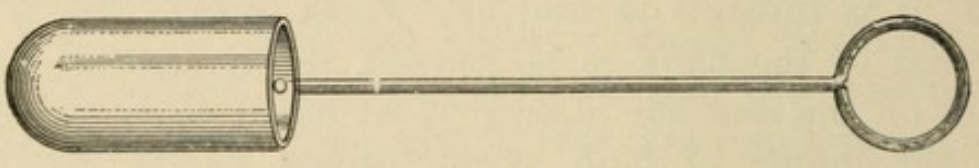

FIG. 51. CHAPIN CREAM DIPPER.

We can take cow's milk as the basis, dilute it with water or other diluent, as barley, rice, or oatmeal water, and add cream to bring up the percentage of fat, and

milk sugar. The upper fatty milk can also be taken, diluting it and adding milk sugar.

The following is a table suggested by Doctor Henry D. Chapin for the modification of milk at home which is simple and accurate, being easily understood by any one:

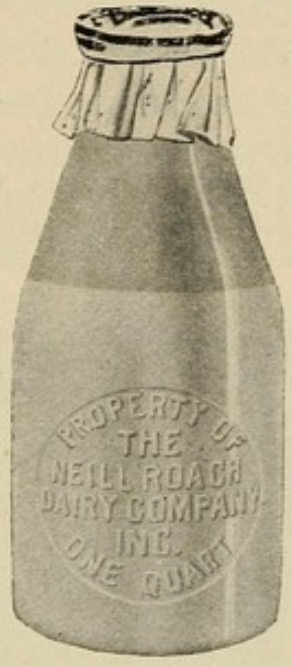

FIG. 52. QUART BOTTLE OF CERTIFIED MILK, SHOWING CREAM LINE.

Allow a quart of milk to stand in a cool place for four hours, dip* off the top eleven ounces, which on analysis will show a cream containing 10 per cent of butter fat. Of these eleven ounces take the quantity specified below, adding one ounce of lime water and one ounce of milk sugar and enough water to make twenty ounces.

The following tables explain themselves:

One ounce of the top eleven ounces, added to nineteen

*The top milk is removed by means of a dipper holding one ounce, as indicated in the illustration, Fig. 51. These dippers are supplied by the Cereo Company, Tappan, N. Y.

ounces of water, makes a solution which analyzes: fat 50, sugar 5.20, proteids .17.

	Fat.	Sugar.	Proteids.
2 ounces	1.	5.40	.33
3 ounces	1.50	5.60	.50
4 ounces	2.00	5.85	.66
5 ounces	2.50	6.05	.83
6 ounces	3.00	6.25	1.00
7 ounces	3.50	6.50	1.20

In preparing the food special vessels should be used and carefully cleaned after using. The following are

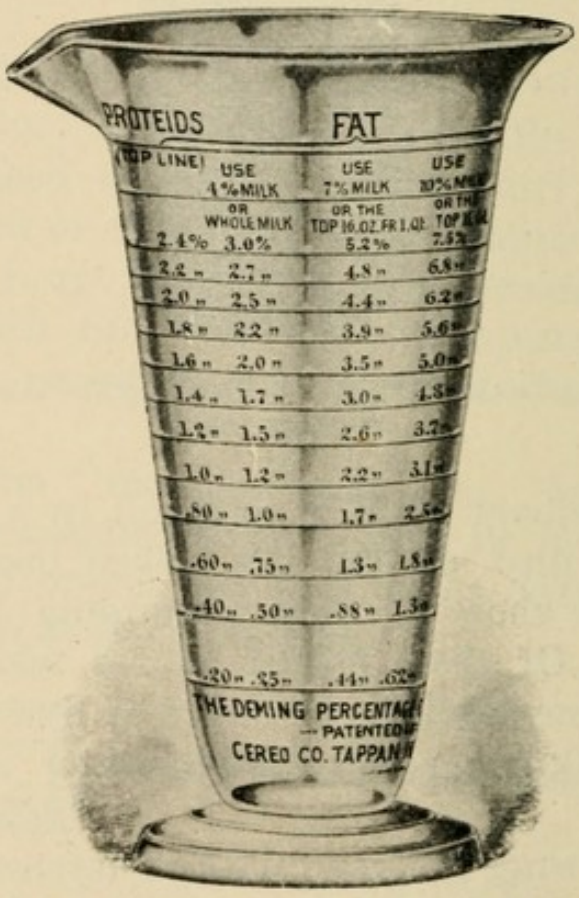

FIG. 53. DEMING MILK MODIFIER.

needed: a white enamel or glass pitcher; bowl; tablespoon; an apothecary's eight-ounce graduate; Chapin

cream dipper, or bent glass tube, for obtaining top milk; funnel; milk sugar; absorbent cotton, and lime water. They should be kept covered to protect them from the dust when not being used.

Cow's Milk.—The milk used in artificial feeding must be as pure as it is possible to obtain it.

It must be drawn from healthy cows, shown to be free from tuberculosis by the tuberculin test; they must be groomed and milked in clean barns, properly built with concrete floors and free from dust, by healthy milkers in clean washed suits, with clean hands, into sterilized covered pails with small openings. The milk must be aërated, cooled, and bottled at once, iced and kept cold until delivered, and put on ice until modified. Milk produced in this way, which after examination is found to be chemically up to the standard and bacteriologically to contain less than 10,000 bacteria to the cubic centimeter, can be certified to by a commission of physicians as coming up to the required standard, and is known as *certified milk*. In several States the use of this term is restricted by law to milk certified to by a commission of physicians.

Quantity of Feeding.—The quantity to be given at a feeding is of great importance, and below follows a table of amounts which can be given an infant at different ages:

AGE.	Intervals, Hours.	No. Feedings, 24 Hours.	Amount Each Feeding, Ounces.	Amount 24 Hours, Ounces.
First week	2	10	1	10
One to six weeks	2	10	1½ to 2½	15 to 25
Six to twelve weeks	2½	8	2½ to 3½	20 to 28
Three to six months	2½	6	6	36
Six to nine months	3	6	8	48
Nine to twelve months	3	5	8	40

Schedule of Feeding.—

AGE.	Intervals, Day.	No. Night Feedings.	No. Feedings, 24 Hours.
First three days	4 to 6	1	4 to 6
Until end of first month	2	2	10
Second and third months	2½	1	8
Fourth and fifth months	3	1	7
Sixth to twelfth months	3	0	6

Care of Bottles and Nipples.—Definite and positive directions must be given the mother and the nurse, in her presence, as to the care of the bottles and nipples, and a bottle selected which is the easiest to clean. The Hygeia

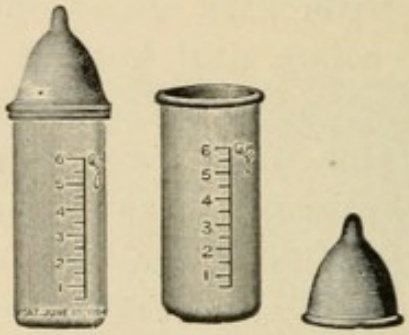

FIG. 54. HYGEIA NURSING BOTTLES.

nursing bottle has a wide mouth and a large rubber nipple, both of which are very easily cleaned and sterilized. The Arnold Pasteurizing Bottle is difficult to clean because of the narrow opening, it being necessary to use a brush in washing. The same objection obtains in the Whitehall-Tatum Bottle, which has a wide, flaring base.

New bottles can be annealed by placing them in a vessel of cold water, bringing it to a boil, allowing the bottles to remain in the water until cold. They crack less readily when so treated.

If more milk has been prepared than the baby will take at a nursing, the bottle should at once be emptied when the child has finished, rinsed with cold water, then

with hot, and filled with soda solution, which is allowed to remain in it until the milk is prepared the following day for the next twenty-four hours. The bottles are then partly filled with soap and water, a tablespoonful of bird gravel is poured in and the bottles each thoroughly shaken, this doing away with the necessity for a brush. They are then rinsed and boiled and kept standing bottom up ready for use.

Enough nipples should be at hand to use a different one for each feeding. After a feeding they are washed,

FIG. 55. RUBBER NIPPLE.

turned inside out, and allowed to remain in a soda or boracic acid solution and boiled with the bottles the following day. Under no circumstances should a long-tube nursing bottle ever be used. It is absolutely impossible to cleanse the tube, and it is a constant source of infection.

The aperture in a nipple should only be large enough to allow milk to escape from it, with the bottle inverted, in drops in quick succession. If it drops very slowly the opening is too small, and may be enlarged very little by the point of a hot needle. If the milk runs in a fine stream the opening is too large and the nipple should be discarded.

The bottle is stood in a cup of hot water until the

milk is about 90° F. The temperature of the milk can be ascertained by allowing a few drops to trickle on the back of the hand or wrist. The practice of some nurses of drawing a few drops from the nipple with the mouth to learn the temperature of the milk can not be too strongly condemned.

Water.—It must be remembered that an infant needs water as much as an adult, and this must be given frequently during the day. Cool or warm water can be given through a nursing bottle three or four times a day.

Sterilization and Pasteurization.—Milk brought to the temperature of 212° F. for fifteen minutes is sterilized; when brought to 140° F. to 170° F. for twenty minutes is pasteurized, the difference being entirely in the amount of heat used. Sohxlet, in 1886, advised the heating of milk for infant feeding, and described an apparatus for carrying this out in the home. When it

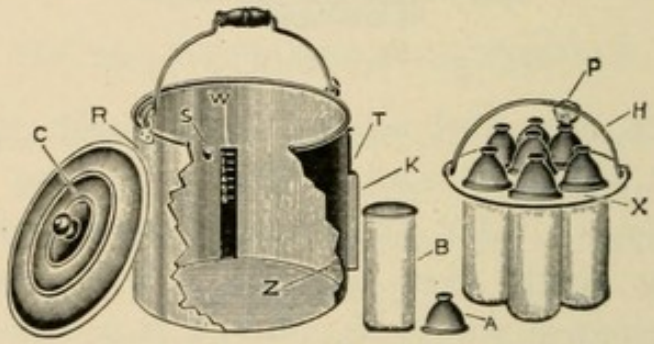

FIG. 56. HYGEIA STERILIZER.

is impossible to obtain a milk for infant feeding which is known to be clean and cold, or the milk contains a quantity of sediment and sours easily, it is decidedly best to submit it before feeding to sterilization or pasteurization. Pasteurized milk means "heated milk," and does not necessarily mean "clean, good, or pure milk."

Both of these processes destroy bacteria, but do not

entirely destroy their spores. The germs most frequently found in milk are the tubercle bacillus, typhoid bacillus, Klebs-Loeffler bacillus, the pyogenic cocci, and the virus of foot-and-mouth disease of cattle. These are all killed at even a lower temperature than 167° F. if maintained long enough.

The chief difficulty in wholesale pasteurization of milk is its being heated in bulk and put in unsterilized containers, either bottles or cans. To be entirely effective it should be first bottled, under as strict cleanly auspices as possible, then pasteurized, cooled immediately, and kept cold until consumed. Unfortunately the pasteurization or sterilization of milk lulls one into a false feeling of security in regard to it. The general belief is that the milk so treated will keep indefinitely and without ice, whereas if such a sample of pasteurized milk is plated it will be found to contain many thousand bacteria.

Effect of Heat.—Owing to the lactic acid bacteria being destroyed by heat, milk so treated does not sour, but slowly putrefies. The growth of the putrefying bacteria in raw milk is inhibited by the lactic acid bacteria. The effect of heat upon milk depends upon the degree of heat, but it so changes the proteid that it is difficult to digest by the infant stomach. It to some extent coagulates the albumen and renders the milk less coagulable by rennet. The exact change which takes place is not known, but the clinical evidence abundantly proves that pasteurized and sterilized milk do not meet the needs of infant nutrition, as rickets and scurvy, both nutritional disorders, occur where this milk is exclusively fed.

Artificial Foods.—The fact that there are upon the market almost countless numbers of baby foods is evi-

dence enough that none answers the requirements in all cases. These foods may be divided into three classes. First, the so-called milk foods to which water is added, and those foods in the form of powder which have been suggested as modifiers of milk. The latter are added to milk for their influence upon the casein. Second, the so-called Liebig or malted foods; and third, the farinaceous foods. In the second class the starches are supposed to have been entirely converted into soluble sugars by the diastatic action of the malt. In the third class but a small portion of the starch is converted by the process of cooking.

A nurse should never recommend an artificial food or a modified milk formula, leaving this strictly in the hands of the attending physician. Too much emphasis can not be laid upon this.

Gavage.—This method of feeding is a valuable one in certain classes of cases in which a child will not eat or is too weak to do so, or in which vomiting occurs immediately after food is taken. The same steps are taken as in stomach washing. The food mixture is poured into the funnel, and when it has been seen to pass the glass tube connecting the catheter with the rubber tube the catheter is compressed tightly and quickly withdrawn. Gavage may be performed with the patient in a recumbent position or held upright in the nurse's lap, leaning against her shoulder. In many cases of persistent vomiting, water or food introduced into the stomach through the tube will be retained when a very much smaller quantity given by the mouth from a spoon or bottle will not be retained. Young children stand the introduction of the tube without discomfort, and gavage can be used for a very much longer period of time than rectal feeding can possibly be tolerated. A very weak modified milk,

plain or peptonized, cereal decoctions, the concentrated foods, as panopepton and stimulants, may be given in this way. In cases of diphtheria or those wearing an intubation tube, the stomach tube is best introduced through the nares.

Rectal Feeding.—This method of nourishment is a valuable one when all others have failed, and may be the means of tiding over a desperate case until nourishment can be given in other ways. The food for administration in this way should be as nearly as possible free from fat and completely peptonized. Completely peptonized or pancreatized skimmed milk, mixed with albumen water of double strength, namely, the whites of two eggs and a pint of water, can be used to advantage. This should be heated to about 100° F., as it loses several degrees of heat in its passage through the tube of the fountain syringe, if this syringe is used to insert it. The food is best inserted through a small-sized short rectal tube (No. 14A), which can be attached to a small rubber tube of the fountain syringe, or the fluid can be injected with a hard rubber or glass piston syringe; care must be taken to invert the syringe, to be sure that all of the air is expelled. The child is placed upon its left side, hips elevated by raising upon a rubber-covered pillow, its thighs flexed upon its abdomen much as in the Sims' position; the tube is anointed well with vaseline from a tube, and the external sphincter is also greased. The tube is then inserted slowly to the distance of nine or ten inches and the nutrient enema slowly injected. Not more than three ounces should be injected in a child of six months of age, nor more than six ounces in a child of three years of age. After the injection the tube is compressed and quickly with drawn, the child's buttocks compressed firmly, and the

child held in the original position, if possible; if not, it is allowed to lie upon its back with legs and thighs flexed. If these enemas are given much oftener than this, the bowel soon becomes intolerant and they are expelled as soon as introduced.

In this connection might be mentioned the great benefit obtained from the high colon injection of water in cases of deficient kidney excretion, as the absorption from the colon is both rapid and prompt. The method of Murphy, suggested originally for use in septic peritonitis in both adults and children, namely, the continuous colonic flushing, may also be employed to advantage. It might be well before the injection of the nutrient enema to give a preliminary colon irrigation, to thoroughly cleanse the lower bowel and render it more absorbent.

CHAPTER VIII.

Operative Obstetrics.

The same dangers are present in obstetric surgery as in general surgery, hence the necessity for the major obstetric operations being performed in a well-equipped hospital whenever possible. The hardships incident to the transportation of a patient in hard labor a great distance must be taken into consideration, but where possible the patient should be moved for the following operations: Cæsarean section; vaginal Cæsarean section; induction of premature labor; craniotomy.

For other operations, as forceps, version, perineorrhaphy, etc., the preparations are the same as for any surgical operation, and the room arranged as much like a hospital delivery-room as possible.

Preparation of Room.—The room selected for the operation must be well heated and lighted, and if not recently cleaned it is best to be content with a thorough sweeping, with windows open, some hours before the operation; but if the time is limited it is better not to do any cleaning which will raise a dust. The table should be placed near a window, to receive the daylight most advantageously, or convenient to artificial light at night.

For all obstetric operations a table is a very necessary part of the equipment, and a kitchen table, over which is spread a folded comfort or blanket protected by a sterile sheet, makes an excellent operating table.

If the floor is covered by a rug it should be rolled up and removed or pulled back from the table, or the carpet protected by heavy paper, newspapers, or rubber sheet. A sewing or card table is used for the instru-

ments, basin containing sterile water or solutions and sponges, and another for dressings, towels, etc. One or two straight-back or kitchen chairs should be near by. These are especially needed in forceps operations and perineorrhaphy. All the available basins and bowls must be thoroughly sterilized by scrubbing with brush, soap, and sterile water, rinsed with boiling water, and finally baked in the oven of the kitchen stove. They are then covered with a sterile sheet until ready for use. There must be plenty of boiled water, sterile towels (rendered so by baking), sterile gauze and cotton, with all the other paraphernalia required for any ordinary labor.

A foot-tub partly filled with hot water, with pitchers of hot and cold sterile water, should be provided for use as soon as the child is born, in case it be asphyxiated, as is so often the case in these operations. The same preparations are necessary to receive the baby and after-birth delivered by operation as if born normally.

Preparation of Bed.—If the operation is to be done at home, and a table can not be obtained, the bed is prepared. If for forceps, version, or primary repair of perineum or cervix, a "cross-bed" is arranged. If the bed is a single one it is prepared as for a normal labor, with rubber sheet over a firm mattress, linen sheet and draw sheet, the latter pinned securely. A folded sheet is brought close down to the edge of the bed, and over this is placed an inflated obstetrical rubber cushion, or Kelly pad, or if this is not at hand a rubber sheet, its free end placed over a vessel at the edge of the bed to carry the discharges into it. The upper portion of this pad is raised by being laid over a folded towel or sheet, to keep the solutions from running up the patient's back.

Preparation of Patient.—For a section the patient

is prepared as for any other abdominal operation—the pubic hair shaved and the abdomen scrubbed. Soap and water is used liberally, followed by a lysol, carbolic, or bichloride solution, as preferred by the operator, and alcohol.

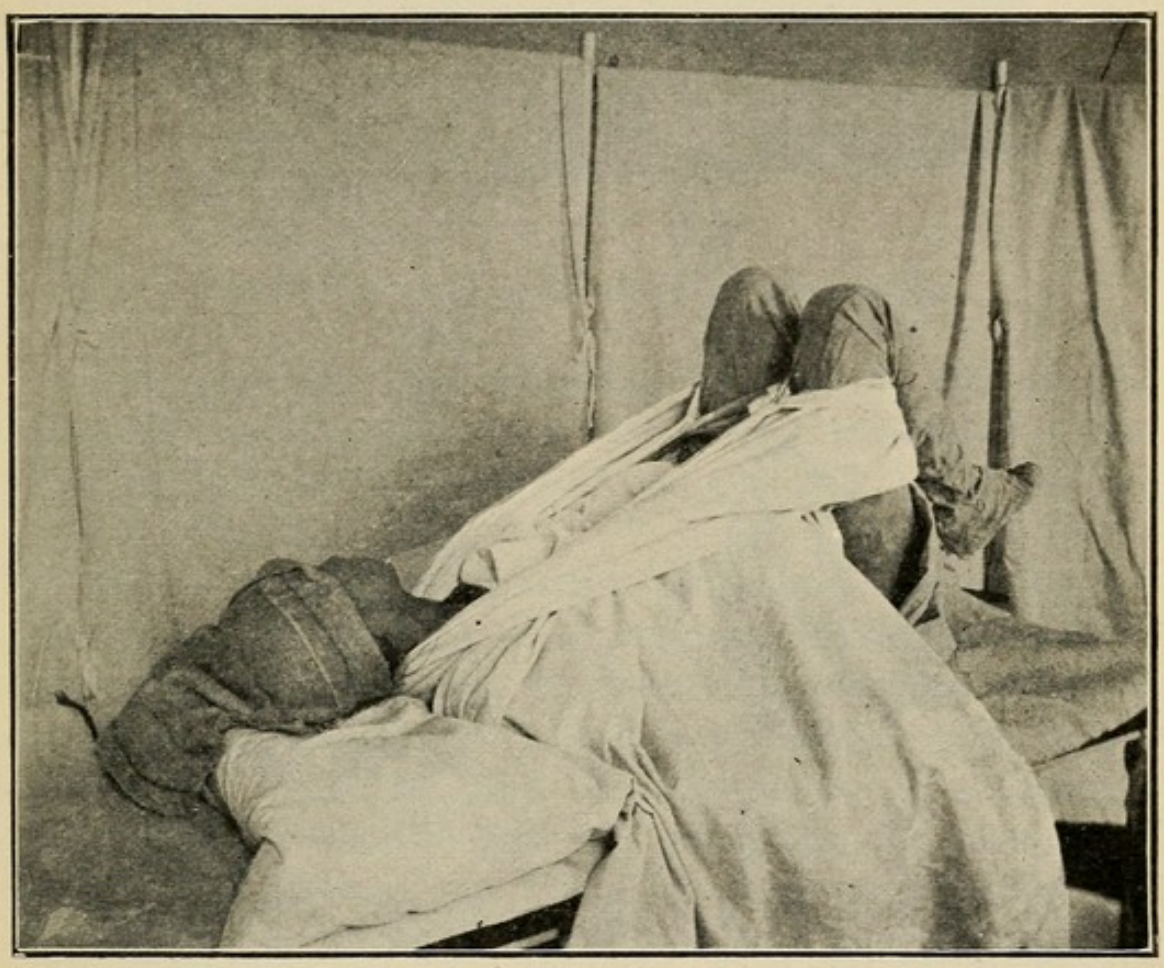

FIG. 57. PATIENT WITH LEGS HELD BY FOLDED SHEET, FOR OPERATION.

If the operation is a vaginal one, the vulva is prepared by the nurse, vulva hair clipped close, thoroughly cleansed, and the final preparations left to the operator after the patient is in position. Douches and cleansing of the vagina are usually dispensed with in obstetric surgery, as the natural secretions are helpful during the birth. The patient should be catheterized before any

operative interference, and always by a rubber catheter during labor.

If the operation is performed on the bed, the patient is anesthetized and placed crosswise in the bed, her hips close to the edge, the legs held in the lithotomy position, flexed well on the thighs and thighs on the abdomen, and held by means of one of the specially devised leg

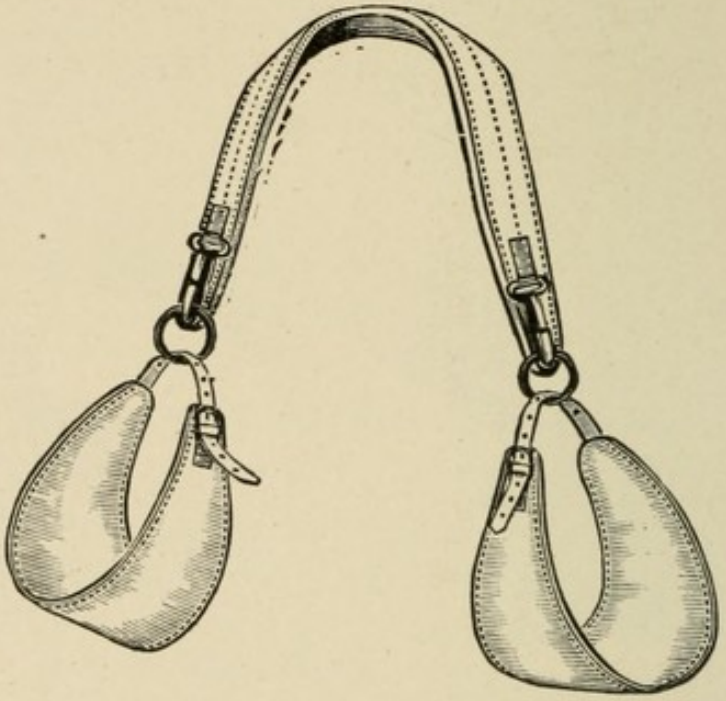

FIG. 58. LEG HOLDERS.

holders, or if these are not obtainable, a sheet can be placed under the neck, brought over the shoulders, and the ends tied around the thighs while they are being held well flexed on the abdomen. By this means the legs are held out of the way without the necessity of having other assistance than that of the nurse.

Preparation of Instruments.—The obstetrician usually carries the necessary instruments in his obstetrical bag, and these must be sterilized by boiling for not less than fifteen minutes in a fish boiler, wash boiler, or large dishpan, after thorough scrubbing of these uten-

sils. The addition of a small quantity of soda to the water will prevent tarnishing of the instruments. The forceps may be brought into the room in the boiler

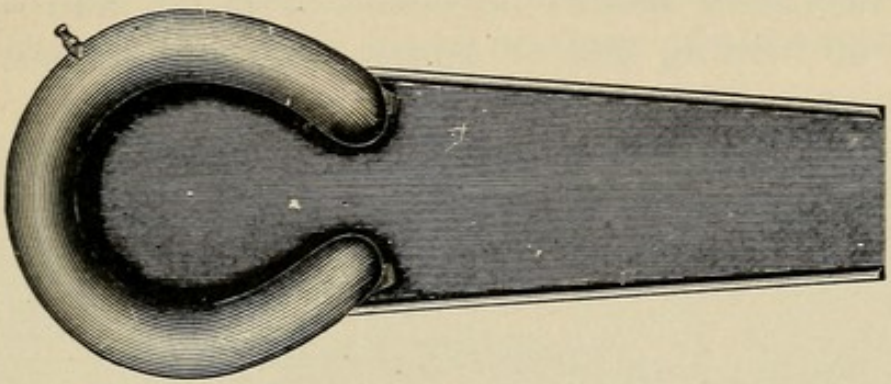

FIG. 59. RUBBER OBSTETRICAL CUSHION.

or in a deep pitcher containing a cool lysol solution, so that the blades are not too hot when introduced. The smaller instruments are laid on a sterile towel on one of the tables provided.

Anesthesia.—It is always advisable that the anesthetic be administered by a physician called in for that purpose, as the nurse is greatly needed as the first assistant to the operator, but it sometimes falls to the lot of the nurse to give the anesthetic. For forceps operations it should only be given to the obstetrical degree, the patient not being rendered profoundly unconscious, but the keen edge of the pain being benumbed. The anesthetic is given either upon a handkerchief or an Esmarch's inhaler, the lips and nose of the patient being anointed with vaseline to prevent the chloroform from burning. It is very important that the room be of the proper temperature; but it must be remembered that if the room is heated by gas it must be turned out while the anesthetic is given, especially if chloroform is being administered, as the fumes caused by these two gases cause a most annoying cough in all who are in

the room. The chloroform inhaler should be removed from the face when the anesthetic is renewed, in order not to drop it in the eyes. If ether is given the danger of an explosion should be borne in mind, and illuminating or heating gas or lamps must not be near the patient and anesthetist.

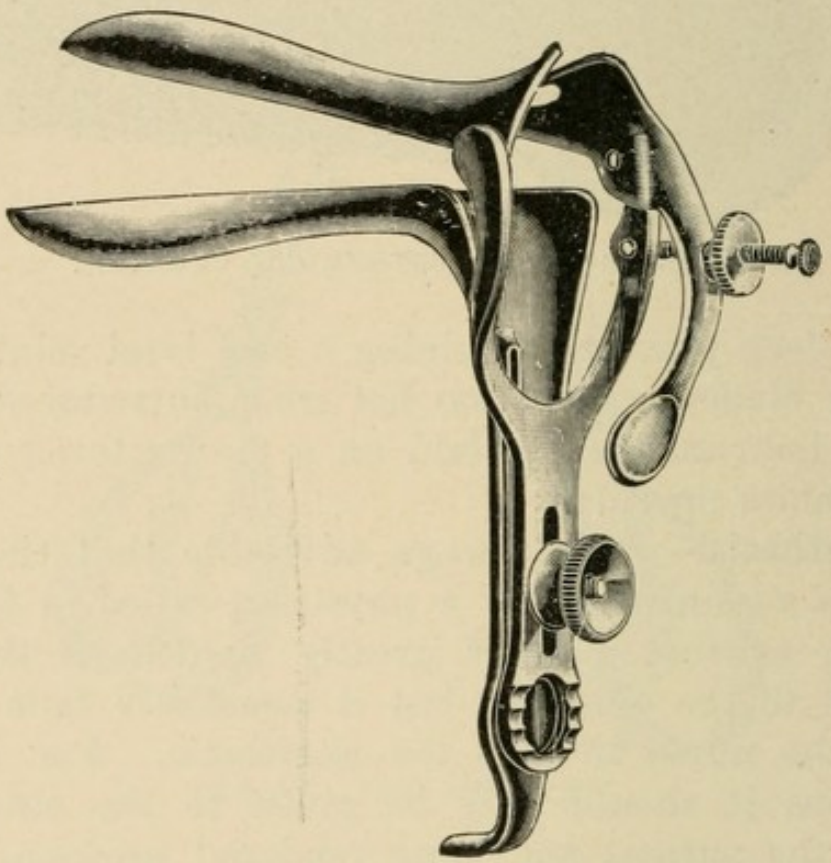

FIG. 60. BIVALVE VAGINAL SPECULUM.

Forceps.—Two kinds of forceps are in general use, those with solid blades and the fenestrated, or open blade. Three kinds of forceps operations are performed —high, median, and low.

In the *high forceps* operation the child's head is above the brim of the pelvis; it has not engaged. This is a very serious and difficult operation, and is usually done with a special instrument called the axis traction forceps.

The *median forceps* operation is done upon the head which has engaged, but which is not low enough to press upon the perineum.

In the *low forceps* operation the head has begun to distend the perineum but shows no signs of advancement.

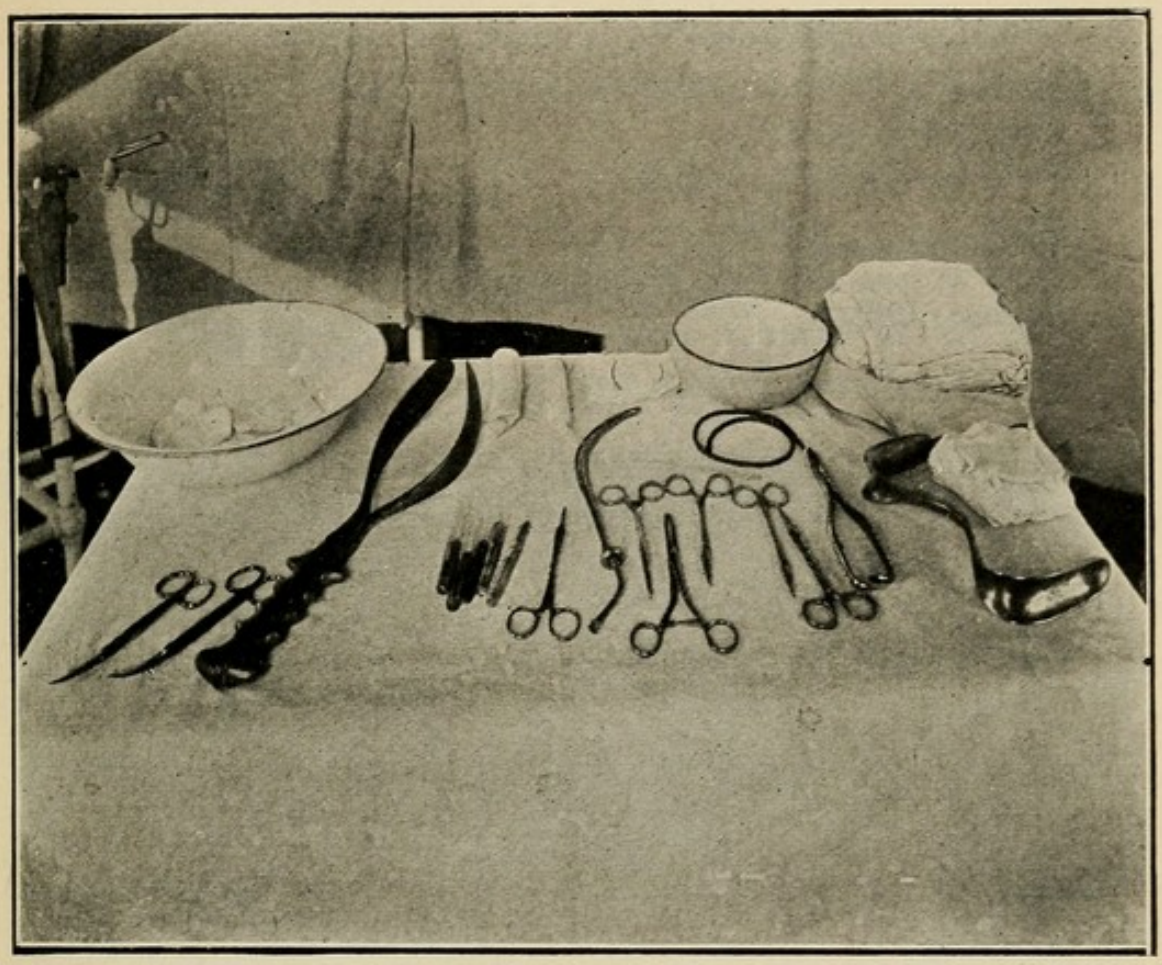

FIG. 61. INSTRUMENT TABLE FOR FORCEPS OPERATION AND POSSIBLE PERINEORRHAPHY.

Special *indications* for the application of forceps are a much prolonged second stage without sign of advancement, exhaustion of the mother following a long labor, signs of asphyxiation of the child, as very fast or quite slow fetal heart sounds, or the passage of meconium-stained liquor amnii in vertex presentations.

The instruments needed for a forceps delivery are as follows:

Obstetrical forceps.
Soft rubber catheter.
Four artery forceps.
Two volsellum forceps.
One Sims' speculum.
One perineal retractor.
One pair scissors.
Two perineal needles.
Half-dozen silkworm gut.
Two tubes of ten-day chromicized catgut.
One glass douche point.
One applicating forceps, long.

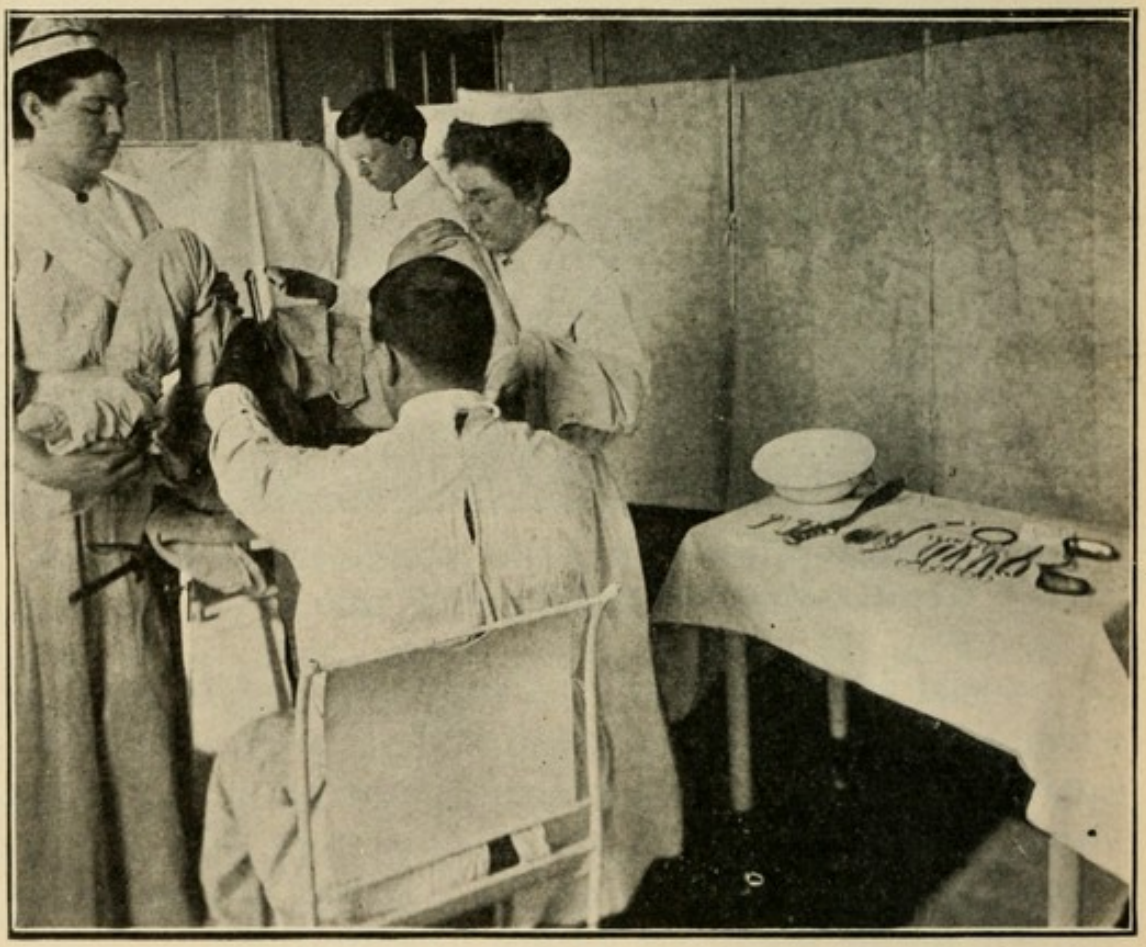

FIG. 62. FORCEPS OPERATION.

The Operation.—The forceps operation consists in the introduction of the left or lower blade, with the left hand of the operator on the mother's left side; the introduction of the upper or right blade, with the right hand on the mother's right side, and the adjustment of the blades so that they can be easily brought together at the shank and locked.

After traction of greater or less severity and duration the head is brought down on the perineum, and may be

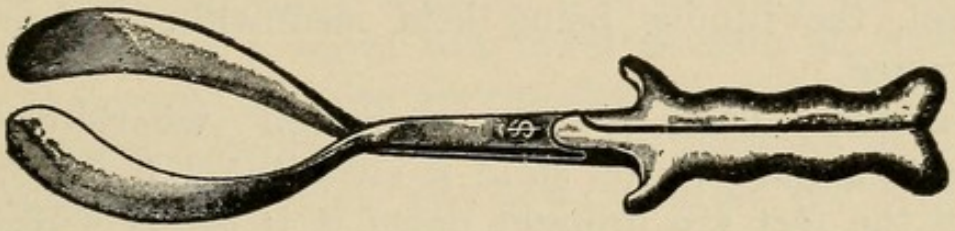

FIG. 63. MCLAIN SOLID BLADE FORCEPS.

delivered spontaneously or with the blades still upon the head.

If the legs are held by the sheet sling or leg holder the nurse stands at the side or the foot of the table, fac-

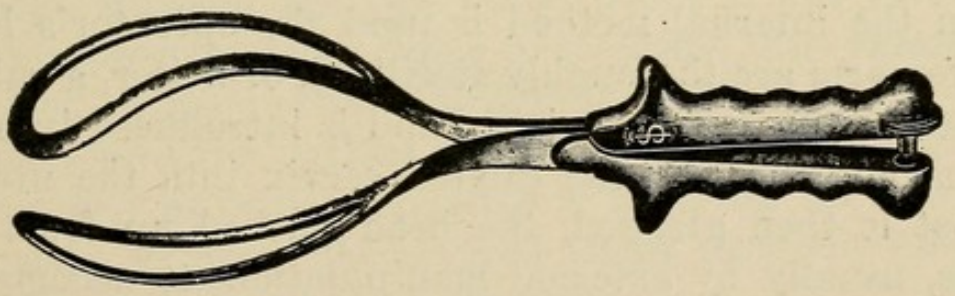

FIG. 64. ELLIOTT'S FENESTRATED BLADE FORCEPS.

ing the operator, or sits upon the edge of the bed if it is a bed operation, steadying the leg with one hand, and with the other sponges the perineum and cleanses the anus if the advancing head forces fecal matter out in front of it. As the head advances she transfers one hand to the fundus, causing the uterus to follow down

after the body of the child, and holds the other in readiness to swab out the mouth and wipe the eyes as soon as it is born.

The rest of the birth and the duties of the nurse incident thereto are the same as in normal deliveries.

If the operation has been upon a double bed the other side is made ready for the patient, and as soon as she has been cleansed and vulva pad adjusted she is quickly moved across and covered with sheet and blanket, the fundus being held meanwhile to keep it contracted.

Version.—This is an operation whereby one presenting part of the child is substituted for another. When the feet are brought down it is called a podalic version; when the presentation is changed so the head is born first it is a cephalic version. One of the chief indications for version is in a transverse presentation, with or without a prolapse of the hand or arm. The operation may be accomplished either by external means, by the internal method, or by a combination of both. When the internal method is used the operator's hand and forearm are thoroughly sterilized, or better, a rubber gauntlet glove is worn. The hand is introduced into the vagina and through the dilated cervix into the uterus. A foot is then grasped, the head pushed up from the pelvis, usually by external manipulation, to accomplish the complete turning. After the feet are born the delivery is accomplished as in an ordinary breech presentation. The assistance of the nurse may be needed as the head is being brought down in the pelvis, to exert pressure downward from above in the curve of Carus.

The greatest dangers in podalic version are rupture of the uterus and death of the fetus from prolonged pressure on the cord by the after-coming head.

Breech Presentation.—This presentation is not very frequent, and usually delays labor considerably, especially if it is a dry labor. In much-prolonged cases assistance may be needed in order to save the child, the operator introducing a sterilized hand in the uterus, grasping a foot, and making traction during a pain. The foot used for traction is usually blue and swollen for a day or so following its birth. The upriding of the arms requires very quick and deft treatment, and the after-coming head may cause trouble. The child's body should be enveloped in a warm wet towel as soon as born, in order to prevent the cold air causing attempts at breathing before the mouth is born. If the birth of the head is prolonged more than five minutes after the birth of the body, the continued pressure on the cord causes asphyxia and a still birth. Delay in this stage may be met by forceps delivery of the after-coming head. The perineum is very often lacerated by hurried delivery of the head in order to save the baby.

Symphysiotomy.—This is an operation in which the cartilage between the two pubic bones is cut through, allowing the symphysis pubis to separate, thus enlarging the inlet of the pelvis considerably. In the after-care of these cases the patient should be kept on a specially devised bed by which pressure is made on the sides of the pelvis, to bring the severed bones together, holding them firmly to enable them to unite.

Pubiotomy.—This operation has practically superseded the one just mentioned. It consists in sawing through the pubic bone, instead of cutting through the cartilage. The bone is cut by a wire saw, called the Gigli saw, and when divided and the severed ends separated the pelvis is enlarged very materially.

The delivery is completed by a version or forceps.

The after-care is of importance—prevention of infection of the wound from the vagina, holding the pelvis together to insure union of the bones, and strapping the knees together to prevent abduction of the thighs.

Cæsarean Section.—As before stated, this operation should always be done in a well-equipped hospital, as it is one of the most dangerous to both mother and child. The operation consists in the removal of the child and secundines after an incision through the abdominal wall and the uterus. It is indicated where it is impossible for the birth to take place via the natural route because of contraction of the pelvis, an abnormally large child, or a tumor obstructing the passage. If performed early in labor, before the mother is exhausted, by a skilled operator and in ideal surroundings, both mother and child may be saved.

The operation is performed as is any other abdominal operation, save that the incision is longer. The uterus, as soon as exposed, is either held at the cervix by an assistant or a rubber tourniquet is passed around it, to control the hemorrhage; an incision is made in the uterus, and if the placenta is inserted on the anterior wall it is cut through quickly and the child grasped and delivered through the opening; the cord is clamped and cut, and the child given at once to an assistant, who endeavors to establish respiration. It is important that there be a tub of hot water at hand for use at this time. The placenta is delivered with the membranes, the uterus sewed up, the peritoneum and abdominal wall closed as in any other operation, and the after-care is the same as following an abdominal section.

Written orders from the attending surgeon and obstetrician must be had by the nurse as to nourishment, bladder, bowels, infant, nursing, etc.

Craniotomy.—This operation is performed to lessen the size of the child's head in cases in which natural birth is impossible, after the death of the child. If there be hope of saving the child's life, but an impossible natural birth, Cæsarean section is the operation of election.

The skull is perforated by a special instrument devised for the purpose, or a pair of blunt-pointed scissors is used. The opening is made preferably in a suture or fontanelle, if within reach, and the instrument is carried into the skull and by moving it about the brain is broken up. A crushing instrument, much like an obstetric

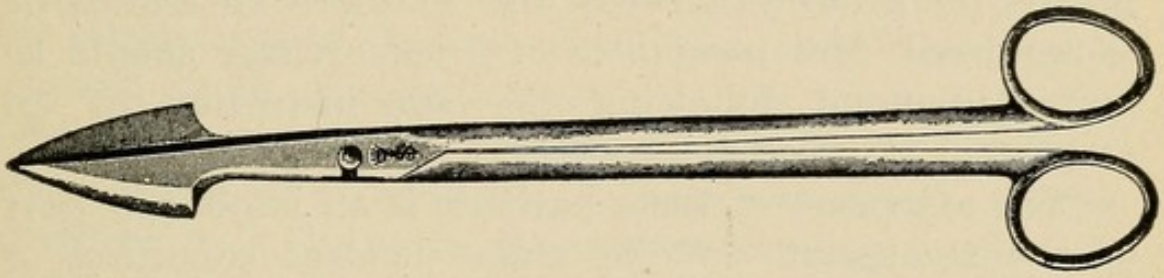

FIG. 65. PERFORATOR FOR USE IN CRANIOTOMY.

forceps, is introduced and applied to the sides of the skull; pressure is made, and the brain forced out through the opening. When reduced sufficiently in size, traction is made and the head delivered. The mutilating operations are most severe, and test the endurance of operator and assistants.

Perineorrhaphy.—Careful examination should be made of the perineum and vagina of every woman immediately after delivery, to ascertain if there has been a laceration. The mucous membrane of the vagina is always swollen and there are minute superficial lacerations, but when these extend into the connective tissue, muscle, or the skin, they should be repaired immediately. The operation when performed at this time is known as a primary perineorrhaphy. Silk, silkworm gut, or cat-

gut, either plain or chromicized, may be used to secure apposition of the torn edges, and with the needles and other instruments must be carefully sterilized by boiling. The catgut, if immersed in alcohol in sealed tubes, should be boiled before using, the tube held in a sterile towel and broken only just as it is to be used.

The patient is brought to the edge of the bed as for a forceps operation, or, much better, placed on a table. Usually, unless the tear is very extensive, it is not necessary to administer an anesthetic, as the parts are numbed and partially anesthetized from the pressure at the time of the birth and can stand the few needle pricks, but if very nervous and sensitive an anesthetic is required. The possibility of a hemorrhage should be borne in mind following the administration of an anesthetic at this time.

The *after-care* of these patients is an important part of the treatment. While under normal conditions a patient can be allowed to assume the upright position to void her urine and for bowel evacuations, she should be catheterized the first day or so after the perineorrhaphy and use the bed-pan for bowel movements. If the tear has been complete, involving the sphincter ani muscle, the bowels are confined for three or four days, to insure union by first intention. If silkworm gut sutures are used their removal is facilitated by using perforated shot for holding the ends together, when they can be cut off close to the shot. If tied and the ends left long, they may prick the skin and be uncomfortable. The long ends of perineal sutures complicate the nursing of the case very much, making it difficult to keep the parts cleansed.

The *removal* of catgut sutures is not necessary, as they are absorbed; silkworm gut is usually removed at

the end of a week. Tissue forceps, artery forceps, and a sharp-pointed scissors are needed, and should be sterile. The patient is brought down to the edge of the bed in a good light, the ends of the sutures or the spot exposed, and only one end cut through, the loop being then withdrawn. This is practically painless, and the patient may be assured of the fact.

Transfusion is performed by inserting a needle into a vein and introducing into it a quantity of normal salt solution. It is employed after severe hemorrhages, in sepsis, and in eclampsia, and is an operation which has saved many lives. Under aseptic precautions one of the large veins of the arm at the flexure of the elbow is exposed by an incision through the skin, the vein having first been distended by pressure applied around the arm above the point of incision. A large hypodermic needle, attached to a fountain syringe containing sterile salt solution at a temperature of 115° F., is then inserted directly into the vein, a pint and a half to a quart of the solution being allowed to run directly into the vein. The salt solution is prepared by dissolving one drachm of salt to a pint of water.

Enteroclysis.—The fluid part of the blood may also be increased by enteroclysis—the injection of water into the bowel. If allowed to run in with any force, or in large quantity, it may cause peristalsis and be expelled instead of retained, as desired. If an artery forceps is placed on the tube leading from the bag, constricting it so the water drips from the nozzle, the fluid will all be absorbed as it is delivered into the bowel. The solution in the bag must be kept at an even temperature, about 95° F.

Vaginal and Uterine Tampon.—In cases of hemorrhage it may be necessary to pack the uterus with

gauze to prevent hemorrhage. After cleaning out the vagina and cervix of the blood clots, the patient is brought to the edge of the bed and a perineal retractor or Sims' speculum is introduced into the vagina. The anterior lip of the cervix is grasped by a volsella forceps and pulled down to the vulva. With a pair of long dressing forceps gauze which has been folded into a narrow strip is carried to the fundus and the uterus filled with it. It is fed to the operator by the nurse from a sterile towel held close to the patient, not allowing it to touch anything as it is introduced. The vagina is then packed similarly and a vulvar protecting dressing applied. The packing is usually removed at the end of twenty-four hours. A sterile gauze roller bandage may be used instead of the folded gauze.

The Douche.—A douche should never be given except upon specific and written directions of the attending physician, describing the character, the solution, the amount, the temperature, and the frequency. An intra-uterine douche is rarely left to the nurse to administer. It is most infrequent that a vaginal douche is given before labor, and not after labor unless some special indication exists.

The strictest aseptic precautions should be carried out in giving a vaginal douche, the douche point, fountain syringe, and water sterilized, the hands carefully prepared, and the labia separated before introduction of the point. The temperature of the solution should be taken before it is used. If a primary perineorrhaphy has been done the point of the nozzle must not be pressed against the perineum. The water in the tube is allowed to run out, as it is cooler, and the nozzle is inserted downward and backward, the bag being held about two feet above the bed, and about a quart of the

solution allowed to run in. A douche-pan is much better to use than a bed-pan for this operation.

Hypodermoclysis.—This is the introduction under the skin, in the cellular tissue, of a saline solution. A

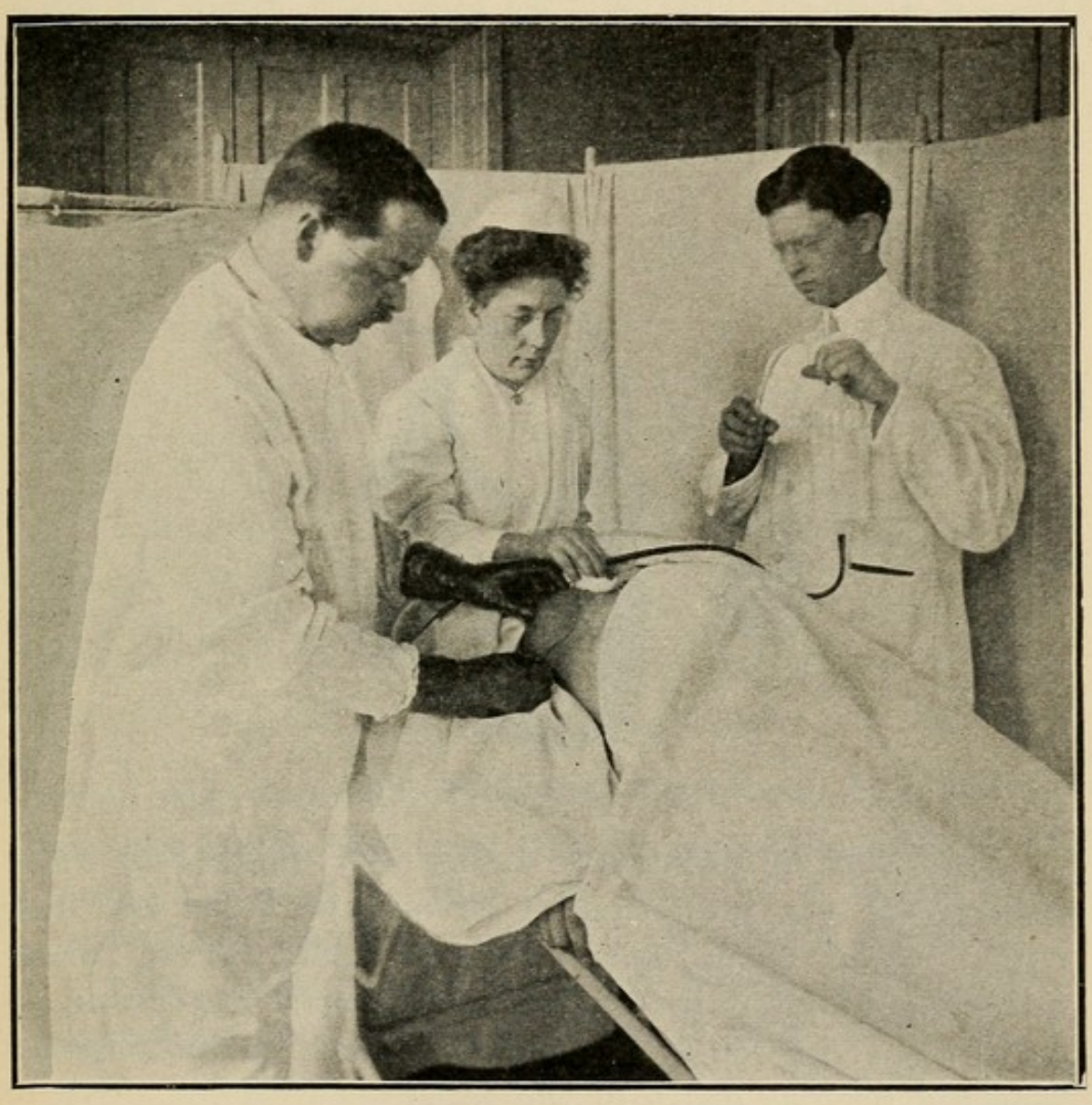

FIG. 66. HYPODERMOCLYSIS.

teaspoon level full of salt is dissolved in a pint of water and boiled for fifteen minutes. Because of the loose tissue under the breasts, this site is usually selected for the transfusion. The skin is prepared by scrubbing

with soap and water followed by alcohol, and the sterile needle, attached to the end of the tube leading from the fountain syringe, is introduced under the skin. The bag is held about four feet above the patient, and from time to time hot saline solution is added in order to keep it at about 110° F. As soon as a tumor of some size is formed under the skin the needle is withdrawn and reintroduced in another place. In this way a quart or more can be introduced under the skin without taxing the patient at all.

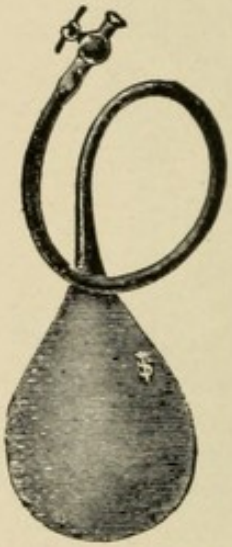

FIG. 67. COLPEURYNTER.

Induction of Premature Labor.—A number of indications for the induction of premature labor are met with, among them being a very small pelvis, when induction of labor before full time makes it possible to deliver a living child because it is smaller; eclampsia; placenta previa; death of the fetus.

The method to be employed in this operation is determined largely by the indications present. If the patient is bleeding from a placenta previa, immediate delivery is indicated, and the cervix must be forcibly dilated. If there is time to wait on Nature a catheter

can be introduced through the cervix into the uterus between the membranes and the uterine wall, which soon brings on uterine contractions; these dilate the cervix, and labor progresses to the completion of the delivery.

The cervix may also be dilated by means of a rubber bag; one type of bag is the colpeurynter, pear-shaped; the other is the Barnes' bag. The latter is violin-shaped. Both are introduced into the cervix collapsed, and are

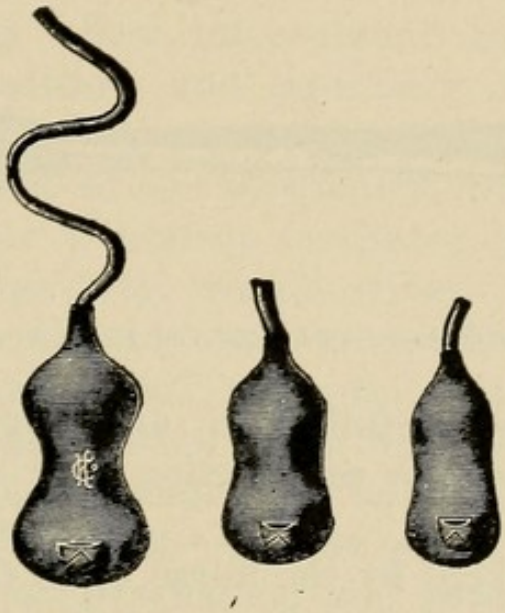

FIG. 68. BARNES' BAGS.

filled with water slowly injected by means of a Davidson syringe until they can not be removed without traction. As soon as they are removed a larger size is introduced, and this continued until labor results.

The other instruments are boiled preparatory to operating—two Sims' and one bivalve speculum, two pair volsellum forceps, one long dressing forceps, scissors, soft rubber flexible catheter, and the rubber bags just described.

The patient is placed on a table in the Sims' position, or preferably in the lithotomy position, and the vulva prepared as for any other surgical procedure. The

speculum is introduced, the cervix exposed, the anterior lip is grasped by the volsellum forceps, and moderate traction made. The vagina is cleansed by a douche and by sponging before the bag or catheter is introduced. The nearer full term the easier will be the dilatation of the cervix to sufficient size to permit the introduction of the bags.

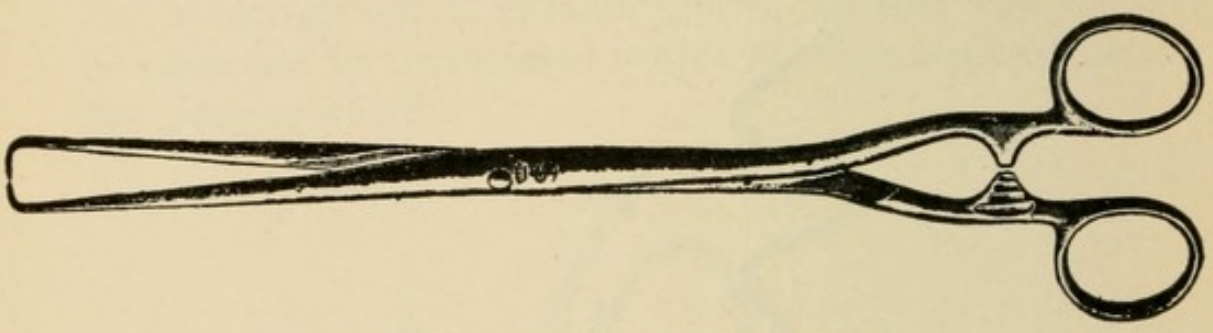

FIG. 69. VOLSELLUM FORCEPS.

If just prior to full term, and immediate delivery is necessary, the cervical dilation may be accomplished by the fingers.

A record is kept by the nurse upon the history sheet of the character of interference and of the first labor pains.

CHAPTER IX.

Obstetric Complications.

COMPLICATIONS OF PREGNANCY.

Pregnancy is a normal physiological condition, and should proceed throughout the entire period of gestation without trouble. A pregnant woman, however, is prone to develop many intercurrent troubles as the result of her condition, and especially if a primipara serious symptoms may be present and be considered a natural consequence of the pregnancy, which if reported and the proper treatment instituted would prevent severe and perhaps fatal complications. Hence, every pregnant woman should very soon after recognizing her condition place herself under the care of the physician whom she has selected to be with her at her confinement, and report regularly to him.

Nausea and Vomiting.—This is one of the most frequent symptoms of pregnancy, and several forms are described. There may be nausea on awakening in the morning, the so-called "morning sickness," without vomiting, a more severe form in which nausea is present most of the time, with every day or so vomiting of a meal, usually breakfast; and *pernicious vomiting* or *hyperemesis gravidarum.* In this form the patient vomits constantly, and rapidly sinks into a typhoid or very low state, with her life endangered.

The *causes* of this condition have never been definitely determined, but the consensus of opinion is that it is due to a toxemia of the system, a failure to throw off the products of tissue waste, their retention causing this symptom. Reflex irritation has also been ascribed

a cause, as a malposition of the uterus or a congestion or inflammation of the cervix uteri.

The *treatment* of morning sickness may not be at all effective, a large number of drugs having been suggested, none of which is a specific. Taking a small breakfast in the early morning in the recumbent position, and lying quiet with head low for two hours following, and gradually arising and slowly dressing, often prevents vomiting. Attention to the bowels is most important; saline cathartics, cascara, enemata, or suppositories may be used. Small meals of easily digested food at short intervals are also advisable. Large, heavy meals usually aggravate the condition. The correction of local pelvic abnormalities is always desirable.

In pernicious vomiting the treatment may be entirely unavailing; the vomiting becomes almost continuous, often of blood; fever develops; rapid pulse; prostration; loss of weight and strength. Stomach washing is often very beneficial, with high, stimulating enemata.

Odors of cooking should not be allowed to reach the patient, and she should not be consulted in regard to her diet. Daintily prepared trays, with small portions, frequently will tempt her and assist in their retention.

The typhoid state developing or threatening, premature labor is induced and the product of conception expelled in order to save the patient's life, but only after a careful consultation with one or more physicians.

Induction of abortion having been determined on, the patient is prepared for a major operation as described elsewhere.

Nursing after an abortion in pernicious vomiting is a most important feature of the case. Rectal feeding is often necessary at first. It must be borne in mind that the rectum is an absorbing organ, and not a digesting

one, and food introduced in this way must be in small quantities and predigested.

Quiet, prolonged rest in bed, a liberal amount of water—if necessary by hypodermoclysis at first—and *concentrated nourishment,* will yield the best results.

Eclampsia.—In this condition convulsions occur and may be present during the latter weeks of pregnancy, during or after labor.

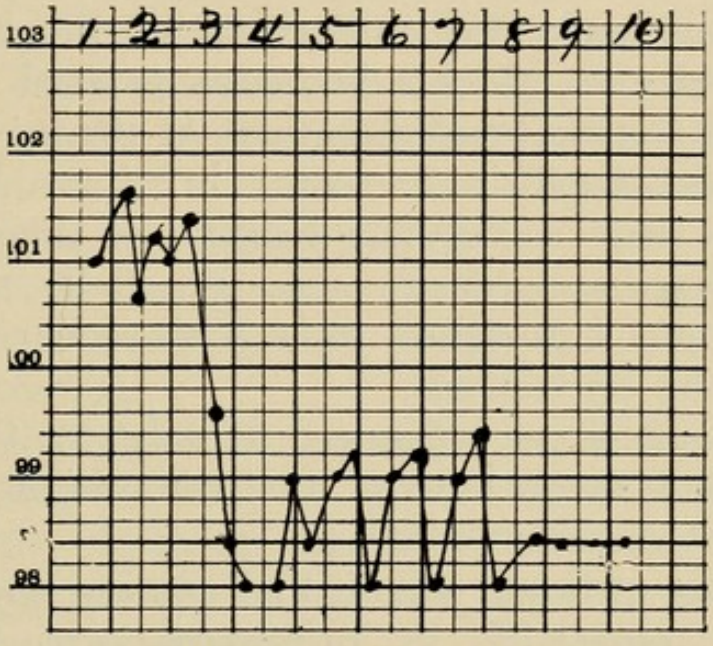

FIG. 70. ECLAMPSIA.

The *cause* of eclampsia is similar to that of the vomiting of pregnancy in all of its forms, namely, a toxemia, a retention in the blood of toxins, the products of tissue waste, with perhaps some vicious changes in the liver due to the pregnancy.

A condition, known as the pre-eclamptic stage, is usually present, which is a warning of the danger of the development of the severe and serious eclampsia. Among the *symptoms* of the pre-eclamptic stage are the following: headache; dizziness; disturbances of vision, as black specks before the eyes, and blindness;

return of the nausea and vomiting; constipation; edema of the feet and legs; scanty and albuminous urine, and loss of appetite.

Albumen in the urine during pregnancy is always a danger sign, and the patient so affected should be watched very closely, her diet restricted to milk, active purgation obtained, together with quiet and protection of the body from chilling.

In acute eclampsia the patient is in active convulsions. They begin with twitching of the muscles of the face and eyes, quickly becoming general. There is cyanosis, stertorous breathing, foam at the mouth, which may be blood tinged if the tongue is bitten. The active convulsions last a varying length of time and the patient relaxes and consciousness gradually returns, or she lapses into a profound coma with sooner or later a return of the convulsions.

The *prognosis* is influenced largely by the length, severity, and frequency of the convulsions and the depth of the coma between.

An excess of liquor amnii, hydramnios, and multiple pregnancy, especially in primiparæ, are frequently associated with eclampsia.

The *treatment* of eclampsia may be divided into, (1) control of the convulsions and protection of the patient from injury; (2) emptying the uterus in the quickest way that will do the least violence and injury to the mother; (3) elimination of the toxic products in the blood.

Place a folded handkerchief or napkin or a wrapped clothespin between the teeth, to prevent the protrusion and biting of the tongue. See that the patient does not fall out of bed. (1) Control the convulsions with (a) chloroform, (b) veratrum viridi (twenty minims injected

subcutaneously at half or hourly intervals until the pulse reaches 60), (c) bromide and chloral (per rectum), and (d) morphine; (2) artificial dilatation of the cervix, with delivery of the child by version or forceps; (3) elimination by saline cathartics, high enemata, hot wet packs, and by hypodermoclysis.

Varicose Veins.—Enlargement of the veins of the extremities and of the vulva frequently occur, especially in multiparæ. On the legs, these veins may be ruptured by striking them against a sharp object, and a severe hemorrhage result. A flannel roller bandage, an elastic stocking made to fit by measure, or adhesive strips, will usually give the needed support to the vessel walls and great comfort to the patient. If of the vulva, the wearing of a wide vulvar pad, quite snugly fitted, will usually give great comfort.

If the vessel should be ruptured in the leg, a tourniquet or bandage should be applied at once *below* the wound and the physician notified.

Encircling garters should not be worn during the latter months of pregnancy.

Pruritus.—Itching of the vulva is often present late in pregnancy, and is usually associated with varicosities of the vulva, or leucorrhea, or both.

Local external applications, as a 1 to 40 or 60 carbolic solution, bicarbonate of soda in saturated solution, carbolated vaseline and menthol, may give relief. Irritating discharges should receive proper treatment at the hands of the physician. Douches before labor must always be given with extreme caution, and only on the physician's orders.

Inability to be on the feet because of pressure symptoms, late in pregnancy, will be greatly relieved by the wearing of an abdominal supporter from the seventh

month. This holds the uterus, which has a tendency to fall forward, and distributes the weight evenly on the muscles of the back. The supporter is also a great relief when there is pressure upon the neck of the bladder, associated with a frequent desire to urinate, which occurs during the last weeks.

Hemorrhages.—Bleeding from the vagina may occur at any time during pregnancy. When it is associated with pain in the abdomen during the early months of gestation it indicates a threatened abortion and calls for careful nursing. Hemorrhage may arise from the cervix, from a small tumor, or from a prematurely detached placenta. When occurring late in pregnancy it indicates a *placenta previa.* In this condition the placenta is attached over the internal os, the edge, the margin, or the entire cervix being covered. The greatest risk in this condition is to the mother, though the child may also die because of the lessening of the area of the attachment of the placenta and the decrease in the amount of oxygen it receives in consequence.

Patients in the last weeks of pregnancy who have the slightest hemorrhage should be kept under the closest observation, and the physician notified the moment any change occurs. They should be kept in bed continuously.

Extra-uterine Pregnancy.—A fecundated ovum may find lodgment in the abdomen and continue to develop to full term, or, as is usually the case, the child dies before the end of gestation. If it lodges in the Fallopian tube it is called a tubal pregnancy. The tube will permit of stretching to a very moderate extent, and at from four to six weeks rupture of the tube occurs, followed by a more or less severe hemorrhage into the abdominal cavity.

Symptoms. The early symptoms of tubal pregnancy are similar to a normal uterine pregnancy, except the menstrual history may be erratic, slight continuous or irregular flow, with passage of membranous shreds. If she is examined at this time a tumor can be felt to the side of the uterus. When rupture occurs there is great pain upon the affected side, attended with more or less profound shock. The latter is due to the hemorrhage, which occurs simultaneously. There is pallor, faintness, nausea, shallow respiration, with rapid, thready, and weak pulse. Immediate operation, tying the bleeding vessels and removing the blood clots and fetus, may save the patient.

COMPLICATIONS OF LABOR.

Not infrequently in multiparæ the labor is short and the child may be born before the physician's arrival, in which event the nurse must perform her duties to the best of her ability. She should maintain a cool demeanor, showing no excitement. In all cities a large number of women are delivered by midwives, who have had nothing but a practical bedside training, with no knowledge of the refinements of aseptic midwifery; hence, a trained nurse should be able to conduct a normal delivery with much greater safety to both mother and child.

Let Nature take its course unmolested until the perineal stage is reached, when unusual watchfulness should be exercised. Ask the patient not to bear down, if it is possible for her to refrain from doing so, just at this time, letting the contractions of the uterus accomplish the stretching of the perineum gradually. When the head is distending the perineum open the right hand and grasp the sides of the head with the thumb and index

finger, exerting pressure to prevent the too rapid escape of the head through the distending vulva. If the head is born too rapidly the perineum will be torn; if the pressure just described is exercised the perineum will be supported and tearing probably prevented.

As soon as the head is born the fingers should feel for the cord, to ascertain if it is around the neck; if it is, it should be pulled over the head, in order to prevent too great traction being made on the placenta.

The child's mouth should then be wiped out, to prevent the inspiration of mucus into the lungs. When the cord has ceased pulsating about eight inches from its insertion in the abdominal wall, it should be tightly tied in two places, the nearest ligature two inches from the wall, and the cord severed between these ligatures. The nurse should see to it that the fundus is held by some one, in order to be sure the uterus remains well contracted.

It not infrequently happens that a nurse has the entire conduct of the case throughout, and she should be prepared for the emergency. Keep the hand on the fundus, rubbing it gently whenever it is felt to relax, waiting for the uterine efforts unaided to complete the third stage. If the placenta presents it should be caught in the free hand, and as the membranes appear at the vulva, rotate or twist the placenta without making any traction, so the membranes will form a rope, and they will gradually escape intact.

If the nurse has had the entire conduct of the labor the placenta should be saved for close inspection by the physician.

Breech Presentation.—Should the child present by the breech, if it is unusually large there is apt to be trouble if it is born too quickly. As it is forced down,

the arms, normally crossed over the chest, are caught on the pelvis and made to upride alongside the head. This makes the diameter so great as to prevent further progress until the arms have been brought down, which is ordinarily quite a difficult procedure. As the body is born it should turn with its back pointing upward, to facilitate the birth of the after-coming head.

As the head is born the child is supported by its feet and carried in a circle upward toward the mother's abdomen. With the mouth born, the child can inspire without danger of aspirating mucus and liquor amnii into the lungs. As soon as the air strikes the skin of the body the child can be seen to make several inspiratory efforts.

Postpartum Hemorrhage.—No complication before, during, or after labor is so trying, or requires such prompt action, as hemorrhage following labor. It may occur very quickly, and the volume of blood lost be so great as to endanger the patient's life before remedial measures can be instituted. The bleeding may occur from the placental site or from a severe laceration of some portion of the genital tract, usually either the cervix or the floor of the vagina. When the hemorrhage occurs during the first hour after labor it is called a primary, after this time a secondary, hemorrhage.

Symptoms.—The first symptom may be the request of the patient for more air, to have the windows opened, or of faintness or dizziness. The first glance at her face will show pallor, blanched lips, with perhaps a cold perspiration. The respiration is quick and shallow, the pulse feeble and rapid, and she may faint. Unless the bleeding is controlled a fatal termination will be speedy.

The physician is usually present to combat the pri-

mary hemorrhage, but the nurse must be prepared to cope with a secondary hemorrhage, for there will not be time to summon assistance if the mother's life is to be saved.

The nurse should count the mother's pulse at frequent intervals, and inspect the vulval dressing. If the pulse is over 100 and the pad is soiled through sufficiently to require changing as often as every fifteen minutes, the bleeding is too profuse. Not only the pad covering the vulva should be inspected, but that portion under the buttocks looked at also, as the blood may not be absorbed by the pad as it escapes.

Treatment.—Preventive treatment is most important. The fundus should be held from the time the head is distending the perineum, to insure uterine contraction upon the body as it emerges. This should be continued for an hour. It is especially important in protracted labors and after anesthesia for operative deliveries, as a tired and relaxed uterus does not contract readily.

As soon as a hemorrhage begins, the fundus of the uterus must be located, vigorously rubbed to insure contraction, firmly grasped by the open hand and pressed backward against the sacrum. This will usually expel some clots from the vagina, with fluid blood. A hot vaginal douche, 120° F., can be given at this time. The bleeding continuing, the vagina can be packed with sterile gauze, the foot of the bed raised, and a teaspoonful of the fluid extract of ergot given by the mouth, or twenty minims of aseptic ergot hypodermatically.

While these ministrations are being carried on, the nurse instructs the onlookers in regard to the preparation of sterile solutions for the physician's use.

The nursing of a patient following a hemorrhage is important. Fluids should be given freely, in fact the

diet should be liquid for the first few days. Enteroclysis is of great benefit. Absolute quiet should be insisted on, and the patient not allowed to help herself at all for several days.

COMPLICATIONS OF THE PUERPERIUM.

Puerperal Infection.—Since our Oliver Wendell Holmes proved that puerperal fever is a preventable disease, and due to the introduction of bacteria from without, thousands of women have been saved to their families. A normal puerperium is afebrile, and the most frequent cause of fever at this time is an infection. Not only can the infecting septic material be introduced in the parturient tract before labor, but during and after labor as well. There are many minute abrasions in the mucous membrane as the result of the traumatism of the labor, with absorbing lymphatics exposed, hence the absolute necessity for the strictest surgical cleanliness of patient, physician, nurse, vessels, instruments, and dressings.

A physician does not attend a confinement case while in attendance upon the contagious diseases. The nurse should so time her engagements that she does not go to a labor from a patient with a contagious disease, or a case of sepsis.

There can be no such occurrence as a woman infecting herself from organisms already in the system; the offending organisms are carried there on the examining fingers, on instruments, or from manipulations during the dressings after labor. The developing organisms find in the abrasions throughout the genital tract open-mouthed vessels, which absorb either the bacteria themselves or their products, the toxins. There are two kinds of infection, one a *sapremia,* where there is retained in

the uterus or vagina a piece of afterbirth or a decomposing blood-clot, to which is carried an offending organism; the result of the absorption of the product of this decomposing mass is a septic condition, relieved by the removal of the offending material. The other is an *infection* from the direct invasion of the pelvic organs by septic organisms, their development there and the absorption into the circulation of their toxins, causing septicemia or "blood-poisoning."

The chief treatment of sepsis or sapremia is that of prevention, and too great care can not be exercised in observing the strictest cleanliness about a woman in labor and during the puerperium, most carefully sterilizing the hands, instruments, dressings, and everything which may come in contact with her genital tract.

The symptoms of sepsis generally manifest themselves between the third and seventh days, rarely later than the seventh day. There is usually a chill or a rigor, headache, pain perhaps in the pelvis, a temperature ranging from 101° F., and a pulse rate always considerably over a hundred.

The nursing in sepsis is a most important part in its treatment, the ultimate result depending to a great extent on the care the patient receives. She requires the most careful feeding, judicious stimulation, and absolute rest, the directions of the attending physician being most carefully recorded and followed. Her nourishment is generally of a fluid character; milk, eggs, and broths should be given in small quantities at regular intervals. Her stimulation, which may be both hypodermatically and by the mouth, must be given with great regularity.

Locally the application of an ice-bag over the abdomen may be required at the point of greatest pain and tenderness, and frequent hot vaginal douches may

be ordered. These should be carefully administered, never less than a quart in amount, and of the proper temperature. Should an intra-uterine douche be required, it should be administered by the physician.

Should the trouble be entirely local, confined to the uterine cavity, the offending material—pieces of placenta or membrane—being retained, a currettage may be necessary to remove the mass. The patient is prepared for this operation as for a forceps delivery, in like position, with an ample supply of irrigation water.

Hypodermoclysis or enteroclysis are frequently used with excellent results.

The *after-care* is important. Concentrated nourishment is continued, the patient allowed to resume the upright position very slowly. She should not be allowed to nurse the baby, and no special effort made to continue the supply of milk.

Too great care can not be exercised by the nurse, in leaving a case of this nature, in carefully sterilizing her person and clothes before accepting another obstetrical case.

After-pains.—These are caused by the contractions of the uterus following labor; after each successive delivery they become more severe. Primiparæ do not suffer greatly from after-pains, but they are apt to be quite severe in multiparæ. They are due to the uterus contracting to expel a blood-clot or shred of membrane or placenta. They may only occur when the child is put to the breast. Rubbing the uterus with slight pressure may relieve the condition temporarily. It may be necessary to administer a sedative—a small dose of heroin or morphine.

Phlegmasia Alba Dolens.—An infection from the uterus extending to the veins of the pelvis or thigh

causes a phlebitis, an inflammation of the vein, with resulting swelling sufficient to obliterate the vessel entirely. This causes a swelling of the leg, sometimes to enormous proportions—the so-called "milk leg." The same condition may occur in any patient, complicating other diseases, as septicemia, pneumonia, etc., hence it has no connection with the appearance of milk in the breasts.

There is fever, pain, and tenderness at the site of the inflammation and often through the entire leg, and the skin is tense from the swelling. Absolute rest and quiet of the limb is essential. It should not be rubbed or massaged, as a blood-clot may be dislodged and an embolism caused which would be caught in the blood-current and carried to the heart, lungs, or brain. The entire limb should be wrapped in flannel and cotton, slightly elevated on pillows, and not moved by the patient at all.

Bladder.—Owing to the relief of pressure and tension with the expulsion of the uterine contents, and the consequent lax condition of the abdominal walls, the bladder becomes easily distended with urine, and often to a dangerous degree without causing great discomfort. Under such circumstances the patient may pass a small quantity, the overflow, and leave a large amount in the bladder, which will decompose and cause an inflammation of the mucous membrane of the bladder.

If the fundus of the uterus, at the end of the first twenty-four or thirty-six hours, is found at or above the umbilicus, distention of the bladder should be suspected, and inspection of the abdominal wall will usually show the distended bladder as a distinct tumor. Catheterization, under these conditions, is always indicated.

Cystitis may result from an infection from the bowel

by the colon bacillus, a decomposition of the residual urine, or follow a faulty catheterization. It is associated with a rise in temperature, pain, a sense of weight and pressure in the bladder, a frequent desire to urinate, with great pain as the last few drops are passed. Albumen, pus, and often blood are found in the urine.

The treatment consists in the administration of a urinary antiseptic internally, and if the symptoms so indicate irrigation of the bladder must be done. This is done through a catheter, the urine being allowed to first escape. The small point of a fountain syringe, connected with a rubber tube and funnel, is then attached to the catheter and a warm solution of boracic acid poured in. Care is taken not to overdistend the bladder. The solution is then siphoned out and fresh solution introduced as often as thought advisable.

Pyelitis.—This is an infection of the pelvis of the kidney by the colon bacillus. This organism can gain entrance to the kidney by the blood, through the lymphatics, or travel up from the bladder through the ureter.

The *symptoms* may be very obscure, perhaps an irregular, widely varying temperature, with rigors and sweats, being the only ones present. Pain or tenderness over the loins may be found. The diagnosis may not be made until the urine is examined both chemically and microscopically. Albumen, pus, and blood, with a very motile bacteria, are found.

A catheterized specimen should always be obtained for examination, in order not to have it contaminated by the lochia. A urinary antiseptic will usually result in a cure.

Constipation.—Because of the lax abdominal walls, and a temporary interference with the nerve supply of the bowels following labor, tympanites may develop from

an accumulation of gas in the intestines. This gas formation occurs usually about the third or fourth day. Constipation is the rule following delivery. The administration of a half ounce of castor oil on the second or third day yields excellent results, and no other laxative is as efficacious. Daily enemata or suppositories are necessary as a rule until the patient is able to sit up. The use of the commode after the first day, if the perineum is not torn, is a great assistance in overcoming this tendency to constipation. Impaction of the rectum may be present and is overcome by injections of saline solution, glycerine, olive oil, or a solution of ox-gall and glycerine, each one drachm and water enough to make a quart.

The use of cascara is indicated, but the possibility of its being excreted through the breast and thus affect the child should be borne in mind.

Mastitis.—An inflammation of the breast. An infection takes place through a minute abrasion or a crack or fissure in the nipple, with an acute inflammation resulting, with or without the formation of pus—an abscess.

The prevention of a mastitis is most important. The strictest asepsis should be maintained in every case of fissured nipple, in order to prevent absorption of pus-producing organisms through the open wound.

The inflammation may be very superficial, about the glands of Montgomery; in the connective tissue of the gland, removed from the nipple; or it may be beneath the breast—the submammary type of abscess.

Symptoms.—There is localized pain and tenderness over the affected area; redness of the skin soon appears, and there develops a hardened area at the site of the inflammation. Usually there is a rigor or chill, with temperature which may run quite high.

Treatment.—Withdrawal of the child from the breast, a binder tight enough to exert some pressure, the administration of a saline cathartic, and the application of an ice-bag, may prevent the formation of pus.

If an abscess results, free incision under a general anesthetic is indicated, and daily dressings with hot

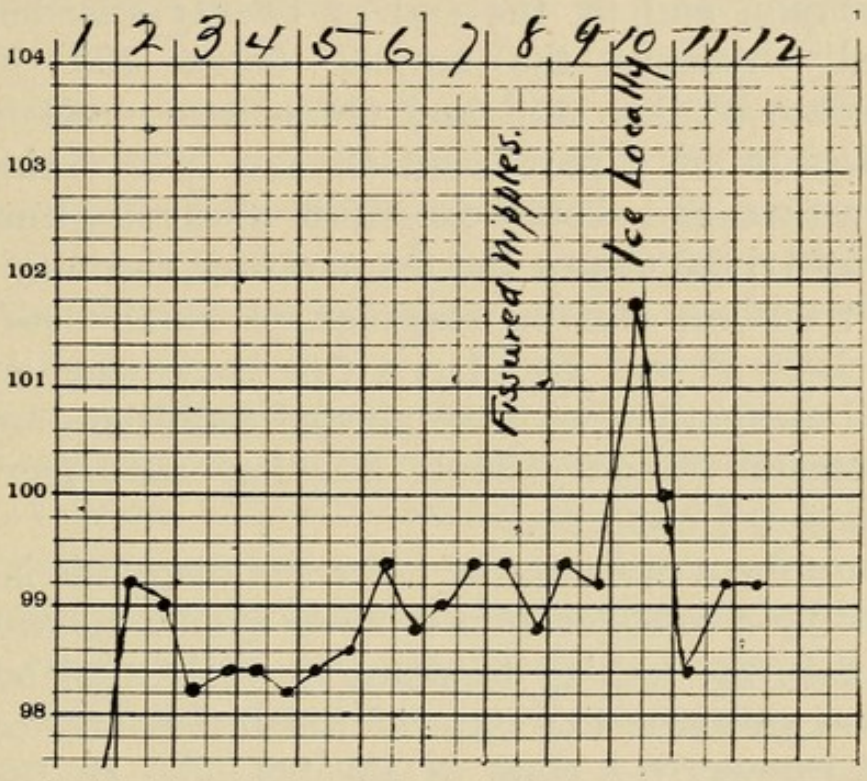

FIG. 71. MASTITIS.

packs applied at frequent intervals until the pain has subsided.

The application of the Bier suction treatment is of benefit in these cases. A glass bell jar large enough to cover the entire breast is applied and the air exhausted in it by a suction pump until slight pain is felt, and allowed to remain for thirty minutes. This may be repeated two or three times in the twenty-four hours.

Temperature.—Immediately after or very shortly after the completion of the third stage of labor there is,

almost without exception, a chill, more or less severe, and a rise in temperature from one to four degrees (100° to 103° F.). This rise is entirely physiological, and has been variously explained. It is probably due to the absorption of fibrin resultant from rapid tissue waste incident to the great muscular effort of the labor. The rise is complete at the end of the first twelve hours postpartum, and by the end of twenty-four hours has generally reached the normal, below 100° F. The occurrence of this chill and temperature rise indicates how susceptible a parturient woman is to variations in temperature, and should constitute a warning that to apparently trivial causes the temperature rise may be due.

A transient rise in temperature which does not go above 100° F. and lasts but a few hours should be considered compatible with the normal condition, and if the thermometer range exceeds this her condition should be considered abnormal.

Upon the occurrence of fever our diagnosis is greatly assisted by a consideration of other symptoms presented: the pulse; the lochia, its quantity, color, and odor; the facial expression; the state of involution and condition of the uterus; the state of the bladder; the condition of the breasts and nipples, and the occurrence of afterpains. The following diseased states may be mentioned as responsible for a rise in temperature of a lying-in woman, named in the order of their frequency and importance: sepsis, sapremia, and septicemia; auto-intoxication from the bowel; malaria; mastitis; typhoid fever; epidemic grip or influenza; tuberculosis; the exanthemata; eclampsia; erysipelas; pneumonia; rheumatism; gonorrhea.

There is no such condition as *milk fever*; the advent of the milk, whether it appears gradually or with a rush,

as is often seen in multiparæ with large breasts containing a quantity of gland tissue, is not accompanied by a rise in temperature. Should a rise above 100° F. be found, there is present some other condition which is responsible. If there is a localized tenderness, pain, and heat following an engorgement of the breast, or "cake" so-called, a mastitis is imminent.

Auto-intoxication from the bowel is a very frequent cause of fever in the puerperium. Intestinal auto-intoxication is a broad subject and one of great interest. Following a normal and specially prolonged labor there is a semi-paresis of the intestinal tract. Nature's effort to accomplish a reposition of the abdominal organs in their normal state is not complete until involution of the uterus has been accomplished. There is lack of abdominal support, a distention of the intestines results from fermentation therein, and a resorption is made possible. The first evidence of this condition is generally a headache, more or less severe, with a coated tongue, bad taste in the mouth, a tendency to the collection of sordes on the teeth, constipation, or perhaps the passage of a few scybalæ; intestinal distention and meteorism, and a temperature of 101° to 103° F. with a proportionately rapid pulse. There is generally no chill as a forerunner of the temperature.

Malaria is unfortunately used far too often as a diagnostic cloak to hide the true condition of sepsis. That it may and does occur is beyond doubt. In fact, malaria, which may perhaps have been latent, may be lighted up by the ordeal of a normal labor, or, as has been noticed, when a pregnant woman is confined in a house located on a street which has been recently torn up for repaving, and develops during the first few days afterward an attack of malaria, chill, fever, and sweat.

The diagnosis in such a case is plain, and is further proved by its response to quinine. Here, however, we are apt to err by administering quinine at once, instead of making first a microscopic examination of the blood to establish a diagnosis. In fact, one should not make a diagnosis of malaria in the puerperal period without

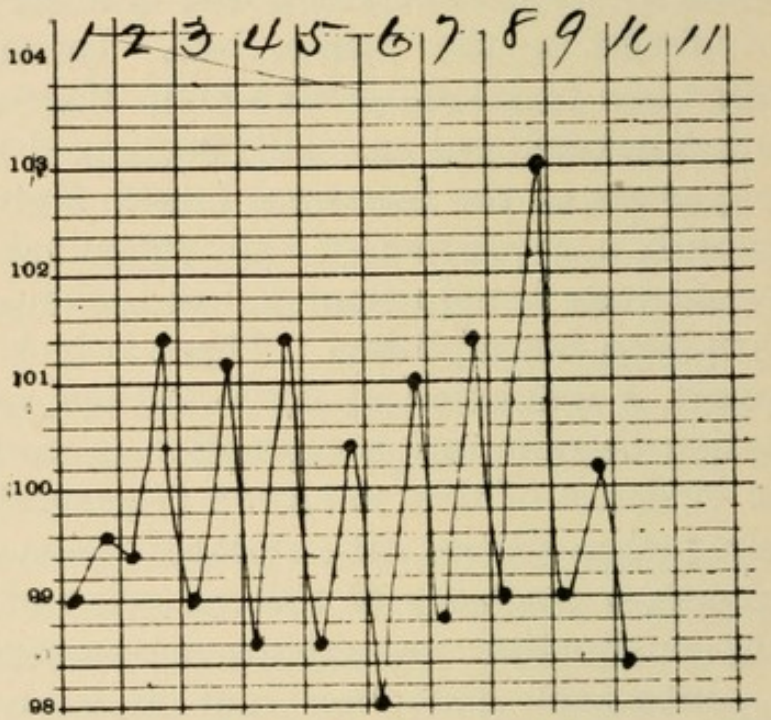

FIG. 72. TUBERCULOSIS.

taking advantage of this easy diagnostic aid, which is absolutely reliable. An attack of malaria may occur at any time during pregnancy, or during the lying-in period. The likelihood of the chill being the onset of an attack of malaria is greater if it occurs late in the puerperium, as sepsis is unusual after the first week.

Mastitis, eventuating in an abscess with or without suppuration, is an extremely painful condition, and because of the local symptoms a mistake in diagnosis is hardly possible when the occurrence of fever is noted.

Typhoid fever is a slow process, and rarely develops postpartum without some evidence of its existence before labor. Sepsis is much like typhoid in many of its phases, and one might be misled. Without the spots, tongue, Widal and diazo reactions in addition to the fever, one would not be justified in making a diagnosis of typhoid fever during the puerperium.

Epidemic grip or influenza may attack a postpartum woman and give a sharp rise in temperature.

Pregnancy occurring in a patient who is afflicted with pulmonary tuberculosis may show an entire amelioration of symptoms upon the beginning of the pregnancy. Her cough, profuse expectoration, sweats, loss in weight cease; she eats and sleeps well, takes on flesh, and apparently "takes a new lease on life." Her improvement, however, is but transitory, and lasts only during pregnancy. Immediately, like a flash, after the completion of labor, there is a lighting up of her former condition; night sweats begin, followed by a rise in temperature, cough, expectoration, hemorrhage perhaps, a loss of appetite and weight, and generally a speedy dissolution.

Of the *exanthemata,* scarlet fever most frequently occurs as a complication of the puerperal state. It must be borne in mind that a scarlatinatiform rash may occur in the course of a septicemia, and, *vice versa,* pelvic symptoms may follow in the train of a scarlet fever, which resembles very much those in sepsis. It is conceded that "the genitalia is the site of entrance of the *materies morbi.*" When it is recalled that the vast majority of deliveries are conducted by the general practitioner, it is surprising that scarlet fever does not occur with more frequency. The following, relative to the peculiarities of scarlet fever in the puerperium, is

taken from Hirst: "It almost always appears in the first three days after labor; the throat complications are slight; the eruption appears quickly, is rapidly diffused over the body, and is apt to assume a dark-red color. It exercises an unfavorable influence over the puerperal state; the milk secretion is lessened; pelvic inflammation occurs in a large proportion of cases; diarrhea may develop, and is an unfavorable sign."

The chill, fever, pain, cough, and expectoration should render a diagnosis of *pneumonia* easy. It is much more liable to occur during pregnancy than during the puerperium.

Winckel was the first to refer to the fever accompanying *eclampsia,* in 1865. Should the convulsions precede labor by a few hours, or occur postpartum, the temperature may run quite high with each convulsion.

The close relationship between *erysipelas* and puerperal fever is generally conceded, the near resemblance of the streptococcus erysipelatis and the streptococcus pyogenes probably explaining this. It also explains why, in an infection with the erysipelas coccus, where the site of entrance is the genitalia, evidences of rash are seen so seldom upon the skin. The course and symptoms of an erysipelas, in which the site of entrance of the contagion is the skin, is in no wise different from an attack under other circumstances.

Puerperal Mania.—A pregnant woman, especially prone to nervous disorders, depression, and melancholia before the baby comes, is very liable to develop a "puerperal mania" afterward. This form of insanity assumes many phases, as the melancholic, suicidal, or homicidal types. These cases require the very closest attention and scrutiny to prevent the patient making way with herself or doing an injury to others, especially her in-

fant. She should not be left alone one moment, and as soon as practicable removed to a private institution for the care of such unfortunates. Her nourishment must be closely watched, as patients frequently secrete articles of diet in order to make it appear that they have eaten them. Any articles with which she can do herself violence should be removed from the room, to prevent her obtaining possession of them.

CHAPTER X.

Advice to Expectant Mothers.

Necessity for Advice.—As soon as a woman knows she is pregnant she should place herself under the care of the physician who will attend her in confinement. This is of the utmost importance, as he will be able to forestall many conditions that may arise during the period of pregnancy which might prove a complication, with perhaps serious results.

The following remarks and suggestions are offered because of their important bearing upon the welfare of the woman who expects to go through the nine months of carrying her child and the labor incident to its birth, and because, as a rule, so little attention is paid to unfavorable symptoms by most women. We here insist upon the importance of a strict observance of the suggestions offered.

Corsets.—After conception the form does not begin to change materially until the fourth month, though there may be an earlier broadening of the back, before the abdomen is noticed to enlarge. From this time it is of the greatest importance to remove all pressure which will retard the upward rising of the womb. The habit of lacing the corsets tightly, to crowd the enlarging abdomen downward in order to conceal the real condition, is pernicious and should never be done. It seriously retards the development of the child, may cause a deformity, and interferes with the circulation in all the organs of the pelvis. If the breasts are large, it is necessary for comfort that some kind of support be worn; there is no objection to the wearing of a corset if it be worn loosely and has only the fewest number of

steels. In fact, the skirt bands can be worn with greater comfort with this support; but in the last few weeks more comfort is obtained by the removal of the corset.

Clothing.—The clothing should be warm in winter and cool in summer. Wool should predominate in the underclothing worn in the winter, in order the more perfectly to protect the skin from chilling; it should be changed often, because normally the skin is very active in its excretions. Loose outer clothing should be worn as pregnancy advances.

Abdominal Supporter.—Late in pregnancy the greatest comfort can be obtained from wearing an abdominal supporter. These are made to conform to the shape of the abdomen; they relieve the weight from the abdominal wall, and enable the patient to walk with comfort. The supporter can be obtained from any instrument store and of most druggists. The measure should be taken around the largest part of the abdomen; one size smaller and one size larger should be obtained for trial, the ones too small and too large being returned. It should be worn from the sixth month to the end of pregnancy, and should be large enough to be let out as the size increases.

Exercise.—Regular daily exercise is of the greatest importance, and too much emphasis can not be placed upon this direction. During the first three or four months exercise is essential, but it should be taken discreetly; horseback riding, bicycle riding, running and jumping should not be indulged in. The exercise should not be taken to the point of great fatigue, and, if possible, after walking the patient should recline for a short rest or nap, removing the street clothing before doing so and donning a loose-fitting gown. Women who have miscarried should use exceptional care at the time they would be due to menstruate if not pregnant, because

another miscarriage is more likely to occur at this time than at any other. Ordinary damp days should not interfere with the regular exercise, but the feet should be protected by heavy walking shoes and rubbers, and a walking skirt should be worn. It can be said with some degree of positiveness that the woman who is out-of-doors regularly during the whole pregnancy has a much easier time than one who stays closely indoors.

Nursing.—Every mother should nurse her infant unless there is some physical defect which prevents, and there are but very few of these. A mother who refuses to nurse her offspring because of a distaste for it, or on account of the demands of society, is unfeeling and unnatural. Such a practice can not be excused or condoned. To aid the nursing the nipples should be trained, if they are not normally prominent. Depressed or flat nipples are injured by the wearing of tight clothes which press upon them.

Kidneys.—Attention is especially called to the condition of the kidneys, and to the importance of *regular* examinations of the urine. There should be sent to the physician a sample of the morning urine once a month from the fourth to the seventh month; from the seventh month a sample should be sent every two weeks. Once during the sixth, seventh, eighth, and ninth months, when the sample is sent, the patient should measure the total quantity passed in twenty-four hours and report this to the physician, corking the bottle securely and marking upon it the date of its passage and also her name and address. For a reminder, it is a good plan to note upon a calendar the date the urine is to be sent.

Unusual Symptoms.—The following symptoms are mentioned as of sufficient importance to consult the physician about as soon as they arise, but should any-

thing occur out of the ordinary it must not be borne without complaint, but should be reported as soon as possible, for frequently serious conditions may develop from apparently trivial things: excessive nausea and vomiting; constipation; diminished flow of urine (below three pints in twenty-four hours); leucorrhea; swelling of the feet, face, or hands occurring at any time during pregnancy; headache; dizziness; dimness of vision; sleeplessness; faintness or fainting; black spots before the eyes; loss of appetite; languor and lassitude; loss of blood, even if a very small amount.

Bowels.—*Regular, daily evacuations* from the bowels are most essential. Women are normally constipated, and during pregnancy this condition is exaggerated. If this develops it should be reported to the physician, and a remedy taken for its relief. This procedure is imperative and should not be neglected.

Bathing.—Regular bathing is essential, as *the skin must be kept active.* In warm weather a bath can be taken daily, in cold weather at least twice a week, preferably at night, to avoid exposure. Frequent washing of the hair is best avoided.

Diet.—The diet during pregnancy should be the most nutritious and varied possible. Peculiar cravings are often present, and if they are very unusual, advice should be sought before these articles are indulged in. Too frequent eating, as well as overeating at any one meal, very often causes digestive disturbances.

Teeth.—It is incident to pregnancy that the teeth should give way, frequently causing toothache and great discomfort. Any dentistry which is imperative for comfort can be done with safety, but it is not well to have teeth extracted unless it is absolutely necessary. Short sittings in the chair for temporary fillings can be allowed

if not too fatiguing and too often repeated. In this way much trouble can be averted.

Nurse.—In the selection of a nurse the patient should be guided by her physician, and never engage one without his full consent and approval, as there is so much that depends upon the nursing during the lying-in period. There are many excellent practical nurses among the colored race, but one should never be selected without the concurrence of the physician.

Lying-in Room.—The room selected for the lying-in should be the brightest and most cheerful in the house, stripped of all superfluous hangings, and one week before the expected confinement it should be thoroughly cleaned, the carpet swept, and the walls and woodwork wiped down. No room should be used in which there has recently been a case of contagious disease, scarlet fever, measles, diphtheria, or typhoid fever, nor should any bedding or mattress be used that has previously been used by these cases.

Preparation for Labor.—The following articles should be provided for the room at least two weeks before the labor. All of them should be thoroughly cleansed, the linens recently laundered, and the entire equipment protected from dust and not used until called for by the nurse or doctor. They should be placed where they will be within easy reach on short notice.

Two wash-basins.
Two pitchers.
Two small basins.
One foot-tub.
One bucket or pail.
Six sheets.
One dozen towels.

One soft blanket for wrapping infant in after birth. Wrapped in clean sheet, pinned up, and laid away.

Two pillow cases.

Two rubber sheets for protecting bed. (A newspaper pad can be made of several thicknesses, used in lieu of one rubber.)

Douche-pan.

Soap.

Six ounces alcohol.

Four abdominal binders. (Made of unbleached cotton, 1¼ yards long, ½ yard wide.)

Obstetrical Outfit.—The following articles are needed for the labor, and can be obtained of C. E. Pfau, druggist, done up in a hermetically sealed box called the *Tuley Obstetrical Outfit*. Purchased in this way the cost is much less than when the articles are bought singly.

Obstetrical pad for bed.

One dozen sanitary pads.

One pound absorbent cotton.

Five yards sterilized gauze.

One two-quart fountain syringe.

Two ounces chloroform.

One-half ounce fluid extract of ergot.

Tape for tying cord.

One drachm Credé eye solution (2 per cent silver nitrate solution).

Dropper.

Nail brush.

Antiseptic soap.

Nail file.

Cord dressing: Ol. ricini, dr. 2; Balsam Peru, min. 4.

Vaseline.

One tube sterile vaseline.

Antiseptic tablets (bichloride).
One paper large safety-pins.
One paper small safety-pins.
Six ounces saturated solution boracic acid.

Labor Pains.—As soon as the true labor pains begin, or if the waters break before the advent of the pains, the physician should be notified. The true pains begin in the back, running around to the abdomen. Pains may occur about the end of the eighth month; these are always located in the abdomen, and do not as a rule affect the back at all. They are called *false labor pains.*

Preparation of Patient for Labor.—If there is time before the physician arrives the patient should take a full bath in the tub, and as soon as the nurse arrives a low enema should be given. The attire during labor should be a nightgown, one or two skirts if the weather is cold, a double wrapper over all, stockings and slippers, and a sterile napkin to protect the clothes from the discharges.

Bed.—If the patient is wakened at night by the advent of pains or the breaking of the bag of waters, the bed should be dismantled and prepared as follows: a hard firm mattress is covered with a rubber sheet or oil-cloth; over this is placed a sheet, which is pinned at the four corners to keep smooth. Over this is placed a second rubber, or if this can not be obtained a pad made of a number of thicknesses of newspapers sewed together and covered with an old but clean sheet. This is placed at a point where the hips will rest. Over this is placed a second sheet pinned as the first, a folded sheet over this which will stretch across the bed, and a pad made of a folded sheet for the hips to rest on. The pad, draw-sheet, the second sheet, and rubber or

newspaper pad are removed after the completion of labor, leaving the bed covered with white sheet and rubber. Another pad, made of a sheet or tufted cheesecloth and absorbent cotton, is then placed under the hips. The bedding used in the preparation of the bed, and the rubber, etc., should be scrupulously clean.

APPENDIX

APPENDIX

SOLUTIONS.

Sterile Water.—An ample supply of sterile water should be prepared for an obstetrical case. In private homes a granite bucket can be procured, and after thorough scrubbing it is filled with water, which is allowed to boil for thirty minutes. This can then be poured into pitchers which have been previously sterilized, and carefully covered with gauze tied over the top. It does no harm to strain the water through gauze as it is poured into the pitchers. Not less than eight or ten gallons of sterile water should be prepared; and only water which has been boiled should be used for douches, washing the hands, or for the preparation of solutions.

Lysol Solution.—This is usually used in from 1 to 2 per cent solutions, and can be made from a stock solution, which is diluted as used, or from the pure drug. Two and one-half drachms to the pint will make a 2 per cent solution.

Bichloride of Mercury.—This solution is made from stock tablets; one tablet dissolved in one pint of water equals 1-1,000 solution. This drug is highly toxic, and should be used with great caution.

Boracic Acid Solution.—This is most often used in a saturated solution, equal to 4 per cent. It is made by dissolving in hot water as much powdered or crystalline boracic acid as the water will take up. This is allowed to cool, and when the excess has crystallized and settled to the bottom the upper clear liquid is poured into a sterile bottle for use.

Saline Solution.—Normal saline solution is made by the addition of one teaspoon, level full, of salt to a pint

of sterile water; the salt should be sterilized before adding to the water, or the solution boiled afterward. A double-strength solution can be made and diluted one half with hot water before using.

Carbolic Acid Solution.—Commercial carbolic acid is in the form of crystals. To a pound of carbolic acid is added five and one-half drachms of alcohol. This solution is added to the desired amount of boiling water and filtered through cotton or strained through several thicknesses of gauze.

STERILIZATION.

Aseptic obstetrics is a goal toward which every physician and nurse is striving. These preparations include the preparation of the room, the bed, the patient and her clothing, the nurse, the physician, the instruments, solutions, and dressings. Sterilization of hands and instruments are here considered.

No method of *hand* sterilization is perfect, and the only safe method of delivery is when wearing sterile rubber gloves. If gloves are not to be had the hands should be scrubbed with a sterile nail-brush, soap and water for three minutes; clean the finger-nails with a dull nail file or stick, and scrub again in sterile water for five minutes. Wash the hands in 95 per cent alcohol and rinse in sterile water. *As long as the hands do not touch an unsterilized object* they are then as sterile as it is possible to make them.

Sterile *rubber gloves* offer the ideal method of protecting the patient against infection from the hands. They should be closely inspected for holes by distending with air and holding under water. Escaping air will be shown by the bubbles.

Gloves must be wrapped in gauze or a small towel

and boiled for fifteen minutes for sterilization, and may be put on wet, partly filled with water, after the hands have been prepared as described above. The gloves may be sterilized some time before, dried with sterile towel and powdered with a sterilized talcum powder, and put on sterilized hands, which have also been dried and powdered.

After being used the gloves are thoroughly washed with soap and water, with equal care upon both sides, dried and powdered with talc or boracic acid, wrapped in sterile gauze, and put in box for use next time.

Instruments should be immersed in water containing about 1 per cent of borax or soda and thoroughly boiled for at least ten minutes, removed from the solution at this time, wiped with sterile towel, and covered with a sterile towel until ready for use. After using the instruments they should be carefully scrubbed with soap and water, boiled for five minutes, and wiped with a sterile towel.

An expensive *nail-brush* should not be used. They do not stand successive boiling, and the bristles usually lose their stiffness and efficiency. A five-cent wooden-back nail-brush, which can be used for but one case, is decidedly the best. In an institution a jar or tray deep enough for the brush to be immersed in a lysol solution should be provided, and the brush not carelessly laid down on the stand. Brushes should be boiled for ten minutes before using.

Dressings should be submitted to dry sterilization before using. The nurse should visit the patient in her home some weeks before the confinement, to assist in the preparation of the lochial and bed pads, and give instructions in regard to pinning up the packages of towels, sheets, gowns, and dressings for sterilization.

These packages are then placed in the oven and baked for thirty minutes. They are removed and laid away with the remainder of the things prepared for the labor, and covered so as to be free from dust.

Basins and pitchers should be scrubbed thoroughly, rinsed, and boiled in a large boiler deep enough to allow them to be completely immersed. They are then dried with a sterile towel and protected from dust until used.

Washing Flannels.—To wash flannels without having them shrink, shave laundry soap and add enough water to boil down to soft soap; use *hot* water and soft soap to make a heavy lather; add a teaspoonful of borax and a tablespoonful of ammonia to a foot-tub half full of water. Squeeze the flannels in these suds, but only to get obstinate spots out; rinse in hot water, with borax and ammonia; dry quickly, and press while damp. Flannels thus treated will not shrink, and need no stretchers.

ANTISEPTIC SOLUTIONS.

DRUGS.	COMMERCIAL FORM.	SOLUTIONS.	STRENGTH.	PER CENT.
Boracic acid	Powder or Crystals	ʒvi to oi	Saturated Solution	------
Bichloride of mercury or corrosive sublimate	Liquid	ʒi to oi	1-1000	.1
Carbolic acid	Liquid	ʒvi to oi	1-20	.5
Formaldehyde (40 per cent)	Liquid	ʒvi to oii	1-100	.1
Lysol	Liquid	ʒiiss to oi	1-50	2.0
Potassium permanganate	Crystals	ʒss to oi	1-250	.4
Normal saline	Sodium Chloride	ʒi to oi	----------	------
Creolin	Green Soap	ʒiiss to oi	1-50	2.0
Household ammonia	Aqua Ammonia	lbi to oi	----------	------

GLOSSARY

GLOSSARY

With but few exceptions, the words and definitions included in this Glossary are taken from the American Illustrated Medical Dictionary by Dorland (copyright, 1909, by W. B. Saunders Company), with the permission of the publishers.

A

Abdomen (ab-do'men). That portion of the body which lies between the thorax and the pelvis.

Ablactation (ab-lak-ta'shun). The weaning of a child, or the cessation of the secretion of milk.

Abortion (ab-or'shun). The expulsion of the embryo before the end of the third month.

Accoucheur (ah-koosh-er'). One skilled in midwifery; an obstetrician.

Accoucheuse (ah-koosh-ez'). A midwife.

Acephalia, Acephalism, Acephaly (ah-sef-a'le-ah, ah-sef'al-ism, ah-sef'al-e). Absence of the head.

Acephalobrachia (ah-sef'al-o-bra'ke-ah). Congenital absence of the head and arms.

Acephalocardia (ah-sef'al-o-kar'de-ah). Absence of the head and heart.

Acephalochiria (ah-sef'al-o-ki're-ah). Absence of the head and hands.

Afetal (ah-fe'tal). Without a fetus.

After-birth. The structure, consisting of the placenta and membranes, cast from the uterus after the birth of the child.

After-pains. The pains felt after the birth of the child, due to the contraction of the uterus.

Agalactia (ah-gal-ak'she-ah). Absence or failure of the secretion of milk.

Albuminuria (al-bu-min-u're-ah). The presence of albumen in the urine. It indicates either a simple mixture of albuminous matters, as blood, with the urine, or a morbid state of the kidneys, permitting albumen to pass from the blood.

Allantoic (al-an-to'ik). Pertaining to the allantois.

Allantois (al-an'to-is). A sac which in early fetal life springs out from the hind-gut of the embryo. It afterward arches around so as to envelop the embryo completely, and fuses with the subzonal membrane to form the chorion and placenta. It carries the blood-vessels from the embryo which establish the placental circulation.

Amenia (am-e'ne-ah). Absence of the menses.

Amenorrhea, Amenorrhœa (am-en-or-re'ah). Absence or abnormal stoppage of the menses. **Primitive A.**, a condition in which the menstruation has not appeared at the proper time. **Secondary A.**, arrest of the menses after they have once existed.

Amnion (am'ne-on). The innermost fetal membrane, forming the bag of waters, the sac that encloses the fetus and forms a sheath for the umbilical cord. It consists of two layers: the outer **(false A.)**; the inner **(true A.)**, and develops from the ectoderm and mesoderm. The false amnion, or subzonal membrane, lies outside the sac of the true amnion, from which it becomes separated. It unites with the allantois and forms the chorion.

Amniorrhea (am-ne-or-e'ah). The escape of the amnionic waters, or liquor amnii.

Analgesia (an-al-je'ze-ah). Absence of sensibility to pain.

Analgesic (an-al-je'zik). (1) Relieving pain. (2) Not sensitive to pain. (3) A remedy for pain.

Anamniotic (an-am-ne-ot'ik). Having no amnion.

Anencephalia, anencephaly (an"en-sef-a'le-ah, an-en-sef'al-e). Absence of the brain.

Anesthesia, Anæsthesia (an-es-the'zhe-ah). Loss of feeling or sensation, especially loss of tactile sensibility, though the term is used for loss of any of the other senses.

Anesthetic (an-es-thet'ik). (1) Without the sense of touch or of pain. (2) A drug that produces anesthesia. **General A.**, one whose administration affects the whole organism. **Obstetrical A.**, anesthesia during labor, sufficient to relieve the acute suffering but not to produce entire insensibility.

Anesthetist (an-es'thet"ist). An expert in administering anesthetics.

Ankylocolpos, Ankylokolpos (ang-kil-o-kol'pos). Atresia or imperforation of the vagina.

Ankyloglossia, Ankyloglossum (ang-kil-o-glos'se-ah, ang-kil-o-glos'um). Tongue-tie.

Anococcygeal (a-no-kok-sij'e-al). Pertaining to the anus and coccyx.

Anodyne (an'o-dīn). (1) Relieving pain. (2) A medicine that relieves pain. The anodynes include opium, morphine, codeine, hyoscine, atropine, coniine, ether, lupulin, potassium bromide. **Hoffman's A.**, the compound spirit of ether (spiritus æ'theris compos'itus), anodyne and antispasmodic. Dose, 30-120 min. (2-8 c.c.).

Anorectal (a-no-rek'tal). Pertaining to the anus and rectum.

Anorexia (an-o-rek'se-ah). Lack or loss of the appetite for food.

Anovesical (a-no-ves'ik-al). Pertaining to the anus and bladder

Anteflexion (an"te-flek'shun). An abnormal forward curvature; a form of displacement in which the upper part of the organ is bent forward.

Antenatal (an-te-na'tal). Occurring before birth, or formed.

Antepartum (an'te-par'tum). Latin for "before delivery."

Anteversion (an-te-ver'shun). The forward tipping or tilting of an organ; displacement in which the organ is tipped forward, but is not bent at an angle, as in anteflexion.

Antihemorrhagic (ant"hem-or-raj'ik). Preventing or arresting hemorrhage.

Antisepsis (an-te-sep'sis). Exclusion, by the use of drugs, of the germs that cause putrefaction.

Antiseptic (an-te-sep'tik). (1) Preventing decay or putrefaction. (2) A substance destructive to poisonous germs. Some of the chief antiseptics are alcohol, boric acid, carbolic acid, creosote, corrosive sublimate, common salt, charcoal, chlorine, tannic acid, sugar, and vinegar.

Anus (a'nus). The distal end and outlet of the rectum. **Imperforate A.**, closure of the natural opening of the anus.

Aperient (ap-e're-ent). (1) Mildly cathartic. (2) A gentle purgative.

Areola (ar-e'o-lah). The darkish ring around the nipple. **A. papila'ris**, the darkened ring around a woman's nipple. **Second A.**, a deposit of pigment outside the primary areola during pregnancy.

Asphyxia (as-fix'e-ah). Suffocation; also suspended animation from suffocation or a deficiency of oxygen in the blood. It is attended by a feeling of suffocation, cyanosis, and coma. **A. Neonato'rum**, imperfect breathing, as in newborn infants.

Attitude. The relation of the head and extremities of the child to its body as it lies in the uterus; head flexed on the chest, arms across the chest, thighs flexed on the abdomen, legs on the thighs and back of foot on the shin.

B

Bacilluria (bas-il-lu're-ah). The presence of bacilli in the urine.

Bacillus (bas-il'lus). (1) A rod-shaped body. (2) A genus of schizomycetous microörganisms, consisting of non-motile rod-like forms.

Bacteremia (bak-ter-e'me-ah). The presence of bacteria in the blood.

Bacteria (bak-te're-ah). The schizomycetes, or vegetable microörganisms, especially the short-rod forms. **Amotile B.**, bacteria which are incapable of motion, as the bacilli of anthrax.

Bactericidal (bak'ter-is-i-dal). Destructive to bacteria.

Bactericide (bak-ter'ĭs-id). (1) Destructive to bacteria. (2) Any agent that destroys bacteria.

Bacteriemia (bak'ter-e-e'me-ah). The presence of schizomycetes in the blood.

Bacteriology (bak"te-re-ol'oj-e). The sum of what is known regarding bacteria.

Bacterium (bak-te're-um). (1) A genus of schizomycetes of short and rod-like form. (2) Any non-animal microörganism; a microphyte.

Bacteriuria (bak"te-re-u're-ah). The existence of bacteria in the urine.

Bacteroid (bak'te-roid). Resembling a bacterium; also a structure resembling a bacterium.

Bag. A sac or pouch. **Barnes' B.**, a rubber bag for dilating the cervix uteri. **Ice B.**, a bag filled with ice, for applying cold to the body. **B. of Waters**, the membranes which enclose the liquor amnii and the fetus.

Balanitis (bal-an-i'tis). Inflammation of the foreskin and the glans penis. It is usually associated with phimosis.

Ballottement (bal-lot-maw'). The diagnosis of pregnancy by pushing up the uterus by a finger inserted into the vagina, so as to cause the embryo to rise and fall again like a heavy body of water. **Abdominal B., Indirect B.**, that which is effected by the finger applied to the abdominal wall. **Direct B., Vaginal B.**, that done by the finger in the vagina. **B. of the Eye, Ocular B.**, the falling of opaque masses in a fluid vitreous after movements of the eyeball.

Basiotribe (ba'se-o-trib). An instrument for crushing the fetal head, in order to facilitate delivery.

Bell's Palsy. Paralysis of the facial nerve.

Binder. An abdominal girdle or bandage, chiefly for women in childbed.

Biology (bi-ol'o-je). The science of living organisms, and of their structure, life, growth, and actions.

Birth. (1) The act or process of being born. (2) That which is born. **Cross-B.**, preternatural labor with fetus lying transversely. **Head-B.**, a birth in which the head presents. **B.-Mark**, a congenital nevus. **B.-Palsy**, any paralytic affection due to an injury occurring at birth.

Bladder. The membranous sac, situated in the anterior part of the pelvic cavity, which serves as a reservoir for the urine.

Blastocele, Blastocoele (blas'to-sel). The cavity of a blastula or vesicular morula.

Blastoderm (blas'to-derm). The delicate membrane which lines the zona pellucida of the impregnated ovum. The blastoderm is formed by the cells (blastomeres) which result from the splitting up of the ovum after impregnation, and have been pushed from the center of the accumulation of the blastochyle. The blastoderm forms a hollow sphere (blastodermic vesicle). **Trilaminar B.**, the stage of development in which the embryo is represented by the three primary layers —the ectoderm, the mesoderm, and the entoderm.

Blastogenesis, Blastogeny (blas-to-jen'es-is, blas-toj'en-e). The germ-history of an organism or species.

Blastomere (blas'to-mēr). Any cell or cell-mass of the blastoderm; one of the masses which constitute the morula.

Blastosphere (blas'to-sfer). The ovum after it has passed into the morula stage.

Blastula (blas'tu-lah). Same as Blastosphere.

Blastulation (blas-tu-la'shun). The formation of the blastula.

Bougie (boo-zhe'). A slender instrument for introduction into the urethra, or a large one, for the rectum or some other orifice; used also to induce labor by introduction into the uterus.

Breast. The anterior aspect of the chest or thorax. (2) The mamma or mammary gland. **B. Pump,** an apparatus for drawing milk from mammary gland.

Breech (brēch). The nates or buttocks.

Bregma (breg'mah). The point on the surface of the skull at the junction of the coronal and sagittal sutures.

Bregmatic (breg-mat'ik). Pertaining to the bregma.

Brim. The edge of the superior strait of the pelvis.

Bruit (brue). A sound or murmur heard in auscultation; especially an abnormal one. **B. Placentaire,** a blowing sound heard in the pregnant uterus, and caused by the fetal circulation.

C

Calorie, Calory (kal-lor-e'). A heat-unit; it being the amount of heat needed to raise one kilogram of water from 0° to 1° C.

Cannula (kan'u-lah). A tube for insertion into the body, its caliber being usually occupied by a trocar during the act of insertion.

Caput (ka'put). Any head or headlike structure. **C. Succeda'neum,** a swelling formed on the presenting part of the fetus during labor, composed of serum in the cellular tissue.

Caruncle (kar'ung-kl). Any small fleshy eminence, whether normal or abnormal.

Caruncula (kar-ung'ku-lah). **Carunculæ Myrtiformes,** small elevations surrounding the vaginal orifice, relics of the ruptured hymen, due to dilatation at childbirth.

Casein (ka'se-in). The principal proteid of milk and the basis of cheese. It is a white substance, soluble in dilute acids and alkalies, and resembles alkali-albumen, but contains more nitrogen.

Caseinogen (ka-se-in'o-jen). A proteid of milk, producing casein when acted upon by digestive ferments.

Caseous (ka'se-us). Resembling cheese or curd.

Cast. A model of a hollow organ, as of a renal tubule or a bronchiole, formed of effused plastic matter.

Cataria (kat-a're-ah). The leaves and top of Nep'eta Cata'ria, or catnip, a labiate plant: a carminative and mild nerve-stimulant. Dose of the infusion, 2 dr. (7.77 gm.).

Catgut. Sheep's intestine prepared as a cord, asepticized and used as a ligature and in drainage. **Chromic C., Chromicised C.,** catgut sterilized and impregnated with formalin by boiling in an alcohol-formalin solution. **Iodine C.,** catgut that has been immersed in a solution of iodine and iodide of potassium. **Silverized C.,** catgut impregnated with silver to give it increased strength and resisting qualities.

Catharsis (kath-ar'sis). A cleansing or purgation.

Cathartic (kath-ar'tik). (1) Purgative or causing purgation. (2) A medicine that quickens and increases the evacuation from the bowels and produces purgation.

Catheter (kath'e-ter). A tubular surgical instrument for discharging fluids from a cavity of the body or for distending a passage.

Catnep, Catnip (kat'nep, kat'nip). See Cataria.

Caul. A piece of amnion which sometimes envelops a child's head at birth.

Celiotomy (se-le-ot'o-my). Surgical incision through the abdominal wall.

Cephalematoma (sef"al-em-at-o'mah). A tumor or swelling filled with blood beneath the pericranium.

Cephalothoracopagus (sef"al-o-tho-rak-of'ag-us). A double monster consisting of two fetuses joined by the head and thorax.

Cephalotome (sef'al-o-tōm). An instrument for cutting the fetal head.

Cephalotomy (sef-al-ot'o-me). (1) The cutting up of the fetal head to facilitate delivery. (2) Dissection of the fetal head.

Cephalotribe (sef'al-o-trib). An instrument for use in cephalotripsy.

Cephalotripsy (sef'al-o-trip-se). The crushing of the fetal head in order to facilitate delivery.

Cereal. (1) Pertaining to edible grain. (2) Any graminaceous plant bearing an edible seed; also the seed or grain of such a plant.

Cereo (se're-o). A proprietary agent for predigesting starchy foods.

Cervico-occipital (ser"vik-o-ok-sip'et-al). Pertaining to the neck and occiput.

Cervicovesical (ser"vik-o-ves'ik-al). Pertaining to the cervix uteri and bladder.

Cervix (ser'vix). The neck or any neck-like part. **C. Uteri,** the lower and narrow end of the uterus, between the os and the body of the organ. **C. Vesicæ,** the neck of the urinary bladder.

Change of Life. The menopause, or normal and final cessation of the menses, often attended with various constitutional disturbances.

Childbed. The puerperal state, condition, or season; lying-in.

Childhood. The period of life before puberty, and especially that which follows infancy.

Chloasma (klo-az'mah). A cutaneous discoloration, occurring in yellowish-brown patches and spots. The term is applied vaguely to various pigmentary skin-discolorations. **C. Uterinum,** a skin-discoloration which occurs during gestation.

Chlorosis (klo-ro'sis). Green sickness; a peculiar anemia mostly affecting girls about the age of puberty; so called from the greenish pallor of the skin. It is marked by perverted appetite, digestive impairment, debility, dysmenorrhea, amenorrhea, and nervous disturbance. **Egyptian C.,** ankylostomiasis.

Chorion (ko're-on). The more external of the two fetal membranes, formed by the outer portion of the allantois pushing in between the true and false amnion and uniting with the latter to envelop the ovum. **C. Frondo'sum,** the part of the chorion that is covered with villi. **C. Læve,** the smooth and membranous part of the chorion. **Primitive C.,** that stage of the zona pellucida during which it develops many small villi. **Shaggy C.,** same as C. Frondosum.

Chorionic (ko-re-on'ik). Pertaining to the chorion.

Circulation. Movement in a regular or circuitous course, as the circulation of the blood. **Allantoic C.,** circulation in the fetus through the umbilical vessels. **Vitelline C.,** the circulation through the blood-vessels ramifying upon the yolk.

Circumcision. The removal of all or a part of the prepuce or foreskin.

Cleft Palate. Congenital fissure of the palate and roof of the mouth.

Clitoris (klit'o-ris). An organ of the female homologous with the penis in the male. It is a small, elongated, erectile body, situated at the anterior angle of the vulva.

Clot. A soft, semisolidified mass or coagulum, as of blood or lymph.

Clyster (klis'ter). An injection into the rectum; an enema.

Clysterium (klis-te're-um). A clyster.

Clysterize (klis'ter-iz). To apply a clyster to; to treat with enemata.

Coccygeal (kok-sij'e-al). Of or pertaining to the coccyx.

Coccyx (kok'six). The small bone situated caudal to the sacrum; in man, the caudal end of the spinal column.

Coitus (ko'it-us). Sexual intercourse; copulation.

Colic. (1) Pertaining to the colon. (2) Acute abdominal pain.

Colon. That part of the large intestine which extends from the cecum to the rectum. **Ascending C.,** the portion of the colon on the right side, going cephalad from the cecum. **Descending C.,** a part of the colon on the left side between the transverse colon and the sigmoid flexure. **Giant C.,** abnormally large size of the colon. **Transverse C.,** that part which runs transversely across the upper part of the abdomen from right to left.

Colostration (ko-los-tra'shun). Illness of a newborn infant caused by the colostrum.

Colostrorrhea (ko-los-tro-re'ah). Spontaneous discharge of colostrum.
Colostrum (ko-los'trum). The first fluid secreted by the mammary gland after delivery. It contains less casein and more albumen than ordinary milk, as well as numerous fatty globules (colostrum corpuscles).
Colpeurynter (kol'pu-rin-ter). A dilatable bag, used to distend the vagina.
Colpeurysis (kol-pu'ris-is). Operative dilatation of the vagina.
Colpitis (kol-pi'tis). Inflammation of the vagina.
Colpocele (kol'po-sel). Hernia into the vagina.
Colpocystitis (kol"po-sis-ti'tis). Inflammation of the vagina and of the bladder.
Colpocystotomy (kol"po-sis-tot'o-me). Incision of the bladder through the vaginal wall.
Colporrhaphy (kol-por'rah-fe). The operation of denuding and suturing the vaginal wall for the purpose of narrowing the vagina.
Colpospasmus (kol-po-spaz'mus). Vaginal spasm.
Colpotomy (kol-pot'o-me). Any surgical cutting operation upon the vagina.
Conception. (1) The fecundation of the ovum. (2) The image of a thing in the mind.
Confinement. Childbed, or the puerperal condition.
Constipated. Affected with constipation; costive.
Constipation. Infrequent or difficult evacuation of the feces; retention of the feces. **Spastic C.**, constipation marked by spasmodic constriction of a portion of the intestine, seen in neurasthenia.
Copulation (kop-u-la'shun). Sexual congress; coitus.
Cornu (kor'nu). Any horn-like excrescence or projection.
Courses. Menses; the monthly illness of a woman.
Cranioclasis (kra-ne-ok'lah-sis). The crushing of the fetal head.
Cranioclast (kra'ne-o-klast). An instrument for use in performing cranioclasis.
Craniotome (kra'ne-o-tōm). An instrument for use in performing craniotomy.
Craniotomy (kra-ne-ot'o-me). The cutting in pieces of the fetal head to facilitate delivery.
Creche. See Day Nursery.
Crest. A projecting ridge, especially one which surmounts a bone or its border. **C. of the Ilium**, the thickened and expanded upper border of the ilium.
Crista. A crest or ridge.
Cry. A sudden loud vocal sound.
Cryptorchid, Cryptorchis (krip-tor'kid, krip-tor'kis). A person whose testicles have not descended into the scrotum.
Cul-de-sac. A blind pouch or cecum; a cavity closed at one end. **Douglas' C.**, a pouch between the anterior wall of the rectum and the uterus.
Curettage (ku-ret-aje'). The use of the curette, or treatment by the curette.
Curette (ku-ret'). A kind of scraper or spoon for removing growths or other matter from the walls of cavities.
Curettement (ku-ret'ment). Same as Curettage.
Cyst. Any sac, normal or other; especially one which contains a liquid or semisolid.
Cystalgia (sis-tal'je-ah). Pain in the bladder.
Cystitis (sis-ti'tis). Inflammation of the bladder.
Cystopyelitis (sis"to-pi-el-i'tis). Cystitis complicated with pyelitis.
Cystoscope (sis'to-skōp). An endoscope for examining the interior of the bladder.
Cystoscopy (sis-tos'ko-pe). Examination of the bladder with the cystoscope.

Cystotomy (sis-tot'o-me). The operation of making an incision into the bladder.
Cytogenesis (si-to-jen'es-is). The development of the cell.

D

Day Nursery. Creche, or shelter for children.
Decidua (de-sid'u-ah). The membranous structure produced in the uterus during gestation and thrown off after parturition. **D. Gravidita'tis,** the menstrual decidua during the stage of pregnancy. **D. Membra'na, D. Reflex'a,** the part of decidua which is reflected upon and surrounds the ovum. **D. Menstrua'lis,** the hyperemic and swollen mucous membrane of the uterus during the menstrual period. **Ovular D.** See D. Reflexa. **Placental D.** See D. Serotina. **D. Serot'ina,** the late decidua; the part of the decidua vera which becomes the maternal portion of the placenta. **Uterine D.** See D. Vera. **D. Ve'ra,** the true decidua; the portion of the decidua which lines the uterus.
Decidual (de-sid'u-al). Pertaining to the decidua.
Decidualitis (de-sid"u-al-i'tis). A bacterial disease leading to alterations in the decidua.
Deciduous (de-sid'u-us). Not permanent; temporary.
Decipara (des-ip-ar'ah). A woman who has borne ten children.
Dejecta. Excrementitious substances.
Dejection. (1) Discharge of excrementitious material; also material so discharged. (2) Prostration; mental depression.
Deliver. (1) To aid in the process of childbirth. (2) To remove—as the fetus, or placenta, or the lens of the eye.
Delivery. (1) Expulsion or extraction of the child at birth. (2) Removal of a part, as the placenta or lens. **Postmortem D.,** birth of a child after the death of the mother.
Dentition. (1) The cutting of the teeth; teething. (2) The kind, number, and arrangement of the teeth. **Primary D.,** the eruption of the deciduous or milk teeth. **Secondary D.,** the eruption of second or permanent teeth.
Dermoid (der'moid). (1) Resembling the skin. (2) A form of congenital cyst, chiefly ovarian, containing hair, skin, teeth, etc.; a dermoid cyst. See Cyst.
Dessertspoon. A measure about equal to two fluiddrams.
Detritus (de-tri'tus). The remains of any broken-down tissue.
Deuteroplasm (du'ter-o-plazm). The nutritive part of the yolk of an ovum.
Deutoplasm (du'to-plazm). See Deuteroplasm.
Diameter. A straight line through a center, joining opposite points of a periphery. **Antero-posterior D.** (of pelvic inlet). (1) That which joins the antero-posterior angle of pelvic inlet; that which joins the sacrovertebral angle with the symphysis pubis. (2) (Of pelvic outlet). Joins tip of coccyx to suprapubic ligament. **Antero-transverse D., Temporal D.,** between tips of alæ magnæ. **Baudelocque's D.,** the external conjugate diameter of pelvis. **Biparietal D.** joins the parietal eminences. **Bitemporal D.,** that which joins the extremities of the coronal suture. **Conjugate D.,** the antero-posterior diameter of the pelvic inlet. **Diagonal Conjugate D.** joins sacrovertebral angle and subpubic ligament. **External Conjugate D.** connects depression above spine of first sacral vertebra and middle of upper border of symphysis pubis. **Fetal Cranial Ds.** are the occipitomental, occipitofrontal, suboccipitobregmatic, cervicobregmatic, biparietal, and frontomental. **Intercristal D.,** the distance between the middle points of the iliac crests. **Mentoparietal D.,** from chin to vertex. **Occipitofrontal D.** joins the root of the nose and occipital prominence. **Occipitomental D.** joins the external occipital protuberance

and the chin. **Parietal D.**, **Postero-transverse D.**, between tuberosities of parietal bones. **Pelvic D.**, any diameter of the pelvis. **Sagittal D.**, from glabella to external occipital protuberance. **Superior Sagittal D.**, between middle of internal crest of frontal bone and superior linea cruciata of occipital. **Trachelobregmatic D.** joins the center of the anterior fontanelle and junction of neck with floor of mouth. **Transverse D. of Pelvic Inlet** connects the two most widely separated points of pelvic inlet. **Transverse D. of the Pelvic Outlet** joins the ischial tuberosities. **True Conjugate D.** connects sacrovertebral angle with the middle of most prominent part of posterior aspect of symphysis pubis. **Vertical D.**, between foramen magnum and vertex.

Diaphoresis (di"af-o-re'sis). Perspiration, and especially profuse perspiration.

Diaphoretic (di"af-o-ret'ik). (1) Stimulating the secretion of sweat. (2) A medicine that increases the perspiration. **Sedative D.**, one that acts by dilating the cutaneous vessels: such as the cardiac sedatives and nauseants.

Diaphragm (di'af-ram). (1) The musculomembranous partition that separates the abdomen from the thorax. (2) Any thin septum.

Diaphragmalgia (di"a-frag-mal'je-ah). Pain in the diaphragm.

Diaphragmatic (di"af-rag-mat'ik). Pertaining to or of the nature of a diaphragm.

Diarrhea, Diarrhœa (di-ar-re'ah). Abnormal frequency and liquidity of fecal discharges.

Diastase (di'as-tas). A white, amorphous, soluble solid produced during the germination of seeds, and contained in malt. It converts starch into dextrin and glucose.

Diblastula (di-blas'tu-lah). A blastula in which the ectoderm and entoderm are both present.

Dicephalus (di-sef'al-us). A monster-fetus with two heads.

Dicrotic (di-krot'ik). Having or pertaining to a double beat, as of the pulse.

Digital (dij'it-al). (1) Of, pertaining to, or performed with, a finger. (2) Resembling the imprint of a finger.

Dilator (di-la'tor). An appliance used in enlarging an orifice or canal by stretching. **Barnes' D.**, a rubber bag used in dilating the os and cervix uteri. **Intrauterine D.**, an instrument for dilating the uterine cavity by means of air or water.

Diplococcus (dip-lo-kok'kus). A form of schizomycetes made up of pairs of cocci united or linked so as to produce an oval or oblong structure; generally regarded as a genus of bacteria.

Disengagement. Escape from confinement, especially the emergence of the fetal head from the vaginal canal in labor, or of an impacted tumor.

Diuretic (di-u-ret'ik). (1) Increasing the secretion of urine. (2) A medicine that promotes the secretion of urine.

Divulsion. The act of separating or pulling apart.

Divulsor. An instrument for performing divulsion in the urethra.

Douche (doosh). A stream of water directed against a part or into a cavity.

Douglas' Cul-de-sac or Pouch. A sac of the peritoneum which dips down below the posterior surface of the uterus.

Douglasitis (dug-las-i'tis). Inflammation of Douglas' pouch.

Ductus (duk'tus). Any passage or duct, as of a gland. **D. Arterio'sus**, a channel in the fetus from the pulmonary artery to the aorta. **D. Venosus**, a fetal blood-vessel connecting the umbilical vein with the inferior vena cava.

Duipara (du-ip'ah-rah). Same as Secundipara.

Dysmenorrhea (dis″men-or-re′ah). · Painful and difficult menstruation. **Congestive D., Plethoric D.**, that which is accompanied by great congestion of the uterus. **Inflammatory D.**, that which comes from or is due to inflammation. **Mechanic D.**, that which is due to mechanic interference with the flow, as from clots or flexion of the uterus. **Membranous D.**, that which is characterized by membranous exfoliations derived from the uterus. **Obstructive D.**, that which is due to mechanic obstruction to the discharge of the menstrual fluid. **Ovarian D.**, that which is due to ovarian disease. **Spasmodic D.**, that which is due to spasmodic uterine contraction. **Tubal D.**, that which is due to narrowness or closure of an oviduct. **Uterine D.**, that which arises from a uterine disorder. **Vaginal D.**, that which is due to a vaginal disease.

Dystocia (dis-to′se-ah). Painful or slow delivery or birth. **Fetal D.**, that which is due to the shape, size, or position of the fetus. **Maternal D.**, that which is due to some deformity on the part of the mother. **Placental D.**, difficulty in removing or delivering the placenta.

E

Ecbolic (ek-bol′ik). (1) Accelerating or causing parturition. (2) An agent which accelerates labor.

Eclampsia (ek-lamp′se-ah). A sudden attack of convulsions, especially one of a peripheral origin. **Infantile E.**, eclampsia of reflex origin, as from worms, rickets, fever, or diarrhea, or from temporary cerebral congestion. **E. Nu′tans**, nodding spasm, or salaam convulsion. **Puerperal E.** occurs at or near the end of pregnancy, and is often uremic. **Uremic E.**, eclampsia caused by uremia due to retention in the blood of products excreted in the urine.

Eclampsism (ek-lamp′sizm). Bar's term for puerperal eclampsia without convulsive seizures, but with clear signs of blood-intoxication.

Eclamptic (ek-lamp′tik). Pertaining to or of the nature of eclampsia.

Eclamptism (ek-lamp′tizm). The condition due to the auto-intoxication incident to pregnancy, and marked by headache, visual impairment, and sometimes by convulsions.

Ecto-. A prefix denoting situated on, without, or on the outside.

Ectoblast (ek′to-blast). (1) The ectoderm, or epiblast. (2) Any external membrane; a cell wall.

Ectopic (ek-top′ic). Out of the normal place.

Edema, Œdema (e-de′mah). Swelling due to effusion of watery liquid into the connective tissue.

Egg. The animal ovum, especially one which is hatched outside the body. **E. Yolk.** See Vitellus.

Embolism (em′bol-izm). The plugging of an artery or vein by a clot or obstruction which has been brought to its place by the blood-current.

Embolus (em′bo-lus). (1) A clot or other plug brought by the blood-current from a distant vessel and forced into a smaller one so as to obstruct the circulation. (2) The nucleus emboliformis.

Embryectomy (em-bre-ek′to-me). Excision of the embryo in extra-uterine pregnancy.

Embryo (em′bre-o). The fetus in its earlier stages of development, especially before the end of the third month.

Embryogeny (em-bre-oj′en-e). The production or origin of the embryo.

Embryoid (em′bre-oid). Resembling the embryo.

Embryologist (em-bre-ol′o-jist). An expert in embryology.

Embryology (em-bre-ol′o-je). The science which treats of the development of the embryo.

Embryonal, Embryonary (em'bre-o-nal, em'bre-o-na-re). Pertaining to the embryo.

Embryonic (em-bre-on'ik). Pertaining to or in the condition of being an embryo.

Embryotomy (em-bre-ot'o-me). (1) The cutting up of a fetus to facilitate delivery. (2) The dissection of embryos and fetuses.

Emmenagogic (em-mem-ag-oj'ik). Pertaining to or aiding the process of menstruation.

Emmenagogue (em-men'ag-og). (1) Any agent which stimulates or favors the menstrual discharge. (2) Aiding the function of menstruation. **Direct E.**, one that acts directly upon the reproductive organs, such as apiol, ergot, rue savine, or tansy. **Indirect E.**, one which acts by relieving some causative condition.

Endoblast (en'do-blast). The endoderm or hypoblast; the more internal of the primary blastodermic layers.

Endoblastic (en-do-blast'ik). Pertaining to the endoblast; hypoblastic.

Endometritis (en"do-me-tri'tis). Inflammation of the endometrium, or lining membrane of the uterus. Endometritis is of various kinds: it may be catarrhal, croupous, diphtheritic, fungous, gangrenous, hemorrhagic, or septic. It is cervical or corporeal according as it affects the cervix or body of the uterus.

Enema (en'em-ah). A clyster or injection; a liquid thrown or to be thrown into the rectum.

Entoblast (en'to-blast). (1) The inner of the two primitive embryonic layers; the hypoblast. (2) A cell-nucleolus. (3) Any one of the segmentational spheres whence the endodermal cells arise.

Enuresis (en-u-re'sis). Involuntary discharge of the urine. **Nocturnal E.**, that which occurs at night and during sleep.

Epiblast (ep'e-blast). The ectoderm, or outermost of the three layers of the blastoderm. From it are developed the epidermis and the epidermic tissues, such as nails, hair, and glands of the skin, the nervous system, the external sense-organs, as ear, eye, etc., and the mucous membrane of the mouth and anus.

Epiblastic (ep-e-blas'tik). Pertaining to or arising from the epiblast.

Epigaster (ep-e-gas'ter). The hind-gut; the embryonic structure whence the colon is formed.

Epigastric (ep-e-gas'trick). Pertaining to the epigastrium.

Epigastrium (ep-e-gas'tre-um). The epigastric region; the upper middle portion of the abdomen, over or in front of the stomach.

Ergot (er'got). Any fungus which affects and finally replaces the seed of a cereal grass; especially the sclerotium of Clav'iceps purpu'rea: ergot of rye. Ergot contracts the arterioles and unstriped muscle-fibers of the uterus, and is a powerful ecbolic and hemostatic. Dose of aqueous and alcoholic **extracts**, 1½–8 gr. (0.099–0.533 gm.); of fluid extract, 15–60 min. (1–4 c.c.); of wine, 1–4 dr. (4–16 c.c.).

Ergotherapy (er-go-ther'ap-e). Treatment of disease by physical effort.

Ergotin (er-go'tin). One of the alkaloids of ergot; also a proprietary ergot-preparation. Dose of alkaloid, 1-15–½ gr. (0.0042–0.033 gm.); of extract, 3–15 gr. (0.2–1 gm.). **Bonjean's E.**, a purified extract of ergot.

Ergotinin (er-got'in-in). An alkaloid, $C_{35}H_{40}N_4O_6$, one of the active principles of ergot. Styptic dose, 1-12–¼ gr. (0.005–0.016 gm.).

Ergotism (er'got-izm). Chronic poisoning from excessive or misdirected use of ergot as a medicine, or from eating ergotized grain. It is marked by cerebro-spinal symptoms, spasms and cramps or by a kind of dry gangrene.

Ergotized (er'got-īzd). Diseased or otherwise affected by ergot.

Ergotol (er'got-ol). A liquid preparation of ergot for hypodermic use. Dose, 5–20 min. (0.33–1.33 c.c.).

Ernutin (er-nu'tin). A proprietary preparation said to represent the active therapeutic principle of ergot.

Ether (e'ther). (1) A fluid of the utmost tenuity, which is conceived to fill all space and to serve as a medium for the transmission of waves of heat and light. Called also luminiferous ether. (2) Ethyl oxide (C_2H_5)O, a highly volatile liquid, obtained by the action of strong sulphuric acid upon ordinary alcohol.

Etiology (e-te-ol'o-je). The study of the theory of the causation of any disease; the sum of knowledge regarding causes.

Eutocia (u-to'she-ah). Safe, easy, or natural parturition, or childbirth.

Evacuation. (1) An emptying, as of the bowels. (2) A dejection or stool; material discharged from the bowels.

Eversion (e-ver'shun). A turning outward, or inside out.

Evisceration (e-vis-er-a'shun). (1) Disembowelment; removal of the entrails, or viscera. (2) Removal of the contents of an organ, as the eye. **Obstetric E.**, the removal of the abdominal and thoracic viscera of the fetus in order to facilitate delivery.

Evolution. (1) An unrolling. (2) A process of development in which an organ or organism becomes more and more complex by the differentiation of its parts; a continuous and progressive change according to certain laws and by means of resident forces. **Spontaneous E.**, the unaided expulsion of a transversely placed fetus without the process of version, or turning.

Excitable. Susceptible of stimulation; responding to a stimulus.

Excrement. Fecal matter; matter cast out as waste from the body.

Excrementitious (ex"kre-men-tish'us). Pertaining to or of the nature of excrement; fecal.

Excreta. Matters excreted; waste matters; materials cast out by the body.

Excrete. (1) To throw off, as waste matter, by a normal discharge. (2) Any excreted or discharged waste matter.

Exencephalia (ex"en-sef-a'le-ah). Congenital exposure of the brain of a teratism.

Exencephalus (ex-en-sef'al-us). A monster having an imperfect cranium, with the brain on the outside of the skull.

Exfetation (eks-fe-ta'shun). Extrauterine pregnancy.

Exogenous (ex-oj'en-us). (1) Growing by additions to the outside. (2) Developed or originating outside the body.

Exometritis (ex"o-me-tr'tis). Inflammation of the peritoneal or outer surface of the uterus.

Extractor. An instrument used in drawing out, pulling, or extracting.

Extragenital (ex-trah-jen'it-al). Lying or originating outside the genital organs.

Extraperitoneal (ex"trah-per-it-o-ne'al). Situated or occurring outside the peritoneal cavity.

Extrauterine (ex-trah-u'ter-in). Situated or occurring outside of the uterus.

Extroversion (ex-tro-ver'shun). A turning inside out; exstrophy.

F

Falling of the Womb. The abnormal descent of the uterus into the vagina.

Fallopian (fal-lo'pe-an). Described by or named for Fallopius.

Fecal (fe'kal). Pertaining to or of the nature of feces.

Feces (fe'sez). The excrement or undigested residue of the food discharged from the bowels.

Fecundation (fe-kun-da'shun). Impregnation or fertilization. **Artificial F.**, that which is effected by injecting semen into the uterus by means of a syringe.

Fecundity (fe-kun'dit-e). Ability to produce offspring; fruitfulness.

Female. (1) Relating or belonging to the sex that conceives and bears young. (2) Receiving a complementary part.

Feminilism, Feminism (fem-in'il-izm, fem'in-izm). The possession or assumption of female characters by the male.

Femininity, Feminity, Femineity (fem-in-in'it-e, fem-in'it-e, fem-in-e'it-e). Womanhood; the possession of normal female qualities by a woman.

Fennel (fen'nel). The umbelliferous plant Fœnic'ulum vulga're and its fruit. The fruit is used as a stimulant, carminative, and emmenagogue. Dose, of water (a'qua fœni'luli), ¼ fl.dr. (4-16 c.c.); of volatile oil, 5-10 min. (0.33-0.66 gm.).

Fertile. Fruitful; susceptible of being developed into a new individual (of ova); not sterile or barren.

Fetal (fe'tal). Pertaining to a fetus.

Fetation (fe-ta'shun). (1) The development of the fetus. (2) Gestation or pregnancy.

Feticide (fe'tis-īd). The destruction of the fetus in the uterus.

Fetus (fe'tus). The unborn offspring of any viviparous animal; the child in the womb after the end of the third month; before that time it is called the embryo. **Harlequin F.**, a fetus prematurely born and congenitally affected with keratoma, ichthyosis, and various defects. **Papyraceous F.**, a dead fetus pressed flat by the growth of a living twin. **F. Sanguinolen'tus**, a dead fetus which has undergone what is known as maceration.

Fibroid (fi'broid). (1) Resembling a fibroma or a fibrous structure. (2) A fibroma.

Fibroma (fi-bro'mah). A tumor composed mainly of fibrous or fully developed connective tissue.

Fillet (fil'let). (1) A loop-shaped structure. (2) A loop, as of cord or tape, for making traction.

Fimbria (fim'bre-ah). A fringe; especially the fringe-like end of the oviduct. **F. Ova'rica**, the longest of the fimbriæ of the oviduct.

Fimbriate, Fimbriated (fim'bre-āt, fim'bre-a-ted). Fringed.

Fimbriatum (fim-bre-a'tum). The corpus fimbriatum.

Flatulence (flat'u-lens). Distention of the stomach or intestines with air or gases.

Flatulent (flat'u-lent). Characterized by flatulence; distended with gas.

Flatus (fla'tus). (1) Gas or air in the stomach or intestines. (2) The air expired in breathing; an act of expelling air from the lungs. **F. Vagina'lis**, noisy expulsion of gas from the vagina.

Flexion. The act of bending or condition of being bent.

Flow. (1) To menstruate copiously. (2) A free liquid discharge. (3) The menses.

Fœtal, Fœtus, etc. See Fetal, Fetus, etc.

Follicle (fol'lik-l). A very small excretory or secretory sac or gland. **Graafian F.**, any one of the small spherical ovarian bodies, each one of which contains an ovum. **Naboth's Fs.**, distended mucous glands within the cervix and about the os uteri.

Fontanel, Fontanelle (fon-tan-el'). Any one of the unossified spots on the cranium of a young infant. **Anterior F.** is situated at the junction of the frontal, coronal, and sagittal sutures. **Posterior F.** is at the junction of the sagittal suture and lambdoid sutures.

Foramen (for-a'men). A hole or perforation; especially a hole in a bone. **F. Ova'le.** (1) A fetal opening between the heart's auricles. (2) An aperture in the wing of the sphenoid bone for the inferior maxillary nerve and the small emningeal artery.

Forceps (for'seps). An instrument with two blades and handles for pulling, grasping, or compressing.

Formaldehyde (for-mal′de-hid). Formic aldehyde, a powerfully disinfectant gas, CH_2O. The gas is used as a disinfectant for rooms, clothing, etc. The aqueous solution is a colorless, volatile fluid, used as a surgical and general antiseptic and preservative.

Formalin (for′mal-in). A 40 per cent solution of gaseous formaldehyde. It is used as an antiseptic and disinfectant in 1:2000 to 1:200 solutions, and as a fixing agent in histologic work.

Fornix (for′nix). **Posterior F.**, the deep recess between the cervix uteri and the posterior wall of the vagina.

Fossa (fos′sah). A pit, depression, trench, fovea, or hollow. **F. Navicula′ris.** (1) A cavity behind the vaginal aperture. (2) An expansion of the urethra in the glans penis.

Frænulum, Frænum, etc. See Frenulum, Frenum, etc.

Frenulum, Frænulum (fren′u-lum). A small frenum. **F. Puden′di,** the fourchet.

Frenum, Frænum (fre′num). A fold of the integument or of the mucous membrane that checks, curbs, or limits the movements of an organ in part. **Fræna Labio′rum,** folds of mucous membrane on the inside of the middle of each lip, connecting the lips with the gums. **F. Lin′guæ,** a vertical fold of mucous membrane under the tongue. **F. of the Prepuce,** the fold on the lower surface of the glans penis that connects it with the prepuce. **F. Puden′di,** the fourchet.

Fumigation. Exposure to disinfecting fumes.

Fundal (fun′dal). Pertaining to a fundus.

Fundus (fun′dus). The base or part of a hollow organ remotest from its mouth. **F. U′teri,** that part of the uterus which is most remote from the os. **F. Vesi′cæ,** the bas fond of the urinary bladder.

Funic (fu′nik). Pertaining to the funis.

Funiculus (fu-nik′u-lus). The umbilical cord, or funis.

Funis (fu′nis). The umbilical cord.

Fusion. (1) The act or process of melting. (2) The abnormal coherence of adjacent parts or bodies.

G

Galactagogue (gal-ak′tag-og). (1) Increasing the secretion of milk. (2) An agent that promotes the flow of milk.

Galactemia, Galactæmia (gal-ak-te′me-ah). A morbid condition of the blood in which it contains milk.

Galactocele (gal-ak′to-sel). (1) A cystic enlargement of the mammary gland containing milk. (2) A hydrocele filled with a milky fluid.

Galactophoritis (gal-ak″tof-or-i′tis). Inflammation of the milk-ducts.

Galactophorous (gal-ak-tof′or-us). Conveying milk.

Galactorrhea, Galactorrhœa (gal-ak-tor-rhe′ah). Excessive secretion of milk.

Galactoscope (gal-ak′to-skōp). A device for showing the proportion of cream in the milk.

Gauze. A light, open-meshed variety of muslin or similar material. Before use in surgery it may be rendered aseptic and impregnated with various antiseptics, as iodoform gauze, borated gauze, sublimated gauze, etc., or subjected to steam or heat for sterilization.

Genesis (jen′es-is). Reproduction; origin; development.

Genital. Pertaining to the organs of generation or to reproduction.

Genitalia (jen-it-a′le-ah). The reproductive organs.

Genito-urinary (jen″it-o-u′rin-er-e). Pertaining to the genital and urinary organs.

Germicidal (jer-mis-i′dal). Destructive to germs.

Germicide (jer′mis-īd). An agent that destroys germs.

Germifuge (jer'mif-ūj). (1) Having the power to expel germs. (2) An agent or remedy that expels germs.

Germinal (jer'min-al). Pertaining to or of the nature of a germ.

Germination (jer-min-a'shun). The sprouting of a seed or spore, or of a plant-embryo.

Germinative (jer'min-at-iv). Pertaining to germination or to a germ.

Gland. An organ that separates any fluid from the blood: such ductless bodies as the spleen, the lymphatic organs, etc., which do not appear to secrete anything, are also called glands. **G. of Bartholin,** the vulvo-vaginal gland. **Montgomery's Gs.,** sebaceous glands of the mammary areola. **Uterine Gs.,** tubular glands of the endometrium. **Vaginal G.,** any gland of the vaginal mucous membrane. **Vulvo-vaginal G.,** a minute gland on either side of the vagina, with a duct opening near the nymphæ.

Goiter, Goitre (goi'ter). Enlargement of the thyroid body, causing a swelling in the front part of the neck; bronchocele.

Gonococcus (gon-o-kok'kus). A bacterial coccus, the specific agent of gonorrhea; the micrococcus gonorrhœa.

Gonorrhea, Gonorrhœa (gon-or-re'ah). A contagious catarrhal inflammation of the genital mucous membrane, mainly propagated by impure coitus, and due to a specific microörganism, the gonococcus of Neisser.

Graafian Follicle, Vesicles, etc. (graf'fe-an). See Follicle, Vesicle, etc.

Gutta. A minute spherical mass of liquid: assumed to be equal to a minim (q. v.). **G.-Percha,** the concrete juice of Isonan'dra gut'ta, a tree of Sumatra, etc., much used in surgery, etc. **G. Rosa'cea.** Same as acne rosacea. **G. Sere'na,** amaurosis.

Gynæcology (jin-e-kol'o-je). See Gynecology.

Gynecologic, Gynecological (jin-e-ko-lo'jik, jin-e-ko-loj'ik-al). Pertaining to gynecology.

Gynecologist (jin-e-kol'o-jist). A person skilled in gynecology.

Gynecology (jin-e-kol'o-je). That branch of medicine which treats of women's constitution and diseases.

H

Hematoma (hem-at-o'mah). A tumor containing effused blood. **Pelvic H.,** an effusion of blood into the pelvic cellular tissue. **Retro-uterine H.,** an effusion of blood into the connective tissue behind the uterus.

Hematometra (hem-at-o-me'trah). An accumulation of blood in the uterus.

Hemorrhage, Hæmorrhage (hem'or-rej). A copious escape of blood from the vessels; bleeding. **Accidental H.,** hemorrhage during pregnancy, due to premature detachment of the placenta. **Arterial H.,** the escape of blood from an artery or a ruptured aneurism. **Unavoidable H.,** that which results from the detachment of a placenta previa.

Hemorrhoid (hem'or-roid). A pile, or vascular tumor of the rectal mucous membrane. **External Hs.,** hemorrhoids situated outside the sphincter ani. **Internal Hs.,** hemorrhoids situated within the sphincter ani.

Hemorrhoidal (hem-or-roid'al). Pertaining to, or of the nature of, hemorrhoids.

Hemosalpinx (hem-o-sal'pinx). Dilatation of an oviduct with blood.

Hemostat (hem'o-stat). (1) An apparatus or a medicine for checking hemorrhage. (2) A proprietary remedy for nose-bleed, containing tannin, quinine sulphate, lard, and benzoic acid; used externally.

Hernia (her'ne-ah). The protrusion of a loop or knuckle of an organ or tissue through an abnormal opening.

Hyalin (hi'al-in). (1) A translucent albuminoid substance, one of the products of amyloid degeneration. (2) A substance composing the walls of hydatid cysts.

Hyaline (hi'al-in). Pellucid or glassy, and transparent or nearly so.

Hydragogue (hi'drag-og). (1) Producing watery discharges, especially from the bowels. (2) A cathartic which causes watery purgation.

Hydramnion, Hydramnios (hi-dram'ne-on, hi-dram'ne-os). Dropsy of the amnion; excess of the amniotic fluid.

Hydrocephalus (hi-dro-sef'al-us). A fluid effusion within the cranium. The disease is marked by enlargement of the head, with prominence of the forehead, atrophy of the brain, mental weakness, and convulsions.

Hymen (hi'men). The membranous fold which partially or wholly occludes the external orifice of the vagina, at least during virginity. **H. Bifenestratus, H. Biforis,** a hymen with two openings side by side and a board septum between them. **Cribriform H.,** a hymen in which the opening is filled by a membrane pierced by many small perforations. **Denticular H.,** a hymen with an opening which has serrate edges. **Imperforate H.,** one which completely closes the vaginal orifice. **Sculptured H.,** a hymen showing an irregularly curved edge, as if carved out of a thickened tissue. **H. Septus,** a form of hymen in which the opening is divided by a narrow septum. **H. Subseptus,** a form of hymen in which the opening is partially filled by a septum growing out of one wall but not reaching the other.

Hymenal (hi'men-al). Pertaining to the hymen.

Hymenitis (hi-men-i'tis). Inflammation of the hymen.

Hymenotomy (hi-men-ot'o-me). (1) The surgical incision of the hymen. (2) The anatomy and dissection of membranes.

Hypercyesis (hi"per-si-e'sis). Superfetation.

Hyperemesis, Hyperæmia (hi-per-e'me-ah). Excessive vomiting.

Hyperencephalus (hi"per-en-sef'al-us). A monster-fetus with the brain exposed.

Hyperpyretic (hi"per-pi-ret'ik). Excessively feverish.

Hyperpyrexia (hi"per-pi-reks'e-ah). A high degree of fever.

Hypo-. A prefix denoting a lack or deficiency; also a position under or beneath.

Hypoblast (hi'po-blast). The innermost of the layers of the blastoderm, or primitive embryo; the endoderm. From it are developed the epithelium of the alimentary canal and of the organs connected with it, and that of the air-passages.

Hypoblastic (hi-po-blas'tik). Pertaining to the hypoblast.

Hypochondria (hi-po-kon'dre-ah). (1) Plural of hypochondrium. (2) Same as Hypochondriasis.

Hypochondriasis (hi"po-kon-dri'as-is). Morbid anxiety about the health, often associated with a simulated disease.

Hypochondrium (hi-po-kon'dre-um). The upper lateral region of the abdomen next below the lowest rib.

Hysterectomy (his-ter-ek'to-me). The operation of excising the uterus, performed either through the abdominal wall **(Abdominal H.)** or through the vagina **(Vaginal H.)**.

Hystereurynter (his-ter-u-rin'ter). An instrument for dilating the uterus: a metreurynter.

I

Icterus (ik'ter-us). See Jaundice. **I. Neonatorum,** the jaundice sometimes seen in newborn children.

Implantation. (1) The transfer of parts, as of sound teeth. (2) Grafting, as of the skin, nerves, or tendons. (3) The introduction of a solid medicine beneath the skin.

Impotence, Impotency (im'po-tens, im'po-ten-se). Lack of power; chiefly of reproductive power or virility.

Impregnate (im-preg'nāt). (1) To render pregnant. (2) To saturate or charge with.

Impregnation (im-preg-na'shun). (1) The act of fecundation, or of rendering pregnant. (2) The process or act of saturation; a saturated condition.

Inanition (in-an-ish'un). Wasting of the body from lack of food.

Incubation. The period between the implanting of an infectious disease and its manifestation.

Incubator (in'ku-ba-tor). An apparatus for rearing prematurely born children; a couveuse.

Infant. A babe or young child.

Infanticide (in-fan'tis'id). The murder or the murderer of an infant.

Infantile. Pertaining to an infant or to infancy.

Infantilism (in-fan'til-izm). Marked retardation of mental and physical development.

Infirmary (in-fir'ma-re). A hospital or institution where sick or infirm persons are maintained or treated.

Instrument. Any mechanical tool, appliance, or apparatus.

Instrumental. Pertaining to or performed by instruments.

Introitus (in-tro'it-us). The entrance to any cavity or space. **I. Vagi'næ,** the entrance to the vagina.

Involuntary (in-vol'un-ta-re). Performed independently of the will.

Involution (in-vo-lu'shun). (1) A rolling or turning inward. (2) The return of the uterus to its normal size after parturition. (3) A retrograde change; the reverse of evolution.

Ischiopubic (is"ke-o-pu'bik). Pertaining to the ischium and pubes.

Ischiopubiotomy (is"ke-o-pu-be-ot'e-me). Obstetric division of the ischiopubic and horizontal branches of the os pubis.

Ischiorectal (is"ke-o-rek'tal). Pertaining to the ischium and rectum.

Ischiosacral (is"ke-o-sa'kral). Pertaining to the ischium and sacrum.

Ischiovaginal (is"ke-o-vaj'in-al). Pertaining to the ischium and vagina.

Ischium (is'ke-um). The lower dorsal part of the innominate bone.

Isthmus (isth'mus, ist'mus, is'mus). A narrow strip of tissue or a narrow passage connecting two larger parts.

J

Jaundice (jawn'dis). Yellowness of the skin, eyes, and secretions, due to the presence of bile-pigments in the blood.

Jelly. A soft substance which is coherent, tremulous, and more or less translucent. **J. of Wharton,** the soft, pulpy connective tissue that constitutes the covering of the umbilical vessels.

Junket. Curds and whey, used as food.

Justo Major (jus'to ma'jor). Larger than is normal or usual. **J. Minor,** smaller than is normal or usual.

K

Kasagra (kas-ag'rah). A proprietary aromatic fluid extract of cascara sagrada.

Kyestein (ki-es'te-in). A film sometimes seen on stale urine, formerly believed to be a sign of pregnancy.

L

Labium (la′be-um). A lip or lip-shaped organ. **L. Majus**, the hairy fold of the skin on either side of the slit of the vulva. **L. Minus**, the fold of mucous membrane within the labia majora; the nympha.

Labor. Childbirth; the bringing forth of a child. **Artificial L.**, that which is facilitated or induced by mechanic or other extraneous means. **Atonic L.**, that which is protracted by atony of the uterus. **Complicated L.**, that in which there occurs a hemorrhage, eclampsia, or some other untoward event. **Dry L.**, one in which the liquor amnii escapes before the beginning of the pains. **False L.**, one in which no progress toward delivery is made. **Induced L.**, labor brought on by artificial means. **Instrumental L.**, that which is facilitated by the use of instruments. **Metastatic L.**, labor in which the contractions occur in some other part than the uterus. **Missed L.**, retention of the dead fetus in utero beyond the period of normal gestation. **Multiple L.**, labor with two or more fetuses present. **Obstructed L.**, that in which there is some mechanical hindrance, as from a tumor or a contracted parturient canal. **Perverse L.**, that in which the child occupies an abnormal position. **Postponed L.**, that which takes place later than the normal limit. **Powerless L.**, that in which there is atony of the uterus. **Precipitate L.**, that which is accomplished with undue celerity. **Premature L.**, labor taking place before the normal period. **Protracted L.**, one which is prolonged beyond the ordinary limit. **Spontaneous L.**, one that requires no artificial aid. **Tedious L.**, parturition that is abnormally protracted. **Twin L.**, tedious labor due to the presence of two fetuses.

Laceration (las-er-a′shun). (1) The act of tearing. (2) A wound made by tearing.

Lactagogue (lak′tag-og). See Galactagogue.

Lactalbumen (lak-tal-bu′min). An albumen found in milk and resembling serum-albumen.

Lactation (lak-ta′shun). (1) The secretion of milk. (2) The period of the secretion of milk. (3) Suckling.

Lacteal (lak′te-al). (1) Pertaining to milk. (2) Any one of the intestinal lymphatics that take up chyle.

Lactiferous (lak-tif′er-us). Producing or conveying milk.

Lactone (lak′tōn). (1) An aromatic fluid ($C_{10}H_8O_4$) prepared by distillation from lactic acid. (2) Tablets containing lactic acid bacteria, used in preparing buttermilk.

Lactose (lak′tōs). Milk-sugar ($C_{12}H_{22}O_{11} + H_2O$), a white crystalline sugar found in milk. It is soluble in water, and is used mainly as a vehicle for medicines.

Lambda (lam′dah). The point at the site of the posterior fontanelle where the lambdoid and sagittal sutures meet.

Lambdoid (lam′doid). Shaped somewhat like the Greek letter Λ or λ.

Lanolin (lan′o-lin). Adeps lanæ hydrosus, or rectified wool-fat: used as an excipient for remedies for external use.

Lanugo (lan-u′go). (1) The fine hair on the body of the fetus. (2) The fine downy hair found on nearly all of the body except the palms and soles.

Laparosalpingectomy (lap″ar-o-sal-pin-jek′to-me). Removal of an oviduct by abdominal section.

Laparotomize (lap-ar-ot′em-īz). To perform laparotomy upon.

Laparotomy (lap-ar-ot′o-me). Surgical incision through the flank; less correctly, abdominal section at any part.

Lavage (lah-vahzh′). The irrigation or washing out of an organ, such as the stomach or bowel.

Laxol (lax′ol). Castor oil prepared with saccharine and oil of peppermint.

Linea (lin'e-ah). The tendinous mesial line down the front of the abdomen. **L. Albican'tes,** the white abdominal lines seen during and after pregnancy; striæ.

Lithopedion (lith-o-pe'di-on). A dead fetus that has become stony or petrified.

Lochia (lo'ke-ah). The vaginal discharge that takes place during the first week or two after childbirth. **L. Al'ba,** the whitish discharge normal after about the first six days after childbirth. **L. Cru'enta, L. Ru'bra,** the reddish sanguineous flow of the first week after delivery. **L. Serosa,** a serous or ichorous lochial discharge.

Lochial (lo'ke-al). Pertaining to the lochia.

Lochiometra (lo"ke-o-me'trah). The retention or non-discharge of the lochia.

Lochiometritis (lo"ke-o-me-tri'tis). Puerperal metritis.

Lochiorrhagia (lo"ke-or-ra'je-ah). Same as Lochiorrhea.

Lochiorrhea, Lochiorrhœa (lo"ke-or-re'ah). An abnormally free lochial discharge.

L. M. A. Abbreviation for left mento-anterior position of the fetus in utero.

L. M. P. Abbreviation for left mento-posterior position of the fetus in utero.

L. O. A. Abbreviation for left occipito-anterior position of the fetus in utero.

L. O. P. Abbreviation for left occipito-posterior position of the fetus in utero.

L. S. A. Abbreviation for left sacro-anterior position of the fetus in utero.

L. S. P. Abbreviation for left sacro-posterior position of the fetus in utero.

M

Macrocephalia, Macrocephaly (mak"ro-sef-a'le-ah, mak-ro-sef'al-e). Excessive size of the head.

Macrocephalous (mak-ro-sef'al-us). Having an excessively large head.

Malpresentation (mal"prez-en-ta'shun). A faulty, abnormal, or untoward fetal presentation.

Mammary (mam'ar-e). Pertaining to the mamma.

Mammilla, Mamilla (mam il'lah). The nipple; also any nipple-like structure.

Mammillary (mam'il-la-re). Like or pertaining to a nipple.

Mania. A variety of insanity characterized by wild excitement, hallucinations, delusions, and violent tendencies; insanity with exaltation, as distinguished from melancholia, or insanity with depression. **Puerperal M.,** the insanity which sometimes follows cnildbirth.

Manikin. A model of the body, with movable members or parts, used to illustrate anatomy. **Obstetrical M.,** a model of the pelvic region to illustrate mechanism of labor.

Masseur (mahs-ser'). (1) A man who performs massage. (2) An instrument for performing massage.

Masseuse (mahs-suhz'). A woman who performs massage.

Mastadenitis (mas"tad-en-i'tis). Inflammation of the mammary gland.

Mastalgia (mas-tal'je-ah). Pain in the mammary gland.

Mastatrophia, Mastatrophy (mas-tat-ro'fe-ah, mas-tat'ro-fe). Wasting away, or atrophy, of the mammary gland.

Mastitis (mas-ti'tis). Inflammation of the breast; particularly inflammation of the mammary gland. **Interstitial M.,** inflammation of the stroma of the mammary gland. **Parenchymatous M.,** inflammation of the glandular substance of the breast. **Phlegmonous M.,** abscess of the breast.

Mastorrhagia (mas-to-ra'je-ah). Sudden hemorrhage from the mammary gland.
Maternal. Pertaining to the mother.
Maternity. (1) Motherhood. (2) A lying-in hospital.
Maturation (mat-u-ra'shun). The stage or process of becoming mature.
Mature. Ripe; fully developed.
Meconium (me-ko'ne-um). The first fecal matter discharged by the newborn. It is a dark-green substance, consisting of mucus, bile, and epithelial threads.
Membrane. A thin layer of tissue which covers a surface or divides a space or organ. **Mucous M.**, a membrane composed of epithelium upon a basement-membrane with a subcutaneous tissue, lining those canals and cavities of the body which communicate with the external air, such as the alimentary canal and its branches, the respiratory tract and its connections, and the genito-urinary tract. **Serous M.**, the lining membrane of any one of the great splanchnic or lymph-cavities.
Menopause. The period when menstruation normally ceases; the change of life.
Menses. The monthly flow of blood from the genital tract of women, attended with congestion of the genital tract and hypertrophy of the uterine mucous membrane. It attends the discharge of ova from the ovary.
Menstrual. Pertaining to the menses.
Menstruation. The monthly sanguineous discharge peculiar to women; the recurrence of the menses. It begins at the age of puberty (twelve to seventeen years) and extends to the menopause. **Climacteric M.**, the time or epoch of the last menstruation. **Vicarious M.**, a menstrual flow from some part or organ other than the vagina.
Mento-anterior (men"to-an-te're-or). Having the chin directed forward.
Mento-posterior (men"to-pos-te're-or). Having the chin directed toward the back, or turned sacrad (used of the fetus at delivery).
Mentum (men'tum). The chin.
Mesometrium (mes-o-me'tre-um). (1) The middle layer of the uterus; the myometrium. (2) The broad ligaments.
Mesorectum (mes-o-rek'tum). The mesentery of the rectum; the fold of peritoneum connecting the upper portion of the rectum with the sacrum.
Mesosalpinx (mes-o-sal'pink). The peritoneal fold that suspends the oviduct.
Metra (me'tah). The uterus or womb.
Metratome (me'trah-tom). An instrument for cutting the uterus.
Metritis (me-tri'tis). Inflammation of the womb. Several varieties are named, according to the part of the organ affected—cervical, corporeal, interstitial, and parenchymatous.
Metrocele (me'tro-sel). Hernia of the uterus.
Metrodynia (me-tro-din'e-ah). Pain in the uterus.
Metro-endometritis (me"tro-en"do-me-tri'tis). Combined inflammation of the uterus and its mucous membranes.
Metrorrhagia (me-tror-ra'je-ah). An abnormal uterine hemorrhage.
Metrorrhea (met-ror-re'ah). A free or abnormal uterine discharge.
Metrorrhexis (met-ror-rex'is). Rupture of the uterus.
Micro-. A prefix signifying small.
Microbacteria (mi-kro-bak-te're-ah). A class of bacteria practically the same as bacterium.
Microbe. Any individual microörganism; a microphyte or microzoön: chiefly used as a synonym of vegetable microörganism.
Micrococcus (mi-kro-kok'kus). (1) A minute bacterial coccus or cell form. (2) A genus of schizomycetes, the individuals of which have a spheric shape.

Microscopic, Microscopical (mi-kro-skop'ik, mi"kros-kop'ik-al). Pertaining to or visible only by the aid of the microscope.

Micturition (mik-tu-rish'un). The passage of urine.

Migration. (1) An apparently spontaneous change of place. (2) The movement of leucocytes through the walls of the vessels. **M. of the Ovum,** the passage of the ovum from the ovary.

Milk. The fluid secretion of the mammary gland forming the first food of young animals. **Adapted M.,** milk specially modified so as to adapt it to the child's digestive capacity. **After-M.,** the stripping, or last milk taken at any one milking. **Butter-M.,** milk from which the butter fat has been removed by churning. **Condensed M.,** milk which has been partly evaporated; usually sweetened with sugar for preservation. **Diabetic M.,** milk containing a small percentage of lactose. **Fore-M.** (1) The first milk that is taken at any milking. (2) Same as Colostrum. **Modified M.,** milk in which the percentage of fat, proteid and sugar content has been changed to meet the requirement of the individual child: used for infant feeding. **Yoghurt M.,** a form of sour milk used in Bulgaria and containing lactic acid bacilli, the most important of which is the Bacillus Bulgaricus. It is used in fermentive conditions of the digestive tract. **M. Leg,** see Phlegmasia.

Minim (min'im). One-sixtieth part of a fluiddram; often used as a synonym of drop.

Misce (mis'se). Latin for mix.

Molimen (mo-li'men). A natural and normal effort made for the performance of any function; especially the monthly effort to establish the menstrual flow: the **Menstrual M.**

Monocephalus (mon-o-sef'al-us). A monster-fetus with two bodies and one head.

Montgomery's Glands. See Gland.

Morbid. Pertaining to or affected with disease; diseased.

Morbidity. (1) The condition of being diseased or morbid. (2) The sick-rate, or proportion of disease to health, in a community.

Mortal. Subject to death, or destined to die. (2) Fatal; causing or terminating in death.

Mortality. (1) The quality of being mortal. (2) The death-rate.

Morula (mor'u-lah). The segmented ovum in the mulberry stage, forming a solid mass of cells.

Morulation (mor-u-la'shun). The process of formation of the morula.

Mother. The female parent.

Multigravida (mul-te-grav'id-ah). A woman who has often been pregnant.

Multipara (mul-tip'ar-ah). A woman who has borne several children.

Multiparity (mul-tip-ar'it-e). The condition of being a multipara.

Multiparous (mul-tip'ar-us). Having given birth to several children.

Muscle. An organ which by contraction produces the movements of an animal organism. Muscles are of a compound fibrous tissue, chemically characterized by the presence of syntonin, or muscular fibrin, and endowed with the property of contractility. They are of two varieties: striated or striped, including all the muscles in which contraction is voluntary, and the heart-muscle; unstriated, smooth, or organic, including all the involuntary muscles except the heart, such as the muscular layer of the intestines, bladder, blood-vessels, etc.

N

Nabothian (na-bo'the-an). Described by or named in honor of Martin Naboth. See under Follicle.

Nates (na'tez). The buttocks.

Nausea (naw'se-ah). Tendency to vomit; sickness at the stomach.

Navel. The umbilicus. **N.-Ill.**, see Omphalophlebitis, 2d def. **N.-String,** the umbilical cord.
Navicular (na-vik'u-lar). (1) Boat-shaped. (2) The scaphoid bone of the tarsus. **Fossa Navicularis,** boat-shaped depression at junction of labia majora and minora posteriorly.
Necropsy (nek'rop-se). A postmortem examination; autopsy.
Necroscopy (ne-kros'ko-pe). A postmortem examination.
Nephritis (nef-ri'tis). Inflammation of the kidney.
Nervous. (1) Pertaining to a nerve or to nerves. (2) Unduly excitable.
Nervousness. Morbid or undue excitability; a state of excessive irritability, with great mental and physical unrest.
Nonigravida (no-ne-grav'id-ah). A woman pregnant for the ninth time.
Nonipara (no-nip'ar-ah). A woman who has borne nine children.
Non-viable (non-vi'ab-l). Not capable of living; used of the fetus after delivery.
Nosencephalus (no-sen-sef'al-us). A fetus with a defective cranium and brain.
Notencephalocele (no"ten-se-fal'os-ēl). Hernial protrusion of the brain from the back of the head.
Nucleolus (nu-kle'o-lus). A nucleus-like body within the nucleus of a cell. **Secondary N.,** a mass sometimes seen near a nucleolus, and looking like a separated portion of the latter.
Nucleus (nu'kle-us). (1) A spheroid body within a cell, forming the essential and vital part. It is distinguished from the rest of the cell by its denser structure and by containing nuclein. It is made up of a network of threads (chromatin) contained in a clear liquid (achromatin).
Nullipara (nul-lip'ar-ah). A woman who has never borne a child.
Nulliparity (nul-lip-ar'it-e). The condition or fact of being nulliparous.
Nulliparous (nul-lip'ar-us). Having never given birth to a child.
Nutrient. Nourishing; affording nutriment.
Nutrition. (1) The process of assimilating food. (2) Nutriment.

O

Oblique. Slanting; inclined; between a horizontal and perpendicular direction.
Obstetric, Obstetrical (ob-stet'rik, ob-stet'rik-cal). Pertaining to midwifery.
Obstetrician (ob-stet-rish'un). One who practices obstetrics.
Obstetrics (ob-stet'riks). The art of managing childbirth cases; that branch of surgery which deals with the management of pregnancy and labor.
Obstipation (ob-stip-a'shun). Intractable constipation.
Occipital (ok-sip'it-al). Pertaining to the occiput.
Occipito-anterior (ok-sip"it-o-an-te're-or). Having the occiput directed ventrad (used of the fetus at the time of labor).
Occipitobregmatic (ok-sip"it-o-breg-mat'ik). Pertaining to the occiput and the bregma.
Occipitofrontal (ok-sip"it-o-fron'tal). Pertaining to the occiput and the forehead.
Occipitoparietal (ok-sip"it-o-par-i'et-al). Pertaining to the occipital bones or lobes.
Occipitoposterior (ok-sip"it-o-pos-te're-or). Having the occiput directed dorsad (used of the fetus in labor).
O. L. P. An abbreviation for occipito-larvo posterior, or the left occipitoposterior position of the fetal head in labor.
Omphalic (om-fal'ik). Pertaining to the umbilicus.
Omphalitis (om-fal-i'tus). Inflammation of the navel.
Omphalocele (om-fal'o-sel). An umbilical hernia.

Omphalomesenteric (om"fal-o-mes-en-ter'ik). Pertaining to the navel and mesentery.

Omphalophlebitis (om"fah-lo-fle-bi'tis). (1) Inflammation of the umbilical veins. (2) Navel-ill; a condition of markedly suppurative lesions in young animals due to infection through the umbilicus.

Omphalotomy (om-fal-ot'o-me). The cutting of the navel-string.

Oöblast (o'o-blast). The cell whence the ovum is developed.

Oöcyesis (o"o-si-e'sis). Ovarian pregnancy.

Oögenesis (o-o-jen'is-is). The origin and development of the ovum.

Oöphoron (o-of'o-ron). An ovary.

Oösperm (o'os-perm). The recently fertilized ovum.

Ophthalmia (of-thal'me-ah). Severe inflammation of the eye or of the conjunctiva. **O. Neonato'rum,** purulent blennorrhea of the newborn.

Os. O. Exter'num, the orifice of the vagina, **O. U'teri Exter'num, O. Tin'cæ,** the lower or distal extremity of the canal of the cervix uteri. **O. U'teri Inter'num,** the internal or upper orifice of the canal of the cervix uteri.

Oviduct (o've-dukt). The duct passing from either uterine cornu to the ovary, and serving to convey the ovum from the ovary to the uterus and spermatozoa to the ovary; a Fallopian tube.

Oviferous (o-vif'er-us). Producing ova.

Ovification (o"vif-ik-a'shun). The formation of the ovum in the ovary; ovulation.

Ovisac (o'vis-ak). A Graafian vesicle; the structure which holds an ovum while still within the ovary.

Ovule (o'vūl). (1) The ovum within the Graafian vesicle. (2) Any small egg-like structure. **O. of DeGraaf,** a Graafian vesicle. **Naboth's Os.,** glandules or follicles within the os uteri and cervical canal, often distended with mucus. **Primitive O., Primordial O.,** a rudimentary ovum within the ovary.

Ovum. (1) An egg. (2) The female reproductive cell which, after fertilization, develops into a new member of the same species. The human ovum is a round cell, about 1-120 of an inch in diameter. It consists of protoplasm (vitellus, or yolk) enclosed by a cell-wall, which consists of two layers, an inner one (zona pellucida, zona radiata) and an outer, thin one (vitelline membrane). There is a large nucleus (germinal vesicle), within which is a nucleolus (germinal spot).

P

Packing. (1) The act of filling a wound or cavity with gauze, sponge, or other material. (2) The substance used for filling a cavity. (3) Treatment with the pack.

Pain. (1) Distress or suffering. (2) A rhythmic contraction of the uterus in labor. **After-Ps.,** the expulsive contractions of the uterus which follow childbirth. **Bearing-down P.,** a variety of pain in the female reproductive organs occurring in various local diseases or in childbirth. **Dilating-Ps.,** those of the first stage of labor. **Expulsive Ps.,** those of the second and final stages of labor. **False Ps.,** ineffective pains which resemble labor-pains, but which do not indicate the beginning of real labor; they usually occur about the eighth month of gestation. **Premonitory Ps.,** ineffective uterine contractions before the beginning of true labor.

Palpation (pal-pa'shun). The act of feeling with the hand; the application of the fingers with light pressure to the surface of the body for the purpose of determining the consistence of the parts beneath in physical diagnosis. **Bimanual P.,** examination with both hands.

Palsy (pawl'ze). See Paralysis. **Bell's P.,** facial paralysis. **Birth-P.,** palsy due to injury received at birth.

Paracyesis (par"ah-si-e'sis). Extra-uterine pregnancy.

Paramastitis (par"ah-mas-ti'tis). Inflammation of the tissues around the mammary gland.

Parenchyma (par-en'kim-ah). The essential or functional elements of an organ as distinguished from its stroma, or framework.

Pareunia (par-u'ne-ah). Coitus; sexual intercourse.

Parthenogenesis (par"then-o-jen'es-is). Asexual, or virginal reproduction.

Parturient (par-tu're-ent). (1) Giving birth. (2) Pertaining to childbirth.

Parturifacient (par"tu-re-fa'shent). (1) Inducing or facilitating childbirth. (2) A medicine that induces or facilitates childbirth.

Parturiometer (par"tu-re-om'et-er). A device used in measuring the expulsive power of the uterus.

Parturition (par-tu-rish'un). The act or process of giving birth to a child.

Pasteurization (pas"tur-iz-a'shun). The arrest or checking of fermentation by heating to 170° F.

Pasteurizer (pas'tu-ri-zer). An instrument used in effecting pasteurization.

Pediatrics (pe-de-at'riks). That branch of medicine which treats of the diseases of children and their treatment.

Pelvimeter (pel-vim'e-ter). An instrument for measuring the diameters and capacity of the pelvis.

Pelvimetry (pel-vim'et-re). The measurement of the dimensions and capacity of the pelvis. **Combined P.**, pelvimetry in which measurements are made both within and outside the body. **Digital P.**, pelvimetry performed with the hands. **Instrumental P.**, measurement of the pelvis with the pelvimeter. **Internal P.**, that in which the measurements are made within the vagina. **Manual P.**, that which is performed with the hands.

Pelvis. (1) Any basin-like structure, as the sac in the kidney of which the ureter is the outlet. (2) The basin-shaped ring of bone at the posterior extremity of the trunk, supporting the spinal column and resting upon the lower extremities. It is composed of the two innominate bones at the sides and in front, and the sacrum and coccyx behind. It is divided by the ilio-pectineal line into the false pelvis above and the true pelvis below. The upper extremity of the pelvic canal is known as the inlet, brim, or superior strait of the pelvis. The true pelvis is limited below by the inferior strait or outlet, formed by the coccyx, the symphysis pubis, and the ischium of either side. The outlet of the pelvis is closed by the coccygeus, levator ani, and perineal fascia, which form the floor of the pelvis. The inlet and outlet of the pelvis have each three diameters—an anteroposterior, a conjugate, and an oblique. **Brim of the P.**, the upper entrance to the intrapelvic space; the inlet, isthmus, margin, or superior strait. **False P.**, the part above the ilio-pectineal line. **Planes of the P.**, two imaginary surfaces which touch all points of the pelvic circumference, caled respectively the plane of pelvic expansion and plane of pelvic contraction. **True P.**, the part below the ilio-pectineal line.

Perineum (per-e-ne'um). The space or area between the anus and the genital organs.

Peristalsis (per-is-tal'sis). The worm-like movement by which the alimentary canal propels its contents. It consists of a wave of contraction passing along the tube.

Peritoneum (per"it-o-ne'um). The serous membrane which lines the abdominal walls **(Parietal P.)** and invests the contained viscera. It is a strong, colorless membrane with a smooth surface, and forms a closed sac except in the female, in whom it is continuous with the mucous membrane of the Fallopian tubes.

Peritonitis (per"it-o-ni'tis). Inflammation of the peritoneum; a condition marked by exudations in the peritoneum of serum, fibrin and cells, and pus.

Pessary (pes'ser-e). An instrument placed in the vagina to support the uterus or rectum.

Phlebitis (fle-bi'tis). Inflammation of a vein.

Phlegmasia (fleg-ma'zhe-ah). Inflammation or fever. **P. Al'ba Do'lens, P. Do'lens,** phlebitis of the femoral vein occasionally following parturition and typhoid fever. It is characterized by swelling of the leg, usually without redness. Called also Leucophlegmasia, Milk-leg, and White Leg.

Phygogalactic (fi"go-gal-ak'tik). Checking the secretion of milk; galactophygous.

Pica (pi'kah). A craving for unnatural articles of food; a depraved appetite. It is seen in hysteria and chlorosis and in pregnancy.

Placenta (pla-sen'tah). (1) Any cakelike mass. (2) The round, flat organ within the uterus which establishes communication between the mother and child by means of the umbilical cord. The placenta is a circular mass about seven inches in diameter, about one inch in thickness, and weighing about sixteen ounces. It consists of an interior or fetal portion, which is a smooth, shining membrane continuous with the sheath of the cord (amnion), the cord being attached to this side, and an external or maternal portion, which is of a dark red hue, divided by deep sulci into lobes of irregular outline and extent (the cotyledons), which project into depressions in the mucous membrane of the uterus. **Adherent P.,** one which adheres abnormally to the uterine wall after childbirth. **Annular P.,** one which extends around the interior of the uterus like a ring or belt. **Battledore P.,** one with a marginal attachment of the cord. **Bilobed P., Duplex P.,** one made up of two parts or lobes. **P. Circumvalla'ta,** a cup-shaped placenta. **Cirsoid P.,** one the vessels of which appear to be varicose. **Duplex P.,** one made up of two parts or lobes. **P. Fenestra'ta,** one which has spots where the placental tissue is lacking. **Fetal P.,** that part of the placenta which comes next to the fetus. **Fundal P.,** one which is attached to the fundus in the normal manner. **Horseshoe P.,** a crescentic form of placenta sometimes occurring in twin pregnancy. **Incarcerated P.,** a placenta retained by irregular uterine contractions. **P. Margina'ta,** a placenta which is surrounded by an unusual margin of elevated placental tissue. **Maternal P.,** that part of the placenta which comes next to the uterine wall: rarely adherent when the rest of the placenta is expelled. **P. Membrana'cea,** an abnormally thin form of placenta. **P. Pre'via,** a placenta which is attached below the dilating zone of the uterus. It may lead to fatal hemorrhage. **Retained P.,** a placenta usually either adherent or incarcerated by irregular uterine contractions, and which in consequence fails to be expelled after childbirth. **P. Spu'ria,** a placental exclave which does not take part in the nourishment of the fetus. **Stone P.,** a placenta which contains calcareous or sabulous deposits of greater or less extent. **Succenturiate P.,** an accessory or subsidiary placenta connected to the main placenta by the vessels. **P. Triparti'ta,** a triple or triply divided placenta. **Velamentous P.,** one in which the umbilical cord is attached by the vessels separately.

Placental (pla-sen'tal). Pertaining to the placenta.

Placentation (plas-en-ta'shun). The manner of formation and attachment of the placenta.

Placentitis (plas-en-ti'tis). Inflammation of the placenta.

Pluripara (plu-rip'ah-rah). A woman who has borne several children.

Pluriparity (plu-rip-ar'it-e). The fact or condition of having borne several children.

Position. (1) The attitude or posture of a patient. (2) The relation certain fixed points on the presenting part bear to fixed points on the mother's pelvis. The former are the vertex, mentum, and sacrum, the latter the ends of the oblique diameters. **First P.**, in vertex presentation, the occiput pointing in the left foramen ovale. Called also left occipito-cotyloid position. **Fourth P.**, the occiput pointing in the left sacro-iliac synchondrosis. Called also left occipito-sacro-iliac position. **Genupectoral P.**, **Knee-chest P.**, the patient resting on her knees and chest, the arms crossed above the head. **Lithotomy P.**, the patient on the back, legs flexed on the thighs, thighs flexed on the belly, and abducted. Called also dorsosacral position. **Second P.**, the occiput pointing in the right foramen ovale. Called also right occipito-cotyloid position. **Sims' P.**, patient on the left side and the chest, the right knee and thigh drawn up, the left arm along the back. Called also semiprone position. **Third P.**, in vertex presentation, that in which the occiput presents at the right sacroiliac synchondrosis. Called also right sacroiliac position. **Trendelenburg's P.**, the patient on the back on a plane inclined 45°, the legs and feet hanging over the end of the table. **Walcher's P.**, the patient on the back, with the hips at the edge of the table and the legs hanging down.

Postpartum (pōst-par'tum). Occurring after delivery, or childbirth.

Postural (pos'tu-ral). Pertaining to posture, or position.

Posture. Attitude or position. See under Position.

Postuterine (post-u'ter-in). Situated or occurring behind the uterus.

Pregnancy. The condition of being with child; gestation. In woman the duration of pregnancy is about 280 days, nine calendar or ten lunar months. **Abdominal P.**, lodgment of the ovum within the abdominal cavity. **Broad Ligament P.**, pregnancy taking place within the broad ligament. **Cervical P.**, the development of the ovum within the cervical canal. **Cornual P.**, pregnancy in one of the horns of a bicornute uterus. **Ectopic P.**, same as Extra-uterine Pregnancy. **Entopic P.**, normal uterine pregnancy. **Extra-uterine P.**, development of the ovum outside of the walls of the uterus. **Fallopian P.**, same as Tubal Pregnancy. **False P.**, apparent, but not real, pregnancy. **Interstitial P.**, gestation in that part of the oviduct which is within the wall of the uterus. **Mesometric P.**, a kind of tubal pregnancy in which the tube has ruptured and the embryo occupies a sac formed partly by the expanded tube and partly by the layers of the peritoneum forming the mesometrium. **Molar P.**, conversion of the ovum into a mole. **Multiple P.**, the presence of more than one ovum in the uterus at the same time. **Ovarian P.**, pregnancy occurring within an ovary. **Phantom P.**, an abdominal enlargement in hysterical women simulating pregnancy. **Plural P.**, pregnancy with more than one fetus. **Twin P.**, gestation with twins. **Unconscious P.**, pregnancy of which the woman is unaware. **Utero-abdominal P.**, pregnancy with one fetus in the uterus and another in the ovary. **Utero-tubal P.**, gestation partly within the uterus and partly in an oviduct.

Pregnant. With child; gravid.

Prenatal (pre-na'tal). Existing or occurring before birth.

Prepotency (pre-po'ten-cy). Power superior to that of the other parent in transmitting inheritable characters to the offspring.

Prepotent (pre-po'tent). Having superior force; having greater power than the other parent in transmitting inheritable characters to the offspring.

Prepuce (pre'pus). The fold of skin covering the glans penis; the foreskin. **P. of the Clitoris**, a fold formed by the labia minora covering the clitoris.

Preputial (pre-pu'shal). Pertaining to the prepuce.

Presentation. (1) The appearance in labor of some particular part of the fetal body at the os uteri. (2) That part of the fetal body which first shows itself at the os in labor. **Arm P.**, prolapse of the arms of the fetus; generally seen in shoulder-presentation. **Breast P.**, the presentation of the anterior part of the chest in labor. **Breech P.**, the presentation of the fetal buttock in labor. **Brow P.**, the presentation of the brow in labor. **Cephalic P.**, the presentation of any part of the head, including the vertex-presentation and face-presentation. **Face P.**, the presentation of the face of the fetus in childbirth. **Foot P.**, **Footling P.**, the presentation of the feet in labor. **Funis P.**, the presentation of the umbilical cord in labor. **Head P.**, the presentation of some part of the fetal head in labor. **Longitudinal P.**, **Polar P.**, the presentation of either the cephalic or the pelvic end of the fetal ellipse. **Pelvic P.**, presentation of the lower end of the fetus, including breech presentation and foot presentation. **Placental P.**, same as Placenta Previa. **Transverse P.**, **Trunk P.**, presentation in which the axis of the fetal trunk lies crosswise or transversely; cross-birth. **Vertex P.**, the presentation of the upper and back part of the fetal head in labor.

Primigravida (prīm-ig-rav'id-ah). A woman who is pregnant for the first time.

Primipara (pri-mip'ar-rah). A woman who has given birth, or is giving birth, to her first child.

Primiparity (pri-mip-ar'it-e). The condition or fact of being a primipara.

Primiparous (pri-mip'ar-us). Bearing, or having borne, but one child.

Privates. The external genitalia.

Prochorion (pro-ko're-on). (1) The thin zona pellucida of the fertilized ovum when it reaches the uterus. (2) The coating of albuminous matter which the ovum receives as it passes along the oviduct.

Procidentia (pro-sid-en'she-ah). A prolapse, or falling down.

Procreation (pro-kre-a'shun). The act of begetting.

Prognosis (prog-no'sis). A forecast as to the probable result of an attack of disease; the prospect as to recovery from a disease afforded by the nature and symptoms of the case.

Prolapse (pro'laps). The falling down, or sinking, of a part or viscus; procidentia. **P. of the Cord**, premature expulsion of the umbilical cord in labor.

Prolific. Fruitful; productive.

Proligerous (pro-lij'er-us). Producing an ovum.

Promontory. A projecting eminence or process. **P. of the Sacrum**, the upper and projecting part of the sacrum.

Pronucleus (pro-nu'kle-us). The nucleus of the egg-element (female p.) or of the sperm-element (male p.) after the coalition of the spermatozoön with the ovum.

Proto-. A prefix signifying first.

Protoblast (pro'to-blast). (1) A cell with no cell-wall. (2) The nucleus of an ovum.

Protuberance. A projecting part; an apaphysis, process, or swelling.

Pruritus (pru-ri'tus). An itching. It is a symptom of various skin-diseases, and may occur idiopathically as a neurosis.

Pseudocyesis (su"do-si-e'sis). Spurious or false pregnancy.

Puberal (pu'ber-al). Pertaining to puberty.

Puberty. The age at which the reproductive organs become functionally operative. It occurs between twelve and seventeen years of age, and is indicated in the male by change of voice and seminal discharge, and in the female by the occurrence of menstruation.

Pubes (pu'bez). (1) The hair on the external genitalia, or the region covered by it. (2) The pubic bone.

Pubescence (pu-bes'ens). (1) Puberty. (2) Downiness; lanugo.

Pubescent (pu-bes'ent). (1) Covered with down or lanugo. (2) Arriving at the age of puberty.

Pubetrotomy (pu-be-trot'o-me). Section of the os pubis and of the lower abdominal wall.

Pubic (pu'bik). Pertaining to the pubes, or os pubis.

Pubiotomy (pu-be-ot'o-me). The operation of cutting through the pubic bone, lateral to the median line.

Pubis (pu'bis). The pubic bone; os pubis, or pubes.

Pudenda (pu-den'dah). The external genital organs.

Pudendal (pu-den'dal). Pertaining to the pudenda.

Pudendum (pu-den'dum). The external genital parts, especially of the female. **P. Milieb're**, the vulva.

Pudic (pu'dik). Pertaining to the pudenda.

Puericulture (pu-er'ik-ult-ur). The art of rearing and training children.

Puerile (pu'er-il). Pertaining to childhood or to children.

Puerperal (pu-er'per-al). Pertaining to childbirth.

Puerperalism (pu-er'per-al-izm). A diseased condition incident to childbirth.

Puerperant (pu-er'per-ant). A puerperal woman.

Puerperium (pu-er-per're-um). The period or state of confinement; childbed.

Purgation (pur-ga'shun). Catharsis; purging effected by a cathartic medicine.

Purgative (pur'ga-tiv). (1) Cathartic; causing evacuations from the bowels. (2) A cathartic medicine.

Pyelitis (pi-el-i'tis). Inflammation of the pelvis of the kidney. It may be due to renal calculus, to migration of the colon bacilli direct from the bowel, or as an extension of inflammation from the bladder. It is attended by pain and tenderness in the loins, irritability of the bladder, chills, remittent fever, bloody or purulent urine, sweats, diarrhea, vomiting, and a peculiar pain on flexion of the thigh.

Pyelocystitis (pi"el-o-sis-ti'tis). Inflammation of the renal pelvis and of the bladder.

Pyemia, Pyæmia (pi-e'me-ah). Blood-poison of microbic origin; septic infection due to the absorption of pyogenic germs.

Pyuria (pi-u're-ah). The presence of pus in the urine.

Q

Quadrant (kwod'rant). (1) One-quarter of a circle; that portion of the circumference of a circle that subtends an angle of 90°. (2) Any one of four corresponding parts or quarters, as of the abdominal surface.

Quadripara (kwod-rip'ah-rah). A woman who has borne four children.

Quadriparity (kwod-rip-ar'it-e). The condition of having borne four children.

Quadriparous (kwod-rip'ar-us). Having borne four children.

Quadruplet (kwod'ru-plet). Any one of four children born at one birth.

R

Rectal (rek'tal). Pertaining to the rectum.

Rectum (rek'tum). The lower, or distal, part of the large intestine, extending from the sigmoid flexure of the colon (opposite the left sacro-iliac symphysis) to the anus, being from six to eight inches long. Its mucous membrane is gathered into transverse folds, which serve to support the feces.

Recumbent. Lying down.

Reproduction. The production of offspring by organized bodies.

Reproductive. Subserving or pertaining to the production of offspring.

Residual. Remaining or left behind.

Retractor (re-trak'tor). An instrument for drawing back the edges of a wound.

Retrocervical (re-tro-ser'vik-al). Behind the cervix uteri.

Retrodisplacement (re"tro-dis-plās'ment). A backward displacement.

Retroesophageal (re"tro-es-of-a'je-al). Situated or occurring behind the esophagus.

Retroflexed (re'tro-flext). Bent backward; in a state of retroflexion.

Retroflexion (re-tro-flex'shun). The bending of an organ so that its top is thrust back

Retromammary (re-tro-mam'ma-re). Situated or occurring behind the mammary gland.

Retroperitoneal (re"tro-per-it-o-ne'al). Situated behind the peritoneum.

Retro-uterine (re-tro-u'ter-in). Situated or occurring behind the uterus.

Retroversion (re-tro-ver'shun). The tipping of an entire organ backward.

Retroverted (re-tro-ver'ted). In a condition of retroversion.

R. M. A. An abbreviation for right mento-anterior position of the fetus.

R. M. P. An abbreviation for right mento-posterior position of the fetus.

R. O. A. An abbreviation for right occipito-anterior position of the fetus.

R. O. P. An abbreviation for right occipito-posterior position of the fetus.

R. S. A. An abbreviation for right sacro-anterior position of the fetus.

R. S. P. An abbreviation for right sacro-posterior position of the fetus.

S

Sac. Any bag-like organ. **Amniotic S.**, the bag of waters. **Embryonic S.**, the blastodermic vesicle. **Gestation S.**, the sac that encloses the embryo in ectopic pregnancy. **Yolk S.**, the umbilical vesicle.

Saccharomyces (sak-kar-om'is-sez). A genus of protophytes; the yeast-fungi. The organisms consist of oval or spheric cells, single or in chains, sometimes forming a mycelium of filaments, and increasing by spores or buds. **S. Al'bicans**, a pathogenic species causing a thrush in the mouth; in white, oval, spherical, or cylindrical cells, sometimes forming long filaments.

Sacro-uterine (sa-kro-u'ter-in). Pertaining to the sacrum and the uterus.

Sacro-vertebral (sa-kro-ver'te-bral). Pertaining to the sacrum and the vertebræ.

Sacrum (sa'krum). The triangular bone situated dorsad and caudad from the two ilia. It is formed of five united vertebræ wedged in between the two innominate bones.

Secundines (se-kun'dinz). The after-birth; the placenta and membranes expelled after childbirth.

Secundipara (se-kun-dip'ah-rah). A woman who has borne two children.

Secundiparity (se-kun-dip-ar'it-e). The condition of being a secundipara.

Secundiparous (se-kun-dip'ah-rus). Having borne a second child.

Segmentation (seg-men-ta'shun). Division into parts more or less similar, especially that which takes place in the fertilized ovum. **S. Nucleus**, the result of the fusion of the male and female pronucleus.

Semen (se'men). (1) Any seed or seed-like fruit. (2) The thick, whitish, liquid, fecundating secretion produced by the testes and ejaculated in coition. It is composed of liquor seminis (a clear, limpid fluid), holding in suspension the spermatozoa, seminal and other granules, epithelial cells, and oil-globules.

Seminal (sem'in-al). Pertaining to seed or to the semen.

Semination (sem-in-a'shun). The introduction of semen into the vagina or uterus.

Seminiferous (sem-in-if'er-us). Producing or conveying semen.

Septic (sep'tik). Produced by or due to putrefaction.

Septicemia, Septicæmia (sep-tis-e'me-ah). A morbid condition due to the presence of non-specific pathogenic bacteria and their associated poisons (toxins and toxalbumins) in the blood.

Serotina (se-rot'in-ah). Same as Decidua Serotina.

Sex. The distinctive generative character.

Sexology (sex-ol'o-je). The doctrine of the sexes and their relations.

Sextigravida (sex-tig-rav'id-ah). A woman pregnant for the sixth time.

Sextipara (sex-tip'ar-rah). A woman who has borne six children.

Sexual. Pertaining to sex.

Sexuality (sex-u-al'it-e). The characteristic quality of the male and female reproductive elements.

Sincipital (sin-sip'it-al). Pertaining to the sinciput.

Sinciput (sin'sip-ut). The anterior and upper part of the head.

Smegma (smeg'mah). A thick, cheesy, ill-smelling secretion found under the prepuce and around the labia minora. Called also Smegma Præputii. **S. Embryo'num,** the vernix caseosa.

Somatopleure (so-mat'o-plur). (1) The somatic mesoblast; the upper layer of the mesoblast adjoining the epiblast, the under one being the splanchnopleure. (2) More correctly, the layer formed by the somatic mesoblast and the epiblast.

Souffle (soof'fl). A soft, blowing, auscultatory sound. **Fetal S.,** a blowing sound sometimes heard in pregnancy, supposed to be due to compression of the umbilical vessels. **Funic S., Funicular S.,** a hissing souffle synchronous with the fetal heart-sounds, and supposed to be produced in the umbilical cord. **Placental S.,** a souffle supposed to be produced by the blood-current in the placenta. **Umbilical S.,** same as Funicular S. **Uterine S.,** a sound made by the blood within the arteries of the gravid uterus.

Sperm. The semen, or testicular secretion. **S. Cell,** a spermatozoön; more correctly, a spermatid. **S. Nucleus,** the nucleus of a spermatozoön; more especially after it has entered the egg and before its union with the nucleus of the ovum.

Spermatic (sper-mat'ik). Pertaining to the semen; seminal.

Spermatid (sper'mat-id). A cell derived from a secondary spermatocyte by fission and developing into a spermatozoön. Called also Spermatoblast.

Spermatin (sper'mat-in). An albuminoid substance derived from semen. It is related to mucin and to alkali-albumen.

Spermatism (sper'mat-izm). The production or discharge of semen.

Spermatogenesis (sper"mat-o-jen'es-is). The development of the spermatozoön.

Spermatogenic (sper"mat-o-jen'ik). Producing semen, or spermatozoa.

Spermatozoid (sper'mat-o-zoid). Same as Spermatozoön.

Spermatozoön (sper"mat-o-zo'on). The motile generative element of the semen which serves to impregnate the ovum. It consists of a head, or nucleus, a middle piece, and a flagellum, or tail.

Splanchnopleure (splank'no-plur). (1) The inner layer of the mesoblast, separated from the somatopleure by the pleuroperitoneal space. Called also Splanchnic Mesoblast and Visceral Mesoblast. (2) The layer formed by the union of the splanchnopleure (1st def.) with the hypoblast. From it are developed the muscles and the connective tissue of the intestines.

Spotting. A slight menstrual show upon a woman's napkin.

Staphylococcus (staf"il-o-kok'kus). A genus or form of bacteria made up of cocci aggregated into irregular masses.

Sterile. (1) Not fertile; infertile; barren; not producing young. (2) Aseptic; not producing microörganisms; free from microörganisms.

Sterility. Barrenness; inability to produce young.

Sterilization. The act or process of rendering sterile; the process of freeing from all germs. It is usually performed by means of heat. Sterilization differs from disinfection in that it calls for the destruction of all bacterial life, while disinfection is not necessarily the destruction of all bacteria, but only those that are infectious.

Stillbirth. The birth of a dead fetus.

Strait. Either opening, superior or inferior, of the pelvis.

Streptococcus (strep-to-kok'kus). A genus or form of bacterial organisms made up of cocci arranged in wreath-like shapes; by some regarded as a sub-genus of micrococcus.

Stria (stri'ah). A streak or line. **S. Gravida'rum,** the striæ seen upon the abdomen of pregnant women. **Striæ atrophicæ,** same as Linea Albicantes.

Striation (stri-a'shun). (1) The quality of being streaked. (2) A streak or scratch; also a series of streaks or scratches.

Sudamina (su-dam'in-ah). Whitish vesicles caused by the retention of sweat in the sudorific ducts or the layers of the epidermis. The vesicles are about the size of millet-seeds, and the eruption occurs after profuse sweating, or in certain febrile diseases.

Superfecundation (su"per-fe-kun-da'shun). The successive fecundation of two ova formed at the same menstrual period.

Superfetation (su"per-fe-ta'shun). The fertilization in the same uterus of two ova formed at different menstrual periods; the fecundation of a woman already pregnant.

Superimpregnation (su"per-im-preg-na'shun). (1) Superfecundation. (2) Superfetation.

Superinvolution (su"per-in-vo-lu'shun). Hyperinvolution; excessive involution by which the uterus after childbirth is reduced to less than its normal size.

Suppression. The sudden stoppage of a secretion, excretion, or normal discharge.

Suppuration. The formation of pus; the act of becoming converted into the discharging pus.

Supravaginal (su-prah-vaj'in-al). Situated above or outside of a sheath.

Symphyseotomy, Symphysiotomy (sim-fiz-e-ot'o-me). The division of the fibro-cartilage of the symphysis pubis, in order to facilitate delivery by increasing the antero-posterior diameter of the pelvis.

Synciput (sin'sip-ut). Same as Sinciput.

T

Tampon (tam'pon). A plug made of cotton, sponge, or oakum; variously used in surgery to plug the nose, vagina, etc., for the control of hemorrhage or the absorption of secretions.

Tamponade (tam-pon-ād'). The surgical use of the tampon.

Tamponment (tam-pon'ment). The act of plugging with a tampon.

Technique (tek'nēk). The method of procedure and the details of any mechanical process or surgical operation.

Teeth. The organs of mastication. **Deciduous T., Milk T., Temporary T.,** the teeth of the first dentition.

Teething. The cutting of the teeth; dentition. See under Tooth.

Temperature. The degree of sensible heat or cold. **Absolute T.,** that which is reckoned from the absolute zero of −273° C. **Body T.,** the temperature of the body. **T.-Curve,** a curved or broken line exhibiting the variations of the bodily temperature in a given period. **Normal T.,** that of the human body in health, or 98.6° F. This is maintained in health by the thermotaxic nerve-mechanism, which keeps a balance between the thermogenetic, or heat-producing, and the thermolytic, or heat-dispelling, processes.

Ter in die (ter in de'a). Latin for "thrice in a day."

Testicle (tes'tik-kl). Either one of the two glands which produce semen. It is an ovid body, suspended in the scrotum from its posterior edge by the spermatic cord.

Testis (tes'tis). A testicle.

Tetanus (tet'an-us). An acute disease due to the Bacil'lus Tet'ani, in which there is a state of more or less persistent tonic spasm of some of the voluntary muscles.

Tetany (tet'an-e). A disease characterized by painful tonic and symmetric spasm of the muscles of the extremities.

Theca (the'kah). A case or sheath, as of a tendon. **T. Follic'uli,** the outer covering of the Graafian follicle.

Thelyblast (thel'ib-last). (1) The feminonucleus; the active element of the female generative cell. (2) The passive element of the male generative cell.

Thermometer. An instrument for ascertaining temperatures. It consists of a substance which expands and contracts with alterations of temperature; and of a graduated scale indicating the degree of expansion or contraction.

Thrombophlebitis (throm"bo-fle-bi'tis). Thrombosis conjoined with inflammation of a vein or of veins.

Thrombosed (throm'bōzed). Affected with thrombosis.

Thrombosis (throb-bo'sis). The formation or development of a thrombus.

Thrombus (throm'bus). A plug or clot in a vessel remaining at the point of its formation.

Thrush. (1) Aphthous stomatitis; a disease of infants attended with the formation of aphthæ, or whitish spots in the mouth. It is due to the presence of a fungus, Saccharmyces Al'bicans. The aphthæ are followed by shallow ulcers.

Thymus (thi'mus). A two-lobed body in the neck and thorax of an infant or of a young animal.

T. I. D. An abbreviation for the Latin ter in die, "three times a day."

Tooth. Any one of a set of small bone-like structures of the jaws, for masticating the food. There are two sets of teeth, the **Temporary (Milk or Deciduous) T.,** which are lost in childhood, and the **Permanent T.,** which begin in the seventh year to displace the temporary teeth and last till old age. There are 20 temporary teeth, 10 in each jaw, as follows: 4 incisors, 2 canines, and 4 molars. There are 32 permanent teeth, 16 in each jaw, as follows: 4 incisors, 2 canines, 4 bicuspids, and 6 molars.

Toxin (tox'in). Any poisonous albumen produced by bacterial action.

Traction. The act of drawing. **Axis T.,** traction along an axis, as of the pelvis in obstetrics.

Transfusion (trans-fu'shun). The transfer of blood from one person to another; the introduction of blood from the vessels of another person; also the introduction into the blood-vessels of any substance, as saline solution.

Triangle. (1) A three-cornered area or figure. (2) A triangular bandage.
Tripara (trip'ar-ah). A woman who has borne three children.
Turning. Version in obstetric practice.
Turn of Life. Same as Menopause.
Twin. One of two individuals born at the same birth. **T. Labor,** tedious labor due to the presence of two fetuses.

U

Umbilical (um-bil'ik-al). Pertaining to the umbilicus.
Umbilicus (um-bil-i'kus). The navel; the cicatrix which marks the site of the entry of the umbilical cord.
Urachus (u'rak-us). A cord which extends from the apex of the bladder to the navel. It represents the remains of the canal in the fetus which joins the bladder with the allantois.
Uremia, Uræmia (u-re'me-ah). The presence of urinary constituents in the blood, and the toxic condition produced thereby. It is marked by nausea, vomiting, headache, vertigo, dimness of vision, coma or convulsions, and a urinous odor of the breath and perspirations. It is due to suppression or deficient secretion of urine from any cause
Uremic (u-re'mik). Caused by or pertaining to uremia.
Ureter (u-re'ter). The fibro-muscular tube which conveys the urine from the kidney to the bladder. It begins with the pelvis of the kidney a funnel-like dilatation, and empties into the base of the bladder. being from sixteen to eighteen inches long.
Ureteropyelitis (u-re"ter-o-pi'el-i-tis). Inflammation of a ureter and of the pelvis of a kidney.
Urethra (u-re'thrah). A membranous canal conveying urine from the bladder to the surface, and in the male conveying the seminal ejaculations. The **Female Urethra** is one and a half inches long; it runs above the anterior vaginal wall and pierces the triangular ligaments as in the male. Its structure is similar to that of the male urethra.
Urethral (u-re'thral). Pertaining to the urethra.
Urethritis (u-re-thri'tis). Inflammation of the urethra.
Urethroscope (u-re'thro-skōp). An instrument for viewing the interior of the urethra.
Urina (u-ri'nah). Latin for urine.
Urinal (u'rin-al). A vessel or other receptacle for urine.
Urinalysis (u-rin-al'is-is). The chemical analysis of urine.
Urinary (u'rin-a-re). Pertaining to the urine; containing or secreting urine.
Urinate (u'rin-āt). To void or discharge urine.
Urination (u-rin-a'shun). The discharge or passage of the urine; micturition. **Stuttering U.,** an intermittent flow of urine, due to vesical spasms.
Urine (u'rin). The fluid secreted by the kidneys, stored in the bladder. and discharged by the urethra. Urine, in health, has an amber color a slight acid reaction, a peculiar odor, and a bitter, saline taste. The average quantity secreted in 24 hours in a man in health is about 3 pints, or from 1200-1600 c.c. Specific gravity about 1.024 varying from 1.005–1.030. One thousand parts of healthy urine contain about 960 parts of water and 40 parts of solid matter, which consists chiefly of urea, 23 parts; sodium chloride, 11 parts; phosphoric acid, 2.3 parts; sulphuric acid, 1.3 parts; uric acid, 0.5 part; also hippuric acid, leukomains, urobilin, and certain organic salts. The abnormal matters found in the urine in various conditions include acetone, albumen, albumose, bile, blood, cystin, glucose, hemoglobin. fat, pus, spermatozoa, epithelial cells, mucous casts, etc.

Urinometer (u-rin-om'et-er). An instrument for determining the specific gravity of the urine.

Uterogestation (u"ter-o-jes-ta'shun). (1) Uterine pregnancy; any pregnancy which is not extra-uterine. (2) The full period or time of normal pregnancy.

Uteroplacental (u"ter-o-plas-en'tal). Pertaining to the uterus and the placenta.

Uterovaginal (u"ter-o-vaj'in-al). Pertaining to the uterus and the vagina.

Uterovesical (u"ter-o-ves'ik-al). Pertaining to the uterus and the bladder.

Uterus (u'ter-us). The womb; a hollow muscular organ, the abode and place of nourishment of the embryo and fetus. It is a pear-shaped structure, about three inches in length, consisting of a broad, flattened part (body) above and a narrow, cylindrical part (cervix) below. Its cavity opens into the vagina below and into the Fallopian tubes on either side above. It is held in place by a broad ligament, a transverse fold of peritoneum which encloses it on either side, and by various ligaments, such as the round ligaments, the recto-uterine ligaments, and the vesico-uterine ligaments. It is made up of a peritoneal coat, a middle layer of unstriated muscular fibers (which constitutes most of its thickness), and a mucous coat, which contains numerous mucous follicles or uterine (utricular) glands, and is lined by ciliated epithelium.

V

Vagina (vaj-i'nah). (1) A sheath. (2) The canal, from the slit of the vulva to the cervix uteri, which receives the penis in copulation. In the virgin adult it is two to two and a half inches on the anterior wall, three to three and a half inches on the posterior wall. The anterior and posterior walls are in contact. Its upper extremity embraces the cervix uteri, the posterior wall reaching the cervix higher up than does the anterior wall. Anteriorly and posteriorly there are a median ridge and the columnæ vaginæ, and running out from the columnæ on either side transverse folds, or rugæ. The hymen is a crescentic or circular mucous fold which constricts its entrance. When the remains of the hymen are stretched in childbirth, warty eminences mark its site, the carunculæ myrtiformes. The vagina has three coats: (1) Outer, or fibro-elastic. (2) Middle, or muscular. (3) Mucous, internal. The circular muscular fibers near the entrance constitute the vaginal sphincter.

Vaginal (vaj'in-al). (1) Of the nature of a sheath; ensheathing. (2) Pertaining to the vagina.

Vaginismus (vaj-in-iz'mus). Painful spasm of the vagina, due to local hyperesthesia.

Vaginitis (vaj-in-i'tis). (1) Inflammation of the vagina. It is marked by pain and by a purulent leucorrheal discharge. (2) Inflammation of a sheath.

Velamentous (vel-am-en'tus). (1) Membranous and pendent like a veil. (2) Insertion of the umbilical cord in the placenta by means of its vessels.

Venesection (ven-e-sek'shun). The opening of a vein for the purpose of letting blood; phlebotomy.

Veratrum (ver-a'trum). A genus of poisonous liliaceous plants. **V. Vir'ide**, the green hellebore of North America, and its sedative and depressant rhizome and roots. Dose of fluid extract, 1-5 min.; of tincture, 1-5 min.

Vertex (ver'tex). The summit or top; the crown of the head. **V. Presentation**, see Presentation.

Vesicle (ves'ik-l). (1) A small bladder or sac containing liquid. (2) A small blister; a small circumscribed elevation of the epidermis, containing a serous liquid. **Allantoic V.**, the internal hollow portion of the allantois. **Germinal V.**, the nucleus of an ovum. **Graafian V.**, the structure which holds the ovum while still within the ovary. **Umbilical V.**, that part of the yolk-sac which is outside the body of the embryo, being joined to it by means of the umbilical or omphalomesenteric duct.

Vesicorectal (ves"ik-orek'tal). Pertaining to the bladder and the rectum.

Virgin. A woman or girl who has had no sexual intercourse.

Virginal (vir'jin-al). Pertaining to a virgin or to virginity.

Virginity (vir-jin'it-e). Maidenhood; the condition of being a virgin.

Vitelline (vi-tel'lin). Resembling or pertaining to the yolk of an egg or ovum.

Vitellus (vi-tel'lus). The yolk of eggs or of an ovum.

Viviparous (vi-vip'ar-us). Bringing forth young alive; producing living young.

Volsella (vol-sel'lah). A forceps with hooked blades.

Vomiting. The forcible expulsion of the contents of the stomach through the mouth. **Pernicious V.**, vomiting in pregnancy, so severe as to threaten the life of the patient.

Vulsella (vul-sel'lah). Same as Volsella.

Vulva (vul'vah). The external part of the organs of generation of the female.

Vulval, Vulvar (vul'val, vul'var). Pertaining to the vulva.

Vulvitis (vul-vi'tis). Inflammation of the vulva.

Vulvovaginal (vul-vo-vaj'in-al). Pertaining to the vulva and vagina.

Vulvovaginitis (vul"vo-vaj-in-i'tis). Inflammation of the vulva and vagina.

W

Wharton's Jelly. See Jelly.

Whey. The thin serum of milk remaining after the curd and cream have been removed. **Wine W.**, the watery part of milk coagulated with rennet or pepsin, strained from the curd, to which wine has been added, and sweetened with sugar.

Y

Yelk. The yelk of an egg, or ovum.

Yoghurt (yog'hert). Bulgarian clotted milk; said to expel harmful intestinal bacteria.

Yolk. (1) The nutrient part of the ovum; also the yellow portion of the egg of a bird. (2) Crude wool-fat, or suint. **Accessory Y.**, the nutritive yolk; the portion of the yolk that serves for the nutrition of the formative portion. **Y. Cells, Y. Granules**, the morphologic elements composing the yolk. **Y. Cleavage**, segmentation of the vitellus. **Y. Food**, the nutritive part of the yolk of an ovum; deuteroplasm. **Formative Y.**, that part of the ovum whence the embryo is developed. **Y. Sac**, same as umbilical vesicle; see Vesicle. **Y. Skin**, the vitelline membrane (q. v.). **Y. Space**, the space formed in the ovum by the shrinking of the vitellus from the zona pellucida. **Y. Stalk.** Same as umbilical duct. See Duct.

Z

Zoöblast (zo'o-blast). An animal cell.

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O