

*- Robert O. Abbott -*

*No. 6. Portico Sq*

THE

*- Spence -*

# OBSTETRIC CATECHISM:

BY

JOSEPH WARRINGTON, M. D.



PHILADELPHIA:

J. G. A U N E R ,

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## P R E F A C E .

TO MY OWN OBSTETRIC PUPILS, AND TO STUDENTS OF  
MEDICINE GENERALLY.

Gentlemen, I dedicate this little work to you.

Were I in the midst of you, as I present each a copy, I would address you principally in the following words :

I have designed this little book, as an aid to you in the prosecution of your studies in a very important branch of the science and art of medicine, or as an occasional remembrancer for you, when you are engaged in the practice of your profession, remote from any experienced living counsellor.

It is written for you, as a sort of vade mecum, a leading string, or reviver of your knowledge in this matter, and in this respect as far as it goes, I am sure it will be useful to you ; but remember, it is not your *text* book : it is your *test* book : it is your catechist or inquisitor, not to tell you

any thing new, but to enable you to determine what you do, or what you do not already know.

Your knowledge of the great principles on which the important subject of obstetrics is founded, is to be derived from other sources ; from well approved standard works : as those written by Velpeau, by Dewees', by Rigby, by Ramsbotham, by Meigs, &c., and to understand either, or all of them well, you must give faithful attention to the study of the anatomy of the female pelvis, and all those organs which are concerned in the process of conception, gestation, parturition and lactation. These you must study by personal application of your scalpel, under the direction of a skilful anatomical teacher.

Then follow closely upon the demonstrations of your Obstetric Professor through his whole course—examine his various pictorial illustrations, anatomical and physiological specimens, and give earnest heed to his demonstrations of the mechanism of the various kinds of labor upon the mannekin,—nay more than this, embrace every possible opportunity to exercise yourselves, either alone with a demonstrator, or in small classes, till you become familiar with every variety of presentation, position, mode of correcting those which are deviated—the proper mode of performing version—the use of obstetric instruments, &c. This done, my little book will be of service to you, and I shall be gratified, if, when you use it as a catechism of your knowledge in midwifery, you shall have been so well instructed by the method I have just pointed out, that you

may detect any error which may exist, either from want of critical knowledge on my own part, or which may have been inadvertently committed, in the haste I have made to supply it to those who have demanded it of me for your sakes, while, as some of you know, I have been laboriously engaged in teaching and practising the art, at a period too, when many of the puerperal women in the extensive Lying-in Charity, which it is my duty to superintend, have been severely visited by diseases which have required the utmost vigilance and promptitude of treatment,—metritis and metro-peritonitis.

I have not followed the systematic arrangement adopted by any obstetric writer in preparing this little offering. If I have been biased by any extrinsic influence, it has been by that of the courses of obstetric instruction given in the University of Pennsylvania, my Alma Mater. I have not, however, calculated it for the meridian of that school only.

The grand principles of this science and art are the same every where ; and from the numerous institutions for medical teaching, which have sprung up around the parent stalk, throughout the different sections of our wide spread country, we may hope for a powerful and honorable competition for excellence in the mode of illustrating these principles, and the extension of facilities for properly qualifying the candidates, to enter usefully upon the exercise of one of the most important functions which one human being can exert towards another.

I have written out the matter now presented to you during the *minutes* not the *hours* of my leisure ; and, therefore, lay no claim to great precision in the language I have used. The questions are to be taken, as though they were put to you extemporaneously and familiarly, and the answers are mostly made out as though you were unexpectedly called upon to give them, and in this I consider consists some good quality in the little essay now put into your hands.

I have addressed you numerous interrogatories, but I have omitted many things, some too which are very important ; but should I discover that you profit well by what I have already done, I shall aim, time permitting, to catechise you at some future period, upon the whole subject of obstetric medicine, which I consider includes not only practical midwifery, but obstetrics proper, and the diseases of women and young children.

Very respectfully yours,

JOSEPH WARRINGTON.

*No. 229 Vine Street, Franklin Square.*

*Philadelphia, 3d mo. (March) 1, 1842.*

*Robert O. Abbott -*

*No. 6. Partics Lgr.*

*- Spence -*

## CONTENTS.

|  |   |
|--|---|
| Anatomy of the female pelvis, 1                  | Peculiarities of the fetus, 145                     |
| Anatomy of the fetus, 15                         | Fetal circulation, 145                              |
| Anatomy of the contents of the female pelvis, 23 | Physiological changes after birth, 147              |
| Menstruation, 40                                 | Function of placenta, 151                           |
| Disorders of the menstrual function, 48          | Extra-uterine pregnancy, 152                        |
| Leucorrhœa, 69                                   | Treatment of extra-uterine pregnancy, 157           |
| Vaginitis, 73                                    | Signs of pregnancy, 158                             |
| Irritable uterus, 79                             | Development of the uterus from pregnancy, 161       |
| Prolapsus of the uterus, 81                      | Physical signs of pregnancy, 163                    |
| Retroversion of the uterus, 83                   | Physical examination, touching, 164                 |
| Treatment of displacements, 87                   | Auscultation, 168                                   |
| Inflammation of the ovaries of generation, 93    | Condition of the vagina, and of the urine, 171      |
| Treatment of hysteritis, 97                      | Diseases of pregnancy, 172                          |
| Ulceration of the uterus, 99                     | Treatment of pregnant females, 185                  |
| Mode of using the speculum, 99                   | Duration of pregnancy, 194                          |
| Treatment of ulcers of the uterus, 101           | Labor, 195  |
| Phagedenic ulcers of the uterus, 103             | Changes effected by labor, 198                      |
| Cancer of the uterus, 105                        | Signs of labor, 200                                 |
| Physometra, 107                                  | Stages of labor, 203                                |
| Hydrometra, 108                                  | Characteristics of the stages of labor, 205         |
| Hydatids, 109                                    | Changes produced by labor, 206                      |
| Cauliflower excrescence, 110                     | Duration of labor, 208                              |
| Tumours within the uterus, polypi, &c. 113       | Presentation and position, 209                      |
| Generation, 115                                  | Particular positions of the cephalic extremity, 210 |
| Pregnancy, 118                                   | Mechanism of labor, 212                             |
| Development of the grand uterus, 119             | Mechanism of first position, 213                    |
| Effects of gravidity, 124                        | Mechanism of second and third positions, 215        |
| Physiological changes caused by pregnancy, 126   | Mechanism of posterior varieties, 216               |
| Structure of the ovum, 128                       | Convertibility of the positions, 219                |
| Placenta, cord, &c. 133                          | Arrangement of the bed for delivery, 220            |
| Nutrition of the ovum, 135                       | Preparation of the patient, 221                     |
| Superfetation, 139                               |   |
| Development of the embryo and fetus, 141         |   |

|   |     |  |     |
|---|-----|--|-----|
| Diagnosis of labor, -   | 224 | Management of the arms, -                      | 271 |
| Mode of making an examination, - -                                | 226 | Deviated breech presentations, - - -           | 273 |
| Rule for the use of the hands in making flexion and rotation, - - | 229 | Use of fillet, - - -                           | 274 |
| Manner of protecting the perinæum, -                              | 231 | Use of blunt hook, -                           | 275 |
| Management of transverse positions, - -                           | 233 | Use of vectis, - - -                           | 276 |
| Delivery of the placenta, -                                       | 234 | Forceps, - - - -                               | 278 |
| Manual assistance, -  | 236 | Application of forceps, -                      | 281 |
| Irregular contractions of the uterus, - -                         | 237 | Necessity of cephalotomy -                     | 289 |
| Hour-glass contraction, -   | 239 | Mode of performing it, -                       | 289 |
| Mode of acting in such cases, - -                                 | 239 | Instruments to be used, -                      | 291 |
| Adhesion of the placenta, -                                       | 241 | Gastro-hysterotomy, -                          | 294 |
| Proper time for cutting the cord, - - -                           | 241 | Premature artificial delivery, -               | 395 |
| Mode of receiving and disposing of the child, -                   | 242 | Presentation of anterior fontanelle, - - -     | 296 |
| Asthenic condition of the child, - - -                            | 243 | Presentations of the face, -                   | 298 |
| Asphyxia - - -  | 244 | Mechanism of face presentations, - - -         | 301 |
| Treatment proper in these cases, - - -                            | 245 | Management of do. - -                          | 303 |
| Tumors on the scalp, -  | 246 | Other deviated positions -                     | 305 |
| Washing and dressing the child, &c. - -                           | 247 | Shoulder presentations, -                      | 306 |
| Putting the mother up in bed, - - -                               | 249 | Spontaneous version, -                         | 308 |
| After treatment, - - -  | 251 | Management of shoulder cases, - - -            | 309 |
| After pains, - - -  | 251 | Various causes of complication of labor, - - - | 313 |
| Pelvic presentations, -   | 243 | Doublets, - - -                                | 313 |
| Varieties of pelvic presentation, - - -                           | 254 | Obliquity of the uterus, -                     | 315 |
| Mechanism of pelvic presentation, - - -                           | 255 | Retroversion of the uterus, -                  | 316 |
| Management of pelvic presentation, - - -                          | 259 | Ante-version, &c. -                            | 318 |
| Management of feet presentations and version -                    | 264 | Spasmodic contractions of the uterus, - - -    | 320 |
| Version by the head, - -  | 264 | Rupture of the uterus, -                       | 321 |
| Version by the feet, -  | 265 | Puerperal convulsions, -                       | 323 |
| Position for version, - -   | 266 | Treatment of do. - -                           | 325 |
| Different steps of version, -                                     | 267 | Atony, or inertia of the uterus, - - -         | 327 |
| Rules for the particular hand, - - -                              | 269 | Inversion of the uterus, -                     | 329 |
|   |     | Use of ergot in cases of inertia, - - -        | 331 |
|   |     | Abortion, - - - -                              | 333 |
|   |     | Symptoms of abortion, -                        | 335 |
|   |     | Treatment of do. - -                           | 337 |
|   |     | Uterine hemorrhage, during pregnancy, - - -    | 337 |
|   |     | Management of accidental hemorrhage, - - -     | 339 |
|   |     | Management of cases of placenta previa, - - -  | 340 |

## OBSTETRIC CATECHISM.

WHAT part of the osseous system of the female, is of most importance to the practical accoucheur?

That portion called the pelvis.

Where is the pelvis situated?

At the lower extremity of the trunk, between the last lumbar vertebra and the upper portion of the ossa femora.

Of how many bones is the adult pelvis constituted?

Four.

What are they?

One sacrum, one coccyx, and two ossa innominata.

Where is the sacrum situated?

Between the last lumbar vertebra above, and the coccyx below, and between the ossa innominata behind.

What is the shape of the sacrum?

Triangular or pyramidal—concave anteriorly and convex posteriorly.

How many articulating surfaces does it present ?

Four. Its base above, for connection with the lumbar vertebra; its apex below, for the coccyx, and one on the upper half of each side for the posterior portion of the ossa innominata.

What is found on the anterior surface of the sacrum ?

Four or five quadrangular facettes, with the same number of transverse lines, marking the point of fusion of the originally distinct bones; at the ends of these transverse lines an equal number of foramina—for the passage of the anterior branches of the sacral nerves.

What muscles are attached to the outer edges of the sacrum, and between these holes ?

The pyramidal muscles.

What is attached to the sharp edges of the inferior half of the sacrum ?

The sacro-ischiatic ligaments.

What is the general appearance of the posterior portion of the sacrum ?

Convex, and very rough.

What do we find in the median line ?

Several spinous processes.

What is to be seen at the upper portion of the posterior face ?

Articulating surfaces for the last lumbar vertebra.

What exists at the lower portion ?

A triangular notch, in which terminates the spinal canal.

What is to be seen on each side of the spinous processes of the sacrum ?

Four or more foramina for the transmission of the posterior branches of the sacral nerves.

What is the object of the rough surfaces near the edges of the posterior face of the sacrum ?

To present points for the strong attachment of sacro-iliac and sacro-ischiatic ligaments.

What is the object of the broad oblique and somewhat rough surface, at the upper lateral portions of this bone ?

For articulation with the ilia or innominata.

What is the situation of the coccyx ?

At the inferior termination of the sacrum, with which it is articulated.

What is its shape ?

Triangular.

What projects upwards, or backwards, from its base ?

Two prolongations, resembling horns.

What is the shape of its apex ?

Tuberculated and rounded.

What is attached to its edges ?

The ischio-sacral, or short sacro-ischiatic ligament.

What muscles are inserted into its edges ?

The ischio-coccygeal muscles.

What muscle is attached to its point ?

The external sphincter ani muscle.

Of how many bones is the coccyx originally composed ?

Three or four.

What kind of articulation exists between the sacrum and coccyx ?

Gynglimoid, or hinge-like.

What is the direction of the motion of the coccyx upon the sacrum ?

Antero posterior.

What is the extent of movement usually allowed to the apex of the coccyx ?

From half an inch to an inch.

Does the presence of the coccyx necessarily interfere with the process of labour ?

Only when it is partially or completely anchylosed.

What is the general shape of an os innominatum ?

It has a very irregular quadrangular shape, appearing as if strangulated at its middle, and twisted in two opposite directions.

How many surfaces has it ?

Two, one external and one internal.

What is the arrangement of its internal surface ?

It is divided into two nearly equal portions ; the upper one, extensively excavated, is called the internal iliac fossa.

What occupies this broad expanse ?

The internal iliac muscle.

What do we find at the posterior margin of this upper portion ?

An articulating surface for junction with a portion of the sacrum.

What is the general shape of the inferior portion ?

Triangular.

What opening exists, about the centre of this lower portion ?

The obturator foramen, or subpubic opening.

What constitutes the point of division between the upper and lower portions of the ossa innominata?

The linea-ilio-pectinea, running from the crest of the pubis, backwards towards the junction with the sacrum.

What is to be observed on the external or femoral surface of the os innominatum?

First, the external iliac fossa. Secondly, the acetabulum. Thirdly, the subpubic, or obturator foramen, surrounded by the edges of the pubis, the ischium and the ischio-pubic ramus.

What occupies the external iliac fossa?

The glutei muscles.

What is noticed on the upper edge of the os innominatum?

The crest of the ilium.

What is attached to this crest?

Muscles in its central portion, Poupart's ligament at the anterior, and the sacro-iliac ligaments at the posterior extremity.

What is seen on its anterior edge?

First, the antero-superior spine of the ilium, next a small semilunar notch, then the inferior anterior spine of the ilium, the groove for the psoas and iliacus muscles, then the ileo-pectineal eminence for the insertion of the psoas parvus muscle, then a triangular smooth surface, the spine of the pubis.

What is the arrangement of the posterior edge of this bone?

First, the posterior spine of the ilium; a small irregular notch; the posterior inferior spine of the ilium; which

articulates with the sacrum, then the great ischatic notch, and lastly the posterior portion of the tuberosity of the ischium.

Of how many distinct bones is the os innominatum originally composed ?

Three, the ilium above, the ischium directly below, the pubis in front of the last, and rather below the first.

At what points are these bones consolidated into *one* at a later period of life ?

In the acetabulum, or cotyled cavity, at the pectineal eminence and at the middle of the ischio pubic ramus.

At about what period of life, does this consolidation take place ?

The age of puberty.

What are the principal articulations or symphyses of the pelvis ?

One for the two pubic bones to each other in front, and one for each ilium to the sacrum behind.

What is the mode of articulation of the symphysis pubes ?

The two articular surfaces are applied to each other, and sustained firmly in that position, by strong ligamentous fibres, before and behind. Underneath the fibrous arrangement is so abundant, as to give to it the character and name of sub-pubic ligament.

Is the symphysis pubes of the adult female susceptible of spontaneous separation, or of having one extremity moved upon the other ?

There are strong reasons for believing that no perceptible

degree of motion can be effected in a healthy condition of the parts.

What is the character of the posterior or sacro-iliac symphysis?

The sacrum is placed like an inverted key-stone at the top of an arch, between the two iliac bones; strong bands of ligamentous fibres extend across from the sacrum to the ilium on each side, and thus a strong symphysis is effected.

Is there a bursa, or synovial sac, found in either of these symphyses?

In the symphysis of the pubes, there is to be seen an *approximation* to a bursa; it is however far from complete.

In each of the sacro-iliac junctions there are found some small points of condensed fatty matter, but no regular bursa.

Does the pelvis derive support from any other points than those at which the bones are articulated?

The whole edge of the sacrum below its junction with the ilium gives attachment to a very strong ligament which converges as it passes downward and forward to be inserted into the tuberosity of the ischium.

What is inserted into the spinous process of the ischium?

Some strong bands of ligamentous fibres, which extend across the lower part of the ischiatic notch, and are inserted into the lower part of the sacrum and the edge of the coccyx.

Where is Poupart's ligament situated?

It commences at the anterior superior spinous process of the ilium, and extends to the crest of the pubis, crossing to a small extent beyond the symphysis.

Where is the obturator membrane found?

Filling up nearly the whole of the obturator foramen, admitting merely of space sufficient to allow the transmission of small vessels, nerves and muscles.

If we divide the pelvis into two equal parts, by a section through the acetabula, what will be found in the anterior portion?

The bodies and rami of the pubes, the arch of the pubes, the rami of the ischia, and the obturator foramina.

What will be found in the posterior half?

The sacrum and coccyx, the bodies of the ischia and ilia, the sacro-sciatic notches.

What do the lateral portions of the pelvis include?

The ischia and ischiatic notches with a part of the obturator foramina.

How is the pelvis divided above and below?

Into false pelvis above, and true pelvis below.

What forms the boundary line between the two?

The linea-ilio-pectinea.

What is the upper portion called?

Pavilion; false pelvis; and abdominal pelvis.

What is its general description?

It is defective directly in front, is expanded and elevated at the sides, while posteriorly it is again diminished except in the central portion, where it is somewhat filled up by the promontory of the sacrum and the lower lumbar vertebræ.

What influence do these lumbar vertebræ, and the promontory of the sacrum exert on the position of the child?

They project so far into the cavity of the abdominal pelvis as to divide it into two portions, and cause the child to slide off to one side.

What is the distance between the superior anterior spinous process of one ilium and that of the other ?

From nine to ten inches.

What is the distance between the middle point of one crest and that of the other ?

From ten to eleven inches.

What is the depth of the upper or abdominal pelvis, that is, from the top of the crista to the linea-ilio-pectinea ?

From three and one fourth to three and a half inches.

Which is of most importance in obstetrics, the superior or inferior pelvis ?

The inferior, or emphatically *the* pelvis.

What is its general shape ?

Conoidal, with its base upwards.

What are its principal openings ?

One above, and one below.

What are these openings called ?

Straits.

Why ?

Because they are rather more contracted than the space between them.

What is the space between the straits called ?

The cavity or concavity, basin, etc.

Are these straits just alluded to, not identical with the cavity ?

They are the initial and terminal portions of the true

pelvis, but should always be distinguished from the cavity itself.

What is the shape of the superior strait?

Cordiform, or somewhat elliptic, with one side of the ellipse depressed.

What constitutes the superior strait?

The top of the symphysis pubes, the linea-pectinea, the linea-ilea, and promontory of the sacrum.

What is the circumference of the superior strait?

From thirteen inches, to thirteen and a half.

What number of diameters of this strait are recognized in practice?

Four.

What are they?

First, antero-posterior, or sacro-pubic, measuring from four, to four and a half inches. Second, oblique, from points in the linea-ileo-pectinea diagonally to the sacro-iliac symphysis, measuring five inches. Third, the transverse, or bis-iliac, on the transverse median line, from one point of the linea-ileo-pectinea to the opposite, measuring five and one fourth inches.

What is the direction of the axis of the superior strait?

It commences about the point of the coccyx: passes at right angles with the plane of the strait through its centre, and would make its exit through the abdominal parieties about the umbilicus.

What relation does this axis hold to the pelvis, and to that of the body?

It is always uniform with regard to the pelvis, but it is variable with regard to the body.

What practical hint is derived from a knowledge of this variability ?

That in difficult or tedious labors we should oblige the patient to incline her body forward to make its axis correspond with that of the superior strait.

What is the shape of the plane of the inferior strait ?

It is oval, or slightly cordiform, if we allow the coccyx to encroach upon its posterior extremity.

What are the boundaries of the inferior strait ?

The sub-pubic ligament in front, the rami of the pubes and ischia on each side, and the sacro-ischiatic ligaments and coccyx behind.

What is the circumference of the inferior strait ?

Twelve inches.

From what points do we reckon the antero-posterior diameter ?

From the posterior portion of the sub-pubic ligament, to the point of the coccyx.

What is this distance ?

Four and a half inches ; the mobility of coccyx allows half an inch more, making it five inches.

From what points do we reckon the transverse diameter ?

From the posterior part of the tuberosity of one ischium, to that of the other.

What synonyme have we for this diameter ?

Bis-ischiatic diameter.

What does it measure ?

Four inches.

What other diameters should be remarked in this inferior strait ?

Two oblique.

Whence are they measured ?

From the junction of the ramus of the pubes, and the ramus of the ischium on either side across to the centre of the sacro-ischiatic ligaments on the opposite sides.

What is the space ?

Four inches; the same as the transverse diameter.

What is the direction of the axis of the inferior strait ?

Commencing just below the promontory of the sacrum, it passes downwards perpendicularly through the centre of the plane of the inferior strait, at the point of intersection, of the antero-posterior and transverse diameters, and thus out about the posterior commissure of the undilated, or through the centre of the dilated vagina.

What is the difference between the transverse diameters of the superior and inferior straits ?

The transverse diameter of the inferior strait is one and one fourth inches, shorter than that of the superior strait.

If we push back the coccyx, and thus make the antero-posterior diameter of the inferior strait equal to that of the oblique, or transverse of the superior strait, with what body might we compare the cavity of the pelvis ?

That of a cylindroid, twisted one sixth of its circumference upon its axis.

What are the supero-inferior measurements of the pelvis ?

From the top of the symphysis to the lower edge of the sub-pubic ligament, one and a half inches. From the top of sacrum to the point of coccyx, five inches ; when the

coccyx is pushed back, from five and a half to six inches. From the linea-ilio-pectinea to the tuberosity, three and a half inches; from the crest of ilium to the bottom of tuberosity of the ischium, seven inches.

What is the distance from the bottom of the sub pubic ligament to top of the promontory of the sacrum?

Four and a half inches.

What is the distance from the bottom of sub pubic ligament to the hollow of the sacrum?

Four and three fourth inches.

What is the distance from the bottom of the tuberosity of one ischium to the linea-ilio-pectinea directly opposite?

Six inches.

What is the height of the arch of the pubes, from a line drawn on a level with the tuberosities of the ischia?

Two inches.

Into what peculiar arrangement is the interior of the pelvis distributed?

On each side of the antero-posterior median line are found two lateral inclined planes.

What is the direction of the anterior inclined planes on each side?

Commencing nearly or exactly at the sacro-iliac symphysis, they occupy all the space between that point and the symphysis pubes, and passing downwards and forward just in front of the spines of the ischia, over the obturator foramina, they terminate on the anterior edge of the rami of the pubes and ischia.

What is the arrangement of the posterior inclined planes?

Commencing at the sacro-iliac junctions, at or below the

linea-ilio-pectinea, they occupy the space between those points and the middle line of the sacrum, then pass downwards and backwards behind the spines of the ischia, over the sacro-sciatic foramina and sacro-ischiatic ligaments, to terminate upon the posterior edges of the tuberosities of the ischia, the lower edges of the sacro-ischiatic and coccygeo-ischiatic ligaments, and also the point of the coccyx.

Which of these occupies the greater space in the pelvic canal, the anterior or posterior inclined planes?

The anterior, being both longer and wider.

What influence do these planes exert upon the mechanism of labor?

They direct the presenting part of the fetus. Thus if the occiput happen to be brought in contact with the pelvis anterior to the spine of the ischium, it must pass down upon the anterior inclined plane, and emerge under the arch of the pubes; but if the occiput happen to enter the pelvis behind the spine of the ischium, the posterior inclined plane compels it as it passes down, to rotate into the hollow of the sacrum, that it may escape at the posterior commissure of the vulva.

Regarding the pelvis as constituted of a series of planes, extending from the sacrum to the pubes, from the linea-ilio-pectinea to the coccyx and sub-pubic ligament, how can we represent the axis of the pelvis?

As a curved line, resembling that of a catheter adapted to the adult male.

Of what value to practical midwifery is a knowledge of the inclination of the straits upon each other, and that the axis of the inferior strait is inclined to the axis of the body?

That in all cases of manual or instrumental labor, the assistance must be rendered in the direction of the axis of that part of the pelvis to which the child is presenting.

What are the general points of difference between the pelvis of the female and the male adult?

The capacity of the female pelvis is greater than that of the male, its diameters being larger, though its depth is less. In the male, the arch is narrow and high, while in the female it is broad, low, and well formed.

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## OF THE FETUS.

What is the general condition of the osseous system of the fetus?

The middle portions of the bodies of the bones are usually pretty well developed, though somewhat flexible, while the extremities are still cartilaginous and very pliant.

What advantages result from this circumstance in practice?

A greater degree of flexibility of the child, both during labor, and for a short time after its birth.

What is the usual length of a fetus at term?

From eighteen to twenty-two inches.

What is the distance from the tip of one acromion process to that of the other?

Four or more inches.

May this diameter be diminished without danger ?

It may be diminished an inch or more without hazard to the child, as it passes through the pelvis.

What is the antero-posterior, or dorso-thoracic diameter of the child ?

Three and a half or four inches—but it may be reduced to two inches.

What are the general measurements of the breech of the child when flexed ?

From trochanter to trochanter, from two and a half to three ; from sacrum to anterior part of thigh when flexed forward, three inches.

What is the antero-posterior diameter of the pelvis alone ?

From one and a half to two inches.

What portion of the fetus is most important in an obstetric point of view.

The head.

How is the fetal cranium constituted ?

Of several different bones, so arranged as to present an ovoid figure.

How are the sutures constructed ?

They consist of membranous interspaces between the several moveable bones of the fetal head.

How is the cranium arranged as to its compressibility ?

Part of it is compressible, the bones being moveable upon, or capable of being slid over each other,—and the other portion is incompressible, or not admitting of such alteration in the position of the bones.

The head being of an ovoid form, what names are given to the two extremities of it ?

Posterior and anterior, or occipital and mental.

How many surfaces do we count upon the head of the fetus ?

A superior, an inferior, two lateral, a posterior and an anterior surface.

What is the boundary of the superior surface ?

A horizontal line, bounded by the upper part of the orbits.

What is the base of the head ?

All the immoveable part of it, viz.—the sphenoid in the centre, the temporal bones laterally, together with the bones of the face.

What part of the fetal head resembles a hemisphere ?

The posterior or occipital extremity.

What is the composition of the os frontis ?

Although it is divided nearly or entirely by a suture during early life, yet it is usually considered as one bone.

How in regard to the occipital bone ?

Originally it was in several separate pieces, but these soon become fused together, that it is usual and proper to consider it as only one bone.

What position do the parietal bones occupy ?

The lateral portions of the head, above the temporal, and between the frontal and occipital bones.

How many principal sutures are they, and what are they called ?

1. The *Lamoid Suture*, running from the bases of

the occipital and parietal bones, between these bones, and along the entire lateral and upper portions of the occipital bone.

2. The *Saggital Suture*, extending forward from the upper point of the occipital bone, between the two parietal bones, to their anterior angles.

3. The *Coronal Suture*, extending along the anterior edges of the parietal bones, between them and the frontal bone, from their base.

4. The *Frontal Suture*, extending forward between the two upper edges of the frontal bone, continuous with the saggital suture to the root of the nose.

What is found at the upper and anterior angles of the parietal bones, and at the upper and posterior angles of the frontal bone ?

A quadrangular or kite-shaped membranous space, called the anterior fontanelle, or the *bregma*.

What is found at the posterior extremity of the saggital suture ?

A triangular or cruciform membranous space, called the posterior or occipital fontanelle.

Is this posterior or occipital fontanelle always well marked on the fetal head ?

By no means—sometimes it is readily perceived, but more frequently it cannot be recognized as a triangular membranous space—it is therefore often merely linear.

Is a knowledge of these fontanelles of much importance in the practice of midwifery ?

They are of great value, as they are the chief means of diagnosing the positions of the head during labor.

If no perceptible membranous space exists at the top of

the occiput—how are we to recognize the presentation of the occipital extremity of the head ?

By the angles at the upper and posterior ends of the parietal bones, and the rounded margin of the occiput.

What other fontanelles may be found on the fetal head ?

Two inferior ones at the posterior inferior edges of the parietal bones, and between them and the edge of the occipital bone.

What influence may these exert in diagnosis ?

Without care they may lead to error.

What are the boundaries of the posterior or occipital surface of the fetal cranium ?

From a point half way between the promontory of the occiput to the foramen magnum of that bone, round over the parietal protuberances, to a point near the anterior extremity of the saggital suture.

What is the situation of the posterior fontanelle in reference to the centre of this posterior surface ?

It is not usually in the centre, but mostly a little posterior to it.

What is meant by the term vertex in obstetrics ?

It is applied to that part of the fetal head exactly in the centre of the posterior surface of the occipital extremity.

What figure does a plane of the occipital extremity present ?

Nearly that of a circle.

By what particular name is it known ?

Occipito-bregmatic circumference.

What is the transverse diameter of this circumference called, and what does it measure ?

The bi-parietal diameter, and it measures from three, to three and a half inches.

What is the perpendicular diameter called, and what does it measure ?

Occipito-bregmatic, and it measures from three, to three and a half inches.

What is the horizontal circumference of the head ?

That which commences at the centre of the occipital protuberance, and passes round on each side of the parietal and frontal bones, till its ends meet in the root of the nose.

What is the long diameter of this circumference called, and what does it measure ?

Occipito-frontal, and measures four inches.

What is the name of the transverse diameter, and what does it measure ?

Bi-parietal, and measures from three, to three and a half inches.

What is the trachelo-bregmatic circumference ?

That which commences in front of the cervical vertebræ, and passes round over the temporal, and portions of the parietal bones, and terminates in the bregma or top of the head.

What are its diameters called, and what do they measure ?

1. Trachelo-bregmatic, measuring three and a half inches.
2. Bi-temporal, measuring two and a half inches.

For practical purposes, what should we consider the diameter of the base of the cranium ?

The same as those of the occipito-mental and the bi-parietal circumferences, of which the first diameter measures five inches, and the second, three and a half inches.

What diameters present within the circumference of a perpendicular longitudinal section of the cranium, and what do they measure?

1. The occipito-mental, five inches.
2. The occipito-frontal, four inches.
3. The occipito-bregmatic, three and a half inches.
4. The trachelo-bregmatic, three and a half inches.

What is the situation of the neck of the child, with regard to the cranium?

It is situated a little posterior to a vertical line drawn through the long diameter.

Which represents the longer lever, the mental or occipital extremity, of which the neck is a point or centre of motion?

The mental extremity.

What results from this when the body and head are equally compressed?

A marked degree of flexion.

What is the relative size of the face with that of the head?

Very small.

What is the facial circumference in obstetric language?

From the top of the forehead to the end of the chin, through the lateral portions of the malar bones.

What are the two diameters of this facial circumference, and what do they measure?

1. The fronto-mental diameter, measuring three inches.
2. Bi-malar, two and a half inches.

Where is the centre of this circumference?

In the root of the nose.

Sagittals-mental 4 1/2

To what shape is the compressible portion of the fetal cranium reduceable?

To that of a conoid.

To what length may the occipito-mental diameter be elongated?

From five, to six or seven inches.

To what may the bi-parietal diameter be diminished by compression?

From three and a half, to three inches.

When strong compression is effected, in what direction does it usually carry the bones?

The os frontis is carried backwards, and the parietal bones also.

Although the diameters of the facial circumference are smaller than those of any other measurement, what diameters *really* are presented to the plane of the superior strait, in face presentations of the fetus?

The trachelo-bregmatic, measuring three and a half, and the bi-parietal diameter, measuring three and a half inches.

What obstacle is added to the passage of the head in such cases.

Part of the neck of the fetus, making the <sup>trachelo</sup>occipito-bregmatic diameter at least an inch longer.

When the forehead presents to the centre of the superior strait of the pelvis, what circumference presents to that of the pelvis?

That which passes from the posterior fontanelle round upon the bi-parietal diameter to the chin.

What is the length of the long diameter of this circumference?

From chin to posterior fontanelle, measuring from four, to four and a half or five inches.

When the occiput presents favourably to the centre, or better still, when the vertex presents to the centre of the pelvis—what circumference presents to that of the pelvis?

That which includes the occipito-bregmatic, and the biparietal diameter.

What relation does this circumference hold to the pelvis in every stage of its passage through the pelvis?

Uniformly the same with the planes of the straits and cavity of the pelvis.

When is the head considered as engaged in the superior strait, in a regular occipital or vertex presentation?

When the posterior circumference is on a level with, or a little below the linea-ilio-pectinea.

In what manner is the finger to be applied to the pelvis and head to determine its degree of descent.

It should be carried up to some portion of the linea-ilio-pectinea, and then applied to that part of the head which is in contact with, or opposite to it.

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## OF THE CONTENTS OF THE FEMALE PELVIS.

What muscles line the upper pelvis?

The iliacus internus and the *psoæ* muscles.

What is the origin and insertion of the iliacus internus muscle?

It rises from the anterior two-thirds of the crest of the ilium, in front of the *psoæ* muscles, and filling up the iliac fossa, is inserted with the *psoæ* muscles into the small trochanter of the femur.

In what respect do these muscles affect the diameters of the superior strait?

They diminish the lateral and oblique diameters from one fourth to one half of an inch.

Which diameter is the longer in the recent pelvis—the oblique or transverse?

Ramsbotham says the oblique—Hodge the transverse diameter, while Cazeaux declares that the oblique diameters are not diminished in length.

What muscles and fascia line and close up the inferior strait of the pelvis?

The pelvic fascia, including the internal iliac vessels and branches—the internal obturator and part of the levatores ani, transversus perinei, and ischio-coccygeal muscles.

What are the origin and insertion of the levatores ani muscles?

They arise from the inner part of the pubes, the superior part of the obturator foramen, and the spine of the ischium. Inferiorly the middle and anterior fibres unite beneath the rectum, enveloping this intestine, and they are inserted into the sphincter ani and perineum in front.

What influence may the constituents of this pelvic floor exert upon the process of labor?

They may, owing to the rigidity of the parts or spasm of the muscles, retard the exit of the presenting part of the child.

What viscera are contained in, and attached to, the pelvis ?

The rectum behind, the bladder in front, the uterus and its appendages in the middle and lateral portions of the cavity. The vagina, and other portions of the organs of generation occupy the lower portion of and are attached to the pelvis.

Do we speak of the whole group of organs of generation in a general or special sense ?

It should be understood in a general sense only.

How are the organs of generation classified ?

Into those of *external*, and those of *internal* organs of generation.

What are called the external organs ?

Mons veneris, labia externa, clitoris, nymphæ, orifice of vagina and perinæum.

What is usually included in this list, though it does not pertain to generation ?

The meatus urinarius.

What is the mons veneris and where is it situated ?

It is composed of a dense fibro-cellular adipose substance, covering the pubes and extending up to a line drawn between the anterior inferior spinous processes of the ilia.

By what is it covered ?

By thick strong hairs.

Where are the labia externa situated, and how are they arranged ?

Commencing upon the front of the symphysis pubes, they extend downwards and backwards to the perinæum ;

they are thick and prominent at their upper portion, but gradually diminish and become flattened as they pass towards their posterior termination.

What are the anterior and posterior points of junction of the labia called ?

The anterior and posterior commissures of the vulva.

What is the texture of the labia ?

Principally cellular and vascular.

What kind of investment has the labia ?

It is cuticular but passing into the mucous state.

What are the boundaries of the vulva ?

They embrace all the parts immediately surrounding the genital fissure.

What is found within the upper half of the labia majora ?

The nymphæ, or the labia minora or labia interna.

What is the situation of the labia minora or nymphæ ?

They arise from nearly the same point at the anterior commissure, and pass obliquely downwards and backwards about an inch, and then are lost in the general lining of the labia externa.

What is the general shape of the nymphæ ?

Triangular.

What modifications of size or shape are they incident to ?

In the infant they are always comparatively large ; and they may become greatly elongated and enlarged, and consequently suffer much alteration in shape.

Is a knowledge of this enlargement of consequence to the practitioner ?

Enlarged nymphæ may be entangled within the obstetric forceps and be torn, or otherwise they may embarrass the use of instruments.

What is the anatomical structure of the nymphæ ?

It is cellular, very vascular, and has the properties of an erectile tissue.

What kind of external covering has it ?

A very delicate dermoid, or perhaps mucous membrane.

What is to be found at the superior extremity of the nymphæ ?

A little hemispherical body, called the glans clitoridis.

What is this glans the termination of ?

The clitoris, which appears to be a rudimental male penis.

In what respect does it differ from the male organ ?

It is much less than it, and has no corpus spongiosum urethræ.

What overhangs the glans clitoridis ?

A fold of membrane, called the preputium clitoridis.

How low do the nymphæ descend ?

To the middle of the orifice of the vagina nearly.

What is the space between the nymphæ called ?

The vestibulum.

What are the characters of the vestibulum ?

It is a smooth, triangular surface, covering the facette of the symphysis pubes ; and is bounded on each side by the base of the nymphæ, having the clitoris as its apex, and a line drawn from the lower terminal extremity of one nymphæ to that of the other, through a perforated caruncle.

What is that tubercle or caruncle called ?

The meatus urinarius.

What is the position of the urethra, with regard to the arch and symphysis pubes ?

Mostly immediately below the one and behind the other.

What is found immediately below the meatus urinarius ?

The orifice of the vagina.

What are the boundaries of the orifice of the vagina ?

All that portion just in front of the part embraced within the sphincter vagina muscle.

What muscle surrounds the vagina at its orifice ?

The sphincter vaginæ.

What are its origin and insertion ?

It arises from the posterior side of the vagina near the perinæum, thence it runs up the sides of the vagina near its external orifice opposite to the nymphæ, and covers the corpus cavernosum vaginæ, and is inserted into the crus and body of the clitoris.

What influence can it exert ?

It is often feeble, but sometimes so powerful as to close firmly the orifice of the canal.

What is found posterior to the orifice of the vagina ?

The perinæum.

How long is it when undistended ?

About one and a half inch.

To what extent might the term perinæum be applied ?

To every portion of the distensible parts found at the inferior opening of the female pelvis.

What is the shape of the perinæum ?

As usually described it is triangular.

What are its boundaries ?

As viewed by some obstetricians, as including all the distensible parts of the inferior opening of the pelvis, its boundaries should be those of the inferior strait of the pelvis.

What is the composition of the perinæum ?

Several muscular layers, as the transversus perinæi, the levatores and sphincter ani muscles, &c., then a considerable portion of distensible cellular and dermoid tissue, &c.

Of what degree of dilatation is the perinæum susceptible ?

Nearly or quite sufficient to cover the head of the child when extruded beyond the inferior strait.

What is the vulvo-uterine canal ?

It is the vagina, a canal leading from the vulva to the uterus.

What is its condition in the virgin female ?

It is small, and near its orifice is nearly closed by a duplication of lining membrane called the hymen.

What is the shape of the orifice of the hymen ?

It is variable, sometimes triangular, sometimes oval, round, lunated, and even cribriform, or pierced with several holes.

About how far within the vulva is the hymen in the adult female ?

Half an inch.

What becomes of the hymen after it is ruptured ?

The lacerated surfaces cicatrize, and form several little eminences upon the surface of the vagina, which have been called *carunculæ myrtiformes*.

Is it a settled matter that all the mulberry-like caruncles are formed in this way ?

Velpeau, at least, thinks that two or more of them exist originally and independently of this cicatrization of the ruptured portions of the hymen.

What is found at the inferior portion of the hymen and anterior to it ?

A depression, called the *fossa navicularis*.

What is its inferior boundary ?

The *frœnum labiorum*, *frenulum perinei*, or the *fourchette*.

What is the general shape of the empty bladder in the female ?

Globular.

Does the urethra pass off in a strait or curved line from the body of the bladder ?

In a line curved downwards and forwards.

How long is the female urethra ?

About one inch.

By what is it lined ?

Mucous membrane.

In what direction do the folds of the mucous membrane of the urethra run ?

Longitudinal and not transverse.

What is there in the female urethra, analogous to the prostatic portion in the male ?

A thickened condition of the vagina, anteriorly, and a development of the cellular membrane on the posterior part of the urethra.

What is to be found at the orifice of the urethra ?

A little caruncle generally, sufficiently prominent to offer some resistance to the touch of the finger.

What little folds exist in the canal of the urethra ?

Folds of mucous follicles, which are sometimes considerably developed.

What is the length of the vagina, or vulvo uterine canal ?  
From four to six inches.

What is its direction in the pelvis ?

It is curved upwards.

What are the directions of its long diameters ?

At its external extremity the long diameter is in the direction of the genital fissure, antero-posterior—near its middle the long diameter is transverse and longer than the first, while at the upper part it is still longer.

What is the length of the antero-posterior diameter of the orifice of the vagina ?

From half an inch to an inch, in its undistended state.

What difficulty results from this small size of the external orifice of the vagina ?

Pain and difficulty in the introduction of pessaries and other instruments.

What part of the vagina has most sensibility ?

The external orifice, just at the point of union or transition of dermoid and mucous tissues.

What is the anatomical structure of the vagina ?

Cellulo-fibrous, with a mucous lining membrane.

Whence is the mucous secretion furnished in the vagina ?

From a large number of mucous follicles arranged within the canal.

What is the arrangement of the lining mucous membrane ?

Arborescent—some of the folds are longitudinal, particularly those anterior and posterior, while others are transverse, and are sometimes called columns of the vagina.

What supply of blood-vessels has the vagina ?

Besides the arteries which carry blood to it, the canal is nearly surrounded by a plexus of veins.

In what respect is the texture of the vagina different from that of the nymphæ ?

It is non erectile, and its upper portion probably contains some muscular fibres.

What kind of organ is the uterus ?

It is a *gestative*, not a *generative* organ.

What is the particular shape of the uterus ?

Pyriiform, or conical, somewhat flattened antero-posteriorly.

Which is the flatter surface, the anterior or the posterior ?

The anterior.

For general purposes of description, what shape may we assume for the uterus ?

Triangular.

How many sides and angles has it ?

Three sides and three angles.

What go off from the superior angles ?

Two appendages called fallopian tubes.

What name is given to the part above these tubes ?

Fundus of the uterus.

What portion is called the body of the uterus ?

All that part between the superior angles and the cylindrical portion ; in other words, all the truly triangular portion of the whole organ.

What portion is called the neck ?

All the cylindrical portion.

What covers the uterus externally ?

Peritonæum.

What is meant by the terms broad ligaments of the uterus ?

They are lateral expansions of peritonæum from the sides of the uterus towards the lateral and posterior portions of the inner surfaces of the pelvis.

What is the shape of the cavity of the uterus ?

Triangular.

What relation do the anterior and posterior portions of the walls of the uterus hold to each other ?

They are so nearly in contact, that there is very little space between them.

What is found at each angle of this cavity ?

The orifice of each fallopian tube at the two upper angles, and the internal mouth of the uterus at the lower angle.

What kind of lining membrane has the cavity of the uterus ?

It appears to be a mucous membrane.

How is it ascertained that the lining consists of a mucous membrane?

Both from its physiological functions and its pathological derangements.

What cavity is situated below the internal orifice of the uterus?

The cavity of the neck.

What is the shape of this cavity?

It is somewhat elliptical, or barrel shaped.

What is the arrangement of the lining or internal surface of the neck?

Arborescent.

What are found in the folds of the neck?

A number of mucous follicles formerly called ovula nabothi.

What is the character of the external mouth of the uterus?

It is somewhat elliptical, with its longer diameter transverse; it presents an anterior and a posterior smooth rounded lip, and more or less prominent.

Which of these lips is the larger?

The anterior is larger and broader than the posterior.

What is the usual shape of the orifice of the uterus in the virgin female?

Rounded and very small.

How may we distinguish one which has been the subject of one or more pregnancies or deliveries?

By the fact that it is more elliptical and somewhat jagged at the edges.

What technical name is sometimes given to the external os uteri?

That of os tinæ, from its resemblance to the mouth of a tench fish.

How is the vagina reflected from the os uteri?

Anteriorly it passes off so directly and apparently at right angles, that the anterior lip appears to be on a level with it. Posteriorly it passes off in a duplication from the middle portion of the neck, and thus presents a cul-de-sac, and at the same time gives an impression to the finger that the posterior lip is longer than the anterior.

How long is the uterus?

Two and a half inches.

How wide at the upper angles?

One and a half inches.

What is the length of the neck?

One inch.

What is the thickness of the uterus?

Its body is half an inch thick.

What sensation should a healthy living uterus communicate to the touch?

The os tinæ should present a smooth surface with regular surface of lips, and about the density of a dead uterus hardened in alcohol.

What is the texture of the uterus?

It is essentially fibrous, but susceptible of great development during pregnancy.

From what circumstance do we infer the existence of muscular fibres in the uterus?

The phenomenon of alternate contractions during parturition.

What has been observed by Professor Hodge, of the direction in which the fibres contract during the effort to expel the placenta ?

That they flatten the uterus and shorten its antero-posterior diameter.

What is the arrangement of the muscular fibres ?

They appear to originate in a medium line, at the front, back and sides of the uterus, and to run off towards the fallopian tubes and round ligaments, &c.

Where are the circular fibres distributed ?

About the neck, and around the upper angles or cornua of the uterus.

Who has best succeeded in demonstrating the arrangement of the muscular fibres ?

The late Madame Boivin of Paris.

Where are the ovaries situated ?

In the folds of the lateral or broad ligaments, at a little distance from the uterus, one on each side.

What office do these bodies perform ?

They are the seat of conception, they mature for fecundation the germ of the new being.

How are they connected with the uterus ?

By a ligamentous attachment only. They project from the posterior portion of the broad ligament, but are covered by it and are suspended only by one edge.

What is the shape of the ovaries ?

They are oval bodies, slightly flattened antero-posteriorly.

What is the usual size of the ovaries ?

Rather smaller than the testicle of the male.

What other investment has it beside the peritonæum ?

A proper tunica albuginea.

What is the texture of this coat ?

Sometimes thick, sometimes thin.

What is found in the parenchyma of the ovary, after the seventh, eighth, or ninth year of female life ?

Ten, twenty, or thirty little bodies, called the Graaeian vesicles.

What are these vesicles ?

The capsules which contain the ovules.

What is the condition of these vesicles after the detachment of the ovule ?

A little globule of blood at first fills the capsule, which is afterwards absorbed, leaving only a little yellow body called the corpus luteum.

How long are the fallopian tubes ?

From four to five inches.

What is their general shape ?

That of a trumpet, having the small end at the angles of the uterus, and the larger, floating free in the cavity of the pelvis.

What is the general arrangement of the cavity of the fallopian tubes ?

At the termination in the uterus the duct or canal is large enough to admit of a middle sized probe, it then diminishes towards the middle, so that at this part scarcely a bristle could pass along it, after which, it continues to increase somewhat irregularly, until it acquires a diameter of two or three lines.

What is the outer extremity called?

The pavilion.

What is the peculiar mode of termination of the fallopian tubes?

They have a digitated or fimbriated extremity called, the *corpus fimbriatum*, or *morsus diaboli*.

What direction do the tubes take in the cavity of the pelvis?

They go off nearly horizontally, but are exceedingly tortuous, and curve backwards, and towards the ovary, to some part of which the largest of the fimbriæ is sometimes attached.

What is the anatomical structure of the tubes?

Its principal tissue is fibrous, having perhaps some muscular fibres interspersed. It is lined by mucous membrane and covered by a peritonæal coat.

Into what cavity do the fallopian tubes open?

Into the cavity of the pelvic portion of the peritonæum.

In what part of the female system do the mucus and serous tissues unite?

At the fimbriated extremity of the fallopian tubes.

What other ligaments has the uterus besides the broad ligaments?

The anterior, or round ligaments, and the posterior, or utero-sacral ligaments.

What are the points of origin and insertion of the round ligaments?

They arise from the superior part of the body of the uterus, just below and a little in advance of the fallopian tubes, and pass horizontally forwards through the abdominal canal, to be distributed beneath the mons veneris, upon the bodies and symphysis of the pubes.

Where are the posterior uterine ligaments situated ?

They spring from the posterior portion of the neck near its middle, and diverging, they ascend towards the middle portion of the lateral edges of the sacrum, and are lost in the cellular membrane which covers that bone.

With what are all the uterine and ovarian ligaments invested ?

Peritonæum.

In what direction do the nerves, blood-vessels, and absorbents reach the uterus ?

Through the folds of the peritonæum or the lateral ligaments.

What is the condition of the internal organs of generation in the fetus ?

They are very small, the uterus is almost lost in the broad ligaments. The same may be said of the ovaries.

At about what age do the ovaries appear to become vascular ?

Seven years.

What physiological changes have taken place at the period of life called puberty ?

All the internal organs have become more developed, more vascular; the uterus has acquired greater size and is more soft; the mons veneris is covered by hair; there is an increased flow of blood to the pelvic viscera, and to the head; the face becomes more or less flushed; the voice is altered, and the moral sensibility is more acute.

At what period of life do these changes occur ?

At the fourteenth or fifteenth year in temperate climates.

What function is the genital organs then capable of performing?

That of reproduction.

What function does the uterus actually perform when all these physical changes have regularly occurred?

That of menstruation.

What is to be understood by the function of menstruation?

That in which the uterus at regular periods secretes a certain amount of sanguinolent fluid.

What are the synonymes of menstruation?

Catamenia, menses, courses, *monthlies*, *terms*, monthly terms, monthly periods, *the reds*, *being unwell*, *indisposed*, *has her troubles*, &c.

Whence is this fluid furnished?

From the cavity of the uterus.

What proof have we that it is derived from this source?

It is always accompanied by some degree of uterine irritation: when occlusion of the orifice of the uterus exists, the secretion is still eliminated by the capillaries, but retained within the cavity of the uterus.

What are the characteristics of the menstrual fluid?

It is a sanguinolent fluid, of a peculiar quality and odour, of a color usually between that of venous and arterial blood; it is not coagulable, nor does it putrify readily.

At what periods of life does this secretion usually commence?

In hot countries, from nine to ten years.

In temperate climates, from fourteen to fifteen years.

In cold regions, from eighteen to twenty years.

At how early a period are females of tropical climates known to be capable of bearing children?

At ten years old.

What influence have these hot climates upon the continuance of the power of reproduction?

Females who begin this function early, also decline early.

What is observed in this respect in regard to cold countries?

That the capability of reproduction, though beginning later is continued to a much more advanced age.

What difference is observable in the condition of females residing at the top, and those at the bottom of high mountains?

Those on the top are more tardy, but continue much longer, while those at the foot, have the function of menstruation begin and end much sooner.

What difference is observed between the girls residing in a country place, and those who inhabit large cities?

That those in the country do not usually begin as soon to menstruate as those who live luxuriantly in large towns.

What influence does temperament usually exert?

Those of nervous temperament usually menstruate earlier and more abundantly than those of phlegmatic temperament.

How are the cases of precocious menstruation to be regarded?

As the result of some idiosyncrasy.

What is the condition of the genital organs in all these cases of extremely early menstruation?

The internal organs, as the uterus and ovaries are precociously developed.

What may be easily mistaken by an ignorant parent for precocious menstruation in her daughter !

A sanguineo-mucous or sanguineo-serous discharge from the vulva.

What is the duty of the physician in this respect ?

To make a careful inquiry into the actual state of the case before he decides it to be precocious menstruation.

What are the general symptoms accompanying a menstrual effort ?

An unpleasant feeling of languor, weariness about the loins, sense of fullness in the hypogastrium, a disposition frequently to urinate and defecate.

Sometimes great nervous excitement, perhaps even hysteria.

The breasts swell and feel more or less tight and painful ; there is headach, palpitation, and a peculiar odour of the breath in some cases.

What is the usual color of this fluid at the first time it is discharged ?

Pale red or pink color.

How long does the first discharge continue ?

Sometimes only a few hours, and rarely ever more than two or three days.

At what period do these symptoms and the discharge return ?

At the end of one lunar month.

When the menstrual function is fairly established, how many days are usually occupied in the discharge ?

In temperate climates from five to seven days.

What influence does the health of the patient exert upon the menstrual function ?

Delicate women usually menstruate more abundantly than the more robust, but in some diseases it is altogether interrupted.

What is the usual quantity discharged at each period ?

In temperate climates, probably from four to six ounces. In the tropical climates, from ten to fifteen ounces ; while in frigid zones, the quantity is very small.

What is observed in corpulent women in reference to menstruation ?

That they usually have a greater discharge than those who are thin.

Is the menstrual function easily disturbed ?

In those of nervous temperaments and irritable constitutions, it is very easily disturbed by physical and moral causes.

What is the usual duration of the menstrual period of female life ?

About thirty years.

At what age does this function usually subside ?

At from forty-five to fifty ; in Philadelphia at about forty-seven years, but much earlier in hot countries.

What is the period of female life at which this function subsides usually called ?

Change of life.

What is observed in reference to the subsidence of this function at this period of life ?

It becomes very irregular, sometimes profuse for one time, then passes over a month or more, then returns pro-

fusely, and finally subsides altogether ; when slight, it is usually painful ; and when profuse, debilitating.

Into what character of discharge does menstruation often pass before it ceases altogether ?

Into that of a leucorrhœa, or sero-mucous, or albuminoid fluid.

What physical changes are observed to take place in the female upon the arrival of this period of her life ?

Her capillary circulation becomes less active, the cellular and adipose matters of the mammæ are absorbed, there is a general shrinking of her person, and that beautiful roundness of her form disappears.

What alteration does her pulse undergo ?

It becomes slower and feebler, and it acquires more of a congestive, or apoplectic character.

In what respect is this period to be regarded as the *critical* period of life ?

Because it is observed that generally, if there be no local predisposition to disease, women usually have their health improve after the cessation of menstruation : but if strongly disposed to any malignant affection, this disease is liable to become more rapid in its course to a fatal termination.

What precise knowledge have we respecting the cause of the function of menstruation ?

None whatever, notwithstanding the numerous speculations on this subject.

Are we to regard the local plethora and ordinary uterine irritation, or activity, as a physiological, or a pathological condition ?

As strictly physiological.

Do any of the appendages of the uterus exert any influence over the menstrual function ?

The ovaries appear to be indispensable to it, as upon their non existence the function does not occur, and upon their removal it becomes suspended.

Admitting that we know very little of the cause of the catamenia or menses, what does its regular appearance indicate ?

A healthy condition of the genital organs, and a capability for procreation or reproduction.

Are there no exceptions to the rule that women cannot conceive unless they have menstruated ?

Some cases are recorded in which women have conceived without having menstruated, but it is supposed that with them, conception took place just before the menstrual period would have occurred.

Which period is most favourable to conception, before or after menstruation ?

Immediately after the secretion has taken place.

What opinion was formerly entertained respecting the quality of the menstrual fluid ?

That it was extremely noxious both to animal and vegetable substances.

What is true in reference to its quality ?

That it possesses no noxious qualities when in a healthy condition.

What rules of conduct should be observed by the female during the menstruating portion of her life ?

All those hygienic rules which are necessary to ensure her a good physical and moral education.

What conditions of her constitution should involve the question of the propriety of her marriage ?

The existence of scrofula, rickets, phthisis, and such transmissible diseases.

What precautions should be employed in early life to prevent the occurrence of such constitutional disorders ?

Every means should be used during childhood to develop and give tone to the various tissues of the system.

What must be regarded, in the present habits of society, as injurious to the health of growing girls ?

The use of ligatures and corsets about the body, in dress ; the want of free gymnastic exercises for the development of the skeleton, and consequently of the organs within it ; too much constraint and confinement of body in one position in the schools.

What is the value of pedestrian exercise in the physical education of young ladies ?

All physical exercises, as gymnastics, and particularly those on foot, as walking, jumping rope, and dancing in the open air, contribute greatly to the establishment of the health and keeping all the secretions in proper order.

What regulations should be enforced in regard to diet ?

The digestive organs should be kept in order by a moderate allowance of nutritious but not stimulating diet, composed principally of vegetable and farinaceous substances.

What attention should be paid to the condition of the skin ?

It should be kept in a soft and transpirable condition by cleanliness, regular bowels, and a proper amount of warm clothing, particularly upon the limbs.

What amount of sleep is necessary, and when should it be obtained?

Not less than eight hours, which should begin with the early part of the night.

What precautions are necessary with respect to mental exercises or cerebral excitement?

To avoid both to any considerable extent, and to discourage precocity of intellect.

What care should be taken in reference to the moral feelings?

They should be regulated, and the passions should not be excited by reading, conversation, or other means.

What influence may much excitement produce at the time at which the secretion ought to occur?

Super-excitation of the system may so operate upon the genital organs as to prevent the occurrence of the secretion.

Under such circumstances what course should be pursued?

The patient should be subjected to restricted diet, saline cathartics, and sometimes even to venesection.

How should we treat any nervous symptoms which may occur in connection with the menstrual effort?

It is not often necessary to interfere much with them: mild anti-spasmodic remedies, such as spirits of nitre, camphor water, assafœtida, and such articles may be administered.

Suppose the capillary circulation be feeble, as indicated by cold extremities, soft feeble pulse, &c., what treatment ought to be adopted?

That which would give tone and vigor to the system,

as good diet, proper exercise, bathing, pleasant company, and agreeable mental excitement ; a proper course of tonics, particularly mineral preparations, may be usefully employed.

What is to be understood by the phrase, “retention of the menses ?”

That they have never appeared, however old the female may have become.

What is meant by the phrase, “suppression of the menses ?”

That having been once established, they cease to appear during some part of the menstruating period of female life.

What technical term have we to signify either of these states ?

Amenorrhœa.

Upon what causes may the tardy appearance of the menses depend ?

Defect, or absence, or want of proper development of the organs of generation, particularly of the uterus, or ovaries, or both, or diseases of them.

Do defects of this kind always interfere with the health of the patient so circumstanced ?

No, it sometimes happens that women so circumstanced enjoy good health.

Why is a knowledge of this fact important ?

That females may not be subjected to the powerful action of medicines supposed to be emmenagogues or specifics for producing the menses.

What proofs have we of the evil consequences of attempting to *force* the menstrual secretion in some of these instances of tardy appearance ?

Many instances on record, in which upon dissection, organs were absent or but very partially developed, and one particularly seen by Dr. Hodge, in which after long and ineffectual treatment by emmenagogues, cathartics, and serious injury to general health ; the professor in consultation, examined the patient but could find no uterus.

Under what plan of treatment did she improve ?

A general invigorating plan, including proper exercise in the open air.

Under what other circumstances may *emansio mensium*, or retention of the menses occur ?

When the health is bad, and the organs partially developed, and again when the health is bad and all the organs apparently developed.

What is the opinion of some experienced teachers respecting the popular notion that the retention of the menses is the cause of the ill health ?

That it is the contrary of what is true, that the ill health is the cause of the retention in those cases in which the organs are properly developed.

Upon what may this ill health depend ?

Upon a bad diathesis, as phthisis, scrofula, &c. ; improprieties in living, neglect of the means of proper physical development, errors in the physical education, causing the female to remain a child until a late period of her life.

To what condition of the system is the term *chlorosis* applied ?

To that, in which about the menstruating period of life,

there is great pallor of the skin, and torpor of all the functions of the system.

What does this state of the system indicate ?

An impairment of the *vis vitæ*, a general functional derangement.

Why is it called chlorosis ?

Because persons affected with it, are vulgarly said to have *green* or *falling* sickness.

How does it generally begin to develop itself ?

By a desire to eat outrè articles ; as dirt, slate pencils, recently quenched coals, &c.

What is the condition of the alimentary canal ?

Torpid throughout ; digestion slow, bowels constipated, stools clay colored.

What is the probable cause of the pallid, or pale yellow or greenish color of the skin ?

The extreme torpor of the liver.

How is this to be distinguished from icterus ?

By the want of the yellow deposit in the adnata of the eyes.

What is the condition of the cerebral and vascular systems ?

The intellect is very torpid, and the pulse soft and without force.

How is the nervous system affected ?

The nerves of sensation and motion, are sometimes greatly disturbed, hence hysteria, and neuralgic pains.

What is at present to be said, respecting the plans often adopted for the treatment of this affection ?

The practice is very often erroneous, as the neuralgic

pains in the side have been mistaken and treated for pleurisy with serious consequences.

What reasons may practitioners have had for diagnosing inflammatory diseases, and resorting to depletion in these cases?

Probably, that in conjunction with the pain, there is sometimes palpitation and febrile excitement.

What are the consequences of the case becoming chronic?

They are often serious.

What is the usual condition of the organs under such circumstances?

They are sometimes found diseased and altered, but most frequently they are in an anemic condition.

What are the results of this disease?

Some patients recover and get entirely well; while others become affected with dropsy, &c.

Does the uterus ever perform its functions during this chlorotic state?

Some patients have a slight, serous menstruation—sometimes it even contains red particles.

What conditions of life are most favourable to the occurrence of chlorosis?

All densely populated places, where there is a deficiency of good air and exercise, and hence especially in the large manufacturing towns of Europe.

What are the true indications for treatment in cases of chlorosis?

To give strength to the system by restoring the healthy condition of the digestive apparatus.

What is to be done to the reproductive organs, at this time ?

No especial attention is to be given to them, until the constitution is improved.

What regard should be had to the full development of all the organs in the body ?

This is most important, and every proper means should be used for this purpose.

What kind of medicines should be used ?

Such alterative medicines as moderately increase the action of the mucous membranes.

If calomel be employed, in what way ought it to be administered ?

In doses of one half, to one eighth of a grain, and cautiously repeated.

What regard should we have for the powers of digestion during this course of medicines ?

Carefully avoid impairing the function of digestion.

Is it proper to use any additional alteratives ?

The preparations of sarsaparilla are appropriate in some of these cases in conjunction with the calomel, or blue pill.

Why is iodine, or some of its preparations indicated ?

Because, in proper doses they stimulate the organs of digestion.

What influence do the mucous secretions exert, if left within the cavities in which they were formed ?

They irritate the system and disturb the digestive function.

How then ought they to be disposed of?

They should be carried off by proper laxative, or aperient medicines.

What may be regarded as the best medicines for this purpose?

Rhubarb, aloes, senna, castor oil, &c.

Under what circumstances would moderately stimulating, or cordial, bitter tinctures, become useful?

When there is a sluggish, or cold state of the system.

What course should be adopted, when the alterative and aperient plan have been carried into effect?

The patient should be put upon the use of tonics; as infusions of camomile, or wild cherry bark; or the preparations of iron; as the rust, the sulphate, and the iodide of iron.

Is it reasonable to expect the catamenia to appear before, or after the restoration of the health?

Not until after the health has improved.

From what causes may the menses be retained, when the organs are well developed, and the health of the female good?

By occlusion of the os tinæ, absence of the vagina, closure of the hymen, or vulva, or some such mechanical obstacle to its escape.

What occurs in such cases?

The secretion goes on, but the fluid is accumulated, because it has no outlet.

What consequences result from this obstruction?

In time, the abdomen swells, the condition of the patient excites suspicion, and the opinion of a physician is appealed to.

What course should he pursue ?

First, make a careful inquiry into the history of the case, then make a proper physical examination of the parts.

What may he expect to find in case the occlusion exists in the hymen ?

Distension of the part, with a sense of fluctuation ; and the membrane of a dark blue color.

What may he expect to find in case the atræsia exists in the orifice of the uterus ?

If at the os tinæ, he may find a tumor like the extremity of an ellipse, projecting into the vagina, and fluctuating under the touch.

If at the internal os-uteri, the neck and external os-uteri may be but little changed from natural, but the body may be found expanded out into a sort of globular tumor, somewhat compressible to the touch.

What becomes of this affection, if not relieved by an operation ?

Sooner or later an opening is formed, and the fluid escapes.

What is the direction of the opening ?

It is various ; sometimes into the rectum, and sometimes into other parts.

If the hymen be entire, what kind of an opening should be made into it ?

Crucial, or stellated.

Suppose the vagina to be absent, what risk would there be in attempting an incision for the escape of the accumulated fluid ?

It would be dangerous to attempt operation for the exit of the retained menses.

When the obstruction exists in the uterus itself, what plan should be adopted?

The orifice should be gradually dilated by a series of bougies.

Is this an operation easy to be accomplished?

It is not.

What is the true method of doing it?

Pull the os tinæ forward by a finger in the vagina, or anus, and keep it pressed towards the pubis, to make the neck of the uterus have the same axis as the inferior strait, and then cautiously pass the bougie.

What condition of the nervous system, is often an accompaniment of amenorrhœa?

Neuralgia, hysteria, &c.

Is it probable that the uterus ever becomes the seat of a congestion and irritation?

It probably does so, in some cases, and it then appears as though the system was above the secreting point.

What consequences might arise from stimulating treatment in such cases?

It might bring on serious consequences, as congestion, apoplexy, &c.

What then should we do?

Diminish cerebral irritation by depletion, by cooling saline laxatives, antimonials, &c.

What would be proper after this had been effected?

Restore the secretions by warm bath, hip bath, warm injections, &c. Allowing the patient, warm weak pennyroyal tea, &c.

Do purgatives interfere with the performance of this secretion ?

They do not, as has been supposed by some.

Into how many varieties is suppression of the menses divided ?

Into two—acute and chronic.

How do we distinguish acute suppression ?

By the action of its cause during the flow.

How does the cause operate in chronic suppression ?

During the interval of the secretion.

Which is the severer form of suppression ?

That in which the cause acts and arrests the secretion during its flow.

What class of females is most liable to suffer from this suppression ?

Those of irritable constitutions or temperaments.

What may be regarded as predisposing causes of suppression ?

Irritability of the system.

What are some of the actual causes of affection ?

Certain moral influences, violent passions of the mind, frights from falls, sudden bad news, terror, dread, rumors of wars, sudden transitions, &c.

How far may physical causes operate in this respect ?

The sudden application of cold to the external surface—violent diseases, fever, inflammatory affections, irritation of powerful medicines, stimulating drastic cathartics,—all may act in the production of the suppression of the catamenia.

How does sudden suppression affect the system ?

The effect of sudden suppression, or that of the cause producing sudden suppression, is often very severe, and greatly disturbs the system which is most predominant in the individual, producing hysteric convulsions, &c., in the nervous, apoplexy in the vascular, or sanguineous temperament—attacks of gout, if the patient have a gouty diathesis, &c. In some cases severe uterine neuralgia is induced by this check of the secretory action.

What are the indications for treatment ?

They must be founded on the temperament and diathesis of the patient. The indication is always to diminish the secondary irritation, and restore the action to the uterus. Thus we are to clear the *primæ viæ* by vomiting and purging, if obstructed, then commence with the mildest anti-spasmodic medicines, as ether, assafœtida, camphor, hyosciamus, if the nervous system be much disturbed.

Under what circumstances may vascular depletion be required ?

When there is much plethora, or vascular excitement, the lancet should be used : if there be local pain without general vascular disturbance, cups or leeches should be applied to the part affected.

Which should be resorted to first, vascular depletion or anti-spasmodics ?

In cases of vascular excitement, anti-spasmodics are of little avail, unless preceded by loss of blood sufficient to reduce the circulation.

When is the use of opium indicated ?

Only when the course just proposed has been tried, and other anti-spasmodics have failed to quiet the system.

What is the best revulsive treatment in cases of sudden suppression ?

Hot pediluvia, long continued, and rendered stimulating by some spices, as mustard, ginger, &c.

What is probably one of the very best emmenagogues we possess for this state of things ?

Copious enemata of warm water.

What should be done conjointly with the use of enemata ?

Place the patient in bed and give her warm drinks, as mint tea, pennyroyal tea, &c., to bring on perspiration.

Suppose, however, she be febrile ?

Then these stimulating drinks would be improper, till she had been purged and perhaps bled.

What should we hope to gain from the application of warm poultices to the vulva ?

They are useful, and preferable to the custom of sitting the patient over the vapour of hot water, for the promotion of secretion from the uterus.

When might leeches be applied to the genital organs ?

Whenever there appears to be a fullness of the uterine vessels, and the secretion does not return to their relief.

Where should they be applied ?

To the pudendum, to the vagina, or to the os uteri itself.

When the system shall have been brought to its proper standard by the means already proposed, and the catamenia do not still appear, what additional means should be used ?

This would be the proper time for the administration of emmenagogues, so called.

Upon what causes does chronic amenorrhœa depend ?

Mostly upon bad condition of the general health, owing perhaps to serious disease in some organs, as phthisis, hepatitis, &c.

In this case, to what part of the system should our remedies be addressed ?

To that affected—if the pulmonary organs, to the lungs, if the hepatic system, to the liver, &c.

What train of functional disturbance mostly accompanies chronic amenorrhœa ?

Spinal irritation, cerebral congestion, and irregularities of the digestive apparatus.

What kind of secretion sometimes affords a partial substitute for the true menstruation ?

Leucorrhœa.

What is the proper treatment for chronic amenorrhœa ?

That which improves the general health, as alteratives, general tonics, and those aperients which act particularly on the lower bowels.

In what way do the so called emmenagogue medicines usually act ?

Some act generally upon the constitution—some more locally upon the lower bowels—some upon the bladder, and a very few directly upon the uterus itself.

With what organs does the uterus appear to have a directly sympathetic connection ?

With the mammæ.

What advantage does this knowledge afford us in the treatment of amenorrhœa ?

That by stimulating the mammæ, we have sometimes excited the secretory action of the uterus.

What direct applications have been made to the uterus with benefit ?

Injections per vaginam, of ten or more drops of acetate of ammonia to one ounce of milk.

What means have been thought useful in promoting the menstrual secretion, by acting directly upon the nervous system ?

Electricity and galvanism.

What is to be said of the effect of physical excitement of the organ by matrimony ?

It may be adapted to a few particular cases, but it is often attended by an aggravation of the condition of the uterus, sometimes inducing permanent disease in it.

What are probably the very best general remedies operating on the bowels we can use in amenorrhœa ?

Rhubarb and aloes in combination.

What substances have been thought useful by acting on the kidneys or bladder ?

The spirits of turpentine, the copaiba, and various other balsamic preparations. The tincture of cantharides has been thought useful by many.

What other articles of the materia medica are supposed to have a sort of specific action upon the uterus ?

Madder, guaiacum, savin, iodine, strychnine, and black hellebore.

In what doses should the savin and the black hellebore be administered ?

Half a grain of the extract, or from five to ten grains of the powder of savin—of the tincture of hellebore from ten or twelve drops to a teaspoonfull, two or three times a day, one or two weeks before the expected time.

Can either of these powerful remedies be used in any or every condition of the system?

The system should be properly prepared for the action of either of them, by bleeding, purging, &c., whenever there is a plethoric or an inflammatory diathesis.

What plan of treatment may be continued through the whole time, without regard to periods?

The hydriodate of iron, madder, spirits of turpentine, and tincture of cantharides.

What is meant by the term *dysmenorrhœa*?

Painful menstruation.

How is the secretion in regard to amount and frequency?

It may be, and generally is, regular in regard to its return, but the quantity secreted is usually less, though some think it is rather greater.

What opinions exist in reference to the cause?

Some say the difficulty exists in the secretion of the fluid, others that it is owing to an obstruction, or difficult *excretion* of the fluid after it has been *secreted*.

What temperaments seem to be most liable to it?

Nervo-sanguine temperaments.

At what age of menstrual life does it occur?

Women are subject to have it occur at any portion of their menstrual life.

What is the usual condition of health in the intervals?

Good:—if impaired, it mostly is so from some other cause.

What are the symptoms of *dysmenorrhœa*?

A sense of coldness, nervousness, &c. Pain in the upper part of the sacral region, thence round the ilia, or

through to the hypogastrium—sense of fullness and bearing down.

Are these feelings constant or paroxysmal?

They occur in paroxysms, like labour pains; indeed in some cases it is difficult to distinguish them from efforts at abortion.

What sympathetic disorders arise from the paroxysms of dysmenorrhœa?

Flatulence, constipation, vomiting, bilious nervous head-ach, palpitation, throbbing, &c.; sense of fullness and actual congestion in the lower part of the abdomen.

What is the usual duration of one of these paroxysms?

Sometimes this severe suffering continues for a day or two, when the secretion appears and the patient becomes easier.

What is noticed as peculiar in the discharge in some cases?

That it is membranous and thrown off in shreds, or in an entire sac resembling the shape of the internal surface of the uterus.

What is probably the exact character of this mass?

Opinions appear to be various. Some think it a coagulation of blood, and not the lymph of inflammation, as that formed in cases of croup.

What is the probable cause of the pain, if the latter idea be correct?

The pain would then seem to depend upon the severe contractions of the uterus to expel the coagulum, &c.

What influence does this condition of the secretory function of the uterus appear to have upon the general health?

Very often the health of the patient in the interval re-

mains good, though the disease has continued to return with unabated severity from one to twenty years. It is however true, that the health may become impaired in some cases, during the existence of dysmenorrhœa.

What is the condition of the mouth and neck of the uterus in the female affected with dysmenorrhœa?

In general the neck is tumid and the mouth a little open.

What is known respecting the capability for conception, in females affected with dysmenorrhœa?

As a general rule, females so affected do not conceive—but numerous exceptions to the rule exist.

What are the general predisposing causes of this disease? Temperament, particularly that of the nervo-sanguine.

What may be regarded as occasional causes of this disease?

Cold, violent mental emotions, fright, &c. It has been brought on by matrimony—it is sometimes the result of metastasis of cutaneous or neuralgic disorders, or of gastric affections.

What agency may displacements of the uterus exert in the production of dysmenorrhœa?

It is very liable to follow any displacement of the uterus.

What may be considered as mechanical causes of dysmenorrhœa?

Besides the various displacements of the uterus which may be regarded to some extent decidedly mechanical, causes are occasionally found in obstructions of the internal and external os uteri, and also in the canal of the cervix uteri.

What may be said of the severity of the pain in some cases of dysmenorrhœa?

That it is greater than that of labor.

What idea is entertained respecting the inflammatory or neuralgic character of this affection ?

Some think it neuralgic or spasmodic, which is often true—others regard it as inflammatory. By some good authority it is thought that it most probably depends upon excitement of the vascular system, upon a congestion not amounting to actual inflammation. In other words, an exaltation of vitality—a nervous excitement with vascular congestion. Some practitioners, as Dr. Dewees, thought it depended upon low or *depressed action*.

How is the treatment of this affection to be divided ?

Into that which is to be applied during the paroxysm, and that to be used in the interval.

What should first be resorted to in the paroxysm ?

A free bleeding to the amount of thirty or forty ounces—next, cups or leeches to the sacrum—then enemata of warm mucilages, and as soon as the vascular excitement has been allayed, the warm hip bath should be employed.

When may narcotics be resorted to ?

As soon as vascular excitement is allayed, anodyne enemata may be used with advantage.

What anodynes are best in this case ?

Dewees recommended camphor enemata, and Parrish found marked benefit from directing patients to take four grains of camphor, three times a day, two or three days before the time of the paroxysm. The Dover's powder is also useful in allaying pain and exciting the action of the skin. Other narcotics, as hyosciamus, &c., are sometimes beneficial.

What other article has been thought useful in diminishing the severity of the attack ?

The acetate of ammonia.

What should be done in the interval to prevent the return of the paroxysm ?

Endeavour to ascertain the cause of the dysmenorrhœa, and if possible remove it. Thus if the patient have displacement of the uterus, it must be corrected. The same may be said of the digestive organs, which should be restored if out of health, by proper exercise, alteratives, tonics, and laxatives.

What may be said of cold bathing ?

It is useful in the intervals to keep down any inordinate vascular excitement.

Can every patient bear the action of cold bathing ?

Not every one, and hence it must be tried cautiously. To those whom it suits it is very useful.

What internal remedies have been proposed in the interval as useful in the prevention of the returns of the paroxysms ?

Sulphuric acid, sulphate of zinc, preparations of senega, volatile tincture of guaiacum, &c.

What can be said of the efficacy of the last article,—so highly recommended by Dr. Dewees ?

Experience has taught that it is not useful in all cases.

What should be the immediate object of the treatment just before the expected paroxysm ?

To relax the system and prevent spasm by using the warm bath—by retiring early to bed—by opening the bowels by large warm mucilaginous enemata—by the use of warm injections into the vagina—warm cataplasms to pudendum, and by a moderate use of anodynes.

What is the proper treatment of mechanical dysmenorrhœa ?

Some practitioners are in the habit of dilating the con-

stricted portion of the mouth or neck by bougies of different sizes.

Can this plan be relied upon as effectual?

It has not succeeded in all cases, though it generally mitigates the suffering.

What are we to understand by the term *menorrhagia*?

An increased or excessive secretion of the menses.

Are we to receive this term in a positive or relative sense?

Menorrhagia is a relative term, as different persons differ so much in regard to the amount, and the same person may be so different at different times in this respect, that it is to be considered as a menorrhagia, only when it is productive of bad consequences.

What is the pathology of menorrhagia?

It is evidently in some cases the result of an inflammatory action.

What period of life is most incident to it?

It most commonly occurs at the latter part of menstrual life.

What are some of its causes?

Nervous excitement, vascular excitement, fevers, &c., cold checking perspiration, causing internal congestions, &c.

By what is it aggravated?

By some diseases and displacements of the uterus, as anteversion, retroversion, &c.

With what is menorrhagia easy to be confounded?

With hemorrhage from the uterus, caused by polypi, ulcers, cauliflower excrescences, &c.

What are the only positive means of discrimination in such cases?

Careful physical examination.

With what other affection may menorrhagia be confounded?

Abortion and its attendant hemorrhage and lochia.

Upon what should the treatment be founded?

As accurate a knowledge as possible of the cause.

What kind of treatment is mostly indicated?

An anti-phlogistic treatment, sometimes involving sanguineous depletion—then revulsives to the lower extremities, by dry warm feet, blisters, setons, and stimulating liniments, &c.

What internal remedies should be given?

The saline laxatives, saline mixture, digitalis, &c., and when the excitement is allayed, small doses of ergot should be administered.

What treatment seems peculiarly proper in the intervals?

The application of cold, moderate at first, but gradually increasing in intensity, as the cold bath, cold douches, &c.

Upon what do the irritative forms of menorrhagia depend?

Upon an irritable condition of the uterus, perhaps the result of over excitement of the organ.

Towards what point should our attention be particularly directed in such cases?

The condition of the uterus.

What is the result to the patient, from protracted menorrhagia, arising from any of the several causes?

Extreme debility, anemia, dropsy, and sometimes completely broken health.

Which should claim our attention most, the constitution or the discharge ?

Gooch, says in this case, take care of the discharge ; but Hodge, says very properly, take care of both. Remove all aggravating causes ; thus, if displacements exist, rectify them, abstain from all sexual excitements, and take care to improve the tone of the system, support patient with animal food, &c., clothe her warmly, particularly about the feet, give her a proper allowance of wine, make use of rough frictions and other revulsive remedies, as dry cups, rubefacients, and particularly blisters.

What internal remedies may be administered, as astringents, to check the discharge ?

The sugar of lead, or the sulphate of zinc ; one of the best preparations, is probably rhatany. Monesia, and infusion of red roses have been recommended, so also, have small doses of ergot, say four or five grains, four or five times a day.

Are females liable to any other affections during the menstrual life, which seem to depend upon it ?

They are, particularly to a white secretion from the uterus and vagina, sometimes from both.

What is this white secretion called ?

Fluor-albus, or leucorrhœa, or vulgarly “ whites.”

Upon what does this secretion appear to depend ?

The application of specific virus, as that of gonorrhœa ; the presence of some irritating body, as polypus, and other tumors ; and it may arise from any of the ordinary causes of inflammations. By some, indeed it is regarded as a uterine catarrh.

What difficulties are there in the way of correct diagnosis ?

Perhaps, principally, the ignorance of physicians, growing out of the reluctance on the part of patients, to make their true situation properly known.

Into what divisions should we separate leucorrhœa?

Into uterine leucorrhœa, and vaginal leucorrhœa, a distinction some think important to be made.

What are the rational signs of leucorrhœa being uterine?

1. It often comes on as the precursor of beginning menstruation.

2. It sometimes occurs immediately before the red discharge, and again exists, after the red discharge has ceased, thus leaving the patient only one or two weeks freedom from any discharge.

3. Sometimes uterine leucorrhœa entirely substitutes the red menstrual secretion.

What other circumstances have been noted in regard to it?

It sometimes comes on about the critical period; rarely is seen after the fiftieth year of life, and is most frequently preceded or accompanied by symptoms of uterine irritation; it also often follows abortion, and even some cases of parturition at term.

What symptoms are usually attendant upon the irruption of leucorrhœa?

Sometimes they are acute, resembling those of menstruation, or even of dysmenorrhœa; as pain in the back, fever, sometimes nervous disturbance, as hysteria, &c., flatulency, dysuria, pain down the thighs, fulness and sense of tension of the labia; after these bad feelings have existed a time, the discharge usually comes on.

What is the general character of the discharge ?

Generally it is serous, or watery, and perfectly transparent; sometimes it is mucous, and occasionally it is albuminiform and adhesive.

Whence is this adhesive secretion thought to originate ?  
From the glands in the neck of the uterus.

How long may the disturbances resulting in leucorrhœa continue ?

From a few hours to several days.

What are the symptoms in chronic leucorrhœa ?

They are the same as, but less intense than, the acute. They sometimes occur in the interval of the menses, though the discharge sometimes substitutes the catamenia. Chronic leucorrhœa is usually less inflammatory, but still it exhausts the patient if long continued.

What is the result to the constitution, of the exhaustion by such secretions ?

Increased irritability, in proportion to the reduction of strength.

What is probably the correct opinion respecting many cases of disease in females called spinal irritation ?

That in very many cases they originate in irritation, from displacement or otherwise, in the uterus.

How does Dr. Hodge trace up the chain of morbid nervous actions or sympathies in these cases ?

“ If a patient have uterine irritation or leucorrhœa, irritation is extended to the spine, and may finally induce universal neuralgia—as odontalgia, otalgia, &c., &c., dyspnoea, palpitation, dyspepsia, &c.

To what point should we direct our remedies in such cases ?

To the cure of the original uterine irritation, and then the other affections will subside, if they have not been too long continued.

What characteristics of the discharge distinguish the chronic from the acute form of leucorrhœa?

In the chronic form the discharge is usually thinner than in the acute variety.

Which variety is most obstinate and difficult to cure?

That which is thick like albumen.

What relation does this leucorrhœal secretion hold to the morâle of the female who is subject to it?

Certain moral causes or impressions act upon this secretion to aggravate it, and this again seems to re-act upon the morâle of the patient and render it more irritable.

How are we to explain the occurrence of leucorrhœa in place of menstruation?

In some cases the excitement in the uterus is not sufficient to cause a red discharge; when the excitement is not very great we may have leucorrhœa; but again, when the excitement is inordinately high even menorrhagia may be the consequence.

What are some of the prominent causes of leucorrhœa?

Want of cleanliness, over stimulation of the organs by prostitution, &c.

Stimulating emmenagogues, the irritation of foreign bodies as pessaries, &c., particular diseases of the uterus, including displacements, abortions, remains of placenta, &c. &c.

Are we to regard leucorrhœa as the result of an inflammatory action?

By some very respectable authority it is regarded as

rarely inflammatory, but as the result of a moderate degree of irritation or excitement.

How is simple leucorrhœa to be distinguished from the specific affection called gonorrhœa ?

In gonorrhœa there is usually ardor urinæ, and it is said by some surgeons that a discharge may be actually squeezed from the urethra in cases of gonorrhœa, while neither of these symptoms attend simple leucorrhœa.

How are we to diagnosticate uterine from vaginal leucorrhœa ?

By the fact that the former is connected with menstruation, sometimes complicated with it, and sometimes becomes a vicarious substitute for it.

What rules of treatment are we to observe for uterine leucorrhœa ?

The same that have been laid down for the management of cases of emansio mensium or chlorosis. When connected with menorrhagia, to be treated as such.

What is to be done with those cases of leucorrhœa dependant upon displacement of uterus, the presence of foreign bodies, or diseases of the uterus ?

Remove the cause by appropriate treatment, and the leucorrhœa will soon subside.

What treatment is necessary for the acute form of leucorrhœa ?

Some cases require antiphlogistics, as general bleeding, cups, leeches, and alteratives, and after reduction of general excitement, the use of proper local remedies, as tepid and cold injections of mucilage into the vagina. If much irritation exists in the parts, warm fomenting injections should be used to favor the discharge.

What should be done if the disease persist notwithstanding the use of these remedies ?

Revulse, by blisters upon sacrum, and hypogastrium ; and if these do not succeed, treat it as a case of uterine irritation.

What is the duty of the physician in attempting the management of chronic cases of leucorrhœa ?

To discover if possible, and remove the predisposing, the actual and the aggravating causes.

What may be said respecting the use of local remedies ?

That in general too much reliance is placed upon them, and too little regard had to the improvement of the general health by proper constitutional remedies.

What remedies have been thought to act directly upon the secretory surfaces of the uterus and vagina ?

Of those to be used internally or by the stomach, the balsam of copaiba, the spirits of turpentine, the tincture of cantharides, and decoction of logwood.

In the menorrhagic leucorrhœa, or that complicated with menorrhagia, the ergot has been prescribed.

Some of the preparations of iodine have been thought useful ; externally the use of continued blisters, or of pustulation from tartar emetic ointment ; while cold douches to the back and into the vagina, have been useful, in allaying the local irritation.

When may we hope to derive benefit from astringent injections ?

When the constitutional and local excitement have been subdued by the means already pointed out.

What is to be said respecting the frequency of vaginal leucorrhœa ?

It is more common than that from the uterus, and very many females are incident to it.

What are the causes of vaginal leucorrhœa ?

The irritations from certain foreign bodies in the vagina, as pessaries, &c. The use of instruments in terminating labor, or abortion; violence done to the vagina in the commission of rape, &c. Chemical or vital irritants, as stimulating injections, the escape of urine into the vagina, acrid discharges from the uterus, the presence of tumors in the uterus and vagina, &c., excessive venery, or prostitution, &c., &c.

How far may leucorrhœal discharge depend upon enfeebled condition of the general health ?

It is sometimes dependant upon this condition of the general health entirely.

To what extent is it dependant upon sympathetic irritations in other parts ?

It is known in some instances to be caused by gastric irritation, by ascarides in the rectum, by diseases in the anus, as hemorrhoids, fistulæ, &c.

How far may habits of life, and the condition of climate operate in its production ?

They may have considerable influence. The women who use foot stoves, who indulge in various luxurious habits, or who reside in very moist climates, are said to be more prone to it than those under different circumstances.

To what state of the vagina is it owing ?

Generally to an inflamed state of the canal.

Is it more common in the married or unmarried female ?

In the married female, though even very young girls are sometimes affected with it.

When dependant upon vaginitis, what are its symptoms ?

There is then a sense of fulness in the pelvis, sometimes, though rarely, pain, but more frequently a sensation of heat in the course of the vagina: with this there is often tenesmus, and a mucous discharge from the rectum, also dysuria, the urine being natural in quality, but the canal of the urethra irritable from the extension of the irritation from the vagina.

Into how many stages do some authors divide this affection ?

Into two, the acute or severe, and the chronic or mild stages, or forms.

What is the usual character of the discharge in the severe form ?

It is acrid, sometimes red like bloody serum.

What is it when the inflammation is milder ?

It resembles mucus or muco-puruloid matter; sometimes it is of a greenish color; when the affection has become decidedly chronic, the discharge is usually of a thin yellowish colour.

How does acute vaginitis usually terminate ?

By resolution, or it runs into a chronic or milder form.

To what extent does it go when it is very severe and somewhat protracted ?

It then may involve the muscular or fibrous coat; unless however, the mucous coat shall have been destroyed by the inflammation, or ulceration, or by a wound, the surfaces do not become adherent to each other. In some instances moreover, sloughing does actually take place.

What is the diagnosis of gonorrhœal inflammation of the vagina?

In this variety of vaginitis there is ardor urinæ, inflammation in the inguinal lymphatics, and in the severer forms, ulcerations of the os tincæ have been observed.

Is it necessary that the vaginitis shall be of a specific character, to produce an irritation in the penis from the act of coition?

Leucorrhœa may be so acrid as to cause irritation in the male organ when exposed to contact with it.

What is the appropriate treatment of acute leucorrhœa?

Vascular and intestinal depletion, revulsives, &c. If the general vascular system be affected, venesection, saline cathartics, low diet;—locally, cups to the back, or leeches to the vulva; then promote secretion by warm hip bath, warm mucilaginous injections into the rectum and vagina.

What is proper after the inflammation has been reduced?

Astringent washes, as solutions of sulphate or acetate of zinc, acetate of lead, alum, borax, nitrate of silver.

What peculiar effect does alum produce?

It coagulates the secretion, particularly if the alum be previously burnt.

Suppose the inflammation to have been such as to be followed by adhesions of the walls of the vagina, what treatment should be pursued?

The contractions and occlusions thus formed should be overcome by the use of bougies or other proper dilating instruments.

What are some of the causes of chronic leucorrhœa?

Chronic inflammation of the vagina, displacements of the uterus, ulcerations in the vagina, or uterus, &c.

Can chronic leucorrhœa be readily distinguished from chronic gonorrhœa?

It is almost impossible to make out the difference between them.

What are the general indications in the treatment of the chronic form of leucorrhœa or vaginitis?

To improve the general health by the use of fresh air, wholesome diet, tonics, alteratives, as preparations of iodine, &c.; then resort to local treatment, if there be ulcerations first cure them. As alterative remedies, the balsam of copaiba, and tincture of cantharides, have had some reputation.

Have we probably any specific for the cure of this complaint?

Nothing which can be relied upon as such.

What kind of topical applications are best when the system has been prepared for their use?

Astringent washes of decoctions of logwood, nutgalls, oak bark, &c.

Should any rule be observed in reference to the mode of application?

They should be passed slowly, but far up, to distend the whole vagina, and bring the remedy in contact with the whole mucous surface.

What mineral astringents are useful?

The sulphate, or acetate of zinc, or of lead, one drachm to half pint of mucilage of gum arabic, to render it slightly adhesive to the vaginal surface. The alum, as mentioned in the reduced state of acute vaginitis, is particularly useful.

What is the probable origin of the pure milky white discharge which occurs in some cases ?

Its origin is not well defined ; it is sometimes supposed to come from the glands of the neck of the uterus, but it has been seen issuing from the vulva.

What is the best mode of cure of this peculiar state giving rise to this discharge ?

The application of the solid nitrate of silver, or a strong solution of the article to the part affected.

Upon what affections besides those of the uterus may the pain in the back, &c., depend ?

It may be caused by some disease in the kidneys, in the bladder, &c., or it may be of a neuralgic, or rheumatic origin, independent of any uterine affection.

In those dorsal or lumbar pains accompanying disturbance of the uterus, is the pain constant or intermitten ?

It is sometimes intermitten, paroxysmal, and of a neuralgic character ; it is mostly moderated by assuming the recumbent position ; sometimes the pain is constant even when lying down.

Are these painful sensations necessarily the result of inflammation ?

They do not always depend upon inflammation, but frequently upon a state of irritation.

What are we to understand by the phrase "*irritable uterus* ?"

A morbid sensibility of this organ, without inflammation or change of structure ; a condition which has continued in some cases for several years without effecting any organic lesion perceptible to the senses.

What influence does this irritability of the uterus appear to have over the exercise of its functions?

It causes them all to be painfully performed.

What is the effect of touching the uterus while it is in an irritable state?

It is extremely painful, sometimes causing the patient to scream.

Can the function of reproduction be carried on in cases of irritable uterus?

Sterility mostly, though not perhaps always, accompanies irritable uterus.

What are the principal causes of irritability of the uterus?

Disturbance of function, and displacements of the uterus; in some cases, it is dependent upon the character of the constitution, frequent labors, abortion, &c.

By what circumstances is the sensibility aggravated?

By distension of bladder, or rectum; by any severe exercise which causes pressure upon the uterus.

Is this affection necessarily complicated with any other?

It often exists entirely alone, but in some instances it is combined with an inflammatory state of the organ.

What influence may depressed or disturbed states of mind have over the production of this affection?

They may exert so potent an influence as to require the condition of the mind to be improved before any other treatment can be effectual.

What consequences may irritable uterus produce if not speedily cured?

Dysmenorrhœa, or menorrhagia, or a train of morbid sensibility, or nervous excitability, hysteria, spinal irritation, &c.

What are the curative indications in irritability of the uterus ?

The removal of any or all the causes which have produced it. Thus, if there be any displacement of the uterus, it must be properly restored, and kept in its proper situation by mechanical or other efficient means. If it has come on after any violent effort of the uterus, as after labor, or abortion, the patient must be kept quiet, and her bowels *moderately* open ; if there be any local inflammatory excitement, leeches may be applied to the sacrum, or groins.

Is there any objection to the application of leeches directly to the uterus in case of irritability of that organ ?

Their application would be painful, and sometimes aggravating.

What constitutional remedies should be employed ?

During the three weeks immediately succeeding the menstrual discharge, she should use the cold bath, either local or general, with a view to obtain a reaction and healthy glow of warmth, and by thus increasing the strength, diminish the irritability of the nervous system.

Cold douches down the back—cold water into the vagina—large quantities of cold water into the rectum and colon to distend them, and produce the two-fold effect of removing the feces and giving tone to the nerves.

What rule for diet and exercise should be observed ?

In the more chronic or protracted form, the diet should be nutritious, and solid or animal, and not entirely vegetable.

The patient should be carried out into the open air whenever possible, and she should use exercise on foot whenever she is able, without aggravating her symptoms.

What is to be said respecting counter-irritants ?

They, such as tartar emetic, croton oil, moxa, and perpetual blisters or setons seem to be in general too irritating to the system, and rather aggravate than relieve.

Under what circumstances are narcotics called for ?

During severe attacks of pain, the cicuta in two grain doses, three or four times a day, gradually increasing the quantity if necessary ; stramonium, belladonna, hyosciamus, lactucarium, &c., are sometimes very useful in allaying the pain, provided the use of them is continued through several weeks.

What alterative tonic have we which is often useful in these cases ?

Lugol's solution of iodine, or the hydriodate of potash. Five, or ten, or twelve drops, three times a day, of the strong solution, continued a long time, often improves the appetite and the vigor of the general system.

What other parts of the pelvic viscera of the female have been observed to be subject to this morbid irritability ?

The vagina, vulva, and urethra.

What treatment is proper for these cases ?

The same as for irritable uterus.

To what variety of displacements is the uterus subject ?

To prolapsus in its several degrees—to retroversion partial and complete—to anteroversion—to anteflexion—to retroflexion, and to a hernial displacement.

What are we to understand by *prolapsus* of the uterus ?

Its precipitation along the canal of the vagina.

How many degrees of prolapsus are there?

Three. First—descent, where the position is slightly altered, without however any marked deviation of the axis of the uterus, but with the neck often bent a little forward. Second—precipitation or prolapsus, where the organ has descended low into the vagina, and has changed the direction of its axis, from a correspondence with that of the superior strait to that of cavity, or even inferior strait, with its anterior surface upwards. Third—procentia, or complete prolapsus, where the organ with part or all of its appendages, that escaped the vulva, with its axis corresponding more or less to the axis of the whole body.

What is the most common cause of prolapsus?

Increased size and weight of the organ, particularly when accompanied by relaxation or elongation of the ligaments, and especially of the utero-sacral ligaments.

During what period of pregnancy is the uterus most likely to become prolapsed?

Between the first and the fourth months, while the organ is heavy and yet not large enough to be supported by the bony structure of the pelvis; again, shortly after parturition, while the organ is still large and heavy, and the ligaments very much relaxed or elongated.

What ligaments are most important to the support of the uterus in situ?

The utero-sacral, or posterior ligaments of the uterus.

What part does the vagina perform in the support of the uterus?

Probably none at all; though in this respect obstetric anatomists differ in opinion

What influence should the knowledge of the risk of accidents have upon our management of puerperal females ?

They, that is, any others than perhaps savages and very laborious women, should be kept in the horizontal position several days after parturition, until the uterus may have approached to its usual size, and the ligaments have regained their usual tonicity and degree of contraction.

What are the exciting causes of prolapsus, in single or unimpregnated women ?

Great muscular exertion, which sometimes induces it in strong girls, sudden and severe falls, constriction of the upper portion of the body, and consequent pressure upon the intestines, and through them upon the pelvic viscera, as produced by tight lacing, severe straining to relieve constipated bowels, &c.

With what other displacement of the uterus may prolapsus be confounded ?

With partial or even complete retroversion.

What is meant by retroversion ?

A tilting of the fundus and body of the uterus backwards, while the neck and body are carried forwards, and sometimes upwards.

How many varieties of this do we recognize ?

Two—the partial and the complete retroversion.

What other peculiar condition of the uterus is there, in which the body may be carried more or less backward ?

Retro-flection, in which the uterus is bent backwards upon itself, in such manner that the mouth and a portion of the neck may have their usual direction, while the fundus, body, and part of the neck are so bent backwards as to form an angle with the inferior portion.

Are either of these displacements capable of being positively diagnosticated by the rational or sympathetic signs ?

No ; there are numerous other affections liable to occur in the female pelvis, which give signs strongly resembling displacements. Thus, congestions of the uterus, irritable uterus, irritable urethra, irritable vagina, irritable rectum, polypus, and other tumors in the uterus or vagina, ascariides in the rectum, or accumulation of hardened feces in that intestine, have all produced sympathetic symptoms similar to those of prolapsus or other displacements.

What are the symptoms usually attendant upon displacement ?

Many of the symptoms of local inflammation—weight in the pelvis while in the erect position—bearing down—disposition to strain, as if to evacuate the bladder or bowels—sensation as though something must fall away—pain in the sacro-lumbar region, thence all round to the hypogastrium—pain in the bones of the pubes, probably from the stretching of the round ligaments : this is relieved at once by lying down—pains sometimes intermittent, like those of labor—a more or less fixed pain in the side, sometimes in one side, sometimes in the other, sometimes in the one inguinal region or the other, and often with a sense of dragging from the umbilicus.

What effect has certain states of the bowels on the feelings of patients who have displacements of the uterus ?

If the bowels are moved regularly and without effort, and the patient is not in a highly irritable condition, she may feel comparatively well ; but if the bowels be constipated, the weight of the feces aggravates the feelings of the patient : and if she have a diarrhœa, the frequent actions

of the bowels greatly increases her distress, by still more dragging down the uterus.

Which most sympathises in this local disturbance of the uterus, the vascular or nervous system ?

The vascular system is usually little affected, but the nervous sympathies often become very extensive ; thus, the spinal marrow, the brain itself, take on the character of spinal or cephalic irritation, and in time neuralgia of almost every organ may occur in succession or simultaneously.

What appears to be proof that this irritation has depended upon displacement of the uterus ?

The fact that in some cases instantly, and in most others sooner or later, all these distressing affections have ceased after the restoration of the uterus to its proper place.

As there are many other affections already alluded to, which cause symptoms resembling displacements of the uterus, is it proper that the physician should at once determine, by physical examination, what the true diagnosis is ?

This should be regarded as a fundamental rule in the duty of treating diseases, but as in this case the feelings of both patient and physician should be spared, if possible, it has been advised first to treat all these acute symptoms by rest in bed, with the head and shoulders low, light diet, *laxative* medicine, warm fomentations, warm injections, and if apparently necessary, leeches to the groins, and the internal use of such mild narcotics, as will under ordinary circumstances of irritation, quiet the system.

Suppose the train of symptoms denoting engorgement, irritability, or displacement of the uterus, should occur in a patient directly after parturition, what treatment should be adopted ?

Keep the patient constantly in bed, or on a sofa, in a

horizontal position, for six, eight, ten, or twelve weeks, till such distressing symptoms are removed.

Will it be proper to practice this irksome restraint upon a female during this whole period, without having ascertained the real condition of the pelvic viscera, by physical examination ?

In married females this examination may be resorted to with less reluctance, and may be made early, but in young and unmarried females it has been thought proper to try the curative effects of rest, diet, and the means mentioned ; but should these fail to remove all the symptoms, such an examination ought undoubtedly to be made.

As patients are apt to have their general health suffer from long confinement, cannot some means be devised by which she may use some exercise ?

If there be no engorgement or acute irritation, her system must be invigorated, and she must be permitted to exercise moderately.

When the acute symptoms have been relieved by rest or otherwise, what is mostly necessary to complete cure, or afford permanent relief to the displacement, while the patient is recruiting her general health by exercise ?

Such mechanical support as will retain the uterus in its proper situation until the general health becomes restored, and the ligaments of the uterus acquire their natural tonicity.

What is the general history of these artificial means of support for the uterus ?

From the earliest records of medicine, instruments called pessaries, have been in use. Sometimes it has been proposed to substitute them by external bandages and com-

presses. The latter have however proved less generally effectual, and consequently the pessary of variable forms and materials have been found necessary.

What is the *modus operandi* of most of the bandages now in use ?

They compress the inferior part of the abdomen, and may be properly called abdominal supporters ; but at the same time, they either force down the small intestines into the cavity of the pelvis upon the uterus, or by the firm pad placed in front of the abdomen, and directly above the pubes, they form such a plane as to cause the abdominal viscera to descend into, or towards the pelvis, when pressed upon from above, by the diaphragm and other respiratory muscles.

What is the effect of the perinæal pad and straps ?

They contribute in conjunction with the circular band, to subject the uterus to more or less pressure, in consequence of its pressing up the perinæum to the orifice of the uterus.

What is probably the cause of the objections to the use of pessaries for the relief of prolapsus and other displacements of the uterus ?

The fact that they are often made of improper materials, unsuitable forms, and that most physicians misapprehend the manner of application, and their mode of operation for the support of the displaced organs.

What is the first thing essential to the successful use of the pessary ?

That the uterus be replaced in its natural situation, for without this the pessary will fail to answer the purpose intended.

What are the materials of which the pessary should be composed ?

Glass, or silver well gilt, or pure gold.

What is the shape of the pessary ?

It is very variable, according to the fancy of the practitioner, but particularly so according to the shape of the vagina, and the condition of the displacement.

What forms are mostly entitled to preference ?

1. The common flat circular form.
2. The ring-shaped, with very thick edges.
3. The oval-ring, curved upwards at one or both extremities.

What is the objection to the globular pessary ?

1. It is introduced through the ostium vaginæ with difficulty.
2. It does not always sustain the uterus in its natural situation.
3. It is often extremely difficult to remove it when it has been introduced.

What position should the round flat pessary occupy in the vagina ?

It should be parallel with the rectum, that is, its convex surface should be applied to the rectum, with its upper edge in the cul de sac of the vagina, and its lower edge upon the perinæum.

Is the uterus then supported in the direction of the thickness, or the diameter of the pessary ?

It cannot be effectually supported in any other than the direction of the diameter of the pessary.

In what way does the pessary appear to act in the support of the uterus ?

As a lever, of which the convex surface rests upon the

rectum as a fulcrum, and the muscles of the perinæum act at the lower edge, while the uterus is supported upon the upper edge.

Which form of pessary has been regarded as best for the support of a retroverted uterus ?

The oblong or elliptical ring pessary, which must be long enough to have one of its extremities go up behind the neck and under the body of the uterus, while the other end is supported by the perinæum, or by the pubes.

What class of pessaries are supposed to be best for females who have had many children, or those affected with irritable uterus, or those who have ulcerations upon the os uteri ?

The ring pessaries with edges sufficiently thick to elevate the uterus from contact with the floor of the vagina.

What consequences may result from having the pessary too small ?

Both pessary and uterus may become prolapsed or retroverted.

What is to be said of the stem pessary, or the pessary *en bilboquet* of the French ?

It is usually too irritating to be useful.

What is the proper method of introducing a pessary ?

Frequently it is sufficient that the patient lie upon her left side, with her hips to the edge of the bed. It is usually more convenient for the practitioner that she lie upon her back, and in some difficult cases it is necessary that she have her hips brought to the foot of the bed, and her feet on chairs each side of the seat of the practitioner. The vulva is then to be well lubricated, and the posterior commissure so put upon the stretch by the index finger of one

hand, as to dilate the orifice of the vagina. The pessary also, well lubricated, is now to be introduced edgewise in the direction of the long diameter of the vagina, by making it press firmly upon the finger, which rests upon the posterior commissure, and taking care not to allow the upper edge to contuse either of the nymphæ, press firmly but gradually onward, until it has entered the orifice of the vagina—then observing that it turns over with its concave surface upwards—continue pressing upon its anterior edge till it is made to rest in the fossa in the perinæum, behind the posterior commissure of the vulva, having its upper edge completely imbedded in the cul de sac of the vagina.

At what part of this operation does the patient experience pain ?

While the instrument is passing through the orifice of the vagina. It is usually instantly relieved, as soon as the pessary has fairly passed beyond this point.

Would it not be best to replace the uterus with the finger, before attempting the introduction of the pessary ?

It would always be best, and in those cases in which the finger is too short for carrying up the fundus in cases of retroversion, it is best to elongate it by carrying up upon it a flexible metallic bougie, with which the organ may be replaced.

What advantage can be gained by passing a finger into the rectum in these cases ?

The replacement may thus often be facilitated, but operations through the rectum are often very painful to the patient.

What instructions should be given to the patient, if she should feel that the lower edge of the pessary presses anteriorly ?

To insert the finger into the vagina, and press the instrument backwards and rather downwards.

What sensation does the patient usually experience after the pessary is properly placed?

Sometimes, immediate relief; this however is not always the case for a few days. In some cases moreover it cannot be borne.

How long is it usually requisite for a patient to continue the use of the pessary?

Three, six, nine, twelve, or more months.

How long may she usually wear a glass, or a gilt pessary without removing it?

In general six months; at the end of which time it is usually necessary that she have it removed to be re-gilded, or to substitute one of different size, whether it be of glass or other material.

How are such pessaries to be kept clean in the vagina?  
By the use of injections.

Is the removal of pessaries easily accomplished?

Not in all cases; sometimes they can be extracted only by the aid of a suitable hook, or a vectis properly constructed, or they may even require the use of proper forceps.

What can be said of the elytroid pessary of Cloquet?  
That it is not found to answer the desired purpose.

What are some of the evil consequences which may result from pessaries?

Irritation, inflammation, ulcerations of the vagina and orifice and neck of the uterus; when injudiciously em-

ployed, or unsuitably constructed, the neck of the uterus has become strangulated in the perforation of the flat pessary, &c.

What should be done if the pessary be found doing any injury ?

It should be removed and its use entirely abandoned, or it should be substituted by one adapted to the case.

What surgical means have been devised for the radical cure of prolapsus uteri ?

The removal of a portion of the mucous membrane of the posterior or anterior part of the vagina, then bringing the edges together so that by their adhesion the vagina may be diminished in size.

What is meant by the term *anteversion* of the uterus ?

That condition of the uterus in which its body and fundus are thrown forward against the bladder.

Is this of frequent occurrence ?

It is believed to be rare, and especially in the unmarried female.

What symptoms does it produce ?

Several of those attendant upon prolapsus and retroversion, but especially does the patient complain of sense of pressure against the bladder; sometimes this feeling is so strong as to have given rise to the idea that calculus existed in the bladder.

What attempts are to be made to remove the cause of such distressing symptoms ?

The indications are to restore the displaced fundus to its proper situation, and retain it if possible by a well adjusted pessary.

Is it an affection easily to be managed ?

In general it is not ; it is probable that it often depends upon some mechanical cause, as the pressure of impacted feces in the sigmoid flexure of the colon, the presence of ovarian or other tumors, &c.

How are we to study or regard inflammatory affections of the organs of generation in the female ?

In relation to the tissue which is affected. Thus, in inflammation of the mons veneris the effects of the disease are modified by the density of the structure ; hence when it suppurates, the pus being bound down, burrows more or less as though under a fascia.

In what respect does inflammation of the vulva differ from that of the mons veneris ?

This structure being much less firm, great tumefaction from sanguine congestion and edema are apt to follow. Suppuration also takes place more readily.

With what is common inflammation of the vulva often complicated ?

With an aphthous eruption, as seen in the mouths of young children.

What class of females are subject to inflammation of the uterus ?

It is liable to occur in single as well as married women, and in the pregnant and non-pregnant condition.

What is it called when it attacks the substance of the uterus ?

Hysteritis, or metritis.

To what grades of inflammation is this organ liable ?

As most others, to acute and chronic inflammation.

What are some of the causes of metritis or hysteritis ?

Blows, falls, sympathetic irritation in other organs, violence to the uterus during parturition, &c.

The causes which produce dysmenorrhœa, also sometimes give rise to metritis.

The uterus may also become inflamed from the application of syphilitic virus applied directly to it, or it may have been indirectly communicated along the vagina.

To what other specific inflammation is the uterus liable ?

To gout or rheumatism.

What symptoms accompany metritis ?

Chill, fever, pain in back, but particularly in the hypogastrium. The bladder is irritated and little urine can be retained, great pain is experienced in any attempt at motion ; when the attack is severe the patient is obliged to lay down upon the back, have the legs drawn up to take off all pressure from the affected part. In the milder forms there is less pain, and little or no sympathetic sign of the local affection.

What condition of the parts is found on physical examination ?

Vagina and uterus hot, the uterus thickened, hard, congested, heavy, and painful to the touch.

What are the varieties of termination of metritis ?

Resolution, abscess, chronic inflammation, induration, and ramollissement or softening.

What is the general character of induration of the uterus ?

1st. The whole uterus, with its neck is large.

2d. The organ may frequently be felt above the pubes, regular in shape, and little if at all, sensitive to the touch.

3d. Balanced upon the point of the finger it feels heavy, and by this weight in the vagina it causes the sensation of prolapsus.

Does this induration pass speedily into any other form of disease ?

It often remains stationary for a long time, even during the balance of life without injury to the patient.

Is it always free from morbid sensibility, when in this indurated state ?

It is not ; on the contrary, it sometimes remains irritable for days, weeks, and even years, and this irritation, as has been said already, is sometimes kept up by the displacement of the organ, whether it be prolapsed, or retroverted.

Are the functions of menstruation and reproduction necessarily interfered with by the occurrence of induration of the uterus ?

Patients may continue to menstruate, but if they become pregnant, they will be likely to abort.

Is ramollisement or softening of the substance of the uterus usually extended to the entire organ ?

It is perhaps altogether a rare mode of termination of inflammation, but when it does so occur, it is more frequently confined to a part, than extended to the whole organ.

What parts of the uterus may be the seat of abscess ?

Sometimes it occurs in the substance, and points towards the cavity of the abdomen or pelvis, sometimes it opens upon the inner surface of the uterus.

When the abscess points towards the external surface of the uterus, what process is usually commenced ?

The serous membrane, viz: the peritonæum, usually

suffers from local inflammation which results in adhesion, and thus a cyst is formed which contains the effused pus until ulceration is effected into the rectum, and the matter passed off per anum; or the coats of the bladder are perforated and the pus escapes with the urine, or an opening is made between the vagina and bladder, or between the uterus, vagina, and rectum; or lastly, and least frequently, a perforation is made through the cyst into the cavity of the abdomen, and fatal peritonitis is induced.

What is the prognosis of abscess in the uterus?

Mostly, unless the abscess open into the cavity of the peritonæum, life may be preserved, though the patient's health may remain a long time impaired.

What treatment is appropriate to acute metritis?

One strictly antiphlogistic, as venesection, saline cathartics, antimonials, local bloodletting, low diet, perfect rest, and some active revulsives, as fomentations, blisters, &c. &c.

What is to be said respecting the use of cold or astringents?

That though useful in some cases and some stages of the disease, they are entirely inadmissible in rheumatic or gouty constitutions.

If the inflammation terminate in induration, how is it to be treated?

Attempts are to be made to discuss it by the use of remedies believed to act powerfully as discutients, as small and repeated doses of mercury, in the form of calomel, blue pill, or corrosive sublimate. By many the cicuta has been thought to act in this way, and latterly the Lugol's solution of iodine, in doses of from eight to ten drops,

three times a day, has had some reputation for this purpose.

Is it necessary to confine the patient to her bed for the discussion of the induration?

Freedom from excitement should be secured to her, but often she may be permitted to move about while under treatment, provided the heavy organ be supported upon a pessary.

What train of symptoms would indicate the termination in suppuration?

A continuance of the pain, with constitutional irritation, together with a sense of throbbing in the part.

What treatment should be adopted under such circumstances?

A continuance of the anti-phlogistic treatment, until the abscess opens spontaneously, or points in such direction that it can be opened artificially.

What particular portion of the uterus is most liable to inflammation?

That part which dips into the vagina, or the neck and mouth of the uterus.

What are some of the numerous causes of inflammation of this part of the uterus?

1. Extension of inflammation from the mucous membrane of the vagina—hence it is often connected with vaginitis.

2. It is sometimes caused by the posterior lip dropping down into, and becoming strangulated in the orifice of a flat pessary; mechanical shocks, as violence in coition, &c.

What symptoms usually accompany inflammation of the neck of the uterus?

They are similar to those of mild metritis, as pain in the back, heat and weight in the pelvis, &c.

What evidence can we have that the inflammation is confined to the neck, and does not involve the body?

The neck is found tumid, and the body not so, when examined by the touch.

What are some of the terminations of inflammation of the neck of the uterus?

In resolution, in induration, in scirrhus, in ulceration both simple and malignant.

How are we to distinguish simple from syphilitic ulceration of this part?

Simple ulceration is said to have smooth regularly defined edges, while those of the specific character have irregular margins.

What varieties of simple ulcerations may affect the neck?

1. Simple ulceration of the mucous membrane, resembling an abrasion of the mucous surface.
2. One in which there are deposits of small patches of lymph, as aphthæ, &c.

How is the corroding ulcer to be distinguished from either of these varieties?

By the fact that it digs out the internal surface of the mouth and neck of the uterus.

Can simple ulcerations always be recognized by the touch?

They cannot; it is rarely safe to rely upon the touch for a knowledge of their character.

How then are they to be recognized?

By means of a speculum or well adjusted tube, passed so adroitly into the vagina, as to enable the eye of the practitioner to *see* the part affected, and thus derive more accurate knowledge respecting it.

What varieties of speculum are there, and of what materials are they composed?

They are made of glass or of some of the metals. Some are complete tubes, either cylindrical, or somewhat conical—consisting of a single piece—such are composed of glass, pewter, or the mixed metals. Others are so divided that they operate with handles upon a hinge, and resemble a tube cleft longitudinally, with a pivot so adjusted that the two extremities of the blades can be more or less widely separated. Others are so constructed as to consist of three equal blades, so adapted as to move upon each other, and thus to be passed into the vagina while folded up, and afterwards expanded, to bring the orifice of the uterus into view.

Which variety of those now in use is probably best adapted to most purposes for which the instrument is required?

The quadrivalve instrument, which is so constructed that it enters the vagina in a small compass, yet it is capable of great expansion when necessary, by compressing the two handles.

How is the speculum to be introduced?

When no great precision in the examination is requisite, the patient may be placed on her left side, close to the edge of the bed—or what is to be preferred, she may be placed on her back, with her feet resting at the end of the bed, and the breech brought down to her heels. If, how-

ever, any careful investigation of the condition of the os tincæ is necessary, it becomes almost indispensable that the hips should be brought upon the edge of the bed, elevated by a pillow or some suitable padding, while the feet are extended upon chairs or suitable supports outside of the bed. The patient's limbs should be properly covered with drawers, and over all should be placed a sheet or blanket, having in the central seam an orifice ripped sufficiently large to receive the instrument as far as to the handles. The examiner is then to be seated or stationed between the knees of the patient, while the instrument, well lubricated, is to be passed by one hand through the orifice, as far as to the handles or base. The vulva is also to be well lubricated by the other hand, one or two fingers of which are to be passed into the orifice of the vagina, to press back the perinæum. As soon as the posterior commissure of the vulva is put sufficiently upon the stretch, the point of the instrument should be carried down upon the back of these fingers, which should thus form a plane, along which the *embout*, or rounded wooden extremity of the speculum, can be guided over the posterior surface of the vagina. This done, the fingers are to be withdrawn, and that hand called to aid the other in cautiously passing the speculum onwards in the axis of the vagina to the cul-de-sac behind the uterus. The handles may then be carefully pressed towards each other, when the *embout*, becoming disengaged, is forced out by the spring contrived for the purpose, and thus leaves the upper portion of the vagina accessible to the eye of the examiner.

What kind of light is best adapted to the purpose of such examinations?

A bright moveable light, such as a free burning lamp or candle.

What obstructions may present to the ready discovery of the state of the parts ?

A greater or less quantity of tenacious mucus, or even coagulated blood, may be attached to the surface of the os tincæ. This must be wiped off by a mop made of fine sponge or charpie, or washed away by a detergent injection.

What is the proper treatment of ulcers of the os tincæ ?

Depletory, while any marked inflammatory action exists—then astringents, and for the mucous ulcerations the nitrate of silver, either in substance or in proper solution, and applied by means of a camel's hair pencil.

Is it essential that the patient should be kept at rest during the treatment ?

If possible, the patient should be kept at rest, and pressure should as much as possible be taken from the uterus. Where, however, quietness is impracticable, the patient should have the ulcerated surface of the uterus isolated from the mucous membrane of the vagina, by the use of a properly adjusted pessary. The dressings or washings can then be applied with better effect.

Are dressings to the os tincæ of easy application ?

They can rarely be properly applied unless through the speculum, previously introduced, to bring the affected part into view.

Is it important that an accurate distinction be made between pure inflammation of a part, and irritation and disorders of function merely ?

It is highly important, as the therapeutic indications are essentially different in many of these cases.

What is meant by the term phagedenic or corrosive ulcer of the mouth or neck of the womb?

That variety of ulcers which is constantly extending by the progress of ulcerative absorption.

Is it proper to regard this as always malignant and incurable?

It is mostly sufficiently malignant in its character to produce serious, and generally fatal inroads upon the constitution, but it is sometimes amenable to appropriate remedies.

In what class of females does it usually occur?

In those of a lymphatic temperament, and who have passed the menstruating period of life in most, but not in all cases.

Is its existence generally recognized early after its commencement?

As it is usually not attended with very severe pain, the patient ascribes the discharge which attends it to too frequent a menstruation, or if she be passed this period of life, she thinks menstruation has returned.

What sensations are usually experienced by those who have this disease?

Principally, a sense of weight, bearing down, as occurs in prolapsus or partial retroversion.

What condition of the uterus, &c., is to be recognized by the finger in the touch.

The circumference of the neck is found enlarged, and the orifice very considerably so—it seems to be infundibulated or *dug out*—sometimes the finger will pass readily to the internal os uteri.

Is the body of the uterus moveable or fixed in these cases?

It is usually quite free and moveable—sometimes it is a little engorged. The neck only or the internal surface being implicated.

Can an accurate diagnosis be obtained by the touch alone?

No, the sense of sight through the medium of the speculum becomes necessary to recognise the alterations which have taken place.

What influence does this affection exert upon the constitution of the patient?

Although it is usually attended with very little pain, yet sooner or later the patient becomes reduced to a state of great feebleness and prostration. The absorption of the vitiated secretion produces hectic fever, great emaciation, followed by edema, &c.

What parts become subsequently involved in the erosive process which is going on?

The bladder, or rectum, or both, become opened so that the urine escapes by the vagina; or in the event of the rectum being ulcerated, the feces pass by the same route.

What precautionary measures are to be adopted to prevent an aggravation or rapid extension of the disease?

The constant use of detergent injections into the vagina, and perhaps into the uterus itself, with a view to remove as effectually as possible all the matter as fast as secreted.

What local medicines may be used?

Those of an astringent character have generally been thought proper, after a due ablution of the surfaces with bland mucilages, or simple warm water; thus the sulphate

or acetate of zinc, in the proportion of one, two, or three grains to the ounce of water, may be thrown up by a syringe, or carried upon charpie, through the speculum by some suitable instrument.

The solution, or solid nitrate of silver, has also been used in such cases.

Is it proper to rely upon local treatment alone?

It will be highly important to attend to all the hygienic measures which improve the general health.

In regard to the use of injections into the cavity of the uterus, how, and by what means, should they be introduced?

In the present ignorant condition of *nurses*, the practitioner should always apply them, and that if possible two or three times a day. The mucilage of flaxseed, slippery elm, pith of sassafras, starch or barley, should be carefully strained, and then conveyed through a gum elastic catheter, the eyelet end of which should be first carefully introduced upon the point of the finger into the cavity of the uterus, and so retained by the hand of the patient or a proper assistant, that it be not driven forcibly against the walls of the uterus when adapting the pipe of the syringe to it: or a silver tube curved into the proper shape may be substituted, and to this the syringe when charged may be so fitted as to pass up the whole contents into the cavity of the uterus.

This operation with whatever kind of instrument, should be conducted with great care, as not only the instrument improperly introduced may do much injury, but there is some danger of forcing the fluids along the fallopian tubes into the cavity of the peritonæum, and thus causing fatal peritonitis.

Is cancer of the uterus a very common disease ?

In this country it is believed really to be one of very rare occurrence, though there are many affections of the uterus which are ascribed to cancer, and yet are not carcinomatous.

What portion of the uterus is most liable to be attacked with cancer ?

The neck.

What is the usual mode of attack of cancer ?

First, the parts become the seat of irregular induration of a scirrhus character, being more nodulated, harder and more dense and painful than simple induration ; one lip is mostly sensibly larger than the other.

What is usually observed in regard to the vagina in these cases ?

That it is more or less shortened, and sometimes adherent to adjacent parts. The same may be said of the uterus, which is usually found immoveable, being bound down to the bladder, or rectum, or both.

What is subsequently observed in respect to the march of the disease ?

Sooner or later, corrosive ulceration with hemorrhage from the surface which is sometimes studded by a fungus growth takes place.

The patient also experiences deep seated lancinating pain, (which is generally, though not uniformly pathognomonic of cancer,) and after a time the nervous system suffers severely, while sooner or later the aspect of the patient changes : she loses the solidity of muscular and cellular tissue, she may previously have possessed, and substitutes for it, a straw colored surface, with more or less edema of the whole cellular membrane.

What should be the treatment of cancer of the uterus ?

At the very incipient stage, it should be antiphlogistic ; after it has made some progress, we can do no more than palliate by keeping the system constantly under the influence of cicuta, hyosciamus, &c., though sooner or later, we are generally compelled to use opium in some form or preparation, in gradually increasing doses, to keep up a degree of narcotism.

By these means the action of the disease is sometimes arrested in its early stage, and its development retarded for a greater or less length of time.

When ulceration occurs, the same care should be taken to wash away the vitiated secretions.

What is to be said respecting the propriety of amputating the neck of the uterus ?

Although this operation has been frequently practised in Europe, in cases of real or supposed cancer, the recorded results are not sufficiently favorable in cases of true carcinoma as to gain our approbation for the practice.

The diagnosis of the disease while strictly confined to the inferior portion of the neck, is not sufficiently clear to justify an indiscriminate resort to it ; and further, when it has become clearly developed, the parts above the reach of the knife are so often invaded by the same disease, that little or no benefit could arise from the cutting away of a part only of the disease.

What do you mean by the term physometra ?

Tympanitis uteri, or a distension of the uterus by a quantity of air supposed to be secreted within its cavity ?

Does the mucous membrane of the vagina probably ever secrete air also ?

It is believed that it sometimes does, as some females

have these discharges of air per vaginam only when in the unimpregnated state, and others when pregnant.

Is it ever attended with any serious consequences ?

Not when it passes off readily, which it does do sometimes with considerable noise ; but when it is confined within the cavity of the uterus, the patient suffers more or less from distension.

Upon what condition of the system, does it depend ?

Some suppose it dependent upon a low degree of inflammation of the mucous membrane ; others ascribe it to some peculiar condition of the nervous system, which presides over the secretory processes.

How is the distension of the uterus from this cause, to be distinguished from pregnancy ?

By percussion, auscultation and ballottement :

1. Percussion produces a resonance which cannot be perceived in pregnancy.

2. Auscultation in this case, cannot detect the sound of the fetal heart, &c.

3. Ballottement, cannot recognise the existence of a body moveable in a fluid, within the cavity of the uterus.

What treatment is to be used in these cases ?

There is no specific remedy known for this affection ; if the air do not pass off under contraction of the uterus, or by the shock of the abdominal muscles, by coughing, or otherwise, it may be necessary to dilate, or perforate the os uteri, and allow the air to pass through a catheter, or canula ; after which, it has been proposed to apply to the inner surface of the uterus, solution of nitrate of silver, or some preparation of chlorine, &c., with the view to alter the condition of the surface which gives rise to this secre-

tion,—particular regard should be had to the healthy condition of the general system.

What do you mean, by the term hydrometra ?

Dropsy of the uterus, from an accumulation of serous, albuminous, or muco-purulent fluid, within its cavity.

Is this condition easily diagnosticated ?

It is not, being easily confounded with pregnancy,—having a similarity of sympathetic signs, though the stomach is said usually to sympathize less than in pregnancy.

What physical examination is best adapted to clear the diagnosis ?

Ballottement, by which the uterus is found to contain a fluid, but having nothing moveable suspended within it.

Auscultation moreover, detects no sounds of the fetal heart.

What treatment is proper for hydrops uteri, or hydrometra ?

A general diuretic treatment, might be somewhat useful, but, it is mostly necessary to perforate the uterus, by a stilet or catheter in its orifice, or pass a trochar and canula, into some part of the neck which can be reached by the vagina.

Should we regard dropsy of the uterus, as a dangerous complaint ?

It should be so considered, but chiefly from the morbid action going on in the inner surface of the uterus, and its liability to ulceration through its walls into the cavity of the abdomen.

What is supposed to be the origin of *hydatid* formations, which sometimes distend the uterus ?

At one time, they were supposed to spring from mucous

surfaces, and hence, originate in the lining membrane of the uterus. At present the prevailing opinion is that they depend upon the serous membranes for their nutrition, and it has been observed, that they are rarely or ever found, except in some way or other, connected with pregnancy. In such cases, they are usually first developed upon the surface of the ovum.

What influence do they exert over the developement of the ovum itself?

When numerous, they interfere with the nutrition of the ovum, which then blights, so that upon extrusion there is little appearance of the original ovum.

What are the symptoms of hyatids in the uterus?

They considerably resemble those of ordinary pregnancy, and hence, cannot be satisfactorily diagnosticated, until they begin to be extruded.

Women affected with hydatid formations in the uterus, are rather more liable to have occasional or constant bloody serous discharges, from the uterus, for a greater or less length of time, before expulsion takes place.

In the early months, the diagnosis is very obscure, but when the uterus is greatly distended, physical exploration and ballottement, prove the non-existence of a fetus in utero.

What opinions have been entertained, respecting the dependence of hydrometra upon hydatids?

Dr. Denman, regarded dropsy of the uterus, as a very large hydatid?

Suppose the existence of hydatids be suspected, or even satisfactorily made out, what plan of treatment ought to be adopted?

As a general rule it will be proper to palliate any disturbances which may occur, and then wait until symptoms of labour come on, when if the extrusion of the mass or masses be tardy, administer ergot sufficient to excite the expulsive action of the uterus.

What other morbid formations are liable to take place in or about the uterus ?

Cauliflower excrescence, fibrous tumors, polypi, moles, and osteo-sarcomatous tumors.

What is the nature of a cauliflower excrescence ?

It appears to be composed of a tissue of vessels bound together by slight attachments of cellular membrane, and covered by a smooth but very fragile envelope of the same character ; to the touch it feels like a fungus or cauliflower, whence the English name.

By some of the French, it is called *vivace*. When exposed to the eye, it displays a bright arterial color.

What is its general texture ?

Very slight, it is ruptured by slight pressure, the touch of a finger, or the point of a syringe, or even the contractions of the vagina, or pressure of the perinæum upon it, hence it readily pours out a great deal of serum and very often some blood, and thus drains the patient.

In some instances, its texture is more firm.

What proofs have we, that it consists almost entirely of vessels of the most delicate texture ?

Immediately after death it is found completely collapsed, with scarcely a vestige of its character while living, and when strangulated by a ligature, the same thing is observed. When the ligature comes away, there is usually only a half putrid membranous mass detached by it.

What is its usual point of origin ?

The neck or orifice, though sometimes the cavity of the body of the uterus.

What period of life is most incident to it ?

Though of rare occurrence, it may attack at any period of married or single life.

What influence does it exert upon the health of the patient ?

The constant drainage to which she becomes subject, sooner or later renders her anemic, gives her a pallid, or straw colored appearance : it is also usually accompanied by more or less edema, and other evidences of debility.

With what other diseases may this cauliflower excrescence be confounded ?

With polypus, and the fungus which sometimes springs from a cancerous base in the uterus.

What is the prognosis of cauliflower excrescence ?

It is generally unfavourable.

What treatment has been proposed and adopted for it ?

Astringents of various kinds ; and in using these to avoid the rupture of the surface of the tumor it is proposed to have the patient's hips elevated, and then pour the fluid into the vagina from a suitable vessel.

Has any surgical treatment ever been resorted to, for its removal ?

The ligature has been applied to its base for that purpose, and its removal has thus been accomplished. The os uteri has also been ablated.

What should be applied to the base of the tumor after removal, to prevent its return ?

The nitrate of silver, or what Churchill has regarded better, the butter of antimony, through the speculum.

To what part of the uterus, may the more solid tumors be attached ?

Some spring from the outer surface, under the peritonæal coat, others on the inner surface, and others again have their origin in the substance proper of the organ.

What is the character of these morbid growths ?

Sometimes they appear to be purely fibrous, sometimes encysted, that is, having a fluid, mucous, serous, puruloid, or tubercular matter in the centre, or in several foci, surrounded by a fibrous envelope. Sometimes again they appear to be entirely fleshy, and at some others they are calcareous or osteo-sarcomatous.

What name is given to the pediculated tumors which spring from the uterus ?

Uterine polypi.

What is their general character ?

They are mostly fibrous, smooth to the touch, and very vascular, and covered by a serous membrane.

Some are more of a mucous character, and others again are hard and glandular in structure ; those partaking of this particular formation, are thought most frequently to spring from the glandulæ nabothi, about the neck of the uterus.

What portions of the uterus do they generally spring from ?

From the mucous membrane of the cavity, of the body, of the neck, and from the orifice of the uterus.

What symptoms usually accompany uterine polypi ?

They are very various—mostly, they are those of a nervous character, none of which are pathognomonic.

There is mostly leucorrhœa, sometimes dysmenorrhœa, menorrhagia, and almost always a sensation of prolapsus.

Is the presence of tumors within the uterus, always easily diagnosticated?

It is sometimes very difficult to do so. It has however been observed, that in many of these cases the uterus seems to be elongated to such a degree as to admit of the introduction of the female catheter nearly its entire length into its cavity.

What sensations does the patient usually experience, when the tumor becomes so long as to rise above the superior strait of the pelvis?

The mechanical inconveniences which usually attend pregnancy, arrived at the same degree of developement—the general health may be good.

By what means is it to be distinguished from pregnancy?

By auscultation and ballottement.

Is it easy to discriminate between the existence of tumors in the uterus, and those in the ovaria, or either of these from extra-uterine fetation?

The diagnosis would be in general, difficult.

What consequences may result from inflammatory action in tumors, otherwise quiescent, and producing little irritation?

When such tumors become the seat of inflammation, more or less rapid changes in their structure may take place, and serious results may follow.

What treatment should in general be employed?

Those which are palliative, or simply discutient, as the iodine, cicuta, tartar emetic by inunction, &c. Attempts at removal by the knife would in general be improper.

By what means may the distressing sense of pressure upon the rectum, and neck of the bladder be relieved?

Occasionally by the use of suitable pessaries.

What class of uterine tumors call for and admit of removal by surgical means?

Those which are pediculated, as polypus, and as cauliflower excrescences.

Which is the better and the safer mode of removal, by the knife or scissors, or by the ligature?

In a large majority of cases by the ligature.

With what other affections of the uterus, have polypus tumors been confounded?

With pregnancy, with prolapsus, with retroversion, and more readily than with either, chronic inversion of the uterus.

How is it to be distinguished from pregnancy?

It can be confounded with pregnancy only when the tumor is formed and retained within the cavity of the uterus, but then the constancy or frequency of the discharge, together with the patulous orifice of the uterus, should clear the diagnosis, or at least determine that true pregnancy does not exist.

How can we discriminate between polypus and prolapsus, or retroversion of the uterus?

1st. By the character of the tumor when it is a prolapsus, the shortening of the vagina, and the recognition of the descent of the body, upon examination through the rectum; and also, the situation of the os tincæ.

2nd. From retroversion, because in this sort of displacement, the orifice of the uterus, is thrown strongly

forward, and no pedicle can be recognised, by the finger in the vagina or rectum.

From what peculiar condition of the uterus is it very difficult to distinguish it ?

Chronic inversion of the uterus. The distinction must be based partly upon the history of the affection, and the result of a careful physical examination.

What is generation ?

It is the function of reproducing the species after the form originally impressed upon it. It is therefore the function peculiar to animated or living beings.

What is the simplest form of generation ?

Fissiparous generation, which does not require sexual organs—it is in other words, generation by spontaneous division.

What is the next higher grade or kind of generation ?

That which is called germiparous, consisting in the formation of buds or germs on some parts of the body, either internally or externally.

What are the germs in the female of the higher order of animals ?

The ovules, situated within the ovarian vesicles.

At what period of life do these germs in the human female exist ?

Between that of puberty and the “change of life.”

Where is the male germ found in vegetable life ?

In the pollen of plants.

What is the male germ in animals ?

It exists in the fluid secreted by the testicles.

What is necessary to constitute conception or fecundation ?

The contact of the male and female germs.

What may be said of the theories of generation ?

That they are numerous and some of them vague, and it is true that the whole subject is shrouded in an impenetrable mystery.

What are the two principal theories in reference to conception ?

1. That of *epigenesis*, which is probably the oldest, and which supposes that it depends upon the conjunction of the male and female germs in the uterus, and that each contributes its portion to the formation of the new being.

2. That of *evolution*, in which it is assumed that the mother furnishes the entire molecule, and that the stimulus of the male sperm only excites it into vital activity.

When is the embryo formed ?

At the time or soon after a fecundating copulation.

What is the condition of this fecundated ovule at the time of conception ?

It is an amorphous mass, like a drop of mucus or albumen.

Which appears to be the most rational theory of generation ?

1. That of the ovular, in which it is believed that the elements of the new being reside in the ovule, secreted by the ovary.

2. That of *evolution*, in which the sperm of the male operates merely by its stimulus upon the female germ or ovule within the ovarium.

Is the semen masculinum, in its totality, necessary to produce a fecundation of the female germ ?

Yes.

What were the experiments of Spallanzani, of Prevost, and Dumas, in reference to this ?

They found that it was necessary that the fluid they used for artificial fecundation, should contain the peculiar animalcules or molecules found in the semen masculinum. Spalanzani has maintained that the animalcules are not essential to fecundation.

Is there any analogy in the modes of fecundation in vegetables and animals ?

The presence of the pollen is necessary to the development of the germ.

How does fecundation take place in the fish ?

By the deposite of the male sperm upon the spawn of the females.

What is the mode of fecundation in the frog and other of the batracian animals ?

The male sperm is thrown upon the female eggs, as they pass from her body.

Is a true copulation necessary in the mammiferous animals ?

Yes.

Is it necessary that the male germ be deposited within the female body ?

It is.

Is it most probable that the ovary is the point at which the two germs meet ?

That idea is generally embraced by physiologists of the present day.

What changes take place in the ovary after a fecundating copulation ?

One of the vesicles enlarges rapidly, soon rises above the surface of the organ, absorption of its peritonæal covering takes place, and it is soon embraced by the fallopian tube, and carried toward the cavity of the uterus.

What is the appearance of an ovarium after the ovule has been removed ?

First, there is an effusion of blood into the cavity, whence the ovule was taken—then a yellow cicatrix called the *corpus luteum*, or yellow body.

What is to be understood by the term oviparous generation ?

That in which the ovum or egg, when once fecundated, may be immediately laid by the female, and its maturity take place out of the body.

What do we mean by viviparous generation ?

That in which the fecundated ovum may be detached from the ovary soon after copulation, but is brought to maturity in a special reservoir, called a womb or uterus.

Is there a true gestation in oviparous animals ?

It cannot be regarded as a true gestation, because the egg is gradually advancing towards the external opening of the oviduct during its process of development.

How many kinds of pregnancy are there ?

Two—uterine or normal, and extra uterine or abnormal pregnancy.

What is the character of, or what constitutes a uterine or normal pregnancy ?

The fact that the ovule when fecundated, is removed from the ovary, carried along the fallopian tube and deposited in the cavity of the uterus.

What would you consider to be preternatural, abnormal, or extra uterine pregnancy ?

The circumstance of the development of the fecundated ovule in the ovarium, the fallopian tube, in the cavity of the peritonæum.

Into how many varieties is true uterine pregnancy divided ?

Simple pregnancy with one ovum.

Double, triple, &c. pregnancy, when there are two, three, or more fetuses.

Complicated pregnancy, when there exists a polypus, great quantity of water, or any diseased state of the product of conception, or of the womb itself.

What varieties does extra uterine, irregular or abnormal pregnancy present ?

Four varieties, determined by the seat occupied by the fecundated germ. 1st, Ovarian ; 2d, Abdominal ; 3d, Tubal ; 4th, Mixed or interstitial pregnancy.

What changes take place in the system, after a fecundating copulation ?

The tubes which were erect during the copulation, continue so ; the uterus participates in the general turgescence, and is prepared to undergo a new development.

What is the usual size of the neck of the uterus in the unimpregnated adult female ?

One inch long, half inch thick.

What size does it acquire during the first two months of pregnancy ?

It is somewhat thicker, and nearly two inches long.

How long does this development of the neck continue to take place ?

Until the fourth month.

When does it begin to shorten again ?

During the fifth month.

How much shorter is it at the end of the fifth month ?

One third.

How much at the end of the sixth month ?

One half.

How much less at the end of the seventh month ?

Two thirds.

What is the state of the neck at the end of the eighth month ?

Nearly all expanded.

Is this a rule without exceptions ?

No, it is true in general, but cannot always be relied on as a positive sign of the advancement of pregnancy.

What is the condition of the os uteri during the various periods of pregnancy ?

It is apparently patulous, but is really plugged by mucous or albumenoid matter during the earlier months, and mostly during the greater part of pregnancy.

What change takes place in the form of the uterus ?

It becomes more regularly pyriform.

What portions then become most rapidly developed ?

The anterior and posterior surfaces.

Which of these two surfaces develops the most rapidly ?

The posterior.

How much of the uterus is behind a line drawn in the length of the ovary through the fallopian tubes at the end of the fourth month ?

Two thirds.

At what period of pregnancy does the body of the uterus become completely spherical ?

At the end of the fifth month.

Has the neck begun to shorten at this time ?

Yes.

What is the original position of the uterus in its non-gravid state ?

It is situated in the axis of the superior strait, with its fundus just above the brim of the pelvis.

Does it descend a little during the first and second months ?

Yes—but chiefly because of its development.

Does it continue to bear the same relation with the axis of the pelvis as it is precipitated ?

It does.

Does this precipitation ever extend as far as to the vulva ?

Yes, in some rare cases.

Does its orifice then point forwards ?

It points forwards in the direction of the axis of the vagina.

Where is the fundus usually found at the third month of pregnancy ?

A little above the margin of the superior strait.

What is the situation of the uterus at the end of the fourth month ?

A large portion of it is out of the cavity of the pelvis.

How high is the top of the fundus at the end of the fifth month ?

Generally half way between the pubes and umbilicus of the mother.

How high at the end of the sixth month ?

On a level with the umbilicus.

How high at the end of seven months ?

Two or three finger's breadth above the umbilicus.

How high at the end of the eighth month ?

It has reached the epigastric region.

Where is the fundus at the end of the ninth month ?

Usually rather lower than at the end of the eighth, in consequence of the rapid anterior development of the organ.

What relation does the gravid uterus hold with the intestines ?

It carries the intestines upwards and backwards, being itself in contact with the parieties of the abdomen.

Is a knowledge of this arrangement important in gastro-hysterotomy ?

Yes.

What are the dimensions of the uterus at the full period of utero-gestation ?

Twelve inches from fundus to orifice, eight and a half inches transversely, and nine antero-posteriorly.

Is the axis of the uterus liable to be modified by the pressure of the abdominal muscles ?

It is so, particularly in first pregnancies.

Does the tension of these muscles in a first pregnancy usually retain the axis of the uterus more nearly parallel with the axis of the body ?

Yes.

What other circumstances or causes, modify the direction of the axis of the uterus during gestation ?

The uterine ligaments, abdominal viscera, and spinal column.

Is the orifice of the uterus always directed to the portion of the pelvis opposite to that towards which the fundus presents ?

It is mostly nearly so, though sometimes it is rather posterior to this right line.

Is the orifice of the uterus sometimes thrown so far back into the hollow, or above the promontory of the sacrum, in cases of anterior obliquity as to be out of reach of the finger ?

When there is anterior obliquity it is always so.

Are the walls of the gravid uterus thicker than when in the unimpregnated state ?

Very slightly thicker.

What changes does the uterine parenchyma pass through in this development ?

It becomes softer, the muscular fibres are developed, the nerves, blood-vessels, and lymphatics all increase in size.

By how many times are the blood-vessels enlarged ?

Arteries four times, and the veins even more than this.

What is meant by what are called *venous sinuses* ?

Enlargements and duplications of the veins merely. Their orifices are patulous upon the internal surfaces.

Is the sensibility or irritability of the uterus increased with gestation ?

It is so, and this is important to be borne in mind in the management of pregnant women.

Does the embryo enlarge the uterus by the irritation of its presence ?

It probably does, not however so much by mechanical distension, as by exciting the vital process of development, a result of irritation caused by fecundation ; as the ovum enlarges it keeps up irritation within the uterus.

If the ovum be accidentally ruptured and discharged, is not the development of the uterus arrested ?

It is probably in all cases.

How is the vagina affected during the process of uterine development ?

It becomes rather shorter during at least two months ; and from the fourth month it becomes longer and larger.

How is the peritonæum, which is spread over the uterus and its appendages, enlarged during gestation ?

By development, and not mere stretching.

Do the fallopian tubes and ovaries remain vascular after conception ?

They do for some time.

How are they situated in reference to the uterus at the end of pregnancy ?

They hang along side of this organ in the folds of the peritonæum.

Do the round ligaments assume a muscular character ?

They do—Velpéau says he has seen them contract during labor, and they often draw the uterus forward during pregnancy.

What effect has advanced pregnancy upon the urinary bladder ?

It is mostly carried upwards and forwards as the uterus enlarges.

What effect has this upon the situation of the urethra ?

It then becomes nearly perpendicular.

Where may you expect to find the meatus in this case ?

Drawn a little back from its usual situation.

How would you introduce the female catheter under these circumstances ?

By depressing the handle and carrying the point under the sub-pubic ligament.

Is the straight catheter always sufficient to pass into the cavity of the bladder ?

It is sometimes better to use the curved or male catheter, in consequence of the direction which the cavity is forced to take by the pressure of the uterus.

What effect does the pressure of the gravid uterus sometimes exert on the functions of the pelvic viscera ?

It often causes obstructions to the natural functions of the bowels as well as bladder.

Is the rectum sometimes more free after the fourth month ?

Yes—but very frequently it is beyond the influence of the abdominal muscles, and hence is often the seat of great fecal accumulations.

In what manner are the respiratory organs affected during the latter months of pregnancy ?

During the eighth and part of the ninth month, the fundus of the uterus presses the diaphragm, liver, &c. upwards, and thus shortens the vertical diameter of the chest and expands its base.

What effect is sometimes produced by the distension of the skin of the abdomen ?

Sometimes its texture is modified, leaving resemblances to cicatrices.

Is the liability to crural hernia diminished as pregnancy advances?

Yes, because the intestines are carried up above the abdominal rings, and their place is occupied by the uterus.

Is the woman more subject to umbilical hernia?

Yes.

At what period of pregnancy does the navel pout out?

About the fifth and sixth months.

Why does it flatten again after this?

Because the fundus of the uterus rises above it.

Why are women during pregnancy particularly disposed to varicose veins, and to edema or anasarca?

Because of pressure upon the vena cava and absorbents.

Does this varicose state of the limbs sometimes continue after delivery?

Yes—and is then increased at every subsequent pregnancy.

While all these changes are going on externally, what is taking place in the cavity of the uterus?

Its lining membrane becomes more developed, more villous and vascular.

Is this modification in the cavity of the uterus supposed to be the result of a peculiar irritation?

Yes—the irritation or stimulus of fecundation.

What is secreted by the lining of the uterus?

A layer of coagulable lymph, gelatinous in character, which speedily becomes organized, vascular, and reddish.

What is this membrane called ?

Decidua or caduca.

How long does it remain next the uterus ?

During pregnancy.

When and how is it disengaged ?

At the time of parturition, when it is thrown off by uterine contractions at the same time with the placenta.

How low down the cavity of the uterus does this lining extend ?

To the internal os uteri.

What is the character of its external surface ?

Villous or shaggy.

What does Velpeau call this membrane ?

*Anhistous*, and considers it unorganized.

What are the proofs of its organization ?

Its vascularity ; it was injected by Ruysch, Burns, &c. The decidua of a cat has been injected by Drs. Goddard and Betton.

Is its growth or development another proof of its organization ?

Yes—it is also subject to diseases, and it becomes very thin towards the last, like serous or cellular tissue.

Is it pervious ?

It has no perforations in it ; it lines the whole cavity of the body of the uterus, and covers the orifices of the tubes and the internal os uteri.

What is the use of this decidua ?

It forms the medium of contact between the uterus and the ovum.

After how many days from conception does it line the cavity ?

Probably four, five, or six.

What is the arrangement of the ovule in reference to its investments ?

It has two membranes ; the chorion externally, and the amnion internally, surrounding it.

Are these membranes endowed with vitality ?

They are.

What does the inner membrane contain ?

A fluid in which is suspended a corpuscle, or cicatricula.

What is the probable size of the ovum at the time of its entrance into the uterus from the fallopian tube ?

It is supposed to be about the size of a hemp seed.

What length of time does it probably require for the ovule to pass along the tube from the ovary to the uterus ?

A week, or a little more.

As the ovum cannot fall into the cavity of the uterus, in what manner is it accommodated upon its arrival at the end of the fallopian tube ?

As it becomes developed it adheres to, and causes a growth of that part of the membrana decidua, which is in contact with that angle of the uterus.

Does this action give rise to the apparent formation of two membranes.

It has that effect.

What names have been given to these ?

That with which the ovum is in contact, is called the decidua reflexa, or decidua ovi ; and that which is next the uterus, the decidua vera, or decidua uteri.

Does this arrangement correspond with that of the pleura pulmonalis, and the pleura costalis ?

It does, for like the lungs, the ovule is thus really exterior to the sack of decidua, though apparently enclosed by it.

Are the two layers of the decidua, viz : decidua reflexa, and decidua vera at once in close contact with each other ?

No, one is closely attached to the ovum, while the other is loose around it.

Is there any fluid interposed between the two layers ?

The interspace is filled with fluid.

At about what period of pregnancy do these two layers come in contact ?

About the fourth month.

Does any portion of the shaggy surface of the chorion come in contact with the uterus ?

No ; for the two layers of the caduca or decidua are interposed.

How, then, does the ovum derive its support from the uterus ?

The decidua receives the blood from the uterus, and transmits it to the ovum through the shaggy surface or the radicles of the chorion.

What are the anatomical characters of the chorion ?

It is a serous or white membrane, and does not carry red blood ; its internal surface is smooth, but externally, it is villous or shaggy ; its little flocculi being like so many radicles.

Are these radicles vessels ?

Some physiologists consider that they are vascular, and

others regard them as areolar spongioles, and not permeable conduits.

Does the chorion increase in thickness and strength as it becomes developed ?

It is believed that it does at the same time that the decidua becomes thinner.

Does the chorion form the basis of the placenta ?

This point is not well settled, though in the opinion of Hodge, Dewees, and some others, it does.

What are the characteristics of the amnion ?

It is a delicate small sac situated within the chorion.

Is it different in any respect from the chorion ?

Yes ; it is smooth, transparent, though it is slightly adhered in places to the chorion by means of mucous filaments or lamellæ, which cover its outer surface.

What fluid does it enclose ?

The liquor amnii.

Is the amnion originally in contact with the chorion throughout ?

No ; originally it is smaller than the chorion.

What is interposed between the two membranes ?

A kind of vitriform substance, enclosed in a delicate reticulated sac.

At about what period of gestation does the amnion come in contact with chorion ?

After the second month ; though agreeably to Velpeau there is much difference in different individuals, in this respect.

Is the amnion a stronger membrane than the chorion ?

It is usually much stronger.

What is the character of the liquor amnii ?

It is peculiar ; unctuous, and rather more consistent than pure water ; has also rather greater specific gravity.

What circumstances may modify its color and odour ?

The excretions from the fetus.

What is the relative quantity of the fluid during the whole period of gestation ?

At first it forms but a thin stratum, but it increases rapidly till the second month. At three months it weighs more than the fetus. After this period the quantity of the fluid relatively diminishes.

What is the quantity usually present at birth of the fetus ?

A pint : sometimes quarts, and in a few rare cases even gallons.

Does this increased quantity appear to exert any influence on the health of the child ?

It usually produces no manifest effect.

What appear to be the uses of this fluid ?

Although its intrinsic use is not known, it is evidently adapted to allow space and facilities for motion, development, &c., of the fetus.

May the presence and increase of the liquor amnii be regarded as a concentric stimulus to the development of the uterus ?

This opinion is entertained by some highly respectable authority.

Is the liquor amnii subject to any changes in colour and quality ?

It is modified in this respect by various causes ; as diseases, &c.

What does Velpeau suppose to be located between the amnion and chorion, until they are approximated by the development of the amnion ?

The reticulated tissue, containing a sort of vitreous humor. He calls it the reticulated body, which after the chorion and amnion come together, corresponds to the allantoïd of inferior animals.

What is the vesicula alba ?

A small tube in connexion with, if not surrounding the umbilical cord, extending from some part of the small intestines. Velpeau says it comes from the ileum ; Oker, Rigby and Ludlow consider the appendicula vermiformis as the remains of it.

Is it situated between the chorion and amnion ?

Some teachers think it is outside of the chorion. Velpeau says it is between the chorion and amnion.

How is it composed ?

It consists of two, perhaps of three membranous layers.

What appears to be its use ?

To supply the embryo with nutriment during the early periods of its development, and until the placental circulation is established.

At what time does it totally disappear ?

By the end of the third or fourth month of gestation.

Are there any blood-vessels distributed through it ?

Yes ; both arterial and venous.

What are these called ?

Vitello-mesenteric, or omphalo-mesenteric vessels.

By what means is the embryo connected with the membranes ?

By the umbilical cord.

What is the composition of this cord ?

It consists of two arteries and one vein, of a layer of amnion, and perhaps also chorion, with some albuminous or gelatinous matter interposed.

Whence do these vessels originate, and in what do they terminate ?

The arteries are continuations of the primitive iliacs, while the vein, goes to pass under the edge of the liver and enter the cava.

They terminate in a great number of branches at the circumference of the ovum, upon a portion of the chorion.

What is this congeries of vascular radicles called ?  
Placenta.

What is the usual size of the placenta at the full period of utero gestation ?

Its diameter is from six to eight inches ; its circumference, from eighteen to twenty-four inches ; and its thickness from a few lines at the circumference to an inch or two in its centre.

What is the character of its inner or fetal surface ?  
It is smooth, lined with the amnion.

What arrangement exists on its external or uterine surface ?

It is arranged in convolutions or sulci, which are distributed between masses, sometimes called placentules.

Is there any membrane thrown across the uterine surface of the placenta ?

The decidua is believed by many physiologists to extend over its whole surface.

Can the amnion be removed from the inner surface of the placenta ?

It can be readily peeled off from the inner surface.

Is the chorion more firmly attached to it ?

It is almost inseparably so.

What is the mode of communication between the embryo and uterus during the first weeks of its uterine existence ?

Through the membranes entirely. The decidua receives blood from the uterus, transmits the elements of nutrition, through the fetal membranes to the embryo.

What is Professor Hodge's theory of the mode of formation of the placenta ?

“ The shaggy surface of the chorion enlarges at the point at which the ovule happens to come in contact with it, and at that point the placenta is formed, chiefly out of the shaggy surface of the chorion, and also of the decidua, which may be regarded as the uterine portion of the placenta.”

What is the composition of the placenta ?

Its tissue is peculiar ; it is somewhat cellular, but is made up chiefly of ramifications of the cord.

Is this susceptible of proof by injection ?

The tissue of the placenta may be distended by injecting the arteries, and when these vessels are filled, the fluid passes out by the vein.

Is it proper to consider the placenta as composed of two parts, the fetal, and the uterine portions ?

It will admit of that mode of demonstration, particularly during the early part of pregnancy.

What are these two portions ?

One, the fetal, is composed of the chorion, and the other, the uterine, is derived from the decidua.

Can these portions be readily separated from each other ?

That process can be effected by maceration, as late as the second month of pregnancy.

Do any large blood vessels pass from the uterus into the placenta ?

No; the communication between the uterus and the decidua, is by capillary veins and arteries only.

What are the proofs of this ?

The decidua may be injected from the uterus during the early periods of pregnancy.

How many kinds of circulation are carried on in the placenta ?

Two; one through the very minute utero-placental vessels for the purpose of sustaining the vitality and nutrition of the placenta; the minute vessels extending from the substance of the uterus into the placenta: and the other, a large circulation, through the vessels of which the placenta is chiefly composed; the blood coming from and returning to the fetus, in a manner analagous to that in which a small supply of blood is sent to the substance of the lungs for their nutrition, while the whole mass which is to be sent over the body, is passed through the great vessels of the lungs, during extra uterine life.

What becomes of the blood of the fetus, after it has been carried out through the umbilical arteries ?

It returns to the fetus through the umbilical vein.

Do the uterine veins increase in size as they approach the placenta ?

They usually increase very greatly.

Do they open directly into the placenta ?

No ; they open upon the decidua by patulous orifices—this membrane therefore acts like a valve over them, to prevent the blood from escaping into the cavity of the gravid uterus.

What is the proof of this arrangement ?

The fact that if the placenta be separated before the uterus contracts, more or less venous hemorrhage occurs as a consequence.

What were Lee's observations in reference to this vascular arrangement ?

“ If air be forcibly thrown into either the spermatic arteries or veins, the whole inner membrane of the uterus is raised by it ; but none of the air passes across the deciduous membrane into the placenta, nor does it escape from the semilunar openings in the inner membrane of the uterus, until the attachment of the deciduous membrane to the uterus is destroyed. There are no openings in the deciduous membrane corresponding with the valvular apertures in the internal membrane of the uterus.”

Upon which individual, mother or child, does the placenta depend for its organic vitality ?

Upon the mother.

What proofs have we of this ?

First, the fact that if the placenta be separated from the uterus, it becomes atrophied. Secondly, the placenta may become diseased ; it may become inflamed, and subsequently adherent to the uterus. Thirdly, the placenta may sometimes be kept alive after the death of the fetus.

To what changes is it mostly subjected under such circumstances ?

It generally becomes carneous and somewhat shrivelled,

in consequence of the failure of the fetal circulation through it.

What are Professor Hodge's views respecting moles ?

He thinks they are probably nothing more than diseases or alterations of the placenta.

Is the placenta very easily separated from the internal surface of the uterus when it is in a healthy state ?

It is—by passing up the fingers between the uterus and placenta, it may be very easily separated. Slight jars, shocks, and any thing which excites uterine contraction, may be a means of causing a separation of the placenta, and giving rise to uterine hemorrhage.

What is the usual length of the umbilical cord ?

About the length of the child at term, say eighteen or twenty inches, though it is sometimes much longer or much shorter than this.

What inconveniences are liable to result from the cord being much longer than this ?

It is then apt to become tied into knots by the various movements of the fetus. It is also liable to become prolapsed during labor, when of greater length than that mentioned.

What are some of the consequences of too short a cord ?

Delivery may be retarded, or the placenta may be pulled down, and hemorrhage follow, or the uterus may be inverted.

What is the length of the cord at the end of the third or fourth week ?

Half an inch. Velpeau, however, says he has mostly found the cord about the length of the embryo or fetus,

throughout every period of gestation at which he has been able to dissect it. During the very early period it appears like a gelatinous bag.

Have the vessels of the umbilical cord any valves ?

No ; an injection passed into the arteries will return by the veins, and vice versa.

Is the cord composed of these three vessels only ?

No ; it has also a greater or less amount of gelatinous matter in it.

When you take hold of the umbilical cord, how many tissues are between your fingers ?

Amnion, chorion, and the two arteries and one vein.

Is the chorion very intimately attached to the cord ?

Yes, it appears almost inseparable from the reticuled tissue which contains the vessels and the gelatine.

Is the cord capable of bearing much force applied to it ?

No ; it sometimes is broken by the weight of the child at birth.

What is the arrangement of the membranes in cases of twins ?

Each embryo has its own membranes and its own placenta.

In cases of twin ova, when an ovule is conveyed into the uterus by each fallopian tube, how many membranes are interposed between each fetus ?

Six—Amnion, chorion, decidua, decidua, chorion and amnion.

What number in case the two ovules pass down one fallopian tube ?

Then there are probably but four, viz.—amnion, chorion, chorion and amnion.

What opinions are entertained by most physiologists respecting superfetation, admitting the theory of generation, now generally believed in, to be correct ?

That it would be impossible for impregnation to take place, after the uterus becomes occupied by a decidua, and perhaps also an ovum.

How are the facts, however, of women giving birth to two or more children at once, of different sizes, and apparently of different ages, to be accounted for ?

Upon the idea that originally it was a twin pregnancy, but that some cause had suspended the development of one of the fetuses.

What is the probable explanation when the fetuses are born at different periods, and well developed ?

That there has been a double uterus, one of which contained the ovum first fecundated, and the other the second.

What in case of the delivery at the same time of two children, one white and the other black ?

That the woman had been the subject of two fecundating copulations in quick succession by men, one white, and the other black.

May not superfetation take place in cases of pre-existing extra-uterine pregnancy ?

It may, indeed, at any time when the uterine cavity is not filled with any substance, and so long as the tubes are open.

To what part of the uterus is the placenta mostly attached ?

According to the experience of some, mostly to one of the sides of the uterus.

What seems to determine its location?

According to some physiologists, it is formed of the villi of the chorion at that point of the membrane to which the cord happens to attach itself, and this is probably most frequently near one fallopian tube or the other.

Are there any nerves in the placenta?

None have yet been satisfactorily discovered.

Is this mass supplied with lymphatics?

It is believed by many that they exist in this body in considerable amount.

How long does the new being retain the name of *embryo*?

During the first, second, and third months of gestation; for up to this period its formation is incomplete.

What name has it during the balance of its intra-uterine existence?

It is called fetus.

What is the earliest period at which an embryo can be seen within its investments?

About the tenth day, and then only by the aid of a magnifying glass.

What does it appear to be at this time?

A mere amorphous vesicle.

Does it quickly undergo considerable changes?

It soon enlarges, and presents two bodies or vesicles attached to each other.

Of what are these two bodies the elements?

The head and body of the future fetus.

Which of these two bodies or vesicles is the head?

The larger of the two.

Is it important to be acquainted with the different degrees of development of the fetus ?

It is.

What does the embryo resemble in the next or second degree of its development ?

A kidney-bean, or a grub-worm or maggot curved upon itself.

What probably is first developed in the embryo ?

Some think the spine and the heart.

What is the mode of addition of the different parts of the embryo, to constitute the fetus ?

Professor Hodge and some others think it is by super-addition, pullutation or generation, and not by evolution, or unfolding. We are ourselves, however, inclined to believe in the latter mode of development.

From what part of the curved embryo is this generation carried on ?

From the convex, and never the concave surface.

What is the general order of succession in this process of pullutation or generation of parts ; admitting this idea to be correct ?

First the features appear, though rather indistinctly ; then the roots of the upper extremities, then the coccyx, and then the lower extremities.

Which portion of the limbs appears first ? the arm and thigh, or the fore-arm and leg, &c. ?

According to those who believe in pullutation, the arm and thigh, and not the fore-arm and leg, with the hand and foot, as Velpeau has it.

Does the embryo change its name at the end of three months ?

Yes ; it is then called fetus.

What is the extent of its development at this time ?

The teguments are distinct, though very soft and rose-coloured ; the head is still proportionately very large, the nose prominent, though both the mouth and eye-lids remain closed : the osseous system begins to be observable, through the gelatinoid coverings, and the digits of the extremities are quite distinct, and even exhibit a surface for the future nail.

What is the length of the head and body of the fetus at this time ?

From vertex to coccyx, it measures about three inches.

At about what period of gestation, does the muscular system become sufficiently developed, to exert the power of motion ?

From the middle to the end of the fourth month.

What is to be understood by the expression, *the viability of the fetus* ?

That the fetus, which has hitherto enjoyed only a sort of vegetable life in utero, is now sufficiently developed to admit of living independently of the uterus, or in other words, to enjoy extra-uterine and animal life.

At what period of fetal existence does this viability occur ?

At about the end of the sixth month.

Are fetuses very likely to live when born at the end of the seventh month ?

It is the experience of some, that they rarely live.

Are children, born at the end of the eighth month less likely to live, than those born at the ninth month ?

Professor Hodge thinks not, though that opinion was entertained by Professor James.

What is the condition of the eye of a fetus at seven months ?

It has been supposed that from the fourth to the seventh month, the eye was closed by what was called the *membrana pupillaris*. That at this time the membrane bursts, and that vision becomes possible to the child born at this time.

What is Velpeau's view of this condition of the eye ?

He appears to think that the iris is not *developed* until the seventh month, that it originates at first as a simple ring, which grows concentrically so as at last to leave the opening commonly called the pupil of the eye.

In what manner is the fetus usually situated in the cavity of the uterus, at the full period of gestation ?

Its general form is that of an ellipse, its limbs crossed and flexed in front of the abdomen.

What is the long diameter of this ellipse ?

From vertex to coccyx.

What is its measurement ?

About twelve inches.

What is the average weight of a fetus at term ?

From seven to eight pounds ; perhaps seven pounds for the male, and six for the female child.

What was about the greatest weight noted by Madame Lachapelle, in four thousand cases ?

Less than twelve pounds.

In Philadelphia, Dr. Hodge weighed one thirteen and a quarter pounds ; and Dr. Condie one, sixteen pounds twelve hours after birth.

In twin cases, are each of the children as large as in single pregnancy?

No, each fetus is usually smaller, but the sum of the twins is greater than in a single pregnancy.

What is the average height of the fetus at term?

From eighteen to twenty-two inches.

Is there any difference at different periods as to the point of insertion of the umbilical cord?

In the early part of fetal existence the cord is inserted near the pelvis, but this point becomes more remote as the body becomes developed.

Where is the umbilical cord situated at term?

About half way between the pubes and ensiform cartilage.

What is the condition of the cerebrum, during the latter part at least of fetal life?

The brain is soft and less consistent at birth than afterwards.

Does the brain appear to be of any physiological importance to the fetus?

No: some children have been born without any brain, and yet had all the other organs developed.

Do the viscera of the fetus bear the same relation of size to each other as those of the adult?

No—the liver is much larger—the lungs smaller and dense, they are very slightly if at all porous or crepitous.

Is there any structure in the fetus which is peculiar to it, and useless to extra uterine life?

Yes—the thymus gland.

Where is it situated?

In the anterior portion of the superior mediastinum.

How many lobes has it ?

Two, but no excretory duct.

Does it remain developed long after birth ?

No—it diminishes rapidly after the extra uterine functions become established.

What is the object of the gland ?

Its uses are not known.

Is there any peculiarity in the fetal heart ?

It is like a single heart, both auricles receiving blood from the veins, and both ventricles simultaneously propelling it into the arteries.

Is the septum between the ventricles complete at term ?

Yes—but it is imperfect between the auricles.

What is the name of the orifice between the two auricles ?

Foramen ovale, or foramen of Botal.

Is there any valve-like formation connected with it ?

Yes, there is an arrangement of this kind situated on the left side of the foramen ovale.

How does the blood from the placenta get into the fetal heart ?

It enters the umbilicus of the fetus through the umbilical vein, which passes up under the edge of the liver, where it empties into the left branch of the sinus venæ portarum, giving off several branches to the liver. Some portion of the blood then passes along what is called the ductus venosus, into the left hepatic vein, which runs into the ascending vena cava. The blood then mixed with that in the cava, is carried up the cava until it reaches the eustachian valve, which directs a large portion of it through the

foramen ovale into the left auricle, at the same time that the right auricle receives the blood which comes down from the descending cava.

How is the blood disposed of, after it has been thus carried into the heart?

The two ventricles, supplied with blood at the same instant from each auricle, now contract and force blood along the pulmonary artery and aorta.

Is the pulmonary artery well developed during fetal life?

It is adapted only to carry blood sufficient to nourish the lungs, and it is not large enough to carry all the blood of the general circulation.

What route is presented as a substitute for the pulmonary circulation?

A short duct is given off from the pulmonary artery to the aorta a little below its arch.

What is this vessel called?

The ductus arteriosus.

How then is the fetal blood carried back to the placenta?

That which is forced out of the right ventricle is carried through the ductus arteriosus. That from the left ventricle passes the usual route of the arch of the aorta. At the point of insertion of the ductus arteriosus, the blood from the two ventricles continues to pass through the aorta as low as to the iliac arteries, which give off branches; which under the name of internal iliacs, turn upwards, one on each side of the bladder and pass out at the umbilicus and proceed to the placenta, under the name of the umbilical arteries. At the same time, a sufficient quantity is carried along the primitive iliacs to nourish the lower extremities.

Is the circulation of the fetus carried on within, or without the cavity of the peritonæum ?

Outside of it at all points. This large membranous sac covers the inner and lateral portions only of the circulatory apparatus.

What changes take place in this circulation, after the birth of the child ?

The air rushes into the lungs, upon the effort to respire ; the column of blood, which before passed along the ductus arteriosus from the right ventricle, now passes along the pulmonary artery, into the lungs ; thence it returns through the pulmonary vein, into the left auricle. The effect of this is to render the ductus arteriosus useless, and it consequently becomes filled with a coagulum. The current of blood coursing from the lungs through the left auricle, closes down the valvular formation on the left side of the foramen of Botâl or the foramen ovale, and thus cuts off the direct connection, which heretofore had existed between the right and left auricles. From this moment, the action of the heart becomes double ; that is, the right auricle and right ventricle, act as it were independently of the left auricle, and left ventricle. The lungs now performing the function of aeration, or decarbonization of the blood, the placental circulation becomes no longer necessary, and the ductus venosus is obliterated.

What becomes of the vessels which were peculiar to the fetus ?

Upon the establishment of the extra-uterine circulation, they become first obliterated by coagula, and then either remain in the character of ligaments, or are entirely absorbed.

What are the physiological characters of the fetus ?

While yet an embryo, it grows, is nourished, and it has fluids to sustain it. It is endowed with vitality from the period of its detachment from the ovary.

Does it form its own blood ?

It does.

What is the color of the fluid which it first circulates ?

White.

How small an amount of red blood can be seen about the heart, while the embryo is in a transparent or translucent state ?

A mere drop or two, about the region of the heart.

Is the blood of the fetus exactly like that of the mother ?

No, it is peculiar ; its color is between that of maternal arterial and venous blood ; is said to resemble the menstrual fluid.

Is its consistence as firm as that of adult blood ?

No ; its coagulum is softer, its red globules are smaller.

Does it contain so large a portion of phosphoric salts ?

It does not.

If the fetus then forms and circulates its own blood, does it not require a relatively greater force to propel it through the placenta and umbilical vessels ?

Yes, and hence the simultaneous action of the two ventricles to carry the blood with double force.

Does the blood of the mother circulate at all through the fetal vessels ?

No ; it is probable that the decidua receives blood from the uterus, but returns it again to that organ without transmitting it to the other portions of the placenta, at least not more than to supply it with nutriment.

Would the circulation of the mother, be too strong for that of the embryo or fetus ?

Yes, it is highly probable that it would destroy it by the momentum with which the blood would be impelled into it if there were a direct communication between the mother and fetus.

What proofs have we, that the maternal blood is not circulated in the fetus ?

1. Injections cannot pass from the vessels of the mother into those of the fetus : nor if the vessels of the fetus be injected, can the matter of injection be conveyed through the placenta into the vessels of the uterus, at least not without previous lesion of structure.

2. If after the birth of the child, the umbilical cord be cut, there is no continuous hemorrhage from it,—only a part of the blood it had contained, is squeezed out by contraction of the uterus.

3. The fetus cannot be poisoned through the mother. The child may die from rupture of the cord, without the mother being affected.

4. The entire ovum has been thrown off by the uterus, and when deposited in warm water, has been known to live many minutes, perhaps an hour ; its circulation going on without any effusion of blood.

What effect does hemorrhage from the mother, have upon the fetus ?

None, whatever, directly ; the woman may suddenly die from very profuse hemorrhage, and yet the child will survive some time ;—if, however, she be exhausted by constant discharge, the fetus will suffer much thus, and fail to become well developed, even though the mother may survive.

Is the circulation of the fetus more rapid than that of the mother ?

It is ; the motions of the heart have been determined by the stethoscope to be nearly or quite twice as frequent as those of the mother's heart.

What part of the fetus receives pure placental blood ?

The left side of the liver only, because every other portion has the blood from the fetal veins mixed with it.

What is the proportion in which the different organs receive the placental blood ?

This has not yet been satisfactorily ascertained ; it may be proposed as a matter of interesting calculation.

Why are the upper parts of the fetus better developed than the lower extremities ?

Because more blood is carried through the carotids and sub-clavians, than through the lower branches of the aorta.

Is more pure blood carried into the left than into the right ventricle ?

In consequence of the arrangement of the eustachian valve, blood which is brought from the placenta, mingled, it is true, with a part of the blood in the portal circulation, is thrown into the left auricle through the foramen of Botal. From this ventricle it is thrown into the arterial branches of the aorta, which go to supply the head and upper extremities, while the blood in the right ventricle is thrown out into the root of the pulmonary artery, and thence through the ductus arteriosus into the aorta, below the branches which supply the upper portions of the body. The right ventricle receives from the aorta the blood of the vena cava descendens.

What is the apparent object of the placenta?

To afford the changes necessary in the blood for the nutriment and development of the fetus.

What changes are probably effected in the placenta?

Those similar to that effected in the lungs by respiration, in other words, hematosiſ.

Is it probable that oxygen is eliminated in the placenta and transmitted to the blood through its tissue?

A supply of oxygen is necessary to hematosiſ. It is indispensible to all animals, to the chick in ovo, &c.

Is there any difference of color in the blood circulating in the arteries?

It is redder in the arteries than veins, although the difference is not so great as in the adult.

How does pressure upon the cord cause the death of the fetus?

By interrupting the process of hematosiſ, and not by suspending the circulation merely, because this may go on in the fetus independently of a cord or placenta, or when these are compressed.

Is it probable that the fluids in which the fetus is suspended affords it any nutriment?

This is an unsettled question, Professor Hodge and some others think not. They suppose that the placenta is in some manner the medium of nutriment.

Has the fetus any of the functions of animal life?

Its faculties are dormant; although the different organs of this kind of life are developed in succession—as ears, eyes, nose, &c., yet it is doubtful whether they are brought into exercise during intra-uterine life.

Is it probable that the fetus has sensation while in utero?

Of the touch or tact only; and it most likely does not suffer from ordinary compression during parturition, as it is then probably comatose. *A cold hand placed upon the abdomen of the mother, the child moves*  
 Does it probably suffer under severe obstetric operations upon it?

*cause by the pressure of the abdominal muscles which are stimulated by the cold.*  
 It is probable that it does suffer from such causes.

Is there any probability that the child may cry in utero?

Not the least, unless possibly when the mouth of the child can come in contact with the atmospheric air.

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## OF EXTRA-UTERINE PREGNANCY.

What is the second class of pregnancies usually adopted by obstetric writers?

Irregular, abnormal, or extra-uterine pregnancy.

Of how many varieties does it consist?

1st, Of Ovarian pregnancy.

2d, Of ventral or abdominal pregnancy.

3d, Of tubal pregnancy.

4th, Of interstitial pregnancy.

What is meant by the term ovarian pregnancy?

That in which the embryo becomes developed in the ovary.

What by ventral or abdominal pregnancy?

That in which the ovule or embryo becomes deposited in the cavity of the abdomen and developed there.

What by tubal pregnancy ?

That in which the embryo becomes developed in the tube.

What are we to understand by interstitial pregnancy ?

That in which the ovule has in some way or other become situated between the layers of muscular fibres in the uterus, and there acquires a degree of development.

Have we any precise knowledge of the causes of these different varieties of extra-uterine pregnancy ?

We have no precise knowledge of the causes—our ideas are merely speculative on this subject. It has been ascertained by experiment that if the fallopian tube be obstructed by ligature, or by excision of a portion of it, before the ovule has passed through its canal, it becomes unable to arrive at the uterus, and it may be somewhat developed in the ovary or tube as a consequence, &c.

Does the development of the fetus go on in the body, or at the surface of an ovary ?

At the surface, and rarely, if ever, in the body.

What then are the investments of the embryo ?

Amnion, chorion, and peritonæum.

Upon what does abdominal pregnancy probably depend ?

Upon irregular action of the tubes. The morsus diaboli not embracing or retaining the ovum.

What is the process by which the ovum forms a nidus in which to be developed ?

Its presence in the cavity of the peritonæum, probably excites inflammation and an effusion of coagulable lymph, which surrounds the ovum, as the decidua would in the cavity of the uterus.

Upon what does tubal pregnancy possibly depend ?

Upon a stricture of the tube, preventing the passage of the ovum into the cavity of the uterus.

What in this case are the investments of the embryo ?  
Amnion, chorion, and parieties of the tube.

Can interstitial pregnancies be satisfactorily accounted for ?

Not at all, unless under the supposition that when the ovum reaches the parieties of the uterus in the tubes, it is arrested at that point and ulcerates its way into the substance of the walls of the organ.

For what length of time may the ovum continue to develop, in these cases of extra-uterine pregnancy ?

For one or two months. *three or more -*

What usually becomes of it after that time ?

It usually dies, becomes encysted in its own membranes, then gradually converted into a sebaceous matter, and looks as though it had been kept in spirits.

Is it subject to decomposition while thus encysted ?

It rarely becomes decomposed unless the cavity of the cyst is exposed to atmospheric air.

Are the placenta and cord mostly found appended to the embryo in these cases ?

In all cases where there is any degree of general development.

What substitutes the decidua ?

Coagulable lymph.

What is the condition of the cavity of the uterus in these cases ?

It is always furnished with a decidua.

Does this decidua remain in the uterus as long as the embryo remains in the pelvis or abdomen ?

Not usually,—it is sometimes thrown off in a few months.

Do any inconveniences result to the mother in those cases in which the fetus lives and continues to be developed ?

Serious consequences usually ensue ; irritation, inflammation, suppuration, ulceration, and sloughing are all liable to take place ; sometimes to an extent to cause the death of the mother.

What kind of accident may accompany the rupture of the cyst, and cause the immediate death of the mother ?

Profuse hemorrhage.

If death do not happen from this cause what may produce it more tardily ?

Peritonæal inflammation.

Do any instances occur, in which the fetus becomes considerably developed, without causing fatal irritation ?

There are instances on record when the woman has carried such a fetus many years.

What then usually happens about the end of the ninth month ?

A parturient effort takes place, and sometimes the decidua and some coagula are thrown off ; uterine action then subsides.

Does the patient ever recover after such parturient efforts ?

Some women live many years after such an event.

Is it possible for them to have a true pregnancy while they are carrying the product of uterine conception ?

Some cases of this kind are on record, and there is no reason why pregnancy should not recur after the decidua has been discharged from the cavity of the uterus.

What is the more common result ?

Irritation, followed by inflammation and abscess, opening externally, as at the umbilicus, groin, perinæum, or into the intestines.

What are the symptoms of extra uterine pregnancy ?

They are very irregular, and differ somewhat from those of normal or uterine pregnancy.

What takes place in regard to the catamenia ?

It mostly returns at the usual period of quickening, and then continues regular, especially if the decidua have been thrown off.

What is the condition of the mammæ ?

They mostly become flattened.

Is there any difference in the time at which the fetus is felt ?

If it acquires any muscular development, it is felt earlier than in natural pregnancy.

Is the ovary liable to take on an effort to abnormal generation ?

Yes—it has been known to contain hair, teeth, &c., which were probably the result of abnormal generation.

What other instances are known which lend support to the doctrine of emboitment or encasement of germs ?

The fact recorded (in Coxe's Med. Museum, vol. ii. No.

2.—Sept. and Oct. 1805,) in which a fetus was found within the abdomen of a boy, fourteen years old; and the case recently related by Velpeau, where the rudiments of a fetus were engrafted on the testicle of a male, &c.

What are the indications for treatment in cases of extra-uterine pregnancies?

Generally palliative, to relieve or remove irritation as much as possible.

What is to be done when the cyst is ruptured?

Support the patient's strength by tonics, cordials, &c.

Suppose an abscess should form and point externally?

Apply fomentations, poultices, &c.

Would it be advisable to open an abscess, if it could be reached by an incision?

By good authority, it is thought that it would be best, (provided the peritonæum would not be opened,) to make a free incision, to evacuate the contents of the abscess, and thus remove the irritation.

Would it be proper to favor the removal of the contents of the abscess by injecting it with cleansing washes?

This would probably greatly facilitate the restoration of the patient's health.

Is the placenta mostly adherent to some part of the abscess?

It is usually attached strongly to some portion of the wall of the sac.

How is it to be separated?

By washing the debris away as fast as it sloughs.

Would gastrotomy be advisable in the early stage of abdominal pregnancy?

The opinion is entertained by some that it would be safer for the mother that it be done, and thus save her from the subsequent irritation.

### OF THE SIGNS OF PREGNANCY.

Into how many classes may the signs of pregnancy be divided?

Two—rational, or sympathetic, or physiological; and positive, physical (or mechanical) signs.

What is usually regarded as the first rational sign?  
Suppression of the menses.

Can this sign be relied upon?

Not positively. *usually*

What other causes may suppress or suspend the menstrual function?

Exposure to cold, uterine congestions, or structural diseases of the organ.

Are the menses always suppressed by pregnancy?

Not always during the first months.

Are there any cases in which women menstruate only during pregnancy?

Such cases are very rare, but have been mentioned by Dewees, Daventer, and Baudelocque.

When do the mammary glands become sympathetically affected?

One or two months after conception, these glands enlarge, become the seat of slight pains or pricking sensations.

When do they begin to secrete milk?

Usually toward the latter end of pregnancy.

Is milk never found in the mammæ, unless the female be pregnant or nursing?

Milk is sometimes secreted by old women, and occasionally by very young girls.

Do the breasts never become tumid or painful, except during, or as a consequence of, pregnancy?

They are liable to become tumid and painful from other causes—as cold, uterine irritation, &c.

What changes do the nipples or papillæ undergo, during pregnancy?

They become enlarged, developed, more tumid, darker coloured.

Do any changes occur in the areola?

It becomes larger and darker coloured—in brunettes it becomes almost black. The mucous follicles, about the nipple, become more prominent, and the veins more blue.

May not these changes occur from other causes than pregnancy?

They may arise from mechanical irritation, as frequent handling, &c.—also, from sympathetic irritation in the uterus, &c.

What changes take place in the uterus during the early weeks or months of pregnancy?

It enlarges, becomes developed, at first in all directions.

At what time does the development of the uterus begin to form a tumor in the abdomen?

In the third and fourth months.

Do young married females mostly become considerably developed about the pelvic region, before they are impregnated?

Yes, not only their hips, but their breasts also, are apt to become enlarged.

Is there any difference in the direction of the abdominal tumor in different women, or in the same woman at different pregnancies?

Yes—in women whose abdominal muscles are relaxed, the uterine tumor is more prominent.

Is the tumor of which we have been speaking, a positive evidence of pregnancy?

It is not a positive evidence, because some women become very fat, internally, after marriage.

Have women any power to conceal the abdominal development, when they wish to appear not pregnant?

They can frequently succeed in doing so, by their manner of carriage and dress.

What is the order of development of the abdominal tumor, in cases of pregnancy?

There is no great enlargement till the third month; at this time there is a fulness in the hypogastrium—at four months the tumor is larger—at five months the uterus is above the pubes, &c.

Is there any alteration in the size of the abdomen during the first two months?

No—there should be no distinct tumor found in the abdomen during the first and second months.

Is there any tumefaction in the hypogastric region, during the third month ?

Yes—there is usually.

Upon what does it depend ?

Partly upon the development of the abdominal parieties, and partly upon the circumstance, that the intestines are carried up by the fundus of the uterus.

What is the general condition of the upper and lateral portions of the abdomen, at the third month ?

It is flat above, and rather puffy in the iliac fossæ.

Has this usually been regarded as a valuable diagnostic sign of pregnancy ?

By many, it has been so considered. The French have the adage—“*En ventre plat, enfant il y a.*”

Where is the top of the uterus situated, in the fourth month ?

It is immediately above the superior strait, and the tumor can then be just felt.

Where is the top of the tumor in the fifth month ?

Half way up to the umbilicus.

Where at the sixth month ?

At the umbilicus.

Where at the seventh month ?

Three fingers' breadth above the umbilicus.

Where at the eighth month ?

At the epigastric region.

Where at the ninth month ?

It does not rise higher during this month, but usually expands more into the lateral portions of the abdomen and

pelvis. Towards the end of gestation, it seems even to descend a little.

Is the protrusion of the navel always a diagnostic sign of pregnancy ?

No—though usually perhaps always present at certain stages of true pregnancy ; yet it may occur from other causes than pregnancy, as the existence of large tumors, &c.

May enlargements of the abdomen from obesity cause an equal degree of protrusion ?

We believe that in fat women, who are not pregnant, the umbilicus is always sunken.

Is the gait of a female altered by pregnancy ?

It is more vacillating ; the feet are placed further apart.

How is the existence of pregnancy to be verified, admitting all the sympathetic signs to be fallacious ?

By physical examination.

In what does this examination consist ?

In examination by the hand of the external surface of the abdomen, &c.

What is the proper position for this object ?

On the back, in a state of flexion, then examine with a hand of the temperature of her body, request her not to strain, nor hold her breath.

What is to be gained by this ?

A knowledge of the size and kind of tumor which occupies the cavity, and sometimes also of its contents.

How can you appreciate the existence of any thing within the cavity of the tumor, by such an external examination ?

By applying the bare cold hand upon the surface of the abdomen, a shock is transmitted to the contents of the uterus, which if endowed with vitality will sometimes move with a force which can be felt.

What position is most suitable for this purpose ?

The patient should be on her back ; have her shoulders raised, her limbs and abdomen flexed.

May she contract the abdominal muscles ?

No ; she should keep every thing as flaccid as possible, she should breathe easy, and make no straining effort.

Should the hand of the examiner, be removed immediately after it has been applied to the abdomen ?

No ; it should be kept some moments in contact with the surface, that it may appreciate any movements which may take place.

Is this external examination sufficient to enable the accoucheur always to diagnosticate pregnancy ?

No ; it is liable to fail, from a variety of circumstances.

What other resource is there ?

Examination per vaginam.

What is this process called in professional language ?

The touch.

What is the relative importance of this operation to the accoucheur in pregnancy and diseases of the uterus ?

By some high authority it is regarded as important to the accoucheur, as the lever to the mechanic, and the compass to the mariner.

What conduct should the accoucheur observe when about to make this kind of examination ?

That which has regard to the sense of delicacy, on the part of the female.

To whom should he make the proposition for an examination ?

To a third person, as a nurse, the husband, or to some matronly female.

How should he dispose of himself, while such a proposition is communicated to the patient ?

He should retire into another room until the decision is made.

What arrangements should be made in order to conduct the examination most satisfactorily ?

The room should be darkened, and the patient dressed lightly, and placed in the suitable position.

Should the physician insist upon having a third person present ?

He should always do so if it be at all practicable.

How should the patient be placed ?

The horizontal position will sometimes answer, though many advantages are gained by the erect position.

If she be placed in the horizontal position, upon what part of her body should she recline ?

When the simple touch to determine the condition of the neck and mouth of the uterus, is to be resorted to only, she may recline upon her left side :—but if both external and internal examination is to be made, she should be placed upon her back, with her hips to the edge of the bed, and her lower extremities flexed.

What accommodations should the nurse furnish for the physician ?

Several napkins, some unctuous matter, a chair by the bed, a basin of warm water, soap, &c.

How should the accoucheur sit ?

At the side of the bed, with his right hand towards the hips of the patient, if she be on her left side, but if on her back, he should sit with his face towards her, that he may reach his left hand to her abdomen.

What is the rule for carrying the hand under the coverings ?

The clothes should be properly raised at their lower edges, by the left hand, and then the right hand with the index finger lubricated, passed cautiously up under the clothes without uncovering the patient.

Suppose your patient to be standing, how should she be arranged ?

She should be allowed to rest her hips against something firm, and then recline forward as if to lean upon the examiner.

How should the examiner be situated ?

Either upon a low seat, or resting upon one knee, in front of the patient.

To what portion of the genital fissure should the finger be carried ?

Always to the posterior commissure, avoiding contact with the mons veneris if possible. When the finger has thus gained access to the vagina, it should be turned to present its radial edge to the arch of the pubes.

Can the touch afford us any good idea of early pregnancy ?

Yes ; it may even then appreciate the changes which have occurred in the uterus.

What is the earliest period however at which any *positive* information can be acquired ?

After the fourth month.

What can be recognised in the uterus after this time ?

The existence of a body suspended in a fluid.

What name has been given to the process by which this knowledge is obtained ?

Ballottement, or uterine palpitation, or percussion.

How is this performed ?

By the application of the index finger of one hand to the mouth or neck of the uterus, while the other hand is applied upon the abdomen over the fundus of the uterus. The finger in the vagina, is then suddenly to push up the part of the uterus with which it is in contact; while the palm of the other hand is prepared to receive any impression which such a shock may make; the percussing finger is to be kept applied to the os or cervix uteri, that it may determine whether any body floating within the cavity, descends upon it. In this way very frequently it is possible to determine the existence of a body within the uterus and even to a certain extent the degree of its development.

Does the woman usually experience a fluctuation or fluttering about the end of the fourth month ?

She does

What is this sensation called ?

Quickening.

Is it proper to regard this as the period at which the child becomes quickened into life ?

¶ The child is endowed with life at all its stages of uterine existence.

Should it not be viewed as an evidence that the degree of the development of the fetus is such, that it can exert muscular movement at this time ?

This would be the proper view to take of it.

Is this period always fixed at four or four and a half months?

No; some women feel the fetus earlier, and some later than this.

Upon what does this difference of time probably depend?

Either upon difference in degrees of development, or upon the different degrees of sensibility in mothers.

When does quickening *really* take place?

At the time of conception.

What other movement takes place during pregnancy which is apt to excite the attention of the woman?

The slipping up of the uterus out of the pelvis.

When does this happen?

Almost invariably between the fourth and fifth month.

Does the occurrence of this sensation of "quickening," and the other signs enumerated, remove all doubts as to the existence of pregnancy?

No—some women have all these signs, and are not pregnant; even some who think they not only feel, but see the movements of the child through the abdominal parieties.

May a woman be pregnant, when none of these symptoms occur?

Yes—when if they have occurred at all, they have been very slight, and no motion whatever has been noticed.

What other means of diagnosis has the obstetrician, besides that of the external and internal touch?

Auscultation.

What are we to appreciate by auscultation?

The existence or non-existence of the vital actions of the fetus.

How many modes are there of performing it ?

Mediately through the stethoscope, or immediately by the application of the ear to the surface of the abdomen.

Does delicacy require that mediate auscultation be used in cases of supposed pregnancy ?

It is certainly most proper when it will answer. If immediate auscultation is resorted to, the under dress of the patient should be allowed to cover her person.

What does auscultation afford, which ballottement does not ?

Ballottement determines the existence or non-existence of a body within the uterus, but does not indicate its vitality—auscultation contributes much to determine the latter, by mostly recognizing the sounds peculiar to the fetus, &c., when it is alive in utero.

Is it an important improvement in the means of obstetric diagnosis ?

It should be considered as a very important improvement in obstetric diagnosis.

How many sounds are to be discriminated by this auscultation ?

Two—one depending upon the motions of the fetal heart, and the other said to depend upon the circulation of blood in the placenta.

What is the difference in these sounds ?

The first has a quick double beat or sound, amounting from one hundred and forty to one hundred and fifty in the minute ; the other is synchronous with the actions of the maternal heart.

What is the character of the first kind of sound ?

It has been aptly compared to the ticking of a watch under a pillow.

What is the character of the other sound that is heard ?

It is like the cooing of a dove, or like the passage of a fluid through a great many cells.

What is it called ?

Placental soufflet, or placental sound.

Is it proper to rely upon the absence of the sounds, as an evidence of death of the fetus ?

Not if other symptoms of its vitality present strongly.

Upon what does it probably depend ?

Not upon the circulation of blood in the placenta, but upon the circulation of blood through the uterine vessels, about or over that part at which the placenta is seated.

May this sound be confounded with any other ?

Yes, with the pulsations in the iliac arteries, &c.

Is any caution to be used, that the patient's clothing may not confuse the sound ?

The friction of the patient's dress may confuse it, unless care is taken to keep it smooth upon the abdomen.

What may obscure these sounds while the child is actually alive ?

The existence of the placenta at the posterior part of the uterus ; or there may be a very fat omentum interposed.

Is it proper to decide that pregnancy does not exist, if this soufflet cannot be heard ?

No—the situation of the placenta may be such, that although its circulation may be active, it cannot be heard.

What is the earliest period of pregnancy at which auscultation becomes of any value ?

Kennedy is reported to have heard it at the twelfth

week, but it is scarcely to be relied upon, until at the end of the fourth, or during the fifth month.

What is the condition of the mother most favourable for auscultation, as regards corpulency ?

The thinner she is, the more readily can the sounds be heard, if the position of the child is favorable.

What situation of the fetus is most favorable for emitting the sounds of its heart ?

That in which its back is applied to the anterior parieties of the uterus.

At what part of the uterine tumor is the fetal sound most frequently heard ?

Generally at the lower and lateral portion of the uterus.

What would modify the position at which these sounds are most distinctly heard ?

A change in the position of the child.

Suppose the breech presented to the os uteri, where should the fetal sound be most readily heard ?

Higher up toward the fundus of the uterus.

Is auscultation of any value in the diagnosis of compound pregnancies ?

In twin pregnancies, there would be two points whence the sound should emanate, one above and another below.

Would the placental soufflet, as it is called, be much altered by a twin pregnancy ?

Not necessarily, especially, if the placentaë were attached to each other, or the fetuses had one common placenta.

What other signs have recently been spoken of as evidences of pregnancy ?

A blue appearance of the living membrane of the va-

gina, dependant probably merely upon venous congestion of the part.

Is this to be regarded as a certain sign?

Its evidence should be received with great caution.

How should we regard the report of the chemical changes of the urine, as an evidence of pregnancy?

By no means as positive, inasmuch as there is yet much conflicting testimony on this subject.

Do the sympathetic or secondary disturbances of the system during pregnancy, sometimes amount to disease?

Yes, and are entitled to be called the diseases of pregnancy.

Into how many classes may these diseases be divided?

Into local and general.

In what way are the local diseases induced?

By pressure and sympathy.

What are some of the consequences induced by enlargement of the uterus?

Pressure on the neck of the bladder, prevents a free discharge of urine, and often causes a distension.

What consequences may result from this distension?

Retroversion of the uterus, inflammation of the bladder, &c.

Does the bladder suffer more or less during the later, than in the earlier, stages of pregnancy?

Generally it suffers less in the later stages, because it is then flattened out over the surface of the uterus.

Can it therefore retain much urine?

No—but a small quantity in general, though it sometimes becomes enormously distended.

What influence would a greatly distended bladder exert over auscultation ?

It would probably render it very obscure.

What effect does pressure of the uterus exert upon the rectum ?

It causes a frequent disposition to defecate, bringing on diarrhœa in some cases.

Is the irritation of the rectum to the same degree at all periods of pregnancy ?

It is less as the uterus ascends, till toward the latter stage.

Is the rectum liable to be greatly distended by hardened feces during the latter periods of pregnancy ?

Yes—in consequence of pressure upon it high up the bowel becomes torpid or partially paralysed.

Is the distension ever so great as to require manual or mechanical aid to relieve it ?

The contents of the rectum sometimes become so hard and large, that they can not be evacuated by any other means.

Does this distension necessarily completely suspend the function of defecation ?

It does, at least partially, though sometimes the bowels appear to the patient to be regular, when in fact only a little mucous and feces pass, while the great mass is retained.

Does the irritation caused by the pressure of the uterus, or by the presence of the scybalæ, ever give rise to dysentery ?

Yes.

What are some of the consequences of pressure of the developed uterus?

Pain in the right side, simulating liver complaint.

Upon what depends the pain frequently felt in one or both of the iliac regions, as the uterus becomes enlarged?

Probably upon the stretching of the round ligaments.

Which of the round ligaments is the shorter?

The right one.

Towards which side of the abdomen does the uterus usually incline, as it becomes developed.

Towards the right side.

How is this inclination accounted for?

First, by the shortness of the right round ligament, and secondly, by the presence of the rectum on the left side of the spine usually.

Does the pressure of the fundus of the uterus upwards, produce any inconvenience to the stomach?

It frequently causes dyspeptic symptoms.

What are some of the effects of pressure upon the bowels?

Displacements through several natural openings in some instances—hence hernia in certain periods of pregnancy.

How are we to account for ventral hernia in pregnancy?

Pressure of the uterus, causes separation of the fibres of the abdominal muscles, and the escape of the bowel between them.

What kind of displacement of the bladder is apt to result from pressure of the uterus upon it?

Hernia into the vagina, or less frequently into the crural ring.

What are some of the effects of pressure of the uterus upon the great blood vessels ?

Congestions of the inferior vessels, hemorrhoids, varicose veins, &c.

How is the edema, to which some women are subject, to be accounted for ?

By pressure of the uterus upon the veins and lymphatics.

Is this pressure apt to affect the labia ?

It sometimes causes great distension and swelling.

Does pressure of the uterus exert any unfavorable influence on the nerves of the lower part of the body ?

Pressure on the crural and obturator nerves, often causes cramps, spasms, and neuralgic pains.

What are the local sympathetic diseases of pregnancy ?

Irritation of the uterus and adjacent parts.

Is the excitement into which the uterus is thrown, usually to be regarded as a healthy action ?

In the natural state of society it is so ; but in civilized life, this irritation often induces disease.

Does the vagina ever become sympathetically affected ?

It becomes the seat of a sensation of fullness, heat, and often a leucorrhœal discharge.

Does leucorrhœa ever thus become a symptom of pregnancy ?

In some doubtful cases this state of the vagina may aid in forming a diagnosis.

Do the glands of the vagina ever secrete very profusely during pregnancy ?

Sometimes the discharge is very copious, and is occasionally thrown out very suddenly.

From what other parts at this time may a copious and sudden discharge take place?

Probably from between the uterus and decidua, between the decidua and chorion, or between the chorion and amnion.

What abnormal formation upon the ovum may give rise to this discharge?

Hydatids.

What peculiarly distressing sympathetic irritation is sometimes brought on in the vagina or vulva by pregnancy?

An inflammatory affection, resembling aphthæ, called pruritis vulvæ.

What effect has the pressure of the uterus anteriorly upon the skin?

It sometimes greatly distends it and renders it painful.

Do the abdominal muscles participate much in the consequences of this pressure?

They are often put upon the stretch, and are occasionally thrown into spasm and pain.

In what pregnancy are these symptoms the most distressing?

Usually, though not always, in the first.

What sympathetic effect has pregnancy upon the stomach?

It mostly becomes disturbed, the patient being distressed with nausea and vomiting.

Is the stomach always afflicted thus by pregnancy?

Not invariably.

What kind of sensation is it which women experience at the stomach, or epigastric region ?

A sense of sinking ; sometimes of fullness, nausea, sometimes resulting in vomiting.

What circumstance aggravates this nausea of the stomach ?

Motion ; it usually comes on the moment of rising from bed.

What is this disturbance usually called ?

Morning sickness.

Is it confined to the morning alone ?

It sometimes lasts the whole day.

Does it always commence in the morning ?

It sometimes comes on in the evening, the patient being quite free from it at other times of day.

Is this morning sickness a popular sign of pregnancy ?

It is by some persons regarded as an invariable or infallible sign.

Does this irritable state of the stomach become very susceptible to the impressions of odors ?

Both the smell and taste seem to be affected by this irritability of the stomach.

Is the stomach affected by moral causes ?

It is rendered worse by depressing, and better by exciting moral causes.

Does any serious consequence ever result from this irritation of the stomach ?

Sometimes it results in confirmed dyspepsia.

What then happens ?

Flatulence, cardialgia, pyrosis, gastrodynia, and salivation.

In what way is the appetite depraved ?

The patient is apt to have fastidious tastes, longings ; desires for outrè articles, as slate pencils, charcoal, &c.

Is it necessary that this desire should be indulged ?

No—we should not encourage such morbid propensities.

What is the popular notion respecting this ?

That these longings, if not gratified, will result in some defect or deformity of the child.

Is it necessary always to withhold the object desired ?

The patient may be indulged in every reasonable desire without impropriety.

Do these inconveniences always occur ?

No—some women are better during pregnancy than any other time.

How long do the annoyances alluded to generally exist ?

Some patients suffer only a month, some three or four.

When are they usually most severe ?

During the second and third months.

When does the distress usually begin ?

Immediately after the suspension of the menstruation.

Is gastritis ever a consequence of this sympathetic irritation ?

Yes.

What is the pathological condition of the stomach in pregnant women ?

Usually it is not inflamed, but mostly in a state of irritation, or rather according to some of sedation.

Is there any indisposition produced by another cause, similar to the sickness of pregnancy ?

*Sea sickness*, in which also there is irritation, or sedation of the nerves of the stomach.

From what may we infer that the stomach is not inflamed ?

It is relieved by taking food, and especially by stimuli, cordials, &c.

Is it mostly accompanied by any sympathetic reaction ?

There is usually no sympathetic fever.

Is ordinary sickness of the stomach in pregnancy usually productive of unpleasant consequences ?

Mostly without any bad consequences, however long the sickness may continue.

What affords temporary relief ?

Lying down, fresh air, moral excitement, &c.

Does the liver become implicated in the consequences of pregnancy ?

It often becomes the seat of pain, and is also functionally deranged.

What evidence have we of hepatic derangement ?

The urine is high colored, bowels are torpid, skin sallow, and sometimes the patient becomes jaundiced.

Is there any other peculiarity about the skin in some cases of pregnancy ?

It becomes covered by brown or yellow spots called maculæ.

Where do these spots usually appear ?

Upon the face and neck.

Do they present any bad omen ?

No, they are of little consequence, and usually go off after delivery.

Upon what visceral derangement do they seem to depend ?

Upon the hepatic affection.

What part of the glandular system is apt to sympathise with the gravid uterus ?

The salivary glands sometimes become greatly excited.

Do the gums become inflamed ?

Not necessarily.

What is the character of the salivary discharge ?

Thick and ropy, sometimes very abundant.

How are the mammary glands affected ?

They almost always become enlarged, slightly painful, and they occasionally secrete milk very early in pregnancy.

What name is given to a tumefaction, which sometimes extends much beyond the ordinary excitement ?

Mastodynia.

Suppose the mammæ after having been distended, should become shrunken and flattened, what indication would it present ?

That the development of the ovum had become suspended.

What other sympathies are involved in pregnancy ?

Those of a general nature are, first, excitements of the cerebro-spinal axis ; and secondly, those of the vascular system.

How are the brain and the mental faculties affected?

The brain becomes more impressible, and the mind more susceptible in most cases.

Does pregnancy ever cause much depression of the faculties?

The patient sometimes becomes despondent, and thinks every thing is wrong.

Does the opposite state of things ever occur?

In some cases the sense of smell and taste become more acute, and the mind much more active and effective.

Is the vascular system necessarily excited at the same time?

The vascular system is not necessarily excited in such cases.

Is the excitement of the cerebrum ever attended by mania?

In some cases, though it rarely comes on till after delivery.

What are some of the consequences of this excitement of the brain and spinal marrow?

Hysteric convulsions.

Does a moderate degree of this stimulation of the nervous system ever produce a favorable result?

In some cases the patient is able to use her muscles more freely than when unimpregnated.

What disturbances are produced in the lungs, or thorax by this nervous excitement?

Dyspnœa; sometimes palpitation and spasmodic cough.

What effect has this nervous stimulation upon the uterus itself?

It increases its sensibility, and renders it often extremely sensitive to the touch.

What influence has it upon the muscular fibres of the uterus ?

It often causes irregular contractions, somewhat resembling labor.

What effect has this excitation upon the general sensibilities of the patient ?

She sometimes has nervous chills, a kind of universal tremor.

When are these sensations experienced ?

Sometimes at the very commencement of pregnancy.

Are they liable to produce much muscular movement ?

In some cases they amount to regular hysteria.

Do some patients experience a condition opposite to this ?

They become faint even during sleep.

Does this condition of the uterus, ever excite any disturbance of the cephalic nerves ?

Some females suffer much from otalgia, odontalgia, cephalalgia, &c.

Is toothach very common in pregnancy ?

With some females it is, and some ladies lose a tooth at every pregnancy, in consequence of the recurrence of odontalgia.

It has been said that some females become better, more able to make exertion, &c., during pregnancy ; are any patients in an opposite condition ?

Some women become very feeble, and unable to walk, during the greater part of pregnancy, until after delivery.

We have spoken now of the nervous excitability as a consequence of pregnancy,—what are occasionally its effects upon the vascular system?

Most young women become more developed, their vessels enlarge, and carry more blood; the whole body, pelvis, &c., become increased in size.

Is this a natural and salutary consequence of pregnancy?  
It should be so regarded.

How is this change brought about?

By a plethoric condition of the blood vessels.

Under what circumstances does this plethora become an evil?

In civilized life, females who live luxuriantly, and do not use much physical exertion become subject to local congestions.

What then, is the best remedy for the natural plethora of pregnancy?

Free exercise and temperate living.

What sympathetic disturbance, is a usual preventive of plethora?

Nausea and vomiting, as in the morning sickness.

After what period of pregnancy, does it usually exist most conspicuously?

The fourth month, and later when the stomach usually has become more tranquil.

What kind of pulse is presented in this plethora?

It is not frequent; rather slow and full, indicating congestion.

What is the condition of the veins?

They are usually very full.

What are some of the consequences of this plethora?

Sense of general fullness—headach, particularly on lying down.

How is the respiration affected?

It is oppressed, and there is usually a difficulty in taking a deep inspiration.

What is the condition of the heart, in this general plethora?

It labors irregularly and with difficulty; there is palpitation combined with oppression.

What is the consequence of the congestion of the portal system?

Distress in the epigastric region, and aggravation of the dyspeptic symptoms where they co-exist.

What effect has plethora upon the viscera at the lower part of the abdomen?

Sensation of weight and distress, especially at the usual menstrual period.

What evil consequences may arise from plethora in the uterus?

Hæmorrhage from the cervix, or from the inner surface of the uterus, from detachment of the placenta.

Is it of importance to attend to these symptoms?

They sometimes become exceedingly dangerous.

Does this plethora ever cause effusions of blood, in any other part than the uterus?

Hæmoptisis, hæmetamesis, sanguineous apoplexy, of brain or lungs, and melanosis, may result from it.

What other evil may happen from extreme turgescence of the blood vessels in the brain?

Convulsions.

What other species of effusion may result from this plethoric condition of the vascular system ?

Serous effusions upon the brain, into the thorax, the abdomen and the general cellular tissue, &c.

What effect have these effusions upon the excited condition of the nervous system ?

They aggravate it.

How are the bowels sometimes affected by it ?

They sometimes pour off the water or serum of the blood in large amounts.

What is the general condition of the blood, in a pregnant female ?

It is usually altered ; has more coagulable lymph or buff upon it when drawn.

Is this the result of inflammatory action, during pregnancy ?

It is not necessarily dependent upon inflammatory action.

Is this plethoric condition never attended by fever ?

In some cases, it is combined with fever and inflammatory action.

How should we regard a little febrile condition of the patient if she have no plethora ?

It is not to be looked upon as a serious affair ; it generally goes off after delivery.

What is it apparently the result of ?

Nervous excitability ; it is not apt to be followed by debility.

What are the symptoms of this *nervous* fever ?

Dry skin, small pulse, &c.

What means are best calculated to relieve this irritability of pregnancy ?

Cold bath, sponging with cold water.

What might we regard as suitable temporary remedies ?

Anodynes ; particularly those of an anti-spasmodic character, as assafœtida, ether, &c.

Why not use the narcotic anodynes, as camphor, and opium, &c.?

When the system becomes habituated to the use of them, the irritability is usually increased.

Is it safe to deplete very much, during pregnancy ?

Too much depletion induces debility, and consequently increases irritation.

Should the treatment of pregnant women generally, be mild or active ?

The treatment should be mild, in most cases.

Should it be preventive or hygienic, rather than corrective or medical ?

It should be rather prophylactic and hygienic—the professional counsellor should give proper attention to suitable exercise of body and mind, rather than medicine in most cases.

What general rules should be laid down, in reference to the diet ?

It should be light, easy of digestion ; chiefly vegetable.

Suppose the patient is dyspeptic, and subject to flatulence ?

Allow her some light animal food, and mild condiments.

What rule should be observed, in regard to her drinks ?

They should be simple, and in moderate quantities.

What ill consequences may arise from drinking large quantities, even of water ?

In the opinion of some, it is apt to increase plethora.

What popular prejudice exists in regard to the amount of diet, required by pregnant women ?

That they require more food while pregnant, and that it should be richer and better than usual.

How far should this idea be favored ?

It is in general, fair to suppose that a woman in this situation would require more.

After the period of morning sickness has passed, what should she do to remove plethora ?

She should use as much exercise as may be consistent with her physical ability.

What are some of the good effects of exercise ?

When taken regularly and in moderation it excites secretion, and prevents dyspepsia, increases strength and removes irritability.

Suppose the patient be too feeble to walk, what kind of exercise can she substitute for it ?

Riding, sailing, &c.

What are some of the disadvantages of too much exercise ?

Pain, fatigue, spasms, abortion and premature labor.

Suppose your patient was already very plethoric, would you oblige her to use exertion to wear it off ?

This plethora should first be reduced by proper direct means before she be recommended to use exertion.

What treatment of a general nature, is proper to allay the great irritability of some pregnant women ?

General bathing, using merely the cold bath.

Suppose the cold bath is followed by a sense of chilliness, what should be substituted?

It should be tepid, or warm.

What peculiar advantages does the warm bath, offer at the later stages of pregnancy?

It is very useful to promote the relaxation of the system.

What consequences might occur if the bath were too hot?

Labor might be brought on, especially if the woman be plethoric.

What are some of the more distinct means of reducing plethora?

Venesection, is the most efficient.

How do pregnant women usually bear bleeding?

Very well—most of them think they require it, and to many of them it is almost indispensable.

Is it better to bleed freely and rarely, if you bleed at all, than to bleed a little, and often?

Bleed freely, and empty the turgid vessels.

What may happen from frequent and small bleedings?

A febrile and irritable condition of the patient's system.

After a free bleeding, whereby a plethoric state is removed, what are the best measures for preventing its return?

Free exercise, bathing, &c.

How would you treat a local inflammation, as pleuritis, hepatitis, &c., during pregnancy?

By free bleeding, and after the reduction of the inflammation, an early use of opiates.

Why resort to opiates ?

To prevent the strong liability to premature uterine contractions.

What unfavorable influence may irritation of the bowels exert upon the uterus ?

It is very likely to bring on contractions, and false pains.

What treatment is proper in the febrile state of the system accompanied by nervous chills, and debility ?

Here omit venesection, but administer instead, spirits of nitre, antimonials, &c.

What should be done during the apyrexia ?

Mild tonics should be given.

What advice should be given the patient, when she experiences difficulty in urinating in consequence of the pressure of the uterus ?

To bear forward, or to place herself on her knees, and if necessary, press the uterus upward, when it rests upon the pubes.

Suppose this means will not afford her the necessary relief, what should be done ?

Introduce the catheter, and allow the urine to escape through it.

What precautions are to be taken, in the introduction of the instrument under such circumstances ?

Bear in mind, that as the bladder is compressed by the uterine tumor, it is usually carried so high up as to put the urethra upon the stretch, and fix it parallel with the posterior surface of the symphysis pubes, and that the bladder itself is pressed forward over the symphysis. Consequently, the point of the catheter, is to be carried along

parallel with the symphysis until it gets above it; the handle is then to be depressed, in order to carry the point of the instrument into the cavity of the bladder.

What evil consequences may result from the long retention of the urine?

Paralysis of the bladder, or its rupture and the death of the patient.

What useful mechanical measure may be resorted to, to obviate or remove the pressure of the uterus upon the bladder?

A broad bandage applied in front of the lower part of the abdomen and carried round to the back, or even across the shoulders.

When the uterus presses upon the rectum, and causes a tenesmus, how should it be relieved?

By pressing the uterus upward.

What means should be used to remove the impacted feces from the rectum?

If oleaginous injections do not succeed, the mass must be removed by a finger or a spoon-handle, or some similar instrument.

How is the pain which is often felt in the abdominal muscles, the skin, &c., to be relieved?

By rubbing them with oleaginous and anodyne mixtures.

Supposing much of the abdominal pain to depend upon the existence of flatus in the intestines, what should be done to relieve it?

Remove the flatus by some carminative or gently stimulating laxative, or antispasmodic.

If the intestines become inflamed, how may they be treated?

By cups, leeches, &c., to the sides of the abdomen; and the other modes of treatment considered proper in ordinary cases.

What other cause may give rise to pain in some portion of the abdomen?

Either of the varieties of hernia, if they become strangulated, or the bowel inflamed.

What is the proper mode of treating hernia?

Reduce it and keep it supported by a proper truss or bandage, which presses upon the opening only—properly adjusted adhesive straps, often answer this purpose very well.

What is the most usual kind of vesical hernia?

Into the vagina, although it has been known to take place into the abdominal or the crural ring.

How is it to be relieved?

By supporting the superincumbent uterus by a proper bandage.

What caution should pregnant women observe in regard to dress?

It should be such as to make no pressure on the abdomen; they should abandon the use of corsets, or have them so constructed as not to compress the body.

How should the hemorrhoids of pregnant women be treated?

By laxatives, leeches, cold poultices, &c.

What is the proper treatment for varices?

Bleeding and proper bandaging.

What other exciting cause besides pressure is liable to produce anasarca, varices, &c., in pregnant women?

General plethora.

What serious evil may be apprehended from great distension of the lower extremities by anasarca?

Gangrene and sloughing.

What surgical treatment does it sometimes require?

Evacuation by puncturing.

How is the sympathetic vaginitis of pregnant women to be treated?

When the patient is plethoric, by free general bleeding, then followed, if necessary, by leeching and cold astringent washes, and alterative injections of nitrate of silver, of alum, &c.

What means should be resorted to for the relief of pruritis vulvæ?

General bleeding if plethoric, and then mucilaginous injections, well charged with borax, and occasionally with laudanum, or better still, the aqueous solutions of opium.

Under what circumstances would the sulphate of zinc or nitrate of silver be useful?

After the removal of plethora.

How strong a solution of the nitrate of silver should be used?

Two, three, or four grains to the ounce of water.

How should we treat irritation of the bladder?

By the use of bland diuretics.

What treatment is most proper for the diarrhœa of pregnant women?

As it is mostly the result of, or accompanied by, inflammatory action, it should be treated by depletion, mild laxatives, regulated diet, &c.

When might astringents be used ?

After the inflammation has been cured.

Should the remedies applied to the stomach for morning sickness, be curative or palliative only ?

Palliative only—thus let the patient eat before she rises ; let her take her cup of coffee and a piece of bread in bed, or instantly after rising. Her food should be solid mostly ; she should not indulge much in liquids.

What should she do if she becomes again sick after eating ?

Lie down at once, or go directly out and walk in the open air.

What temporary medicines may she take to relieve the vomiting, when it is urgent ?

Lime water and milk, and other antacids. Hot drinks, as catnip tea, infusions of cloves, nutmegs, mace, &c.

Suppose more active measures be necessary, what other articles may be administered ?

Spirits of turpentine in small doses, and wine in moderate quantities : the aromatic sulphuric acid may be administered, and in some urgent cases, sinapisms may be applied over the region of the stomach.

What notice should we take of her longings, if her sickness be urgent ?

They should be gratified to avoid irritability, unless she desires improper and outrè articles.

What organ should we regard as the primary seat of irritation of the stomach ?

The uterus ; and hence none other than mild palliative measures can be useful.

If the liver become torpid and jaundice occur, how must it be treated?

By mild alteratives, gentle mercurial course, and especially the proper use of alkalies.

Suppose the secretions from any organ become very abundant during pregnancy, how should they be managed?

Great care should be taken not to arrest them suddenly.

Suppose the patient suffered from mastodynia?

Care should be taken not to remove it at once by the application of cold, for fear of causing a metastasis. It should be moderated by warm application, leeches, &c., if necessary.

What kind of plaster is very useful, and usually sufficient to relieve it.

The Diachylon or soap plaster.

What other means often succeed?

Frictions with anodyne liniments.

Is it important to distinguish neuralgia of a part from inflammation?

It is: and the treatment should be conducted accordingly.

What kind of anodynes are best, if the pain be purely nervous?

Camphor, hyosciamus, ether, assafœtida, &c., but not opium.

How should we treat the pains in the chest in pregnant women?

With cups, leeches, &c., if inflammation exist—but if it be merely neuralgic, palliate with assafœtida, camphor, &c., carefully withholding opium, if possible.

Suppose there is pain in the abdomen, with indications for bleeding, what subsequent treatment should be used ?

In such case, give opiates by the stomach, or in enemata, to prevent the contractions of the uterus.

How should we treat a severe cephalalgia or otalgia ?

By leeches, laxatives, &c., upon general principles, and after excitement is allayed, give anodynes.

Suppose the woman have severe tooth ache, what objection would there be to the extraction of the tooth ?

Any sudden and powerful shock, as that of extraction of teeth, might bring on contractions of the uterus, and result in premature delivery. It is therefore better, as soon as it is admissible, to give anodynes.

What is meant by the term *labor* in obstetric language ?

It signifies an effort on the part of the uterus, and the mother to expel its contents.

Is it to be regarded as a mere mechanical action, or a vital function ?

It is a function, partly dependant upon mechanical, though principally on vital action.

What is the time at which labor takes place after conception ?

It is *apparently* irregular, in consequence of the difficulty of knowing the precise time of conception.

What is the ordinary period of calculation ?

Ten days from the last menstrual period, making nine calendar months and ten days, or ten lunar months—two hundred and eighty days, from the last day on which the menses appeared.

What is the most probable length of time ?

Nine calendar months.

Do some women go longer than this ?

Some have gone ten calendar months, three hundred and eleven days, as was proved in the Gardner Peerage case, in England.

What was the length of pregnancy in a case under the notice of Dr. Dewees ?

Two hundred and ninety three days. *Dr. Hodge - 4 days of 11*  
*three months calendar*

What difference is usually noticed in the condition of the child, when the pregnancy has been protracted ?

It is usually better developed, and is more vigorous.

How many kinds of cause of labor are there ?

Two—natural, (or spontaneous,) and accidental.

What is the actual cause of labor ?

At present it is unknown to physiologists.

What are accidental causes ?

All such as indirectly excite the uterine fibres to contraction, whether at full time or prematurely.

What influence may excitement or injury of any of the viscera have upon the production of labor ?

It is mostly liable to excite the contractions of the uterus, and thus bring on labor.

What influence has the mind or morale of the patient on labor ?

Certain moral impressions excite labor, while others suspend or prevent it.

What effect are violent inflammations of any of the viscera, or any febrile condition of the general system, liable to have upon labor ?

They always increase the liability to uterine contractions.

Does the fetus perform any active part during labor ; that is, does it contribute in any way by its own efforts to effect its delivery ?

None whatever ; it is in this respect entirely passive.

What is the main agent in the process of labor ?

The uterus.

What may be regarded as important accessory aids ?

The abdominal muscles, the diaphragm, and indeed all the voluntary powers of the mother.

What evidences have we that the uterus is the principal, and may be the sole agent in the expulsion of the ovum ?

Labor has sometimes taken place during sleep, and the ovum has been expelled immediately after the apparent death of the patient ; it also has happened while she was comatose and could use no effort.

What evidences are offered to the sense of touch, that the uterus contracts ?

If you place the hand on the abdomen when the woman complains of pain, you can feel the uterus grow hard and firm.

If you apply the finger to the uterus per vaginam, you will feel it tightening itself up when the patient complains of pain.

Does the state of the mind exert any influence upon the contractions of the uterus in labor ?

Although uterine contraction is not subject to the voli-

tion of the patient, yet moral causes do exert great influence over it. Sometimes increasing the violence of the contractions, but more frequently suspending them, or rendering them much more feeble.

What effect has great anxiety upon labor ?

It almost always retards it, while on the other hand, confidence and hope increase and facilitate it.

To what part of the system may the excitement of the uterine system be translated ?

To the brain and spinal marrow.

What are the usual consequences of such a translation ?

Puerperal convulsions.

To how many kinds of contraction is the uterus subject ?

Two : tonic, and alternate, or spasmodic.

What is to be understood by the term tonic contraction ?

A regular and permanent contraction of all the muscular fibres of the uterus.

What synonyme has tonic contraction ?

Tonic rigidity.

What is meant by spasmodic contractions of the uterus ?

Those contractions which take place suddenly, continue a few minutes and then subside.

What terms are synonymous ?

Alternate contractions, painful contractions, labor pains, &c.

Is not tonic contraction of the uterus painful ?

Not usually.

What are its effects ?

It squeezes the blood from the vessels, and diminishes the size of the uterine tumor.

Where is probably the seat of the pain during the spasmodic contraction ? *in all the tissues of uterus*

About the neck of the uterus. The pain however is not always proportioned to the degree of the contraction.

What is the usual order of frequency of the spasmodic or alternate contractions of the uterus in labor ?

At first, about once in half an hour, then gradually more frequently.

What is the effect of these alternate contractions upon the uterus ? *draw up the orifice of uterus.*

They dilate the orifice, and gradually force out some portion of the ovum.

What effect has the dilatation of the os uteri upon the long diameter of the uterus ?

It shortens its long diameter.

What effect has the dilatation of the os uteri upon the membranes which were situated over the cervix and os uteri ?

They necessarily become separated from their connexion with that part ?

What happens to the membranes, as the os uteri becomes considerably expanded ?

They mostly pass out into the vagina, and present what is usually called, the "Bag of Waters."

What influence does the presence of this "bag of waters" usually exert upon the vagina ?

It distends it, and often excites a copious secretion of mucus.

What becomes of this "bag of waters" under the continued and repeated contractions of the uterus?

It ruptures or bursts, and suddenly discharges its contents.

Are you to expect always to find a "bag of waters" in the vagina after the woman has been in labor some time?

Not always; for it sometimes happens that the membranes rupture before the os uteri is dilated to any extent, but even when this does not happen, the presenting part of the fetus may be applied so closely to the membranes at the os uteri, that there is little or no fluid interposed:— *after* again, the size of the ovum may be so great, or the mem- *but the* branes so full, that it is impossible for a segment of the *gush of* contents of the uterus to pass beyond the level of its *water,* orifice until rupture takes place. *to take place*

What does the uterus embrace, as soon as the waters are forced off?

The fetus.

When are the accessory powers of the mother brought to bear upon the fetus?

Mostly, soon after the expulsion of the waters.

In what way do these act?

First, the woman fixes the diaphragm by a deep inspiration, and then suspending the respiratory effort she contracts the abdominal muscles so as to bear downward; then she fixes her lower extremities, which are generally flexed, by putting her feet against some solid body; afterwards she seizes hold of some immovable body, if she can reach it, and thus brings into action all her voluntary powers, for forcible and violent expulsive effort.

Are these accessory powers very important in some cases of labor?

Although some women are delivered by the contractions of the uterus solely, yet in the greatest number of cases, these accessory powers become indispensable for the completion of parturition.

How is the uterus sustained in situ during the powerful effort of the accessory powers?

The lower part of it is fixed in and rests upon the margin of the pelvis.

Can a woman excite the tonic, or bring on the spasmodic contractions of her uterus, by the voluntary exertion of the accessory powers?

By the effort of the abdominal muscles she can frequently stimulate the uterus into action.

Are the accessory powers ever necessary to aid in the dilatation of the os uteri?

No: on the contrary, the patient should be prohibited from using them by bearing down during the dilating process.

What observation would go to give an idea that the accessory powers were not always completely under the influence of the will of the patient?

That of the fact, that when the child is pressing against the os uteri, or some of the soft parts of the vagina, it seems to be impossible for the mother to avoid bearing down.

What are some of the precursory signs of labor, or rather what are the evidences that the woman has nearly completed the full term of utero-gestation?

A subsidence of the abdominal tumor, so that pressure

is taken off from the epigastrium, and the woman feels more buoyant, free, and comfortable: the brain, heart, lungs, and all the superior viscera performing their functions more readily.

What sensation is then usually experienced about the pelvis?

One of pressure, uneasiness, constant desire to urinate, or defecate every ten or fifteen minutes.

What alteration is observed about the vulva or vagina?

A more or less copious secretion of transparent, or mucous albumen-like fluid usually takes place; the tissues are also usually much softened and relaxed. *Sometimes mixed with blood -*

By what kind of process does this occur?

By a vital or physiological process.

What is the consequence if this secretion do not take place?

The external parts remain hard and rigid. *Sometimes labor commences without this sign - at once*

Into how many stages is labor usually divided?

Three.

What is the first stage?

That in which the os uteri is undergoing the process of dilatation sufficiently to permit the child to escape through it.

What constitutes the second state?

The expulsion of the child from the uterus through the soft parts of the mother.

What does the third stage include?

The complete expulsion of the appendages of the fetus, viz: the placenta and membranes.

What is the usual situation of the fetus in utero, at the commencement of labor, or the full period of gestation?

It is flexed upon itself; its back being usually applied to the anterior portion of the uterus, its occiput towards the anterior half of the maternal pelvis, and the vertex applied to the orifice of the uterus.

Where are the first pains of labor usually felt?

In the back, or hypogastric region. *a severe cutting or grinding pain*

Are they uniform in this respect in the same women at different times?

No: sometimes they begin in the back, and sometimes in the lower part of the abdomen.

When may they be considered as most regular?

When they are felt first in the back, and extend round to the pubic region.

What inconvenience does the woman usually experience beside the pain in the early stage of labor?

A sense of weight and of constant inclination to evacuate the bladder and bowels.

When does the woman begin to express her desire to seize hold of some support, that she may exercise her accessory powers?

Usually at the end of the first stage of labor.

What is the usual state of the mind during the first stage of labor?

Irritable, petulant, desponding. *impatient, anxious*

What is her physical condition?

She is often chilly, flatulent, sick at stomach, sometimes vomiting small quantities of food recently taken, but mostly little else than air.

*Sometimes quite a severe rigor.*

What is the popular opinion respecting the prognosis afforded by sick stomach?

That sick labors are early labors, and this idea is usually correct, for nausea relieves rigidity.

What is the condition of the pulse in the first stage?

It is usually small and feeble in the first stage. *not much disturbed -*

What may be inferred from the fact that there is a secretion of mucus tinged with blood from the vagina?

That the woman is actually in labor.

What is this secretion called by nurses and other women?

A *show*.

Whence does it arise?

Probably from the vessels which are ruptured by the separation of the membranes from the mouth and neck of the uterus.

May a woman have a great deal of pain about the back and abdomen, and yet not be in labor?

She may have spurious, inefficient, though sometimes very severe pain.

How are these to be distinguished?

By the touch.

What sensation do they communicate to the finger of the accoucheur, when introduced against the os uteri?

Is it found that the uterus does not contract at all, or if at all, not in a manner to open the os uteri.

Is the dilatation of the os uteri regular and uniform, or does it progress more rapidly at one time than another?

It usually dilates very slowly at first, but afterwards more rapidly.

What is the usual shape of the os uteri during labor ?

At first it is round, but as it dilates, it assumes the shape of the part of the fetus which is about to engage in it.

What prognosis can be founded upon the condition presented by the os uteri to the touch ?

It is very uncertain ; as a general rule, when the os uteri is soft and fleshy, though somewhat thick, the dilatation will proceed rapidly.

What may be expected, when you find the os uteri firm and thin ?

Generally, that the labor will be slow in its first stage.

Can these conditions be relied on with any confidence ?

No : practitioners of long experience are often disappointed in them.

What is the best mode of testing the degree of dilation at each pain ?

The application of the finger in contact with the os uteri during several successive contractions.

What portion of the whole duration of labor, is usually occupied by the first stage ?

About ten-twelfths.

What for the second expulsion stage ?

About one-ninth.

What for the third stage, or complete expulsion of the placenta, &c. ?

One twenty-fourth.

Does the first stage involve mother or child in danger ?

Not necessarily, unless the membranes rupture prematurely ; then the child may suffer.

May either mother or child, incur any risk during the second stage?

The mother rarely incurs any hazard, but the child may be said to be in imminent danger, in many cases.

What accident may happen to it?

It may become apoplectic from the forcible pressure of the uterus upon it, while its head is retained in the pelvis, or if expelled too rapidly, it may be in a state of asphyxia.

Is the mother subjected to any danger, during the third stage?

Her danger at this time is often imminent; hemorrhage, inversion of the uterus, &c., are liable to occur.

What sort of pains usually characterize the first, or dilating stage of labor?

They are usually described, as *cutting, grinding, or tearing* pains.

In what respect do those of the second stage differ?

They are *forcing, bearing down, expulsive*.

What position does the woman usually assume, during the first stage?

She will sit, stand, or walk about; sitting or kneeling down only when she has a pain.

What attitude does she usually assume, when in the second stage?

She mostly prefers to lie down, flex her body and lower extremities, but extend her arms to embrace something, with which to support the bearing down effort she is about to make.

What is her physical condition during the second stage?

Her pulse becomes excited both by the effort, and the

occasional suspension of respiration. She is mostly bedewed with perspiration, and when a pain comes on, her face becomes florid, sometimes almost livid.

Is the increase of the pulse necessarily owing to febrile excitement?

No; it is the result of exercise, and should be distinguished from the pulse of inflammation.

What are some of the consequences of this effort?

Mostly an increased secretion of serum, from the skin, and mucus from the cavities; occasionally also, ecchymosis of the conjunctiva, epistaxis, and even apoplexy, or cerebral congestion.

What consequences often result if the secretions do not increase under this effort?

The patient is almost sure to become febrile.

What is the condition of the mind, during the second stage?

It is more calm and confident, the patient now often solicits the return of pains, and she rarely now imagines that she will die before labor is accomplished.

What disturbance is she liable to experience in her lower extremities, in this stage?

Severe cramps, and pain.

Why do these take place now?

In consequence of the pressure exerted by the child's head, upon the sacral nerves.

What condition of the brain may supervene in this stage of labor?

Delirium, or mania may ensue.

*The Thyroid gland is sometimes swollen during labor, and may remain so, giving rise to goitre.*

What urgent sensation takes place when the presenting part of the child is brought in contact with the perinæum?

An impulse to evacuate the bowels.

Should the patient be allowed to rise to comply with such a desire?

It would be unsafe, as well as unavailing for her to rise for that purpose at this stage of the labor.

To what extent does the perinæum usually stretch over the presenting part of the child?

Generally sufficient to cover the part presenting.

What takes place in reference to both the moral and physical condition of the patient, immediately after the extrusion of the child?

The uterine pains now usually at once subside; the woman, in an ecstasy of gratitude expresses herself relieved; her moral sensibilities are sometimes wrought up to their highest degree.

What usually occurs soon after this?

The uterus again contracts for the purpose of expelling the placenta.

How many steps, or stages are there for the expulsion of the appendages of the fetus?

Three; one in which the separation of the placenta is effected, and the other in which it is thrown into the vagina, and the third, in which it with the membranes is expelled from the vagina.

By what power is the placenta usually expelled from the vagina?

By the voluntary powers of the mother alone, unless aided by the hand of an assistant.

What amount of hemorrhage usually attends the expulsion of the placenta, under most favorable circumstances?

Perhaps half a pint, rather more or less.

Suppose hemorrhage should become profuse, in what length of time might it destroy the life of the mother?

It is asserted by very respectable authority, that it would require only five or six minutes.

Whence does this blood escape?

From the patulous orifices of the large veins, opposite to the point at which the placenta was attached.

What are the sources of danger, during the third stage of labor?

Simple exhaustion from the severe efforts made during the second stage, but particularly from hemorrhage.

What would you call a tedious labor?

One which occupies twenty-four or more hours.

What are some of the causes of tedious labor?

Rigidity of the soft parts, small size of the pelvis, or deviations of the presenting part of the child; want also of regular action of the uterus.

What is the usual and proper direction of the uterine forces?

Such as to propel the contents downward and a little backward, in the direction of the axis of the superior strait of the pelvis.

How is the direction of the uterus modified by the effort of contraction?

It is carried more and more into a line with the axis of the superior strait.

*complaints of chilly feelings, and at times the pulse sinks rapidly -*

- sometimes the pain that ruptures  
the membranes, may completely expell  
the child, head and all -

PRESENTATION AND POSITION OF THE FETUS. 209

What is to be understood by the term floor, or bottom of the pelvis ?

The lower end of the sacrum, the whole of the coccyx, and the perinæum.

When the presenting part of the child is carried down to this part, what direction has it next to take ?

It must be propelled forwards along the curvature of the coccyx and perinæum.

What do obstetricians mean by the word *presentation* ?

That some portion of the contents of the ovum becomes situated at the orifice of the uterus, at or near the centre of the pelvis.

What is meant by *position of the fetus* in midwifery ?

That some part of the presentation is directed towards some particular, or specified part of the maternal pelvis.

How are labors usually classified ?

Into rapid, slow, easy, difficult or laborious, assisted or unassisted, manual and instrumental, simple and complex, eutocia and dystocia.

What conditions are necessary for the performance of natural labor ?

That the uterus should contract regularly, the child present favorably, and that the pelvis be sufficiently large, and the soft parts of the mother be sufficiently relaxed.

Is it necessary that the vertical extremity of the fetal ellipse present to the pelvis, that the labor may be natural ?

This is the most favorable position ; but the labor may be natural if the pelvic extremity present.

How are natural labors classified ?

First, into those in which the vertical extremity of the fetal ellipse presents favorably ; and secondly, into those in which the pelvic extremity presents to the pelvis of the mother.

Why does the cephalic extremity present most frequently ?

Probably, 1. Because the head is heavier than any other equal bulk of the body, and therefore descends in the liquor amnii. 2. Because in the formation of the peculiar figure of an ellipse the cephalic extremity is better adapted to the small extremity of the ovoid cavity of the uterus.

How many grand varieties of occipital positions are there ?

Two. First, in which the occiput presents to some part of the anterior half of the circle of the superior strait. Second, in which the occiput presents to some part of the posterior half of the superior strait.

Why is it preferable that the occiput present to the anterior semicircle of the pelvis, in cases of cephalic presentations ?

Because the head can then most readily descend along the planes of the pelvis, and by easy movement upon the neck, pass out under the arch of the pubes.

How many positions of the head are generally recognized ?

Six—of which three are anterior, and three are posterior.

What is the first position of the occiput ?

That in which the occiput presents to that portion of the linea-ilio-pectinea, which is within the left acetabulum, and at the same time the sinciput or bregma, presents to the right sacro-iliac symphysis.

What diameters of the child's head corresponds to the different parts of the pelvis, in the first position.

The occipito-bregmatic diameter of the head, corresponds to that oblique diameter of the pelvis, which extends from the left acetabulum to the right sacro-iliac symphysis—the bi-parietal diameter of the head corresponds to the other oblique diameter of the pelvis. The occipito-mental diameter of the head, corresponds to the axis of the superior strait, and upper part of the cavity of the pelvis.

What in the second ?

The occiput is towards the right acetabulum ; the sinciput toward the left sacro-iliac symphysis ; the occipito-bregmatic diameter, therefore, corresponds to this oblique diameter of the pelvis, while the bi-parietal, also, corresponds to the other oblique diameter. The occipito-mental diameter corresponds to the axis of the pelvis.

What in the third ?

The occiput is directed to the symphysis pubes, and the sinciput to the sacrum. The occipito-bregmatic diameter of the head, therefore, corresponds to the antero-posterior or sacro-pubal diameter of the pelvis ; the bi-parietal diameters of the head to the transverse diameters of the superior strait of the pelvis ; the occipito-mental diameter corresponds to the axis of the pelvis.

What in the fourth ?

The occiput is directed to the right sacro-iliac junction ; the sinciput or the bregmatic, to the left acetabulum. Hence the occipito-bregmatic diameter corresponds to this diameter, and the bi-parietal diameter of the head to the other oblique diameter of the pelvis. The occipito-mental diameter corresponds to the axis of the pelvis.

What in the fifth ?

The occiput is directed to the left sacro-iliac symphysis ; the sinciput or bregma to the right acetabulum. Hence the occipito-bregmatic diameter corresponds to this oblique diameter of the pelvis, while the bi-parietal does to the other oblique diameter. The occipito-mental diameter of the head corresponds to the axis of the superior strait.

What in the sixth ?

The occiput is directed to the sacrum, and the sinciput or bregma to the symphysis pubes. The occipito-bregmatic diameter corresponds to the sacro-pubal or antero-posterior diameter of the superior strait of the pelvis ; the bi-parietal diameter corresponds to the transverse diameter of the pelvis, and the occipito-mental diameter corresponds nearly or entirely with the axis of the superior strait. The contractions of the uterus continuing, the shoulders come down, and in the first position of the right shoulder is carried along the right anterior inclined plane to the symphysis pubes. The occiput in the first position is carried down the left anterior inclined plane, toward the symphysis pubes, and the forehead upon the right posterior inclined plane, toward the middle of the sacrum.

This is the second effect of the contractions of the uterus.

What is this change of the position of the head technically called ?

Rotation.

How does the child's head pass through the inferior strait ?

The occipito-mental diameter corresponds to the axis of the inferior strait ; the occipito-bregmatic to the antero-posterior, or coccy-pubal diameter ; the transverse diameter

of the head to the transverse or bis-ischiatic diameter of the mother.

When does *extension* take place ?

When the head of the child begins to enter and pass through the inferior strait.

When does expansion of the perinæum begin to take place ?

As soon as the head fairly engages in the inferior strait.

What is this expansion called ?

The perinæal tumor.

To what degree does the perinæum become expanded ?

Sometimes till it is large enough to cover the whole cranium.

When may extension of the child's head be considered as perfect ?

Just as the face is clearing the perinæum.

When does the perinæum offer the greatest resistance to the escape of the child ?

At the time in which the parietal protuberances are about to escape.

What takes place in regard to the position of the head, after it clears the perinæum ?

*Restitution*, in which the face of the child takes the oblique position at right angles with the direction of the shoulders.

What change of positions do the shoulders undergo.

They rotate on the inclined planes. The right shoulder to get under the sacrum, and the other the symphysis.

What direction does the head assume as the shoulders become engaged under the symphysis, and in front of the sacrum ?

The occiput presents to the left tuberosity of the ischium, and the chin towards the right.

Do the shoulders engage in the same inclined planes in which the head did ?

No ; always in the opposite ones.

What change takes place in the axis of the body of the child as the shoulders escape ?

The body curves upon its axis laterally to accommodate itself to the curvature of the axis of the pelvis.

What part of the child offers the greatest resistance to the delivery in cephalic presentations ?

The head.

What other portion offers the next degree of difficulty ?

The shoulders.

Which shoulder is delivered first ?

*pubal axis*  
*axis appears*  
*first, although*  
*it may be*  
*delivered before sacral*  
In cases of early labor the pubal shoulder first, but in cases of great rigidity of the perinæum, the pubal shoulder is frequently thrown back under or behind the symphysis, and the sacral shoulder thrown out first.

Do the same diameters of child's head present to the same planes of the pelvis, in the second as in the first position of cephalic presentations ?

The measurements are the same in both cases.

What circumstance offers the only interference to as ready a delivery in the second as in the first position ?

The presence of the rectum, sometimes impacted with feces.

Which way does the occiput present after restitution has taken place in the second position ?

To the right side.

Does rotation occur quite as readily in the second as in the first position ?

When the rectum is distended with feces, rotation does not take place so readily.

What difficulties does the third position present which are not experienced in the first and second positions ?

The fact that it has the occipito-bregmatic diameter, presenting to the short or antero-posterior diameters of the pelvis of the superior strait.

Does rotation of the head take place in the third position ?

It does not.

Do the shoulders rotate.

They mostly do.

Does restitution of the child's head take place in the third position ?

No: or at least only to a less extent than in either of the others.

Why is the first position more frequent than the second or others ?

It is not easily accounted for, though some think it is dependent upon the position of the ~~cecum~~. *Sigmoid flexure*

Is the second position any more unfavorable than the first ?

Yes: owing to the slightly greater degree of difficulty of rotation of the head, in consequence of the situation of the rectum on the left side of the sacrum.

Why are third positions uncommon ?

Because of the difficulty of retaining two convex surfaces, the sinciput and the promontory of the sacrum in contact with each other.

What peculiar difficulty is liable to present in cases of third position ?

The pressure of the anterior fontanelle against the promontory of the sacrum.

How do the shoulders rotate in cases of third position ?  
Either right or left comes under neck of pubes.

Why is the fourth position more frequent than the fifth ?

Probably for the same reason which renders the first more frequent than the second position.

What is the mechanism of the labor in the fourth position ?

First, flexion takes place, though perhaps to a less degree than in the anterior varieties ;—then the occiput rotates along the right posterior inclined plane ; flexion is now increased, and the forehead is thrown behind the arch of the pubis. No extension can take place until the occiput has passed over the whole length of the sacrum, and the forehead has passed out under the arch of the pubes.

What other parts than the head and neck are involved in flexion, as the child enters the cavity of the pelvis ?

The thorax and shoulders.

What conditions are necessary in this case for favorable delivery ?

That the parts of the mother be very much relaxed, or the child small.

What accident is liable to happen to the mother, as the head passes from the inferior strait?

Rupture of the perinæum.

Is the bladder more likely to suffer in these than in occipito-anterior positions?

Towards the latter stages of labor it is liable to great distension from the forcible pressure of the anterior part of the head.

What change takes place in regard to the head after it has cleared the perinæum?

*Revolution* backwards.

Which way does the face of the child turn when it has cleared the inferior strait?

Towards the left thigh of the mother.

Under what circumstances may the forehead, and not the anterior fontanelle come out under the arch of the pubes?

When the child is small, or the perinæum much relaxed, or the coccyx very moveable.

In what direction do the contractions of the uterus carry the child in the early period of the second stage of labor?

Directly down into the hollow of the sacrum.

What inconvenience arises in reference to the body of the child?

In the posterior varieties the child's spine bends under the contractions of the uterus, and therefore, the expulsive powers are less efficient than in the anterior position.

What is the mechanism of the fifth position?

The bi-parietal and occipito-bregmatic diameters, corresponding to the oblique diameters of the superior strait,

the contractions of the uterus force the occiput down along the left posterior inclined plane, and the bregma along the right anterior plane.

Which way does the face turn, after it has escaped the vulva ?

To the inside of the right thigh.

Does the forehead present any difficulty in its passage under the arch ?

It is believed by some that it escapes less readily than the occiput.

Which is the most rare position of all the occipital presentations ?

The sixth.

Why does it occur rarely ?

Because of the extreme difficulty of having two rounded surfaces, like the occiput and promontory of the sacrum kept in contact with each other.

What is the mechanism of labor in the sixth position ?

The head is driven directly down the central line of the sacrum without any rotation. The shoulders are rotated as in the third position, except that they are reversed.

What are the two main points to be studied, in reference to the mechanism of all the positions ?

The characteristics of the first and the fourth positions, as containing the elements of the mechanism in all the other cases.

Why are the two transverse positions of the head at the superior strait easily convertible into the first or second, fourth or fifth ?

Owing to the rotation of the head upon the inclined planes.

Why may the fifth position become converted into the first, and the fourth into the second ?

Owing to the greater length of the anterior inclined planes.

Is labor to be steadily regarded a natural function ?

In almost all cases it is to be so regarded.

Why then should the judicious practitioner be present at all labors ?

That he may encourage his patient, and prevent mischief from improper interference on the part of others.

Is correct diagnosis in cases of labor difficult and important ?

It is highly important, and often difficult.

What influence is the practitioner to exert in natural labors ?

A negative influence, rather to prevent mischief than by being himself very active.

What general or particular treatment should the accoucheur direct during the latter parts of pregnancy ?

That the patient should use a proper amount of exercise, live principally upon vegetable diet, simple drinks, keep her bowels free, and observe that her bladder is freely and entirely evacuated.

How would you keep her bowels open ?

By a laxative diet, or if necessary, by the use of olive oil, or what sometimes is better, by the use of emollient enemata, &c.

What should you impress upon her mind in reference to her bladder ?

To observe that it is evacuated completely, and to notice whether the quantity passed is actually as great as usual.

What amount of exercise should she adopt?

It should be free and regular, throughout her whole pregnancy, so long as it can be continued without pain.

What remark should you make to the patient in reference to her apprehensions of debility during labor?

That her apprehensions are ill founded, that she is really stronger than she thinks she is, and that she will be able to exert herself more and more as the labor advances.

By what means should you promote relaxation?

First, adopt the rule already laid down of vegetable diet and open bowels, then if she continue to have a rigid fibre, relax it by antiphlogistic treatment, as bleeding, nauseants, &c.

What kind of room should the patient select for her nursery during her parturient and puerperal states?

It should be spacious and well ventilated, so circumstanced that it can be darkened when necessary.

What arrangement should be made in reference to the bed?

It should be so situated as to be accessible if possible at each side and the foot, but at the right side and foot at least. It should have posts sufficiently high to enable her to place her feet against either one as may be desired, and if curtained, these should be kept drawn that the bed may be well ventilated.

What objection to her being delivered on one bed, and after labor transferred to another?

There is often much hazard in making the transfer, as hemorrhage, &c. might be thus brought on.

How should you have the bed prepared for delivery?

First, have the bed, if of feathers, properly flattened

down, then place upon the middle portion of it upon which the hips will rest after delivery, a folded sheet, blanket, or any soft material to protect the bed below from the lochia, which may escape beyond its immediate recipients. Then place on the lower sheet or blanket, fold the lower end of this in several short folds so near the middle of the bed, that when the patient is placed in her proper situation after delivery, this fold will be below her hips. Place upon the lower portion of the bed, first an oil-cloth, or some other impervious material, and over this, several folds of clothing, as blankets, sheets, or something of this kind, so arranged as to cover principally, or entirely, the portion of the bed thus left bare by the folding up of the lower sheet. Bring the lower edge of these folds a little over the foot or edge of the bed, at which the accoucheur is to sit. Then place the pillows diagonally across the bed, that they will be comfortably under the patient's head when she is sufficiently flexed. The usual bed covers may be placed within reach to allow the patient to use them as she may wish, when she is placed on the bed. To that bed post against which her feet are to be fixed when she is placed on the bed, attach a towel or strong band, in such manner that her hand may embrace the loop of it when she is properly flexed.

What principle object should the physician have in view in giving directions for the preparations of the bed?

That the patient may lie upon her left side so curved forward as to throw the axis of the body into nearly the same line with that of the uterus.

How should the patient be prepared to be placed on the bed?

Her body clothing should be so adjusted that she need

not have it at all soiled. For this reason her skirts should be laid aside; her linen so folded up around her waist that it will be beyond the risk of discharges, a bandage suitable for encircling her abdomen after delivery, should be placed around her waist, and so pinned as to retain her linen as folded up; and next a sheet or blanket should be folded in double in the direction of its length, the centre of this fold should be placed in front of the abdomen, and carried round on each side to the middle of the back, or better still, one portion should be carried round the left side over the back, to meet the other portion on the right side, where it should be carefully pinned with a large pin. The night or bed gown, which should be a short one, can then be allowed to drop down from the shoulders to the waist. The patient should have stockings on, without any garters to retard the circulation; her feet should mostly also be protected by slippers. She should then, if the stage of her labor require, be placed upon her left side, with her hips within a foot of the lower end of the bed, her body flexed forward, her lower extremities drawn up, that her feet may be placed against the right foot post of the bed; the lower side of the sheet is then to be drawn out smoothly under her, while the upper portion is to be carried out also smoothly behind her; it will thus protect her completely from any exposure of her person; next over this may be drawn a suitable amount of bed clothes.

What provision should be made in reference to the management of the child at its birth?

There should be provided a proper ligature for the umbilical cord,—a pair of sharp edged, but blunt ended scissors, should be at hand; also\* suitable clothing, in which to envelope it when born.

There should also be the means at command of raising

the temperature if necessary—there should be at command an abundant supply of warm water, and also some suitable stimulants, as spirits, aq : ammoniæ, or something of the kind, to excite respiration if necessary.

What accommodation should be furnished the accoucheur ?

A chair to sit upon, some unctuous matter with which to lubricate his hand, and the soft parts of the mother ; several napkins—a short apron or napkin across his lap ; and the nurse should also fold napkins on his arms.

Should the physician endeavor to promote relaxation of the os uteri and the perinæum ?

It is proper to do the one, during the first, and the other during the second stage of labor.

How is this best effected ?

By passing up large warm enemata into the rectum, or by bleeding from the arm, or by the use of nauseants in the first instance, and by the repeated use of warm moist cloths, in the second instance.

Should the practitioner attend to the condition of the stomach, bowels and bladder ?

He should inquire into the state of all these organs, and attend to regulate them.

What course of conduct should the accoucheur exercise while in attendance upon the parturient female ?

It should be such as would preserve her feelings free, and inspire her with proper confidence in him—he should remain calm under all circumstances, carefully avoid, by any action or even change of countenance, exciting her apprehensions of an unfavorable termination of her case ; he should offer candidly all reasonable prospects of a

happy and safe delivery, though he should cautiously avoid any promise as to this or the time of its occurrence. He should suppress all unnecessary talking, or allusions to any other cases which may have been known, or reported to be fatal or hazardous; he should advise his patient against straining, or forcibly bearing down during the first stage, but strongly urge the necessity of it, during the second stage. He should carefully ascertain the state of the bladder and bowels, and direct accordingly; he should recommend his patient to remain up considerably, during the first stage, but to lie down, during the remaining period of labor. He should not remain constantly with her during the first stage, but not be absent from her subsequently until the whole process is completed.

What consequences may happen from the patient bearing down too early?

Too early rupture of the membranes.

What risk does the child incur if the membranes become ruptured before the first stage is completed, particularly if the woman bears down very forcibly?

It may be fatally compressed.

Is it always easy to determine whether the patient is in labor or not?

To the young practitioner it is often very difficult; even experienced accoucheurs cannot always decide positively.

What are the usual means of discriminating true from false pains by the history of the case?

By the character of the pains: true labor pains are mostly alternate, showing a distinct interval of ease between them, while in colic, or neuralgic pains, they are more irregular, and in the pains attendant upon inflammation, they are more constant and accompanied by more febrile action.

What condition of the os uteri, should be found in regular labor ?

It should usually be found somewhat dilated ; and when a finger is applied to it during a pain depending upon uterine contraction, it will be found to be tightened up by being drawn as it were, over the lower segment of the ovum.

Suppose you had reason to conclude that the patient was afflicted with false pains, how should you attempt to relieve them ?

By attempting to remove the supposed causes ; if they depended upon constipation, by cathartics, or enemata ; if upon inflammatory action, by bleeding, &c. ; if upon neuralgia or spasms, by proper anodynes, or counter irritants, &c.

Can you always positively assure a woman that she is in labor, if you find her os uteri dilated to the size of a ten cent piece ?

Though this circumstance, accompanied by pains of a more or less regular character, may be considered as sufficient data for diagnosing the actual existence of labor, yet it has happened to some practitioners to observe this state of things in women who have subsequently gone from one to four weeks after this, before they were delivered ?

When should she be *put to bed* for the completion of labor ?

When you believe the os uteri is nearly or entirely dilated.

Why should you have her flexed forward ?

That the axis of her uterus may be thrown into a line with the axis of the superior strait.

What accommodation should be supplied to the accoucheur, when he is about to make an examination, or is preparing to assist the patient by receiving her child, &c.?

The nurse should adjust a napkin around each fore arm, place a sheet, or folded cloth upon his lap, put within his reach several napkins, diapers or cloths, and a cup of lard or pure oil. She should do this quietly, and he should take his seat with as little parade as possible.

Thus seated and otherwise accommodated, what should he proceed to do ?

To make a proper examination, to determine the exact state of the case if possible.

How should he make this examination ?

He should be seated with his right side to the bed; with the left hand, he should separate cautiously the upper from the lower fold of the sheet, which had been placed around the patient before she was placed on the bed; when a pain occurs, he should lubricate the index finger of the right hand, and keeping this finger flexed towards the hollow of the hand, at the same time that the thumb is strongly extended, (thus guarding the finger, from the risk of having the ointment on it rubbed off on the clothes, and subsequently perhaps, smeared upon his coat sleeve,) he passes his right hand between the folds of the sheet, the lower edges of which had been slightly separated by the left hand. The left hand is then to be carried, exterior to all the covers, to the region of the right trochanter; at the same time, the right hand glided along, between the folds of the sheet in the manner directed; is to be passed a little posterior to the spot upon which the left hand slightly rests, viz: upon the right trochanter; in this way the knuckle of the examining finger may with considerable

certainly be brought to the sulcus between nates, or to the raphe of the perinæum, and then glided forwards, until it slips into the genital fissure over the posterior commissure, without bringing it in contact with the sensitive apparatus at the anterior commissure; when once the finger has gained this aperture, it may be extended along the vagina, with its radial edge towards the arch of the pubes, and thus cautiously applied to the orifice of the uterus, &c.

What is the importance of making this examination at the time of a pain?

First, that he may determine whether she is really in labor or not, and next to ascertain the degree of dilatation of the os uteri, and if possible the presentation of the child.

Is it easy for you always to determine the presentation of the child, previous to the rupture of the membranes?

It is mostly easy to do so, unless it be a presentation of the side, or back of the child.

Is the position easy to be recognised through the membranes?

In general it is not, until after they are ruptured, and the presenting part fairly engaged in the pelvis.

Does labor usually proceed more rapidly after the rupture of membranes, if the os uteri be properly dilated?

It does.

How should you rupture the membranes?

By pressing the point of the finger into the fold of the membranes, if the bag of water be large; if not prominent, the nail of the finger should be directed towards the presenting part of the child, and then by a little vibratory

motion it gradually wears them away. This must be done with great caution.

Should you use any precautions for your protection from the sudden escape of the liquor amnii, when you open the membranes ?

The wrist should be enveloped in a napkin, and one should also be applied to the perinæum and vulva, so that at the instant you burst the membranes, you may withdraw the finger, and apply the napkin to absorb the discharge.

Should you change the saturated napkins privately ?

They should be either handed quietly to the nurse, or laid secretly at the bottom of the bed-post without calling aloud to any one about them.

Should you after this time keep any thing applied to the breech of the patient to absorb the discharges ?

This should be done by applying successively folds of a sheet, or better still, by changing napkins as fast as they become saturated. By this plan, the patient is rendered more comfortable.

If you rupture the membranes, at what period of a pain should you do it ?

At the commencement of a pain.

Should the accoucheur interfere with the process of labor, during the second stage ?

He should let it alone, if he have ascertained that the position is correct.

Under what circumstances may you facilitate the progress of the head through the pelvis ?

Provided flexion is not complete, you may apply the finger against the side of the forehead, (not on the fontanelle,) and pushing it up, facilitate the flexion.

Which finger should be used ?

The index of the left hand, for the first and fifth positions, and that of the right hand for the second and fourth positions.

When should the patient be encouraged to bear down ?

As soon as the os uteri is dilated, and the first stage complete.

If she do not know how, what instructions should you give her ?

To take in a full breath, and bear down the whole time of a pain ;—to bend herself forward, &c.

Should she be careful to relax herself, as soon as the pain is off ?

This should be insisted upon in most cases.

What kind of drink should she have to revive her during the second stage ?

Give her a drink of lemonade or toast water, and fan her, &c.

How should you assist rotation, if the fetus require it ?

If in the first position, by passing the index finger of the right hand over the parietal protuberance, and press from behind forward : or what may be better, introduce the index finger of the left hand, to the left temple of the child, and press it from below backwards.

If in the second position, the left finger is to be used in the right parietal, or the right for the left temporal bone.

If in the fourth position, with a view to facilitate rotation into the hollow of the sacrum, the left index finger is to be applied to the left parietal bone, or the right to the right temporal bone.

If in the fifth position, to rotate to the sacrum, the right

index to the right parietal bone, or the left index to the left temporal bone.

Suppose you are not certain of your diagnosis at this stage of the labor ?

Do nothing until you are certain of the diagnosis, and indications.

What is the proportionate force of the uterine contractions, during the labor ?

Inversely as the size of the organ.

When is the force of the contractions of the uterus at its acme ?

When the presenting part is about to pass through the genital fissure.

Is there any danger of rupture of the perinæum in most cases of labor ?

It has been known to rupture during the progress of natural labor.

How must the perinæum be supported ?

It is best done by the accoucheur, applying the palm of his hand over the perinæum, and keeping his wrist directed towards the child's head.

What should be interposed between the hand and perinæum ?

A napkin which will receive the feces if any escape.

In what direction may the perinæum be ruptured or lacerated ?

From the fourchette backwards ; through the centre ; or at the anus.

Is it ever necessary to resist the descent of the child, when the perinæum is in danger ?

It is, if the perinæum is not relaxed.

When is the greatest danger of laceration ?

At the moment that the parietal protuberances are passing through the vulva.

When the head escapes, what attention should be given in reference to the cord ?

To ascertain whether it is around the child's neck, and if so, to loosen it by drawing upon the placental extremity of it.

Should the head of the child be supported after its extrusion ?

It should repose in an expanded hand of the accoucheur.

What attention should be given to the shoulders, if they do not readily rotate ?

Assist the rotation by pressing the proper one under the arch and the other into the hollow of the sacrum.

Under what circumstances may the accoucheur draw a little upon the head ?

When the perinæum offers a strong resistance to the exit of the shoulders.

In what direction should he draw upon the head ?

If a shoulder be thrown up behind the symphysis pubes, the traction should be towards the sacrum, sufficient to disengage the pubal shoulder ; but if this be already free, the traction may be made in the direction of the axis of the vagina.

Having cleared the shoulders from the grasp of the perinæum, should you hasten the delivery of the rest of the child ?

No ; its delivery should be rather retarded, in order to allow the uterus to contract well upon it and the placenta.

What should you do as soon as the body is extruded ?

Carry the child round and place it in such a position as to be free from the discharges of the mother.

What attention does the mother require, as soon as the child is born ?

Ascertain that the uterus is contracted.

How ?

Place your hand on the abdomen, under a part or all of the clothing, and then feel where the uterus is.

What is the difference in the mechanism of the second position ?

The assistance which it requires, is to be given in a direction opposite to that of the first, and with the left hand.

Should you attempt to convert a third, into a first or second position of the vertex ?

Yes ; whenever possible.

Suppose flexion does not take place, how could you assist it ?

By passing the finger of the right hand, up under the arch of the pubes and applying it over the occiput and drawing it down, or by passing up two fingers of the left hand, one on each side of the frontal bones, and pressing them backwards and upwards.

When you find some difficulty in converting the third into the first or second, how should you proceed ?

Pass in the hand, and carry up the whole head during absence of pain and then convert it.

In reference to the first or second position, how far back

may the occiput be, to justify our considering it still a first or second position ?

Very far back when still high in the pelvis.

Are transverse positions rare ?

They so rarely occur, as not to have a place in most systems of midwifery.

Does the occiput or the vertex enter the superior strait readily in the posterior varieties ?

It usually enters the superior strait, perhaps more readily than when it is anterior.

What is the usual difficulty in the case in the course of the labor ?

That of getting the flexion to take place, to a sufficient degree.

How should you assist the flexion ?

By pressing against the forehead, or by passing a finger into the rectum, and drawing the occiput forward if it cannot be reached through the vagina.

Why is the perinæum in greater danger in this than in other cases ?

The occiput is applied to it with more force.

What do some scientific and experienced accoucheurs, think a good rule in all cases of occipito-posterior position, if diagnosed early ?

Always to direct the occiput toward the anterior part of the pelvis.

How would you convert a fourth into a second position ?

By pressing against the pubal side of the face with a finger of the right hand, or upon the sacral side of the occiput with the fingers of the left hand.

How would you convert a fifth into a first position ?

By pressing against the face, temple, or cheek ; or against the sacral side of the occiput with the finger of the left hand in the first, and of the right hand, in the second instance.

What strong objection might be suggested against this practice of artificial conversions ?

That the oblique position of the child originally, may make it necessary that the neck be twisted more than one third of a circle.

What is the result of experience on the subject ?

That no injury does arise from the practice.

What conversions should you make of the sixth position ?

Into a fourth or fifth position : this conversion is sometimes spontaneous.

Where may you expect to find the fundus uteri after the extrusion of the child ?

Most frequently in the umbilical or hypogastric region, though occasionally it is met with in the left iliac fossa.

Suppose you find the uterus firm, should you feel uneasy, however large it may be ?

If it be very firm and somewhere below the umbilicus, we perhaps should not feel uneasy, but if larger than that, we should suspect twins.

Should the woman be expected to deliver herself of the placenta ?

In the majority of instances the uterus spontaneously expels it into the vagina.

How many pains does it usually require ?

Two, three, or four.

Is it ever necessary to stimulate the uterus to contract, to expel the placenta?

It is sometimes necessary to do so by friction.

Should you ever pull at the cord, unless you are very sure the uterus is well contracted?

Never more than to draw the cord into a right line.

What danger attends the practice of strong traction upon the cord.

Hemorrhage, inversion of the uterus, &c.

Under what circumstances may you assist by acting on the placenta?

When the uterus has remained some time torpid and will not contract. The patient must be otherwise in good condition, her pulse and respiration regular.

In what direction should you act upon the cord, or the placenta?

Always in the axis of the part of the pelvis in which the placenta is situated.

How is this to be done?

By passing up a finger and allowing it to act as a pulley.

In what direction when the placenta is in the vagina?

In the axis of the vagina. In the axis of the inferior strait, at first, and afterward along the plane of the perinæum.

Should you ever hook your finger into the placenta, when it comes within reach?

It may be proper to do so in case the mother does not expel it. The accoucheur should always carry it backward toward the sacrum and the perinæum.

When you get the placenta partially through the vulva how should you act upon it to secure the delivery of the membranes ?

Retard its expulsion from the vulva ; then rotate the placenta upon its axis to twist the membranes into the form of a cord.

What should you do in cases of inertia of the uterus ?

Stimulate the uterus to contraction.

By what means ?

By external frictions over the uterus, and by pinching it up, as it were, through the parities of the abdomen.

What kind of internal stimulants may be resorted to ?

Ergot may be administered, but as its effects are here uncertain and slow, it would be best to pass a hand into the uterus.

Should the placenta be squeezed ?

If the placenta be properly squeezed by the hand so introduced, the uterus might be stimulated to action.

Does the presence of the coagula behind the placenta, seem to retard its delivery ?

This has been regarded as one of the causes of delay in its expulsion.

Does the contraction of the os uteri ever prevent the delivery of the placenta ?

This is probably a rather frequent cause of retention of the placenta.

What varieties of contraction are there of the os uteri ?

That of the internal and that of the external os uteri.

How do you ascertain this ?

By the sense of touch upon introducing a finger within the orifice.

Suppose the fundus and body are well contracted, how long should you wait before you act to assist the delivery?

No time need be lost in making a reasonable attempt at overcoming the contraction, and expediting the expulsion of the placenta.

What hazards are known to result from the practice of leaving the patient until spontaneous expulsion takes place?

Irritation, inflammation, low fever, &c.

Should you ever leave your patient so long as the placenta remains undelivered?

She should not be left more than a few minutes at a time, because, although in some cases no accident has happened from a long continued retention, it is proper you should guard against danger by proper attempts to remove it.

What practice is best for relaxing the mouth of the uterus, and for inducing the contraction of the fundus and body?

Friction over the body of the uterus—the application of cold—by sponges of cold water—by a stream of cold water from a height, &c.

What should you do if external frictions and the use of cold do not succeed?

Pass in the *whole* hand and seize the placenta with the fingers and bring it down; provided, however, the insertion of a single finger has not been sufficient to effect this purpose.

What instrument may be used when the hand can not be passed?

Dewees' hook—or as he has called it, his wire crotchet.

What objections to the use of this hook?

It would seem to be a dangerous instrument, as when passed beyond the finger, it may be hooked into the substance of the uterus.

What advantages do the uvula forceps of Dr. Bond offer?

They may be safer than the hook of Dewees, but still they are not always capable of being made to pass up on each side of the placenta.

What advantages do Dr. Hodge's placental forceps offer.

They can be introduced as one blade, and then one or both of them made to revolve around the placental mass, after which they act as common forceps.

What is the consequence of very violent contraction of the body, as well as of the neck of the uterus?

Prostration of the patient's strength, great exhaustion, faintness, &c.

What should we rely upon most confidently, for the relaxation of such spasm?

Free doses of opium.

May contraction ever take place at the internal os uteri?

It may, and perhaps most frequently does in cases of retention of the placenta.

How should we overcome this constriction?

By the gradual insertion of the fingers, and perhaps the whole hand cautiously. In some cases bleeding and other relaxing measures are necessary.

What other part of the uterus may become spasmodically contracted?

Any other parts of the body of the uterus.

What is this peculiar contraction called, in which the fibres of the middle portions of the body contract, while the other portions remain somewhat relaxed?

*Hourglass contraction.*

Is there danger of hemorrhage in this case?

Hemorrhage may take place both above and below the constricted part. This complication is probably rare.

Does this kind of accident require prompt attention?

It should be attended to promptly, because it usually is a case accompanied with much suffering.

What have you to do to overcome it?

Induce the fundus by frictions to contract on the abdomen, and then introduce your other hand into the uterus, and pass it up conically through the point of stricture.

Should you try to pull the placenta away instantly?

Efforts should be made to extract it cautiously, and allow the contractions to take place regularly, as the mass is removed.

How should you secure the regular contractions of the uterus, while the hand is still in it?

By proper frictions upon the abdominal parieties, over the fundus of the uterus.

How should you effect the relaxation of the stricture, if the means just proposed do not succeed?

Put the patient into a warm bath, give her opiates, or bleed her.

Is preternatural adhesion of the placenta very common?

It is not by any means very common.

Is the diagnosis of such adhesion easy?

It is not always easily made out.

How should you act in a case of real or supposed adhesion of the placenta ?

Pass up the hand in a conical form, and when you reach the part, expand it.

Which portion of your fingers should you place in contact with the uterus, in order to detach the placenta ?

The pulpy portion when you can, but this would be difficult when the placenta is at the fundus.

Suppose the adhesions are very firm, should you attempt to strip off the whole placenta from the surface of the uterus ?

It should always be done when practicable, without injuring the substance of the uterus.

What consequences are to be expected from retention of parts, or the whole of the placenta ?

Irritation, pain, inflammation of the uterus, and putrefaction of the placenta, with the risk of the consequences of absorption of pus.

How should you treat the case if putrefaction should occur ?

Detergent washes, carried up into the cavity of the uterus by a suitable syringe.

What kind of syringe should you use ?

One of the ordinary kind, which can be attached or introduced into the end of a gum elastic catheter, which should be carefully introduced into the cavity of the uterus, and the fluid then passed from the syringe through it—or a syringe having a long curved pipe, with a bulbous extremity, may be used for the same purpose.

What kind of fluid should be injected into the cavity of the uterus ?

That which is bland, mucilaginous, and detergent, as flaxseed tea, solution of castile soap, &c.

Is the cord sometimes so tender as to be very easily broken ?

It is in some cases.

What practice should you resort to for the purpose of removing the placenta in the case of rupture of the cord ?

The fingers or the hand should be carefully introduced within the vagina, and if necessary, within the cavity of the uterus, and then cautiously embrace as much of the mass as practicable, at the same time allowing the uterus to expel it if possible ; if not, draw it gradually in the direction of the axis of the part through which it is to pass.

What is meant by the phrase of the lying-in chamber, “clearing the woman ?”

The complete removal of the placenta with its membranes, and of all the coagula and other discharges which are to be found in the vagina and about the breech of the woman, as well as the application of a soft dry napkin to the vulva.

Is it proper to cut the cord immediately after the child is extruded ?

It is better to wait until respiration, and the capillary circulation are established.

Under what circumstances should we feel at liberty to cut the cord ?

If the child cry, or respire freely, and a red or arterial color may be seen on the face and other parts of the skin, the division of the cord may be made with propriety.

What is the object of applying a ligature upon the cord?

To arrest the circulation in the cord, and prevent hemorrhage from its vessels when they are divided. *if not immediately, after respiration commences.*

How many ligatures should you place upon the cord?

One ligature only is necessary in the great majority of cases; some practitioners think it proper to apply two ligatures for the purpose of cleanliness, and to avoid the possible risk of hemorrhage in case of two placentas inosculating with each other. *not usual, but may possible occur.*

At what distance from the abdomen should the ligature be applied?

About two inches. *—half an inch between the two ligatures—*

What precaution should you take in relation to the possibility of the occurrence of umbilical hernia?

See that this does not exist, or if it does, apply the ligature sufficiently far beyond it.

In what manner should you take up the child to give it to the nurse?

The best plan is to have a napkin so folded and applied near the breech of the mother, that with one hand one of its extremities can be placed under and support the head as soon as it is extruded; as the body passes out, these folds are gradually expanded until the whole child is extended upon it. Then as soon as the cord is divided the child is enveloped in this napkin, and thus easily lifted to the receptacle held by the nurse, for as the child is usually covered by a very slippery or pasty matter, it is often difficult or disagreeable to handle it properly. If, therefore, the napkin be not used, it will be found perhaps most convenient to pass the palm of one hand behind the thorax and nape of the neck, while the other is passed

under the thighs, and the legs embraced with the index finger between them. It has been suggested as an improvement upon this method, to pass the palm of the hand under the thorax, having its radial edge towards the chin of the child, and thus raise it up from the bed to the receiver held by the nurse. The child is thus easily held by the hand, and is thus for a moment kept in a position nearly as much flexed as when in utero.

How should the nurse receive and dispose of the child ?

She should be provided with a large piece of flannel or soft warm cloth, which she should present at the left side of the accoucheur : she should then envelop the child and retain it in her lap, or place it in some safe situation, till she is prepared to wash and dress it.

What do you mean by an asthenic condition of the child at birth ?

That it is feeble, the features are shrivelled and narrow, resembling old persons. The child is blue, does not respire freely ; its circulation is very feeble ; it groans, does not cry, nor seem to make any effort to breathe, or if it breathes, it does so very feebly.

How should you manage such a condition ?

Endeavour to stimulate its respiratory muscles by warm bath, cold douches alternately ; by dry heat, slight friction with the end of the fingers ; do not fatigue it, but wash it with warm alcoholic fluids, then apply warm cloths ; assist its respiration by blowing into its lungs, &c. ; give it barley water, gum water, sugar and water, &c. ; do not let it be fatigued with nursing ; take care not to weary it by dressing ; wrap it in a warm flannel or in cotton wadding, to accumulate animal heat as much as possible.

What do you mean by asphyxia ?

A state of apparent death, in which the child is perfectly motionless, and either pale, or livid.

How many kinds of asphyxia do you recognise ?

Two ; simple, and congestive asphyxia. *1 case, pallid.*

What are the common causes of this state ? *2. blue over entire face of body-*

Pressure in the passage through the pelvis. Pressure on *body,* the cord or the placenta, by arresting the circulation, &c. *-also premature detachment of placenta-*

Is the brain of much importance during intra-uterine life ?

It does not appear to be. The child is like a plant, appearing to have a mere vegetable existence while in utero.

What causes operate after to produce asphyxia ?

Compression upon the cord around the child's neck : knots in the cord which may arrest its circulation. The retention of the membranes over the child's head. The floodings of the large quantities of the liquor amnii or blood over the child. Suffocation under the bed clothes, or by the membranes around the head. The respiratory organs clogged with mucus, &c.

What evidences have we of the state of simple asphyxia ?

Pallor, absence of blue blood on the surface, absence of respiration. The breast, &c. may have a bluish appearance, but other parts are pallid.

What evidences have we of the congestive state of asphyxia ?

The face is swollen and turgid with blood. There is absence of respiration and circulation ; the whole surface is more or less blue, and the extremities of the body cold.

Are these two distinct affections, or are they probably degrees of the same condition?

It is probable that they are but degrees of the same state. *1. case congestion takes place internally*  
*2. .. externally -*

How should you treat asphyxia?

Remove all mechanical impediments to the respiration or circulation; place the child free from the cloths, &c., clear all mucus from about its glottis; assist its respiration, if it be able to swallow, give it a little fluid to wash away the mucus. Keep the child connected with the placenta as long as any circulation exists. Keep the body warm, put it into a basin of warm water; bring this to the bed and lift the child into it, before the placenta is removed; then dry it at once by warm cloths; when it comes out, use free friction in this case, about the respiratory muscles with towel or hand; use brandy, alcohol, harts-horne, liniments, and also stimulating injections: then dash on some cold spirits, or cold water, then in a moment wipe it off, and plunge it into the warm bath again, &c. Imitate the process of respiration, by pressing the thorax and abdomen, alternately with the head: some times breathe into the lungs, pressing the larynx slightly against the spine to prevent the air from passing through the esophagus into the stomach, if you cannot soon succeed thus, use the tracheal pipe or quill to convey the air into the lungs.

How must this tube be used?

Pass it along the side of the mouth and throat, over the glottis, and then force in a small quantity of your own breath.

What can be said of the value of galvanism or electricity in these cases?

*the rounds*  
*- a full, rounded abdomen, always a good line.*  
*of omphalo-*

*warm*  
*sugar*  
*and -*  
*water*

They have not generally succeeded, and the apparatus is rarely at hand.

Are you speedily to abandon this treatment if your first efforts do not succeed ?

By no means ; the efforts must be persisted in for half an hour, an hour, or even more before relinquishing any attempts to resuscitate it ; and after you have succeeded, oblige the nurse to keep up some frictions over the skin for some time.

How would you treat the congestive form of the affection ?

The same as before, adding some care to diminish the amount of blood in the veins of the child. Therefore, do not tie the cord ; for if the symptoms be urgent cut the vein at least, some say the whole cord, and thus let the blood escape.

How much blood may you thus take away ?

From half an ounce to an ounce.

Are children ever born with tumors on the scalp ?

It not unfrequently happens that tumors of greater or less size are found on the scalp.

Of what character are they ?

Generally bloody, and are of the character of ecchymosis.

How are they formed ?

Most likely by the excessive pressure made upon the body of the child within the uterus or pelvis, the blood is squeezed out into that portion of the scalp which is not so compressed.

May these tumors be supposed to be fractures of the cranium?

They may, and sometimes they strongly assimilate fractures with depression of a portion of the bone.

Are fractures of the cranium often met with?

They are not.

What should you do for the relief of the tumor?

Apply cold leadwater, &c. with a view to discuss it.

Should you use frictions?

No: because by so doing you may excite inflammation in the tumor.

Suppose it is inclined to suppurate, how should you do?

Poultice it, and promote the formation of pus.

Should you open it freely?

It should be freely opened, unless as happens in some cases, absorption goes on very rapidly. If opened, it is to be dressed as a simple suppurating wound.

Should the practitioner pay attention to the mode of washing the child?

He should carefully superintend this process.

How should the nurse get rid of the sebacious matter which mostly covers it?

By the free application of unctuous matter, the best of which is animal oil.

What kind of soap should be used?

It should be mild, bland, and not strongly alkaline.

Should the nurse use brandy, &c., on all occasions?

It is by no means necessary on all occasions. It need not be used unless the child is in a very feeble or asthenic state.

How should you dress the cord ?

Take a piece of linen about six inches square, cut it in a central hole, through this draw the umbilical cord, then fold this linen up in such manner as to envelope the cord completely, keeping its cut extremely directed toward the child's chin. A more simple method, and one which we prefer to this, is, to take a piece of linen about four inches wide and six long, and cut into the middle of its extremities, a slit about an inch long. Holding the cord at right angles with the body, this slit is to be drawn from above downward, to fit closely to the root of the cord. This is then to be turned up toward the chin, one of the lateral portions of the linen is to be turned over in front of it, and then the other in the same manner. Next raise the upper end of the cord, and fold these three layers of linen under it, until there will thus be seven thicknesses of the linen interposed between the cord and the teguments of the abdomen. The balance of the linen folds, if any, may be brought down in front of the cord. It will in this manner be sufficiently isolated from the body of the child, and the dressing can be easily renewed if necessary. Over this, as in the other case, a roller of flannel, just wide enough to reach from the axillæ to the hips, is to be fastened.

What is the object in thus enveloping the cord ?

To prevent the contact of it, as a putrefying mass, with the surface of the abdomen, and thus cause great irritation of the skin.

How long does this cord usually remain attached to the umbilicus of the child ?

Three, to five or seven days, and in some few instances even much longer than this.

What is the principal object of the belly band or roller ?

Merely to support the cord in its proper situation, and retain the dressings upon it.

Should you allow the nurse to pin the roller tight ?

It should never be pinned so tight as to interfere with muscular motion, whether respiratory or otherwise.

How in other respects may the child be dressed ?

According to the desire of the mother or friends, provided the clothing be such as to keep the child sufficiently warm, and allow it sufficient freedom of motion.

What should you allow the child to have after it is dressed ?

The milk from the breast at once if possible, but if not, it may be supplied with a few teaspoonsful of warm sugar and water, till circumstances favor its application to the breast of the mother.

What cautions should be observed in reference to the placing of the woman in her proper situation in bed after delivery ?

Every attention should first be paid to "clearing" the woman—a soft napkin should be applied to her vulva—the bandage should be put properly over the hypogastric and pubic regions—she should then be carefully slid up in bed, in the completely horizontal position, without being allowed to raise herself up.

Would you have her placed up in bed instantly after her delivery ?

She should be allowed to remain quiet until her respiration and circulation become tranquillized.

What dangers may arise from close compression of the vulva by the napkin ?

It may arrest the discharge of the blood from the vagina,

plug it up by a coagulum, and thus obscure hemorrhage in some cases. The cloth should therefore be applied but loosely to the vulva.

When should there be a bandage or *binder* placed on the abdomen of the woman ?

There should be a suitable bandage for the purpose of supporting the abdomen after its sudden evacuation by delivery.

How wide should this be ?

Sufficient to reach from the trochanters upwards, to at least the false ribs.

What dangers is the woman subject to, unless the bandage is applied ?

Faintness, sense of exhaustion, inertia of the uterus, hemorrhage, &c.

Would it be well to apply a compress under the bandage ?

It is proper to do so, with a view to compress the intestines down upon the fundus of the uterus.

Should you pin on the bandage yourself ?

It would be best for you to do so, with a view to have it properly done.

Where should you begin to pin it ?

At the upper part of it.

What kind of bandage or binder should be used ?

A common towel is very suitable, but some are to be found intended to fit to the back, and then over the abdomen.

Should you keep the patient in the horizontal position for several days ?

This should be done to avoid the risk of hemorrhage or of prolapsus, &c.

What kind of diet may she be allowed ?

Very light—as gruel, panada, barley water, toast water, crackers, &c.

What kind of drinks should she have, and at what temperature should they be administered ?

Cool, simple drinks. If feverish, water with sweet spirits of nitre.

What regulations should you enjoin about company ?

None should be admitted for a day or two, until the patient is well rested, and even then the visitors should not be allowed to disturb her tranquillity.

Is the woman subject to pains subsequent to delivery ?

Most women recently delivered, except those with their first children, have attacks of spasmodic uterine pain, a short time after delivery.

What is their character ?

They are spasmodic, alternate, and neuralgic.

What is the usual cause ?

Some think they are owing to the presence of coagula in the uterus.

Do they ever depend upon the particular condition of other organs ?

They sometimes no doubt depend upon certain conditions of the stomach, bowels, and even bladder.

Should you always enquire into the cause before prescribing for them ?

This should be done with much care, as the indication of treatment differs greatly.

How should you treat them, when they depend upon the condition of the nervous system?

They should be allayed by anodynes, the best of which are camphor, morphia, &c.

Should you ever direct warm injections for the relief of after pain?

Whenever they appear to depend upon the existence of any irritation in the bowels, as flatulence, fæces, &c.

Are there any cases in which vascular depletion becomes useful?

Whenever there is a plethoric or feverish condition of the system.

Is it ever necessary to evacuate the bladder by the catheter?

It is necessary to ascertain the condition of the bladder, and if full, relieve it by the catheter.

Are there any cases of *misplaced* after pains?

When pains attack the region of the coccyx, the knee, or other joints, they may be so considered.

How would you treat this variety?

By the free use of anodynes.

Are after pains ever dependant upon want of tonic contraction of the uterus?

They probably mostly depend upon inefficient contraction of the uterus; and are, therefore, to be obviated by procuring the complete contraction of the organ. They are often prevented, or if they occur, may be often relieved by free, long continued friction over the uterus soon after delivery.

*danger - compression of ~~cord~~ some  
- hind long diameters of head to short of mother  
detachment of placenta, while head is in  
cavity of pelvis -* PELVIC PRESENTATIONS. 253

*- Cauted, not evident - probable motions of child -*

Are pelvic presentations to be regarded as dangerous for the child ?

They are to be so regarded, because of the liability of the head to be arrested in the pelvis of the mother, after the body is extruded.

Why are they unfavorable for the mother ?

Because of the usual delay in the first and second stages of the labor, and the consequently greater amount of physical exertion which is necessary for her to complete it.

Why are they more dangerous for the child ?

Because during the second stage, the child is far more liable to be fatally compressed, both as regards the cord, and the delay of respiration while the head is within, and the body without the uterus.

How are you to diagnose breech presentations ?

The os uteri and bag of waters are not quite so large as in the cephalic presentations ; the finger can usually detect a sulcus between the limbs ; sometimes, also, the genital organs can be felt, but a still more conclusive evidence presents, when in passing up the finger, you can feel the crista of an ilium and the fold in the groin.

Does the presence or the absence of the meconium afford any value in the diagnosis ?

Usually it does not, because it is not always present in pelvic presentations ; whereas it is sometimes found deposited within the inferior portion of the ovum in some cases of cephalic presentation.

How are pelvic presentations divided ?

Into regular and irregular presentations—or into breech, feet, and knee presentations.

Which of these are regarded as irregular and unfavourable ?

Those of the feet and the knees.

What is the first change which the uterus effects upon the form of the child in cases of breech presentations ?

Still greater flexion into the form of an ellipse.

What are the different varieties or positions of the pelvic presentations ?

For all practical purposes four are sufficient, but some teachers make six, taking the sacrum for the occiput, and the posterior part of the thighs for the anterior fontanelle.

What then is the first position of the breech presentations ?

The sacrum to the left acetabulum, and the posterior part of the thighs to the right sacro-iliac symphysis.

What the second ?

The sacrum to the right acetabulum, and the posterior part of the thighs to the left sacro-iliac symphysis.

What the third ?

The sacrum to the symphysis, and the posterior part of the thighs to the sacrum of the mother.

What the fourth ?

The sacrum to the right sacro-iliac symphysis, and the posterior part of the thighs to the left acetabulum.

What the fifth ?

The sacrum to the left sacro-iliac symphysis, and the posterior part of the thighs to the right acetabulum.

What the sixth ?

The sacrum to the sacrum, and the posterior part of the thighs to the pubes of the mother.

What is the mechanism of labor in the first position of breech presentation ?

How does rotation take place in this case ?

The left hip is carried along the right anterior inclined plane, and the right along the left posterior to the median line of the sacrum and coccyx.

Which hip comes under the symphysis pubes in the first position ?

The left hip.

Do the shoulders rotate in the uterus at the same time that the hips rotate in the pelvis ?

They are believed to remain fixed in the uterus.

Is the diagnosis of pelvic presentations easy ?

Generally so ; the bag of water is usually smaller, and the presenting part is softer than the head ; moreover there is a sulcus between the limbs. The crest of the ilium, and the fold in the groin, aid greatly in making out breech presentations.

In what direction does flexion take place after the hips are delivered ?

Laterally, to accommodate the body to the axis of the pelvis.

Does restitution of the hips take place ?

In many cases this does occur.

How are the shoulders delivered ?

One of them passes on the anterior inclined plane, to appear under the arch of the pubes, while the other passes along the posterior inclined plane, to appear in front of the coccyx.

What effect has the rotation of the shoulders upon the neck of the child ?

It twists the neck of the child one sixth of a circle.

Does restitution of the shoulders take place after they are delivered?

It does, unless some resistance be applied to the body.

Is it important that the head should present in a particular direction, for its safe delivery.

It is highly important that the head present its occipito-mental diameter, to the axis of the pelvis.

What hazard may result if the practitioner draw forcibly on the body of the child, as soon as it is delivered?

The direction of the head may be so altered, that the occipito-mental diameter, instead of corresponding with the axis of the pelvis, becomes thrown across, to correspond with one of its diameters, and thus its delivery would be impracticable.

In what direction would the unaided efforts of the uterus and abdominal muscles, force down the head after the body is expelled?

Generally with its occipito-frontal or occipito-mental diameter to the plane of the inferior strait.

In what direction should the body of the child be carried, to favor the ready engagement of the head in the inferior strait?

In all the anterior varieties of pelvic presentation, the body should be properly wrapped in a napkin, and carried up towards the front of the abdomen of the mother. In the posterior varieties, the body is in the same manner to be depressed towards the sacrum of the mother.

Is there any difference in the mechanism of the second position of the breech?

There is no essential difference except that the rotation takes place in an order reversed from that in the first posi-

tion ; that is, the right hip and shoulder rotate on the left anterior, and the left hip and shoulder on the right posterior inclined planes, and the occiput on the right anterior inclined plane.

What is the usual mechanism of the labor in the third position of the breech ?

Although the breech may engage with the sacrum to the pubis at the superior strait, the hips and shoulders are mostly twisted upon the inclined planes, and thus come down obliquely, and finally present one to the coccyx, and the other to the pubes at the inferior strait.

Is the head in any greater danger of being arrested at the superior strait in the third, than in either the first or second positions ?

The occipito frontal diameter may become wedged in the antero-posterior diameter of the superior strait, and thus require manual or instrumental assistance to disengage it.

What is the mechanism of the fourth position of the breech ?

Here the sacrum is to the right sacro-iliac symphysis, the right hip toward the right acetabulum, and the left one toward the left sacro-iliac symphysis ; as the child descends, the left hip is carried down the left posterior inclined plane, and the right hip down the right anterior inclined plane to the arch of the pubes ; the shoulders follow the same route, the occiput is driven down along the right posterior inclined plane to the middle line of the sacrum and coccyx, to escape at the posterior commissure of the vulva.

What is the principal difficulty in this case, and that of the fifth and sixth positions ?

The liability of the head to become arrested at the superior strait in consequence of the chin being carried back by the forced curvature of the thorax.

Is there any essential difference in the cases of presentation of the feet and breech ?

There is nothing essential in the mechanism of the labor, except that as the first stage is shorter, the second is usually more protracted.

Is the child subjected to any greater risk of its life in this than in breech presentations ?

It is so, in consequence of the degree of compression of the body, thorax, and neck, which are compressed by the soft parts of the mother.

Why are the shoulders likely to be delivered with greater difficulty in this than in breech cases ?

Because as the feet or knees make their exit through the os uteri before it is much dilated, and then meet with little resistance to their descent in the pelvis, the os uteri is liable to embrace the arms and shoulders, and thus prevent their ready descent.

How are knee presentations calculated ?

The anterior part of the legs compare with the occiput or the nape of the neck, and the anterior part of the thighs with the anterior fontanelle in cephalic presentations.

What is the best direction to be given to the patient during the first stage of labor in reference to her bearing down ?

As it is desirable to prolong the first stage of labor in all

the pelvic presentations especially, she should be urged not to bear or force down.

Suppose you find her strongly disposed to do so, what precautions should you take not to allow the membranes to be ruptured too early?

Oblige her to lie down; if she have intestinal or vesical irritation, calm them by anodyne enemata; if she cough, tranquillize it by some suitable anodyne.

When you diagnosticate any of the pelvic presentations, should you make any effort to deliver the child while it is yet in the uterus?

Never, unless some accident should complicate the labor, as convulsions, hemorrhage, &c., and then, not unless the os uteri be sufficiently dilated.

When the hip descends should you be careful to ascertain whether it rotates?

Although rotation of the hip is of less importance than that of the occiput, yet it is proper that you should secure the rotation of the hip as it passes through the pelvis.

Should you use any traction effort on the child at this time?

None whatever; it would be generally safer for you to retard the descent of the child, that the os uteri may become freely dilated.

Should you support the perinæum at this period?

You should; not so much however to prevent its being lacerated as by this means to delay the descent of the child.

Should you do any thing more than to support the child, and the perinæum at this time?

Nothing more than this; no traction should be made on any part of the child, unless it be to assist rotation.

When the body is delivered as far as the umbilicus, what attention should you give to the cord ?

Draw out a fold of it to prevent it from being put too forcibly upon a stretch.

Suppose you find it compressed, how should you manage it ?

Endeavour to raise up the part which compresses it, then carry the cord to a part of the pelvis in which there will be more space.

Which arm or shoulder is usually delivered first ?

That which passes over the sacrum ; though this rule is not invariable.

What is the best mode of supporting the body of the child when it has been delivered, and while the head is still in the pelvis ?

Covered by a napkin, and resting longitudinally upon your arm.

When the head is about to emerge, can you aid it to any advantage by the use of the finger ?

Aid, always important, and sometimes indispensable, can, and ought to be afforded at this time.

Is it proper to pull the body forcibly in a horizontal line with the view to expedite the delivery of the head ?

Never ; the body must be carefully carried in such a direction as to favour the occipito-mental diameter of the head to retain the direction of the axis of that part of the pelvis in which it is situated.

How should this be done ?

In the anterior varieties, carry the body of the child over the abdomen of the mother ; in the posterior varieties, depress the body of the child, or carry it round towards her back.

Should you be much disturbed by the occurrence of the third position of the breech ?

Inasmuch as we can have considerable command over the rotation of the child's shoulders by proper manipulations upon the breech, we should apprehend little inconvenience from this position.

Should you interfere with it before the breech has descended into the cavity of the mother's pelvis ?

No ; it is quite unnecessary to interfere at all until the breech has fairly entered the cavity of the pelvis.

What assistance should you then offer ?

Assist or compel rotation on to one of the anterior planes to convert it into the first position.

Is it probable that the direction of the head is modified by the rotation of the shoulders as it descends into the strait ?

This idea is entertained by some who do not concede that in rotations of the head in cephalic presentations the shoulders are not modified by such rotation.

What is the mechanism of breech presentations in the posterior positions ?

The contractions of the uterus, impel the right hip, (if we take the fourth position as the type of these posterior varieties,) along the right anterior inclined plane towards the arch of the pubes, while the left hip is driven along the left posterior inclined plane to the middle line of the sacrum to become the sacral hip and usually to be delivered first. The body is then carried down in a state of lateral flexion, until the right shoulder is carried down on the right anterior, and the left on the left posterior inclined plane, to be delivered at the vulva. There is then a dispo-

sition for restitution to the oblique position which the head occupies ; that is, with the spine towards the posterior part of the right thigh, and the umbilicus towards the anterior portion of the left thigh ; but the occurrence, or non occurrence of this will depend upon the manner in which the body is supported on the hand of the accoucheur, or on the bed of the mother. As the fetus is now chiefly or entirely beyond the reach of uterine action, the voluntary powers of the mother mainly drive down the head of the child with its occiput on the right posterior inclined plane to pass on the perinæum, while the chin, mouth, nose, eyes, forehead, and bregma successively escape under the arch of the pubes.

Is it safe for you to attempt rotation in a direction opposite to that which it would spontaneously take, and thus convert it into an anterior position ?

Some practical accoucheurs think it safe and easy after the shoulders are delivered.

At what part of the pelvis can this forced rotation be effected ?

While in the cavity, and not in either of the straits of the pelvis.

What should you do with a sixth position of the pelvis ?

Endeavour first to convert it into a fourth or fifth, and when the shoulders are delivered, by the aid of the fingers convert it into a first or second position.

Why can we do this with greater safety than in cases of original cephalic presentations ?

Because we are in these cases able to modify the direction of the body to that in which we force the head.

What is an important rule, in reference to feet cases ?

Not to facilitate the descent of the feet until the first stage is completed.

Suppose the heels of the child are situated in contact with the breech, should you pull down the feet ?

No ; you should retard the delivery in the first stage, keeping up the feet, to allow the breech, &c., to descend and dilate all the soft parts.

Of what principles of the healing art, is the practitioner of midwifery to avail himself, in the management of difficult labors ?

Both medical and surgical principles, viz : those which are strictly medical, by which he is to overcome difficulties by the use of agents generally administered internally ; and those which are strictly surgical, manual, or instrumental ; in which the obstacle is overcome, or aid rendered by the hand alone, or by the hand and appropriate instruments.

What circumstances may complicate labor, and render medical or surgical aid, or both, necessary ?

Rigidity of the os uteri, or of the external organs, or of both : hemorrhage from some part of the body, particularly from the uterus ; convulsive movements of the nervous and muscular systems ; inertia of the uterus, &c. ; malpositions of the fetus ; deformities of the pelvis ; the existence of tumors within it, &c.

What has the accoucheur to do in these cases ?

To temporize and use medical means in the cases of rigidity, but he must use the hands or instruments, or both, in the other varieties of complication.

What is the character of the medical means to be used ?  
Such as overcome rigidity when it exists, and such as stimulate the uterus when necessary.

What are operations by the hand called ?  
Manœuvres or manipulations.

How are the instruments used in obstetricy classified ?  
1. Those which do not injure mother or child : 2. Those which destroy the child, for the benefit of the mother : 3. Those which subject the life of the mother to risk with a view to save the child alive.

What complications of labor require the use of the hand ?

Those in which there are slight deviations of position ; and those in which hemorrhage, or convulsions occur.

What function does the hand usually perform ?  
The correction of the presentation ; or position, version, &c.

What do you mean by version by the head ?  
That movement by which the head is restored from a deviated to a proper position.

What is meant by version by the vertex ?  
That movement by which a deviation of a vertex presentation is corrected, or reconverted to a true and favorable vertex presentation.

This term applies especially to the correction of deviated positions of the head simply, while version by the head, usually means the bringing of the head to the axis of the pelvis when some other part of the child has been presenting.

What do you understand by the phrase version by the feet ?

That operation by which the hand is introduced into the uterus, and the feet seized and brought down by it.

Which variety of version is most common in this country ?

Version by the feet.

Which is to be preferred, when either version by the head, or by the feet, is accomplishable ?

That by the head by far, as the subsequent delivery is more natural and safe.

What inconveniences does the mother usually suffer from an effort by the accoucheur to make version ?

Pain, risk of hemorrhage and the rupture of the uterus, or other injury to it.

To what risks is the child subject, by version by the feet ?

It may suffer from being too severely twisted upon its spine ; and also, all the inconvenience of original feet or breech presentations.

Is version by the head or feet, to be resorted to with a great deal of care ?

It must so, and with calculation of the capability of the mother to bear it.

Should you obtain a consultation on the propriety of it, if possible ?

You should, whenever it is practicable without hazardous delay.

What condition of the os uteri must exist before it will be admissible to perform version ?

That of dilation, or facility of dilation.

What are you to do until this state of the os uteri is obtained ?

Temporize by using proper medical treatment if any be indicated.

Is it admissible to make version, after the head has passed the os uteri ?

Never—you should operate as soon as possible after the first stage is completed.

What dangers attend any attempt at this operation under such circumstances, that is, when the head has been driven out of the uterus ?

The uterus may be ruptured, and the soft parts within the pelvis may be injured ; the child's head may also be wounded.

At what moment can you proceed to this operation with the best effect ?

Directly that the first stage of labor is complete, or the os uteri sufficiently dilated to admit the passage of the hand and arm.

What position should the patient be placed in for the purpose of making version ?

On her back, with her hips over the edge of the bed, and her feet properly supported.

Why would you have her brought to the edge of the bed ?

To allow room for the ready movements of the accoucheur in introducing his hand and part of his arm.

How should the patient's feet be disposed of ?

They should be placed out on chairs or any convenient staging which may enable her to keep them on a level with her hips.

What position is the accoucheur to assume for the purpose of passing the hand ?

One in front of the patient and which is more easy to himself.

What attention should be given to the dress of his person, to prepare for this purpose ?

He should lay off his tight coat, roll up his shirt-sleeves, then put on a night-gown, or some other loose cover, with as little display as possible.

How are the parts of the patient to be prepared ?

They should be well lubricated with some mucilage or animal oil.

What calculation has the operator to make previously to passing the hand ?

That by which he determines what is the position of the different parts of the child, what alteration he has to make, and which hand he must use to effect this object.

What is the rule in reference to the hand which must be used ?

That which corresponds to the side to which the occiput presents, provided the object is to make version by the vertex.

What are the different steps of the operation ?

First, the lubrication of the hand and soft parts ; next, the dilatation of the genital fissure and vagina ; then the passage of the hand into the os uteri ; next the seizing of the head ; and lastly, its version.

How are you to dilate the vulva ?

By the gradual introduction of the hand in a conical shape, and the point of the thumb bedded between the fingers.

What position should the hand be in ?

In a state of semipronation.

What is this movement technically called ?

Introduction.

In what condition of the patient are you to make this introduction ?

During a pain.

In what position are you to carry the hand when introduced ?

In that of supination.

What general direction are the thumb and fingers to assume ?

Thumb to the pubes, fingers to the sacrum.

In what condition of the patient are you to make the rest of the manœuvre ?

In the absence of a pain.

How do you seize the head ?

First, place your hand against the part within the superior strait, push it up in the axis of the superior strait, and slide your hand under it or a little to the side of it—then embrace the head, and carry the chin over to the iliac fossa, opposite that in which the occiput is situated; then let it descend.

How should the other hand be employed at this time ?

It should be applied over the fundus of the uterus, to support it properly.

What are the objections to this version by the head ?

The difficulty of seizing the head.

Should you attempt this version in all cases ?

It will be safe to resort to it, only when the head is readily within the reach of the hand.

When the head is well situated, but some accident has happened to the mother, should you resort to the version by the feet?

Remembering the dangers of version, better use the forceps if practicable.

What is the rule for the use of the particular hand in version by the feet?

Use that hand, the palm of which would correspond to the abdomen of the child, and which in withdrawing it, having hold of the feet, will keep the body in a state of flexion during the whole version.

How are you to proceed to make the version by the feet?

First, introduce the hand properly during a pain; next, press up the head, and pass the palm of the hand along the front and one side of the child, over the whole body to the breech, then cause it to descend upon the thighs and legs, and next embrace the feet, retain these in the hollow of the hand until they are brought down into one iliac fossa, or into the cavity of the pelvis—then slip the index finger between them, retaining the heels in the palm of the hand, until they are completely beyond the vulva.

Can you always seize both feet in this case?

Though a skilful operator can mostly do so, it is not always practicable.

How must you act if you have but one foot?

Draw it carefully downward, in the direction of the axis of the pelvis, at the same time adducting it towards the other as much as possible.

How can you secure the foot drawn out, while you search for the other?

Pass a noose of a soft band or fillet upon it, and let the loose extremities of the fillet remain out of the vulva.

Is it always necessary to reach the second foot?

It is not always necessary to search for this, if it is not easily found.

What rule should be observed in reference to bringing the back part of the feet to the anterior part of the pelvis?

Always to do this, because of the much greater facility of subsequent delivery of the head.

How is this to be effected?

By acting upon the pubal leg more than on the other.

Into what position of the feet do you change a first cephalic position?

To the second, and not to the fourth position of the feet.

How are you to do this?

By acting most on the pubal leg.

Into which position should you bring the feet, when you use your right hand for version?

First position.

In which position does the left hand bring down the feet?

Into the second position of the feet.

What should you do when you have delivered the body as far as the umbilicus.

Draw out a fold of the cord of sufficient length, to prevent it from being ruptured.

Is it necessary for you to continue to aid the delivery of the child, after you have made version or mutation?

It is usually necessary, at least to such an extent as enables you to assist the proper rotation of the hips, shoulders and head.

If you find the arms do not descend with the body of the child, can you do any thing to encourage their descent?

Suspend the tractive effort, resist for a few moments, the descent of the body, and let the uterus force down the arms if possible.

Suppose however this does not occur, how are you to act to get down the arms ?

Carry the body to the side, so as to admit of the introduction of the fingers up to the elbow, and bring down first the sacral, and next the pubal arm, in the proper direction for flexion at the elbow.

Which way are you to direct the movements of the arm ?

Always over the anterior portions of the child's head, thorax, and abdomen.

Suppose the arms are locked behind the occiput of the child, how would you disengage them ?

Press up the head during the absence of a pain, and with the points of your fingers, carry the elbow over the side of the head and face, and then over the thorax. If you cannot succeed with your fingers, use the blunt hook, as a lever for this purpose.

Suppose the shoulders delivered, and the head do not advance readily, what attentions are necessary, to assist its delivery ?

Instead of making traction effort at once, rather press up the shoulders to the vulva, and carrying the body backwards, you pass up a finger upon the occiput and press it forward ; or what would be still better, act upon the chin or the malar bones by the fingers, to bring them more forcibly forward.

Would you depend much pressure upon the chin?

Usually little can be gained by this plan, as the lower jaw yields very readily to slight pressure downwards.

What points of the face are more to be depended upon?

The malar bones, if they can be reached, as they are not yielding as the lower jaw.

Suppose you fail in this, what other manual resource have you?

Apply the fingers of the other hand upon the occiput, and act upon it simultaneously.

Suppose when the head is fairly engaged in the inferior strait, and it becomes arrested, what instrumental means becomes necessary for its relief?

The forceps.

Is it well for you to be provided with forceps in cases of pelvic presentations?

It would be proper for you to have them at command in all cases of pelvic presentations, whether original or rendered such by version, that the delivery of the head may be effected as rapidly and as safely as possible.

Are there any cases of original foot presentations, in which it is necessary to bring down the feet?

Yes, cases of inertia, &c.

Suppose it becomes necessary to bring down the feet in original breech presentations, how would you proceed to do it?

The soft parts being sufficiently dilated, introduce the proper hand, push up the breech if necessary, then pass it along the thighs to the knees, descend upon the legs and seize the feet.

Which hand should you use ?

That, the palm of which looks to the abdomen, or the back part of the thighs of the child.

Do you bring down the feet in the same position at which the breech was situated ?

This would always be right, as forced rotation can in such cases, if necessary, be effected by acting upon the legs, when they are brought down.

Are breech presentations liable to any deviations of position ?

They are ; hence we may have presentations of the sacrum, or either one of the ilia, &c.

Do deviations of the breech usually become rectified spontaneously ?

Usually they do.

Suppose however there should be great delay in the descent of the breech, should any attempts be made to rectify them ?

It would be proper to facilitate the delivery, by rectifying the position.

What is the rule, in reference to the use of the hand in these deviated positions of the breech ?

Pass up that hand the palm of which will look towards the abdomen of the child.

Can you ever bring down the feet to any advantage ?

The advantages of this manipulation would rarely be commensurate with the risk of attempting it, unless the breech is high up and the child easily moveable in the uterus.

Suppose the labor be far advanced, and the arrest takes

place in the cavity of the pelvis, or inferior strait, what then would you do ?

Attempt to bring down the breech by passing up the hand and fixing a thumb in one groin and a finger in the other.

Suppose there was not space sufficient for the passage of the hand and breech together, what instrumental means have you ?

The fillet, which if it can be applied, would be well adapted for this purpose.

What is the fillet ?

A thin strong silk ribbon, or a thin linen tape of such width as to admit its being passed along a fold in the ham or groin.

How is this to be effected, while this fold is still within the pelvis ?

This instrument properly lubricated, is to have one of its extremities doubled up in numerous plaits or folds, which are to be carried upon the point of the index finger of the proper hand and applied to the fold in the groin or ham ; the fillet is then to be passed on the point of the finger till it is found on the opposite side of the limb ; the plaits are then to be drawn out at the vulva, and thus the fold of the groin or ham, will be secured in it. With this tape or ribbon, a very considerable degree of force can be exerted and very efficient aid often rendered.

What resources have you for the application of the fillet, if the fold of the ham or groin, is beyond the reach of the finger ?

A slightly curved silver canula, containing a watch-spring stillet, with an eyelet mounted upon it ; this eyelet

having a small loop of strong thread in it is to be carried up to the fold in the ham or groin, upon the end of the canula, it is then thrust forward along the fold to appear at the opposite side of the limb, the end of the fillet is to be passed through this loop, the steel-spring stillet is then to be retracted, and the fillet thus drawn over the groin or ham, and its extremity brought within reach of the hand of the accoucheur, who is thus enabled to act with it.

What other instrument have we for the delivery of the hips ?

The blunt hook.

Where are you to fix it ?

In the fold of the groin or ham.

How is it to be prepared for use ?

Properly warmed and lubricated.

Is it proper to apprise the patient or her friends, of the necessity of its use ?

With few if any exceptions, the necessity for all such instruments should be explicitly stated, and consent obtained.

Does the introduction and use of this instrument give pain to the mother ?

None, if properly introduced.

Into which groin or ham, is it to be passed ?

Into the sacral groin or ham if possible, though it is usually most convenient and even better to fix it in the pubal limb, while in the upper part of the pelvis.

How are you to guide the instrument to its point of application ?

Along the point of one or more fingers, to the body or

thigh of the child, and when passed sufficiently far onward the end of the hook should be made to slide around on one of these parts to the fold into which it is to be fixed.

Can you use the blunt hook to any advantage in cases in which it is difficult to bring down the arms of the child with the fingers ?

Its use is sometimes indispensable, when the finger of the accoucheur fail.

In what particular case, can the blunt hook be resorted to, for the delivery of the *head*, in breech presentations ?

When it is impossible to produce flexion by the hand or vectis.

How are you to use it, and where are you to fix it ?

First try it in the mouth carefully, next it may be fixed upon the lower edge of the orbit.

How are you to correct certain deviations of presentation of the head ?

By the hand if possible, but if not, by the vectis.

What is a vectis or lever ?

It is a metallic instrument several inches in length, having one or both of its extremities curved to the shape of the child's head.

Does its curvature increase its power ?

Its power is increased nearly in proportion to the degree of its curvature, in certain cases.

Does this increased curvature, increase the difficulty of its introduction ?

It does so.

What functions is it intended to perform in the hand of the accoucheur ?

That of a lever, or tractor, sometimes both.

If used as a lever, what must be the fulcrum ?

Some part of one hand of the accoucheur.

If used as a tractor, what force must co-operate with it ?

The finger or hand of the accoucheur.

Should you value it very highly as a tractor ?

Not when we can substitute the forceps.

What can you effect with the instrument as a lever ?

Flexion, and rotation.

Suppose you had occasion to increase flexion in a first position of the cephalic extremity, how would you introduce it and operate with it ?

Take it in the left hand, lubricate the vulva, the instrument, and the right hand : then pass this in to the head of the child, slide the point of the vectis along the concavities of the right hand between the child's head and the os uteri ; then sweep it around from the side of the head over the left parietal protuberance to the occiput, taking care to keep any part of the instrument from contusing the mother ; when so adjusted, slip one or more fingers of the right hand against the forehead, or sides of the bregma, and press them upwards towards the cavity of the abdomen, while the thumb of the same hand acts as the fulcrum to the lever, the left hand is employed in acting through the instrument to bring down the occiput.

Suppose you wanted to assist rotation in a second position of the vertex, how should you pass it and operate with it ?

Hold the instrument in the right hand, pass in the left as a guide, then introduce the vectis along the right sacro-iliac symphysis under the side of the head, and then between it and the right ischium until you reach the parietal

bone ; this done, take the handle in the left hand, pass in one or two fingers of the right hand against the left frontal bone, throw the thumb over the shaft of the vectis to form a proper fulcrum, and then act simultaneously with the instrument and the fingers to carry the occiput toward the arch of the pubes and the face towards the sacrum.

Is the lever to be regarded as a dangerous instrument ?

Not when skilfully used in cases indicating the employment of it.

In what particular condition of the head is it especially useful ?

In transverse positions of the cephalic extremity.

What obstetric instrument have we of much greater value than the vectis or lever ? *1. used them. 5 2- /*

Forceps.

*- Chamberlain - Smets -*

What do these forceps represent ?

A pair of artificial hands.

What is the composition of the forceps ?

Two blades so arranged as to embrace the child's head, and so constructed that they can be introduced separately, and then locked or united to each other.

What mode of junction or locking, is the best ?

Perhaps the German is most preferred.

What is this particular mode of locking ?

There is a conical screw pivot near the centre of one blade, and a conical notch in the other, into which the pivot is to be received. Their junction is kept secure by the screw carrying down the cone of the pivot into the conical notch.

*Davis are much used*

How do you distinguish the forceps by the length ?

*Hayden* Into English or short, French or long forceps.

What forceps are thought to be best, French or English ?

Upon the whole, the French forceps properly modified, are to be preferred.

What is the use of the fenestra in the blades ?

To enable some portions of the scalp and cranium, as the parietal protuberances to pass through them, and thus enable them to occupy apparently less space in the cavity of the pelvis, and at the same time to secure a more firm grasp of the head.

To what part of the pelvis, is the use of the short forceps restricted ?

Inferior strait, unless perhaps we except those contrived by Professor D. D. Davis.

From what parts can you deliver the head with the long forceps ?

From every part of the pelvis, as a general rule.

What rule have you for the application of force in the use of forceps ?

Sufficient to overcome the resistance.

To what part of the child are the forceps to be applied ?

Always to the head.

To what part of the head are they to be applied ?

To the sides, in all cases except one.

What is that one ?

In transverse positions, in which rotation cannot be effected.

To which diameter of the head, are the forceps to be applied parallel ?

The occipito mental diameter.

Should you give the mother any pain in the introduction of the forceps ?

None other than to excite the contraction of the uterus.

Is the child's head liable to receive some slight injury by the use of the forceps ?

This is in some cases unavoidable, when the pelvis is small or deformed, or the head badly situated, or the forceps not well constructed.

In what particular cases are the forceps indicated ?

When there is too much resistance to be overcome by the natural powers, or when the powers of the mother become enfeebled by hemorrhage, or the contractions irregular by convulsions, &c.

What condition of the os uteri must exist, before the forceps can be applied ?

That of dilatation ; the first stage of labor should be complete if possible.

Which practice is preferable for young practitioners ; version by the feet, or forceps, in cases in which the head is still at the superior strait ?

Version by the feet.

Suppose the head has passed out of the os uteri, *must* you then use the forceps ; instead of resorting to version ?

Version would then be out of the question, and the whole consideration would be upon the use of the forceps.

Is it important you should diagnosticate very carefully before you attempt the application of the forceps ?

There would be hazard in using the forceps without correct diagnosis.

How would you have your patient placed for delivery by the forceps ?

She should be placed as for the operation of version by the feet.

What preparation of the patient would you have made before you operate with respect to the bladder and bowels ?

They should be carefully evacuated.

How do you designate the blades ?

Male and female, or left hand and right hand blades.

Which is male, and which female ?

The male blade has the pivot, the female the notch.

What relations must the forceps hold to the pelvis as they withdraw the child's head, through the lower strait ?

Their concave edges must always look to the pubes.

What are the different steps in the introduction of these instruments ?

In the first place the consent of the patient or her friends should be obtained for the purpose, after a due explanation of the necessity and object of their use. The patient then being properly placed, the instruments are to be brought to a suitable temperature by placing them for a few moments in warm water ; the male blade or left hand blade, is to have its fenestrated extremity properly lubricated, the vulva is also to be lubricated as well as the right hand. The accoucheur taking his station between the limbs of the patient, holds the male or left hand blade in his left hand, a little beyond the middle towards the fenestrated extremity, in the same manner that he would hold a writing pen. The dorsum of the fingers of the right hand is to be applied to the left labium and side of the vagina, and the orifice of the uterus if within reach. The handle of the blade being carried almost perpendicular to the horizontal line on which the patient is placed, is now

to have its point slided cautiously along the palm of the hand and the fingers, gradually approaching a parallel with the patient's body, until the blade has been placed by the side of the child's head in the direction of its occipito-mental diameter. The handle of this blade is then to be supported by an assistant, while the other blade is to be taken in the right hand, and its fenestrated extremity lubricated as the other; the left hand is now to be properly prepared, and the dorsum of its fingers applied against the right labium, side of the vagina and mouth of the uterus if within reach. The handle of this blade is then to be carried in a nearly perpendicular direction towards the left groin of the patient, that its lower point may be slided along the palm of the left hand in the direction of the axis of the vagina, of the inferior strait of the cavity of the pelvis, and if necessary, the superior strait; as this movement is effected the handle is of course correspondingly depressed, till it comes in contact with, and crosses obliquely, the blade first introduced, and then the points of junction brought accurately together; they are then to be locked.

What is the general rule in reference to the concave and convex edges of the blades?

The concave edges are to look towards the pubes, and the convex edges towards the hollow of the sacrum.

Should you always keep the point of the instrument against the head of the child?

This should always cautiously be done to prevent embracing any of the soft parts of the mother between the instrument and the child's head.

What dangers may result from want of care in this matter?

The inclusion of some portion of the mouth of the uterus, or even the penetration of the abdomen, with the instrument.

Is there any danger of entangling any of the soft parts in the fenestra of the blades ?

There is.

How are you to prevent this ?

By carrying up the hand as a guard.

How are the blades to approach each other at the lock ?

In nearly parallel lines ?

Should the blades always lock readily ?

Unless they do, it is certain that the head is not accurately embraced.

How are you to judge whether you have the forceps properly applied to the child's head ?

By their locking readily, while the blades are applied in the direction of the occipito-mental diameter of the child's head, as indicated by the position of the occipital fontanelle or by the chin.

Is there any danger of passing up the forceps *out side* of the *os uteri* ?

There is great danger of this accident without much care in some cases.

What test have you that this has occurred ?

The complaint of the patient that you hurt her.

When you have the blades locked, should you make a little compression and traction effort ?

This should be done in order to bring the instruments to their proper bearing, and to ascertain that no part of the mother is included.

Should you apply a fillet upon the forceps in all cases ?

In none except where it is important to keep up long continued and firm pressure.

Under what circumstances is the fillet necessary ?

When there is some defect of size of pelvis, or too great magnitude of the child's head.

What is the modus operandi of the forceps ?

Both as levers and tractors.

Should the forceps be regarded as a double lever ?

They should.

Where is the common fulcrum ?

The pivot.

What is the usual centre of motion of these levers during the effort of delivery ?

The trachelo bregmatic diameter of the child's head.

Should you be particularly careful to support the perineum in delivery by the forceps ?

This should be regarded as an important object of attention.

Is it proper for you to remove the forceps as soon as the head escapes through the inferior strait ?

This a good general rule.

In what direction are you to move the handles of the blades ?

From side to side of the head, and always from handle to handle.

Suppose the whole head is situated obliquely and in the cavity of the pelvis, how are you to apply the male blade ?

Elevate the handle, pass in the blade, sweep it under the top of the head, then depress the handle rapidly to

bring it to the side of the head, and the pivot will look towards one of the groins of the mother.

How should you pass in the female blade ?

Pass it firmly into the cavity of the pelvis under the top of the child's head, then by insinuating the fingers under the convex edge of the blade, depress the handle of the blades to sweep it over the parietal protuberance, and allow the blade to lock with the pivot to the left groin of the mother, in case of first or left occipito-anterior position.

Suppose the shoulders become arrested, how would you assist their delivery ?

Continue to act with the forceps upon the head ; or lay them aside and apply one hand behind, and the other in front of the neck, make proper traction in this way ; or pass up the blunt hook into one axilla, and thus make proper traction till first one and then the other shoulder is disengaged.

Suppose the head becomes arrested at the superior strait, how should you proceed with the view to assist the delivery ?

Ascertain if possible, if there be any deviation ; then correct it ; and if there be none, or if you cannot correct it, consider what further action would be proper.

Would you turn, or apply the forceps ?

Turning would be safer, unless the practitioner have much experience in the use of forceps.

Can you apply them easily and safely at the superior strait ?

They are neither easily or safely applied at the superior strait, and should not be applied at that point under any

circumstances, unless the practitioner possess great manual dexterity.

What use should you make of the hand in the application of the blades, admitting you attempt to use them in this case ?

Pass it into the cavity of the pelvis till it comes in contact with the head sufficiently completely to protect the mother from injury.

Are there any greater difficulties in applying the forceps in the second position of the vertex than in the first ?

When the occiput is towards the right acetabulum, the left side of the child's head to which the male blade is to be applied, is so closely directed to the anterior part of the pelvis, that when the first or male blade is properly introduced, it occupies so much of the anterior commissure of the vulva as to leave insufficient space for the proper introduction of the female blade.

How is this difficulty to be obviated ?

First pass in the male blade to its proper situation : having then determined what this is by the actual introduction, retract the blade by reversing the motion by which it was passed, till it is opposite the left ischium ; then having it carefully supported by an assistant, introduce the female blade to its proper situation along the right sacro-iliac junction. This blade is still in front of male blade ; the male blade is now to be passed up to its original situation under the ramus of the left pubis : when if all is right, it will lock readily.

What relation does the child's head hold to the forceps in the posterior positions of the occiput ?

The top of the head corresponds to the concave edges of the blades.

What rule have we for the direction of the handles in the posterior varieties ?

As the occipital extremity of the occipito mental diameter is directed strongly backwards in these cases, it is necessary to depress the handles on the perinæum to obtain the proper position of the head within the blades.

Suppose the head present with the occiput to one ischium, should you correct the deviation by the vectis before you apply the forceps ?

Yes, if at all practicable.

Is it a rule in obstetrics not to apply the forceps with one blade under the arch of the pubes, and one over the perinæum or coccyx ?

It should never be done.

Should we always attempt to correct the deviation by the vectis, or a blade of the forceps used as a single lever, before both blades are used for tractors in this kind of presentation ?

A persevering but judicious effort should be made for this purpose, in order if possible, to prevent the necessity of applying them over the occiput and face.

What other presentations of the fetus may require the application of the forceps for the delivery of the head ?

Presentations of the pelvic extremity, in which after the delivery of the body the head is retained.

How are you to dispose of the body of the child in such cases ?

In case the occiput is anterior the body is to be carefully lifted up over the abdomen of the mother ; while in posterior positions of the occiput, the body is to be carried toward the sacrum of the mother.

Suppose the chin has departed from the chest, can you introduce and apply the forceps with benefit?

It would be ineffectual in delivering the child, and subject the woman to much risk of injury.

Can you hope to deliver the head from the superior straits after the body has been delivered?

Not safely.

What accident is liable to occur in cases of pelvic presentation with the body delivered but the head retained, if you use great traction effort?

Separating the body from the head.

Suppose you meet with a case in which the head is retained after the body has been pulled off, what should you do?

First try to get the head in a proper position then apply the forceps.

But suppose you cannot get it into the proper relation with the pelvis for the safe application of the forceps, what means are you to employ?

Hooks, vectis, &c., so applied to the head as to get it in such position that the forceps can be applied, or that you can introduce such instruments as to enable you to diminish its capacity, and afterwards extract it.

What diseases result in distortions of the pelvis?

Rachitis, or mollitis osseum.

Why do the distortions usually take place in the direction of the sacro-pubal diameter?

From the fact that the pressure is made in that direction by the superincumbent weight of the spine or body.

What is the smallest size of diameter through which a living child can be delivered ?

Three inches.

If less than this, is it proper for the accoucheur to wait for the effects of the natural powers ?

It is not, because all her efforts would be ineffectual.

What resource has the attendant in such case ?

The perforator, crotchet, and gastro-hysterotomy.

What is afforded by the perforation of the cranium, and the breaking up of the pulpy mass ?

An opportunity for the vault of the cranium to collapse, and pass down more readily.

What are the diameters of the base of the skull after the vault has been removed ?

The face measures one and a half inches ; two inches with the lower jaw. The transverse diameter is two and a half inches.

What is the operation of diminishing the size of the child's head called ?

Craniotomy, cephalotomy, and embryotomy. *Johnson's prof.*

What instruments are used for this purpose ?

A lance shaped instrument called a perforator, which is well adapted to certain purposes ; though one of a more extensively useful character is Smellie's scissors, or some modifications which have been made upon it.

How is the uterus to be supported for the operation ?

It must be supported by one or both hands of the assistant.

Suppose the head, &c. be properly supported by the hands of an assistant over the abdomen, how is the operator to proceed to the introduction of the instrument?

The point of the perforator or scissors, is to be well guarded in one hand which is to be introduced to the proper part of the head.

How is he to operate with it?

Fix it, if possible, in a suture or fontanelle, push it up to the shoulders of the blades if you use the scissors; then open the handles and cut from within outwards, then turn the edges in another direction, and cut again till you have made a considerable opening.

When you have perforated to the cranium sufficiently, how are you to break up the membranes and the pulpy mass of the brain?

Pass the scissors, or some other convenient instrument and rotate it freely within the cranium, at the same time scoop out the mass thus broken up by it.

If the head do not readily collapse what means of assistance have you?

The forceps, which may be applied to the head, and compress it. To retain it in this collapsed state it is well to pass a fillet lightly around the handles.

Could you ever use the vectis to advantage in cases in which the head has been perforated?

It may sometimes be used with benefit to change the direction of the head, or to assist in traction.

What other and common means have you to act as a tractor?

An instrument called the crotchet, or sharp hook.

How is this instrument to be applied ?

It is to be passed through the artificial opening in the head, and fixed upon some firm point within the cranium. It is however a dangerous instrument, and never to be used when it can be avoided.

How are you to guard it when introduced ?

By the finger applied against some other part of the head to prevent any accident from its slipping.

Are crotchets ever guarded by a blade opposed to them ?

They are ; and it is unsafe to use one without a proper guard of this kind.

What other instruments have you for opening and diminishing the child's head ?

The intra-pelvic trephine for boring into the cranial bones of the child, invented by a German. The brisé-tête of A. C. Baudelocque, the craniotomist of Dr. Davis, the cranial bone forceps of Drs. Meigs and Davis's *Craniotomist*

Should you ever use ergot in cases of considerable deformity of the pelvis ? *a kind of punch*

Never, inasmuch as there would be great danger of rupturing the uterus.

Should you perform version by the feet in such cases ?

It should not be attempted.

What would be the objection to this practice ?

We should increase the difficulty, if there was not room for the child to pass, by removing the head from the reach of instruments intended to draw upon it or diminish its size.

If the blades of the forceps could be introduced, do you think it prudent to try the use of them ?

Yes.

Suppose you failed, what other resource would you have ?

The diminution of the child's head by the perforator, if the child be dead, or if the condition of the mother would justify it, the cesarean section, in case the child were still alive, and could probably be saved.

Suppose the size of the forceps was so small that you cannot deliver with the forceps, what should you do ?

Diminish the size of the child's head, and then apply the forceps or crotchet ?

Suppose you had applied the forceps, and found you could not deliver with them, how should you do ?

Open the head while the forceps are still on, then compress the bones with these instruments, and renew the attempts to deliver.

Having opened the vault of the cranium, how are you to apply the crotchet ?

Pass it in through the perforation upon some fixed point within the cranium, as the petrous portion of the temporal bone, or into the edge of the foramen magnum of the occipital bone, and then draw cautiously with it.

Suppose there is not room for the bones to pass down even after the brain is evacuated, what then is to be done ?

Pick, or tear, or cut away the different portions of the vault of the cranium.

In the use of instruments for this purpose, should you have regard to the scalp ?

Yes ; it is important not to cut it away with the bones, but preserve it as a guard to the soft parts of the mother.

What instrument would you use for cutting up the bones of the cranium ?

The osteotomist of Professor Davis of London.

Suppose the space is too small for you to operate with the osteotomist, what could you substitute for it?

The forceps of Dr. Meigs.

When this difficult operation has been decided upon, is it necessary for you to complete it at once?

Generally you may take your time at it, work at it till you are weary, then give your patient an anodyne, rest yourself, then resume the task.

Through what sized aperture can you bring down the base of the cranium?

One that is from one and a quarter to one and a half inches antero-posteriorly, and from two and a half to three inches transversely.

Is the operation of cephalotomy dangerous to the mother?

Not in common cases, if performed in time and with proper care.

Is her situation hazarded by the necessity of breaking up the vault of the cranium?

It is.

Suppose the body will not pass through the deformed canal?

It must then be mutilated.

Should you make up your mind in the early part of labor, in what manner you will complete the delivery?

It is proper that you make a careful examination for that purpose.

Suppose the pelvis be rather smaller than the standard size, what should be done when labor takes place?

Clear the bowels and the bladder, promote relaxation of the soft parts—make a careful examination of the internal

capacity of the pelvis,—and if it be regular and not very small, apply the forceps as soon as the head is within their easy grasp.

When the pelvis is very much contracted, which is to be preferred, the crotchet or the cesarean section ?

If the child be alive, and the mother in good condition, it would be right to recommend the cesarean section.

What are the objections to the cesarean section ?

First, it involves the life of the mother in great jeopardy, particularly if resorted to when she is in a state of excitement or exhaustion from ineffectual labor. Second, it does not always preserve the life of the child, though the risk of this constitutes the least objection.

What mode have we to diminish the size of the child's head in utero, besides that of the perforation ?

The crushing forceps, or *brise-tete* of A. C. Baudelocque.

Would you be disposed to use this instrument ?

It is so large and cumbrous an instrument, that we think it could not be used without great hazard to the patient, though it is said to have been successfully employed in some cases in Paris.

What plan does obstetric medicine propose, to prevent the occasion for the use of instruments in cases of deformed pelvis ?

The induction of artificial premature delivery.

What is the proper stage of pregnancy for this purpose ?

The eighth month or a little earlier.

What is the proper mode of doing this ?

Stimulate the uterus to contraction, by titillating the internal surface of the os uteri—or if this do not succeed, by puncturing the membranes.

What size of the pelvis demands this practice ?

When the diameter is less than three inches, say two and three quarter inches antero-posteriorly.

Suppose the diameters be less than this, what must you have resource to ?

To gastro-hysterotomy, i. e. the cesarean section ; or to the use of the crotchet.

Should you ever attempt either of these operations while alone ?

Never, if possible to have a consultation.

Should you ever give ergot in any cases of mechanical obstruction in labor ?

There is probably no case of this kind in which the use of ergot would be proper.

What should you do ?

First correct the deviation if possible, or if none exist, apply the forceps, if the capacity of the pelvis be sufficient.

What instrument becomes very valuable in cases of retarded labor, in posterior varieties of cephalic presentation ?

The lever.

If you cannot rotate the head in case of the sixth position, what instrument should you apply ?

The forceps, which in such case must be carried high up in the pelvis.

Suppose you have no instrument at command, what can you substitute ?

A fillet, carried up over the back part of the head, by a piece of whale bone, or some flexible substance.

Regulation operation

Do cases of presentation of the anterior fontanelle, to the centre of the pelvis, ever occur in practice ?

They are sometimes met with.

How does this occur ?

In consequence of the head being carried down in a state of extension instead of flexion.

What diameters present to the pelvis in this case ?

The occipito-frontal, and bi-parietal diameters.

What diameter corresponds with the axis of the superior strait ?

The trachelo-bregmatic diameter.

Does this deviation ever become spontaneously corrected as it descends ?

It is believed that it might be hazardous to rely upon spontaneous correction of this deviation, though this may possibly occur.

Suppose however the occiput becomes arrested at the linea-ilio pectinea, what is the consequence ?

The head becomes locked in the superior strait, cavity, or inferior strait of pelvis.

Would such a state of things render labor impracticable ?

It would, unless the pelvis be very large, or the head very small.

What practice should you adopt to prevent the occurrence of this difficulty, if you see the patient early ?

Pass up your finger, and arrest the descent of the forehead until the occiput comes down.

Suppose you cannot succeed with your finger, what should you do ?

Fix the lever upon the occiput, and pressing up the forehead with the finger, bring down the occiput.

Should you do this in the absence of a pain ?

This is the only time in which you could expect to succeed.

If the head descend into the cavity, how should you manage it ?

Pass in your lever under the sacral side of the occiput, and effect flexion and rotation at the same time.

Suppose the head has descended into the inferior strait, how should you do ?

It is desirable still to make restitution if possible, and bring the occipito-mental diameter into relation with the axis of the pelvis, and with this view it has been proposed to pass one or two fingers into the anus, and press against the head through the recto-vaginal wall, into its proper relation with the pelvis, and then bring it down.

Do the obliquities of the uterus probably ever contribute to cause this deviation ?

It is believed that they do.

Is the head in these deviations more likely to be arrested in the third, than in other anterior varieties ?

This opinion is entertained by some accoucheurs.

What practice should be resorted to, to correct the deviation in this case ?

Push up the head, rotate it partially, push up the forehead and allow the occiput to descend.

Would it be at all admissible to apply the forceps in this kind of deviation ?

The use of them *might* succeed, but the practice is barely justifiable.

What are face presentations ?

Deviations of vertex presentations.

What diameters present to the planes of the pelvic straits under such circumstances ?

Fronto-mental, and bi-temporal diameters.

What part presents to the centre of the pelvis ?

The root of the nose.

What then, are the difficulties of this case ?

The occipital bregmatic diameter is added to the antero-posterior diameter of the thorax, as the head descends into the pelvis.

Does this occur in all cases of face presentation ?

It does so when the sinciput is anterior in consequence of the occiput being thrown backwards upon the spine of the child.

Is the labor impracticable in that case ?

It is always so, if the child has its usual proportions.

Suppose the chin presents to the anterior parts of the pelvis, is the labor equally impracticable ?

This labor is practicable, and the child may be readily born alive.

What is the reason of this, since in all other cases dorsum of the child to the spine of the mother is regarded less favorable than when the dorsum is anterior ?

In this case it is true, there are many inconveniences ; but as the chin descends nearly in the axis of the pelvis, the sinciput is accommodated in the hollow of the sacrum, the trachelo-bregmatic diameter nearly corresponds to the occipito bregmatic diameter in cases of original occipital presentation ; as the head descends, the chin appears under the arch, while the front part of the neck is forced strongly against the posterior part of the pubes, and this part of the throat becomes as it were, the centre of motion as the head

is driven forward; to have first the chin, next the face, then the forehead, and lastly the sinciput, pass successively over the perinæum. In consequence of the small depth of the pelvis at the symphysis, the back part of the head and the top of the thorax, are less forcibly engaged in the superior strait, at the same time in this case, as must happen in the case of those positions in which the bregma comes under the arch of the pubes.

What are positions of the anterior fontanelle?

Deviations of occipital positions.

How many positions of these are acknowledged?

Six—the same as occipital positions.

Is it possible for you to modify or alter this position at the superior strait, while the ovum is entire or recently ruptured?

If the os uteri be sufficiently dilated, to enable you to carry up one or two fingers sufficiently far, you may push up the forehead and let the occiput descend.

Do these deviated positions engage less readily in the superior strait, than those in which the vertex presents?

There are two causes of delay in the descent of the head in deviations of this kind; first, because this position of the head offers a larger surface to the os uteri, and therefore can not pass through it so readily; secondly, the occipito-frontal diameter cannot readily descend in the superior strait, while the thickness of the walls of the neck of the uterus is added to it.

When is this deviation mostly recognized?

When the head has come down into the cavity or inferior strait of the pelvis.

What indications have we to fulfil when the head has descended into the inferior strait in this deviated position?

The movements of flexion and rotation

How are you to make the rotation in this case ?

By acting on the side of the forehead with the fingers of one hand, or on the parietal bone with the fingers of the other.

Can you use the lever to any advantage ?

Yes, if properly applied, you may effect both flexion and rotation with it and the fingers.

Is this a proper case for the forceps ?

No, not while the deviation continues.

When the deviation takes place to a still greater extent, what kind of presentation have we ?

Presentations of the face.

What diameters present to the pelvis in face presentations ?

The fronto-mental and bi-malar, apparently—though really, the trachelo-bregmatic and bi-parietal diameters, when the chin presents or rotates anteriorly.

Are face presentations to be regarded as rendering delivery impracticable ?

Not generally, particularly when the chin rotates under the arch of the pubes.

Can the face enter the superior strait when the chin presents to the sacrum of the mother ?

It can enter the superior strait without much, if any difficulty.

Can delivery take place spontaneously in these cases of face presentations ?

It cannot unless the child be very small.

What obstacle offers to the delivery in these cases ?

When the chin is turned towards the sacrum, it may be

said that we have the occipito-bregmatic diameter of the head, and the dorso-sternal diameter of the upper part of the thorax, attempting to pass down into the space of the sacropubal diameter of the pelvis. Under such circumstances, it is impossible for the occipito-mental diameter of the head to come into correspondence with the axis of the pelvis; the convexity of the sinciput is constantly applied to that of the inner side of the symphysis pubes, while the concavity of the mental tracheal and thoracic surface—so to speak, is opposed to the concavity of the posterior portion of the sacrum. Hence the capacity of the pelvis is insufficient for the transmission of the head and shoulders of the fetus in this direction, by the uterine and voluntary powers of the mother alone.

How many varieties or positions of face presentations are recognized by systematic writers?

Usually the same number as in occipital presentations.

What are the most common varieties of face presentations?

Presentations of the face are nearly always resolved into right mento-iliac and left mento-iliac, by the time the face gets into the cavity of the pelvis.

Can the labor in these cases be terminated spontaneously, or with slight assistance?

They can, provided the chin comes under the arch of the pubes.

What is the mechanism of labor in these cases?

First, the extension becomes as great as possible—the face is then carried down, the chin rotates upon the anterior plane, until it gets under the arch of the pubes: flexion then takes place until the head clears the perinæum;

the labor then terminates as in an occipito-posterior position.

Does flexion take place at any time during labor with face presentation ?

Not at all, until the chin comes under the arch of the pubes.

Should you in all cases endeavor to assist the rotation of the chin under the arch ?

Always, if possible.

What should you do if you find the child descending face foremost at the superior strait ?

By the old rule, we should make version by the feet, but under the counsel of more scientific instruction, we should perform version by the head, and bring down the vertex.

Suppose a manipulation of this kind to be admissible, that is, the head still high up and easily moveable above the superior strait, in what direction should you attempt to bring down the occiput ?

Always at first into that opposite to that in which the chin was situated, after which you must effect rotation if necessary, as already stated.

Suppose the <sup>first</sup>~~second~~ stage of labor be complete, and the face have descended into the cavity of the pelvis, how should you act ?

Endeavor to rotate the chin towards the arch of the pubes.

Can much be done by the use of your fingers, if you well understand the mechanism of labor ?

Much may be done by these means at various degrees of the progress of labor, if its mechanism be well under-

stood, and the accoucheur use his fingers dexterously and cautiously.

Suppose you find the top of the head coming under the arch of the pubes, and you cannot rotate it, what instruments *may* you apply ?

The forceps, with the hope of effecting delivery ultimately.

Does the introduction of these instruments require any *particular care* in these cases ?

Great care is necessary, as you are obliged to depress the handles, and at the same time apply the ends of the blades high above the pubes, and more or less against the shoulders of the child.

Ought you to attempt the use of the forceps, if you know the child is not alive ?

They ought not to be applied under such circumstances, until the head has been *prepared* for them by other means.

What instruments are indicated in cases the forceps cannot deliver ?

Perforator and crotchet, &c., or after the perforator and the collapse of the cranium, the forceps ; though it should be remembered, that the compression by the forceps, increases the diameter of the child's head, in the direction of the sacro-pubal diameter of the pelvis.

Would you ever be justified in attempting to make flexion within the cavity of the pelvis ?

It has been proposed as proper to attempt it, though we are not ourselves of the opinion that it would be difficult to effect it.

In what direction should you attempt to do it, if you determine upon trying it ?

In the oblique diameter of the cavity of the pelvis.

Why do face presentations require more laborious effort for their delivery than other presentations ?

Because the cephalic extremity of the fetus is removed from the line of direction in which the uterine and accessory powers act.

What deviations may we convert with advantage into face presentations ?

Those in which the forehead presents, and cannot be rectified by restoration to an occipital presentation.

What objections to this practice when the occiput is anterior ?

They would then be converted into a case of impracticable labor with face presentation, unless rotation could be effected by dexterous manipulation.

Should you ever allow a forehead presentation to continue as such when you discover it to exist ?

Never, if possible to correct it by reduction to an occipital presentation, or an antero-mental presentation.

What should be your rule of action in these cases ?

To convert the fronto-anterior position into the chin presentation, and to attempt to bring down the occiput, when they are sincipito-anterior.

How should you operate with the forceps in cases of mento-anterior positions of face presentations ?

Apply the blades as in cases of occipito-anterior positions, and as the chin clears the anterior commissure, draw a little forward with the front part of the thorax against the under part of the arch, then carry the handles rapidly

over towards the abdomen of the mother, with a view to move the trachelo-bregmatic and the trachelo-occipital diameters like radii, between the arch of the pubes, the sacrum, coccyx, and the perinæum.

Are you liable to meet with positions of the side of the child's head?

They may occur when there is great obliquity of the uterus, or the top of the head should be arrested in a certain direction at one side of the superior strait.

How are you to recognize them?

By the presence of an ear and a portion of the coronal, or of the lambdoid suture, a mastoid, or a zygomatic process, &c.

How are you to correct this kind of deviation?

If possible, push up the head of the child, and by the hand bring down the head into its proper relations with the pelvis.

When the nape of the neck presents to the centre of the pelvis, what is the indication?

To correct the deviation according to the general rules already proposed.

May it happen in practice that various parts of the body, as the hip, the back, one side, &c., may present to the centre of the pelvis?

However rare, they are stated to have occurred.

How do these generally result in practice?

Mostly in the presentation of a shoulder, or hip, or of the breech or feet, &c.

Is any change effected in the position of the child during the early stage of labor ?

Great changes are sometimes effected in deviated positions, even before the os uteri is well dilated, or the child driven down into the lower pelvis.

How are we to account for such changes ?

First, in the peculiar form of the abdominal and super pelvic cavity ; and secondly, in the flexibility of the child, its form is adapted to the shape of the uterus, in such manner as to make its long diameter correspond to that of the long diameter of the uterus.

But some persons have compared the fetus in utero, to a cork inside of a bottle, which can pass through the neck only in a certain direction. Is this comparison correct ?

Not exactly so, as the child is more pliable, yet it must finally escape only in the direction of its long diameter.

When deviations of presentations of the body occur, is it proper for you to wait until spontaneous version takes place ?

It would not be best : we should always endeavor, if under favorable circumstances, to introduce the hand, and deliver by the feet.

What do we mean by shoulder presentations ?

They are presentations of the upper parts of the sides of the body, which were probably originally deviations from cephalic presentations.

What number of presentations of the shoulders are there ?

Two of the right and left shoulders, each.

What points of the pelvis and child, do we take in our diagnosis ?

The pubis of the pelvis, and the dorsum of the child.

How do you diagnosticate the shoulder presentations ?

By the presence of a tumor, on one side of which is a smooth elastic surface, the side of the neck ; on another a slender bone, the clavicle ; on the opposite side a broad plate of bone, the scapula ; between these a number of small ridges, the ribs, and mostly, more important, a small cylindrical body, an arm, lying parallel to a larger one.

What is the value of the hand in the diagnosis of shoulder presentations ?

It may assist considerably in making up the diagnosis. By some practitioners it has been advised to bring down the arm to determine the position. We are persuaded however, that this practice is rarely if ever necessary.

Should we be very precise in our calculation of the exact relative position of the back and the pelvis ?

As it probably rarely happens, that the dorsum of the child is applied to the pubes with as much accuracy as the occiput is to the left acetabulum, &c., we have to take as a general statement, the nearest approximation to it, in our practice.

What are the positions of the shoulders ?

Dorso-pubic, and dorso-sacral, of the right and of the left shoulders.

Can spontaneous delivery ever take place in cases of shoulder presentations ?

Never while they continue as shoulder presentations, provided the child be at or near the term of its development. In some very rare instances, the uterine and voluntary contractions have effected such mutation in the position of the

child as to expel it with one of the extremities, usually the pelvic, presenting.

What is this mutation called ?

Spontaneous evolution, or spontaneous version.

What is to be understood by spontaneous version ?

That movement by which the body of the child, originally unfavorably situated, becomes changed in such a manner as to present one of the extremities, (especially the pelvic) of the ellipse, that it can enter and pass through the pelvis, aided by the powers of the mother alone.

How do you explain the law by which this change is effected ?

As already mentioned, it depends probably upon the flexibility of the fetus, and upon the direction of the uterine forces aided by the contractions of the abdominal muscles.

What is the probable proportion of cases of spontaneous version, in shoulder presentations ?

It has been rated at one case of spontaneous version, to one thousand cases of shoulder presentations.

Should you ever wait for spontaneous version, in any cases of shoulder presentations, or of those of the lower or upper part of the body ?

It would not be proper to wait, if it be possible to act judiciously for correcting the deviation.

Suppose you find the lower part of the body present ; what is the rule of practice ?

To pass in the hand, and bring down the breech or feet.

Suppose some portion of the upper part of the body present, what should you do?

Pass in the hand, and make version by the feet.

What should be the condition of the soft parts, before you proceed to an attempt at version?

They should be relaxed or dilated, to an extent sufficient to avoid contusion or laceration.

When you have diagnosticated such a deviation, should you endeavor to preserve the membranes till all the parts are dilated?

This is proper in all cases of real, or supposed deviation, until the parts are well dilated.

What is the rule for the use of the particular hand, and its mode of introduction?

1. That rule which applies to version by the knees or feet, in all cases, viz : that hand, the palm of which, looks towards the abdomen of the child.

2. When it is ascertained that the dorsum of the child is towards the pubes of the mother, that hand is to be introduced, which can be readily flexed into the iliac fossa in which the breech is situated ; this will be the right hand to the right iliac fossa, and the left hand for the breech in the left iliac fossa.

In either of these cases, the hand is to be carried up supine beyond the child or between it and the sacrum along one of its sides to the breech, then along the thighs to the hands or feet, which of course are to be brought down, by the left hand in the second, and by the right hand, in the first position of the feet or knees.

Will the same rule apply to the cases of dorso-sacral positions?

No : here the reverse obtains, that is, in the dorso-sacral position of the right shoulder, in which the breech is in the left iliac fossa, the right hand must be passed up in front of the child and in a prone condition, while in the dorso-sacral position of the left side in which the breech is in the right iliac fossa ; the left hand must be passed up in a prone condition between the child and the anterior part of the uterus.

In passing the hand for the purpose of reaching the hams or feet for version, is it proper to persist in carrying it up when there is a uterine contraction ?

All attempts at acting with the hand in the uterus, must be suspended as soon as the contraction takes place, and moreover, the hand must be expanded upon the part of the child with which it is in contact at that time, lest the knuckles should cause rupture of the uterus to take place.

Is it sometimes necessary to rotate the body of the child on its own axis, in some of the shoulder presentations for the purpose of getting down the feet ?

This is unavoidable, particularly in dorso-sacral positions of either side.

Suppose the body has been under pressure of the uterus, and the shoulder is wedged down in the pelvis, must you act at once, or endeavor to allay the contractions of the uterus ?

It is a fundamental rule, never, if possible to avoid it, to act in attempting at least the first steps of version, unless when the uterus is in a state of relaxation.

If therefore the tonic contraction of the uterus upon the child, be such that it is immoveable in the uterus, efforts must be made by bleeding, warm bath, nauseants or opiates, to overcome the constriction which this powerful organ exerts upon its contents

Suppose the child be dead, or you have reason to believe that the mother will die if not speedily delivered, what would you do ?

Deliver by the crotchet or other appropriate instrument.

How would you proceed to do this ?

Eviscerate the thorax by perforating it, and removing its contents ; then remove portion after portion of the child, as it comes within reach.

Should you always favor the process of version by the feet, even after eviscerating the child, rather than to force the head down first ?

This is preferred by good authority.

Suppose a hand should descend with the head, what practice should you resort to ?

Support it at the superior strait while the head descends.

Should you ever make traction effort upon the arm in case of its descending first under any circumstances ?

Never ; such a practice would always complicate the difficulty of subsequent delivery.

Does the descent of the umbilical cord ever complicate labor ?

It does very materially, unless the labor is very rapid and speedily terminates.

How does it do this ?

By the risk of pressure upon the cord, and arresting the circulation through it, and speedily destroying the child by suspending the process of hematosis.

Can a very short cord complicate the labor very seriously ?

It may slightly retard delivery in some cases, but the chief inconvenience it produces is from the sudden dragging out of the placenta, and sometimes also the uterus with it, and causing inversion of that organ.

What is the indication in prolapsus of the umbilical cord ?

To carry it up above the superior strait, and let the head descend first.

How are you to retain it there ?

Some attach it to loops at the end of flexible catheters, but the better plan is that of carrying it up in a pocket, on a piece of whale bone above the superior strait, and retain it till the head fairly engages, then withdraw the whale bone and leave the cord, and the pocket to be delivered after the child.

Should you expect to gain any benefit by bringing down the feet, in such cases ?

We think this rarely, if ever advisable, as the cord would still be in danger. If reduction of the cord be impracticable, we would employ the forceps if the head were within reach.

Do preternatural enlargements of the child or of its head, ever complicate the labor ?

Enlargements of this kind may not only complicate the labor, but render it impracticable without the aid of proper instruments.

What practice is indicated under such circumstances ?

Tap the child's head, evacuate the water, or open the head and evacuate the brain ; complete the delivery by the forceps or the blunt hook, if either be necessary.

Does the base of the cranium ever offer any special obstacle to delivery ?

Rarely, if ever, provided it be brought down in the proper direction.

In what direction is the base of the cranium to be brought down, after the vault has been removed ?

Always, if possible, with its facial extremity foremost.

Do you consider labor with twins, as more hazardous to the mother than single pregnancies ?

Not often so.

Are evidences of twins in utero very conspicuous, usually ?

There are few, if any rational signs to be depended upon as evidences of compound or twin pregnancy.

What is the most certain means of diagnosis of twin pregnancies ?

Auscultation.

What must you hear to convince you of the existence of twins ?

The sound of two hearts, each at different parts of the uterus.

What are the principal causes which render twin cases of labor more tedious ?

The great distension of the uterus, and the unfavorable direction in which the contractions fall upon either of the fetuses.

Is the second stage rapid ?

It is usually so, when once one fetus is fairly engaged, because it is usually really smaller than when it is simple pregnancy.

Is there any more danger in the third stage of labor in compound, than in simple pregnancies?

In consequence of the great distension of the uterus during the latter periods of pregnancy in such cases, it is more liable to acquire an atonic state, and hence the greater risk of hemorrhage, &c.

Are labors in twin cases, liable to become complicated by the descent of any portion of the other child when one has originally presented?

This accident has been known to occur, and it is easy to suppose that this complication is often liable to happen.

Suppose the head of one child, and the feet of the other should engage in the pelvis at the same time, how should you manage the case?

If possible, push up the feet, and let the head descend; but if not, apply the forceps with a view to deliver the head by the side of the feet; if this expedient should fail, it has been advised to resort to craniotomy, and embryulcia.

What other complications may take place?

A great variety; one of the most difficult and interesting, perhaps, is that in which as one descends, with the pelvic extremity first, its chin becomes locked under the chin of the other which was presenting the cephalic extremity, and which had gotten down, perhaps into the cavity of the pelvis.

How should you proceed with a view to save the life of one child?

Eviscerate the child which has descended, detruncate it, leave the head in the cavity of the uterus, push it up above the superior strait; then deliver the second child, and afterwards remove the head of the first.

Do any complications of labor occur from obliquities of the uterus ?

It is believed that many cases of complication or deviation, depend upon obliquities of the uterus, by which its axis is thrown out of a line with that of the pelvis.

In what direction do these obliquities usually occur ?

Laterally and anteriorly.

Do obliquities of the uterus usually correct themselves ?

They mostly do by the aid of the contractions of the abdominal muscles ; not always however, until after they have caused serious deviation in the direction of the presentation.

How should you correct those deviations which interfere with ready delivery ?

Generally by placing the patient on the part of her body opposite to that, to which the uterus is inclined.

Are you justifiable in making any attempt at correction within the pelvis ?

This may sometimes be done advantageously by acting on the orifice of the uterus steadily, but moderately in the absence of a pain, and retaining it in the acquired position during the next pain, &c.

Are there any cases in which the os uteri cannot be reached by the finger at the commencement of labor ?

Cases of this kind have been met with, and the ignorant accoucheur has been persuaded that there was no os uteri at all, and from the apparent necessity of the case, has proceeded to make one with his bistoury.

How is this occurrence to be explained ?

Either by the very considerable anterior obliquity of the

uterus, or by the very great development of the anterior portions of the neck of the uterus, or both of these together.

By what plan of practice is it to be corrected?

By passing a bandage around the abdomen of the patient, and thus compressing the fundus and body of the uterus backward; then wait until the first stage of labor is nearly completed, by which time you can reach the anterior lip, which you can draw gently forward.

How are you to account for the occurrence of cases in which the head of the child, instead of engaging in the centre of the pelvis, becomes arrested upon the top of the pubes?

They most probably depend upon great relaxation of the muscles at the lower part of the abdomen.

How are you to manage cases of this kind?

Make pressure upon the hypogastric, or rather upon the pubic region. If the case offered any unusual difficulty, we would propose the application of a firm bandage around the pelvis, and then urge the patient to take several successive pains in a sitting or standing position strongly inclined forwards.

Is labor ever complicated with retroversion of the uterus?

Rarely, at or near term; some cases however, have been reported by Merriman.

What do you mean by *retroversion of the uterus*?

That in which the fundus of the uterus is thrown down into the hollow of the sacrum, while the os tincæ is carried up behind the pubes.

During what period of gestation may this condition of the uterus take place?

During the first three months only.

At what time are you to expect that labor will take place in this case?

Generally before the sixth month.

What are the inconveniences and dangers arising from this accident?

Retention of urine and feces from pressure; more or less paralysis also of the lower extremities; inflammation and sloughing, &c.

What are the usual causes of retroversion?

Violent straining, as in jumping, falling, &c. Efforts at defecation while constipated; too great a distension of the bladder; the superincumbent pressure of impacted feces in the colon, &c.

What are the symptoms of retroversion of the uterus?

Constant bearing down sensation, great difficulty, or utter impracticability of evacuating the bowels or bladder, &c.

What is the most prominent symptom, and also the most dangerous one?

Retention of urine, and distension to the immediate danger of rupture of the bladder is the earliest urgent symptom, though when in some cases the urine can be evacuated artificially, and the bowels accommodate themselves to the aid of art, the condition of developing uterus and ovum becomes the subject of great concern.

As many of these rational signs are fallacious, how are we to determine the existence of the retroversion of the uterus?

By the introduction of the finger into the vagina, and discovering that the os tinæ is closely forced up behind the pubes, while the body is thrown backwards into the hollow of the sacrum, and the vagina thereby very much shortened.

What are the indications for treatment ?

Reduction or restoration, if possible ; but if the uterus be so far developed as not to admit of being replaced, we must palliate by artificially evacuating the bladder and bowels ; if the enlargement of the uterus produce serious inconvenience, it will be necessary to induce abortion, by rupturing the membranes, if possible, by a stilet passed into the os tinæ ; but if not, by a puncture through the substance of the uterus, either directly through the vagina, or through the recto-vaginal septum.

What other displacements of the uterus may complicate pregnancy ?

Anteversion of the uterus, and hernia of the uterus.

What consequences to pregnancy may happen from either of these conditions ?

Little inconvenience can happen to pregnancy from anteversion of the uterus, as it is usually rectified in proportion as it becomes developed ; but with regard to hernia of the organ, this sort of displacement would entail serious consequences upon gravidity.

Are there any physiological conditions of the patient which may interfere with the function of parturition ?

There are many depending upon conditions of the nervous, vascular, and muscular systems.

What is the most common of these physiological conditions ?

Rigidity of the os uteri, perinæum, and from original tonicity, depending perhaps upon plethora, and again in some instances the rigidity may be caused by an alteration of structure, as adhesions, cicatrices, &c.

What process most readily overcomes the rigidity ?

Increased secretion, promoted by bleeding, warm bathing, fomentations, &c.

Does rigidity ever depend upon irritation, the cause of which is direct or remote ?

It may, and no doubt does.

May the hand of the accoucheur ever be the cause of this rigidity ?

By too frequent, or too roughly touching the orifice of the uterus, it may become irritated, rigid, and even inflamed.

May too early a rupture of the membranes give rise to rigidity ?

It is probable that in some cases the too early drainage of the waters, and the pressure of the presenting part upon the os uteri, may cause irritation and consequent rigidity.

By what means can the accoucheur properly expedite the delivery under such circumstances ?

By such *medical* treatment as may diminish the vital tone.

If the stomach be loaded with impurities, gentle emetics, washing out the stomach, &c. Much may be done, by acting on the bowels by the warm enemata, purgatives, with castor oil, &c.

Bleeding is very useful, particularly if the patient is febrile. After bleeding nauseating diaphoretics, &c.

Warm injections, warm fomentations to the vulva, favor

relaxation. Advantage will be derived from keeping the patient's mind calm and confident. Use anti-spasmodics, as assafœtida, camphor, &c.; even laudanum may be beneficially employed in some cases.

As local adjuvants, the ointments of belladonna, stramonium, &c., may be applied to the os uteri; anodyne enemata, from sixty to one hundred drops of laudanum, may be given at once, after the bleeding, or purging, &c.

Is it often necessary to divide the bands or cicatrices, to overcome the constriction?

It is rarely necessary, in the cicatrices or adhesion of the vagina or perinæum, and scarcely ever in cases of rigidity of the os uteri, if proper medical or constitutional means are resorted to.

What danger would be involved in the division of the os uteri, under such circumstances?

Extension of the incision to a degree equal to a laceration of the uterus.

May labor be complicated or retarded, by irregular contractions of the uterus?

It may to a greater or less degree.

How are these irregular contractions diagnosticated?

By the woman feeling the pain in one particular spot, and by the want of expulsive effect.

Where may these spasmodic contractions occur?

In various points, as the body, fundus, and orifice of the uterus.

Why do we rarely have spasmodic contractions in the os uteri, in cases of regular presentation of the vertex?

Owing to the fact, that the orifice does not embrace the

neck of the child, in consequence of the manner in which its chin is applied to the thorax.

May the internal os uteri, become spasmodically contracted ?

It is believed by some accoucheurs, that it may.

What effect has this upon the advancement or retardation of the child ?

The child descends to the superior strait, during an expulsive effort, and recedes at once, when the voluntary powers become suspended.

What is the proper practice in this case ?

Venesection, anodyne injections, &c., to suspend the actions of the uterus.

Avoid turning and forcible delivery merely because the delivery is delayed on this account.

To what particular accident is the uterus liable, during the parturient effort ?

Lesion of its structure, either partially or entirely, that is, there may be a separation of some portion of its tissue, or the rupture may extend through its entire substance involving the peritonæum.

What are the symptoms of rupture of the uterus ?

A sudden suspension of the alternate contractions, great prostration of strength, hurried or gasping respiration, rapid pulse, &c.

What are the consequences of this accident ?

They are dependant upon the extent of the accident ; the patient may recover from a partial rupture, but when it is complete, the result is almost always fatal.

What are the indications for treatment in this case ?

If the rupture take place in the first stage of the labor, gastrotomy should be resorted to immediately, with a hope to save the child, but if in the second stage, version by the feet, or delivery by the forceps, should be promptly resorted to.

Suppose the child has escaped into the cavity of the abdomen, what should you do?

Placing one hand externally over the situation of the child, you should pass the other into the pelvis, and through the rent in the uterus endeavor to find the feet, and bring them down.

What if the rupture should occur in the vagina, is your chance of delivery greater?

It is, inasmuch as in such case the opening is not shut up by contraction.

Would you think you might resort promptly to the operation of gastrotomy, if you could not deliver the child through the natural passages?

That would be the only proper course.

Does this rupture ever arise from rigidity of the uterus or perinæum?

It is believed that it does, particularly when the portion ruptured has been subject to ramollissement.

Under what circumstances would you use the forceps, or crotchet, &c.?

In case the head was still in the cavity of the pelvis though the body had passed into the cavity of the abdomen.

Are convulsions during parturition ever dependant upon rigidity?

There is much reason to believe they are sometimes

dependant upon this cause, as in the unavailing effort at delivery, the brain becomes the seat of such degree of congestion, as determines irregular or spasmodic contractions of the muscular system.

Why do you call them *puerperal* convulsions ?

Merely because the woman affected, is in a pregnant, or puerperal state.

Do you consider them different from convulsions which may occur in unimpregnated women ?

They do not differ essentially from those which may attack unimpregnated women, or even nervous men.

How many varieties of these convulsions, do you generally recognize ?

Two ; hysterical and apoplectic.

Which is the most frequent variety ?

The apoplectic.

Which is the least dangerous ?

The hysterical variety.

Upon what does the latter form most frequently depend ?  
Irritability of the nervous system.

What are the general symptoms of this form of the affection ?

They are similar to the higher grades of hysterical convulsions in unimpregnated women.

What effect have these convulsions upon the labor ?

They usually suspend it, inasmuch as there appears to be a sort of metastasis of muscular contraction of the uterus to that of the body generally.

What are the symptoms of the apoplectic variety of convulsions ?

Those of congestion; mostly pain in the head, sometimes intense in some one spot; there is loss of vision, perversion of the hearing, &c., pulse full, slow and apoplectic.

Muscles of face much affected; sibilating noise, frothing at the mouth; convulsion of the anterior muscles of the face and body; the patient sometimes falls into a comatose state, and remains so, until another convulsion comes on, though sometimes she promptly recovers.

What is the cause of these convulsions during labor?

They are supposed to depend upon the violence of the uterine and general expulsive effort.

What are the usual post mortem appearances in cases of these convulsions?

Congestion of numerous vessels in the brain and its coverings, with serous, or sanguineous effusion.

Are there some cases in which death occurs, without any effusion, or apparent lesions of the brain?

There are; and this fact is calculated to lead to the conclusion, that the convulsions may depend upon some other cause than determination of blood to the cerebrum.

What effect have these convulsions upon gestation?

Women who have these convulsive movements during pregnancy are liable to have the fetus die in utero, or to abort it before it is completely developed.

What effect has gestation upon the convulsions?

Though pregnancy is not always directly a cause of these morbid movements, yet the woman, in some instances, is subject to a repetition of them, until the child is delivered either at term or prematurely.

Are the pains usually suspended upon the occurrence of abortion? *convulsions*

When convulsions occur during labor, the regular contractions of the uterus become suspended—a mere fluttering kind of movement is observed.

What are you to do in reference to the condition of the uterus ?

Let it alone in most cases, especially during the first stage of labor. Attend to the convulsion alone and allow the uterus to take care of itself. This it will usually do, if the tranquillity of the nervous and general muscular system can be restored. If the labor have advanced to the second stage, you may sometimes deliver with the the forceps, if the head be low in the pelvis.

How should you treat the apoplectic variety of these convulsions ?

Bleed, twenty, thirty, forty or fifty ounces, until you empty the blood vessels and relieve the plethora ; then resort to the usual treatment for apoplexy—cold to the head—mercurial cathartics, &c.—active enemata—cups and leeches may sometimes be employed after one free bleeding. When vascular depletion has been carried sufficiently far, sinapisms, blisters, &c., may be used as revulsives or counter-irritants. When the congestion is thus relieved, opium or camphor may be given in combination with calomel and ipecacuanha, and after the system shall have been properly reduced, and the disease controlled, mild tonics, as valerian, &c., may be administered.

Should you interfere with the process of gestation, supposing it be not complete ?

We think not, at least not until after all the usual means of treatment have been fully employed. Should the convulsions persist under such circumstances, we might consider the propriety of premature delivery.

Are some patients incident to continued effects of convulsions, or rather to a state approaching that which results in convulsions ?

Yes ; there often remains a disposition for congestion of the large blood vessels.

What is the treatment proper for such a state ?

Revulsion by moderate bleeding, and the use of sinapisms, &c.

What do you understand by inertia of the uterus ?

A want of sufficient action, either tonic or expulsive.

What are its general causes ?

During the first stage of labor, it may depend upon plethora in the uterus. Sometimes it depends upon a transference of the irritation from the uterus to the brain, heart, lungs, &c.—sometimes upon some diseases of the uterus, or general debility from phthisis, uterine hemorrhage, &c.

May not inertia occur while the uterus possesses a sufficient amount of power ?

It may, and then it merely requires to be stimulated into action.

What is the usual process by which occult hemorrhage occurs ?

The blood which escapes from the patulous orifices of the vessels on the inner surface of the uterus, becomes coagulated at the os tincæ, which it plugs up—the hemorrhage, thus prevented from escaping externally, goes on, and the tonic contraction of the uterus being absent, it distends the uterus, until the quantity thus abstracted from the system becomes so great that the patient dies at once, or falls into a state of syncope, from which she can be revived only by the most prompt measures.

What influence has the presence of coagula in the vagina in this case?

It appears to paralyse the uterus, and thus prevent it from closing up its venous orifices, by tonic contraction.

What is another marked consequence of atony of the uterus occurring during the second and third stages of labor?

Inversion of the uterus.

What are the degrees of inversion of the uterus?

Three are generally recognized in this country, viz.—first, simple depression—second, portion of the fundus passed the orifice—third, complete inversion, in which the whole organ is turned inside out.

What are the usual causes of this accident?

First, great weight of the placenta. Second, too early and too forcible traction efforts of the mother. Third, the continued and forcible bearing down of the mother after extrusion of the child, &c. Fourth, Dewees and some others, think it may depend upon irregular contractions of the fundus, &c.

What practice are you to adopt in cases of inversion?

We must be governed by the existence of the degree of the inversion.

What if the inversion is incomplete?

Endeavor by firm, equable and steady compression of the inverted part between the two hands, so to diminish its size, that it can be passed up within its orifice, and then carried up upon the back of the hand, till restored to its proper relations. If, however, this reduction is impracticable, we are advised to draw the inverted fundus carefully down, to complete the inversion of the organ.

What are you to do, if the inversion be found complete ?

First, make careful compression upon it, with a view to diminish its size sufficiently to pass it up within its orifice ; but if this be not practicable, desist, and leave the case to the gradual physiological changes which may be effected in it, to adapt it to its new situation.

What degree of inversion causes the most serious consequences, the complete or incomplete ?

The incomplete.

Why is this so ?

Because in this case a portion of the neck is constricted, and the circulation is impeded through it, and hence venous hemorrhage is kept up, inflammation and sloughing may also occur from this cause, while in cases of complete inversion, all constriction is obviated, and although more or less hemorrhage occurs frequently or constantly, yet there are no consequences of strangulation in the part.

What is the diagnosis of this inversion ?

The moment of its occurrence, the patient complains of a sudden sinking about the pelvic region, shrieks out, becomes faint, &c. Upon applying a hand at the vagina, a mass of greater or less size, depending upon the degree of the inversion, will be perceived without or within the vulva, or perhaps even within the os uteri itself, if it be merely in the first degree, (though in this there is usually less sense of exhaustion.) If it be external to the os uteri, the mass presents a rather dense structure, with a soft, spongy, more or less rugose surface, not necessarily sensitive to the touch.

How can you distinguish this internal surface from a polypus tumor ?

This may be very difficult in some cases, but generally

perhaps the surface of the uterus is more rugose than that of polypus.

May the practitioner not mistake this for a coagulum, a placenta, or a presentation of another fetus?

This would require care in his physical examination, but then with these the patient does not suffer in the same manner.

How are you to manage a case of inertia of the uterus?

During the first stage of labor, but little interference is necessary: we should endeavor to ascertain the causes of the inertia—if plethora, bleed—if constipation, purge—if from irregular distribution of the nervous influence, give those medicines calculated to act upon and regulate the nervous system.

How would you stimulate the uterine fibres moderately?

By friction, by cathartics, by warm teas, &c.

How in the second stage?

If the uterus be distended, rupture the membranes, provided the os uteri be sufficiently dilated; then act slightly upon the os tinæ with the finger, by slight traction in different directions. If this did not succeed we would administer the ergot.

Would you consider ergot as a dangerous remedy?

Highly so, if not very judiciously resorted to; but very important and useful in proper cases.

Why has it probably been productive of such fatal effects in practice?

Because it has been resorted to in cases when the advancement of the child was opposed by vital resistances, as before the os uteri or the perinæum were sufficiently relaxed to admit of ready egress of the fetus, forcibly

compressed by the *ergotic* contraction of the uterus. Furthermore, it has been productive of immense evil when administered in cases of mal-position of the child, or when there has been deformity or deficiency of amplitude in the pelvis.

Under *what* circumstances *can* you administer it with propriety ?

Dilatation or relaxation of all the soft parts, favorable positions, or presentations ; absence of *any mechanical* resistance at the superior strait of the pelvis.

It is rarely proper to administer it in cases of first pregnancy, because of the tenacity of the vital resistances in these cases.

What are the usual effects of the ergot upon the uterine fibre ?

It stimulates it to tonic contraction, by which nearly every portion of it acts in the direction to diminish its capacity, and the whole organ, therefore, acts with great and persistent force upon the body within its cavity.

Does the ergot sometimes fail in producing such effect ?

It does so sometimes, owing either to the idiosyncrasy of the patient, or to the bad quality of the article.

What is the first object of the practitioner in cases of hemorrhage from the uterus in the third stage of labor ?

To excite the tonic contractions of the organ, and thus cause it to close up the open venous orifices.

How should you effect this ?

By friction ; by kneading as it were the uterus ; by the application of a cold hand, cloth, or sponge, or plate of snow, or ice upon the pubic region : by powerful compression ; by the passage of a hand into the cavity of the

uterus ; by introducing within it a sponge saturated with vinegar, or by passing up a peeled juicy lemon ; allowing these acid vehicles to remain until expelled by the contraction of the uterus, &c.

Would you give ergot in any of these cases ?

It might be given if at hand, particularly if in the form of tincture, though it is the experience of some practitioners that it rarely acts in cases of great prostration from hemorrhage.

Knowing your patient subject to atony and hemorrhage in the last stage of labor, would you give the ergot in anticipation ?

We would give it just as the child was about to be extruded.

Would you at once remove the placenta from the vagina, or leave it in until the hemorrhage is arrested ?

Pass your hand beyond the placenta, remove the coagula you may meet with, and as the uterus contracts allow it to come away.

What general rule should you observe in reference to the mode of preventing this accident ?

See that the different stages of labor go on regularly.

Should you remain by your patient until she reacts after her labor ?

You should never leave her till you have witnessed this state.

Suppose your patient arrives at the term of gestation, and she becomes greatly prostrated by phthisis, pulmonary hemorrhage, &c., would you think proper to bring on labor and expedite her delivery ?

If we can arrest the cause of the exhaustion, we ought to

wait till term ; but if she be constantly sinking, it is thought better to deliver promptly, but cautiously, while the patient is yet capable of furnishing the means of hematosis to the child.

Suppose your patient be affected by syncope during labor or pregnancy, should you generally be alarmed ?

Not generally ; we are rather to regard it as depending upon a want of regular distribution of the nervous influence.

What is to be understood by the term *abortion* in obstetric language ?

It signifies the separation of an ovum from the mother's organs previous to the completion of its development.

To within what period of gestation do we limit the term abortion ?

Till the end of the sixth month.

What do you call the expulsion of an ovum at any time between the end of the sixth, and the end of the ninth month of gestation ?

Premature delivery.

How many varieties or modes of abortion are there ?

Two : one in which the ovum is detached merely, and the other, in which it is not only detached, but expelled.

Upon what conditions may abortion depend ?

1st. Those peculiar to the mother.

2d. Those peculiar to the child.

What are the various causes of abortion ?

Some depend upon the state of the system generally, some upon the state of the uterus itself.

What condition of the general system of the mother favors abortion ?

Any extremes of health, as plethora, asthenia, great irritability of the nervous system, &c. Syphilis, and other severe constitutional irritation, accidental diarrhœa, active catharsis caused by drastic purgatives, &c.

What condition of the uterus is favorable to, or predisposes to this accident ?

Plethora ; the menstrual nismus ; irritability of its fibre, &c.

Does the female necessarily abort when subjected to the influence of these predisposing causes ?

No : it usually requires the aid of an exciting cause to effect the abortion.

What may be regarded as exciting causes ?

Mechanical irritants, great muscular effort, nauseating, or peculiar odors ; the smell of a segar, the odor of flowers, &c., under some circumstances produce this effect.

Is the production of abortion always within the power of the mother ?

Not always ; some women are unable to produce it, however they wickedly attempt it, by jumping, standing, taking active medicines, &c.

What is the most certain mode of effecting abortion ?

By rupturing the membranes, and allowing the fluids to escape.

How are you to explain the action of the causes of abortion ?

They must produce first organic irritation in the blood vessels of the uterus, and this must extend to the muscular tissue of the organ.

What distinction are you to make between irritation of the blood vessels, and that of the muscular fibres of the uterus ?

It has been explained thus, according to the theory of Bichat : irritation of the blood vessels involves merely the organic life ; irritation of the uterine fibre involves the animal life—hence when irritation of the blood vessels occurs, there is not necessarily any contraction, but when irritation of the uterine or muscular fibre occurs, there will be contractions, and perhaps also expulsion. This however is to be understood as a speculation.

Will contraction of the uterine fibres arrest hemorrhage so long as the ovum is retained ?

No : if the ovum be detached, it is usually a cause of hemorrhagic irritation.

Suppose however you have a partial detachment of the ovum, can the hemorrhage be arrested before the ovum be expelled ?

It may in consequence of the coagulation of blood in the orifices of the vessels, provided the surface of the detachment be not too large.

What are the symptoms of abortion ?

Sense of weight, and pain in the pubic and sacral regions, more or less muco-sanguineous secretion escaping from the vulva, &c.

Can you diagnosticate between abortion and dysmenorrhœa, during the first three months of supposed pregnancy ?

Not with any confidence, even in some cases after the mass within the uterus has been extruded.

What are usually regarded as the diagnostic signs of abortion ?

Regular, intermitting pain in the back ; hemorrhage to some extent ; more or less watery discharge ; strong bearing down, expulsive pains : most or all of these except the watery discharge are met with in dysmenorrhœa.

Does abortion always become complete when once begun ?

Not always ; the ovum may sometimes be preserved in a state of vitality for some length of time, though its development may not increase.

What consequences result from abortion ?

They are very various ; some women recover well and enjoy even better health after one abortion, but others suffer ill health, during a part or all the remainder of their lives, especially when they have been caused by mechanical violence.

How do you prevent abortion ?

Diminish the morbid irritability, by removing the cause. If plethoric, bleed, &c. If too much reduced give nutritious food, tonics, &c.

What are habitual abortions ?

A recurrence of a single abortion, in patients of peculiarly irritable uterine fibre.

How are you to arrest a tendency to abortion ?

By a general antiphlogistic and revulsive plan of treatment, which diminishes the force of the blood upon the inner surface of the uterus, &c.

Blisters to the back, &c., are often useful in such cases.

Amongst the internal remedies are the sugar of lead, digitalis, &c., to diminish the force of the circulation.

What valuable mechanical means have we at hand, for the arrest of the hemorrhage ?

The tampon, for the purpose of arresting the flow of the blood through the vagina.

What is the best article for the tampon, or plug?

Strips of bandage, or better still, a piece of sponge, cut into an oblong shape, and so introduced as to allow of its expansion within the vagina.

How far may the use of the tampon involve the safety of the ovum?

It has been supposed dangerous to it, but this can rarely if ever happen, provided it be properly introduced, and judiciously managed.

What precautions are first to be had recourse to?

Reduce first of all, the force of the general circulation, by vascular depletion, then allay the pain by opiates.

May the ovum be detached from the surface of the uterus?

It may become detached, after the symptoms have continued a short time.

How are you to act, when you discover this fact?

Encourage its complete expulsion.

Suppose you find the ovum lodged in the orifice of the uterus, what should you do?

Remove it, or facilitate its detachment.

Should you give large doses of opium in this particular state of things?

If any, merely sufficient to allay the nervous irritation, not enough to paralyse the uterine contractions.

Should you always make an examination per vaginam, in case of supposed detachment?

Yes, always, carefully.

How should you proceed to effect the complete removal of the ovum in such cases ?

By the finger, by Dewees' hook, or better still, by Hodge's abortion forceps.

Does the hemorrhage usually cease speedily, after the removal of the ovum ?

It speedily in most cases becomes reduced to a mere lochial discharge, which usually subsides in a very few days.

Upon what does uterine hemorrhage depend, during or immediately after labor, or for some time before labor begins ?

Upon detachment of some portion of the placenta.

Where is the placenta usually attached ?

About the fundus, or one of the sides of the uterus, near one of the fallopian tubes.

What are the consequences of the detachment of the placenta, to both mother and child ?

Both are endangered by it ; the mother suffers from the direct loss of blood, and the fetus from imperfect hemato-sis. Should any lesion of the placenta occur, the fetus suffers from direct loss of blood, while the mother may escape accident.

Is the detached portion of the placenta ever re-united ?

It is probably never re-united in such way as that the function can be carried on in the part once detached.

What becomes interposed between the placenta and the internal surface of the uterus ?

A coagulum of blood, which may become organized and adherent both to the uterus and placenta.

How are hemorrhages from the uterus during pregnancy classified ?

Into *avoidable* or *accidental*, and *unavoidable*.

What is meant by accidental or avoidable hemorrhage ?

That which occurs at any period of pregnancy, from an accidental detachment of the placenta, when it is situated at a portion of the uterus, the development of which is proportionate to that of the placenta itself, as about the body or fundus of the organ.

What do you mean by unavoidable hemorrhage ?

It is that which inevitably occurs from the detachment of some portion of, or the entire placenta from the uterus, in consequence of its being situated at a part which is developed more rapidly than the placenta itself.

Is the hemorrhage necessarily constant in this case ?

It may be arrested temporarily by the process of coagulation, but it is subject to constant recurrence.

What are the means of diagnosis in these cases ?

Examination per vaginum, by which you can feel the fibrous structure of the placenta over the os uteri.

How much of the hand should be introduced into the vagina for this purpose ?

In order fully to appreciate the existence of placenta prævia, it is mostly necessary to pass in the entire hand.

How are you to proceed to arrest the hemorrhage in this case ?

It has been proposed to place the patient in a recumbent posture with her hips elevated, her circulation as much reduced as may be consistent with her health, and then resort to such medical means as favor coagulation of the blood.

Are you ever to resort to version for the purpose of effecting delivery before term?

This has been proposed, and directions given to force upon the os uteri for this purpose, but we regard it as highly improper, We think a better method would be (if any be called for,) to perforate the placenta, allow the liquor amnii to escape, and the uterus to contract upon the fetus, &c., as in cases of premature artificial delivery, when the pelvis is known to be too small for delivery at term.

What means have you of arresting the hemorrhage mechanically?

The tampon, which may be cautiously applied, and continued until complete dilatation occurs, and the uterus expels it, the coagula, the placenta and the fetus from its cavity.

Should you keep down the force of the circulation, favor the coagulation of blood, by absolute use, by the use of tampon, &c., even though you have to continue this plan for five months?

We think this would be the appropriate plan of treatment.

Suppose you find hemorrhage coming on at the full period of gestation, should you palliate during the first stage of labour?

Yes; never introduce the hand till the os uteri is dilated or dilatable.

How are you to proceed, as soon as the second stage of labour commences?

Facilitate as fast as possible the delivery of the child, and as soon as it is born, place the hand on the fundus of the uterus, and ensure its complete contraction.

Suppose the pains are slow, and the head is above the superior strait ?

Turn and deliver, or give ergot, and as soon as the head is within reach, apply the forceps. Treat the third stage according to established usage.

In cases of placenta prævia, as soon as the os uteri is dilated, what are you to do ?

Pass your fingers, and then whole hand, between the placenta and surface of the uterus, seize the feet, and deliver footling.

What other practice has been proposed by some of the German physicians in such cases ?

To let the child alone, fill the vagina with a tampon, made of strips of bandage, portions of which can be removed, as the head or presenting part is protruded through the uterus ; and when it is fairly within reach, use forceps, blunt hook, or authorized means for expediting the delivery.

THE END.

## OBSTETRIC MEDICINE.

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THE subscriber having fitted up for an obstetric study, the spacious room over the medical and miscellaneous book store of Crolius & Gladding, No. 341 Market street, north side, first house west of Ninth street, is prepared to receive a larger number of pupils than his late lecture room would accommodate.

The situation he now occupies is in the vicinity of the University and Medical Colleges of this city. The room is well lighted during the day. In the evening it is lighted with gas. It is accessible by an ample stairway, with an entrance from both Market and Ninth streets. It is so arranged as to be completely isolated from the other rooms in the house, by a vestibule which makes the study free from intrusion.

It contains a Library of Obstetric Medicine, consisting of several copies each, of the works recommended by the Obstetric Professors in the several schools, as text-books; also, at least one copy of a number of valuable works on this department of medicine.

The collection at present consists of

|                                      |         |         |
|--------------------------------------|---------|---------|
| Dewees' Compendium of Midwifery,     | several | copies. |
| Meigs' Philadelphia practice of Mid- |         |         |
| wifery                               | - - -   | one do. |
| Meigs' Velpeau's Midwifery,          | -       | do. do. |
| James' Burns' Midwifery,             | - -     | do. do. |

|   |     |       |
|---|-----|-------|
| Gooch's Midwifery, - -  | one | copy. |
| Denman's Midwifery, 2 vols., -  | do. | do.   |
| Francis' Denman's Midwifery, -  | do. | do.   |
| Collins' Midwifery, - -   | do. | do.   |
| Smellie's Midwifery, 3 vols., with<br>plates, - - - -   | do. | do.   |
| Heath's Baudelocque's Midwifery,<br>3 vols., - - - -  | do. | do.   |
| Osborn's Midwifery, - -   | do. | do.   |
| Blundell's Principles of Obstetricy, -  | do. | do.   |
| Hamilton's Midwifery, - -   | do. | do.   |
| Doane's Maygrier's Midwifery, -   | do. | do.   |
| Hamilton's Practical Observations in<br>Midwifery, - - -  | do. | do.   |
| Bard's Compend of Midwifery, -  | do. | do.   |
| Rigby's Midwifery, - -  | do. | do.   |
| Ramsbotham's Obstetric Medicine<br>and Surgery, - - -   | do. | do.   |
| Dionis' Midwifery, translated from<br>the French, 1719, - - -   | do. | do.   |
| Daventer's Midwifery, translated<br>from the Latin, 1728, - -   | do. | do.   |
| Memorial des Accouchemens, Par<br>Mad. Boivin, with 143 plates, -   | do. | do.   |
| Pratique des Accouchemens, Par<br>Mad. Lachapelle, 3 vols., - -   | do. | do.   |
| Traité Complete de l'art des Ac-<br>couchemens, par Velpeau, with<br>plates, 2 vols., - - -   | do. | do.   |
| Cours Complet d'Accouchemens, par<br>Jules Hatin, with plates, - -  | do. | do.   |
| Lemonnier Sur l'Accouchement Ma-<br>nuel, quarto, with plates, 1 vol., -  | do. | do.   |
| Essai de Levret, Sur l'abus des regles<br>générales, et contre les préjugés qui<br>s'opposent aux progres de l'art des<br>Accouchemens, - - - | do. | do.   |

|   |             |         |  |
|---|-------------|---------|--|
| Observations sur les pertes de sang<br>des femmes en Couche, Par M.   |             |         |  |
| Leroux, - - - -   | one         | copy.   |  |
| Deweese on Females, -   | one or more | copies. |  |
| Gooch on Women, - - -   | one         | do.     |  |
| Sir C. M. Clarke on Females, 2 vols.,   | do.         | do.     |  |
| Davis' Obstetric Medicine, quarto<br>vol., 1294 pages, - - -  | do.         | do.     |  |
| Clarke's Essay's on the Management<br>of Pregnancy and Labour, and the<br>Inflammatory and Febrile Diseases<br>of Lying-in Women, - - - | do.         | do.     |  |
| Montgomery on the Signs and Symp-<br>toms of Pregnancy, - - -   | do.         | do.     |  |
| Blundell on some of the most import-<br>ant diseases peculiar to Women,   | do.         | do.     |  |
| Churchill on the Diseases of Women,   | do.         | do.     |  |
| Parkman's Velpeau, on Diseases of<br>the Female Breast, - - -   | do.         | do.     |  |
| Bedford's Baudelocque on Puerperal<br>Peritonitis, - - - -  | do.         | do.     |  |
| Ferguson on Diseases of the Uterine<br>System, - - - -  | do.         | do.     |  |
| Lodge's Pauley's Lisfranc on Dis-<br>ease of Uterus, - - - -  | do.         | do.     |  |
| Waller, Lisfranc and Ingleby on Dis-<br>eases of the Uterus, - - -  | do.         | do.     |  |
| Warrington's Duparcque on Diseases<br>of the Uterus, - - - -  | do.         | do.     |  |
| Maladies des Femmes, par M.<br>Nauche, - - - -  | two         | do.     |  |
| Maladies des Femmes, par Chambon,   | do.         | do.     |  |
| Boivin et Dugés, Sur les Maladies<br>de l'uterus et des ses annexes, -  | do.         | do.     |  |
| Boivin, Recherches sur une des causes<br>les plus frequentes et la moins<br>connue de l'avortement, &c.                                 | do.         | do.     |  |
| Boivin, Sur l'hémorrhagie, - - -  | do.         | do.     |  |

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| Boivin, Sur une Cas d'absortion du placenta, - - - -                               | one | do. |
| Dewees on Children, - -  | do. | do. |
| Eberle on Children, - -  | do. | do. |
| Underwood on Children, - -   | do. | do. |
| Parkman's Rilliet & Barthez, on Diseases of Children, - -                          | do. | do. |
| Billiard on Diseases of Infants, -   | do. | do. |
| Davis on Hydrocephalus, - -  | do. | do. |
| Evanson & Maunsell on the treatment of Diseases of Children, -                     | do. | do. |
| Combe on Children, - -   | do. | do. |
| Capuron Sur les Maladies des Infans, Ticknor's Mother's and Nurse's Guide, - - - - | do. | do. |
| Warrington's Nurse's Guide, -  | do. | do. |

Moreau's Midwifery, Velpeau's Human Ovology, and Sir Astley Cooper on diseases of the female breast, and on the anatomy of the breast, have been ordered for the Library.

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## ILLUSTRATIONS.

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| Moreau's Obstetric Plates, coloured, framed, and varnished, (folio) in number, - -            | 60 |
| Maygrier's (Doane's Edit.) Plates of Midwifery Illustrated, pasted on boards and varnished, - | 80 |
| Davis' Obstetric Atlas — bound lithographic plates, - - - -                                   | 44 |
| Ramsbotham's Parturition Illustrated, 52 plates and 142 figures.                              |    |

Boivin & Dugés' finely coloured plates, representing the principal morbid alterations of the uterus and its appendages, - - - -
 41 |

The eighty plates of Maygrier, and the hundred and one finely coloured plates of Moreau, and Boivin

& Dugés, are so displayed upon the walls of the study that they are constantly in view for reference, in illustration of midwifery, and most of the diseases of the uterus.

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The Cabinet of Obstetric Anatomy at present consists of

*Female pelvis*, containing the genital organs in situ—two specimens.

*Uterine organs*, in connexion with each other, but detached from the pelvis—one specimen.

*Ovum*, entire at 7 months—one specimen.

*Uterus*, which contained the above-mentioned ovum—laid open that its internal surface may give some idea of the mode of connexion of uterus and ovum, during gestation—one specimen.

*Uterus*, ruptured at its cervix, during labour, the woman having died undelivered—one specimen.

*Uterus*, with surface principally lined with fibrous vegetations, resembling cauliflower excrescence—one specimen.

*Uterus*, containing two fibrous tumours at the fundus of the cavity—the surfaces of these tumours so arranged as to resemble one tumour split into two equal parts—one specimen.

*Uterus*, as seen ten days after delivery, and seven days after attack of metro-peritonitis—two specimens.

*Hard polypus*, with portion of a long pedicle—one specimen.

*Ova and fetuses*, from six weeks or earlier up to ninth month, complete—several specimens.

Uterus and appendages, with portion of peritoneum. The body of the uterus is in a scirrhus state. The orifice represents the ulcerated condition, after the removal, by ligature, of a small cauliflower excrescence. In the peritoneal attachments are to be

seen parieties of two abscesses, one of which opened externally into the vagina; the other into the cavity of the abdomen, causing fatal peritonitis—one specimen, (in spirits,) presented by late pupil, Dr. James Mitchell, of Philadelphia.

Organs of generation in the female fetus; presented by late pupil, Dr. Thomas Wood, of Ohio—one specimen.

Dried pelvis, representing normal and abnormal sizes and proportions—three specimens.

Fetal skeleton, mounted—one specimen.

Fibrino-sanguineous masses, which have been supposed to be abortions; the study of which, may correct some false impressions heretofore entertained respecting certain cases of supposed abortion; several of these have been presented to the proprietor.

The Cabinet of Instruments contains specimens of every thing necessary for the practitioner of Midwifery, as well as a variety of those used in the treatment of the diseases of women. A suitable number of these will be placed in the hands of the gentlemen having the privilege of the room, that they may become familiar with the articles, and the mode of application and use.

One or more obstetric machines, and models of fetus, as well as labour beds, and forceps, vectis, &c., will be accessible at all reasonable periods to the members of the class or classes having the privilege of the study; and it is the intention of the subscriber to add to the various departments of the means of reference or illustration, as far as practicable, in proportion to the number of his pupils.

With this view, orders have been given for a specimen of every new and approved obstetric instrument as it may appear; and instructions directed to a bookseller to supply the library with a copy of any valuable work which may be published on midwifery, and diseases of women and children.

As it is the wish of the subscriber to enlarge his cabinet of specimens, illustrating the anatomical, physiological, and pathological departments of obstetric medicine, he hereby announces to his former pupils, and his friends generally, who may be disposed to contribute specimens, with appropriate descriptions, that their favours will be gratefully received and suitably acknowledged.

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### PLAN OF INSTRUCTION.

The room is open daily from an early hour in the morning until 10 o'clock P. M. On Thursdays it is not accessible until 11 A. M. At all other periods except this, every facility is furnished for prosecuting the study of the various departments of Obstetric Medicine.

The subscriber devotes one hour each day for five days in the week, at the room, in giving practical instructions in obstetrics and the diseases of women and children.

During the session of public lectures, regular examinations are made on the subject, at least once each week.

Four courses of Demonstrations of the anatomy of the female organs of generation, of the mechanism of labour, simple, manual, and instrumental, together with the mode of preparing the bed, and the patient, &c., are given in the lecture-room.

These courses will commence at 8 o'clock in the morning of the first Monday in March, in June, in September, and in December, and continue regularly five times a week until completed. The interval between the completion of one course and the commencement of the other is filled up by lectures on diseases of women and children, in the same manner, except,

perhaps, during August, and a recess of a few days in October.

Three classes of pupils are accommodated by this arrangement, viz. :—One, consisting of gentlemen who wish to make themselves thoroughly acquainted with the principles of Obstetrics and the diseases of women and children, by the use of the library, by pictorial illustrations, by anatomical specimens, and by constant attendance upon demonstrations and lectures on these subjects, with appropriate recapitulatory examinations; these are regarded as Room Pupils, and can enter as such, during any period of their medical studies under the regulations prescribed.

Another class consists of those who enter for the lectures merely, and who have no access to the room except during the hours appropriated to the lectures.

The third class consists of advanced students, or graduates in medicine, who are desirous of acquiring practical experience in attending upon pregnant, parturient and puerperal women, under the supervision of the subscriber, as Accoucheur to the Philadelphia Dispensary and Nurse Charity.

Such gentlemen are regularly instructed in the duties of the accoucheur, and closely exercised upon obstetric models in the manner of preparing the bed and the patient, as well as in tact in diagnosis of presentation and position of the fetus, the use of the hand, for manual, and of the various instruments, for instrumental deliveries. In connexion with this course of exercises, they are admitted to the Obstetric Clinic every Thursday morning, at which they have such cases of pregnancy as apply for aid, distributed to them for attention, under the supervision of the subscriber as Accoucheur.

Gentlemen who attend the lectures on diseases of women, or who obtain the privilege of the study as Room Pupils, and are at the same time associated

with any of the District Physicians of the Dispensary, or of the Guardians of the Poor, are at liberty to consult with the subscriber in reference to any case of disease peculiar to females, which may have been assigned to them, provided such consultation be made with the approbation of the physician under whose care they are visiting the patient. These consultations are made at the study at the close of a lecture, or at the bedside, if desired, whenever the leisure of the subscriber will permit.

The Annual Introductory Lecture is given at 8 o'clock in the evening of Wednesday following the first Monday of November of each year.

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### TERMS.

For pupils who enter for the privilege of Room, Obstetric demonstrations and examinations in Midwifery, preparatory to graduation or otherwise, during the term of regular courses of public lectures in the Schools, - - - \$15 00

For pupils who enter for the entire year, enjoying the above privileges, and in attendance upon the course of practical lectures on diseases of women and young children, during the recess of public lectures, - - - \$35 00

For graduates, or advanced students, who wish to attend upon cases of pregnancy and parturition, under the care of the subscriber, as Accoucheur to the Philadelphia Dispensary and Nurse Charity, including a course of close preparatory exercises upon the obstetric machine, &c., during three months, \$20 00

For pupils who enter for an entire year, with all the privileges above specified, including a course of practice, for three months, (the period at which such pupils are permitted to enter on practice, being at the discretion of the teacher,) - \$50 00

Pupils who enter for attendance upon the lectures merely, during the year, - - \$20 00

The fees in all cases to be paid in advance, and in money current in Philadelphia.

Pupils in entering their names and obtaining tickets will please specify the town, county, and state in which they reside, the name of their preceptor, and the school to which they are attached, or at which they intend to graduate.

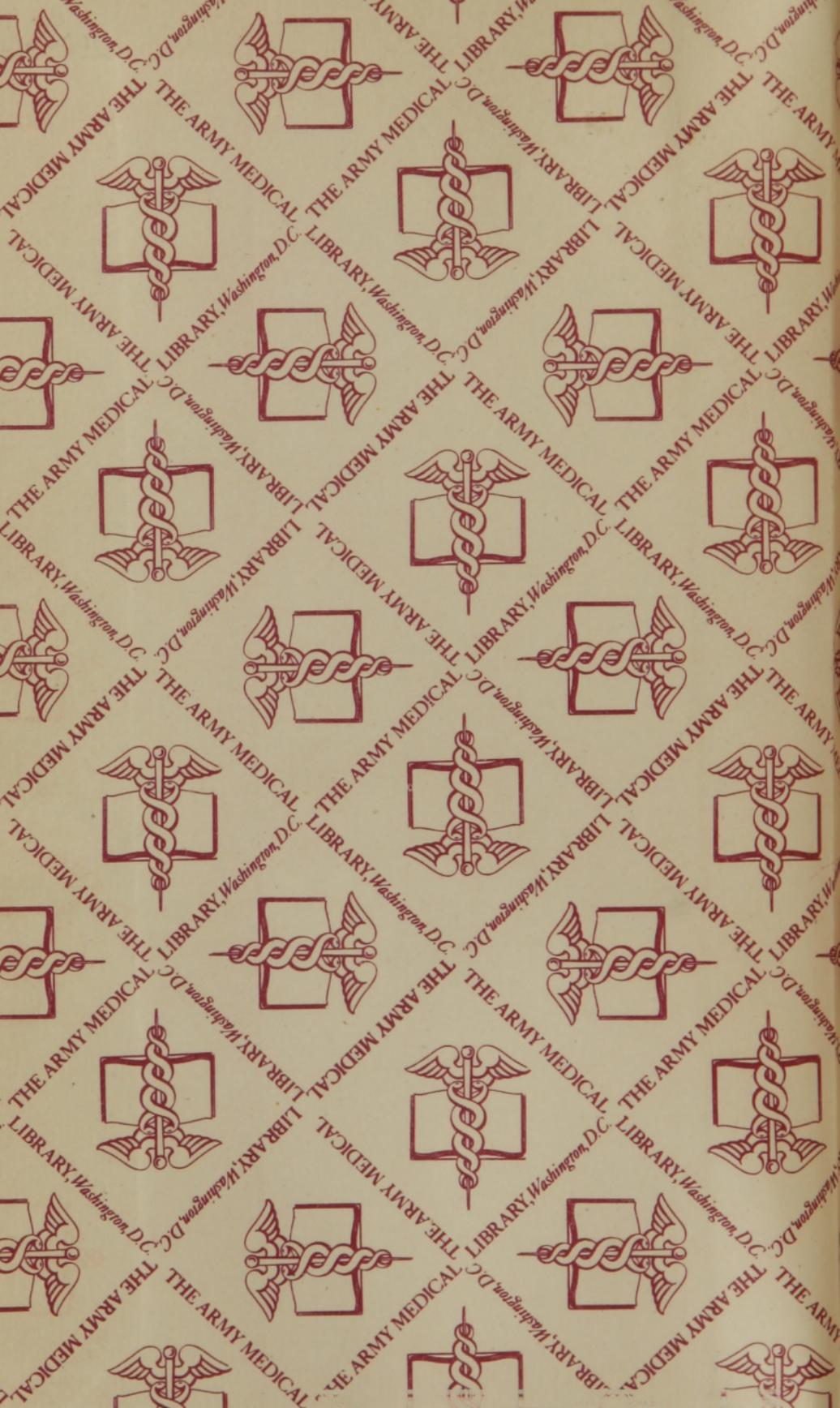
JOSEPH WARRINGTON, M. D.,

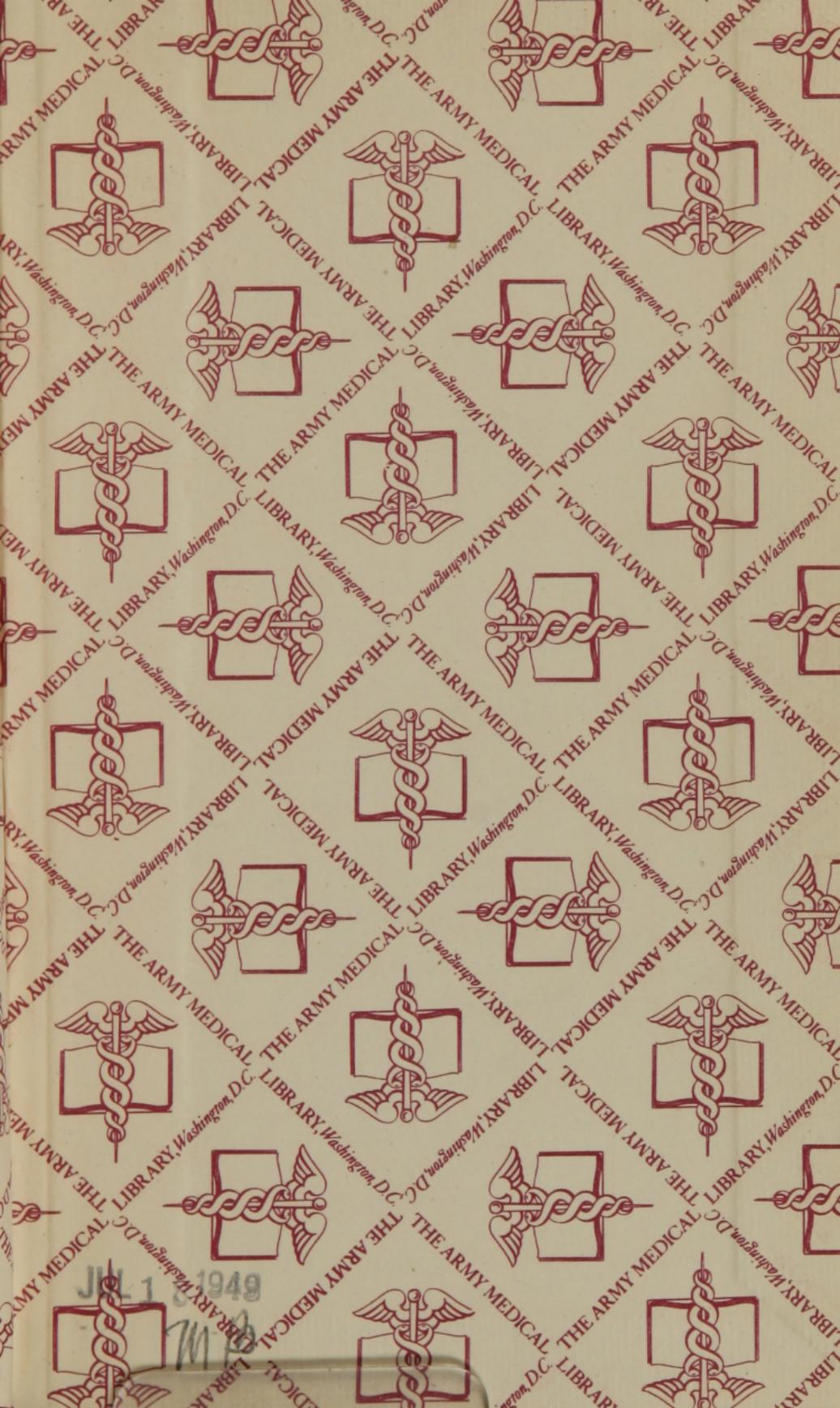
*No. 229 Vine Street, Franklin Square.*

Philadelphia, 2d mo., Feb. 1842.

NOTE.—Hours at Room, 341 Market street, 8 to 9 o'clock, A. M., (except Thursdays,) at home, 229 Vine street, 3 to 4, P. M.







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