

Dr. Conquest's outlines of midwifery : intended as a text-book for students, and a book of reference for junior practitioners.

Contributors

Conquest, Dr.
Winn, James M.

Publication/Creation

London : Longman, Brown, Green, and Longmans, 1854 (London : Spottiswoode.)

Persistent URL

<https://wellcomecollection.org/works/apxdzyft>

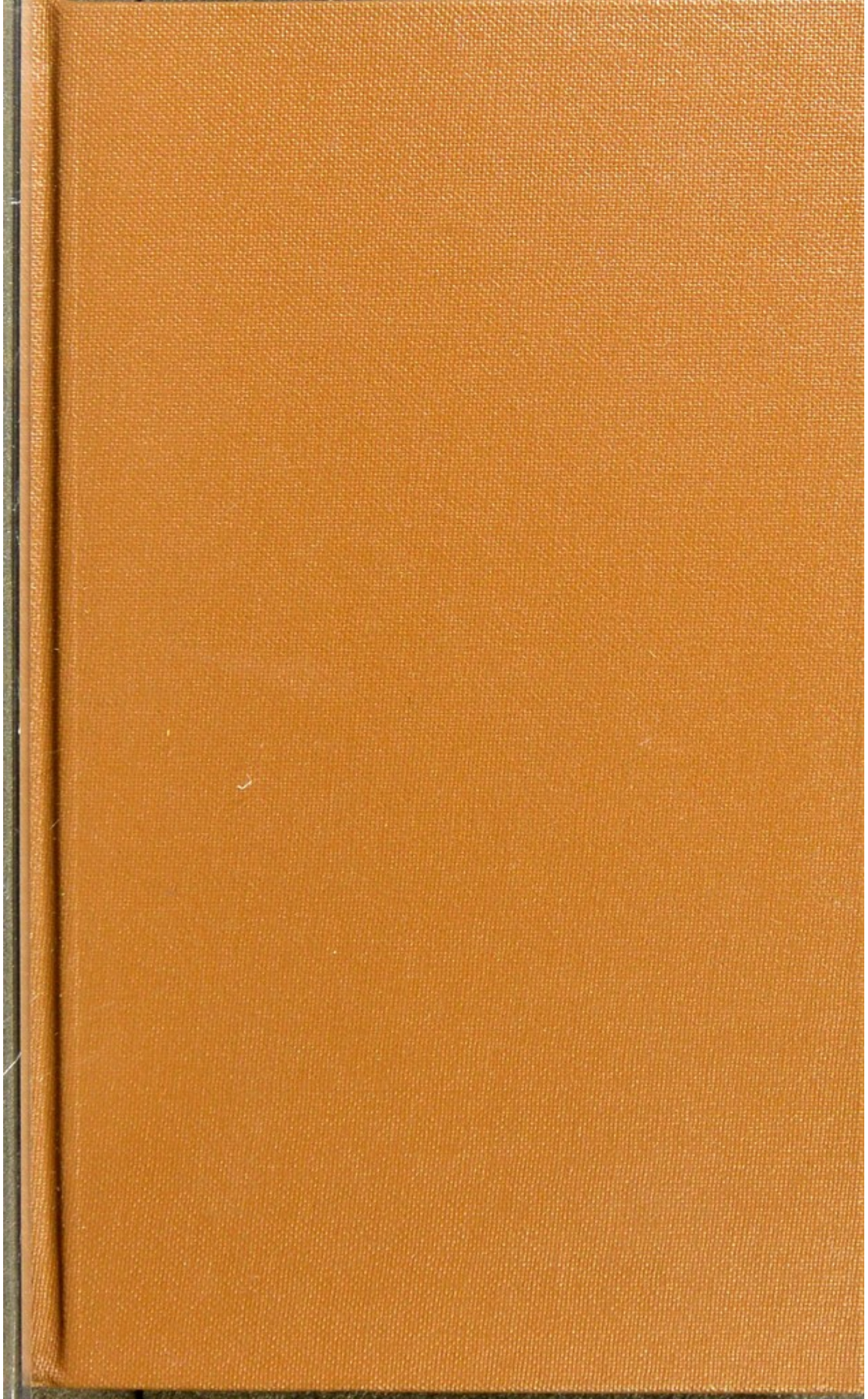
License and attribution

This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.



Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
<https://wellcomecollection.org>





22101653377



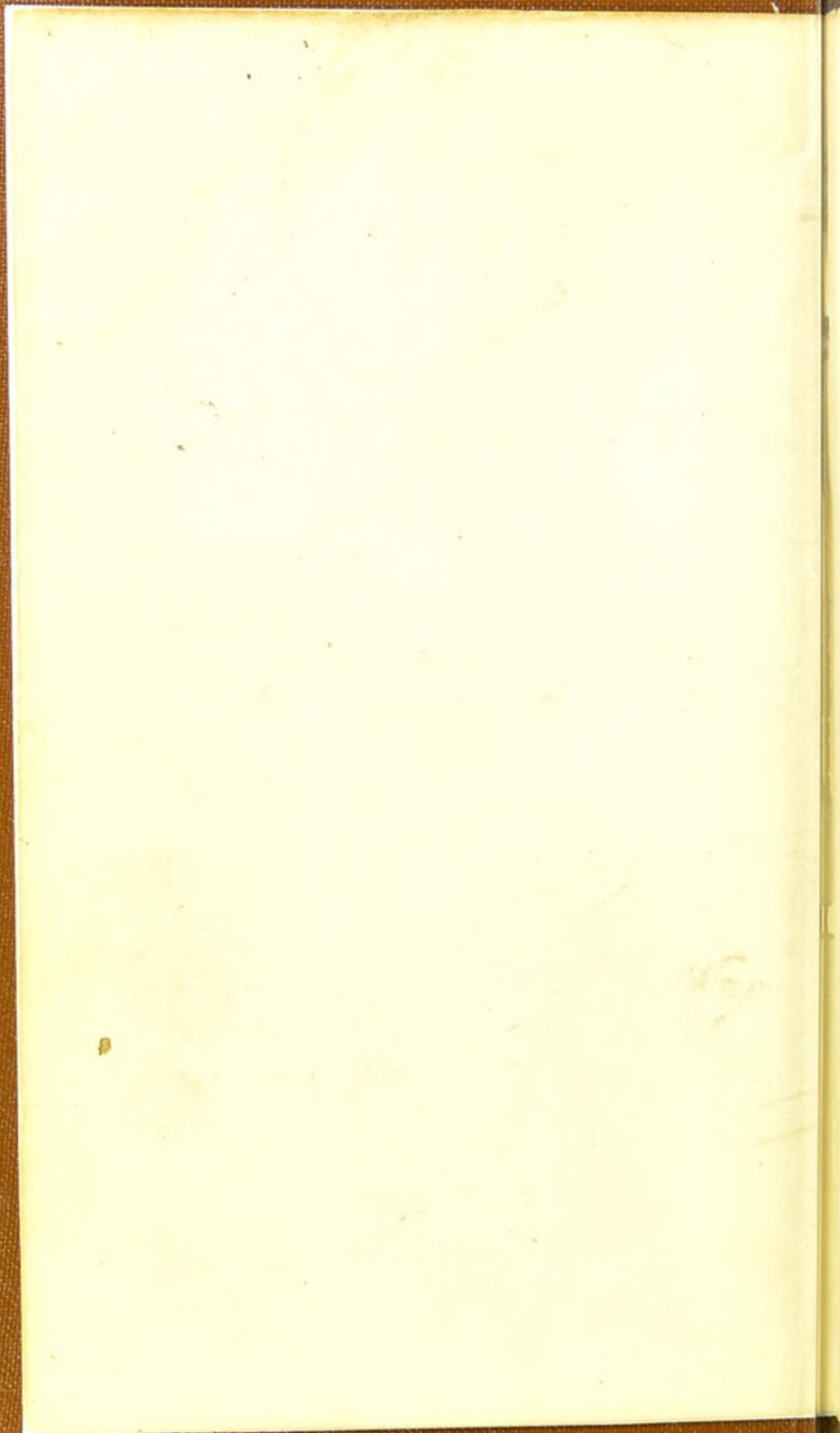
[Faint, illegible handwriting or text, possibly a signature or title, located below the stamp.]

6
7



To the Medical Society of
London

From the Editor



E. g. 8

DR. CONQUEST'S
OUTLINES OF MIDWIFERY;

INTENDED AS

A TEXT-BOOK FOR STUDENTS,

AND

A BOOK OF REFERENCE FOR JUNIOR PRACTITIONERS.

A NEW EDITION,

BY

JAMES M. WINN, M.D.,

MEMBER OF THE ROYAL COLLEGE OF PHYSICIANS;
PHYSICIAN TO THE METROPOLITAN DISPENSARY; FORMERLY PHYSICIAN TO THE
ROYAL CORNWALL INFIRMARY AND TO THE TRURO DISPENSARY;
FELLOW AND ONE OF THE COUNCIL OF THE MEDICAL SOCIETY OF LONDON;
AND MEMBER OF THE HUNTERIAN SOCIETY,
ETC.

WITH NUMEROUS ILLUSTRATIONS ON WOOD BY BAGG.

LONDON:
LONGMAN, BROWN, GREEN, AND LONGMANS.
1854.

29487875

WELLCOME INSTITUTE LIBRARY	
Coll.	welM0mec
Call	
No.	WQ100
	1854
	C758

M19841

LONDON:
A. and G. A. SPOTTISWOODE,
New-street-Square.

E6

ADVERTISEMENT.

No apology is needed for the re-publication of the "Outlines of Midwifery," a work of much celebrity, which has already passed through six editions, and has been translated into the French, German, and Hindostanee languages. Some explanation may, however, be expected from an Editor who undertakes the task of revising a work during the lifetime of the Author.

Twelve months since, Dr. Conquest obligingly gave to the Editor full permission and encouragement to bring out a new edition of his "Outlines," and expressed his own disinclination, after a long and active career, to undergo the labour which a revision of his work would require, in order to place it on a level with the requirements of the present day.

Neither time, nor labour, nor bed-side observation, have been spared by the Editor, in his endeavours to sustain the essentially practical bearing of the original work, and to make it of value to those who

cannot find leisure to consult more elaborate treatises on Obstetric Science. He has deemed it expedient not to alter the Author's text; consequently, the new matter is introduced by means of interpolations, with his initials attached. By this arrangement, he hopes confusion will be prevented on those few points, and he is happy to say they are extremely few, in which he has ventured to differ from the distinguished Author.

Numerous additional engravings have been interspersed throughout the volume, the greater portion of which were copied from original drawings. To Mr. W. Bagg, whose taste and skill are so well known, the Editor is indebted for the efficiency of the engravings that illustrate the text.

FINSBURY SQUARE, *March*, 1854.

CONTENTS.

	Page
STRUCTURE OF THE PELVIS - - - - -	1
Ligaments of the pelvis - - - - -	6
Uses of the pelvis - - - - -	7
Dimensions of the adult female pelvis, at its <i>brim, cavity,</i> <i>and outlet</i> - - - - -	7
Axes of the pelvis - - - - -	11
Deformed pelves - - - - -	12
Mensuration of the pelvis - - - - -	15
Distinctions between the male and female pelvis - - - - -	16
Description and dimensions of the <i>fœtal head</i> - - - - -	16
Structure and functions of <i>the organs of generation and</i> <i>their appendages</i> - - - - -	20
Directions for introducing the catheter - - - - -	23
Vagina - - - - -	25
Structure, &c. of the <i>unimpregnated uterus</i> - - - - -	26
Appendages of the uterus - - - - -	32
Ovaria - - - - -	33
Vesiculæ Graafianæ - - - - -	34
Corpora lutea - - - - -	34
Ovariotomy - - - - -	35
Physiology of the unimpregnated uterus - - - - -	38
Premature menstruation - - - - -	41
Emansio mensium - - - - -	42
Suppressio mensium - - - - -	44
Dysmenorrhœa - - - - -	46
Menorrhagia - - - - -	48
Speculum uteri - - - - -	50

	Page
Conception - - - - -	52
Description of the OVUM - - - - -	53
Placenta - - - - -	55
Fœtal structure and peculiarities - - - - -	59
Fœtal circulation - - - - -	62
Gravid uterus - - - - -	65
Evidences of pregnancy - - - - -	66
Duration of utero-gestation - - - - -	72
Phenomena and diseases of utero-gestation - - - - -	72
Retroversio uteri - - - - -	80
Abortion - - - - -	83
PARTURITION - - - - -	89
Classification of labours - - - - -	89
Stages of labour - - - - -	91
General observations on parturition - - - - -	91
Examination per vaginam - - - - -	92
Symptoms <i>preceding</i> labour - - - - -	94
Symptoms <i>accompanying</i> labour - - - - -	95
NATURAL LABOUR - - - - -	98
Management of the placenta - - - - -	107
PRETERNATURAL LABOURS - - - - -	112
Remarks on the Secale Cornutum - - - - -	117
On the use of galvanism in labour - - - - -	120
Rigidity of the os uteri, &c. - - - - -	122
Œdema of cervix uteri - - - - -	123
Descent of os uteri before the head - - - - -	124
Malposition of the uterus - - - - -	124
Retardation of labour from mental emotion - - - - -	125
Embarrassment of labour from hysteria - - - - -	125
Distention of the bladder - - - - -	126
Preternatural shortness of the funis - - - - -	126
Pendulous abdomen - - - - -	126
Archylosis of the os coccygis - - - - -	127
Unfavourable position of the presenting part - - - - -	127
Want of room in the pelvis - - - - -	127
Indications for manual interference - - - - -	130
Classification and description of obstetric instruments - - - - -	131

CONTENTS.

vii

	Page
Short forceps - - - - -	- 134
Directions for applying the short forceps - - - - -	- 140
Of the vectis - - - - -	- 145
<i>Vertex</i> presentations - - - - -	- 147
<i>Face</i> presentations - - - - -	- 153
Presentation of the <i>forehead</i> - - - - -	- 156
----- <i>ear</i> - - - - -	- 157
Long forceps - - - - -	- 159
Operation of cephalotomia - - - - -	- 163
Craniotomy forceps - - - - -	- 165
Crotchet - - - - -	- 168
Blunt hook - - - - -	- 169
Perforating scissors - - - - -	- 170
Evidences of the death of the child <i>in utero</i> - - - - -	- 172
Application of the perforator - - - - -	- 176
Application of the crotchet - - - - -	- 177
Application of the craniotomy forceps - - - - -	- 178
Cæsarian operation - - - - -	- 179
Division of the symphysis pubis - - - - -	- 182
Of the production of labour prematurely - - - - -	- 182
PRETERNATURAL LABOURS, or those in which any other part than the head presents; such as the <i>feet, breech, hand,</i> <i>funis, &c.</i> - - - - -	- 185
Application of the forceps in a <i>breech</i> case - - - - -	- 189
Operation of turning - - - - -	- 191
Mode of extracting the head when detached from the body, and left <i>in utero</i> - - - - -	- 199
Presentation of the <i>hand</i> - - - - -	- 199
Management of those cases in which the hand comes down by the side of the head - - - - -	- 199
Presentation of the <i>elbow</i> - - - - -	- 200
Of (what is termed) the Spontaneous Evolution of the Fœtus - - - - -	- 200
Presentation of the <i>funis</i> - - - - -	- 201
Labours in which there is a <i>plurality of children</i> - - - - -	- 205
Superfœtation - - - - -	- 211

	Page
Extra uterine pregnancies,—abdominal, tubal, and ovarian - - - - -	212
Monsters,—defective, redundant, malformed, or misplaced, and hybrid - - - - -	214
Hydatids and Moles - - - - -	215
Labours attended by <i>convulsions</i> - - - - -	218
Labours attended with <i>uterine hæmorrhage</i> - - - - -	226
Labours attended with <i>laceration of the uterus or vagina</i> - - - - -	248
On the use of chloroform in labour - - - - -	253
<i>Dietetic and medical treatment of the mother and child subsequently to delivery</i> - - - - -	258
Lochia - - - - -	274
General observations on puerperal diseases - - - - -	276
Fatal syncope - - - - -	276
Inversion of the uterus - - - - -	278
Puerperal inflammation - - - - -	280
Puerperal fever - - - - -	297
Ephemera, or Weed - - - - -	300
Miliary Fever - - - - -	300
Phlegmasia dolens puerperarum, or uterine phlebitis - - - - -	301
Puerperal insanity - - - - -	304
Laceration of the perineum - - - - -	308
Effusion of blood within the labia - - - - -	310
Sloughing of the vagina and contiguous parts - - - - -	310
Vesico-vaginal fistula - - - - -	311
Recto-vaginal fistula - - - - -	312
Retention of urine - - - - -	312
Inflammation of the breasts - - - - -	313
Causes of suspended animation at birth, and the treatment of <i>still-born</i> children - - - - -	316

OUTLINES
OF
M I D W I F E R Y.

IN an elementary work on the Principles and Practice of Midwifery, the obstetric ANATOMY OF THE PELVIS seems to claim primary attention; because the laws and associations which govern the respective organs of the body cannot be accurately known without an acquaintance with their position and structure; and diseased action can never be understood without a previous knowledge of healthy function.

The PELVIS is that assemblage of bones which is united to the trunk by the last lumbar vertebra, and to the inferior extremities by the articulation of the thigh bones with the ossa innominata.

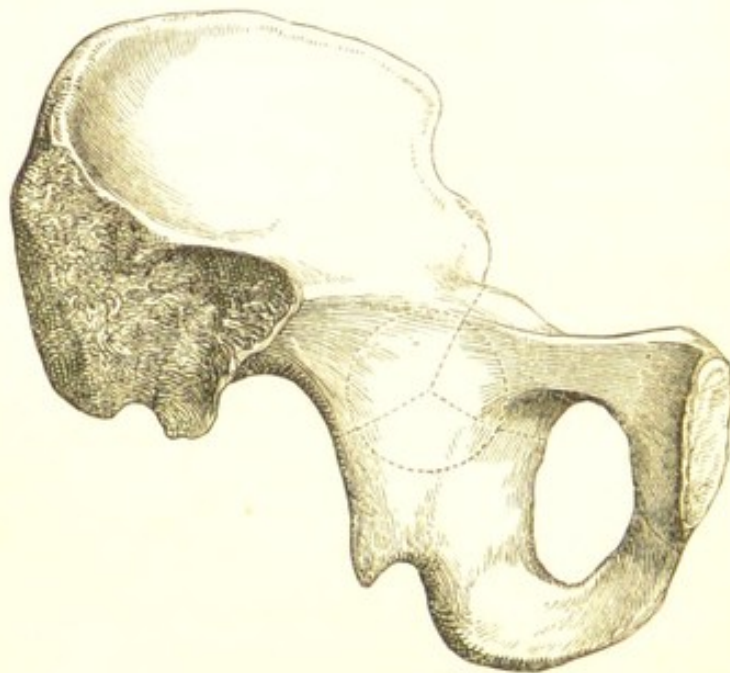
The *adult* pelvis consists of *four* bones, viz., the *two* Ossa Innominata, the Os Sacrum, and the Os Coccygis.

The OSSA INNOMINATA* form the sides and front

* These bones have the name of *Ossa Innominata*, or nameless bones, because they are thought not to resemble any known object.

of the pelvis. At birth, and for some time afterwards, each os innominatum consists of *three* distinct bones, named Ilium, Ischium, and Pubis; and, although they do not continue separate in the adult, yet the previous division is nominally retained.

[The following diagram-sketch shows the original separation of the os innominatum into three parts.



The circular dotted line indicates that portion of its internal surface which corresponds to the acetabulum or cotyloid cavity. This locality requires special attention, as it affords a useful land-mark in determining the various presentations of the foetal head. — J. M. W.]

The ILIUM*, or haunch bone, forms the superior and largest portion of the os innominatum. The

* So called because it is the boundary of the flanks "*ilia*."

upper border of this bone is called the *crista* or crest, having an external and internal *labium*. It gives origin to the oblique and transverse muscles of the abdomen. The anterior border has two processes: the anterior superior spinous process, from which the sartorius and tensor vaginae femoris muscles originate; and the anterior inferior spinous process, about an inch below the former, from which arises the rectus femoris. The outer part of the ilium bears the name of *dorsum*, and the inner of *venter*. From the former the glutei muscles originate, and from the latter the iliacus internus. Near to that part of the bone which joins the sacrum are the two posterior spinous processes.

The ridge of bone which forms the front and lateral portions of the brim of the pelvis is termed *linea innominata*, or *linea ileo-pectinea*.

[There are several points of obstetric interest connected with the *ilium*. The expanded portion or *ala* of the female is broader than that of the male; but its width must not be taken as an invariable criterion of the capacity of the *true pelvis*. Cases occasionally occur in which great breadth of hip is associated with considerable narrowness of the pelvic cavity.

If the *alæ* be too much expanded, the gravid uterus is insufficiently supported, and an increase of its natural obliquity is the result. If, on the other hand, they be too perpendicular, an opposite condition ensues, and the womb is then apt, if the pelvis be unusually capacious, to press injuriously on the subjacent viscera. — J. M. W.]

The ISCHIUM*, or hip bone, forms the inferior part of the os innominatum. The narrow and lowest part, on which we sit, is called its *tuberosity*, and is covered with a thick defensive cartilage. That portion of this bone which ascends obliquely forwards and inwards to join the ramus of the pubis is named its *ramus*. The spinous process at the inferior and posterior part gives origin to the internal sacro-ischiatic ligament. Just above this process is the great *ischiatric notch*.

[The SPINES of the *ischia* have an angular form, and project backwards and inwards. When too much bent inwards, they may offer a serious impediment to the passage of the child's head. The *tuberosities* of the *ischia* may also become an occasional source of obstruction, either from thickening of the bone, the result of the constant action of vigorous muscles; or to an opposite condition, in which these parts are imperfectly developed and compressed together, in consequence of a morbid softening of the osseous structure. — J. M. W.]

The PUBIS†, or share bone, is the anterior and smallest part of the os innominatum, and is nominally divided into head or tubercle, body, and ramus. At the termination of the body the surface is rough, and united to the opposite os pubis by a thick cartilage and ligamentous fibres, constituting the *symphysis*

* The *Ischium* is so called from $\iota\sigma\chi\upsilon\omega$, to support.

† This bone is termed *pubis*, from the Latin word *pubis*, denoting the downy hair of incipient puberty.

pubis. The arch formed by the rami of the ossa pubis is called the arch of the pubis.

Between the pubis and ischium is an oval opening called *foramen ovale* or *thyroideum*, which is nearly closed by the *obturator ligament*.

Viewing the OSSA INNOMINATA *obstetrically*, there are several things deserving particular attention, such as the *concave surfaces of the ilia*, which are so spread outwards as to permit the uterus freely to expand during gestation; the *inclined planes of the inferior parts of the ischia* which slope obliquely towards the pubis, disposing the vertex, in its descent during parturition, to move forwards towards the arch of the pubis; and the posterior surfaces of the ossa pubis which incline downwards and backwards, so as to favour the sliding of the head of the child into the pelvis.

The OS SACRUM* forms the posterior part of the pelvis, and the basis of the vertebral column. It is concave before, convex behind, and is usually perforated by four pair of holes for the transmission of the sacral nerves. The upper and projecting part is called its *promontory*. At birth this bone is composed of five or six portions, which, having considerable resemblance to the vertebræ of the spine, have been styled false vertebræ, and which are united by intervening fibro-cartilages; but in the adult these become absorbed, and the false vertebræ are connected by bony union. Still, however,

* From *Sacer*, it being deemed by the ancients a sacred bone, and was offered by them in sacrifices.

there remain vestiges of the oblique, transverse, and spinous processes.

[The internal smooth concavity of the sacrum is termed the *hollow of the sacrum*. This curve is full of interest to the obstetric practitioner. If it exceed or fall short of the normal proportion, it will, in either instance, offer an impediment to the passage of the child's head.—J. M. W.]

The Os COCCYGIS* is a little bone at the apex of the sacrum, to which it is united by an intervening fibro-cartilage, and by a capsular ligament with synovial membrane. It consists of three or four irregularly shaped triangular pieces, which usually admit of considerable motion during parturition; which process is interfered with when bony union has taken place between them and the sacrum. The os coccygis affords support to the pelvic viscera.

JUNCTION OF THESE BONES.

The bones of the pelvis are united by various ligaments, and, there being no motion, the union is termed *synarthrosis*.

The *sacrum* and *ilia* are joined by two plates of a white dense and elastic cartilage, and therefore the union is termed *symphysis*. Firm union is also given by numerous ligamentous bands, usually called the *internal and external sacro-iliac* ligaments.

The *sacrum* and *ischia* are united by the *internal*

* The *Os Coccygis* is thought to resemble the bill of a cuckoo, and therefore has derived its name from ΚΟΚΚΥΞ.

and *external sacro-ischiatic* ligaments, the former being attached to the spinous process of the ischium, and the latter to the tuberosity of that bone. The *ossa innominata* are firmly bound together at the symphysis pubis, not only by a strong elastic fibro-cartilage interposed between the articulating surfaces, but also by powerful ligamentous fibres running in all directions.

The *os coccygis* and *sacrum* are united by an intervening fibro-cartilage, and the sacro-coccygeal ligament.

[It was formerly supposed that the joints of the pelvis generally separated to a certain extent during parturition. This notion is erroneous: it however occasionally, but very rarely happens, that the ligaments become relaxed during and after pregnancy. This affection is exceedingly difficult of removal, the patient often requiring to be confined to her bed for a very lengthened period. — J. M. W.]

The *uses* of the pelvis are, to support the vertebral column and upper parts of the body, and to give lodgment to a portion of the small intestines, the urinary bladder, rectum, and internal organs of generation.

DIMENSIONS OF THE ADULT FEMALE PELVIS.

Three parts must be noticed, and their dimensions accurately ascertained: —

The *Brim*, or superior aperture;

The *Cavity*; and

The *Outlet*, or inferior aperture.

The BRIM is bounded posteriorly by the promontory of the sacrum, and laterally and anteriorly by the linea innominata.

Its *shortest diameter* is from the symphysis pubis to the promontory of the sacrum, and, without the soft parts, measures four inches and a half; with the soft parts, three inches and five-eighths. Its *lateral or middle diameter*, described by a line drawn from one linea innominata to the other, between their most distant opposite points, is five inches and a quarter without the soft parts; or four inches, if they remain as in the living subject, with which we have principally to do. The *longest diameter* is found by a line drawn from either sacro-iliac symphysis to the opposite acetabulum, which, with the soft parts attached to the pelvis, measures four inches and five-eighths.

The CAVITY of the pelvis is that part which is between the superior and inferior apertures, and contains the pelvic viscera.

All its diameters are nearly the same, being rather longer between the spinous processes of the ischia than from before backwards.

Obstetrically, it is important to be familiar with the *depth* of the cavity at different points.

Posteriorly, it is about *six inches* deep;

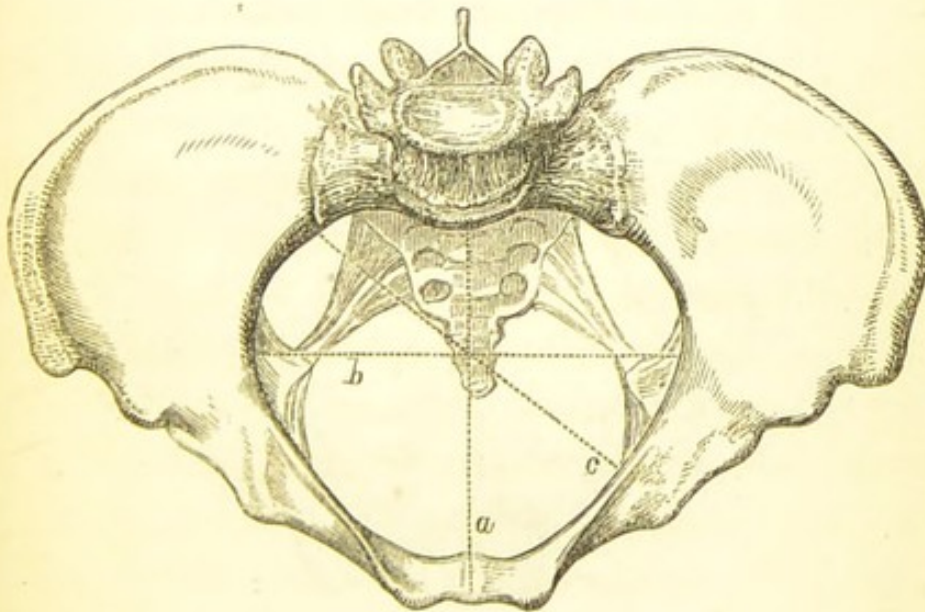
Laterally, *four inches*;

Anteriorly, *two inches*;

The OUTLET of the pelvis, when viewed with the sacro-ischiatic ligaments attached to it, assumes a quadrangular shape.

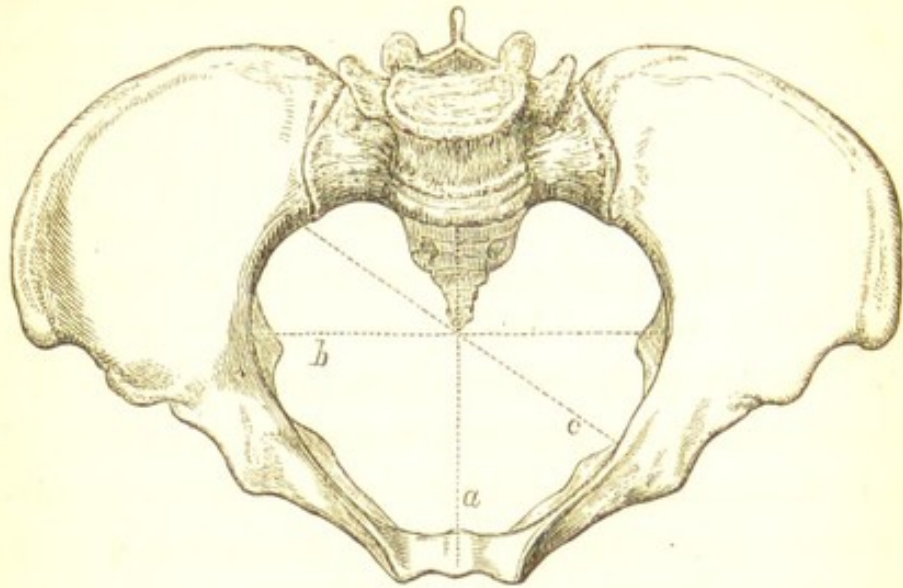
Its *shortest diameter* is from one tuberosity of the ischium to the other, and is about *four inches*, the soft parts remaining; its *longest diameter* is from the apex of the os coccygis to the arch of the pubes, and measures *five inches*, including one inch which it acquires from the mobility of the coccygeal bone, permitting it to recede in most women, as the head of the child passes, during its extrusion. Unless these dimensions be borne in mind, malposition of the head cannot be rectified, nor can any correct opinion of the progress or duration of labour be given.

[The reader need scarcely be reminded, that the above measurements are not absolutely, but only approximatively correct, and that authors vary in their estimates. The following diagrams will serve to illustrate the various pelvic diameters.



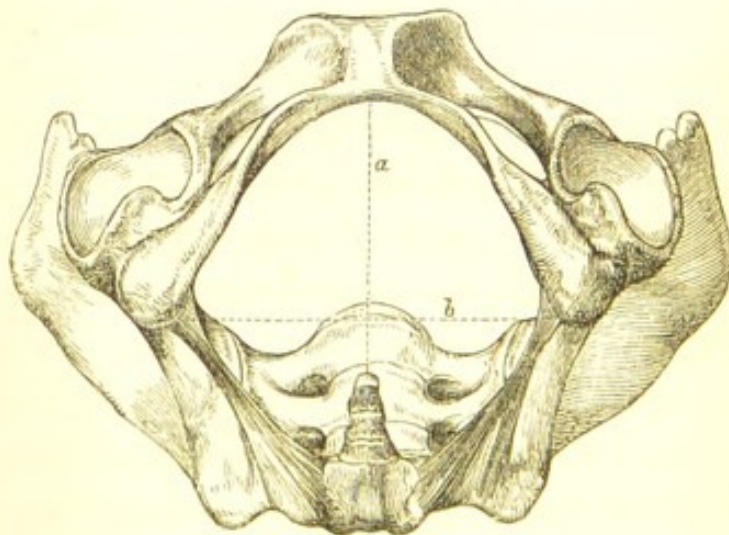
DIAMETERS OF THE BRIM.

- a.* Antero-posterior or conjugate, 4 inches. *b.* Lateral or transverse, 5 inches.
c. Oblique, $4\frac{1}{2}$ inches.



DIAMETER OF THE CAVITY.

a. Antero-posterior, $4\frac{1}{2}$ inches. *b.* Transverse, $4\frac{3}{4}$ inches. *c.* Oblique, 5 inches.



DIAMETER OF THE OUTLET.

a. Antero-posterior, 4 to 5 inches. *b.* Transverse, 4 inches.

The estimates given vary slightly from those in the original text. With respect to the brim, I consider that the *transverse*, and not the *oblique*, is the longest diameter; and that, with regard to the *cavity*, the converse is the case. — J. M. W.]

AXIS OF THE DIFFERENT PARTS OF THE PELVIS.

Without a correct knowledge of the axis of the *brim*, *cavity*, and *outlet* of the pelvis, neither manual nor instrumental assistance can be advantageously afforded. The axis of the vertebral column is perpendicular to the horizon. The axis of the *brim* of the pelvis is represented by a straight line drawn from the umbilicus to the apex of the os coccygis; the axis of the *cavity*, by a female catheter of the usual curvature, having one extremity fixed about the centre of the superior aperture of the pelvis, and the other at the centre of the inferior aperture, in such manner that the convexity of the curve of the instrument shall be backwards; and the axis of the *outlet*, by an imaginary right line passing through the centre of the orifice of the vagina, and falling upon the centre of the promontory of the sacrum, but varying with the movements of the os coccygis.

[A consideration of the directions of the two *axes*, will indicate the position most favourable for the expulsion of the child. The patient should lie on her side, with the back curved and the thighs flexed. By this means the axes approximate and the labour is facilitated. — J. M. W.]

In all manual operations, the direction of the axis of the pelvis at its different parts must be strictly regarded.

Deformity and *distortion* of the pelvis, as they relate to parturition, will be practically considered under the head of *protracted labour*.

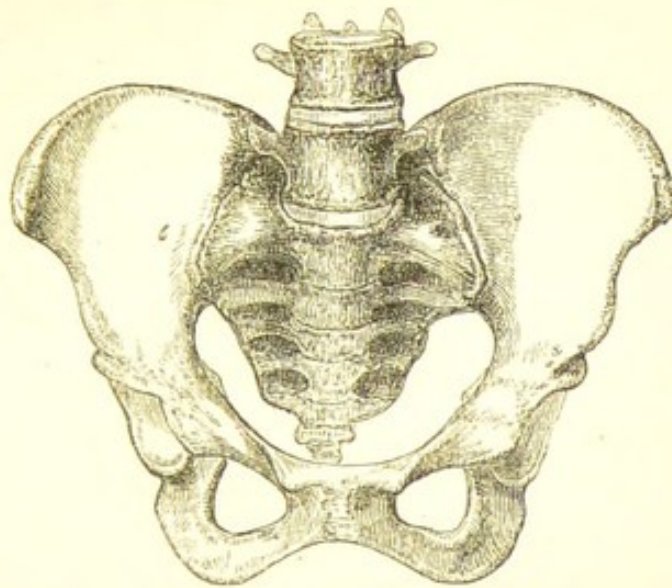
[As the subject of distortion is but briefly alluded to in a subsequent part of the work, I have deemed it useful, before concluding the description of the female pelvis, to introduce a section on deformed pelves.

DEFORMED PELVES.

The *pelvis* may be distorted by disease, and thus present serious obstructions to the delivery of the child. It may also, by mere deviation from the normal size in a healthy condition of the osseous structure, become a source of embarrassment during labour: these varieties ought not, strictly speaking, to be included in the same class as those abnormalities which are the result of diseased action; it might, however, confuse the student to subdivide the subject unnecessarily, and the usual course of elementary works has been to arrange all the various forms under one head.

Excessive amplitude. — If the pelvis be too capacious, there is danger of hæmorrhage or inversion of the uterus, from too rapid expulsion of the child.

Undeveloped pelvis. — The pelvis may acquire the adult size, but be incapacitated for delivery in consequence of having retained its *girlish* proportions.

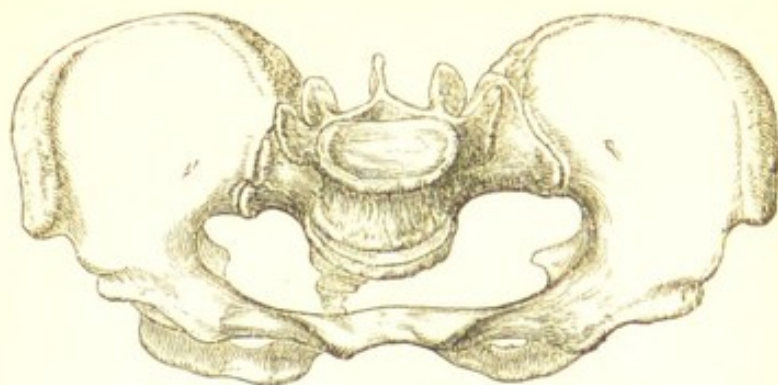


UNDEVELOPED PELVIS.

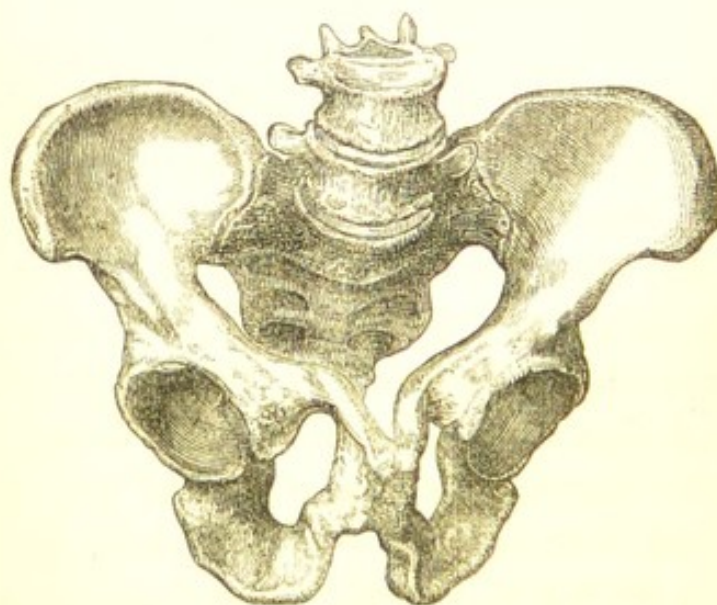
As the pelvis is not always fully developed at puberty, the impropriety of early marriages is sufficiently obvious.

Masculine Pelvis. — This is a frequent cause of protracted labour, and is commonly noticed in robust women who are accustomed to hard labour. The constant action of powerful muscles increases the thickness of the osseous structure, and thus gives a masculine form to the bones of the pelvis.

Ovate and Cordate Pelvis. — The former deformity is produced by *rickets*, a disease of infancy; the latter distortion is occasioned by *mollities ossium*, a rare affection of adult life, which reduces the bones to the softest possible consistency, and generally pursues a fatal course.



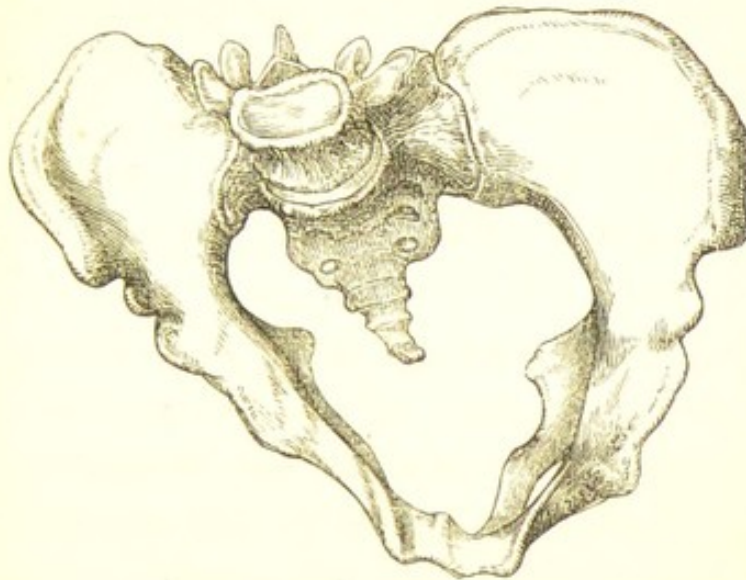
OVATE PELVIS.



CORDATE PELVIS.

Obliquely Ovate Pelvis.—This deformity appears to derive its origin from an arrest of development in

early life; one side of the pelvis becoming developed, whilst the other retains its infantile proportions.



OBLIQUELY OVATE PELVIS.

Mensuration of the Pelvis. — The only practicable mode of measurement is by means of the fingers or hand. If, when one or two fingers be passed into the vagina, the promontory of the sacrum can be felt, it is a sign that the conjugate diameter is preternaturally diminished. In a similar manner, the oblique and coccy-pubic diameters may be determined. A notion of the size of the pelvis may also to a certain extent be formed by examining the shape of the bones *externally*, by means of the hand. — J. M. W.]

DISTINCTIONS BETWEEN THE ADULT MALE AND
FEMALE PELVIS.

First, the long diameter of the brim in the *female* is from side to side, or rather from one sacro-iliac symphysis to the opposite acetabulum, but in the *male* it is from before backwards; *secondly*, the ilia are more distant; *thirdly*, the tuberosities of the ischia are more remote from each other; *fourthly*, the acetabula are smaller, and much further separated; *fifthly*, the arch of the pubis is of greater span, and this is favourable to the emergence of the child's head at birth; *sixthly*, the sacrum is less curved; and, *seventhly*, the whole pelvis is less massive, but more capacious and shallower in the female, than in the male.

All these points of difference are so many evidences of wise and beneficent design, and are admirably adapted to the functions and duties of the two sexes.

DESCRIPTION AND DIMENSIONS OF THE FETAL
HEAD.

The shape and admeasurements of the *fœtal head* must be viewed in connection with the shape and admeasurements of the adult female pelvis.

The passage of the head through the pelvis secures the expulsion of the trunk and extremities, because the cranium is proportionably much larger than the other parts of the body of the fœtus.

At birth, the *os frontis* consists of *two* distinct bones; the *os occipitis*, of *four*; and the *ossa temporalia* are also divided into *four* bones: so that these, with the *TWO ossa parietalia*, present us with *twelve* bones; and these are united by as many sutures*, which admit of motion; so that, by pressure during parturition, the bones approximate and overlay one another, and materially lessen the size of the head.

It is highly necessary to be familiar with three of these sutures: the *sagittal*, which runs in a straight line from the nose to the occipital bone; the *coronal*, which connects the parietal and frontal bones, running from ear to ear; and the *lambdoidal* suture, which unites the occipital to the parietal bones.

The bones of the fœtal head are generally defectively ossified at birth, and, at the front part of the cranium, a quadrangular space intervenes between the frontal and parietal bones, called the *anterior fontanelle*.† At the back of the head there is a small triangular space, which is termed the *posterior fontanelle*.

An acquaintance with the course of the sutures

* The term *suture* is not correctly employed here, because the bones are not united in the fœtus by dentiform margins, as in the adult, but are connected by the dura mater and pericranium; so that, scientifically speaking, the term *syneurosis* should be substituted for *suture*. The latter is retained, because most writers and teachers apply it to this form of union.

† The term *fontanelle* was given from the pulsation of the brain, which is seen at these points, resembling the bubbling motion of the sand in a spring of water.

and with the situation and shape of the fontanelles, is of great importance, as it is highly expedient to ascertain, during parturition, not only the *presentation*, but the relative *position* of the presenting part to the circumference of the pelvis; and it is by such knowledge we are enabled to detect malposition of the head, which often admits of being so rectified as to secure a favourable correspondence between the diameters of the head and pelvis.

The *dimensions* of the fœtal head cannot be correctly given, because during parturition it undergoes so much and such varied compression and alteration in bulk and shape.

Exclusive of the alteration of its shape by pressure, the following diameters may be noticed:—

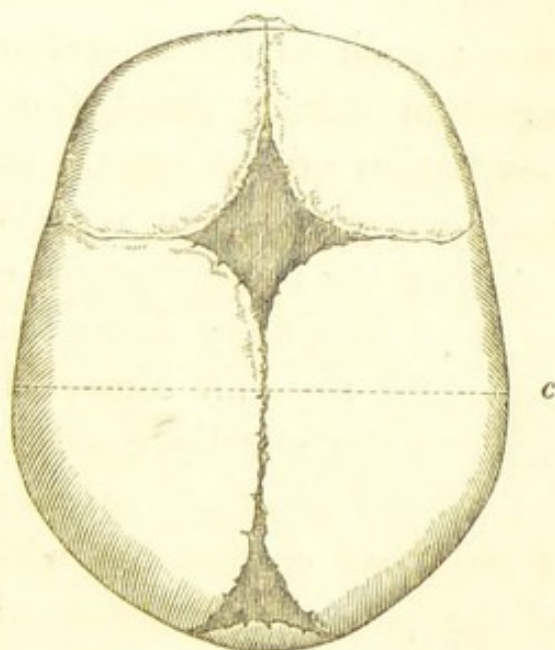
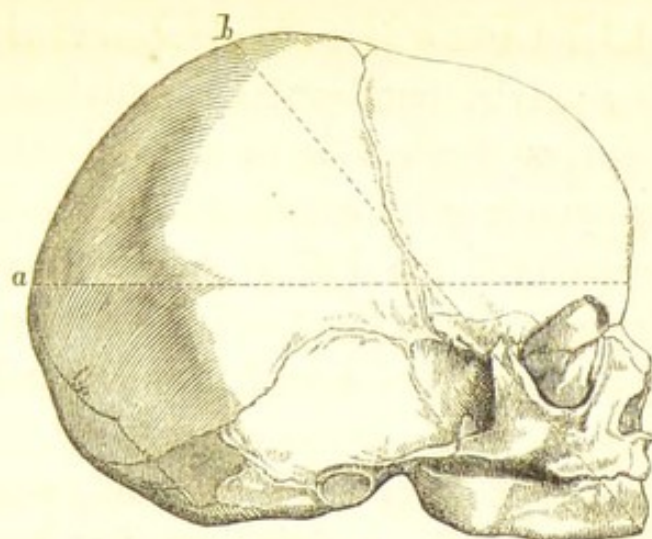
The long diameter, from the occiput to the root of the nose, $4\frac{1}{2}$ inches.

The transverse diameter from one parietal protuberance to the other, $3\frac{1}{2}$ inches.

The perpendicular diameter from the vertex to the foramen-magnum also, $3\frac{1}{2}$ inches.

The great diameter from the occiput to the extremity of the chin, 5 inches.

[Various authors have enumerated as many as nine diameters; it is, however, quite unnecessary to burden the memory with more than three:— The long diameter or occipito-frontal, the mento-bregmatic, and the bi-parietal or transverse diameter. These dimensions will be readily understood by reference to the annexed diagram sketches.



a. Long diameter, or occipito-frontal. *b.* Mento-bregmatic.
c. Bi-parietal or transverse diameter.

The mento-bregmatic, which extends from the chin to the vertex, measures about $5\frac{1}{2}$ inches, but during labour it becomes elongated to the extent of $6\frac{1}{2}$ or 7 inches. — J. M. W.]

The foetal head never presents with either its long or great diameter so as to correspond with any of those of the pelvis, but by the gradual action of the uterus it enters the pelvis in an oblique direction, thus never opposing its extreme width or length to the pelvic cavity. No difficulty from this cause can be experienced by the foetal head, on its entrance in the pelvis, provided it be well formed, and the presentation and position of the cranium be favourable.

The *shape* of a foetal head is ovoid, and the average size of the cranium of the males at birth exceeds that of the females by about a thirtieth part.

Several important suggestions force themselves on our notice here; such as the alteration in figure of the foetal cranium during parturition; the almost uniform presentation of the vertex, in consequence of the occiput being near the vertebral column of the foetus, so that the uterine power exerted on the body of the child inevitably depresses the front of the head, by which the chin comes in contact with the sternum; and the equally constant and favourable position of the cranium, so that the longest diameter of the head corresponds with the longest diameter of the pelvis, and *vice versâ*. These are so many evidences of original and benevolent contrivance.

STRUCTURE AND FUNCTIONS OF THE ORGANS OF GENERATION, AND THEIR APPENDAGES.

The *Mons Veneris* is the soft and prominent covering of the symphysis pubis, formed by the common

integuments, which are elevated by fat, and at the age of puberty covered with hair; below this are the *labia pudendi*, which are two large soft lips, formed by a duplicature of the common integuments, having interposed adipose substance. Their internal surface is smooth, and studded with numerous sebaceous follicles. The labia commence at the symphysis pubis, and are continued downwards and backwards to the *perineum*, which is the portion of common integuments, about an inch and a half in length, intervening between the termination of the labia and the anus; the edge of the perineum, which unites the labia pudendi at their lower extremities, bears the name of *frænum labiorum*, or, in French, *fourchette*. The anterior edge of the perineum is called the commissure, and on separating the labia is seen a sulcus between their inferior extremities, called *fossa navicularis*. The first thing to be noticed between their superior extremities is the *clitoris*, which is a little organ of extreme sensibility, and somewhat analogous in its shape and structure to the penis. Although it has neither urethra, nor corpus spongiosum, it has a glans covered with a prepuce, and there are also corpora cavernosa, which take their origin from the rami of the ischia.

Continuous with the prepuce of the clitoris are the *nymphæ*, or inner and smaller labia, composed of folds of the common integuments, having interposed between them a spongy substance, principally composed of ramifications of the pudic artery.

The *nymphæ* gradually enlarge as they pass down-

wards, and when they have reached the upper part of the orificium vaginæ they disappear. Their inner surface is abundantly studded with sebaceous glands. The principal uses of the nymphæ appear to be, to admit of greater dilatation of the parts during parturition, and to direct the stream of urine.

On separating the nymphæ, the *orificium urethræ*, or *meatus urinarius*, is seen, having an elevation surrounding its lower segment, and situated about an inch below the clitoris, and the third of an inch above the entrance into the vagina.

[Between the *meatus urinarius* and *symphysis pubis* a smooth furrow is seen. This part is about an inch long, and is termed the *vestibulum*. It affords a useful guide to the finger in the operation for introducing the catheter. — J. M. W.]

The female *urethra* does not exceed two inches in length, having a much larger calibre than the same canal in men. Its inner surface is a continuation of the mucous lining of the bladder, and is liberally supplied with lacunæ or follicular glands, which secrete mucus to lubricate the parts, and defend them from the irritation that might otherwise be produced by the urine. One large lacuna is found on each side of the orifice. The course taken by the urethra is that of a straight line along the upper part of the vagina, where it may be felt as a cord; but, on reaching the inner edge of the symphysis pubis, it becomes curved upwards.

[The term *Vulva* is often used as a general designation for the whole of the external organs of gene-

ration, and consequently comprises parts covered by cuticle as well as by mucous membrane. —J. M. W.]

DIRECTIONS FOR INTRODUCING THE CATHETER.

This operation, simple as it may appear, is one which is too frequently very awkwardly performed. This is in some degree attributable to the existing circumstances which demand the use of this instrument. From the connection of the bladder and uterus, the former inevitably rises with the latter during the progress of utero-gestation, and often becomes thrown considerably forward; and the same thing occurs in women having distorted pelves, or pendulous bellies, independent of pregnancy; so that the urethra becomes elongated and preternaturally curved. It is also very much thrown out of its natural course in procidentia and in *inversio uteri*.

That position is best, both for the patient and medical man, which combines delicacy with convenience; and consequently, without any exposure of her person, the woman may lie on her back, with her knees elevated and separated. The operator, standing on her right side, with the catheter previously oiled in his right hand, is to carry his left hand over the right thigh, and with the index finger to separate the labia and nymphæ, and to discover the clitoris. The catheter, having a stop-cock at its end, and held in the right hand of the practitioner, is now to be carried under the patient's thigh to the *orificium urethræ*, which may generally be easily found by

allowing the extremity of the instrument to follow the index-finger of the left hand downwards, about an inch below the clitoris, till it arrives at a semi-circular prominence, about a third of an inch before reaching the upper edge of the orificium vaginae. It then usually slips into the urethra; but sometimes into one of the large lacunæ found at its entrance.

[As the *clitoris* possesses great erotic sensibility, it ought not and need not be manipulated in the manner recommended by the majority of writers on midwifery. Perhaps the best mode of introducing the catheter is to place the patient on her left side, with the knees drawn up. In this position the meatus can be very readily discovered, and the bed is not so apt to be soiled with the urine. — J. M. W.]

Under the circumstances already alluded to, and in some cases of protracted labour, such is the elongation and distortion of the canal that a flexible male catheter is requisite.

And here it may be noticed, that such is the alteration in the relative situation of parts in proclivitas and inversio uteri, that, although the catheter must be introduced and carried forwards to the pubes with the point directed in the usual course, yet, when it has reached the symphysis, its handle must be so elevated towards the abdomen that the extremity of the instrument should be directed towards the knees.

Under other circumstances, such as the bladder being over the pubes, when the abdomen is pendulous, the handle must be as much depressed immediately after the point has cleared the symphysis pubis.

Female catheters are usually too little curved. Previously to being used, the stilette should be withdrawn, and a moistened bladder tied on the extremity of its handle, into which the urine may flow after the introduction of the catheter. This plan prevents the bed being wetted, which is an almost unavoidable circumstance as the operation is commonly performed.

VAGINA.

The orifice of the vagina is found about a third of an inch below the meatus urinarius.

The vagina is the canal which conducts to the uterus, and terminates just above the mouth of that organ.

It is composed of elastic substance, with a constrictor muscle at its entrance. It is covered posteriorly by a reflexion of the peritoneum, and is connected with the contiguous parts by condensed cellular texture.

[Three coats enter into the formation of the vagina—an external or cellular, a middle or muscular, and an inner or mucous. The latter membrane is continuous with that of the uterus, and will be noticed in conjunction with it, as the two membranes cannot be conveniently studied apart. — J. M. W.]

The vagina is plentifully supplied with arteries, veins, nerves, and absorbents.

Its course is somewhat curved, and it is united at an obtuse angle with the uterus. It is commonly

about four inches in length, and two in diameter, during virginity, being narrower at its commencement and termination than in the middle. Its capacity becomes much increased in women who have borne children.

Its entrance is bounded by a sphincter muscle, and by a congeries of blood-vessels, arranged like net-work, and termed *plexus reteformis*.

At the orifice of the vagina are several rings or folds of the vagina, which, from their supposed resemblance to myrtle leaves; are called *caruncula myrtiformes*. They are not, as is generally affirmed, the remains of the ruptured hymen, for they may be found when it remains entire.

Just at the entrance of the *orificium vaginæ* is the *hymen*, a thin membrane, by which it is partially closed. In many girls it is wanting; and when existent, often lies folded loosely in wrinkles, until just before puberty, when it becomes developed, and expands. It differs very much in form in different women, but is generally crescent-shaped, dwindling to nothing at its cornua, being attached at its circumference, but having an opening at its centre for the escape of the menstrual secretion.

Sometimes it is *cribrated*; at other times altogether *imperforated*.

UTERUS.

This organ, which is found between the female bladder and rectum, is destined for the reception of the foetus, which it usually retains until, at rather

more than *thirty-nine weeks* from conception, it has become a perfect child.

The unimpregnated uterus is in shape not unlike a flattened pear; but, when impregnated, it assumes an oval form, and at the full period of gestation resembles an oblong gourd.

This organ is divided into *fundus*, *corpus*, *cervix*, and *os*.

The *fundus* is that portion which is above the insertion of the fallopian tubes.

The *corpus*, or body, is the narrow part which is between the fundus and neck of the womb.

The *cervix*, or neck, is the narrow portion below the body; and the *os*, mouth, or *os tincæ* (from its supposed resemblance to the mouth of a tench), or *os internum*, is the extremity of the cervix, divided by a transverse fissure, the two edges of which are called *labia*.

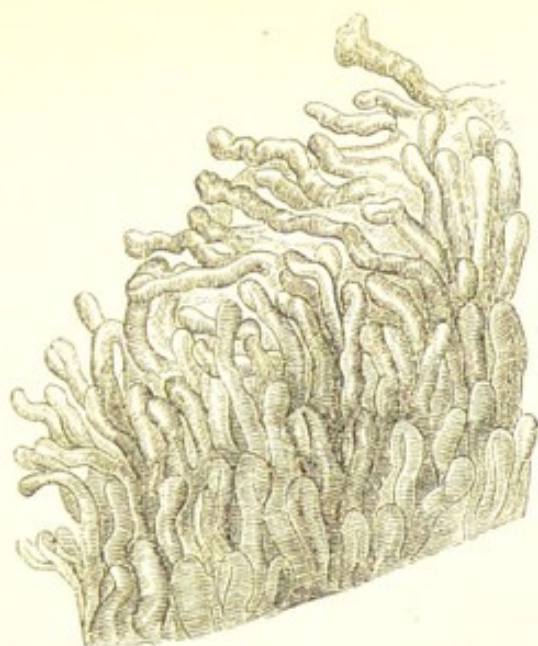
In *length*, the unimpregnated uterus is less than three inches; in *breadth*, less than two inches at the fundus, and one inch at the cervix; and in *thickness*, the parietes are about a third of an inch. These admeasurements are liable to considerable variations.

The *cavity* of the uterus is triangular, and is lined by a continuation of the smooth and highly vascular villous covering of the vagina. This lining is folded at the cervix uteri, where the duplicatures are beautifully arranged in an arborescent form, and on this account termed *arbor vitæ*, or *arbor Morgagni*. Between these duplicatures there are numerous follicular glands.

[Recent investigations, by Dr. Tyler Smith, Dr. A. H. Hassall, and Dr. Hanfield Jones, have developed some important facts connected with the structure and functions of the mucous membrane of the uterus and vagina. These discoveries are likely to lead to a more rational treatment of many of the affections to which these organs are liable. It has been shown that the mucous membrane of the os uteri and external part of the cervix differs, in several essential points, from that which lines the canal of the cervix. The former is covered with *tessellated* or *squamous epithelium*; and when this is removed by maceration or disease, numerous villi, each containing a looped blood-vessel, become visible. Follicles have not yet been detected by the microscope, although they have generally been supposed to be abundant in this part of the mucous membrane. The other division, or that portion of the membrane which lines the cervical canal, contains an abundance of mucous follicles and numerous rugæ. The villi are covered with *cylinder-epithelium*, and between their blood-vessels and basement membrane, oil globules and granular cells are abundant.

Dr. Tyler Smith compares the lining of the cervix to an open gland, and considers it to be the chief seat of leucorrhœa.

The mucous lining of the vagina, as well as that of the os uteri, appears to bear a closer analogy to the skin than other mucous membranes. In proci-dentia uteri, the epithelium, from exposure to the air, acquires a density equal to that of the epidermis.



VILLI OF OS UTERI. (After Hassall.)



RUGÆ OF CERVICAL CANAL. (After Hassall.)

Mr. Whitehead of Manchester was the first to point out the fact that the mucus of the vagina is *acid*, whilst that of the cervical canal is *alkaline*. The mucus within the cervix is supposed by Dr. Tyler Smith to owe its transparency and viscosity to the alkali which it contains, and the curdy appearance of the vaginal mucus to the influence of an acid. These deductions are extremely probable, as similar effects can be produced by artificially adding alkalis or acids to the mucous secretions of these parts.

In its natural state, the cervical canal is plugged up with thick mucus, which is regularly removed at every monthly period, and secreted afresh at the termination of the catamenial flow. This viscid plug closes the os uteri during the period of gestation.

Although the cervical canal is a common seat of leucorrhœa, this is not always the case. The discharge may come from the exterior of the os uteri and upper part of the vaginal canal. In the latter form of leucorrhœa, the discharge abounds in epithelium, and it is in this form of the affection that injections are supposed to be most beneficial.

It is possible that when the alkaline secretion of the cervical canal is in excess, it may irritate and corrode the mucous covering of the os uteri, and thus give rise to secondary inflammation. — J. M. W.]

Structure. — Nerves, arteries, veins, absorbents, and muscular fibres, all connected by dense cellular structure, enter into the composition of the uterus. Its nerves are derived from the meso-colic plexus, the sacral and great sciatic, which, by their connection

with the intercostal, establish sympathy with various parts of the body.

[It is important to bear in mind that the uterus is supplied by two classes of nerves,—the *excito-motor*, derived from the cerebro-spinal system; and the *ganglionic*, from the great sympathetic nerve.—J. M. W.]

Its *arteries* are four: two *spermatic*, which are distributed to the fundus uteri and the appendages of the uterus; and two *hypogastric*, which supply the cervix and corpus. These vessels freely anastomose with each other.

Its *veins* bear the same name as the arteries. The right spermatic veins terminate in the vena cava, and the left is the renal. The hypogastric empty themselves into the external hemorrhoidal and internal iliac veins.

Its *absorbents* are very numerous, though small. In the gravid uterus, their diameter becomes much augmented, and they may be distinctly seen on the surface, and in the substance of the organ. They pass into the iliac glands.

The *muscular fibres* run in all directions, taking an orbicular, transverse, and reticulated course. At the cervix uteri, and its superior angles, these fibres may be most distinctly seen.*

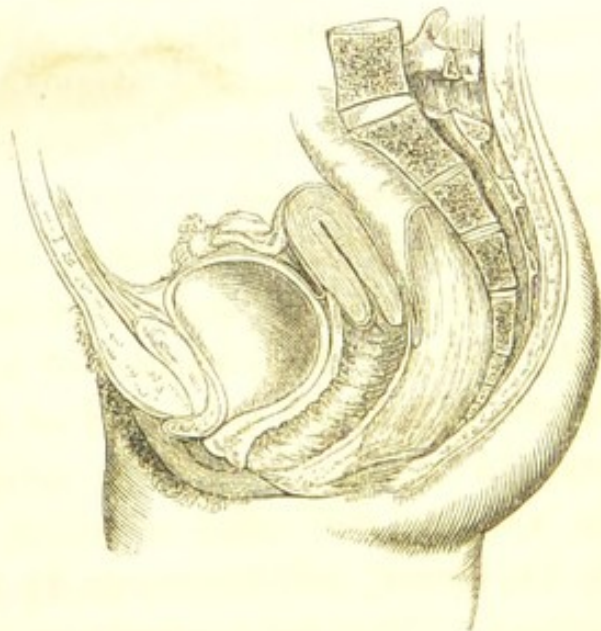
* Vide an instructive paper on this subject by Mr. Charles Bell in the 4th vol. of the Medico-chirurgical Transactions; and another equally so by Madame Boivin, in the Mémoires de l'Académie Royale de Médecine.

APPENDAGES OF THE UTERUS.

These are the *ligamenta lata*, and *rotunda*, the *tubæ Fallopianæ*, and the *ovaria*.

The peritoneum is reflected over the anterior and superior parts of the uterus. The lateral duplicatures of it form a broad expansion, and envelop the fallopian tubes, ovaria, and vessels. These doublings are called the *ligamenta lata*, or broad ligaments.

[The peritoneum covers the back as well as the front of the uterus, and forms a pouch between it and the rectum. It descends further on the posterior than on the anterior part of the uterus, and furnishes a covering, to a slight extent, for the upper and back portion of the vagina.



The preceding figure represents the relative po-

sitions of the internal organs of generation. —
J. M. W.]

The *ligamenta rotunda*, or round ligaments, are about the size of a goose-quill, and arise from the superior angles of the fundus uteri, and, proceeding obliquely downwards and outwards, pass out through the ring of the external oblique muscle, to be inserted about the mons veneris and contiguous parts.

The *tubæ Fallopiæ* derive their name from Fallopius, who first clearly demonstrated them. They are two muscular tubes, of about three inches in length, proceeding from the superior angles of the uterus. They run across the pelvis, become larger and more serpentine in their course, and terminate as an expanded opening, with fringed edges, termed *fimbriæ*; these extremities float loosely in the pelvis, not being included in the *ligamenta lata*. The inner covering of these tubes is a plicated continuation of the highly vascular lining membrane of the uterus. The fallopian tubes are the media of communication between the uterus and ovaria.

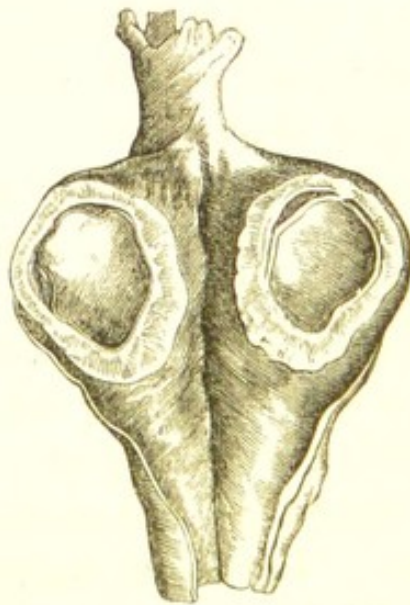
The *ovaria* are two flattened oblong bodies, situated a little below the tubes, and about an inch and a half from the uterus. They consist of a close and compact texture, principally composed of a number of highly vascular vesicles, united by cellular structure. These vesicles, the office of which was first described by De Graaf, are consequently called *vesiculæ Graafianæ*. They are probably so many ova, charged with the rudimental matter of future children.

[Each Graafian vesicle is composed of two membranes, a central yellowish pulp (*vitellus*), and, within this, the *ovulum* or germinating vesicle. Wagner has discovered a circular dark spot on the ovulum, which he has named *macula germinativa*.

If the ovaries be removed, the female loses the distinctive signs of her sex; hence the adage, *Propter ovaria sola mulier est quod est.* — J. M. W.]

When, from venereal or other excitement, these vesicles burst, they become converted into opaque bodies, which, from their dirty yellow colour, are termed *corpora lutea*.

[A *corpus luteum* is invariably found in either one or the other of the ovaries of a woman who has died shortly after impregnation. It is a yellowish deposit, the size and shape of a small bean, containing



CORPUS LUTEUM (Lee).

a central cavity, which is either empty or filled with coagula. It gradually disappears, and at the end of the fifth month of gestation is, as a general rule, completely absorbed.

Spurious corpora lutea are found in the virgin ovary, as well as in that of the woman who has borne children. They differ from the true corpus luteum in being irregular in shape, and in not possessing a cavity lined with membrane. — J. M. W.]

OVARIOTOMY.

[The limits of an elementary work will not permit me to dwell on, or even allude to, many points of interest connected with the functions and diseases of the ovaries; nevertheless, the subject of ovariectomy has lately excited so much attention, that I cannot pass it by without making a few observations. It cannot be doubted that the operation is attended with great hazard, the rate of mortality, according to Lee, being as high as 1 in $2\frac{1}{4}\frac{8}{2}$. Recent observations have, however, led me to infer that the dangers, great as they are, have been overrated, and that failures have often happened in consequence of unsuitable cases having been selected for the operation. A case of encysted dropsy of the ovary, which lately came under my notice, and on which Mr. Borlase Childs operated most skilfully and successfully, was unquestionably not one of those cases which are usually considered most favourable for excision; and yet the patient has done well. As it is Mr. Childs's intention

to publish all the particulars of the case, I shall refrain from giving it more than a very cursory notice. The patient was thirty-three years of age, and the mother of two children. Within ten months the abdomen had increased rapidly, being the size of that of a woman in the last stage of pregnancy. The cyst was multilocular, although Mr. Childs, myself, and all who saw the patient, were led to diagnose a single cyst, in consequence of the uniform distinctness of fluctuation. An incision three inches long was made through the abdominal parietes, and the contents of two cysts were emptied by tapping. The cysts were then drawn through the opening and the pedicle, to which they were attached, divided, a ligature having been previously placed round its root. Soon after the operation pain of the abdomen supervened; this was quickly subdued by opium, leeches, and the application of mercurial ointment.

It is quite clear that, in the above case, the formation of an artificial fistulous opening, or the injection of a cyst, would have been useless, as these operations are of little avail, except in the unilocular variety.*

* Since writing the above I have, through the courtesy of Mr. Childs, been present at another case of ovariectomy, in which he removed, by the major incision, a multilocular cyst weighing sixteen pounds. In this case there were extensive adhesions between the posterior surface of the tumour and the omentum; these were readily broken down by the fingers. As numerous vessels were necessarily wounded, Mr. Childs passed a double ligature through the omentum and removed a portion of this body measuring four inches in extent. The patient, a middle-aged woman, lived nine days after the operation and remained free from any bad symptom until twenty-four hours

The great danger in ovariectomy is from hæmorrhage. The risk from peritonitis has been exaggerated. Except during the puerperal state, and other inflammatory conditions of the body, when the blood is loaded with fibrin, wounds and injuries of the peritoneum are not so fatal as commonly supposed. Sir G. Balingall, in his "Outlines of Military Surgery," 2nd edit., refers to cases of penetrating wounds of the abdomen, in which the *intestines were implicated*; and yet several of these cases recovered, although the remedial measures consisted of little more than abstinence and rest. He also (p. 310.) alludes to cases of *wounds of the bladder*, implicating the peritoneum, and which were also in a fair way of recovery.

It must not, however, be understood that I consider the claims of ovariectomy, to be ranked as one of the capital operations of surgery, as yet firmly established. I merely recommend an impartial inquiry into its merits, and a careful discrimination between those cases which are, and those which are not, suitable for the operation. When the growth of the cyst is slow and the health tolerably good, the operation should not be undertaken. I have a patient, who has been labouring under ovarian disease for many years, and, when I last saw her, before her death, when an uncontrollable diarrhœa supervened, and was the immediate cause of her dissolution. A post-mortem examination did not reveal any appearances which could be attributed to the operation. There were no traces of peritonitis; neither were there any signs of hæmorrhagic effusion.

the general health had considerably improved, and the cyst had not perceptibly enlarged during a very long period.

By Mr. South's calculations, it would appear that, out of twenty cases of ovariectomy, fourteen died before the expiration of nine months. According to Mr. Syme, the rate of mortality in amputations of the thigh is equally high; but it must be recollected that, in the latter instances, the operations are performed to arrest imminent danger, which is not commonly the case in ovarian diseases. At the present stage of the inquiry, however, statistical deductions can scarcely be considered as approximative. — J. M. W.]

PHYSIOLOGY OF THE UNIMPREGNATED UTERUS.

Before impregnation, the uterus has but one function to perform—that of *menstruation*; which is a secretion of a reddish serous fluid from the cavity of the uterus, commencing in temperate climates at about the *fourteenth* year, and usually recurring every lunar month, or twenty-eight days, and hence called *menses*, and sometimes *catamenia*. It recurs with surprising regularity when once established, through *thirty* years, or until the woman attains the age of from *forty-four* to *fifty*. In hotter countries, the catamenial discharge commences as early as the *tenth* year; whilst in colder regions, it often does not appear before the *twentieth* year, and, instead of recurring monthly, there may be an interval of three months between each period.

[It appears probable, from the statistical researches of Mr. Robertson, that climate does not exert much influence on the catamenial functions, and that the menstrual secretion commences at very nearly the same period of life in every part of the world. Individual examples of premature menstruation may be found in every climate, and are more likely to occur in those countries where the dissolute state of society leads to an early abuse of the sexual functions. — J. M. W.]

The time of the first appearance of the secretion depends much upon the temperament, habits of living, &c., and on these circumstances, also, the *quantity* secreted is very dependent.

The *average quantity* in this country is about *four ounces*, which is generally about *four days* in flowing.

The menses do not contain fibrin; consequently the secretion does not coagulate.

[Simon is of opinion that the menstrual fluid contains fibrin, and that its detection is difficult, in consequence of the presence of a large quantity of mucus, which prevents the blood from coagulating. It may be termed a muco-sanguineous fluid, and is composed of blood corpuscles, mucous globules, epithelial scales, and serum. — J. M. W.]

Most women are more or less indisposed by vascular fulness and excitement, not only previously to and during the first secretion, but on every subsequent recurrence of the discharge. It is usually preceded by lassitude; darting pains through the

mammæ, with fulness of these glands; vertigo; uneasiness in the loins and thighs; and dyspepsia.

Its *source* is undoubtedly the internal surface of the uterus, as manifested in cases of inversion of the organ.

Its *cause* is unknown, although many have been conjectured.

[There can be little doubt that the ovaries furnish the periodical force which excites the menstrual secretion; the mode, however, in which it exerts its influence is not yet determined. Bischoff, Pouchet, Girwood, Gendrin, Negrin, Raciborski, Lee, and others have of late given in their adherence to the views of Dr. Power. They suppose that, at every catamenial nixus, a Graafian vesicle bursts, and that menstruation depends upon this phenomenon. This is termed the ovular theory. — J. M. W.]

It [menstruation] is a sign of the aptitude of the uterus for all the purposes of gestation. During pregnancy and lactation the menses cease to flow, except in some few cases, in which the secretion is poured out from the upper part of the vagina.

[Cases are on record in which impregnation has taken place in females who have never menstruated. A case of this description came under my notice many years since, in which a young girl yielded to the entreaties of her seducer, under a false impression that she could not become pregnant. — J. M. W.]

This secretion [catamenia] is the most unequivocal and best individual proof of *puberty*, at which period the mons veneris becomes covered with hair, the breasts

begin to be developed, and all the genital organs to be evolved.

Independent of that *temporary* suspension of the menstrual secretion which usually takes place during pregnancy and lactation, there is a time at which it *finally* disappears, and this is deemed in general, by females, a most important epoch in their lives. In our country this event occurs about the forty-fourth, or from that to the fiftieth year; it is popularly called the *dodging time* (from the irregular intervals between the successive appearances of the discharge), and the *turn of life*. The whole system is usually in a state of congestion; or determination of blood takes place to particular organs.

At this time, and with these symptoms, women should live sparingly, take a few doses of saline purgatives, and, if necessary, lose a little blood.

PREMATURE MENSTRUATION.

Some girls of full relaxed habits menstruate, in this country, a year or two before the usual time at which this secretion should appear. On investigation, such females will usually be found to be the subjects of fulness of the whole system, and will often cease to be *unwell* (as it is termed) for months and even years, after losing a little blood, and taking a saline purgative every third or fourth morning for a few weeks, with plain diet and daily exercise on foot.

Some well-authenticated instances are recorded of children who have menstruated; but most of these cases, like those of old women who are said to have

had the catamenial secretion, are sanguineous discharges from a diseased uterus or vagina.

EMANSIO MENSIIUM.

The non-appearance of the menses at the usual time is sometimes called *amenorrhœa*, *retensio mensium*, and *chlorosis*, or *green sickness*, from the dirty yellowish-green hue assumed by the countenance.

When the catamenia do not appear at the usual time, the girl sooner or later complains of general lassitude, with indisposition and inability to make either mental or bodily exertion without great fatigue. She often suffers from dyspnœa, disturbed sleep, impaired or depraved appetite, sense of fulness, and dull pain in the loins, with a dark and dirty yellowish-green colour of the entire surface of the body. The temperature of the skin is diminished, and every symptom indicates deficient power and action.

Cause.

This is somewhat obscure. In some cases it has resulted from defective ovaria; but in almost every instance there are unequivocal evidences of a torpid condition of the arterial and lymphatic systems, and particularly of that part of them which concerns the uterus.

[Emansio mensium depends on various morbid conditions. The ovaries or uterus may be wanting, or imperfectly developed; the hymen may be imperforate; the os uteri may be congenitally occluded:

moreover, the non-appearance of the catamenia may be owing to the presence of phthisis, scrofula, or anæmia. — J. M. W.]

Treatment.

The indications of cure are *two*: —

First. To give tone and energy to the general system; and,

Secondly. To stimulate the uterine organs.

The *first indication* is to be accomplished by preparations of iron, such as the *mistura* or *pilula ferri composita*, zinc, calumba, and other vegetable bitters, combined with ammonia or myrrh, and the cold salt-water bath, if there be sufficient *vis vitæ* to secure that re-action on which the beneficial result of cold-bathing so much depends.* To these medicinal means may be added moderate daily exercise on horseback, or on foot, in pure air, with plain nutritious diet, rather to invigorate than stimulate the system.

The *second indication* is to be secured by the exhibition of aloetic purgatives and enemata twice a week; by the use of the hip-bath, with warm salt water, daily; and warm woollen clothing, especially on the feet. Sometimes a course of Bath or the Brighton chalybeate waters has been beneficial, or a

* Delicate persons, who are apparently unable to bear cold-bathing, may often be brought to derive advantage from its employment, if, before going into the bath, they walk until the circulation becomes somewhat quickened, without producing perspiration; and if, instead of remaining some time in the water, they make only one plunge, and immediately employ friction, and dress themselves.

cautiously conducted ptyalism has succeeded, when ordinary measures have failed.

SUPPRESSIO MENSIIUM.

The catamenial secretion, when once established, generally recurs with great regularity; but sometimes it becomes suppressed by other causes than utero-gestation, lactation, or uterine disease.

This discharge may be either obstructed immediately before the expected flow of the menses, or after the secretion has commenced; and, although the obstruction not unfrequently exists for some time without constitutional or local disturbance, more frequently general febrile excitement, followed by dyspepsia and debility, with vicarious hæmorrhage from the nose, lungs, stomach, or from some open wound, attended with considerable local distress, are the consequences.

Causes.

The application of cold and humidity to any part of the surface of the body, or to the extremities; powerful mental emotions; and anything enfeebling the constitutional or uterine powers, such as low living, impure air, frequent abortion, immoderate sexual intercourse, leucorrhœa, &c.

[To the above causes may be added: serofulous and cystic tumours of the ovaries; induration of the uterus; inflammation of the uterus or ovaries; occlusion of the os uteri from adhesive inflammation, occasioned by the injudicious application of caustic

potash; the influence of any considerable irritation or disease, which may, on the principle of counter-irritation, interfere with the catamenial flow, although the reproductive organs may be perfectly healthy.—J. M. W.]

Treatment.

The management of *suppressio mensium* must depend on whether the suppression be *occasional* or *established*.

Should it be *occasional* (by which term is meant the sudden and casual suspension of the secretion, either before or during its flow), the symptoms are usually acute, and require the abstraction of blood, locally and generally; saline purgatives; and the warm hip-bath. Should there be much uterine pain, opium, henbane, poppy, stramonium, or any narcotic, with a diaphoretic, will afford relief; particularly if conjoined with the abstraction of blood from the vicinity of the uterus by leeches or cupping.

But, should the suppression have become *established*, it will be highly necessary to ascertain whether it is connected with any disease of the uterus. If it be not, the case demands the same treatment as is recommended in *emansio mensium**, with the addition of stimulating injections, particularly of ammonia.

[An improved acquaintance with the pathology of the sexual organs has of late years led to a more

* Vide page 42.

rational treatment of amenorrhœa and other uterine affections. Amenorrhœa is merely an *effect* which may be induced by a variety of *causes*, and must be treated accordingly. Emmenagogues must not be had recourse to until general or local congestion has been removed. They may then be frequently used with advantage. The following remedies are perhaps the most useful agents for acting immediately upon the ovaries and uterus, and restoring their functions. They are of course contraindicated, should organic disease of these organs be present. The remedies to which I refer are:—ergot, savine, mustard hip-bath, galvanism, ammoniated tincture of guaiacum, cantharides, steel, turpentine, stimulating enemata, out-door exercise, emetics, &c.

Vicarious menstruation.—The abnormal secretion must not be suddenly arrested in this form of the disease, and the affection must be treated on the principles already laid down for the cure of amenorrhœa.

Amenorrhœa with vicarious leucorrhœa.—Occurs generally in delicate females about the period of their first menstrual discharge. The exhibition of mineral tonics and attention to the general health are the principal curative measures.—J. M. W.]

DYSMENORRHŒA, OR PAINFUL MENSTRUATION.

This diseased condition of the uterine function occurs principally to women who menstruate sparingly; and they are usually barren. There is generally severe uterine pain, which is augmented by external

pressure: the head and stomach sympathise with the uterus; and there is a sense of bearing down. The secretion is often mixed with coagula and filaments of a membrane, very similar to the *decidua uteri*.

Cause.

A subacute inflammatory state of the inner surface of the uterus, inducing constriction of its secerning vessels.

[Several additional causes may be enumerated. These may be divided into *mechanical* and *functional*. To the former class belong an undersized uterus, a deviation of the uterus, and stricture of the cervix uteri; to the latter, subacute ovaritis and a gouty or rheumatic condition of the uterus. — J. M. W.]

Treatment.

During the secretion of the menses, local bleeding is decidedly useful; the hip-bath, with warm water, may be used twice a-day; and, as often, an enema should be thrown into the rectum, composed of at least a pint of thin gruel or warm water, with a drachm of tincture of opium. Full doses of the extractum hyoscyami, with camphor and opium, combined with nauseating medicines, will sometimes afford considerable relief. Valerian, ammoniated tincture of guaiacum, and acetate of ammonia, have all proved useful.

During the interval local bleeding should be employed once every week; an aloetic laxative must be daily exhibited, the warm hip-bath should be had recourse to once a-day, and regular exercise strongly

enforced. A well-conducted course of mercury, so as to keep the system sensibly under its influence for several weeks, has, in a few instances, been beneficial.

[Should a stricture of the cervix uteri be detected, the cautious use of a steel dilator may be of service. It should not, however, be had recourse to unless leeching, opium, and the warm bath, &c., have failed to afford relief.

When a congested state of the ovaries or uterus are the cause of the dysmenorrhœa, cupping the loins or leeches to the vulva, opium, a belladonna plaster to the sacrum, large doses of camphor, and other soothing and gently antiphlogestic remedies are indicated.

Where a gouty or rheumatic diathesis is present, colchicum, guaiacum and alkalis will facilitate the cure.

If there be reason to suspect a neuralgic condition of the ovaries, and especially if this state be accompanied by anæmia, the preparations of steel will be of the greatest service, when given during the intervals between the paroxysms.—J. M. W.]

MENORRHAGIA.

By menorrhagia is meant an immoderate secretion of the menstrual discharge; either in the *quantity* which flows at the usual time, or in the *frequency* of its recurrence, or length of period.*

* Menstruorum vel sanguinis e vagina præter ordinem fluxus.—
Cullen.

Causes.

A plethoric and enfeebled condition of the system, with uterine congestion, and this generally connected with lax fibre and deficient tone in the extreme vessels of the uterus.

[A predisposition to *menorrhagia* may be engendered by too frequent child-bearing, violent exercise during the catamenial period, costiveness, a congested state of the portal system, sedentary habits, excessive coition, tight lacing, or by the use of stimulating food, &c.

The pathological conditions which immediately give rise to menorrhagia (including in this term every description of sanguineous discharge not connected with the puerperal state) are various: subacute ovaritis, irritable uterus, congestion of the uterus, cancer, fibrous tumours of the uterus, polypi, &c.—
J. M. W.]

Treatment.

Every circumstance and pursuit, with all such articles of food as accelerate the frequency and increase the force of the action of the heart and arteries, must be sedulously guarded against.

During the term of menstruation, absolute quietude of mind, and body in a recumbent posture, must be enjoined; and cold may be applied to the pubes and loins. Should there be much vascular action, the *potassæ nitras*, in doses of five grains every hour, is useful; but if the pulse is feeble, the mineral acids

liberally exhibited will sustain the vital powers, and perhaps constrict the secerning vessels. The superacetate of lead, with acetic acid and opium, may be advantageously exhibited.

During the interval a few ounces of blood may be advantageously removed from the uterine region; an injection, composed of equal parts of the *liquor aluminis compositus* and *aqua distillata*, should be thrown into the vagina three times a-day; the hip-bath cold, or the application of cold water to the loins and pubes, by the bidet or by a sponge or cloth, ought to be employed every morning; and, if convenient, sea-bathing may be tried. In addition to these means, sexual separation, with the avoidance of fluids as much as possible, and moderate regular exercise, must form part of the plan of treatment.

[When the hæmorrhage is excessive, and the pulse feeble, some of the following remedies will frequently be of service:—*Secale cornutum*, Indian hemp, enemata of cold water, elevation of the hips, turpentine, and the introduction of plugs into the vagina. The acetate of lead, however, in doses of two or three grains given every four hours, combined with acetic acid, but not with opium, is the most powerful astringent.

In plethoric women, subject to menorrhagia, I have frequently given a smart purge, just before the expected return of the catamenia, with the happiest effects.—J. M. W.]

SPECULUM UTERI.

[I cannot quit this division of the work without offering a few remarks on the use of the speculum. Although of great use in some forms of uterine disease, there can be no doubt that this instrument has been fearfully abused. Dr. Copland has denounced it as a "phalloid" instrument. I cannot coincide in all that he has stated; it must, however, be confessed that there is much truth in many of the objections which he has advanced.

A young girl, 19 years of age, consulted me a short time since for a slight leucorrhœal discharge, accompanied with a trifling amount of ovarian irritation. She informed me that her previous medical adviser had actually used the speculum for this comparatively insignificant affection, and that he had also applied caustic to the neck of the uterus! Another young woman, who came under my care not long ago for a leucorrhœal discharge, stated that her previous attendant had been in the habit of using the speculum for a period of *six years!* I told her that, as the instrument had certainly received a fair trial, I would not have recourse to it again.

I consider that some deservedly high authorities have countenanced unintentionally the abuse of the speculum, by recommending its use in cases of simple abrasion of the os uteri. They state that this condition cannot be detected by the touch. Granting this, of what avail is the discovery? The destruction of portions of the epithelium by the *alkaline*

discharges of uterine leucorrhœa is, no doubt, a frequent and comparatively trifling occurrence; but, on the subsidence of the leucorrhœa, the epithelium is quickly renewed. Does a simple abrasion of the mucous membrane of the mouth, occasioned by hot or pungent food, require minute examination and caustic applications?—J. M. W.]

CONCEPTION.

Before entering on an examination of the contents of the gravid uterus, the obscure but interesting subject of *conception* must be alluded to: any deeper investigation of it would only serve to convince the inquirer that scarcely any practical advantage could result from the pursuit. The works of Malpighi, Harvey, Spallanzani, Blumenbach, Denman, and Ryan may be consulted with advantage on this function.

It appears to be essential to fecundation that, on the part of the *female*, the ovaria contain some vesicles in a healthy condition, and all the passages to them unobstructed; on the part of the *male*, the testes must be in a healthy state, so that semen may be secreted. In general, there is both in the male and female a determination of blood to the whole genital system, constituting the venereal œstrum, but this is not essential; and, as the immediate cause of impregnation, there must be sexual intercourse.

The male semen, having been transmitted through

the uterus, and by the tubæ Fallopiianæ, to the ovaries, stimulates one or more of the vesiculæ Graafianæ, which, *ab origine*, appear to contain ova and the rudimental matter of the fœtus. Some physiologists doubt this.

The fimbriated extremities of the tubes expand and embrace the ovaria, having become during the coitus ready to receive the ovum, which is about to escape from the ovarium. The impregnated ovum bursts through the peritoneal covering of the ovarium, and enters the grasping and open extremity of the tuba Fallopiana of the fecundated side; along which it is conveyed into the uterus in about three weeks after conception, there gradually to undergo its complete development. Although this is the opinion generally entertained, Sir E. Home says he has seen the ovum in utero at the end of eight days.

OVUM.

The result of conception having been traced into the uterus, it contains the primordial parts of the child, although they can scarcely be detected, on account of their minuteness and transparency.

It will be found to have two membranous coverings, having a gelatinous substance interposed between them. They are, the

Chorion, and

Amnion;

the latter being the inner, and the former the outer, covering of the fœtus. These, with the

Liquor amnii,

a fluid secreted by the amnion, constitute the complete ovum.

Immediately after conception the vessels of the interior and highly vascular surface of the uterus take on increased action, and secrete a thick, extremely tender, lacerable, and cribriform membrane, which may be divided into two laminæ; the one in contact with the uterus, bearing the name of

Tunica decidua uteri;

and the other, from being reflected on the first, is called

Tunica decidua reflexa.

The tunica decidua uteri remains as the proper membrane of the uterus until after parturition, when it is discharged with the lochiæ, a portion having come away with the chorion. The tunica decidua reflexa is extremely thin, and becomes much more so as the ovum increases in size: in the earlier months of utero-gestation it may be easily separated from the tunica decidua reflexa, but after the fourth or fifth month, from constant pressure against it, it becomes as it were identified with it, and no longer distinguishable: hence, on dissection of the gravid uterus, during the latter periods of pregnancy, we can detect but three membranous coverings between the uterus and fœtus, viz., the tunica decidua uteri, the chorion, and the amnion.

The *liquor amnii*, which distends the involucre or membranes, seems principally intended to preserve the delicate fœtus from the pressure of the uterus during gestation; and during parturition, to perform

the office of a soft and inimitable wedge, by which the os uteri and other parts are prepared for the passage of the child.

In the fourth volume of the Medico-chirurgical Transactions, an analysis of it, by Dr. Bostock, is given. It has also been analysed by Vauquelin, Berzelius, and Scheele.

PLACENTA AND FUNIS UMBILICALIS.

The *placenta*, or after-birth*, constitutes the medium of communication between the mother and the child. It is a thick, soft, round, lobulated, spongy, vascular mass, adhering by vessels to the fundus, or anterior and superior part of the uterus, and connected to the foetus by the funis umbilicalis.

It consists of a maternal and foetal portion, which have no communication by continuity of canal, so that, if be injected by the uterine vessels, the injection does not pass from them into the foetal part of the placenta, nor from the umbilical vessels into the maternal portion.

The maternal or cellular half of the placenta appears to be formed by the uterine vessels shooting into the decidua; and the foetal half, or that portion in which the two umbilical arteries ramify minutely over the maternal cells, is probably formed by the shaggy and external layer of the chorion.

* The *Placenta* derives its appellation from *πλακος*, a cake, which it resembles.

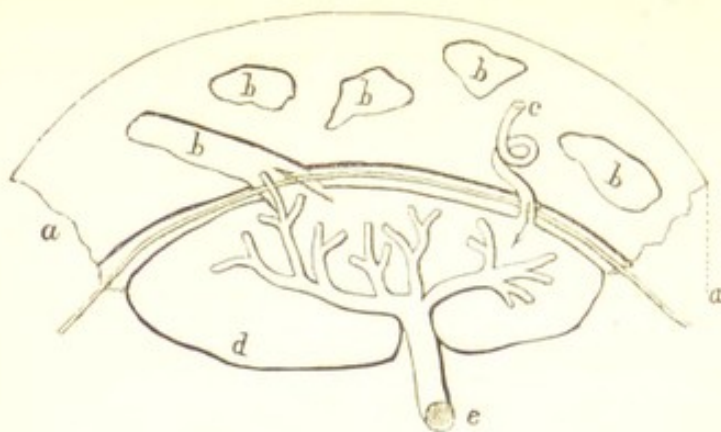
The placenta is not to be seen as an appendage to the ovum till nearly the completion of the second month.

Functions analogous to *respiration* and *nutrition* are probably performed by the placenta. In this organ the blood acquires the stimulating and nutritious qualities essential to the existence and growth of the foetus.

[Having recently had the rare opportunity, through the courtesy of Mr. Edward Snell, of dissecting a portion of the uterus and placenta taken from the body of a woman who died of hæmoptysis at the close of the last month of gestation, I am happy to have it in my power to clear up some points with respect to the difficult question of the placental circulation. With the valuable aid of Dr. Gull, I made a careful microscopical examination of the various tissues, and my observations tend to confirm the views of Goodsir and other modern observers, and, to a certain extent, the theory of Hunter. Under a power magnifying 270 times, the following facts were clearly manifested:— 1. That the falciform duplicatures of the uterine veins, commonly called sinuses, contained not only parallel, but *transverse muscular markings*, indicating a high degree of contractile energy. As these valve-like bodies are situated at the openings of the sinuses, they must exert a powerful influence in arresting the flow of blood when the placenta is separated from the uterus. 2. That a large amount of *elastic* tissue was combined with the muscular striæ, which must also tend to contract the openings of the

sinuses. 3. That the *obliquity* of the sinuses was very striking, and indicated an additional provision for arresting hæmorrhage. 4. That many of the delicate filaments which are seen passing from the placenta to the uterus, when these bodies are separated, were composed of looped capillaries, enclosed in a fine nucleated membrane. This membrane is probably a continuation of the chorion. These loops form as it were villi, and project, but do not open into the sinuses. They correspond exactly with the description given of them by Goodsir. 5. That the tissue of the placenta contained numerous oil globules, showing that this organ, at the close of gestation, has fulfilled its destiny, that it is in fact effete, and about to be thrown off by a process similar to that which separates a ripe seed-vessel from the parent plant.

By a careful deduction from the above facts, and the observations of Goodsir, Weber, Owen, and others, I think it may be safely inferred that the maternal blood enters the placental cells by the curling arteries of the uterus, and that the placental tufts project into these cells. From these cells the blood is returned by the uterine veins without having left the maternal blood-vessels. The foetal tufts are therefore bathed in the blood of the sinuses, and the blood of the foetus is purified by a sort of action similar to that which takes place in the branchiæ of fishes, or to that which obtains in the rûdicles or fibrils of the roots of a plant, by which nourishment is extracted from the surrounding medium.



a. Sections of the walls of the uterus. *b, b, b, b.* Uterine sinuses. *c.* Curling artery. *d.* Placental cavity. *e.* Placental tuft.

The preceding diagram will serve to illustrate the above views. — J. M. W.]

In the human female the number of placentaë usually corresponds with the number of children.

The *funis umbilicalis*, or navel-string, is the means of connection between the mother and child.

It is composed of two arteries, which originate from the internal iliacs of the child; and of one vein, which returns the blood from the placenta to the fœtus. These vessels are united by a gelatinous substance, and enveloped in a sheath formed by a duplicature of the chorion and amnion. The funis is usually about twenty inches in length, and the vessels run in a spiral direction. It has nerves from the grand sympathetic.

[*Battledore Placenta.* — This name is given to the placenta when the umbilical cord is attached to its edge instead of its centre. It is not of common occurrence, but it is a peculiarity which should be borne in mind, lest the ready detection of the root of

the cord, in a case of this sort, might lead to the supposition that the placenta was detached, whilst the bulk of the organ was still adherent to the uterus. Such an erroneous notion might lead to mischievous traction of the cord. — J. M. W.]

FŒTAL STRUCTURE AND PECULIARITIES.

So minute are the different parts of the fœtus for several weeks after impregnation, that, even when submitted to microscopic examination, it presents itself only as a gelatinous, semi-transparent, greyish mass.

At the *fourth week* of utero-gestation there exists an oviform mass, of about the size of a hazel-nut, consisting of the chorion, with a beautiful shaggy covering, principally composed of its vessels; of the amnion; liquor amnii; and fœtus, which appears only as an opaque spot, not exceeding in size a large ant.

By the *fifth week* the fœtus resembles in shape and size the malleus of the internal ear, being about a quarter of an inch in length. About the *sixth week* it resembles the section of a French bean in its form; the budding extremities may be traced, and its head and body are nearly equal in size.

At the *seventh or eighth week* all the parts are distinctly formed, and the fœtus is from one to two inches in length, and about three drachms in weight.

During the *third month* the length is about six inches.

By the *fifth month* it is usually ten inches long.

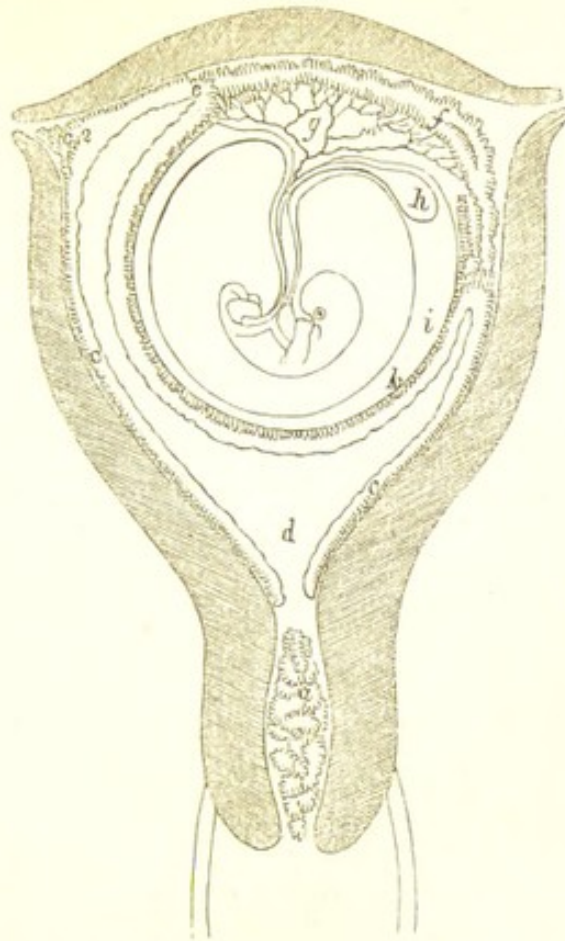
At *seven months* it is about fifteen inches in length.

And at the termination of the *ninth month*, or the full period of utero-gestation, the average length is twenty inches, and the average weight seven pounds.

[*Umbilical Vesicle*.— This small sac is about the size of a pea, and contains an albuminous fluid, which serves to nourish the embryo during the early period of its existence, and bears an analogy to the yolk-sac of the chick. It is situated between the chorion and amnion, and can seldom be discovered after the third month of gestation. A small duct-like prolongation connects it with the umbilicus. Through this the yolk-like matter of the sac was formerly supposed to be conveyed directly to the intestinal canal. This notion is probably incorrect. Recent investigations render it almost certain that the nutritious particles of the vesicles are absorbed into the general circulation before they reach the tissues of the embryo.

Allantois. — This vesicle is only discernible in the very earliest month of embryotic life. It is intimately concerned in the development of the urinary organs. Its remains form the *urachus*, or suspensory ligament which connects the bladder to the umbilicus. Its early office is probably to form a receptacle for the excretion thrown off by the *corpora Wolffiana*.

The *corpora Wolffiana* are minute bodies attached to the urinary canal, and are, to a certain extent, substitutes for the kidneys in the early period of gestation. As the kidneys become developed, the *corpora Wolffiana* gradually disappear.



*c*². Decidua vera passing into right Fallopian tube. *e*. Point of the reflection of the decidua reflexa. *g*. Allantois. *h*. Umbilical vesicle. *i*. Amnion. *k*. Chorion. *d*. Cavity of the decidua. *f*. Decidua serotina or placental decidua. *cc*. Decidua vera.

The preceding diagram, after Wagner, exhibits an ovum and its membranes in the third and fourth months. — J. M. W.]

PECULIARITIES OF THE FŒTUS.

The *kidneys*, *capsulæ renales*, and *liver* are disproportionately large; the *lungs* are nearly black, collapsed, and of greater specific gravity than water, because they have not been distended by air. Until the seventh month the pupil is occupied by a highly vascular membrane, termed *membrana pupillaris*; in the anterior mediastinum there is the *thymus gland*,

composed of two lobes: in the female the *ovaria* are very much elongated, and the *clitoris* often so much so as to be mistaken for a penis; and in the male the *testes* are lodged on the *psoæ* muscles until the seventh month, after which they descend into the scrotum. The *bones* (except those of the ear) are partly cartilaginous at birth, and for some time afterwards.

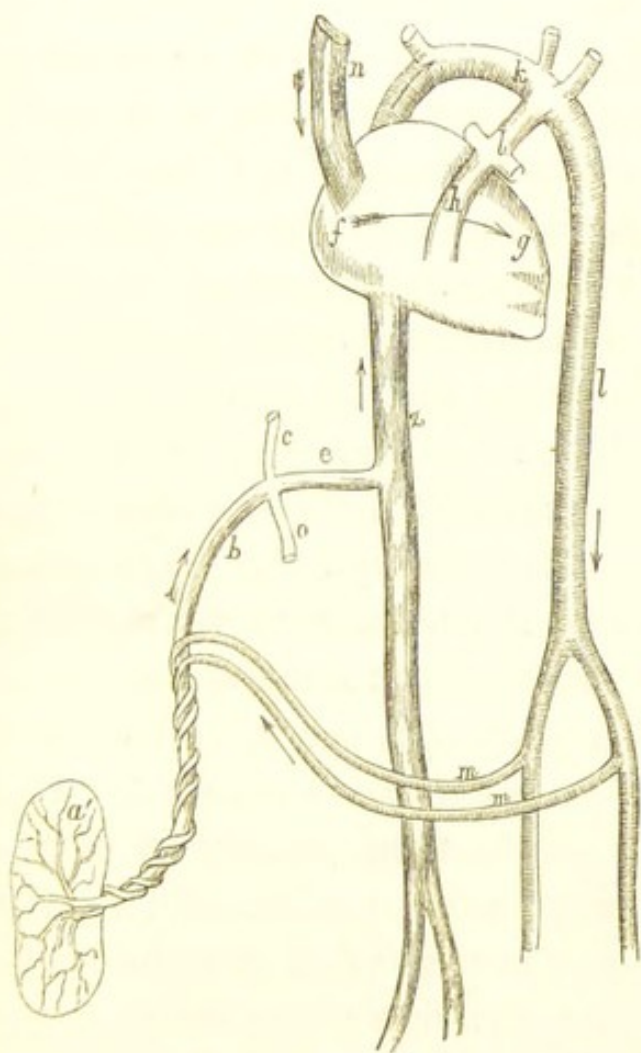
Besides these, there are several peculiarities in the foetus appertaining to the circulation of blood, viz., the *two umbilical arteries* and the *umbilical vein*, before described; the *canalis venosus*, a short branch between the umbilical vein and the left vena cava hepatica; the *canalis arteriosus*, an artery arising from the pulmonary artery, and passing obliquely into the aorta; and an opening in the septum of the auricles, called the *foramen ovale*.

FETAL CIRCULATION.

The umbilical vein takes up blood from the cells of the placenta by the bibulous orifices of its minute ramifications, and conveys it through the umbilicus along the suspensory ligament to the under surface of the child's liver. On arriving at the substance of the liver the umbilical vein divides into two branches, one terminating in the vena porta, the other (the ductus venosus) in the left vena cava hepatica, just as it is about to enter the vena cava inferior; so that the blood of the umbilical vein arrives at the heart under two conditions—one part has passed through the circulating system of the liver, the other has passed directly. Thus the blood of the

umbilical vein arrives at the left auricle, and there mingles with the blood returned to the heart by the vena cava. (It is necessary to bear in mind that the contraction of the two auricles is synchronous, as is also that of the two ventricles; and that the contraction of the auricles alternates with that of the ventricles, and the same with their dilatation.)

[The following diagram will materially aid in ren-



a. Placenta. *b.* Umbilical vein, terminating in three branches (*c* and *o* to liver, and *e* the ductus venosus which joins *z* the vena cava inferior). *f.* Right auricle, — the blood going from the right to the left auricle *g.* *h.* Pulmonary artery. *i.* The ductus arteriosus, which unites the pulmonary artery and the arch of the aorta *k.* *l.* Descending aorta terminating in the iliac arteries. *m, m.* Umbilical arteries. *n.* Vena cava superior.

dering intelligible those points which are peculiar to the circulation of the blood in the fœtus.— J. M. W.]

During the dilatation of the auricles the blood which has passed through the system of the fœtus, and that which has circulated through the placenta, is impelled into the right auricle, fills it, rushes through the foramen ovale into the left auricle, and there meets with a portion of blood that has circulated through the lungs, and is returned by the pulmonary veins: in this way are both auricles filled, and they contract.

During the contraction of the auricles the blood of the right passes into the right ventricle, and the blood of the left into the left ventricle.

During the contraction of the ventricles the blood of the right is forced into the pulmonary artery, from which by far the greater part of it passes by the *ductus arteriosus* into the aorta, whilst a small portion of it is propelled through the lungs to be returned to the heart by the pulmonary veins. The blood of the left is projected into the aorta, and meets with that of the right, which has passed through the pulmonary artery and ductus arteriosus. The aorta and its various ramifications convey it over the whole system, where, having performed its different functions, the greater part of it is returned to the heart by the vena cava; but a portion diverges from the general circulating system, and is conveyed in its deteriorated or venous state to the placenta by the umbilical arteries, to have the requisite changes there

worked upon it, and to be again returned by the umbilical vein in the way described.

GRAVID UTERUS.

In consequence of impregnation, the uterus receives increments of new matter in all its component parts. Thus the calibre of the blood-vessels and lymphatics becomes increased, so that at the full term of gestation the parietes of the uterus are not thinner than when the organ was unimpregnated, though at this time it is very greatly augmented in bulk.

Not only does this viscus undergo so material an alteration in its bulk, but it becomes changed from being pyriform to the shape of an egg, having its smallest extremity downwards.

After parturition the depletion of its blood-vessels, and the contraction of its muscular fibres, rapidly diminish the bulk of the uterus; and the activity of its absorbents restores it in a few weeks to nearly its original dimensions. During pregnancy the uterus occupies the anterior part of the abdomen, being pressed forward by the abdominal viscera, which are attached posteriorly by the mesentery to the spine, by which arrangement the uterine axis is made to approach that of the pelvis, and compression of the blood-vessels that run close to the spine is thus prevented.

EVIDENCES OF PREGNANCY.

Some women pass through the whole term of utero-gestation with but little or no disturbance of the constitution: but in addition to suppression of the menstrual secretion, there are generally other symptoms, which contribute to inform us of the existence of pregnancy.

Suppressio mensium is one of the first and most common proofs; but as this may result from disease, it cannot be universally relied on; and sometimes menstruation will continue for some months after impregnation.

Irritability of body and mind, in consequence of the intimate sympathy subsisting between the uterus and every other part of the system, is another presumptive evidence. This irritability is evidenced by disturbed sleep, febrile excitement, nausea, vomiting, dyspepsia, and peevishness.

Enlargement of the mammæ usually accompanies pregnancy, and is combined with lancinating pains through these glands, and often with the secretion of a whitish serum. But these symptoms will sometimes arise from a diseased condition of the uterus.

Darkened and enlarged areolæ are said to be the best individual proof of impregnation in first pregnancies; but to be able safely to rely on this appearance, much judgment and experience are necessary.

Quickening is the first perception of the fœtus in utero. Its symptoms are referable to the sudden starting of the uterus above the brim of the pelvis,

and to the sudden removal of the pressure of that organ from the iliac vessels, in consequence of which the blood descends, and a temporary exhaustion of the vessels of the brain follows: therefore it is that women often faint on this occurrence taking place. It usually occurs at a week or a fortnight beyond the fourth calendar month, or a little beyond the nineteenth week, and presents demonstrative evidence of utero-gestation; and, although the movements of intestinal gas are sometimes mistaken for it by women themselves, yet a medical man can hardly be imposed upon.

Enlargement of the abdomen is not alone to be relied on, because it may result from diseased abdominal viscera, or from an accumulation of fluid in its cavity.

The gravid uterus rises in the abdomen in a ratio corresponding with the advance of pregnancy. Where the parietes of the abdomen are thin, it may be felt *at the end of the third month*, just at the brim of the pelvis.

[For a short time, however, previous to the third month, the hypogastric region is *flattened* to a slight extent, owing to a falling backwards of the womb previous to its ascent. This symptom is of short duration, and is sometimes disguised by flatulency.

—J. M. W.]

At the close of the *fourth month* it rises above the brim.

During the *fifth month* it is about midway be-

tween the superior aperture of the pelvis and umbilicus.

At the *sixth month* the upper edge of the fundus uteri is a little below the umbilicus.

At the *seventh month*, just above it.

During the *eighth month* it is equidistant from the umbilicus and scrobiculus cordis; and,

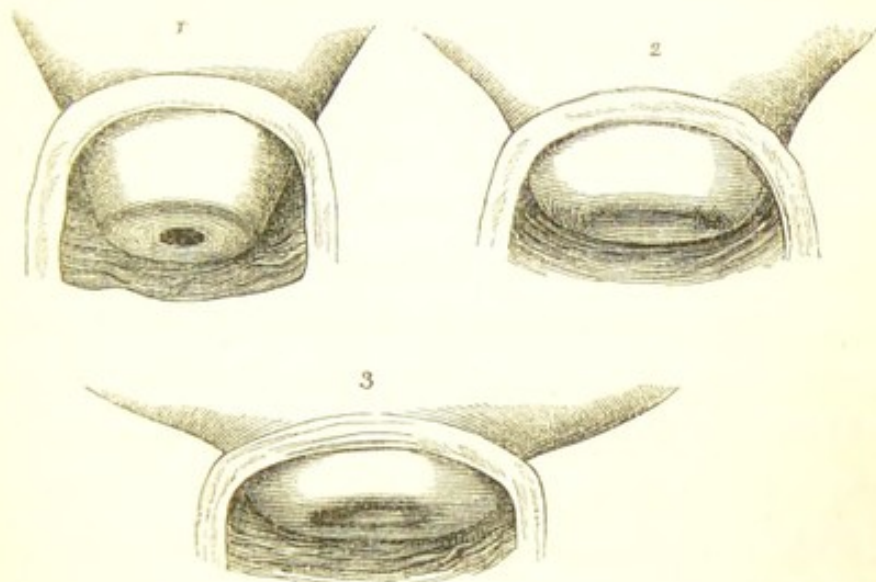
At the commencement of the *ninth month* it extends to the scrobiculus cordis, from which it usually subsides a week or two before labour, to the situation it occupied between the seventh and eighth months.

But in *corpulent* women external examination communicates very little information; and therefore it becomes essential to institute an inquiry per vaginam, in order to ascertain the condition of the os and cervix uteri.

During the first *four* months of pregnancy the mouth of the womb is shut up by a glutinous deposit, secreted by the glandulæ nabothi. It is also somewhat increased in size, changed from its oval to a circular form, and is thrown rather backwards. The cervix uteri is scarcely altered in length until the *fifth* month, when it begins to shorten and expand, so that it loses half an inch; during the *seventh* month another half inch is lost; and at the end of the *eighth* month it disappears, leaving the circumference of the mouth much larger than before, to be expanded during the *ninth* month.

Thus it appears that the existence of pregnancy can only be determined by the concurrence of several symptoms.

[The subjoined figures, after Maygrier, exhibit the appearance of the cervix uteri at the third (1), seventh (2), and eighth (3) months of gestation.



The following additional tests of pregnancy deserve especial attention:—

Vaginal Examination.—In the first two months the cervix uteri feels soft and swollen, and is often slightly tilted *forwards*. About the fourth month the os uteri cannot be so easily felt, owing to the ascent of the womb and its altered axis, which inclines the cervix *backwards*. At the end of the seventh month the cervix is little more than a mere ring, encircling the os uteri. In *multiparæ* these signs are not so apparent as in women who are pregnant for the first time. The enlarged body of the uterus can be readily detected, *per vaginam*, between the fourth and fifth months.

Ballottement.—This symptom is most readily discovered between the fifth and sixth months. The patient should stand upright; one or two fingers of the left hand must then be pressed against the cervix uteri, whilst the other hand is placed upon the abdomen, to steady the fundus of the uterus. On making a sudden jerk with the fingers of the left hand, a solid body (the head of the child) will be perceived to start upwards, and, in a few instants, fall lightly against the fingers.

Ballottement may also be effected without a vaginal examination, by placing the patient on her side, and pressing each side of the abdomen with the hands.

External Palpation.—The motions of the fœtus may often be detected, if the subject be not very fat, in the last months of gestation, by simply placing the hand over the abdomen.

Auscultation.—On applying the stethoscope to the abdomen in the latter stages of pregnancy, two sounds are commonly heard,—the one connected with the fœtal heart, the other with the placenta or uterus. Recently raised objections to the placental origin of the latter sound appear to us to be far from conclusive. It is a cooing or whining noise, seldom heard before the fourth month of gestation. Naegele thinks it can be heard over every part of the uterine tumour. This does not coincide with my experience. Although the sound may be more or less diffused, especially when the uterus is not much developed, this is not the case in the latter period of pregnancy.

I have never heard it distinctly, except in one particular portion of the uterus, most commonly in the left or right lateral region of the womb, but never simultaneously in both sides. It has been fixed to one portion of the uterus during the whole of pregnancy. This fact is quite irreconcilable with the notion that it is occasioned by pressure on the iliac vessels, or that it emanates from every portion of the uterine surface. There can be no doubt that the sound is an invaluable test of pregnancy; but more research is necessary before its precise nature can be determined.

The sounds of the foetal heart are of a tickling character, and number about 130 in a minute. They are seldom heard before the end of the fifth month. They are most commonly heard towards the left of the umbilical or hypogastric regions.*

Funic Souffle.—Dr. Kennedy gives this name to a faint murmur which is occasionally met with, and which corresponds with the pulsations of the foetal heart.

Discolouration of the Vagina.—M. Jacquemin's opinion, that the mucous membrane of the vagina becomes of a violet colour during gestation, is confirmed by the extensive observations of M. Duchatelet.—J. M. W.]

* I have now a patient under my care, in the last stage of gestation, who is herself painfully conscious of the foetal pulsations.

DURATION OF PREGNANCY.

Although most modern accoucheurs think that a woman rarely carries a child in utero longer than 273 days, *thirty-nine weeks*, or *nine calendar months*, there is too much evidence to be rejected in support of the opinion that gestation does sometimes proceed to the extent of forty-five weeks.

A legitimate and rational conclusion, from the mass of authenticated evidence on this subject, appears to be that the process of utero-gestation *usually* requires thirty-nine weeks for its completion; but circumstances may occur to retard the perfection of this process, so that the child when born, although later than usual, shall not exceed the ordinary size: whilst, on the other hand, it must be admitted that sometimes the process is prematurely completed, and a perfect child of the usual size expelled two or three weeks before the termination of the ninth month.

Utero-gestation is generally computed either from a single coitus, from a fortnight subsequent to the last menstrual secretion, or from the time of quickening. In either of the first two methods of calculating, *thirty-nine weeks* are allowed: in the last, about *nineteen* or *twenty weeks*.

PHENOMENA OF UTERO-GESTATION.

If women lived less unnaturally, pregnancy and parturition would be attended by fewer of those painful symptoms which usually accompany them in civilised society.

During the term of utero-gestation the diet should be moderately nutritious, and easy of digestion. All stimulants should be prohibited, because the vascular and nervous systems are already too highly excited.

Regular and moderate exercise on foot should be enjoined, and all violent bodily exertion and powerful mental emotions should be carefully avoided; for occurrences which produce no disturbance in the constitution of an unimpregnated woman very sensibly affect one whose mental and physical condition is rendered irritable by impregnation.

The *diseases* and *inconveniences* of the pregnant state may be traced either to *irritability of the nervous and plethoric condition of the vascular systems*, or to *pressure on contiguous organs by the gravid uterus*.

Nausea and *vomiting* are the earliest and most distressing attendants on utero-gestation.

These troublesome complaints harass women most on their first rising from an horizontal position in bed, and sometimes recur frequently through the day. Nausea and vomiting generally disappear soon after quickening; but with some they continue through every stage of pregnancy.

Medical interference is not always necessary. Should this condition of the stomach be a source of much distress, a *blister*, or *leeches*, or *cupping-glasses*, applied to the pit of the stomach, will often afford relief. *Saline aperients*, in moderate doses, taken daily before rising, are useful. Infusion of *calumba*, or some other vegetable bitter, taken with an acid and alkali in a state of effervescence, is beneficial.

Should the symptoms be very urgent, so as to endanger the support of the woman, the stomach must be kept in a state of absolute rest, and nourishment must be exhibited by the absorbents of the skin and intestinal canal. *Opium*, to the extent of two grains for a dose, with the same quantity of *capsicum*, is sometimes very efficacious when the stomach is singularly irritable, and the constitution much enfeebled. Now and then *premature labour*, artificially effected, is essential to the safety of such women.

[Minute doses of *nux vomica* taken every morning and evening, combined with the use of laxatives, will sometimes alleviate the vomiting of pregnancy when other means have failed. — J. M. W.]

Cardialgia is often a very troublesome affection of the stomach. This sensation of heat in the throat and fauces, with frequent eructations of acrid fluid, requires the exhibition of such medicines as will carry off the excessive quantity, and correct the morbid quality of the fluid thrown up into the mouth. To secure these objects, *magnesia*, *liquor potassæ*, *liquor ammoniæ*, *vegetable bitters*, &c. are usually employed with advantage.

Pain in the head, with many other symptoms occurring within the first few months of pregnancy, is referable to vascular congestion, owing to the constitution not being reconciled to the plethora consequent to the cessation of the menstrual secretion; so that, until the balance in the circulation is established, it is necessary to deplete the system by the

steady use of laxatives, and by having occasional recourse to general and local bleeding.

The necessity of these remedial means exists very commonly in women who begin to bear children late in life, as well as in such as are of thick stature, with short necks. Such women should be bled at about the fifth and eighth months, by which means puerperal convulsions may sometimes be averted.

A variety of complaints which depend on *nervous irritability* and *vascular excitement* are apt to occur, which require the same management as when existing under other circumstances.

To *pressure* of the gravid uterus on contiguous viscera may be referred —

Hæmorrhoids, a disease of frequent occurrence during gestation, in consequence of interruption to the free return of blood to the *venæ portæ* by the hæmorrhoidal veins, producing distention and pain.

First, unload the bowels by mild aperients, such as the *potassæ supertartras*, *oleum ricini*, *confectio sennæ*, *sulphur præcipitatum*, &c. *Secondly*, subdue inflammation and pain, by lessening the bulk of the distended hæmorrhoidal vessels by leeches; puncturing the tumified veins; by a poultice composed of oat or linseed meal, and the *decoctum papaveris*; and, *thirdly*, restore the vessels to their original condition by cold enemata and astringent applications.

Should the tumours be a source of much vexation, so as to threaten uterine irritation and contraction, they may be removed by the scalpel, or by a clean-

cutting pair of scissors; but this is somewhat hazardous.

[Dr. Baltimore of America has recently devised a mechanical contrivance for the cure of piles and prolapsus ani. It consists simply of a wooden seat, which has a deep concavity for the reception of the nates. By this contrivance the soft parts around the rectum are compressed, and the hæmorrhoidal vessels supported. Dr. Baltimore speaks very highly of its curative powers. — J. M. W.]

Constipation is a very common attendant on pregnancy, and originates in torpor of the bowels, or in pressure of the gravid uterus.

This condition of the intestinal canal might be in a great degree obviated by the regular use of ripe sub-acid fruits, vegetables, and moderate daily exercise. Should pharmaceutical interference be necessary, the following formula is very well adapted to overcome the affection: —

R. Extracti colocynthidis compositi, dr. i.

Extracti hyoscyami, gr. xxiv.

Contunde bene simul ut fiat massa in pilulas xxiv. fingenda: quarum, capiat duas vel tres, alvo adstricta.

The daily exhibition of a common enema, so commonly resorted to on the Continent, is preferable to the prevalent and pernicious custom in this country of stimulating the bowels to action by a daily recurrence to purgative medicines.

Sometimes the rectum so completely loses its tone as to become enormously distended with hardened

feculent matter, and requires its contents to be broken down, and washed out by some mechanical contrivance.

Severe cutting pain in the direction of the linea innominata is occasionally produced by the gravid uterus resting on this edge of bone when sharper than usual.

Horizontal posture on the back, and the nice adaptation of a soft oblong pad to the pendulous abdomen, supported by a bandage passed over the shoulders, will afford relief.

Irritation of the neck of the bladder, connected with an inability to walk, the sensations attendant on proidentia uteri, ardor urinæ, and sometimes retention, with a considerable yellowish mucous discharge, now and then harass women in the early months of pregnancy, but often disappear as the uterus rises and gets above the pelvis.

This painful complaint must be subdued by a recumbent posture, mild and unirritating aperients, particularly oleum ricini, cum mucilagine acaciæ, diminished quantity of fluid, and that of the blandest quality. Should retention of urine and inflammation of the neck of the bladder supervene, the employment of the catheter and lancet must be had recourse to.

Petechiæ, vibices, and ecchymosis sometimes result from some of the cuticular vessels of the abdomen giving way from distention; this discolouration and cracking of the skin often alarms timid women very unnecessarily.

Gentle friction and a recumbent posture will usually relieve. Should exudation of serum from the cuticular cracks be distressing, the parietes of the abdomen may be sponged several times daily with thin water-gruel or tepid water.

Varices of the veins of the lower extremities occur during the latter months of utero-gestation, and sometimes give way, occasioning considerable hæmorrhage.

Unless the superincumbent pressure of the gravid uterus could be removed, the treatment must be palliative; but the turgescence of the vessels may be diminished by an elastic and well-applied roller, by aperients, by abstemious living, and by keeping the lower extremities as much as possible in a horizontal position.

Œdema of the labia pudendi, or even of the whole body, now and then occurs towards the close of pregnancy, in consequence of the reflux blood being interrupted in its course by pressure.

Aperients, moderate friction, regular but gentle exercise, and when at rest a recumbent posture, should be enforced. When the labia only are œdematous, warm fomentations of decoctum papaveris will afford relief. Should the skin be enormously distended, a few slight punctures may be made into the cellular substance, but they are better avoided.

[A few other harassing symptoms which sometimes accompany gestation demand a cursory notice.

Cough. — This is occasionally a very troublesome

affection, and lasts throughout the whole term of pregnancy. Laxatives, opiates, and warm plasters will often afford relief. If a cough supervene towards the end of gestation, it may require general or local bleeding for its removal.

Salivation. — Dr. Coale has lately, in the American Journal of Medical Science, related the case of a patient who saturated with saliva several handkerchiefs in the course of an hour, and without the least injury to her general health. Similar cases are on record.

Functional Disorder of the Heart. — Palpitations are occasioned by the pressure of the womb upon the diaphragm. Syncope is a serious symptom which generally occurs in the earlier periods of pregnancy. It is apt to be fatal to the foetus. The recumbent posture, brandy, ammonia, &c. are the appropriate remedies.

Toothache. — This is a common occurrence, and is not dependent on caries. It may be alleviated by steel, bark, or valerian.

General Fever. — The paroxysms come on at night, and abate towards the morning. It is a distressing affection, owing to the loss of sleep which it induces; but it does not impair the general health.

Despondency is often combined with a presentiment of death. It should be regarded with some dread, as patients who have suffered from this symptom are liable to be attacked with serious illness after delivery.

Inflammatory affections, owing to the highly fibrinous condition of the blood which obtains during pregnancy, run a rapid course, and require very vigorous treatment. — J. M. W.]

RETROVERSIO UTERI,

is that displacement of the uterus which occasionally takes place between the third and fourth months of pregnancy, before the uterus has risen above the superior aperture of the pelvis. The fundus uteri (which should incline upwards and forwards) is thrown downwards below the promontory of the sacrum, and presses on the rectum; whilst the os and cervix uteri are forced upwards and forwards, either against or over the symphysis pubis. This displacement is commonly attended with constipation, tenesmus, and retention of urine.

Cause.

An over-distended state of the bladder, which presses down the rectum, and, from its connection with the uterus at its neck, naturally elevates that organ as it rises in the abdomen. This is the most common, but not the only cause, of this malposition of the uterus; which, though perhaps never dissociated from distended bladder, may nevertheless be produced by powerful mental emotions, or some other causes acting on the bladder, provided the uterus, either by impregnation or disease, be enlarged to about the size it attains between the third and fourth months of utero-gestation.

Treatment.

The regular employment of the catheter is the principal means of cure. The bladder must be emptied twice daily, until the uterus by its growth rises above the pelvis. The catheter should be small, flat, and curved considerably more than under ordinary circumstances; and generally a flexible male catheter will be required. The distorted course of the urethra must be borne in mind, which will point out the necessity for depressing the handle considerably during the introduction of the instrument; and not unfrequently it will be necessary to introduce two fingers into the vagina, so as to depress the cervix uteri.

The bowels should be kept open by clysters; and absolute rest, in a recumbent posture, must be enjoined. Under this management the uterus very often replaces itself in a few days, without it being requisite to restore the organ to its original situation by any manual interference.

But it may be impracticable to withdraw the urine, and it then becomes necessary to replace the uterus, or the bladder may slough or burst, or adhesive inflammation may ensue. The woman being on her hands and knees, the fore and middle fingers of the accoucheur's left hand, well anointed, are to be gently passed up the rectum to the fundus of the uterus, which they are to elevate; whilst the cervix uteri is at the same time to be carefully depressed by two

fingers of the right hand in the vagina. Should the fingers employed to elevate the fundus uteri not be long enough to effect this object, a piece of whale-bone may be substituted, having a small piece of sponge attached to one extremity as a pad; but this requires extreme care.

In some few melancholy instances the uterus has been firmly wedged into the pelvis by adhesive inflammation. Such cases have terminated fatally; nor is it probable that the result would have been more favourable had a trocar been passed through the uterus to discharge the liquor amnii, or had the symphysis pubis been divided, in compliance with the recommendation of some respectable men. In one case the bladder was tapped above the pubes; the uterus was subsequently reduced, and the woman did well.

In several patients the uterus has remained partially retroverted to the full period of utero-gestation; of course, without an entire retention of urine and fæces. During parturition, after severe and protracted sufferings, the os uteri has descended, and the child has been expelled; but in some cases the patients died undelivered.

[M. Faviot recommends, in obstinate cases, the introduction of a flaccid caoutchouc bladder into the rectum, beneath the retroverted womb. This bladder is to be subsequently distended with air. M. Faviot states that he cured a case by this means, in which the retroverted uterus had contracted adhesions to the neighbouring parts.

Should every other means fail, there can be no objection to puncturing the fundus of the uterus, through the vagina, with a trocar, in order to give exit to the liquor amnii, and thus diminish the size of the womb.

Sometimes, however, the ovum can be reached and destroyed by an instrument introduced through the os uteri.—J. M. W.]

ABORTION.

THE separation and expulsion of the *ovum* from the uterus, before the foetus is able to carry on the functions of vitality, independent of its connection with the uterus, is termed Abortion, or Miscarriage.

[When it occurs during the last three months of pregnancy it is termed premature labour, and must be treated according to the principles which regulate the management of parturition at the termination of gestation.—J. M. W.]

Symptoms.

Uterine hæmorrhage, either with or without flakes of decidua, with intermitting pain.

These are usually preceded by several premonitory

symptoms, which are too fallacious to be relied on; such as lancinating pains in the breast, followed by flaccidity, cessation of the morning sickness, rigors, coldness of the lower part of the abdomen, and sometimes an offensive discharge from the uterus.

Predisposing Causes.

Irritable and feeble condition of the uterus, not admitting of its distention beyond a certain extent, and premature development of the os uteri.

Exciting Causes.

All such as enfeeble the uterus, or destroy the life of the ovum, so as to interfere with the progress of utero-gestation; such as general febrile excitement, plethora, diseased rectum or bladder, powerful mental emotions, violent exertion, such as dancing, riding, &c., emetics, purgatives, fatigue, rapid and excessive accumulation of the liquor amnii, syphilitic taint, &c.

[During the first three months of pregnancy an exceedingly slight force is sufficient to sever the very delicate attachment between the ovum and the decidua. As the development of the ovum goes on most rapidly during the third month, it is at this particular period that abortion most commonly happens. It is also extremely liable to occur at the customary menstrual periods, when a hæmorrhagic nisus may be supposed to have a tendency to produce abortion in those who are predisposed to the accident.]

The disposition to abort is engendered very commonly by a luxurious and indolent life. The robust and hard-working female, although subject to rough usage, is seldom known to miscarry.

Amongst the predisposary local causes may be enumerated prolapsus uteri, excessive venery, adhesions of the uterus to the neighbouring organs, retroversion, local plethora (the result of general plethora), and a diseased state of the ovum.

The *habit* of aborting becomes very strong if not corrected. Dr. Churchill instances the case of a lady who miscarried ten or twelve times within three years, and each time at the second month of pregnancy.

Fatty degeneration of the placenta, said to be a cause of abortion, is merely a secondary effect, to which atrophied organs are liable.—J. M. W.]

Prognosis.

This should always be guarded; because, although the immediate consequences of abortion be not alarming, it often debilitates the system, and produces a long train of distressing symptoms dependent on vascular disturbance. The immediate danger depends very much on the extent of the hæmorrhage, which is usually more formidable in the latter than in the early months of pregnancy.

Treatment.

The remedial means which bear on the *predisposing causes* embrace a sedulous avoidance of all those cir-

cumstances which produce local and constitutional irritability, congestion, or debility, and the steady employment of means to subdue such a condition when existent.

If there be *debility* and *irritability*, recourse must be had to sea air and cold bathing, the daily use of the bidet, cold water injections, per vaginam or per anum, with the exhibition of vegetable tonics or mineral acids internally: sexual separation should be enjoined, and a recumbent posture enforced, for some weeks before and after the usual period of abortion, with abstinence from fermented liquors.

In the majority of cases there is *local congestion*, demanding topical bleeding by leeches or by cupping from the loins, perineum, or groin; and in such cases dry diet* should be insisted on. Women disposed to abort should never be present in a lying-in room during parturition, or, as is common with quadrupeds, they may expel the contents of the uterus from sympathy.

Should a syphilitic taint be known to exist in either parent, a mercurial course for some weeks must be adopted.

A second class of means are applicable to the symptoms which threaten the immediate detachment and expulsion of the ovum, and the *principal indica-*

* It may be here observed, that the term DRY DIET always means the AVOIDANCE OF FLUIDS, as far as is practicable. Instead of the ordinary diet, ripe subacid or dried fruit should be substituted, and that quantity of solids and fluids likely to produce PLETHORA AD MOLEM must be abstained from.

tion is to prevent uterine action; for, if this be established, abortion can but rarely be prevented.

It is at this point that the progress of the mischief may often be arrested, by moderating the force and diminishing the frequency of the action of the heart, by local and general bleeding; by injecting, per anum, three or four grains of opium, previously rubbed down with cold water; by absolute quietude of mind and repose of body in an horizontal posture; by light covering, cool air, cold injections per anum et per vaginam; and by the exhibition of nitras potassæ, in doses of ten grains, in any cold fluid, every two hours, unless it nauseates.

Should uterine action commence abortion almost inevitably follows. But even then most of the means just enumerated must be persevered in, with a view to counteract the bad effects of severe and protracted pain and hæmorrhage. *Opium* should not be given unless with the intention of temporarily subduing the contractile efforts, which, if feeble, may be arrested for a time; so that when they recur, it may be with that degree of augmented power which is necessary to expel the ovum. The *secale cornutum* may be advantageously used to assist the feeble uterine energies.

Stimuli can scarcely ever be necessary.

If the woman's life be endangered by hæmorrhage, then extraordinary measures may be requisite; such as plugging up the vagina, dashing cold water on the abdomen, the introduction of ice within the vagina,

and the exhibition of lead internally, in combination with opium and acetic acid.

Lead is a much more valuable, efficient, safe, and manageable medicine than is generally supposed.

Sometimes the hæmorrhage is kept up by some portion of the ovum remaining partly within and partly without the uterus. Should circumstances demand it, this may be removed by careful digital interference, or with a pair of curved dressing forceps.

Premature separation and expulsion of the ovum occurs more frequently at the sixth, tenth, and twelfth weeks, and at the seventh month. Women disposed to abort should, therefore, more sedulously avoid the exciting causes of abortion at those periods of utero-gestation.

[The above observations on the treatment of abortion are alike comprehensive and judicious, and leave little to add, except a few words on the prevention of the *habit* of miscarrying—a habit which, when allowed to proceed unchecked, is pretty certain to acquire fresh force at every successive period of its recurrence: “*Vires acquirit eundo.*”

A patient in whom this habit is engendered should be strictly confined to the horizontal posture until long after the usual period at which she aborts has passed by. The mind and body should have perfect repose; and if she be plethoric, bleeding may be required. Aloetic purges must be avoided, but gentle laxatives will frequently be of service. Total absence from the conjugal bed must be rigidly enforced.—J. M. W.]

PARTURITION,

Is that process occurring at the expiration of thirty-nine weeks from conception by which the uterus detaches and expels its contents, and returns nearly to the condition in which it was previous to impregnation.

Cause.

Many reasons have been assigned for the accession of labour at the expiration of the thirty-nine weeks after impregnation: but the only one reconcilable with positive and observable facts is, that the uterus ceases at that time to receive any further augmentation of its component parts, and is stimulated by the mature ovum coming in contact with its neck and mouth; or perhaps it may be referred to the recurrence of a menstrual period, when the uterus, from its own distention and weight of contents, is no longer able to bear that increase of susceptibility which accompanies these periods.

CLASSIFICATION OF LABOURS.

Most of the modern arrangements will be found to be objectionable, if submitted to the test of *nosological correctness*.

The division of labours originally made by Hippocrates into

Natural, and
Preternatural,

is sufficiently comprehensive, whilst it forcibly recommends itself by its simplicity and perspicuity.

NATURAL LABOUR is characterised by four circumstances :

First, the occipito-vertex presents.

Secondly, there is sufficient room in the pelvis to admit of the ready descent of the head of the child in that direction which permits the occiput to emerge from under the arch of the pubis.

Thirdly, there is parturient energy adequate to the expulsion of the contents of the uterus without manual interference, and without danger either to the mother or child. And,

Fourthly, the process of parturition is completed within a moderate time.

PRETERNATURAL LABOUR embraces all the varieties not to be comprehended in the class of natural labour, whether from their *difficulty*, *duration*, or *danger*. They may be arranged under the following six orders : —

First, Protracted labours.

Second, Those labours in which any other part than the head presents, such as the breech, feet, hands, funis, &c.

Third, Labours with a plurality of children.

Fourth, Labours attended with convulsions.

Fifth, Labours with uterine hæmorrhage.

Sixth, Labours in which laceration of the uterus or contiguous parts occurs.

[The classifications which have been devised by various authors are all more or less imperfect. In some, the limitation of the number of classes has led to vague terms and cumbrous subdivisions; in others, an opposite plan has caused an unscientific separation of closely allied affections. The most imperfect classification, however, serves to connect facts, and any method is better than none. — J. M. W.]

STAGES OF LABOUR.

Certain phænomena occur during the progress of parturition, which may be arranged under three divisions or stages.

The *first* comprehends all those circumstances that occur before the complete dilatation of the os uteri.

The *second* includes all that takes place between the complete expansion of the os uteri and the expulsion of the child.

The *third* embraces everything connected with the detachment and expulsion of the placenta and membranes.

GENERAL RULES FOR CONDUCTING LABOURS,

Equally applicable to Natural and Preternatural.

Sometimes circumstances of so much moment occur in the earliest stages of labour, that a practitioner should never long defer his visit after being summoned to a parturient woman: either the sudden

expulsion of the child through a capacious pelvis, which always excites alarm, and may invert the uterus; or formidable, and even fatal hæmorrhage, may demand his immediate and active interposition. Besides, to a female, who at this time is the subject of suffering and fear, it is consolatory to know that her medical attendant is acquainted with her state; and although it is the duty of the nurse to prepare (or, as it is technically called, *guard the bed*) and also to change the dress of her mistress, still it can never be derogatory from the dignity of the accoucheur to see that everything likely to conduce to the comfort and safety of his patient is arranged previous to the accession of those active symptoms which more decidedly characterise labour.

Independent of these, which some may think unimportant considerations, it is highly necessary that the accoucheur should at a very early period of labour make himself acquainted with the presenting part of the child, and with its position in relation to the circumference of the pelvis; because it often happens that this inquiry detects some malposition of the head which must be rectified at the commencement of the labour, or the presentation of some other part, which may require his immediate and active interference. This knowledge is to be acquired by what is termed *examination*, or, among women, *taking a pain*, from the popular opinion that by the act some relief is given to the patient.

This *examination per vaginam* is usually proposed too abruptly, and made too rudely. Delicate women

revolt at the idea of this proceeding; and therefore its necessity, and the advantages to be obtained from it, should always be explained to them. The proposal should be made to the nurse, or some friend, and the medical man should be out of the room whilst the patient places herself at the foot of the bed on her left side, having her knees drawn up towards the abdomen, and her feet pressing against the bed-post.

Unless the parts are well lubricated by mucous secretion, the index and middle fingers of the left hand are to be anointed with oil or lard, and carried up to the os externum, the situation of which may be ascertained by the hips. The fingers should be introduced at the posterior part of the vagina, and with moderate effort be steadily pressed forward to the os uteri. Thus far the proceeding should be carried on during a paroxysm of pain; but until the pain ceases nothing further is to be done, except to ascertain the degree of expulsatory power exerted by the uterus, and this must be done very cautiously, or the membranes will be lacerated, and the liquor amnii escape.

On the cessation of the uterine contraction, the finger is to be carried forwards through the os uteri; and the presenting part and its position, with the condition of the os uteri, must be known before the fingers are withdrawn.

The woman and her friends always expect some part of the information thus obtained; and whilst the uncertainty of the *duration* of labour should always guard us against giving an opinion on that

point, we are bound to communicate any favourable intelligence for their encouragement.

Having satisfactorily ascertained what he wished to know, the practitioner should withdraw, lest his patient be induced to retain the contents of the bladder and rectum too long.

The state of these two viscera ought to be ascertained from the nurse, and if requisite the bowels should be opened by an enema.

The patient may be permitted to take any plain food, but should not be allowed stimulants. Such refreshments as ripe subacid fruit may be liberally granted.

Her spirits should be kept up by kind and cheerful conversation; she should be encouraged to walk about the room during the first stage of labour, and every effort should be made to divert her thoughts from her suffering.

She should not be urged to make any voluntary exertion to expedite the progress of parturition; but the entire process should be left as much as it can be to nature.

The lying-in room ought to be as cool and well ventilated as possible, and two attendants, besides the accoucheur, are quite sufficient for every possible occurrence.

SYMPTOMS PRECEDING LABOUR.

For some days previous to the accession of labour certain symptoms are often present, which, by women

who have borne children, are known to be precursors of that eventful hour.

Restlessness, particularly at night, very frequently precedes parturition for days and weeks, and is rarely to be considered as bearing unfavourably on labour.

Subsidence of the uterus and abdomen is not an unusual monitor of the approaching suffering. It may be viewed in a favourable light, inasmuch as it indicates room in the pelvis.

Glairy mucous secretion from the os uteri and vagina, popularly termed *show*, sometimes occurs for days before the more active symptoms of labour. It is often streaked with blood, and tends to lubricate the parts concerned in parturition.

Irritability of the bladder and rectum, demanding their frequent relief, is another occasional precursor of labour.

SYMPTOMS ACCOMPANYING LABOUR.

In consequence of the resistance which the uterus meets with during its contractile efforts, *pain* accompanies every such contraction; but the pain attendant on parturition differs very materially in its nature and in its influence on the uterus. These paroxysms of pain are either

Entestinal, or
Uterine.

Paroxysms of intestinal pain, or such as are termed false or spurious pains, may be distinguished from genuine labour pains by being unconnected with

uterine contraction, by attacking different parts of the abdomen, and by recurring irregularly.

These pains usually originate in some sources of intestinal irritation, and may almost always be removed by emptying the bowels, and by subsequently exhibiting an opiate. They can hardly be confounded with enteritis by an observant practitioner.

The uterine pains are either *dilating* or *expulsive*.

Dilating pains, or, as they are popularly termed, *grinding pains*, result from uterine contraction. They are principally confined to the back, occur in the earliest stages of labour, and are peculiarly distressing to the patient, who expresses her suffering by restlessness, despondency, and moaning. They often continue a long time without the intermissions being free from uneasiness, and appear almost exclusively to dilate the os uteri.

It is during the existence of these dilating pains that *rigors* most commonly occur. They generally appear when the os uteri is approaching to its full degree of dilatation, and are then not unfrequently accompanied by a slight discharge of mucus, either with or without blood, commonly called a "show." These rigors are not dependent on a state of actual cold, and the patient herself will often express her surprise that she should shiver so violently, and yet feel quite warm; they are the result of a peculiar sympathy that exists between the os uteri and other parts of the body.

When the mouth of the womb is considerably dilated, *expulsive pains*, sometimes termed *forcing* or

bearing-down pains, commence in the loins, and gradually proceed round the abdomen, till they meet at the region of the pubes.

If the accoucheur's hand be placed on the flaccid parietes of the abdomen previous to the accession of a paroxysm of expulsive pain before the woman is aware of it, the uterus may be felt contracting to a hard, tense, incompressible tumour.

Between these pains there are regular intervals of ease, which gradually become shorter, whilst the pains, in an inverse ratio, increase in their duration and severity; and now it is that the abdominal muscles and diaphragm afford their assistance.

During each propelling effort a larger portion of the membranes, distended with liquor amnii, is forced through the os uteri, performing to it and all the parts through which the child has to pass the office of a soft but powerful wedge. With these pains there is often present a frequent disposition to empty the rectum; and sometimes this is so harassing as to justify the administration of a small enema, with a few drops of tincture of opium.

[During the transit of the head through the superior aperture of the pelvis, it sometimes happens that painful sensations are experienced on the inner side of the thigh, in consequence of pressure on the *obturator nerve*. In the last stage of labour the *sciatic nerve* may be severely compressed, so as to induce cramp of the muscles at the back of the thigh and leg. I have known a patient suffer from partial paralysis of this nerve for many weeks after

a protracted labour, owing to injury to which it has been subjected during parturition.—J. M. W.]

Vomiting is a common attendant on uterine pain, and is beneficial, by ejecting food which, from its quantity or quality, may be a source of inconvenience to the stomach.

It principally occurs during the dilating pains, and unquestionably assists in the relaxation and dilatation of the os uteri.

When vomiting continues or returns in a protracted labour, after the mouth of the womb is fully dilated, with abdominal tension and pain, without uterine contractions, and with ejections from the stomach of fluid like dark coffee-grounds, with foul tongue and rapid and hard pulse, it generally must be viewed as indicative of inflammatory action or exhaustion and laceration, and requiring immediate and most efficient interference.

Besides these attendants on parturition, the pulse usually becomes quick and full, the countenance florid, the whole surface of the body covered with profuse perspiration, and the lower extremities cramped.

NATURAL LABOUR.

THE process of natural labour is at once so simple and so beautiful that it cannot fail to excite the admiration of those who investigate minutely the operations of nature.

It would be useless to repeat what has been advanced respecting the precursory and accompanying symptoms of parturition, although it is necessary to recall those statements to mind, as constituting a part of the history of natural labour.

The premonitory symptoms having continued for an indefinite time, pains in the loins darting through the pelvis, with mucous discharge, indicate the near approach of labour. For some time the pains are of the *dilating* kind; and, on an examination per vaginam, will be found rather to be diminishing the thickness of the edges of the os uteri than to be enlarging its area. When the edges of the os uteri are not thicker than the other parts of the expanded cervix, it begins to open; and, as soon as it can admit the extrusion of any portion of the membranes distended with liquor amnii, the pains become rather of the *expulsive* character, and there will be a sensible bearing-down of the whole uterine tumour. Successive paroxysms of pain dilate the os uteri more and more, whilst the protruded membranes, distended like a tense bladder, fill up the opening, and perform the office of an inimitable wedge, till the uterus and vagina form one continuous passage. Soon after this, the membranes generally burst during a strong pain, having previously contributed to the dilatation of the vagina; and, with the escape of the liquor amnii, there is sometimes a temporary suspension of pain, and the head of the child is propelled into the superior aperture of the brim of the pelvis, or descends into the cavity, but more frequently this advance is not

made until several pains have followed this occurrence.

Uterine contractions recurring with augmented frequency, force, and duration, gradually propel the foetus along the passages, until the head presses on the perineum, which is put on the full stretch, and also against the soft parts, which it protrudes. These by degrees dilate, and permit the forehead, face, and chin to pass over them, whilst the occiput emerges and turns up from under the arch of the pubis. After the complete extrusion of the head, the other parts of the body are expelled sometimes by the same pain, but more frequently by one which speedily follows.

Now and then the same pain detaches and expels the *placenta*; but more commonly the uterus remains at rest about a *quarter* of an hour, when it resumes its contractions, and throws off the placenta with its adherent membranes.

This completes the beautifully simple process of natural labour, during the whole of which no assistance is required from us; but, on the contrary, any officious interference is likely to be productive of some untoward occurrence.

Several important *changes in the relative situation of parts*, which well deserve attention and admiration, occur during this interesting process.

At the commencement of labour, the head is found at the *brim* of the pelvis, having its long axis adapted to the longest diameter of the pelvis, or, in other words, with the forehead and occiput opposed to the sacro-iliac symphysis and opposite acetabulum; the

forehead being usually directed to the *right* sacro-iliac symphysis, and the occiput to the *left* acetabulum.

It descends into the *cavity* of the pelvis, without undergoing any very material change in the relation which it bears to the circumference of the pelvis, except that the forehead is directed a little more backward towards the hollow of the sacrum. Its further descent without some change of position is resisted by *three* obstacles.

First, by the sacro-ischiatic ligaments; *secondly*, by the spinous processes of the ischia; and, *thirdly*, by the position of the shoulders, which are opposed to the shortest diameter of the brim of the pelvis — i. e. to the promontory of the sacrum and symphysis pubis.

If the form of the spinous processes of the ischia be recollected, it will be evident that the occiput having a tendency to turn forwards by the position of the head, on its descent into the cavity of the pelvis, will be assisted in effecting this course by the unequal pressure of the processes of the ischia on the sides of the head; for, whilst one spinous process presses on the edge of the parietal bone next the forehead, the other is pressing on that edge of the opposite bone which is nearest the occiput, so that the apex of the occipital cone necessarily passes under the arch of the pubes.

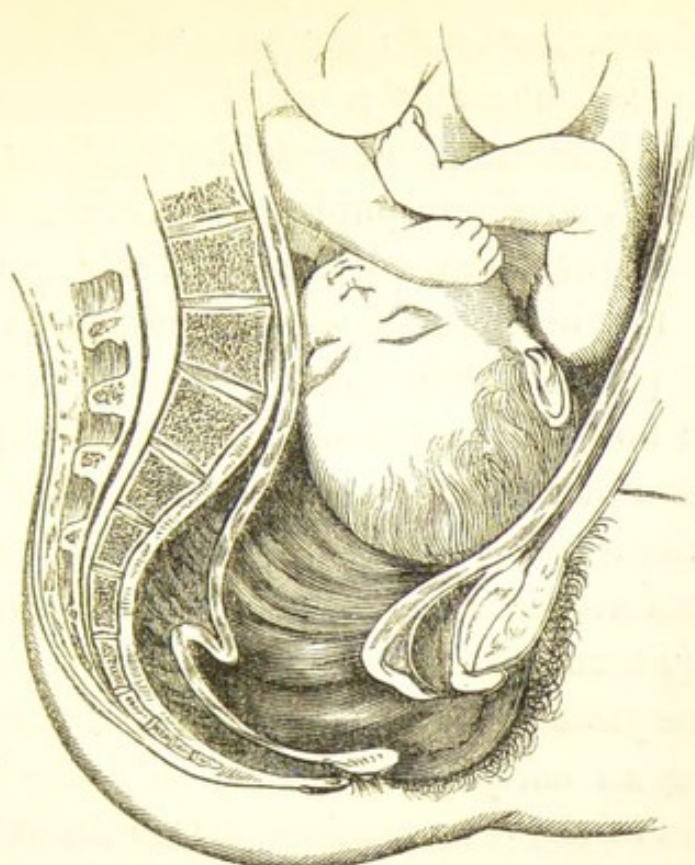
As the head passes through the inferior aperture, its long axis pretty nearly corresponds to the axis of the inferior part of the cavity of the pelvis, and its

short axes correspond to the diameters of this aperture, i. e. the one between the parietal protuberances to the short diameter, and the one between the foramen magnum and top of the head to the long diameter, whilst the same change applies the long axis of the shoulders to the widest part of the brim, which enter without any difficulty.

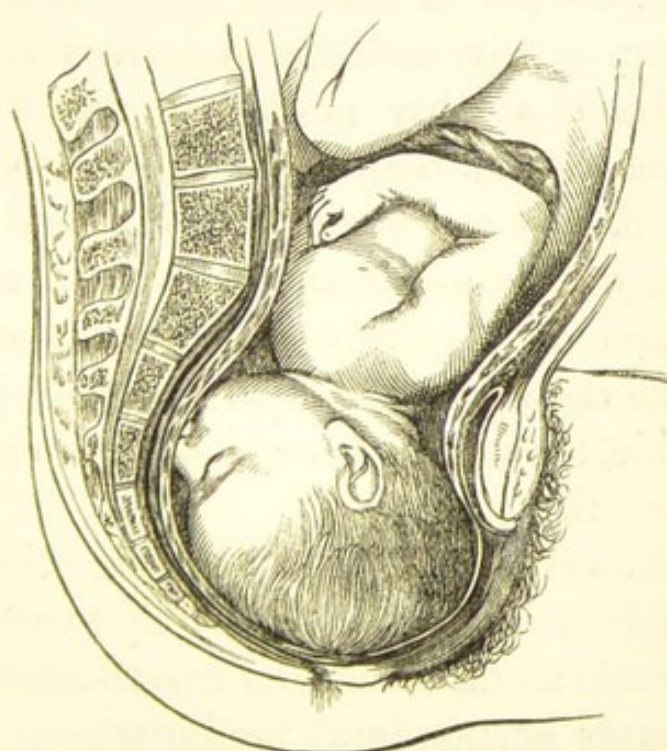
On the emergence of the occiput, in the form of a cone (an admirable contrivance gradually to open the soft parts), the chin recedes from the chest, and the occiput turns up towards the abdomen of the mother, so that the chin and occiput describe a curved line during the gradual exit of the head from the vagina.

At this stage of the process another change takes place: the shoulders, having entered the cavity of the pelvis nearly in the same direction as they passed the brim, meet with the obstacles that the head encountered, and from similar causes effect the same turn, during which the body of the fœtus takes a new direction, so that the face is turned from the sacrum to one of the thighs, generally to the right, and the shoulders to the sacrum and pubes; in this way the shoulders pass with ease through the outlet of the pelvis, having their greatest width corresponding to its long diameter.

[The following cuts, after Lee, exhibit the progress of the head in the first stage of an ordinary case of vertex presentation, termed, according to Baudelocque, the left occipito-cotyloid.



FIRST STAGE.



FIRST STAGE COMPLETED.

Baudelocque, whose arrangement of vertex presentations is generally adopted, describes six varieties. 1. Left occipito-cotyloid. 2. Right occipito-cotyloid. 3. Occipito-pubic. 4. Left fronto-cotyloid. 5. Right fronto-cotyloid. 6. Fronto-pubic.

When the head, in a natural labour, is about to enter the pelvis, the occiput projects lower than the forehead; and it has been shown by Naegelè that the left parietal protuberance of the foetal head advances further than that of the opposite side. The head may, therefore, be considered to pass *obliquely* as well as *spirally* through the pelvis.

Dr. Conquest has judiciously enforced the propriety of making an early examination, in order to detect the nature of the presentation. This should be done before the liquor amnii is discharged, although it will be impossible to discover the *precise* nature of the presenting part until the os uteri is well dilated, and the head is fairly in the brim of the pelvis. Before this period, frequent examinations elicit no information, and are productive of much irritation. In the early stage of labour the os uteri can be detected much more readily by the fingers of the *left* than of the right hand; that is, if the woman lie on her left side, the position in which women are usually delivered in this country.

The fontanelles of the foetal head are the parts by which we discriminate between occipito-cotyloid (occiput towards acetabulum) and fronto-cotyloid (forehead towards acetabulum) presentations. The anterior fontanelle cannot be so easily detected in the

latter as in the former presentation. The posterior fontanelle during labour loses its triangular shape, and presents only a rough spot formed by the junction of the sutures. If the position of the head cannot be determined by the fontanelles, owing to some deviations from their usual forms, the *lobe of the ear* will form a good discriminating sign. This part may be easily reached, unless the brim is greatly contracted; and, inasmuch as it is nearer to the occiput than the forehead, it furnishes a ready means of diagnosis.

There is a point connected with vertex presentations which presents great interest: it is the general fact established by Naegelè, that, when the head is expelled in Baudelocque's *second position*, it does not assume this direction until the close of the labour, and that it enters the pelvis in the *third position* (occiput to sacro-iliac symphysis). As nature is generally all-powerful in effecting the necessary rotation, the folly of an early interference in cases of this description is sufficiently obvious. — J. M. W.]

It appears that all a practitioner can do towards preventing the rupture of the perineum consists, first, in preventing the head from passing over it until it has acquired sufficient dilatibility; secondly, in preventing the head from passing *suddenly* over it, even when it has acquired this dilatibility; and thirdly, in assisting the head to take its natural direction, viz., such as that the occiput turns up before the symphysis pubis. With every precaution, laceration, even to a considerable extent, will sometimes

take place, but attention to these objects will generally prevent it.

Some intelligent men think that pressure on the perineum does harm, but that much benefit results from pressing back the head so as to secure its slow exit. The hand may perform the office of an inclined plane, as the full relaxation and retraction of the perineum are the objects to be aimed at.

[The perineum is most conveniently supported with the palm of the right hand, which should be covered with a napkin. The reflection of the skin between the thumb and forefinger should rest against the edge of the perineum. By this means, the left hand placed over the abdomen, will be at liberty to steady the uterus during the passage of the child. The support to the perineum should not be withdrawn until after the shoulders are born.—J. M. W.]

In natural labour no other interference is justifiable, and too strong terms cannot be employed to reprobate the practice of hastening the birth of the body by dragging it forcibly by the head into the world. It should be left to be expelled by the unaided contractions of the uterus.

As soon as the child manifests unequivocal signs of life, a ligature, consisting either of a piece of tape or of a few threads, must be passed round the funis, about two inches distant from the umbilicus, and a second ligature at the distance of three inches from the first. The funis is then to be divided by a round-pointed pair of scissors at a point equidistant from each ligature, taking care that nothing but the funis be included in the incision. All this should be done

under the bed-clothes, it being indelicate and unnecessary to expose either mother or child.

Having transferred the child to the nurse, a broad bandage, which ought always to be passed round the abdomen of the mother before or during labour, should be moderately tightened, so as to compress the uterus, or the uterus should be supported by gentle pressure made by the hands of an assistant, which will be found very materially to aid its efforts to detach and expel the placenta.

The management of the placenta constitutes a very important part of the duties of the practitioner. If the uterus be not permitted to empty itself gradually and perfectly, some untoward and alarming circumstance is likely to occur in this stage of parturition.

Generally, from *fifteen* to *thirty* minutes elapse between the birth of the child and the expulsion of the placenta. The woman then complains of a slight pain in her back or abdomen, and this secondary contraction of the uterus detaches the placenta, although it but rarely expels it from the passages; whence it may usually be removed by coiling the funis round two of the fingers of the right hand, whilst, guided by the cord, the thumb and index-finger of the left hand should always be passed up to its insertion, which, when felt, is a pretty sure indication of the detachment of the whole mass from the parietes of the uterus. By this measure also the funis is prevented from breaking off, and a firmer hold of the placenta is obtained.

To guard against the possibility of inversion of the uterus occurring without our knowledge, the pla-

centa should be permitted to slip by the fingers of the left hand retained in the vagina; and in order to facilitate its extraction, the funis should always be directed in the axis of the brim, cavity, and outlet of the pelvis, as the placenta passes those parts.

[The whole of the fœtal membranes should be carefully removed with the placenta. If a portion be left behind, it might in the first instance excite after-pains, and afterwards, in consequence of forming a nidus as it were for putrefiable fluids, engender a low form of puerperal fever. — J. M. W.]

The hand of the accoucheur should afterwards be laid on the abdomen, to ascertain that the uterus is well contracted; and the pulse should be felt, lest internal hæmorrhage, re-distending the uterus, may be going on and endangering the patient's life.

It is of great moment that a bandage be fixed over the uterine region: this being done, and a well-aired napkin applied to the labia pudendi, some mild, cool nourishment may be given to the woman, who, after having remained tranquil for half an hour, and having had her soiled linen removed, may be drawn up to the head of the bed. During her removal she must remain perfectly passive, and is on no pretence to be raised from the horizontal posture, lest hæmorrhage or prolapsus uteri should follow.

DETENTION OF THE PLACENTA,

May depend either —

First, on diminution or loss of contractile power in the uterus.

Secondly, on irregular contraction. Or,
Thirdly, on adhesion between the uterus and placenta.

[A fourth cause may be added,—deficient power in the abdominal muscles, induced either by the distention to which they have been subjected during the period of gestation, or to the long-continued use of that most prejudicial invention, a female corset. There can be no doubt that partial atrophy of the abdominal muscles is not the least amongst a long catalogue of evils produced by the pernicious custom of tight-lacing. — J. M. W.]

First. Should the placenta be retained in utero in consequence of insufficient power in that organ to separate and expel it, as when the uterus has become exhausted by protracted exertions, on an external examination of the abdomen, instead of communicating to the hand the sensation of a hard ball just above the symphysis pubis, it will be found large and loose, occupying no inconsiderable part of the cavity of the abdomen. Under these circumstances no reasonable man would think of *forcibly* extracting the placenta by pulling at the funis, as he would most likely invert the uterus; or, should he succeed in detaching the mass from its connection with the uterus, the large uncontracted orifices of the uterine vessels must inevitably pour out streams of blood, and the woman would most likely fall a victim to his temerity and ignorance.

The management of this case resolves itself exclusively into the *production of uterine contraction*.

This object is to be accomplished by *external* and *internal* means.

The *former* are, the steady employment of pressure on the abdomen with a bandage or by the hands of an assistant, grasping the uterus within the palm of the hand, briskly rubbing the uterine region, and dashing the abdomen with cold water. The *internal* means to be employed are, the introduction of the hand within the cavity of the uterus, in which it is to be cautiously moved about until, by its contractile efforts, it expels the hand and placenta; and the injection of cold water into the uterus.

A *second* cause of the detention of the placenta is *irregular contraction* of the uterus. This spasmodic affection of its muscular fibres may occur either in the longitudinal or circular ones; but it is most frequently the latter that take on spasmodic action, either at the cervix uteri, which they close, or about the middle, dividing the uterus into two chambers, constituting the *hour-glass* contraction.

[Irregular contraction of the uterus appears to be sometimes occasioned by a too speedy delivery, in consequence of a preternaturally large pelvis. The contractions have not had sufficient time, as it were, to subside in regular order, and abnormal action of the muscular fibres is the result. — J. M. W.]

It has been before directed never to draw down by the funis, unless its insertion into the substance of the placenta can be distinctly felt and grasped; and in this case the importance of the direction is obvious, because the inevitable consequence of pulling by the

cord will be its separation, by which the difficulty of removing the placenta will be augmented.

The *management* of this case consists in *subduing the spasmodic constriction*; and this is to be accomplished by the exhibition of a full dose of opium, not less than *forty* or *fifty minims* of tincture of opium, or from *two* to *three grains* of the gum. Usually within half an hour after its administration the constricted part becomes *dilatable*, and may be overcome by the cautious introduction of the hand into the uterus through the stricture.

The *third* cause of detention of the placenta constitutes one of the most formidable and trying cases in obstetric practice. It arises from *adhesion between* the uterus and placenta, in consequence of the deposition of coagulable lymph from inflammatory action which may have existed during gestation.

This adhesion is not often found to unite the whole surface of the placenta to the uterus; consequently a part is loosened, and hæmorrhage, with a retraction of the cord on the cessation of secondary pains, excites suspicion of the state of things, and leads to an examination per vaginam.

The unaided efforts of the uterus can never detach and expel the placenta under these circumstances; and consequently the hand of the accoucheur, guided by the funis, must be very carefully introduced into the uterus, and an attempt made to detach the placenta by drawing its circumference to the centre of the mass.

Should this effort be unsuccessful, one or two

fingers may be very cautiously insinuated between the edge of the placenta and uterus, which must be slowly and tenderly separated. The hand should never be withdrawn until the object is completely effected, and uterine contractions excited.

It is of great importance to remove every portion of the placenta, if it can be done without violence; or hectic fever, or inflammation of the uterus, or hæmorrhage may supervene and destroy the woman. In some cases a very small piece has induced fatal results, either by hæmorrhage or irritative fever.

[Adhesions, in some very rare instances, have occurred between the *Chorion* and *Decidua*, and interfered with the expulsion of the placenta. Fortunately, these adhesions can be easily broken down by means of the hand. — J. M. W.]

PRETERNATURAL LABOURS.

UNDER this class the following six orders will be treated of: —

- First.* Protracted labour.
- Second.* Those labours in which any other part than the head presents, such as the breech, feet, hands, funis, &c.
- Third.* Labours with a plurality of children.
- Fourth.* Labours attended with convulsions.
- Fifth.* Labours with uterine hæmorrhage.
- Sixth.* Labours in which laceration of the uterus or contiguous parts occurs.

First Order.

PROTRACTED LABOUR.

The term *protracted* is here applied to all labours called by different authors *laborious, lingering, difficult, perilous, impracticable, tedious, perplexing, instrumental, &c.*

Cause and Management.

All protracted labours might be said to originate in *defective parturient power*, or in *preternatural resistance*; but they must be more minutely looked at under *two divisions*.

First. Such labours as are brought to a favourable termination by the unaided powers of the uterus.

Secondly. Such labours as require instrumental aid.

Within the whole range of obstetric science there is nothing which so much distinguishes the judicious practitioner from the man who disgraces medicine, as the management of *protracted labours*. One man, by incessant meddling, produces rigidity of parts, and even inflammation of the os uteri, so that his patient through his folly shall suffer from a most painful and protracted labour.

Another officiously interferes with the beautifully simple and admirably adapted process of nature; and presumes that, by rupturing the membranes as soon as he can detect them, or by using his lever on lever principles, by which many women are rendered wretched for life, he shall accelerate parturition.

A third urges his patient to be constantly taking stimulants, such as wine and spirits; or to employ

voluntary exertion, and desires her to hold in her breath and force down, whilst the os uteri is not half dilated enough to permit the head to pass; and the consequence is, that the woman becomes so exhausted by useless exertions, that she at last has not power enough to expel the child, and instruments must be had recourse to.

Another practitioner allows the head to remain in a position which will never permit it to pass through the pelvis for hours, and even days, until the mother is worn out by fruitless efforts, though the malposition might have been rectified at the commencement of labour.

A fifth is altogether unconcerned about the condition of the soft parts, until the head has been so long and firmly wedged in the superior aperture of the pelvis, that mortification follows.

To complete this mournful series of portraits, another, instead of waiting for uterine action to throw off the placenta, will pull at the funis until the uterus is inverted or formidable hæmorrhage follows; and when, as a consequence of his meddling, the uterus is filled with coagulated blood, and strives to empty itself by strong contractions, which are called after-pains, he will strive to counteract this salutary operation by exhibiting large doses of opium to quiet these pains, which are intended to repair the mischief he has himself produced. These sketches are not one shade too deep, and they are but a sample of those practical evils which are of almost every-day occurrence.

Unexpected circumstances very often occur in the practice of midwifery, in which a little mechanical dexterity will materially tend to shorten the duration and mitigate the severity of the woman's suffering. This is so often seen, that an accoucheur will find an acquaintance with mechanical principles of no inconsiderable importance.

An accoucheur must always maintain a calm and unruffled temper, and that well-conditioned state of mind which will prepare him for the occurrence of unexpected and alarming difficulties.

Whilst the patient and her friends are all bustle, consternation, and despair, his countenance and manner must never express alarm or want of resource under the most trying and adverse events. His knowledge should be so well arranged, and his plan in such a state of readiness, as to admit of their immediate application. Every now and then he will be so circumstanced, and overtaken by such occurrences, that he dares not defer acting until a second opinion is obtained; but he must at once determine on a plan, and adopt and pursue it with prompt and active decision. Neither his hand nor his heart must, for a moment, lose its firmness; but with a mind unassailed by fear or doubt, he must accomplish his purpose with calmness and steadiness. On the occurrence of formidable difficulties or imminent danger, his coolness and calm consideration should at once be engaged on behalf of his patient; and with an increase of peril, there should be an increase of self-possession on his part: but all this should be

founded on knowledge and judgment, and not on ignorance and presumption—for confidence and decision are as frequently the offspring of the latter as of the former.

In such different degrees do medical men possess these important qualifications that one will retain the confidence of his patient during a protracted labour of many days, whilst another, by his timid countenance and vacillating conduct, will lose her confidence in as many hours.

But there is another feature, without which an accoucheur is essentially deficient; it is *kindness of manner*.

He must, indeed, be destitute of the ordinary ingredients of humanity, who feels not for a woman agonising before him in paroxysms of pain which appear intolerable and seem to threaten the extinction of life. It is true that he will often be so harassed by mental inquietude and bodily fatigue that the maintenance of a cheerful countenance is almost impracticable; but nothing can justify peevishness or insensibility, or indifference to the sufferings of his patient. On the contrary, tenderness and delicacy of manner, and whatever can soothe agitation and fear, or alleviate pain, however trifling the means, must never be neglected.

But to advert to the various causes of protracted labours of the *first division*, or those which are brought to a favourable termination by the unaided powers of the uterus.

Feeble or irregular uterine action will protract labour.

Any circumstance debilitating the constitution, or the uterus only, will produce this condition.

Parturition, protracted from this cause, usually occupies a long time, during which it is of the greatest moment to *support the powers of the system* by mild, unirritating, nutritious diet, and by kind and sympathising conduct; no voluntary exertions or forcible straining should be permitted, the room ought to be cool and well ventilated, every encouragement to repose should be given, and uterine action must be increased by steadily employed *friction* of the abdomen and loins, with moderate pressure on the uterine region. An enema of a pint of tepid water, or gruel, with a handful of salt, will sometimes increase the uterine action. *Opium* is a very efficient remedy for this cause of protracted labour; it should be given either by the mouth or rectum, not in such a quantity as to paralyse the energy, but in a dose of about twenty minims of the tincture, or two grains of solid opium, so as to procure sleep and suspend irregular or feeble contractions of the uterus, that, on their recurrence, it may act with redoubled energy. The *ergot of rye* may be strongly recommended for the relief of these and some other cases connected with an enfeebled condition of the uterus. Perhaps the following remarks may be deemed a summary of what is known of its powers:—

The SECALE CORNUTUM, or ergot of rye, was first used by a German (Cameranius), in the year 1668. It was deemed so deleterious by the French, in 1774, as to be proscribed by a legislative act, but it has of

late attracted the notice of physicians, as possessing certain specific powers over the uterus "more certain than tartrate of antimony upon the stomach, or jalap upon the intestines." The ergot may be advantageously given under the following circumstances:—

" 1. When, in lingering labours, the child has descended into the pelvis, the parts dilated and relaxed, the pains having ceased or being too ineffectual to advance the labour, there is danger to be apprehended from delay, by exhaustion of strength and vital energy, from hæmorrhage, or other alarming symptoms.

" 2. When the pains are transferred from the uterus to other parts of the body, or to the whole muscular system, producing puerperal convulsions.

" 3. When in the early stages of pregnancy abortion becomes inevitable, accompanied with profuse hæmorrhage and feeble uterine contractions.

" 4. When the placenta is retained from a deficiency of contraction.

" 5. When patients are liable to hæmorrhage immediately after delivery. In such cases the ergot may be given as a preventive a few minutes before the termination of the labour.

" 6. When hæmorrhage or lochial discharges are too profuse immediately after delivery, and the uterus continues dilated and relaxed without any ability to contract."

On the other hand,

" 1. It should never be administered when nature is competent to a safe delivery.

“ 2. It should never be administered until the regular pains are ceasing and are ineffectual, and there is danger to be apprehended from delay.

“ 3. It should never be administered until the rigidity of the os uteri has subsided, and a perfect relaxation induced.

“ 4. It should never be administered in any case of preternatural presentation that will require the foetus to be turned.”

Under the precautions which are here quoted, the efficacy of the ergot is very striking, being followed, in from five to twenty minutes after its exhibition, by a bearing-down effort, which gradually increases, and goes on, without any intermission, till the delivery be completed. It is this uninterrupted action of the uterus which renders the remedy so improper when the presentation is unfavourable, as any attempt to turn the child must, of necessity, prove abortive, and even dangerous.

Twenty or thirty grains infused in water generally answers better than a larger dose, as it does not affect the stomach with nausea or vomiting. When it does this, it may be exhibited in combination with ammonia, and repeated until three doses have been given.

[From the fact of children having been born dead in many cases where ergot was given, it has been perhaps too hastily inferred that this drug is capable of producing a poisonous effect on the infant. With respect to the supposed instances of toxæmia, my experience quite corresponds with that of Dr. Rams-

botham, who has justly observed that, "in most of the cases, however, which were adduced to determine this fact, the labour had been very lingering, and the child had been destroyed, not by any poisonous quality in the drug, but by pressure, either on the foetal head during its passage through the pelvis, or more likely on the funis umbilicalis."

With respect to the mother, ergot is not only a safe, but a valuable remedy, when judiciously given. But if improperly administered it may cause laceration of the uterus, vagina, or perineum.

Galvanism.—Conflicting opinions prevail as to the value of this agent in the treatment of lingering labour. Herder suggested its use many years since, and its utility as an ecbotic agent has recently been advocated by Drs. Radford, G. Bird, Lever, Barnes, Mackenzie; also by Messrs. Houghton, Cleveland, Dorrington, Wilson, Clarke, and others. The remedy has, however, failed in the able hands of Dr. Simpson. Whatever may be its utility as an excitant of the *muscular* fibres of the uterus, there can be no doubt as to its great efficacy in exciting the *secerning* functions of the womb; the latter fact has been fully established by the researches of Dr. Gull. — J. M. W.]

Plethora, as indicated by the calibre of the vessels, or by the force or frequency of the circulation, will sometimes produce this feeble and partial action of the uterus.

The abstraction of a few ounces of blood will accelerate the progress of labour retarded by this cause.

An *excessive quantity of liquor amnii*, by over-distending the uterus, will enfeeble its contractile power. Should this cause be *very obvious*, the membranes may be punctured by a probe or quill, or by scratching with the finger nail; but the necessity for this *very rarely* occurs, and certainly not until the membranes distended with fluid have fully performed their office of dilating the os uteri and the passage to the os externum.

Prematurely discharging the liquor amnii cannot be too sedulously avoided; for among the most wearisome and trying cases of protracted labour, both to the accoucheur and patient, those which follow this occurrence must be classed: consequently a practitioner should not rashly interfere in those cases where the liquor amnii is supposed to be in excess, or he may expect his temerity to be attended with augmented sufferings to his patient, inasmuch as the os uteri and vagina must be slowly dilated by some hard and irregular part of the child, instead of the soft wedge formed by the membranes filled with their fluid.

When this circumstance occurs, from some accidental cause in the earliest stage of labour, the process is always protracted, and the woman must submit to an incessant dribbling of the liquor amnii, without obtaining any relief from manual interference.

Children, under these circumstances, are not unfrequently expelled dead.

Rigidity of the os and cervix uteri gives rise to a

very protracted labour. With this condition of parts, if the finger be carried within the os uteri it feels thick, smooth, and unyielding: and whenever this sensation is communicated to the finger on examination, considerable time will elapse before the mouth of the womb dilates; and if assistance be not given, after suffering through days and nights, the os uteri may remain close, thick, and hard.

[Rigidity of the os uteri is sometimes occasioned by a premature escape of the liquor amnii, which allows the head to come in close contact with the cervix. By this means the os uteri is injuriously bruised and irritated.—J. M. W.]

The *management* of these cases requires considerable discretion; and although *time* will usually terminate them, yet the dilatation may be materially accelerated by the *abstraction of blood*, in quantity to be regulated by the powers of the woman. This being done, the bowels should be freely opened by an aperient exhibited by the mouth, and by a large emollient clyster.

After these means have been adopted, a few ounces of tepid water or gruel, with from *one to two drachms of tincture of opium*, should be thrown into the rectum; or the os uteri may have gently rubbed into it from *one to two drachms of the extract of belladonna*. By these means relaxation is often speedily secured.

[Tartar emetic is a valuable adjunct to blood-letting in these cases. It should be given in frequently repeated and small doses, until nausea is produced. Tartar emetic will often succeed without

the use of venesection ; it may also be usefully combined with opium.

Belladonna is a remedy that must be used with great caution, and later experience has thrown much doubt on its power of inducing relaxation of the os uteri. — J. M. W.]

Stimulants, fatigue, exertion, and a hot close room must be studiously avoided ; and the patient should be kept calm by every attention and kind assurance that can be given her, so that her hope and confidence may not fail. Nothing can justify the very common, absurd practice of urging a patient, under these circumstances, to *hold in her breath and force down*, whilst the os uteri is undilated and rigid.

Should the *membranes be unusually rigid and thick*, so as to protract labour after they have fulfilled their office of dilatation, the only remedy is cautiously to lacerate them.

When *rigidity of the external parts* interferes with the expulsion of the child, time must be given, fomentations employed, and lard liberally introduced into the vagina ; great care must be taken of the *perineum*, which should be steadily supported, or not only the fourchette, but the perineum through its whole extent, or even the recto-vaginal septum, may be lacerated, and the woman rendered miserable for life.

Œdema of the cervix uteri is another cause of protracted labour, and one which, if not well managed, sometimes proves very tedious. The cervix becomes either in part or wholly thickened and puffy, communicating the sensation of a roll of dough. This state

is produced by pressure of the head of the child obstructing the circulation.

Relief is to be afforded by *cautiously elevating the fundus uteri*, and by *dilating and supporting the os uteri*.

During a paroxysm of pain an assistant may gently elevate the fundus uteri by a broad bandage applied round the abdomen, whilst the accoucheur very carefully supports and dilates the œdematous cervix uteri with his expanded fingers in the vagina.

By these means the os uteri will slip back over the head of the child.

Artificial dilatation of the œdematous cervix uteri must never be persevered in, if it be acutely sensible. When this is the case, the loss of blood will be highly beneficial, especially if, as sometimes happen, the threatening symptoms of convulsions be present.

Descent of the os uteri before the head of the child lengthens the duration of labour, because the expulsive efforts of the uterus cannot be so completely expended on its orifice. This case must be managed very much in the same manner as the last.

Malposition of the uterus is very embarrassing to those who have not met with the occurrence.

If the os uteri be thrown *backwards* against the promontory of the sacrum, the labour is generally protracted. It principally happens to women with capacious pelves, and is not easily detected on the first examination.

Time will rectify this displacement, and the woman who is the subject of it should pass through parturition lying on her back.

If the os uteri be forced *forwards* against the symphysis pubis, or tilted over it with the fundus backwards, the case will probably prove to be retroversion of the uterus continuing to the full period of gestation. This is a particularly trying case, in which nothing but time and patience can effect anything.*

Powerful mental emotions, whether of a painful or pleasing nature, materially influence uterine contractions, which they will not only diminish, but altogether suspend; consequently, the mind of a woman in labour should be kept as free from sudden and strong affections as possible.

[*Hysteria* often embarrasses and retards the progress of a labour. Cases of this description require very careful management. The bowels, which are generally constipated, should be unloaded by an enema; and if the excitement continue, an opiate may be administered. If these means fail to induce regular uterine action, and the os uteri be dilatable, secale cornutum should be given. The moral treatment of the case is of the utmost importance. The room must be kept perfectly quiet, and all superfluous visitors or attendants rigidly excluded.

Mental shock and *depressing passions* should be regarded with the most serious apprehension. Dr. Murphy has recorded several interesting cases, in which death was no doubt occasioned by mental despondency. — J. M. W.]

* Vide, on this subject, a pamphlet by Dr. Merriman, entitled, "A Dissertation on Retroversion of the Womb," &c.

Distention of the bladder has, in many instances, prevented the uterus, diaphragm, and abdominal muscles from exerting their full power on the uterine contents; and several cases are on record of such criminal negligence as has permitted this viscus to burst. When this cause operates to protract labour, the catheter must be introduced, and *in all cases of protracted labour* the state of the bladder should be inquired into every few hours.

Preternatural shortness of the funis, either *actual* or from *entanglement* about the extremities or neck of the fœtus, is a cause of protracted labour for which very little can be done, and one which, fortunately, but rarely happens.

When there is reason to suspect its existence from unusual retraction of the head just as it is about to be born, great care must be taken, on the expulsion of the body, to keep the umbilicus of the child close to the os externum of the mother, to prevent the forcible detachment of the placenta, or inversion of the uterus, or separation of the navel-string.

[If the cord be twisted more than once round the neck of the child, an attempt should be made to liberate one of the coils; and failing to do so, the only alternative is to cut the funis, and tie it. The child must then be delivered without delay, or it will die of asphyxia. — J. M. W.]

A pendulous abdomen, by allowing the uterus to hang over the pubes, will protract labour. This occurrence happens to women who are very fat, and who have borne many children. Such a patient

should lie on her back during parturition, and a bandage should be passed round the abdomen just tight enough to support it.

Anchylosis of the os coccygis to the sacrum is another cause, for which no relief but such as *time* affords can be given.

Unfavourable position of the presenting part will protract labour, particularly when the axis of the head or shoulders *has not its usual relation* to the diameter of the pelvis. Such malpositions will often be overcome by time, or they must be rectified by means to be hereafter pointed out.

Want of room in the pelvis, or, what is equivalent to it, an unusual size of the child, will interfere with labour. The capacity of the pelvis may be encroached upon by tumours of various kinds, as the cysts of ovarian dropsy, hernia of the bladder, intestines, omentum, &c., and the size of the child may be increased by the accumulation of water or of air evolved by putrefaction in its head or other cavities.

[Want of room in the pelvis can be readily detected by introducing the finger in different directions between the head and the pelvis. If the ear can be felt, it is a sign that there is, in all probability, sufficient room for the head to pass.

In ordinary cases the pressure on the head will produce a corrugated tumefaction of the scalp; but in cases of impaction this condition of the parts gradually disappears, and a soft tumour of considerable dimensions is developed. — J. M. W.]

Should the cause of impediment in these cases be trifling and compressible, powerful parturient efforts may overcome it; but if it be larger or incompressible, the case may require the forceps, scalpel, or perforator. No invariable direction for the management of these cases can be given, because much must depend on the consistence, size, and situation of the obstruction. Some tumours may be elevated, and kept above the brim of the pelvis until the presenting part occupies the superior aperture; and others of them may be safely punctured.*

Various other causes of protracted labours of the division now under consideration are mentioned by writers, such as cribrated hymen, contraction of the vagina, either congenital or the result of disease, &c., but these are of very rare occurrence, and are usually overcome by the unaided powers of the uterus; and if not, the scalpel must be used, the greatest care being taken to divide the obstructing part.

[*Hydrocephalic enlargement of the head* will sometimes offer a serious obstruction to delivery. It is distinguished by the width of the sutures: the head, moreover, feels as if it were a tumour filled with fluid. These cases will frequently do well without instrumental aid. If necessary, the head must be perforated. — J. M. W.]

* Much interesting and important information on these points is to be found in a variety of publications, and particularly in the 2nd, 3rd, and 10th volumes of the Medico-chirurgical Transactions. In the Clinique Chirurgicale, tome i. there are several instructive cases, by Messrs. Pelletin.

SECOND DIVISION,

Of Protracted Labours, or such as require *instrumental aid* for their completion.

General Observations.

To determine on the necessity for instrumental interference is one of the nicest points in the practice of midwifery; for, whilst the unnecessary employment of instruments cannot be too strongly reprobated, no conduct ought to be more deprecated than that timid and cruel mismanagement which permits an interesting female to struggle under fruitless efforts, till she sinks exhausted from such exertions, or is not delivered until irreparable mischief is done to the soft parts; in consequence of which she may linger out a wretched existence for a few weeks or months, the victim of criminal procrastination.

To assist in forming an opinion on this momentous question, some such general rules as the following may be laid down before considering *particular cases*.

Should labour from any cause have proceeded until the contractions of the uterus become so feeble as to be inadequate to expel the child, or should the pains have altogether ceased, then artificial aid may be justifiable.

The *cessation or diminution of pain* referred to is either the consequence of original debility, or of an

exhausted condition of the uterus from the injudicious permission of long-continued and fruitless exertions, and must be distinguished from that *occasional and temporary suspension of uterine efforts* which is not associated with any other unfavourable symptom, and which may often be removed by repose, nourishment, and friction of the abdominal and lumbar regions. Where there is steady progress, although but small, the presenting part being loose in the pelvis, the vagina cool and clothed with secretion, the mind tranquil, the powers of the system not exhausted, and the rectum and bladder capable of emptying themselves, time may be allowed.

But, on the other hand, should the *pains* have been for many hours *strong and expulsive*, should the presenting part be firmly *wedged in the pelvis*, interrupting the functions of the bladder and rectum, surely common sense dictates that timely assistance should be given to prevent exhaustion or sloughing.

[A certain sign of approaching exhaustion, and one which indicates the propriety of having recourse to instrumental aid, is the discharge from the vagina of a peculiar oily and *olive-coloured discharge*, having a disagreeably faint, but not putrid odour. The source and nature of this fluid are not yet determined. — J. M. W.]

Whenever, then, this state of things exists, with fever, restlessness, headache, vomiting (the os uteri being fully dilated), mental inquietude, abdominal tenderness, with heat, dryness, and pain about the vagina and os uteri, unless delivery be effected, low

muttering delirium, feeble, rapid, and intermitting pulse, with cold, clammy perspiration, and death, will soon terminate the heart-rending scene.

The instruments most approved of in modern practice are,

First, such as do not necessarily destroy either mother or child; and these are the

Short and Long Forceps,
Lever or Vectis,
Blunt Hook, and
Fillet.

Secondly, such as destroy the life of the child, or endanger that of the mother; and these are the

Perforator,
Craniotomy, or Extracting Toothed Forceps,
Crotchet, and
Scalpel.

Before describing these instruments, some GENERAL OBSERVATIONS, which are equally applicable to the employment of each of them, may be usefully made.

First. Before using instruments, the bladder and rectum should, if possible, always be emptied; the former by the introduction of the catheter, and the latter by the exhibition of an enema.

Secondly. Instruments should never be introduced whilst the os uteri remains firm and undilated, or irreparable mischief may ensue. The perineum should also be in a yielding condition.

Thirdly. The assistance given by instruments should always be afforded during pain, in order that

the uterus may be gradually emptied. Of course, if uterine contractions have ceased, all that can be done in this respect is to imitate nature by employing the power with intervals of rest.

Except under very peculiar circumstances, such as may occur in cases of hæmorrhage, syncope, &c., the power employed should be rather steady than quick; and if it secure perceptible advance of the child, however little the progress may be, it should be considered as satisfactory.

Fourthly. Instruments should always be introduced slowly and cautiously, and during the intervals between the pains.

Fifthly. The patient should be placed in the usual position, on her left side.

Sixthly. The instruments ought to be brought as nearly as possible to the temperature of the body, by immersing them in warm water, and should be well anointed before their introduction.

Seventhly. Unless very urgent circumstances prohibit it, the employment of instruments should generally be made known to the patient, and always to her friends or attendants.

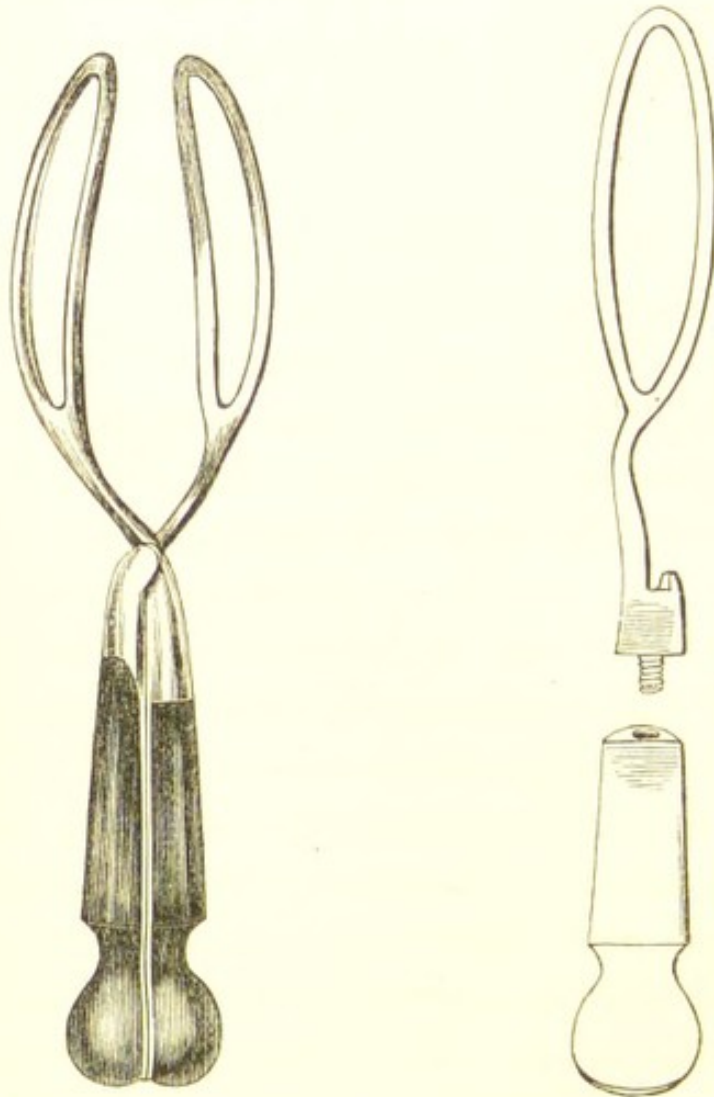
Eighthly. The extracting power should be employed in the direction of the axis of that part of the pelvis at which the head is situated, so that, if it be at the brim, the handle of the instrument must be directed backwards against the coccyx; but as the child advances, that part of the instrument grasped by the operator's hand should be gradually directed towards the pubes.

Ninthly. Should the instrument, when used, give much pain of a cutting or pinching character, we may rest assured that some part of the mother is included in the grasp, and we should immediately change the hold.

Tenthly. The time to be occupied in effecting delivery will depend on the degree of difficulty to be overcome; *time* being always considered to be equivalent to *power*.

OF THE SHORT FORCEPS.*

This instrument is a double lever, so constructed that the fulcrum of each blade is in the handle of the other.



* In this edition, all that was said in the former editions respecting the *short* forceps is retained, because most practitioners continue to use them; but if the *long* forceps are possessed, they may be substituted for the short ones in every case in which they are ordinarily used, only bearing in mind that, if the head be in the cavity of the pelvis, the blades are to be fixed on the sides of the face, but if above the brim, over the occiput and forehead.

The forceps exhibited in the preceding engraving differ from those in ordinary use in several important particulars.

The *fenestræ* are not very wide, but sufficiently so to admit the protuberances of the parietal bones to pass through them, by which two very important objects are secured.

The *first* is, a *diminution of bulk*, because the rims of the blades lie along the sides of the parietal protuberances, instead of adding to the size of the head, by being directly on or over them, as is inevitable with Smellie's and all similarly constructed forceps, the rims of which approximate too closely to permit any part of the cranium to pass through the *fenestræ*; in consequence of which the difficulty of parturition (presuming it to consist in disproportion between the head and the pelvis) is materially augmented; and the *second* is, that instead of having the hard unyielding metal opposed to the soft parts of the mother, by which their safety is endangered, the prominences of the parietal bones passing through the *fenestræ*, when the forceps are well applied, will be in contact with the vagina; by which it is obvious there is much less probability of its sustaining injury than from the blades of the forceps in ordinary use.

Another distinguishing feature of these short forceps is the curvature of the intermediate part between the blade and the handle, which is intended to save the perineum from pressure and laceration. It is familiar to every practical man that, in many cases which require the employment of the forceps, there

is great danger of the perineum being torn, notwithstanding the utmost precaution on the part of the practitioner, particularly in that case in which the occiput, instead of being opposed to the symphysis pubis, is found descending along the hollow of the sacrum (or, in other words, the face inclined to the pubes); and this, it need scarcely be observed, is one of the most common causes of protracted parturition demanding the aid of the forceps (presuming that the malposition of the head has been omitted to be rectified in the early stage of labour). If, in this malposition of parts, the forceps are well applied, the points will be directed forwards to the pubes, and the handles backwards towards the rectum, endangering, by pressure, the safety of the perineum. Now, the simple contrivance of a curvature in the shanks fully meets this serious evil, independent of the facility which it gives to the handles to be carried much further back than they could otherwise be, by which a firmer and more favourable hold is obtained of the child's head; and for want of which, in many instances, the points of the blades, instead of being directed over the cheeks and towards the chin, pass on, and even wound the neck of the infant. This one illustration must suffice, though others might be adduced in confirmation of the correctness of the preceding observations.

The last, although very far from the *least*, peculiarity in these forceps to which reference will be made, is the construction of the handle of the blade, which is usually applied last and uppermost.

It is only necessary to appeal to any one who has

introduced forceps with their convex surfaces opposed to the sides of the pelvis, when the ears of the child are from side to side, and such an one will at once acknowledge that extreme difficulty often presents itself to the introduction of the upper blade, in consequence of the bed or mattress below preventing that depression of the handle which is essential to elevate the point of the blade, in order to carry it over the upper side of the head. Indeed, the accomplishment of this object is almost impracticable without changing the position of the woman, or introducing the blade into the hollow of the sacrum, and afterwards bringing it over the cheek of the child. But there is a decided objection to either of these alternatives, because women, during labour, always attach importance to the most trifling departure from the ordinary mode of proceeding; so that the mere proposal of turning them on their backs (which, by the by, is a disgusting and indelicate position), or even the act of bringing the nates over the edge of the bed, usually excites considerable apprehension: otherwise, either of these changes would meet the difficulty.

With respect to the other alternative, or the introduction of the upper blade by the circuitous course of the sacrum, this expedient is often impracticable, and always difficult, because the concavity of this bone may be so completely filled up with the head of the child as not to allow of the requisite movement of the instrument without the employment of an injudicious degree of power. Accoucheurs, alive to this circumstance; have long since had their levers

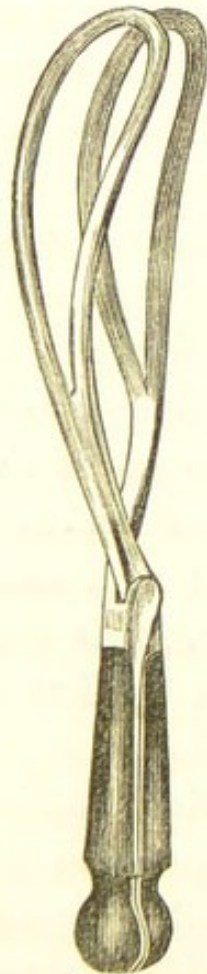
made with reflecting or moveable handles; and it is the latter expedient that suggested the simple contrivance of a moveable handle, by means of a screw, which is exhibited in the engraving; and, with the handle detached, there can be no difficulty in introducing the upper blade of the short forceps directly over the side of the head without changing the position of the patient. After the blade is fixed, of course the handle is to be screwed on, and the instrument used as any other.

[Dr. Conquest's *long* forceps is a much more valuable instrument than his short one, as the fenestræ are reduced to a more convenient size. Dr. Conquest has for some time past adopted its use in all cases where the head is arrested below, as well as in those in which it is obstructed at, the brim of the pelvis. From what he has stated in the foot-note at page 134., it is extremely probable that his short forceps will, eventually, be entirely superseded by the longer and more useful instrument.

The great width of the fenestræ at the base of the *short* forceps occasionally interferes with the passage of the blades through the vulva. The moveable handle is also a disadvantage. If the handle be not screwed on very firmly, it may turn round and greatly embarrass the operator. If the hips of the patient be brought close to the edge of the bed, there is no difficulty in passing the upper blade with the handle fixed: moreover, the blade cannot be so easily introduced without as with the handle, that is, if the woman be placed in a favourable position.

There is probably no better or more generally useful forceps than that devised by the late Dr. John Clarke. As the blades have a lateral curve, they are adapted not only for cases in which the head is arrested in the cavity, but also in many instances where it is unable to clear the *brim*, of the pelvis. Beatty's and Denman's short forceps are admirable inventions, but, being straight, they are not well suited to the latter class of cases.

Clarke's short forceps is an extremely useful instrument, and equal to almost every emergency. With very slight precaution it will be found quite as manageable as the straight forceps. With the



CLARKE'S FORCEPS.

latter instrument it is immaterial which blade is introduced uppermost; but with the former care must be taken that the convex edge of each blade is directed towards the face of the child.

When this forceps is coated with elastic gum, or silver wash, its appearance is not at all formidable; and if, when shown to the patient, it be represented as an "artificial hand," it is seldom that she will evince any repugnance to its use. — J. M. W.]

DIRECTIONS FOR APPLYING THE SHORT FORCEPS.

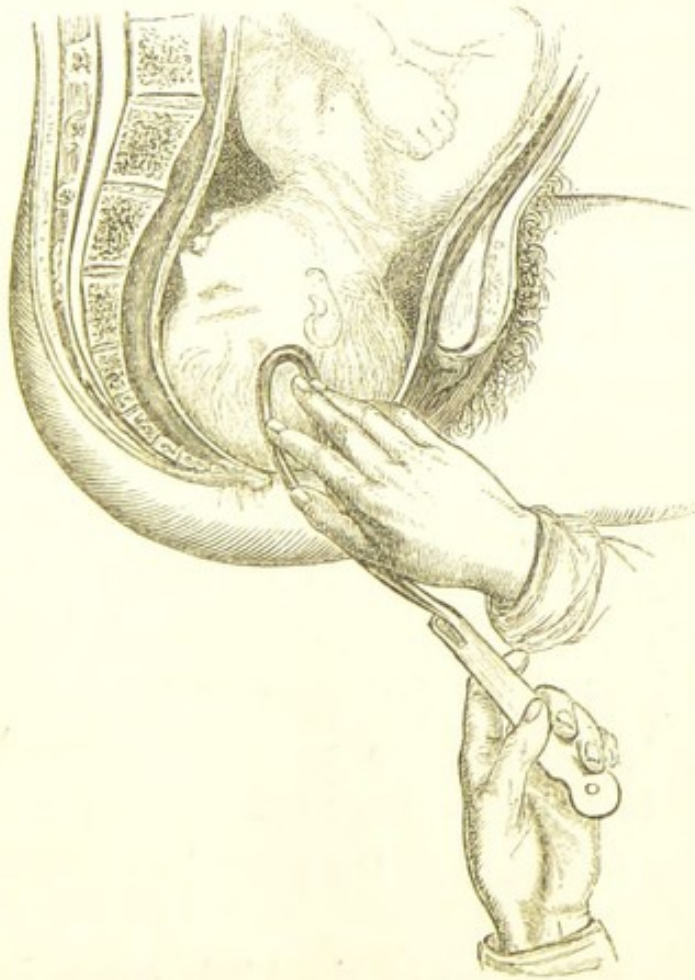
1. The *short* forceps are to be applied to the sides of the head of the child, so that the ears and protuberances of the parietal bones shall be within the fenestræ, and the locking part consequently either at the vertex or face.

2. They cannot be advantageously employed until the head is in the cavity of the pelvis; and this is best determined by the fact that the protuberances of the parietal bones have descended below the linea innominata, or unless an ear of the child can be distinctly felt (taking care not to mistake for it any portion of the uterus); and, except in cases of syncope from hæmorrhage, it is scarcely ever necessary to use this instrument until the ear has been distinctly felt for several hours.

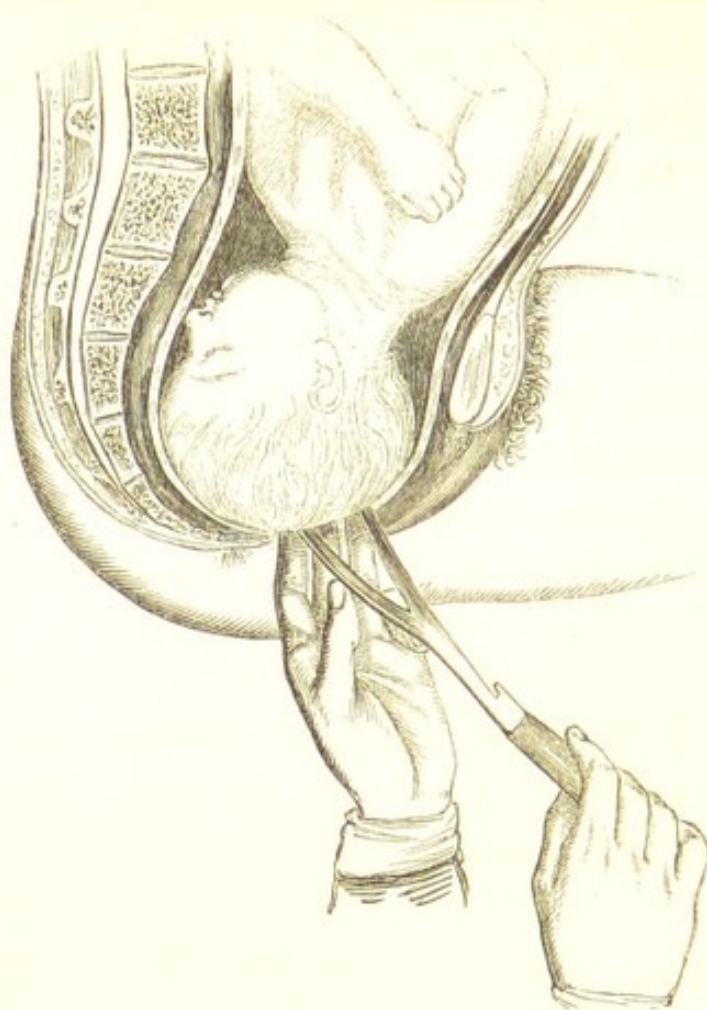
3. The half to be first applied is that with the entire handle, and it should be held in the left hand, that the index and middle fingers of the right hand may be at liberty to guide the point of the blade to

its destination. The other blade is to be unscrewed from the handle, and, being held in the right hand, is to be applied in an opposite line corresponding with the course of the first blade, the parts being prepared by the index and middle fingers of the left hand, whilst the third and little fingers are employed in retaining the first introduced blade in its place. The handle is then to be screwed on.

[Some authors recommend that the operation should be *commenced* by the introduction of the *upper* blade, and in most cases I have found this the most convenient plan.



INTRODUCTION OF THE UPPER OR ANTERIOR BLADE.



INTRODUCTION OF THE LOWER OR POSTERIOR BLADE.

In describing the preceding cuts I have avoided the terms *right* and *left* hand, as I consider them liable to create confusion in the mind of the student. It is of little consequence which hand is employed to hold either the upper or lower blade, provided the instrument be properly adapted. The manner of introducing the blades can be readily understood by reference to the preceding engravings.—
J. M. W.]

4. When the point of the blade comes in contact with the ear, the handle should be depressed, so that

the point shall rise over the obstruction, and immediately the handle should again be elevated. Thus the extremity will be kept in contact with the side of the head, and the risk of including a part of the os uteri be avoided.

5. Before the locking can be effected, it is often necessary slightly to withdraw one or both blades; and when they are brought both together, great care is required not to include any part of the mother, for even a single hair locked in will give pain.

6. Should the extremities of the handles closely approximate, or be very distant from each other when applied, it will generally be found that the application is not properly made, and the instrument will not retain its hold.

7. When fixed, the handles should be kept together by the hand, but not so tightly as to compress the head; compression should be employed only during a pain, when extractive power is used.

8. When power is used, it should be from blade to blade, combining moderate traction with the lateral motion.

If these directions are followed, in connection with the observations made a few pages back, there will be but little difficulty in successfully employing the short forceps in the particular cases to which they are applicable.

OF THE LEVER, OR VECTIS,
AND
WHALEBONE FILLET.

These pages, being purely practical, do not admit of any lengthened discussion on the comparative value of the lever and forceps.

Some persons have lavished the highest praise on the one instrument, and equally eminent men have bestowed the most unqualified approbation on the other. As in most disputed points, "*media quodammodo inter diversas sententias,*" will hold good here; for whilst, under some circumstances, the lever is doubtless preferable to the forceps, the latter is now very generally admitted to be, in the majority of cases, by far the more useful instrument.

The lever, or vectis, is a very powerful, and, consequently, a very dangerous instrument, if it be used on lever principles, acting upon, and injuring, the soft parts of the mother at the fulcrum, or point of support. In the hands of men who have not employed it rather as a *hook* than a *lever*, it has done incalculable mischief.

The lever may be employed, subject to very much the same regulations as the forceps, only that it can be used earlier, and may be applied to any part of the head.

[The only cases in which the vectis appears to be

preferable to the forceps are, *brow, face, and ear* presentations.

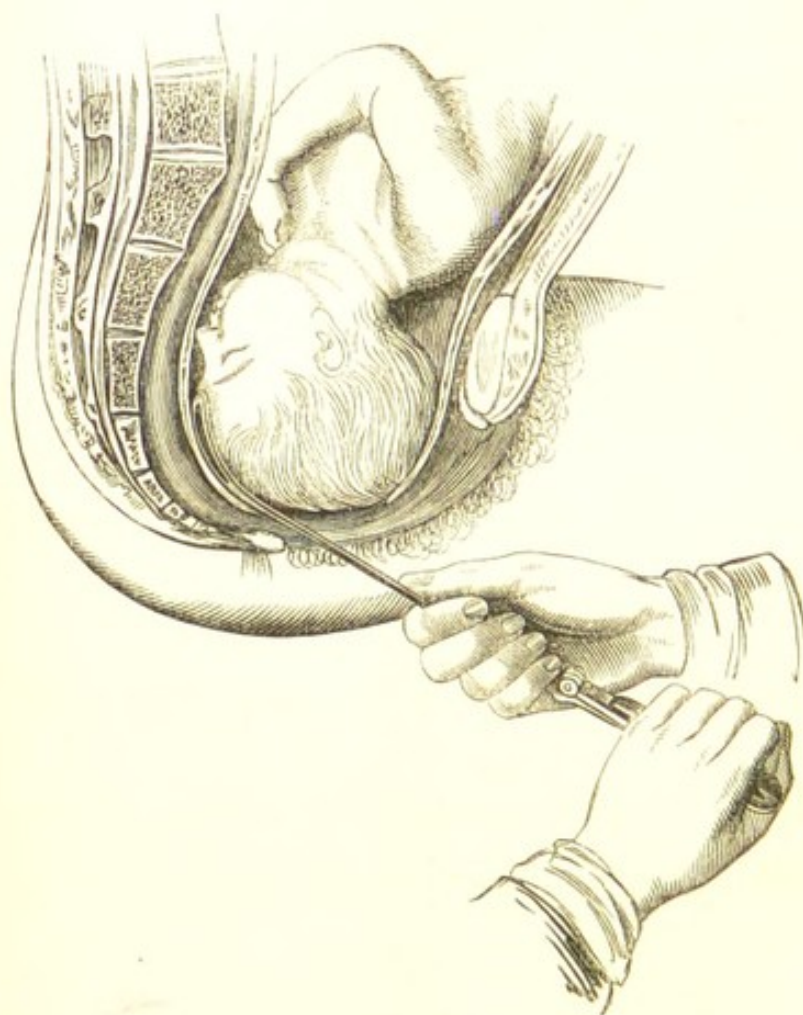
The vectis is similar in shape to a single branch of the forceps; it differs merely in having a longer and straighter shank, and a more abruptly curved blade. It is highly essential that one side of the



handle should be flat, to prevent the possibility of the instrument turning round in the hand of the operator. Lowder's vectis is a good instrument;

but the one I prefer is *rather* more curved at the extremity (*vide* diagram). If the curve, however, be *very great*, it will offer a serious obstruction to the introduction of the blade.

In using the vectis as an *extractor*, the shank should be held firmly with one hand, whilst the handle is fixed with the other. The extractive force



APPLICATION OF VECTIS.

must be exerted in the direction of the axis of the pelvis, but only during the uterine pains, provided the womb retains its contractile power.

The point of the instrument will generally require to be shifted frequently during the operation, and the lever-like action to be alternated with the tractive force. In using it as a lever, the greatest care must be taken that a fulcrum be made with the left hand of the operator. — J. M. W.]

In many cases in which the lever and forceps are now used, a piece of round and smooth whalebone, bent and used as a fillet or vectis, answers every purpose, and is a much safer instrument. It is to be passed over the occiput and chin.

PARTICULAR CASES REQUIRING THE USE
OF THE
SHORT FORCEPS, OR LEVER.

First. Presentations of the *vertex*. And,
Second. Presentations of the *face, forehead, and ear*.

OF VERTEX PRESENTATIONS.

Three cases will be sufficient to illustrate all the minor varieties of *position* of the head in this *presentation*.

1. The ears may be opposed to the sides of the

pelvis, with the *occiput to the symphysis pubis*. This, it will be recollected, is the most favourable position; but exhaustion, hæmorrhage, convulsions, want of room, and other circumstances, may justify the employment of the forceps.

[When the head is *impacted* in the *cavity* of the pelvis, the forceps cannot be used without great risk of injuring the mother. It is when the head is simply *arrested* that the forceps is indicated in presentations of this description. — J. M. W.]

In this position of the head, the lower blade should be applied first, with its concavity corresponding to the convexity of the head, the extremity of the blade directed backwards towards the promontory of the sacrum, and consequently the handle pointing forwards. The upper blade having been passed by the right hand, in a corresponding direction, attention to the rules already laid down will enable the accoucheur to conduct this case to a favourable termination.

2. The ears may have the same relation to the circumference of the pelvis as in the former case, the *occiput being in the hollow of the sacrum*.

In this position of the head, the presenting part will not be so conical towards the symphysis pubis; the bones of the cranium will not so readily overlap each other; and the largest, anterior, or quadrangular fontanelle will be felt towards the pubis, with the sagittal suture running backwards towards the sacrum.

Such being the relative malposition of parts, and

the bones of the face unyielding, the labour is protracted; because the whole of the head must enter the pelvis before any part can emerge from under the symphysis pubis.

Should the pelvis be capacious, and the *vis a tergo* powerful, the face may be forced from under the arch of the pubis, the perineum having been put so much on the stretch as to endanger its laceration.

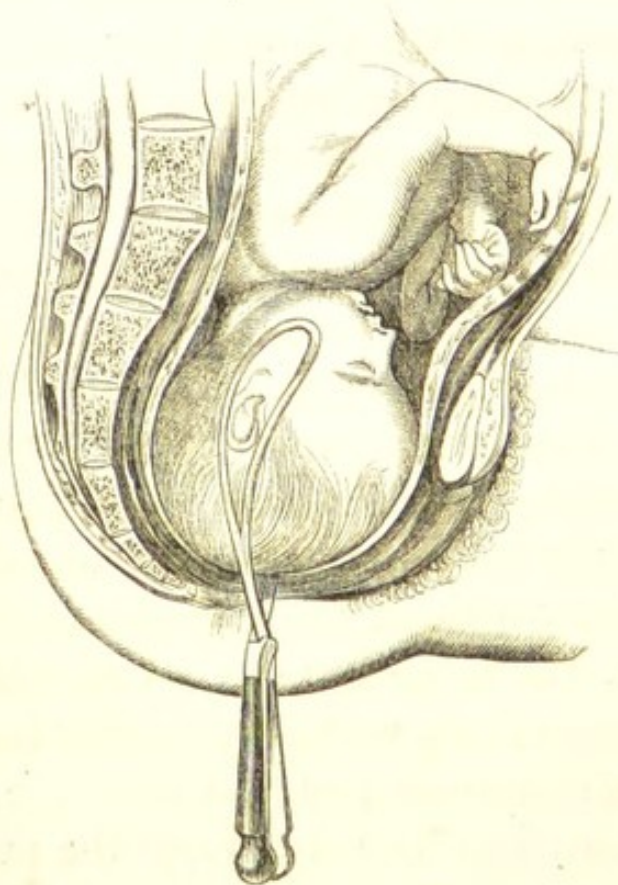
*If the powers of the uterus are inadequate to the expulsion of the head in this direction, an attempt should be made to turn the face into the hollow of the sacrum, by steadily pressing, in the intervals between the pains, against the opposite frontal and parietal bones with the fore-fingers of both hands retaining it in its altered position until the next pain, by which means, if the head be not firmly fixed, a more favourable position may be secured.**

But this object cannot always be attained, and it is then necessary to attempt the same thing by the forceps: if the operator is unable to succeed by means of these, without the employment of immoderate force, the attempt must be abandoned, and the head brought down without changing its position. Under the circumstances of this case, the points of the blades must be directed towards the pubes, and,

* Dr. Smellie first recommended this plan, which was subsequently more fully brought before the profession by Dr. John Clarke, in a paper published in the 2nd volume of the "Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge."

consequently, the handles towards the os coccygis. This is one of those cases in which there is great advantage from the curvature in the shank; for without it there would be inevitably such a degree of pressure on the perineum as would greatly risk its safety. As the head descends, the perineum must be supported, and the handles gradually directed towards the arch of the pubes.

[In this presentation, which is extremely rare, the



blades of the forceps are to be placed over the ears of the child; and it is one of those cases in which the forceps with a lateral curve has a decided advantage over that which is straight.

The best description of forceps, however, is apt to slip, owing to the difficulty of maintaining a firm hold of the head when it is in this position. On this account many practitioners prefer the vectis. — J. M. W.]

Considerable time should be given in this position of the head; for it is surely a less evil to allow the woman to endure a little more pain, than to endanger the perineum by a hasty delivery.

3. When the head has descended into the cavity of the pelvis, the ears are sometimes opposed to the symphysis pubis and hollow of the sacrum, and the *occiput and face opposed to the sides of the pelvis*.

In this case, the long diameter of the head corresponds with the shortest diameter of the outlet; consequently, the sacro-ischiatic ligaments, the spinous processes of the ischia, and the situation of the shoulders at the brim, prevent the advancement of the child.

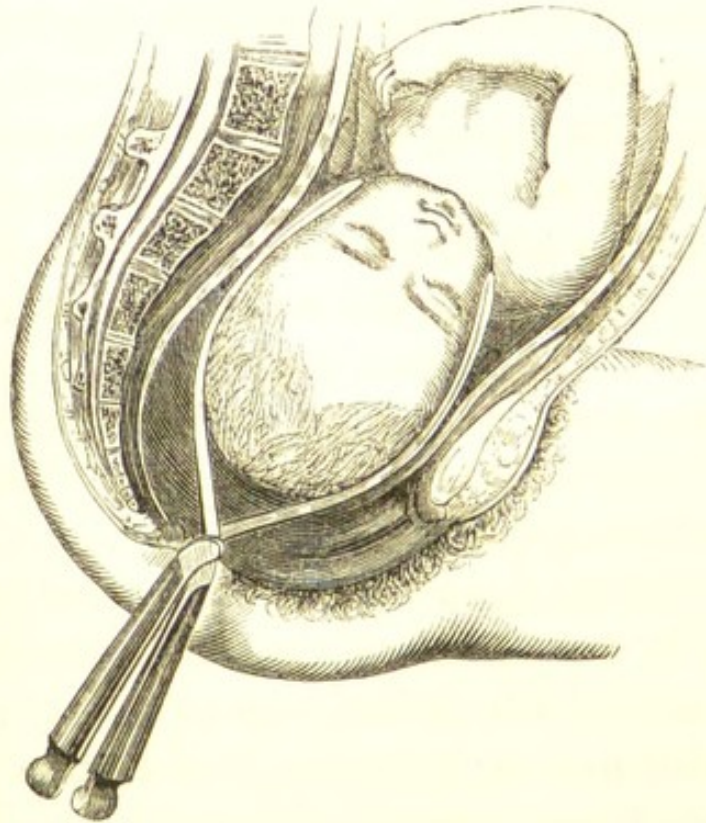
Under these circumstances, an attempt should be made to turn the head *half-round* with the fingers, as suggested in the presentation last under consideration; and if the fingers be inadequate to that quantum of force which may be necessary, the forceps must be substituted to effect the same object.

Very often, when this *half-turn* is made (which should always be so effected as to bring the face into the hollow of the sacrum), the difficulty being overcome, nature will terminate the labour. Should she not, the forceps are to be used as in the first supposed case; or that in which the occiput is opposed to the

symphysis pubis, and the ears to the sides of the pelvis.

In this case, the first blade of the forceps must be applied between the head and pubis, and the other blade in the hollow of the sacrum, instead of to the sides of the pelvis, taking care not to injure the soft parts in contact with the arch of the pubis.

[When the face is turned towards the right ilium, the handles of the forceps must be rotated inwardly;



when it is directed towards the left ilium, the handles must be moved in an opposite direction.

Before making the turn, the greatest care must be taken to ascertain the exact position of the face.—
J. M. W.]

OF FACE PRESENTATIONS.

In these protracted and awkward cases, the eyes, nose, or mouth, are discovered on examination; but, if the strength of the patient be well managed, and time given, the difficulty arising from the length and inequality of the presenting part, will most frequently be overcome by the uterine efforts, without manual interference.

On the other hand, if rashness and rudeness be substituted for patience, much mischief may be done; for with the greatest care the face of the child will be often frightfully swollen and black, and the perineum of the mother lacerated.

In these cases, retention of urine is generally a source of distress, and requires the occasional introduction of the catheter.

As in vertex presentations, *three positions* of the face will be noticed, the management of which will embrace all the unimportant varieties.

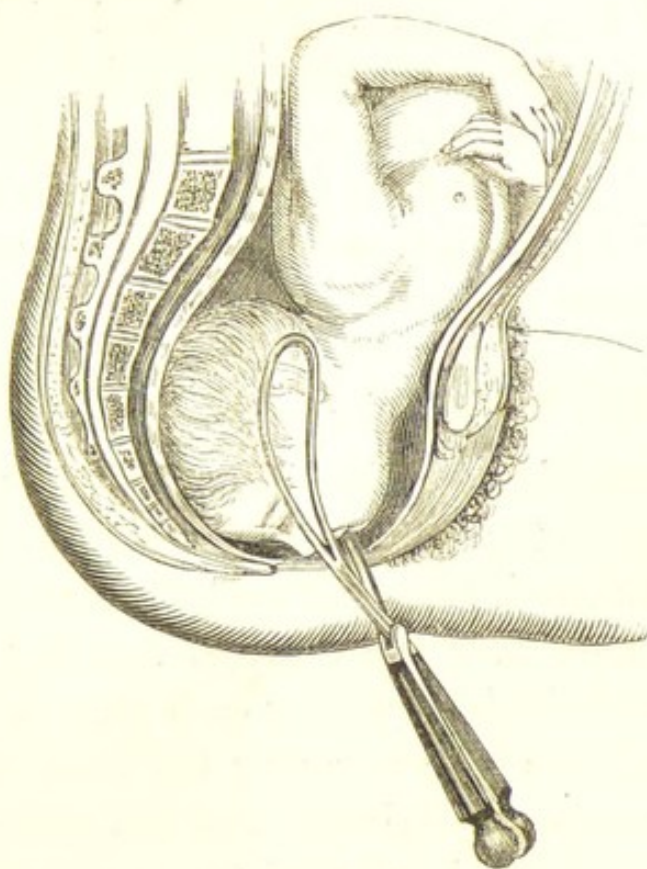
1. *The chin may be opposed to the pubis*, and this is the most usual and favourable situation in which it can be placed.

Although the labour may be very protracted, still, if the contractile efforts of the uterus be powerful, this case will generally be terminated without the necessity for instrumental aid; and it is highly important to observe, that, when nature accomplishes

the delivery, *the chin emerges from under the arch of the pubes before the forehead and vertex are expelled.*

Should the uterine energy not be adequate to the completion of the labour, assistance is to be given in one of the following methods: first, if the resistance be trifling, by disengaging the forehead and chin, so as to convert it into a vertex case; by steadily pressing the face upwards and sideways, with a semi-rotary motion during pain, so that the occipito-vertex shall be placed against the sacro-iliac symphysis; or, **secondly**, if the case be discovered *early*, the *lever*, or *bent whalebone*, may be most advantageously used as a *hook*, fixed on the occiput which it is to depress, whilst the face is raised by the fingers. This method of managing such cases refers exclusively to them when *discovered early*, and when *the resistance is inconsiderable*: but, **thirdly**, if the face be low down, and firmly wedged in the pelvis, then the process adopted by nature must be imitated, and, with the *lever fixed over the side of the face*, the chin must be made first to emerge; or the forceps may be applied as in the vertex case, only that the blades, running in a line from the face to the occipito-vertex, will have their extremities at that part, and the locking will be at the chin.

[Dr. Ramsbotham is of opinion that all face cases commence as brow presentations, and that the change of position is owing to the pressure excited by the uterus, which depresses the shoulders and separates the chin from the chest.



With regard to these cases, it must be remembered that, in their early stage, the chin generally rests on the ischium, and that at a subsequent period it is directed towards the pelvis. — J. M. W.]

2. Should the *chin* be opposed to either side of the *pelvis*, it may be deemed requisite to employ the forceps, but care must be taken not to effect the *half-turn* too early; and still greater care should be observed to make the half-turn so as to bring the chin to the symphysis pubis.

In some rare instances, the *chin* is opposed to the *sacrum*, and the consequence generally is, the death

of the child, from the duration and severity of the labour.

By an experienced man the head might be elevated, and its position rectified, if it be not too firmly jammed into the pelvis; but more frequently it will be necessary to open the head by the perforator, and diminish its bulk, before delivery can be effected.

PRESENTATION OF THE FOREHEAD.

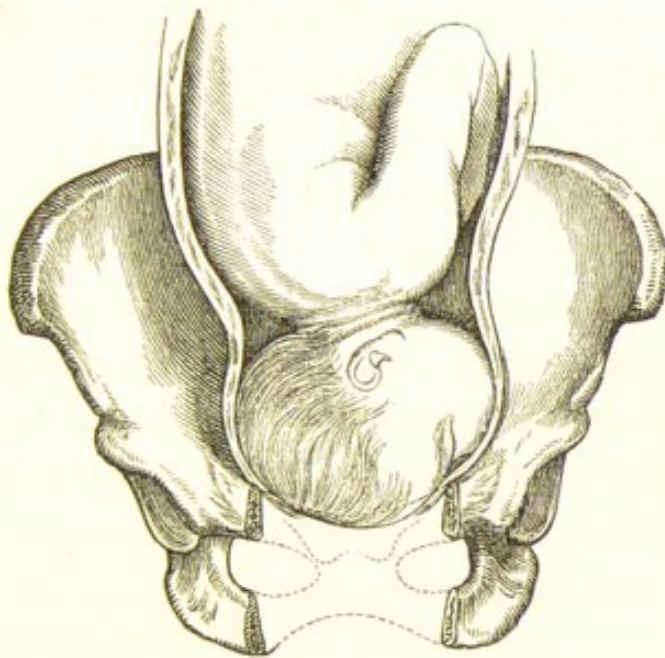
This malposition of the head occasionally protracts and augments the sufferings of women so much as to require the employment of the *whalebone* fillet, which is to be fixed over the occiput, drawing down the back part of the head during each paroxysm of pain, and at the same time elevating the forehead, so as to cause a closer approximation of the chin and chest, by which the termination of the case may be materially accelerated.

[This malposition, which has been termed by many writers *premature separation of the chin from the chest*, may often be easily corrected by simply pressing the forehead upwards during an interval of pain, and preventing its descent, until subsequent uterine contractions have depressed the occiput; the labour will then terminate without the necessity of further interference.

The signs which indicate this presentation, are the extreme facility with which the fingers can be inserted between the pubis and the occiput, and by

the unusual ease with which the boundaries of the anterior fontanelle can be determined.

When instrumental aid is required in these cases, the vectis should be used.



It is evident, from what has been previously stated, that, if these cases be not corrected at an early stage of the labour, they will have a tendency to be converted into face presentations. — J. M. W.]

PRESENTATION OF THE EAR.

The cases on record in which the ear has presented are very few ; and it cannot be difficult, if such presentations be discovered early, so to employ the lever as very materially to improve the relative situation of the parts.

This instrument is to be carried over the vertex

laterally, and, whilst traction is employed, during every parturient exertion, the base of the cranium is to be raised by two fingers.

Of the *first class* of instruments, or those the use of which is not incompatible with the safety of both the mother and child, the BLUNT HOOK and FILLET remain to be noticed. These are instruments in very little use, and will be spoken of when those cases come under review to which they are applicable; but in many cases a *fillet may be substituted most advantageously for the forceps and lever*. It may be either of whalebone, or tape, or ribbon, passed over the occiput or chin by the fingers. In every instance in which it can be employed, preference should be given to it.

OF THE LONG FORCEPS.*

This invaluable instrument, now recommended by several respectable authors and lecturers, is but little known, and much less estimated; or it would be employed, by accoucheurs, as a most important substitute for the perforator and crotchet, in many of those cases in which children are destroyed.

This instrument is principally applicable,

First, To those cases of difficulty arising from deformity at the brim of the pelvis, in which the deficiency of space is from the sacrum to pubes, but is so slight that a little power beyond what the uterus can employ would expel living children, that are now too often sacrificed.

Secondly, To those cases of hæmorrhage, convulsions, &c. in which the head of the child, although at the superior aperture of the pelvis, is not within reach of the short forceps; and in which delivery, being essential to the well-doing of the mother, is now usually effected by opening the head of the child.

The *long forceps*, when the head is above the brim

* If the practitioner possesses this instrument he need not have the *short* forceps, because there is no case to which *they* are applicable which may not be as easily relieved with the *long*. I never use any but the long, and find them adapted to *all* cases demanding the use of forceps.

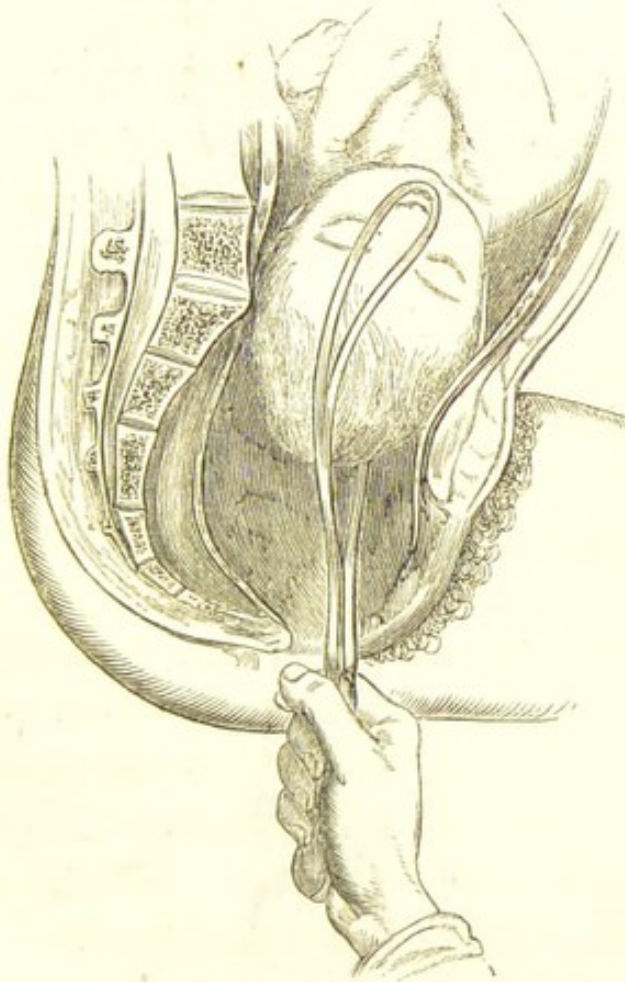
of the pelvis, are to be applied, in most instances, over the occiput and face of the child; so that the convex edges of the blades may correspond with the concavity of the sacrum.

When applied, the power may be exerted from side to side, with moderate traction, in the direction of the axis of the brim of the pelvis, the handles being kept backwards towards the os coccygis, and, as the head descends, its most favourable position in relation to the pelvis must be secured; and, during its descent, the instrument may be removed, if the uterine contractions be sufficient; and if not, it must be re-applied, as the short forceps would be, over the cheeks of the child.

It has been extremely gratifying to several highly esteemed friends, as well as to myself, to have been instrumental, by this means, in saving not a few children whose heads had been condemned to be opened.

[As a general rule, the long forceps should not be employed if the conjugate diameter of the pelvis measures less than three inches. In using them, the greatest caution must be exercised lest the blades be forced up between the vagina and the neck of the uterus. Care must also be taken in locking the forceps, that a portion of the womb be not injuriously pressed against the head of the child. Each blade must be introduced in close contact with the child's head, and it should be guarded by two fingers or the whole of one hand passed up into the cavity of the uterus. The upper blade should be introduced first. Violence cannot be too strongly deprecated;

and if, after a few energetic, though cautious trials, the head make no advance, the operation must be abandoned.



APPLICATION OF THE LONG FORCEPS.

Dr. Ramsbotham's long forceps is an extremely valuable appliance, having a great advantage over the straight instrument. The lateral curve of the blades enables them to be more readily adapted to the axis of the pelvis.



DR. RAMSBOTHAM'S LONG FORCEPS.

The long forceps in unpractised hands is a dangerous instrument ; but in those accustomed to midwifery operations it will frequently be found a most valuable appliance. — J. M. W.]

An examination of the SECOND CLASS OF INSTRUMENTS, or such as endanger or actually destroy

the life of either mother or child, will lead to the consideration of the best management of cases of extreme difficulty from *unusual ossification of the bones of the cranium*; *distention of its cavity by fluid*, or from *distorted or deformed pelves*, the consequence of *rachitis*, *mollities ossium*, or *exostosis*. Under these circumstances, a woman must not die undelivered; nor should she be permitted to exhaust her powers by fruitless exertions, until inflammation and sloughing result from the continued pressure.

Four methods have been provided for overcoming these difficulties, one or other of which must be adopted, according to the peculiar circumstances of the individual case. These are —

First, The operation of *Cephalotomia*, which consists in diminishing the size of the head of the child by the perforator.

Secondly, The Cæsarian section.

Thirdly, The division of the symphysis pubis, or Sigaultian operation: and,

Fourthly, The production of parturition *prematurely*.

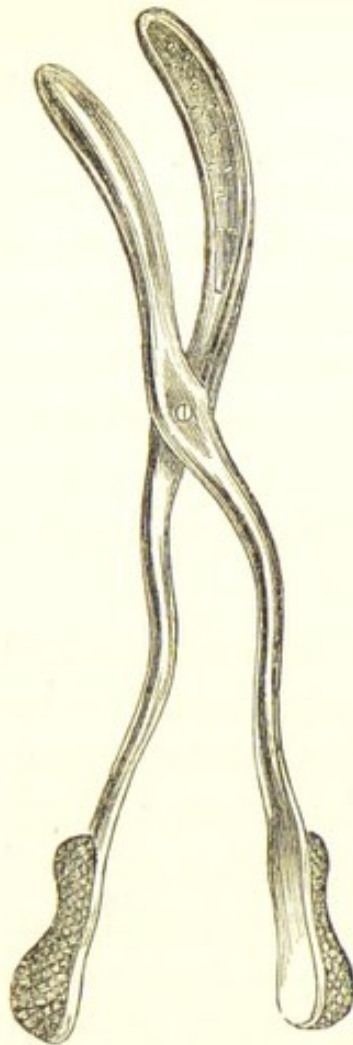
OF DIMINISHING THE BULK OF THE HEAD OF THE CHILD BY THE OPERATION OF *Cephalotomia*.

The instruments employed in this operation are the *perforator*, to open the head, and break down its contents; and the *crotchet*, or sharp-pointed hook, to extract the cranium; or, as a substitute for the crotchet, the *craniotomy forceps*.

Of the *craniotomy forceps*, as the competitor of the

crotchet, something more must be said. Dr. Haighton used to exhibit in his lectures a pair of lithotomy forceps, a little modified, which he represented as being in some cases a very valuable substitute for the crotchet. It forcibly struck me, that these forceps, if still further modified, would possess all the advantages of the crotchet, without having any of those flagrant defects which fully justify the exclusion of that dangerous instrument from obstetric practice, in all those cases which require the application of considerable extracting force to bring down the perforated cranium.

Midwifery is indebted to several continental writers for very similar suggestions; and gentlemen who have attended the lectures of Dr. Hamilton, of Edinburgh, must be familiar with Dr. Lyon's forceps, which are so strongly recommended by him. The progressive steps by which this instrument has arrived at its present improved construction, are detailed in the eighth volume of the London Medical Repository, by Dr. D. Davis, and the instrument itself is exhibited in an engraving contained in the same volume. By comparing the craniotomy forceps there sketched, with those represented in the engraving which accompanies these pages, the mechanism of the two will be seen to be different, whilst their principle of action is the same. To the instrument exhibited in the following cut, preference is given merely on account of its simplicity, easy application, and adaptation at once to ordinary cases, and to such as require peculiar management.



DR. CONQUEST'S CRANIOTOMY FORCEPS.

Some such contrivance as this must, eventually, altogether supersede the crotchet; though for some time that instrument may continue in use, to the manifest danger of both patient and operator. The craniotomy forceps offer the following advantages:—

First, The accoucheur may obtain with them such firm hold of the foetal cranium as will enable him to rectify its unfavourable position, and also to

regulate the degree of power necessary to be employed for its extraction: two highly important advantages, which it is evident the crotchet can never confer.

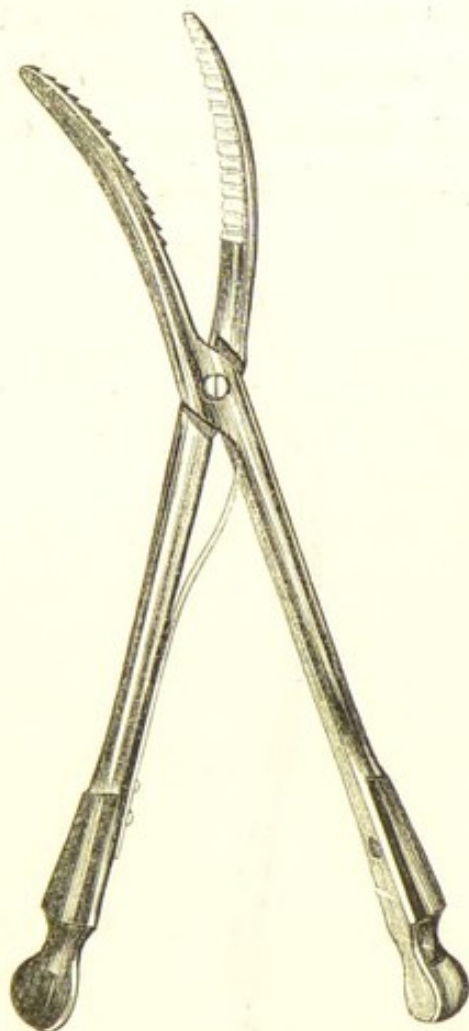
Secondly, With this instrument there is little danger of injuring the vagina, should it slip even whilst considerable extracting power is being employed. On the contrary, not only is the crotchet much more likely to slip, but many most deplorable instances are recorded in which it has torn the soft parts of the mother, or lacerated the fingers of the accoucheur. And,

Lastly, It is essential to the security of the vagina and contiguous organs that, whenever the crotchet is used, the precautionary measure of keeping a hand in the passage should always be had recourse to; a precaution extremely painful to the patient and practitioner, and one usually needless when the craniotomy forceps are employed.

[Some deservedly high authorities continue their preference for the crotchet. If it be properly guarded by a finger placed on the skull opposite to the point of attachment, it is not more liable to injure the passages than those jagged portions of the cranium which often come away under the application of the ordinary *toothed* craniotomy forceps.

On this latter account I prefer a forceps with *serrated* blades, as it is not so liable to crush the bones of the cranium. The best craniotomy forceps is that devised and constructed by Mr. Ferguson, the surgical instrument maker of Giltspur Street. The

blades are not toothed, but shaped like those of a cobbler's pincers, and the handles are separated by a spring.



FERGUSON'S CRANIOTOMY FORCEPS.

THE CROCHET is a hook-shaped instrument, having its point sharpened to a moderate extent. If it be very sharp it will tear the bones too readily, and if too blunt it will not maintain a firm hold. The instruments in general use are too straight, and in many of them I have noticed an unnecessary width and sharpness of the shank immediately below

the hook. As the crotchet is a dangerous instrument in the hands of the inexperienced, it would be advisable for the junior practitioner to restrict himself to the use of the craniotomy forceps until he become thoroughly accustomed to midwifery manipulations. The following figure represents one of the most useful descriptions of crotchet.



CROTCHET.

Blunt hooks of various sizes will often be found of service in extracting the child. They may be introduced through the foramen magnum, or behind the orbit.

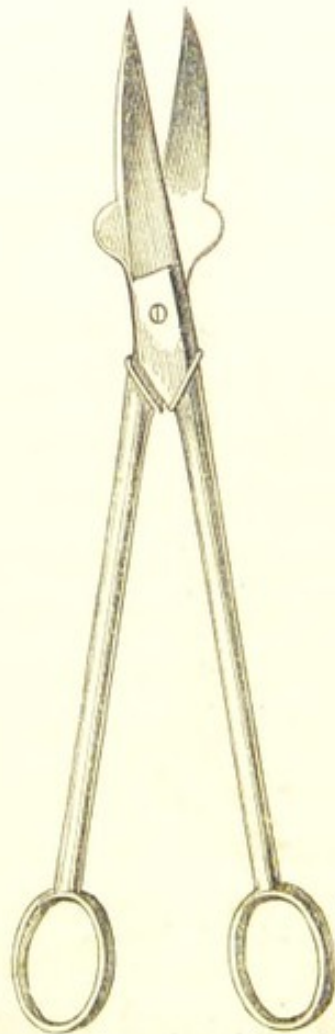


BLUNT HOOK.

Dr. Oldham has invented a long, narrow, and straight crotchet, termed a *vertebral hook*, which promises to be a useful addition to this class of instru-

ments. It consists of a long and narrow steel stem, with a small hooked extremity. By passing this instrument through the foramen magnum into the spinal canal, a firm hold may be obtained of one of the vertebral arches. Dr. Oldham speaks highly of its utility.

Perforating scissors.—Smellie's scissors has an advantage over other instruments of a similar kind, as it cuts both externally and internally. This construction renders it available for perforating the chest as well as the cranium.



SMELLIE'S PERFORATING SCISSORS.

A perforator should be made of well-tempered metal; and there should be a rest at a small distance from its points, in order to obviate the danger of its being thrust too far into the skull.—J. M. W.]

In estimating the dimensions of the pelvis, all pelvimeters but the fingers are ridiculous and useless; and with these it requires no little experience to estimate correctly the admeasurements either of a preternaturally enlarged head, or of a deformed pelvis.

As nothing less than the *life* of the child is dependent on the opinion formed of these cases, the most perfect conviction of the necessity for the *perforator* should be obtained before its employment is determined on; and the sanction of a more experienced practitioner should, if possible, be always secured.

The result of observations made by the most eminent accoucheurs is, that a full-grown foetus cannot pass through the superior aperture of the pelvis, if the distance between the *pubes* and the promontory of the *sacrum* be less than *two inches and three quarters*: but a medical man cannot be too deliberate in his decision on the impossibility of the child's expulsion, particularly when it is remembered that many cases are recorded in which this operation was most needlessly performed, as was manifested by the facility with which the children were afterwards expelled, having had their heads so slightly wounded that they lived several days after birth.

Without endangering the safety of the soft parts

of the woman, reasonable time should therefore be granted to the powers of the mother, by which her mind will be more satisfied on the expediency of the operation: the head will have descended lower in the pelvis; and the child may perhaps die.

A multitude of symptoms have been enumerated by authors, as denoting the *death of the child in utero*. Singly they are of little value, and even when taken collectively do not enable us to pronounce, with any degree of certainty, whether the foetus had ceased to exist or not.

Among others (as occurring *before labour*) we may mention a sudden rigor, without any evident cause; general sensation of uneasiness; peculiar bad taste in the mouth and foetor of the breath; flaccidity of the breasts; sensation of weight and coldness in the abdomen, and of the rolling about of a heavy body from side to side as the patient moves. The symptom last enumerated is the only one that occurs before labour, by which we may judge with any degree of certainty as to the child's death.

During labour, besides the symptoms already mentioned, we may add escape of the meconium (the head presenting), great mobility of the cranial bones, emphysema of the scalp, sanious foetid discharge from the uterus, containing portions of the cuticle, and want of pulsation in the funis. Still, with the exception of the last, none of these can be considered as symptoms by which we can decide whether the child be dead or not. Still less is their absence to be viewed as a proof that the child is living. With the excep-

tion, therefore, of the symptom before labour, where the patient has the sensation of a weight rolling from side to side of the abdomen as she moves about, and of the flaccid state of the cord if it happen to be prolapsed during labour, no one of these alleged proofs of the death of the child should be admitted; and, without the concurrence of several of them, an opinion cannot be satisfactorily formed.

[*Auscultation.* — When the sounds of the foetal heart can be heard, they necessarily afford an infallible sign of the child's vitality. They are, however, not invariably audible. An instance lately came under my notice, during a protracted case of parturition, in which they could not be heard, although the labour terminated with the birth of a living child. —J. M. W.]

Should it have been determined on to perform the operation of *cephalotomia*, the general rules laid down for the application of instruments must be regarded, before proceeding to diminish the bulk of the head.

The uterus and its contents should be kept *in situ*, by steady pressure made on the abdomen by an assistant, whilst the operator passes two fingers of his left hand *per vaginam* to the head of the child. Having fixed on a suture or fontanelle, the point of the perforator is to be carefully carried along the groove made by the approximation of the fingers to the part to be perforated, through which, by a semi-rotary or drilling motion, it is to be forced into the skull, until its progress is arrested by the *shoulders* of the instrument. The handles must now be opened,

and the instrument turned in different directions, so that the opening may be sufficiently enlarged to admit the perforator, with which the cerebral mass is to be well broken down.

If the head has been opened early, and no bad symptoms exist, some hours may pass without anything further being done, during which time uterine contractions will force out the contents of the cranium, so that the bulk of the head becomes materially diminished, and, the difficulty being overcome, the labour may be terminated by the unaided powers of the mother.

If this should not take place, by waiting a few hours the tumefaction of the soft parts of the mother have time to subside, and the head will have descended more or less into the cavity of the pelvis.

The *craniotomy forceps* are now to be passed up the vagina, and on reaching the perforation the handles are to be opened a little way, and the blade *without teeth* is to be introduced within the cranium, so that the concavity of the shanks shall be opposed to the perineum. On closing the handles, the teeth transfix the bones of the head, which is to be extracted in the line of the axis of that part of the pelvis through which it is passing.

It is well only to co-operate with uterine efforts, and every attempt must be made to overcome any remaining obstacle, by improving the situation of the head, and by the steady employment of extracting power.

The extraction of the body is to be effected as

under other circumstances; and when the child is separated from its mother, the mangled head ought to be stuffed and sewed up neatly.

Sometimes, the mere adaptation of the shoulders to the longest diameter will not much facilitate their passage; and the obstruction may be so considerable as to justify assistance with the blunt hook fixed in the axilla.

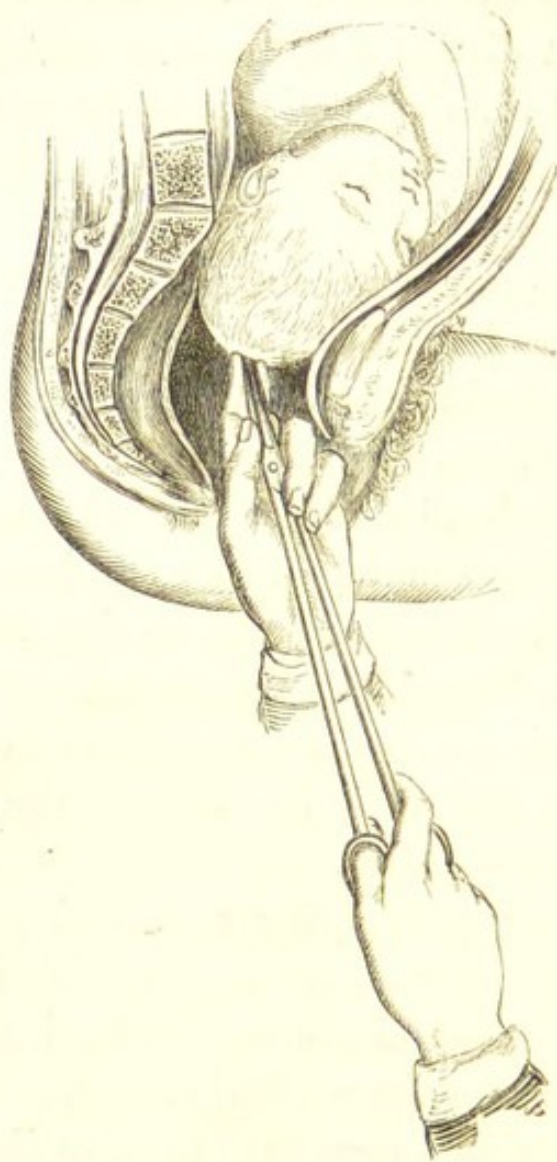
In other instances, it becomes necessary cautiously to perforate and remove the contents of the thorax and abdomen before the body can be extracted.

Should extreme difficulty exist in obtaining the passage of the head through the brim of the pelvis, the bones of the summit of the cranium and of the face must be removed *seriatim*, so that the base alone shall remain. The chin is then to be brought through first, by which means there will be rarely more than *an inch and a half* from the chin to the root of the nose to enter the pelvis.

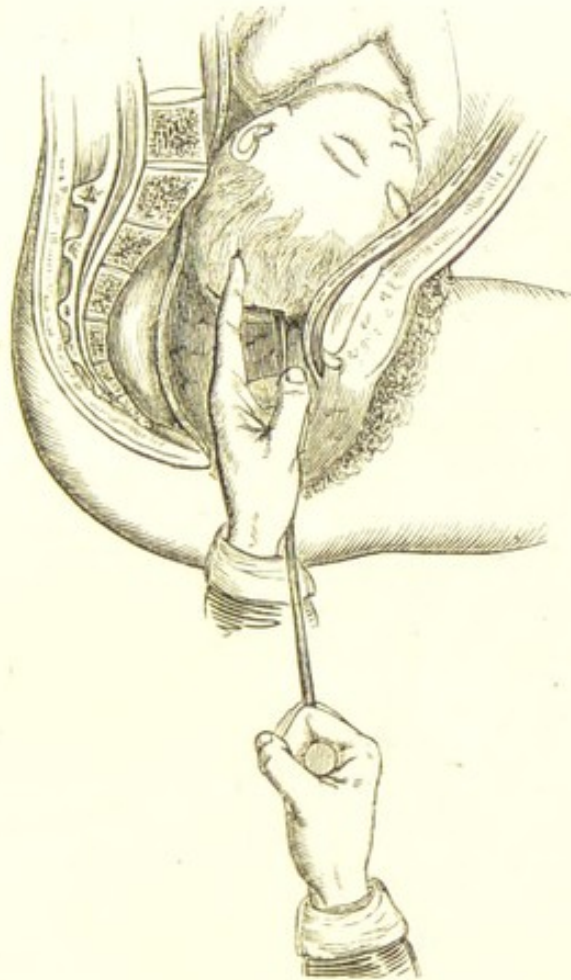
Presentations of the face now and then demand perforation of the cranium to diminish its size. In these cases, the perforator should be introduced just above the nose, in the *sagittal* suture.

When it becomes necessary to open the head, after *the lower extremities are expelled*, the perforation must be made *behind the ear*, and above it, to avoid the mastoid process.

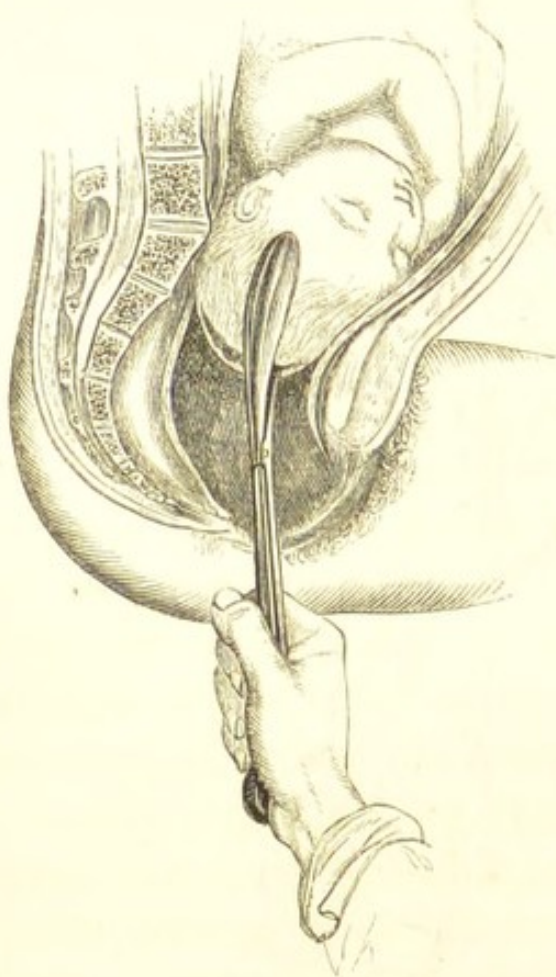
[The following illustrations exhibit the manner of applying the perforator, the crotchet, and the craniotomy forceps.



APPLICATION OF THE PERFORATOR.



APPLICATION OF THE CROTCHET.



APPLICATION OF THE CRANIOTOMY FORCEPS.

The late Dr. D. Davis invented a strong species of bone-forceps, termed an *Osteotomist*, for the purpose of removing, piecemeal, every portion of the cranium, and thus obviating the necessity for the Cæsarian section. M. Baudelocque has also contrived, for a similar purpose, a crushing machine worked with a screw, to which he has given the name of *Cephalotribe*. As these two instruments have not been generally sanctioned by the profession, it would be out of place to give other than a brief notice of them in an elementary work of this description.

Turning has been strongly advocated as a substitute for craniotomy by Professor Simpson. Although this operation might in a very few instances be successful, a very little consideration will show its inexpediency. 1st, The powerful traction, required in a deformed pelvis, might separate the neck from the head. 2ndly, If the head be too large to pass after the shoulders are born, craniotomy must be performed at a disadvantage, and nothing is gained. 3rdly, The pressure on the funis, during the inevitably protracted delivery by turning in a narrow pelvis, must be equally fatal to the child as craniotomy.—J. M. W.]

OF THE CÆSARIAN OPERATION.

This operation consists in making an incision through the parietes of the abdomen and uterus, sufficiently large to admit of the introduction of the hand, and of the extraction of the foetus and placenta.

The cases demanding this formidable and so frequently fatal operation, will be admitted to be extremely rare, when it is affirmed, that several instances are authenticated by men of the highest integrity and eminence in their profession, in which children have been delivered after the perforator has been used, although the distance between *pubes* and *sacrum* did not exceed *one inch and a half*, and in which there did not appear to be more than *two inches* from one side of the pelvis to the other.

In *England* the operation has been performed somewhat less than *thirty* times in cases of protracted labour, from rachitis or molacosteon. It is affirmed that in one instance it terminated favourably.* It has also been performed successfully *once* in *Ireland* with a razor, by an illiterate but bold female practitioner in midwifery.†

On the *Continent*, the operation has been abundantly more successful; for out of *two hundred and thirty* cases, reported by Monsieur Baudelocque, *one hundred and thirty-nine* women recovered, and consequently only *ninety-one* died.

[Dr. Churchill has carefully drawn deductions from four hundred cases, forty of which occurred in this country. - By his calculations, it appears that, on the Continent, one mother in $2\frac{1}{2}$ died, whilst in Britain the mortality has been as high as three in every four cases. With regard to the children, one

* Vide Medical Records and Researches, page 154.; and Essays on Surgery and Midwifery, by James Barlow, 1822.

† Vide Edinburgh Medical Essays, vol. i. art. 37.

in $2\frac{1}{2}$ died in this country, and one in four on the continent. — J. M. W.]

Perhaps the only satisfactory reason that can be assigned for the remarkable difference in the result of the operations performed in this country and on the Continent is, that it has scarcely ever been determined on in England until after long-continued fruitless efforts have been made by the mother to expel the child, so that her constitutional powers, and the parts to be operated on, have been in the most unfavourable condition; whilst, on the Continent, an ecclesiastical law compels the patient to submit to, and the accoucheur to perform, the operation, as soon as careful examination demonstrates the necessity, whilst the constitution is tranquil and its powers unimpaired.

[The Cæsarian section is the most formidable of all surgical operations, and it appears that, under the *most favourable circumstances*, the mortality rises nearly as high as 1 in 2. The great dangers to be dreaded are nervous shock, hæmorrhage, incarceration of the bowels in the uterine wound, and the super-vention of peritonitis, which is much more likely to occur after this operation than after ovariectomy, owing to the highly fibrinous condition of blood which obtains in the puerperal state.

When, during pregnancy, an osteo-sarcomatous growth from the sacrum has completely blocked up the pelvic aperture, a condition of parts exists in which the Cæsarian operation is indispensable. — J. M. W.]

The uterus may be opened for the extraction of the

child, in some cases, *after the death of the mother*; for although it has not been ascertained how long vitality may be preserved by the fœtus in utero, after apparent extinction of the vital principle in the mother, yet several instances are given, on the best authority, of the *Cæsarian section* having been performed half an hour after death, in which the children were saved.

THE DIVISION OF THE SYMPHYSIS PUBIS.

It is scarcely necessary to say anything on this third method of relief, which was proposed by Monsieur Sigault in the year 1767, because the result of about *fifty* recorded cases was so disastrous that the operation was for a long time abandoned; but attempts have recently* been made on the Continent to revive it.

ON BRINGING ON LABOUR PREMATURELY.

The three methods of proceeding already adverted to, are in themselves so formidable, and so painful to a well-constituted mind, that it must hail with pleasure any proposal which promises to substitute a less objectionable mode of treating cases of extreme difficulty from disproportion of parts.

It had long been noticed that some women, who

* During the year 1826.

could not expel full-grown children at the full period of utero-gestation, produced living children when, from accidental circumstances, they aborted between the seventh and eighth month: and this fact led to the introduction of that practice which brings on labour as soon as the child is capable of carrying on the functions of life independent of its mother.

The result of this operation has hitherto been, that out of nearly *one hundred cases*, in which labour has been prematurely induced, about *one half* of the children, who would otherwise have been inevitably destroyed by the perforator, have been born alive.

Before determining on the propriety of this measure, the necessity, and the probable success of it, should always be confirmed by the opinion of a second practitioner of character and experience.

The measure cannot be necessary if the woman has previously borne a living child at the full term, unless disease has subsequently diminished the capacity of the pelvis.

It should never be adopted unless former labours have demonstrated, most unequivocally, the impossibility of a full-grown child being moulded to the passages, and forced through them.*

The operation is performed by three different methods.

First, By gently and cautiously carrying the forefinger of the left hand per vaginam, through the os uteri, and into contact with the membranes, the

* Vide a very instructive paper on this subject, in the *Third Volume* of the Medico-chirurgical Transactions, by Dr. Merriman.

woman standing up and steadily forcing down the uterus; while the stilette of a catheter, held in the right hand, and conducted along the finger of the left hand, is to be cautiously pressed through the membranes to let off the liquor amnii.

A conclusive objection to this mode of operating is the destruction of the child, which most frequently follows, in consequence of the uterus being emptied of its fluid, and pressing on the defenceless fœtus.

Secondly, This plan has been modified and rendered less objectionable, by carrying up the stilette some distance between the uterus and the ovum before puncturing the membranes, so that, the puncture coming in contact with the surface of the uterus (instead of being made opposite the os uteri as in the first proposal), the liquor amnii escapes gradually, and the child runs less risk of perishing by pressure.

But neither of these plans can bear comparison with the *third* method, which consists in merely passing the finger round and round within the os and cervix uteri, so as to detach the *decidua*.

By this mode, the membranes are left entire, so that the fœtus cannot be destroyed by pressure; and the mouth of the womb and vagina are gradually dilated by the protrusion of the liquor amnii, performing its wedge-like office as in a natural labour.

Parturition usually commences in from *twenty-four* to *ninety-six* hours, and the management of the case must be conducted by the same rules as are applicable to labours under other circumstances.

[Two other methods of inducing premature labour deserve attention — artificial dilatation of the os uteri by means of sponge tents, and the exhibition of ergot of rye. The former method is one of the most efficacious means of inducing premature labour, and seldom fails: the latter remedy cannot always be depended upon. — J. M. W.]

Second Order

OF LABOURS,

Or those in which any other part than the head presents, such as the Feet, Breech, Hand, Funis, &c.

Many varieties of this order of labours will terminate without any artificial assistance, and are, therefore, deemed by some authors to be natural cases; but the majority of writers and teachers consider all labours to be preternatural, in which the head is expelled last.

An accoucheur is led to suspect that the head is not the presenting part, when the liquor amnii escapes without being followed by the descent of the fœtus: and when the os uteri is considerably dilated, without the child resting upon it.

But nothing short of the actual detection of the presenting part can afford conclusive evidence.

It is of considerable moment to discover the presentation during the first stage of labour, because the varieties of this order of labour require very dif-

ferent management; and this is one of many reasons why the practitioner should always examine the woman per vaginam at the *commencement* of parturition.

Labours in which the head is expelled last, generally demand some kind of manual aid, and it is important to bear in mind that this assistance should not be given until the mouth of the womb is fully dilated, or it may be lacerated; and when interference is necessary, it should always be given with the greatest possible care and deliberation. Nor is it undeserving of notice, that when two extremities present, they should never be drawn down until it is ascertained that they both belong to the same child.

First, Of presentations of the *feet*.

This presentation occurs more frequently, and is more easily managed, than any other presentation of the lower extremities.

The *foot* is known to present, —

First, by the shortness and evenness of the toes.

Secondly, by its thickness and shape.

Thirdly, by its heel.*

The feet may be very differently situated as they pass through the pelvis; and although their passage may be equally easy in either direction, the position in which they descend very materially influences

* I have given to the Museum of St. Bartholomew's Hospital two hands, in which the carpal bones are so bent as to cause these extremities to bear a very close resemblance to feet, for which, indeed, they were mistaken during labour.

the transit of the head and shoulders through the superior aperture of the pelvis.

The most favourable direction for the toes in their descent, is, towards one or other of the sacro-iliac symphyses, because the head is then placed with its long axis corresponding with the longest or diagonal diameter of the pelvis; and in its further descent is naturally disposed to proceed with the face towards the hollow of the sacrum.

On the other hand, should the toes point to the vertebral column, or to the abdomen of the mother, the head in its descent will not enter the pelvis, because the long axis of the former does not correspond with the longest diameter of the latter, and the chin or occiput becomes hitched on the pubes and promontory of the sacrum; and it may hardly be practicable to disengage them from this very unfavourable position.

If, then, the feet should come down in this untoward direction, it becomes necessary to rectify the malposition by firmly grasping the nates as soon as they have passed the os externum; and with prudent firmness, in the intervals between the pains, to give that inclination to the body which will direct the toes towards either sacro-iliac symphysis.

Considerable dissonance of opinion has existed on the management of the arms, which of course are extended by the sides of the head of the child. It is unnecessary to refer to the arguments which have been advanced by those who think they should

always be brought down before the head, or by others who maintain the impropriety of removing them from their position.

Whenever the finger of the accoucheur can, without difficulty, be passed along the body of the child, and over the shoulders to the bend of the elbows, an attempt should be made to draw down the arms one after the other, by sweeping the hands of the child over its face, and in general this can be effected without the employment of immoderate force.

When the body is expelled, and the head is filling up the superior aperture of the pelvis, there is great danger of the child losing its life by the pressure of the funis between the bones of the cranium and the pelvis; and, therefore, if the passages be well dilated, the termination of the labour should now be accelerated by two fingers passed over the shoulders of the child, with which moderate and steady extracting power may be employed, whilst one finger of the other hand, passed into the mouth, will have the double advantage of depressing the chin to the sternum (by which means the shortest axis of the head may be brought to correspond to the diameters of the superior aperture of the pelvis), and at the same time air will be admitted into the mouth and chest of the child, and its existence rendered less dependent on the circulation through the funis.

With this command of the head, also, any malposition may be rectified.

[The means recommended by the author, for facilitating delivery in these cases, are not always

sufficient to save the life of the child. The forceps or vectis may be required, and should always, if practicable, be kept in readiness, in breech and footling presentations; otherwise a life may be lost in consequence of this instrument not being close at hand.



APPLICATION OF THE FORCEPS IN A BREECH CASE.

Whilst the forceps is being introduced, an assistant must draw the body of the child forwards when its face is directed towards the sacrum, and backwards when the head is placed in an opposite direction. — J. M. W.]

Should only *one foot* present, it is well to attempt to grasp the other; but, very often, this is not easily done, nor is it of much importance, because, as it descends, a finger may be hitched in the groin, and the leg and thigh brought down.

The *knees* now and then constitute the presenting part; but, independently of this presentation being extremely rare, it demands no management different from a footling case.

Secondly, Of presentations of the *breech*.

Labours in which the nates occupy the brim of the pelvis are generally extremely tedious, because these parts do not diminish in their size, or so readily accommodate themselves to the superior aperture as the bones of the head, and the uterus appears to act inefficiently.

The breech and head are not unfrequently confounded one with the other; for although the breech is usually softer than the head, yet, both being round, considerable care is requisite to distinguish them.

This presentation may generally be distinguished,—

First, by the escape of the meconium.

Secondly, by the anus and organs of generation.

Thirdly, by the os sacrum.

It may be said, that the cleft of the breech will assist in the diagnosis, but the separation cannot always be traced.

[It occasionally happens in breech cases that the scrotum is swollen to a great extent in consequence of pressure.

This condition is apt to embarrass a young practitioner. Care should be taken not to make frequent manipulations, lest the scrotum be still further injured. The irritation consequent on frequent explorations has, in some instances, led to sloughing of the scrotum.—J. M. W.]

The breech is found at the superior aperture of the pelvis differently situated, but this is far from being unimportant, because, if its longest diameter from side to side do not correspond to the lateral or diagonal diameter of the pelvis, it enters the brim with considerable difficulty.

It is only necessary to advert to the practice of pushing up the breech, and bringing down the feet, to deprecate such maltreatment; nor is it much more prudent to employ blunt hooks fixed in the groins to expedite the progress of these labours, which, if left to the natural powers of the mother, are usually terminated safely, though almost always slowly.

[If the legs be extracted before the expulsion of the breech, the death of the child generally ensues. Whilst the thighs of the infant remain flexed, they serve, to a certain extent, as a means of protection for the cord. — J. M. W.]

When the breech is expelled without the *os externum*, then the *direction of the toes*, and all other circumstances requiring attention in presentations of the feet, must be borne in mind, because the labour becomes to all intents and purposes one of that kind.

The other varieties of this order of labours require (almost invariably) the operation of

TURNING,

Which consists in passing a hand into the uterus, to find and bring down the feet or knees, and which produces that revolution in the situation of the child

which has given to the proceeding the designation of *turning*.

This operation is necessary when the *upper extremities*, the *back*, the *abdomen*, and sometimes when the *funis* presents, and now and then when peculiar circumstances demand expeditious delivery, even though the vertex may be the presenting part.

General Rules.

Turning ought never to be attempted until the rectum and bladder have been emptied, and the os uteri is sufficiently dilated to permit the hand of the accoucheur to pass into the uterus with ease; and, if possible, the operation should be performed before the liquor amnii has escaped.

Considerable importance has been attached to the position of the woman, and to the use of one arm of the accoucheur in preference to the other: but, after all, no particular rules are of much use, for the operator will be compelled so to place his patient as to enable him with ease to use that arm which gives him the most command of the child in utero; and this will altogether depend on the circumstances of the individual case.

Generally, the woman may lie on her left side, as usual, only with her nates over the edge of the bed; and the practitioner may use his right or left hand according as the feet of the child are to the right or left side of the pelvis, taking care always so to introduce the hand that the child shall be in its *palm*, and its back be opposed to the inner surface of the

uterus. The hand should be passed up between the membranes and the uterus, nor should they be ruptured until the hand has reached the inferior extremities of the child, and the liquor amnii thus prevented escaping by the presence of the arm in the vagina. In this manner the uterus cannot contract upon the child, and the operation of turning is very greatly facilitated.

The customary practice of taking off the coat before the operation of turning, often disgusts and alarms the patient, and cannot be necessary if the sleeve of the coat be made sufficiently large to admit of its being slipped up above the elbow. The hand and arm should be well anointed with some unctuous substance; and when introducing the hand into the vagina, and carrying it through this canal and the os uteri, the fingers ought to be arranged in a conical form.

[Although, in ordinary labours, it is not necessary to take off the coat, false delicacy must not interfere with a strong sense of duty, in cases of danger or difficulty. If the sleeve of the coat be small, it will, when turned up over the elbow, tend to cramp the muscles of the arm at a time when perfect freedom of motion is required.

In anointing the hand, care should be taken not to apply the oil or lard to its *inner* surface, otherwise a firm hold of the child's foot will not be so easily maintained. — J. M. W.]

The introduction ought to be carried on during an interval of rest from pain, and the hand should

always be flattened and passive whilst the uterus is exerting its contractile power, or this organ may be injured.

In arm presentations, it very rarely happens that a child, after the sixth month, can be expelled without its position be changed; indeed, never, unless the pelvis be unusually capacious, and the child unusually small, and *à fortiori* at subsequent dates, it becomes necessary to change the situation of the fœtus.

When the *hand* presents, it is known, —

First, by the shape and situation of the thumb.

Secondly, by the irregularity of the points of the fingers.

Thirdly, by its breadth and flatness.

Suppose, then, on examining at the commencement of labour, when the os uteri is not dilated to a greater size than the circumference of a shilling, the accoucheur discovers that the hand presents. A patient in this condition ought not to be left, lest the membranes should break, their fluid contents escape, and the uterus firmly contract on the body of the child. As soon as the passages and the os uteri are sufficiently relaxed to admit the hand, it is to be carried through them with a semirotary motion, in the direction of the axis of that part of the pelvis through which it is passing. On entering the os uteri, it is to be gently insinuated between the membranes and uterus, and carried upwards along the anterior surface of the child.

The part thus grasped is to be slowly and gently

brought down, taking *care never to draw them over the back of the child, but always along the abdomen.*

The arm now recedes, and the case is converted into a presentation of the feet, and claims the same management.

[If the feet are close together, it may be as well to seize them *both*, provided they can be grasped with ease, as the evolution is effected more quickly



by so doing ; if, however, only one foot can be felt, no attempt must be made to search for the other extremity. *One foot is all-sufficient for the purpose.*
—J. M. W.]

But a variety of circumstances may occur to render

the operation of turning not quite so easy as it may seem to be from this description of it.

The liquor amnii may have escaped for hours, and the uterus be contracted powerfully upon the child, and so irritable, that on any attempt to carry the hand forwards, most energetic contractile efforts are excited, which prevent its further introduction without the exertion of such an immoderate degree of force as few men have hardihood to employ. In such a case, we have no alternative between overcoming the resistance by superior power, at the risk of bursting the uterus, or paralysing its irritability by a full dose of *opium*.

Many objections may be advanced to either of these methods; but, on the whole, the best practice is to exhibit from *forty to fifty minims* of the tincture of opium, or about *three grains* of the gum. This having been done, the woman is to be watched, and on the diminution or cessation of irritability (which, by the by, is often greatly aggravated by incessant efforts to turn), the object may usually be more easily effected.

[I have recently met with cases of shoulder presentation, in which the inhalation of *chloroform* proved of great service in overcoming the resistance of the uterus. Before administering this remedy, the introduction of the hand was impracticable, but immediately after its exhibition, the spasmodic contraction yielded, and version was effected with great facility. This case shows, in opposition to some theorists, that chloroform does, under certain con-

ditions, suspend the action of the uterus. — J. M. W.]

Should the liquor amnii have escaped, the uterus being merely in a state of passive contraction, and the os uteri dilated, turning should be immediately accomplished, lest *active* contractions should ensue; but should the *os uteri not be dilated* more than is barely sufficient to admit the arm of the child to pass into the vagina, the accoucheur must wait its more complete dilatation, or laceration of the cervix uteri may be the consequence of his premature attempts to force his hand forward.

Sometimes, although the feet or a foot be brought into the vagina, the hand which was previously there does not recede; and it sometimes happens that both a hand and a foot are met with in the pelvis, constituting the original presentation. Under any circumstances, this is an awkward case: a *fillet*, which is merely a piece of tape or ribband with a noose, must be slipped over the ankle, and whilst the practitioner is employed in elevating the arm by one or two fingers fixed in the axilla, an assistant may not only prevent the return of the foot, but steadily draw it down by the fillet.

Sometimes, after the feet have been brought down, *considerable difficulty attends the passage of the body and head of the child.*

Should the child be affected with ascites, hydrothorax, or hydrocephalus, so as to obstruct its passage, the fluid must be let out of the respective cavities by a trocar, or the perforator cautiously introduced.

If the arms obstruct the descent of the child, the difficulty will be overcome by improving their situation, so that they shall occupy the spaces in the pelvis near one sacro-iliac symphysis and opposite acetabulum ; or the accoucheur may assist by passing his fingers over the shoulder ; or, even the blunt hook may be used, provided the force employed be moderate.

But much more frequently it is the *head* which offers the principal obstacle, and no little skill is necessary to secure its speedy extrication. The difficulty at this point of delivery will depend either on *malposition* of the head, or *disproportion* between its size and the dimensions of the pelvis. If malposition prevents the advancement of the head, the practitioner is to blame, because he ought to have placed the head (as soon as he could grasp the nates), in the most favourable situation with the diameters of the pelvis, and now powerful uterine contractions may have wedged it either into the brim or the cavity. Under these circumstances, the head must be very cautiously disengaged, and its position improved.

Should *disproportion* between the size of the head and the cavity of the pelvis be the cause of difficulty, if *slight*, time may overcome it ; if *considerable*, the bulk of the head must be diminished by the perforator, introduced either behind the ear or at the back of the head.

In some very rare instances, *embryotomy*, or the extraction of the child piecemeal, may be necessary.

When *immoderate force* has been employed to extricate the head, it has been left in utero by the forcible separation of the body. Such conduct is extremely culpable, because it may almost always be traced to indiscretion.

When this occurrence has taken place, it is necessary to have the uterus fixed by the steady pressure of an assistant on the abdomen, while the accoucheur proceeds to extract the head. This may be done by the long forceps, or by fixing the craniotomy forceps, crotchet, or blunt hook in the foramen magnum; always accommodating the head to the longest diameter of the pelvis during the extraction.

Cases occasionally occur in which the perforator may be required, but no particular direction can here be necessary, except that the head must be kept steady at the brim of the pelvis, either by external pressure, or by the craniotomy forceps or crotchet fixed in the foramen magnum.

The *hand coming down by the side of the head* is not properly a presentation of the hand, because if not mismanaged, it may generally be made a vertex case.

If, on examination, this mixed presentation be discovered, the hand may be cautiously raised above the brim of the pelvis, and kept there by the fingers of the accoucheur, until the head fully occupies the aperture, and consequently prevents the further descent of the extremity. But this cannot always be done, and it is then necessary to place it in the most advantageous position, so that it shall add as little as possible to the bulk of the head.

This case will be made a complete arm presentation, if, instead of the cautious interference just recommended, the hand be grasped, and pulled down into the vagina.

Presentations of the *abdomen*, *back*, and *sides*, sometimes, though very rarely, occur. A knowledge of the general rules for turning, will be a sufficient guide for the management of such cases.

[*Elbow*. — When this part of the child presents, in a transverse direction, some difficulty may be experienced in determining its character; as the knee of a foetus, when firmly bent, closely resembles the elbow. If any doubt exist in the mind of the attendant, he should *gently* draw the extremity into the vagina, in order that its nature may be thoroughly determined. — J. M. W.]

OF (what is termed) THE SPONTANEOUS EVOLUTION
OF THE FÆTUS IN UTERO.

It is now generally admitted that this singular phenomenon, which was first attempted to be methodically explained by Dr. Denman, is not what he considered it; viz., a spontaneous *turning* of the child in consequence of powerful uterine contractions, which, forcing out the breech and feet, allow the arm to recede into the uterus; but rather a doubling of the foetus, so that the arm changes its situation but very little (perhaps not at all), whilst the nates are forcibly expelled before the upper extremity; the case becoming similar to a breech or foot presentation.

Several very respectable men have lately written on this curious subject, and the result of all that has been observed confirms the opinion, that the process is rather that of forcible doubling and expulsion, than of evolution; still it does not appear that the occasional occurrence of this fact ought in the least degree so to influence the accoucheur as to lead him to neglect the proper time to turn the child by manual interference, when the presentation requires it; although the possibility of this result may tend to inspire hope that the case may terminate favourably, when turning is inadmissible.

Children born under these circumstances have all been expelled dead.

OF FUNIS PRESENTATIONS.

Whenever the umbilical cord enters the cavity of the pelvis before any other part of the body, it is exposed to that degree of pressure which frequently, interrupting the circulation of blood through it, destroys the life of the child. It has therefore always been a desirable object so to preserve the cord from pressure, or to accelerate the expulsion of the child, that its life might not be destroyed.

FIRST, then, it is maintained by some men, that the funis may be so preserved from pressure that circulation through the cord shall not be interrupted. To secure this an attempt may be made to carry up the funis into the uterus, and suspend it over the feet or hands of the child; or a piece of soft sponge may be so introduced between the foetal head and pelvis

of the mother, that the funis, when once conveyed above it, shall not find room to slip down again; or the funis, being drawn down, may be enclosed loosely in a little bag, which is to be introduced and left within the uterus.

[Several contrivances have been devised for replacing a prolapsed funis. Mr. James Stephens, of Manchester, has invented a valuable instrument for this purpose. It consists of a catheter with a stilette



CATHETER DEVISED BY MR. STEPHENS FOR REPLACING THE FUNIS.

passing through it. The extremity of the stilette is divided, and when projected beyond the end of the catheter, it expands by means of a spring. The funis is to be grasped by this cleft, or end of the stilette, and firmly fixed by means of a screw attached to the handle of the catheter. The cord can then be readily conveyed beyond the head of the child.*

Dr. Ramsbotham has adopted a simple method for replacing the cord, which can be adopted in case the medical attendant is not provided with Mr. Stephens's instrument. For this method, he (Dr. Ramsbotham) says, "We shall only require a piece of thin whalebone from eight to twelve inches long, and half an inch wide, and less than a yard of narrow tape; but which may be obtained wherever women are present. Near one end of the whalebone two holes should be bored about an inch asunder; the tape should be carried through first one and then the other; so that the loops should be lengthwise on the whalebone between the holes, and both strings should hang down the same side. When used, the folds of funis must be placed within the loop, and the tape drawn moderately tight — not sufficiently so, however, to impede the circulation through the umbilical vessels, and the end of the instrument thus charged must be carried up into the uterus above the child's head; the tape must then be taken away by pulling at one string, the funis released, and the whalebone withdrawn. If the fold comes down again, it may

* Mr. Stephens published a minute description of his method in the "Lancet," vol. ii. 1847.

again be returned, and the instrument may be left for some little time just within the os uteri, where from its form and pliability it is not likely to do any injury.*

A futile objection has been raised to both the above methods, on the ground that they are apt to stop the circulation of the funis. During the few moments required for the operation, it is of little consequence whether the circulation be arrested or not, as it is frequently stopped for a longer period, from other causes during labour, without occasioning the slightest injury to the child. — J. M. W.]

Should these attempts be unsuccessful,

SECONDLY, *the operation of turning* is recommended; but before this is resorted to, several suggestions which naturally present themselves must be attended to.

It should be borne in mind, that all the advantage proposed to be gained is on the part of the child, the mother's life not being endangered by a presentation of the funis; consequently, as the operation of turning is sometimes destructive to the mother, it ought never to be performed merely to save the life of the child,

First, Unless the full consent of the patient and her friends is obtained.

Secondly, Unless she has had a child before (except the pelvis be unusually capacious, and the soft parts more than ordinarily relaxed).

* Principles and Practice of Obstetric Medicine and Surgery (p. 493.), by Dr. F. H. Ramsbotham.

Thirdly, Unless there be proofs of the life of the child: and,

Fourthly, Unless circumstances are peculiarly favourable to turning; such as the uterus being distended with liquor amnii, and its contractions not strong; the head of the child being above the brim of the pelvis; and the passages so relaxed and dilated as to admit of the easy introduction of the hand, and the speedy delivery of the child.

Sometimes the funis and head will descend so rapidly into the pelvis, that *turning* is inadmissible. Such a case, if the pulsation in the cord be perceptible, and the os externum relaxed, may be beneficially terminated by the *forceps*.

It will always be desirable to keep the funis towards one or other of the sacro-iliac symphyses, as the part of the pelvis where it will be least compressed.

Third Order.

LABOURS WITH PLURALITY OF CHILDREN.*

Twin cases occur on an average about once in ninety labours; and triplets, once in three thousand. Several well-authenticated instances of four and five children at a birth are recorded; and Dr. Osborne states that he has distinctly traced six fœtuses in an abortion.

[Statistical returns are extremely variable, and

* Vide a curious paper on this subject by Dr. Garthshore, in the Transactions of the Royal Society, for June, 1787.

must never be considered as other than approximative. The average frequency of triplets, as given by the author, is perhaps too high. Dr. Ramsbotham states that out of 48,985 cases, which occurred at the Royal Maternity Charity, there were only three instances of triplets. — J. M. W.]

Attempts have been made to determine the existence of a plurality of children *before* and *during* parturition.

The evidence of the uterus containing more than one child, which is supposed to offer itself *before* labour, or during pregnancy, is too fallacious to be relied on; — such, for example, as enormous distention of the abdomen, with a longitudinal groove in the course of the linea alba, forming two distinct and lateral tumours; rapid ascent of the uterus; the sensation of twice quickening, &c.

Nor are the signs occurring *during* labour much less fallacious; except when the different parts of two children present at the same time. This demonstrative evidence has often occurred, and should put practitioners on their guard, not to proceed to extract a child by two extremities, without satisfactorily ascertaining that they both belong to one child.

[Since the publication of the last edition of this work, *auscultation* has been successfully employed as a test of the presence of twins. When a foetal heart can be heard in two distinct parts of the abdomen, incontestible proof is afforded of the existence of two children in the uterus. — J. M. W.]

After the birth of one child, the existence of one

or more remaining in utero, may be ascertained by *external* and *internal* examination.

The *external* proof is the size and consistence of the abdomen, the parietes of which, if there is a second child in the uterus, remain nearly as tense as before the expulsion of the first; still it must be borne in mind, that this proof is not invariably conclusive, because the uterus may remain so uncontracted from other causes, as entirely to occupy the cavity of the abdomen.

When it does so without containing another child, the uterine tumour is generally more moveable.

Internal examination is therefore necessary; and it is extremely unjustifiable in an accoucheur to omit both external and internal investigation in any case of labour.

In every instance, after the birth of the child, before extracting the placenta, after external examination, two fingers of the left hand are to be carried into the uterus, guided by the funis; and if its insertion into the placenta be felt, it is hardly possible for a second child to escape detection, taking care not to be misled by a distended bladder, enlarged ovary, or by the membranes containing coagula.

Suppose a second child to have been discovered, it can hardly ever be prudent to communicate the fact to the patient, because powerful mental emotions do so much mischief. If her friends be prudent, they may be put in possession of the circumstance.

This species of labour is very differently managed by different men; for, whilst some recommend the

immediate extraction of the second child, others advocate the powers of nature, in such unqualified terms, as to leave the case altogether to be completed by her. Here the sentiment, *media quodammodo inter diversas sententias*, again forces itself on the attention of the dispassionate inquirer; and, therefore, if neither hæmorrhage, exhaustion, or any other alarming symptom, demands immediate interference, it is well to wait an hour, to give the uterus and constitutional powers time to recruit; and, usually, secondary pains come on, and expel the uterine contents.

In all cases, the membranes may be ruptured as soon as the second ovum is detected, and if the head or feet be the presenting part, nothing further need be done; but, should any presentation exist which requires the operation of turning, surely it ought to be immediately performed, before the recurrence of uterine contractions interfere with the free movements of the hand in utero; but here the operator must pause, and not at once proceed to deliver.

Should the secondary contractile exertions not commence at the expiration of an hour, such measures may be had recourse to as will excite them: for example,—abdominal friction, moderate stimulants, and the irritation of the cervix uteri, by means of the fingers; and never let it be forgotten, that the grand object to be aimed at is, to *re-excite uterine contraction*; for, if the organ be suddenly and abruptly emptied, without any regard to the re-establishment of its contractile disposition, formidable or fatal hæ-

morrhage may ensue; and considerable flooding is a very common consequence of the exhausted condition of the uterus, when it has been distended by more than one ovum.

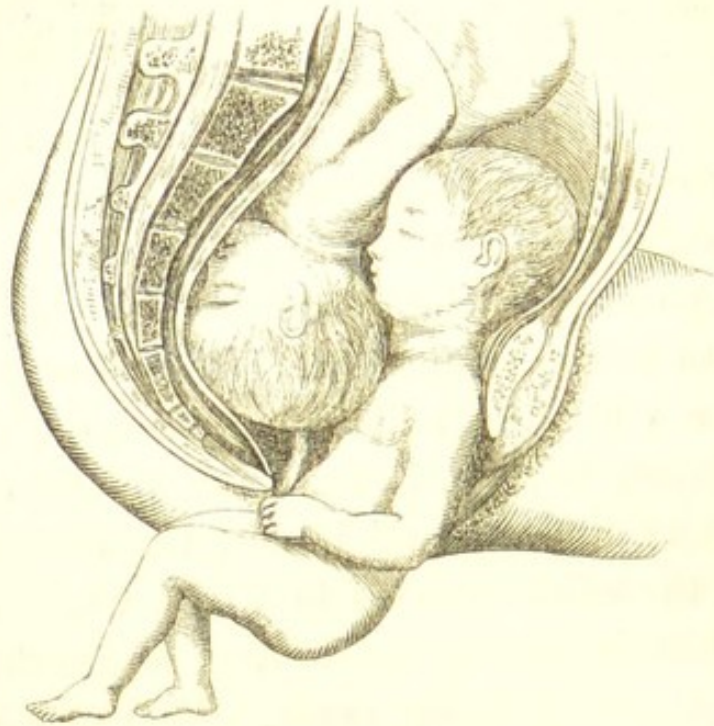
In consequence of this predisposition to hæmorrhage, it is always prudent to watch the woman for some hours after delivery; and never to leave her until the uterus is well contracted, and the abdomen surrounded by a well-adjusted bandage.

Although each child is generally enclosed in a distinct set of membranes, and has a placenta and funis peculiarly its own, still one placenta ought never to be extracted alone, because the vessels of the two often anastomose; and if not, the removal of one, whilst the other remains in utero, would expose the woman to imminent danger from hæmorrhage, which must almost inevitably ensue. When, therefore, the placentæ are to be extracted (and their removal must be governed by what has been advanced), the funes must be twisted together, and the masses withdrawn simultaneously.

[Immediately after the birth of the first child, great care should be taken to place a tight ligature on the placental side of the cord. Neglect of this precaution might lead to serious hæmorrhage, in consequence of the occasional union of the two placentæ referred to in the above paragraph.

It has, in a very few instances, happened that both heads have become jammed in the pelvis. Mr. Eton of Windsor has given an interesting account of a case of this description in the "Medical Gazette" for

July, 1846, in which he was obliged to decapitate one child before he could effect the delivery of the other.



MR. ETON'S CASE.

Dr. Ramsbotham relates an instance where he found a right and a left foot of different children projecting from the vulva. This accident was occasioned by the ignorant interference of a midwife. He discovered that the feet belonged to different children, in consequence of the toes lying in opposite directions. He cautiously replaced one leg, and then proceeded to deliver with the other. Each child was brought into the world alive.

After the delivery of twins, a patient requires more than ordinary care, as puerperal affections are

much more likely to follow labours of this sort than ordinary cases. — J. M. W.]

SUPERFŒTATION*

Is a process involved in considerable obscurity, but fortunately one of no practical importance.

The term *superfœtation* implies that a second impregnation may take place whilst the uterus already contains a living child in utero; but this cannot be, if the theory of conception, which assumes the transmission of the male semen through the uterus and Fallopian tubes, be correct; because, the os uteri being blocked up by coagulable lymph, and the entrance to the Fallopian tubes being obstructed by the decidua soon after conception, such an occurrence is rendered impossible.

Those cases in which a plurality of children have existed, and in which superfœtation is supposed to have occurred, are either referable — to the premature death of one fœtus, which has remained in utero with the living child to the full period of utero-gestation; or, to the descent of the ova into the uterus, from the ovarium not observing the same order of time, one being more slowly evolved than the other, although both might have been fecundated by the

* Vide Transactions of the College of Physicians, vol. iv.; Medico-chirurgical Transactions, vol. ix.; and Philosophical Transactions, vol. lx.

same coitus; or, to the existence of two uteri in the same woman; or, to impregnation taking place whilst the uterus contains a blighted fœtus; or, to a second impregnation during one œstrum.

EXTRA-UTERINE PREGNANCIES,

Or, as the title imports, gestation carried on in some other parts than the uterus, as in the *abdomen*, *Fallopian tube*, or *ovarium*, is scarcely less curious and mysterious than the subject of superfœtation.

[The most common of these forms is the tubal variety. A very rare kind occasionally occurs, termed the *Interstitial* or *Parietal*, in which the ovum is arrested in that part of the Fallopian canal which lies imbedded in the fibres of the uterus.—J. M. W.]

In these matters, theory must be a most uncertain guide; and it is only from a well-arranged accumulation of observations that we can expect light to be thrown on these occasional deviations from the ordinary progress of nature.

As yet, no facts have been advanced which satisfactorily substantiate the occurrence of abdominal gestation; and it is more than probable, that in those cases which are termed abdominal or ventral pregnancies, the fœtus does not exist in the belly from the commencement of utero-gestation, but escapes into the cavity of the abdomen from the uterus, either by ulceration or laceration of its parietes.

In the majority of such cases, if the woman has not sunk under the first shock, such has been the constitutional disturbance that she has soon died; whilst, however, in several well-authenticated instances, by a secretion of coagulable lymph, a new receptacle has been formed, in which the fœtus has quietly reposed for many years, until, by an abscess, pointing externally at some part of the abdomen, or bursting into the large intestines, the different bones of the child have been expelled.

When the ovum has been detained in the *ovarium*, or arrested in its course along the *Fallopian tube*, as it has increased in size by gradual development, the sac containing the fœtus may burst, and the woman die of internal hæmorrhage. In tubal this giving way always occurs, but ovarian gestation may go on to the full time.

During extra-uterine pregnancy, the usual evidences of utero-gestation are present, but generally associated with some anomalous symptoms. The uterus always becomes more or less developed, and secretes its decidua.

[*Diagnosis.*—Some part of the fœtus can occasionally be distinguished through the walls of the vagina; the cervix uteri, although somewhat enlarged, is found not to undergo those changes which are usually attendant on pregnancy, and the os uteri is often thrust up, out of reach of the finger, in consequence of the presence of the fœtus in the pelvis.

Treatment.—In some instances, where the fœtuses were alive, they have been removed by vaginal or abdominal incisions. These operations, however, cannot be recommended, as they were almost invariably fatal to the mother.

If a rupture of the cyst take place, which is marked by the symptoms of internal hæmorrhage, the patient must be laid in the horizontal posture, a very firm bandage should be placed round the abdomen, and stimulants, with astringents, freely administered.

When nature has set up an attempt to remove the dead fœtus by an ulcerative process, opiates should be given, to allay pain, and the strength must be supported by tonics and nourishing food. Occasionally it may be expedient to enlarge the natural opening, in order to facilitate the removal of the bones of the dead fœtus. — J. M. W.]

OF MONSTERS.*

All monsters may be arranged under the *four classes* of—defective, redundant, malformed or misplaced, and hybrid, or those begotten by animals of different species.

When cases of monstrosity occur, there is generally a disposition in the uterus to expel its contents prematurely, so that it is not usual to have much ob-

* Vide Medico-chirurgical Transactions, vols. v. and vii.

struction offered to labour by a monstrous fœtus, even when it has a redundancy of parts.

Nothing is known of the causes which divert nature from her usual course of proceeding, consequently the production of monsters is altogether unintelligible to us; neither have we satisfactory evidence that they exist *ab origine*, nor have we the slightest grounds for believing that *the imagination of the mother* possesses the power of changing the structure of the parts of the fœtus which have once been formed, although advocates for each opinion are to be met with.

A great deal of curious and interesting matter might be brought forward on the subject of monstrosities, but the purely practical design of these pages excludes it.

The management of cases of monstrosity must altogether depend on the presenting part.

OF HYDATIDS AND MOLES.

There are what are popularly called *false conceptions*, and respecting which a great deal that is ridiculous has been said and written, in the attempt to explain their finite cause. All our learning on the subject amounts only to the knowledge of their occasional existence in the uterus.

Hydatids are vesicles containing a limpid fluid, and each is said to have a body, a head, and three or four

antennæ, with or without fangs. They are usually united in clusters, by some common connecting structure, which is the probable medium of their communication with the uterus, and the channel by which they derive that low degree of life they are supposed to possess.

[It would appear from the researches of modern physiologists, that the vesicles commonly called *uterine hydatids* have not an independent existence, and that they are totally different from the animals described by the author. The mass of evidence would lead us to infer that ordinary uterine hydatids originate in a disease of the ovum, and that the clusters of vesicles are produced by a dropsical condition of the villosities of the chorion.

Dr. Andrew, however, has published (in the "Glasgow Journal") two cases in which hydatid-like bodies were discharged from the uteri of virgins. Dr. Ramsbotham gave, in an able article on uterine hydatids, read at the Harveian Society, what appears to me to be the true solution of this anomaly. He supposes that the vesicular bodies expelled in Dr. Andrew's cases were *bonâ fide* hydatids, identical in every respect with the parasites commonly found in the liver, lungs, &c.; and that they *originated in the fibrous structure* of the uterus.

Hydatids are generally expelled by the unaided efforts of the uterus. Should hæmorrhage supervene, manual assistance will be required.— J. M. W.]

Moles are fleshy masses of different size and density. They differ considerably in their structure,

but are always gorged with dark blood, and are slightly united by vessels to the uterus, from which their feeble vitality is derived.

It is conjectured that they are either the result of the premature death of the ovum in utero, or the consequence of coagula, or of a portion of retained placenta.

Hydatids and moles in the uterus are generally for some time attended by the common symptoms of pregnancy, which, however, soon cease or become obscure. Very frequently after the breasts have become flaccid, and the other symptoms of pregnancy have disappeared, the uterine tumour remains, in the case of hydatids being attended with occasional discharges of water; and in the case of moles, with discharges of blood. Of course, there are no movements of a child; and the size of the uterus does not correspond to the ordinary bulk of that organ at the same period of pregnancy.

At very different periods, in different women, the diseased mass is expelled from the uterus with the ordinary symptoms of abortion; and the case requires similar management. In some rare histories of these diseases, the morbid growth has remained in utero to the full term of pregnancy.

In almost every instance in which either hydatids or moles have existed, the general health has been deranged, and the condition of the uterus has been unhealthy. If possible, the cause must be discovered, and appropriate treatment adopted. The state of the uterus is generally improved by abstinence from

sexual excitement, and by the steady employment of cold bathing, and other means which invigorate the system.

Fourth Order.

LABOURS ATTENDED BY CONVULSIONS.*

Women are liable to epileptic seizures before, during, and subsequent to parturition; and in either case they seem to arise from the same source, and to demand similar treatment.

[Although an attack of epilepsy bears a resemblance to puerperal convulsions, there is, nevertheless, a marked difference between the two affections. Epileptic attacks are not generally ushered in with decided symptoms of congestion of the brain, they are not accompanied with hissing expiration, they do not follow each other in rapid succession, and they are seldom fatal. The reverse of these symptoms obtains in puerperal convulsions. Moreover, experience seems to prove that epileptics are remarkably free from puerperal convulsions, and that epileptic fits very seldom occur during pregnancy, or, if they do appear, that they are much milder than on other occasions.— J. M. W.]

Character of the Attack.

Sometimes puerperal convulsions come on without any premonitory signs: but, in the majority of cases,

* Vide "Traité des Convulsions chez les femmes enceintes en travail, par Miguel, à Paris;" and "Considerations sur les Convulsions que attaquent les femmes enceintes, par Chaussier."

they are preceded by vertigo ; a sense of fulness and tightness about the head ; ringing in the ears ; redness of the eyes, and a feeling as if they were too large for the sockets, together with an indistinctness of vision, and *muscæ volitantes*, caused by partial paralysis of the retina. With these symptoms, the pulse is usually full, hard, and very slow ; but sometimes very rapid, and soon becomes small and feeble. The patient sighs often and deeply ; sleeps soundly, and snores ; and, in some instances, complains of violent darting pain alternately in the head and stomach, and of considerable rigors, unconnected with the dilatation of the os uteri.

When these symptoms are not timely met by very active treatment, they are followed by a sudden deprivation of sense : the voluntary muscles first become rigid, and then violently agitated ; the eyes roll about with great rapidity ; the countenance is horribly distorted, swollen, and livid ; the teeth are fixed ; and respiration is hurried, and accompanied by a peculiar hissing noise, the effect of quickly respiring through a quantity of saliva.

This affecting and horrible scene terminates in stupor, which continues for an indefinite length of time (from a few minutes to an hour), when the poor woman recovers with sensations of extreme fatigue, and entire oblivion of the paroxysm.

Sometimes the first fit ends in apoplexy ; or, after consciousness has been re-established for a short time, the convulsions return, and continue to recur for hours or days ; and if the woman be in labour, they

reappear with the pains, and the stupor remains between the fits.

Convulsions appear more frequently in first than in subsequent pregnancies or labours, and may appear at any time after the sixth month of utero-gestation.

[When puerperal convulsions ensue during labour, they generally occur at the period when the os uteri is undergoing dilatation. They may also occur, but less frequently, when the head is forcing against the inferior aperture of the pelvis.

The unmarried are more prone to convulsions than married women, in consequence of the anxiety and despondency to which they are subject. Mr. Rose, of Zwaffham, found, that, out of twelve cases which he attended, nine were primiparæ, eight occurred in unmarried females, one in a third pregnancy, and two in twelfth labours. In four, they came on after; in eight, before labour. In five instances, the urine was albuminous prior to labour.

Short, stout, muscular women are most liable to convulsions. They sometimes, however, attack the slender and delicate. Dr. Ramsbotham thinks that cases of convulsion are commonest in hot weather, and during an electrical state of the air.— J. M. W.]

Causes.

The *essential nature* (or, as it is usually termed, the *proximate cause*) of puerperal convulsions, is congestion in the vessels of the brain, in concurrence with an irritable condition of that organ.

The *predisposing* and *exciting* causes are, pressure

of the gravid uterus on the descending blood vessels ; powerful mental emotions ; morbid intestinal secretion ; distended bladder ; parturient exertions ; and uterine irritation and distention.

[The proximate cause of convulsions is not yet determined ; it probably consists in an irritation of that division of the venous centres which is supposed to control the actions of the muscular system. The exciting causes may be either *hyperæmia*, *anæmia*, or *toxæmia*. Dr. Lever discovered albumen in the urine in nearly every case of puerperal convulsions which came under his care. It is not, however, clearly established that this condition of the urine is a cause of convulsions. Bright's disease of the kidneys, which prevents the free elimination of urea, is no doubt an occasional exciting cause. — J. M. W.]

Diagnosis.

It is of importance to distinguish genuine puerperal convulsions from hysterical paroxysms, which they often very much resemble. They may be discriminated by bearing in mind that, in hysteria, the pulse is rarely effected ; the paroxysms come on without the usual premonitory symptoms of convulsions, and attack feeble irritable women rather than those who are plethoric and robust, the usual subjects of convulsion. The fit of hysteria is associated with globus hystericus and palpitation of the heart, and is not followed by coma.

Prognosis.

Our opinion of the result of these cases should

always be guarded; for although most women recover, if the treatment be appropriate and prompt, still if the fit be preceded by intense lancinating pain about the stomach or through the head, and the patient remain comatose between the paroxysms of convulsive action, the danger is imminent.

Treatment.

The management of puerperal convulsions divides itself into *two* leading indications:

First, to unload the vessels of the brain; and,

Secondly, to remove the exciting cause, whatever it may be.

To secure the *first indication* (after having fixed the mouth open by the interposition of a piece of wood between the teeth), the *lancet* must be considered as the sheet anchor on which the practitioner must depend. It is of the greatest moment that blood be abstracted early, rapidly, and abundantly, that the vessels of the brain be unloaded.

If possible, on the accession of the premonitory symptoms, the temporal artery or the jugular vein should be opened, if not, a vein in each arm; and the incision should be so large that a considerable quantity of blood may be withdrawn in a short time. In this formidable disease, the quantity of blood must not be measured by ounces, but by the effects it may produce on the convulsions; and it will often be necessary to repeat the blood-letting again and again within the first few hours. Having unloaded

the cerebral vessels in some measure by the rapid and early detraction of from *forty* to *fifty* ounces of blood, should the symptoms not be suspended, from *fifteen* to *twenty* ounces may be removed by cupping glasses applied to the nape of the neck.

The scalp must also be shaved; and pounded ice, in a bladder, or a cold evaporating lotion, should be constantly applied to it.

The head and shoulders must be kept above the level of the trunk; and all stimulants must be absolutely prohibited.

The alimentary canal is to be thoroughly evacuated by the administration of enemata; and for this purpose nothing answers better than about an ounce of soft soap in a pint of warm water. From five to ten grains of *hydrargyri chloridum* may be laid on the tongue; and if the power of swallowing be not lost, soon after this, a solution of *magnesiæ sulphas in infuso sennæ* may be given. *Croton oil* is useful under these circumstances.

The exhibition of nauseating doses of *antimonii potassio-tartras* will be highly conducive to the reduction of vascular action, and, with this intention, may be conjoined with the purgative medicines.

[The treatment recommended by the author is admirably adapted to the congestive form of the disease, but is not suitable when the convulsions depend on an anæmic condition of the system. In the latter variety, camphor, ammonia, and opium will be found of service, and antiphlogistic measures must be avoided.]

The convulsive attacks may often be arrested by dashing cold water on the face.

In hysterical convulsions, great advantage is derived from acting briskly on the bowels, as the secretions are often in a depraved condition in these cases.

The inhalation of chloroform is a valuable agent in the treatment of puerperal convulsions. It appears to act beneficially by allaying the irritability of the uterus, which is often an exciting cause of convulsions. When there is rigidity of the os uteri, impeding delivery, the relaxing effects of chloroform will be found of great use. — J. M. W.]

The *second indication* is to be fulfilled after ascertaining the exciting cause, which it is often very difficult to do.

It will always be prudent to empty the bladder and bowels; and it will sometimes happen that, after one or two copious and extremely offensive and dark-coloured motions have been obtained, the paroxysms cease. But the condition of the uterus is the point demanding the most attentive consideration; although it is to be feared that, in many instances, too much importance has been attached to the immediate emptying of this organ, when it has led to the omission of blood-letting and purging.

The result of careful observations made on the influence of delivery over puerperal convulsions, seems to be:—

First, that if the os uteri be rigid and undilated, any attempt to empty the uterus by the introduction of the hand into the uterus to expedite delivery, ag-

gravates the convulsions; and even when the mouth of the womb is open, such an attempt will often bring back the paroxysms.

Secondly, in most instances, the os uteri dilates rapidly in these mournful cases, or is easily dilatable; and, in general, the parturient efforts are so powerful and frequent, that little advantage can be gained by any manual interference, until the head descends so low in the cavity of the pelvis, as to be clearly embraced by the short forceps.

Thirdly, should very urgent symptoms appear to justify delivery before the head of the child has descended so low as to be within the reach of the short forceps, either the long forceps or perforator are to be preferred to the introduction of the hand into the uterus, should the attempt to turn produce any recurrence of convulsions.

Of course, these last observations do not apply to cases in which the parts may be well dilated or dilatable without any uterine action; or to such presentations as the arm, in which it is always necessary to change the position of the child by turning.

[Although the uterus is in a state of irritation, and the natural indication would be to get rid of the child (itself a source of irritation), when it can be removed with facility, it nevertheless appears, from statistical returns which have been carefully tabulated by Dr. Murphy, that, in those cases of convulsion where labour terminated without assistance, the mortality was less than when instrumental delivery was had recourse to. These results bear out

the observation of Dr. Conquest as to the inexpediency of effecting an *early* delivery in every instance of puerperal convulsions. — J. M. W.]

After delivery, puerperal convulsions, in some instances, have continued without any very ostensible cause. In these cases it is often necessary to persevere in the same plan of treatment as has been laid down; with the addition of successive blisters applied to different parts of the body, to produce counter-irritation.

Under these circumstances, large doses of camphor have been given with decided benefit.

It is not uncommon, after puerperal convulsions, for the bladder to lose its tone, so as to require the introduction of the catheter for some time.

Fifth Order.

LABOURS WITH UTERINE HÆMORRHAGE.

The practice of midwifery can scarcely present a more appalling and dangerous occurrence than uterine hæmorrhage; and certainly there are no cases which come under the care of the accoucheur that demand more prompt, judicious, and vigorous treatment than labours of this order.

Uterine hæmorrhage may occur *before, during, or subsequently* to the birth of the child.

Under the head of abortion, sufficient has been advanced on the subject of hæmorrhage occurring *before* labour, only that it must be borne in mind, that, in the latter months of utero-gestation, the calibre of

the blood-vessels has become so greatly augmented, that the same causes then occurring may produce much more formidable flooding; and although medical treatment must be very similar to that which was recommended when treating of abortion, still it often becomes a very important consideration whether or not it be essential to the safety of the patient to adopt some such means as will be referred to when considering the management of hæmorrhage from the uterus *during* labour, or at the completion of the term of utero-gestation. At this time, uterine hæmorrhage may be either,

First, ACCIDENTAL, as the consequence of some occurrence which partially detaches the placenta from its connection with the uterus, to which it is usually fixed at some part of the *fundus* or *body*. Or,

Secondly, uterine hæmorrhage may be UNAVOIDABLE, as the consequence of the implantation of the placenta over the os and cervix uteri.

[The distinction drawn between these two forms of hæmorrhage is of the utmost practical importance, but the terms commonly employed to describe them are decidedly open to objection. It would be illogical to assert that the floodings in *both* instances are not *equally* unavoidable.

All cases of hæmorrhage during labour are owing to a partial separation of the placenta, and they admit of being naturally divided into an *internal* and an *external* variety. In a placental presentation the flooding is invariably external; in every other instance it may be either external or internal.

The subject of internal hæmorrhage should form a distinct class. Its symptoms are peculiar, and require especial attention; inasmuch as failure in recognising them has often led to fatal results.

Internal or concealed hæmorrhage may be suspected when weakness suddenly supervenes, accompanied with a thready pulse, yawnings, deep sighs, a painful distention of the womb, and a tendency to syncope. When these symptoms are developed during labour, there is the greatest cause for alarm. The treatment must be prompt, and conducted on the general principles described in a subsequent section. — J. M. W.]

When hæmorrhage is accidental*, it may be produced by various

Causes,

Such as passions of the mind; violent exertions in jumping, dancing, coughing, &c.

It has also followed a blow or fall, and the lifting of a heavy weight.

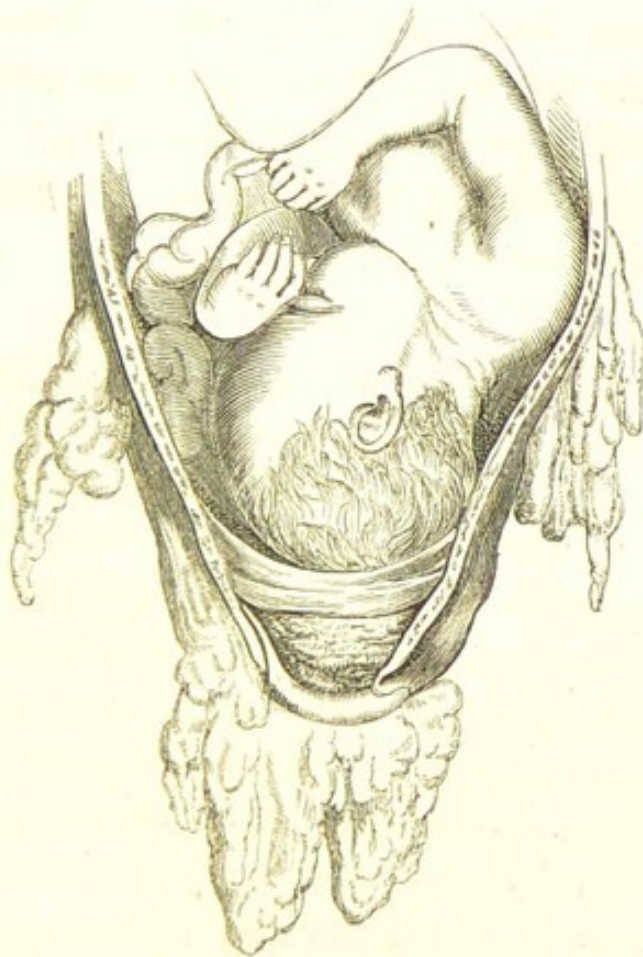
The quantity of hæmorrhage, and the degree of danger, greatly depend on the size of the portion of the placenta detached from the uterus; the force of the general circulation; and the degree of pain: those cases being most dangerous in which there is little or no uterine contraction.

Sometimes the placenta will adhere to the uterus

* The terms *accidental* and *unavoidable* are employed because they are in general use; not but that they are in some respects objectionable. They are used by *Dr. Rigby*, whose work on Uterine Hæmorrhage ought to be familiar to every one who practises midwifery.

at every point of its circumference, whilst it is so loosened at its centre that a quantity of blood may be poured out into the space thus formed, sufficient to endanger the life of the woman, without there being any hæmorrhage per vaginam.

[*Diagnosis.*—When the placenta is *not* situated over the os uteri, the hæmorrhage generally *abates* during the periodical uterine contractions in labour.



PLACENTA PRÆVIA. (After Hunter.)

When the placenta is situated over the os uteri (placenta prævia), the bleeding is *aggravated* on the accession of each successive labour-pain. The dilatation

of the cervix uteri, consequent on each contraction of the womb, necessarily separates the placenta attachments, and hæmorrhage is the inevitable result.

Hæmorrhage from placenta prævia will sometimes ensue as early as the seventh month of gestation. It may be suspected when the patient is seized with an instantaneous gush of blood, which comes on without any premonitory symptoms, and for which she cannot assign any cause. The placenta may be wholly or only partially attached to the circumference of the os uteri. Care must be taken not to mistake a clot of blood for a placental presentation. The placenta may be distinguished, on examination per vaginam, by its lobular and flesh-like feel.—J. M. W.]

Treatment of accidental Uterine Hæmorrhage.

From whatever cause flooding may arise, it should always be viewed as a perilous symptom, and as one demanding prompt and active interference.

The following general directions must be universally and rigidly observed:—

The woman should be laid on a mattress in a horizontal posture, having the pelvis raised higher than the shoulders, by some support less yielding than a feather pillow. The doors and windows should be opened, and the patient have no other covering than decency demands. No fire should be permitted to be in the room, and every talkative friend ought to be excluded. As little food as possible is to be given, and that neither warm nor spiced. In fact,

everything that can diminish the force of the circulation must be sedulously employed.

Cloths dipped in the coldest vinegar or salt water must be applied to the pubes and loins; or pounded ice, in a bladder, may be allowed gradually to dissolve on these parts. In addition to these means, salt, or vinegar, and cold water, may be injected into the rectum, and a piece of ice, if it can be easily obtained, may be introduced into the vagina.

If these means be strictly employed, the hæmorrhage will frequently cease, or so diminish as to place the woman out of immediate danger; but she must, nevertheless, be vigilantly watched.

Should such measures not be successful, something more must be done; and it is fortunate that, not unfrequently, the uterus is disposed to empty itself quickly; a disposition which is facilitated by the relaxation of the cervix uteri, in consequence of the hæmorrhage.

Suppose, then, these efforts to arrest the progress of accidental hæmorrhage are unavailing, two modes of proceeding have been proposed:—

FIRST, to deliver the woman by turning the child in utero, and bringing down the feet: or, SECONDLY, merely to rupture the membranes that the liquor amnii may escape; and thus the uterus, by contracting on its contents, will so far diminish the hæmorrhage that the patient may go on with safety until the child is expelled.

The *first* method appears to be best adapted to those melancholy cases in which there is an absence

of all contraction of the uterus, or in which the pains are extremely feeble and inefficient, with a relaxed condition of the cervix uteri. When either of these two dangerous attendants on uterine hæmorrhage is present, the operation of turning often produces some contractile exertions of the uterus, by which the danger is materially lessened.

The *second* method is applicable to those cases in which there are labour-pains, and experience proves it may almost always be depended on as successful.

[The first mode is not so often required in this species of hæmorrhage as in that arising from placenta prævia. Puncturing the membrane, and full doses of ergot, are generally sufficient to induce a contraction of the uterine fibres.

If the patient be in a state bordering on collapse, turning should not be had recourse to, until she be roused by stimulants, as the sudden emptying of the womb might induce a fatal syncope.

Plugging the vagina, which is allowable in placenta prævia, is a dangerous expedient in these cases, owing to the internal hæmorrhage which is likely to be produced by its use.—J. M. W.]

When hæmorrhage is UNAVOIDABLE, the cause is, implantation of the placenta *ab origine* over the cervix uteri, so that flooding very naturally occurs at any time after the fifth month, whenever the expansion of the cervix uteri lacerates those vessels which pass between it and the placental mass.

Hæmorrhage, from this cause, places the woman in most imminent danger; for, on the accession of pains

which dilate the os uteri, other vessels are torn, and the bleeding recurs with increased violence.

This is a case in which we ought never to confide in the powers of nature, because expulsatory uterine efforts only augment the peril of the patient, and therefore the hand must be either bored through the substance, or, what is better, passed by the edge of the placenta, and the child turned.

Should the flooding be such as threatens to prostrate the powers of the system, the operation ought not to be deferred, or one gush of blood may close the painful scene; and, happily, whenever it becomes essential to the safety of the patient to proceed immediately, although the os uteri may not be dilated, it will be found so *dilatable* as not to oppose any hindrance to the introduction of the hand. When the hæmorrhage occurs between the fifth and eighth months, it is usually not very formidable at first, so that, if the os uteri be not dilated or dilatable, the operation may generally be deferred for some hours with safety; but, at the same time, it is of the highest importance not to permit the woman to be exhausted by the loss of blood before turning is effected.

If, on examination per vaginam, every part of the os uteri be found covered by the placenta, and no point be found at which it is thinner than the rest, it is usually recommended that the fingers be forced through the substance of the mass, and the feet of the child be brought down through the aperture, and the woman delivered as soon as circumstances will

admit; but, on the whole, it seems best in every case to proceed as when the os uteri is only partially covered with the placenta, so that the hand can be passed by its edge to the membranes without difficulty.

In whatever way admission may be obtained into the uterus, the operation of turning is to be performed under the guidance of those directions which have been already given.

[If the hæmorrhage occur before labour has commenced, and the patient's strength be not materially lessened, turning should not be had recourse to, until the os uteri is dilated to the size of half-a-crown. In the mean time the vagina should be plugged with tow, and perfect rest, in the recumbent posture, rigidly enforced. If these means fail to arrest the hæmorrhage and the os uteri be *undilatable*, the placenta may be often effectually compressed by evacuating the liquor amnii. To effect this object, an elastic catheter, armed with a stilette, may be introduced by the side of the placenta, until it reach the membranes, when the liquor amnii can be easily drawn off. This is preferable to passing the stilette through the centre of the placenta, an operation which must necessarily wound vessels of large calibre, and be inevitably fatal to the foetus.

Turning is, however, sometimes admissible when the os uteri is not larger than a shilling, provided it be in a *dilatable* condition.

Turning must not, in the most favourable condition of the passages, be performed if the woman be in *an*

alarming state of exhaustion. In an extreme case of this sort, it may be advisable to remove the whole of the placenta, as recommended by Professor Simpson. This measure should be quickly followed by the application of the tampon and the free administration of ergot of rye and brandy. This mode of proceeding will give the patient a *chance* of recovery; if, on the other hand, you deliver by turning the child, there is *no chance*.

Drs. Radford and M^cKenzie, and Mr. Houghton, have adduced strong evidence in favour of galvanism in cases of uterine hæmorrhage. It should be applied to each side of the abdomen by means of metallic plates covered with moistened flannel. This remedy must, however, be only looked upon as an adjunct to the decisive treatment previously enforced.—
J. M. W.]

But uterine hæmorrhage may occur *after*, as well as before and during, the expulsion of the child; and flooding at this time often endangers the safety of the woman.

[*Post partum* hæmorrhages may also be conveniently subdivided into those which occur *before*, and those which happen *after*, the detachment of the placenta. The former may be the result of inertia or irregular contraction of the uterus, or of adhesion of the placenta. The latter may be owing to torpor of the uterus, general plethora, or to an anæmic condition of the system.

Hæmorrhage, after the separation of the placenta, may occur as late as the fifteenth day. One of the

most serious cases I ever met with happened as late as the twelfth day, and nearly proved fatal, although the loss of blood was comparatively trifling.

The treatment of hæmorrhage must be regulated rather by the effect of the loss of blood than by the quantity which escapes. Dr. Ramsbotham has recorded two cases in which each patient died from the loss of only a pint of blood.—J. M. W.]

The hæmorrhage referred to is not the loss of blood which very frequently attends that contraction of the uterus which expels the child and at the same time loosens a small portion of the placenta, nor that which merely circulated through the uterus, and which, on the complete detachment of the placenta, and the contraction of the organ, is expelled from its vessels, now so diminished in their size; but it is those successive gushes, or the more insidious but not less dangerous stillicidium of the vital fluid, which, if not arrested, sooner or later fatally exhausts the subject of them.

The *immediate consequences* of the flooding may not be alarming, and will very much depend on the velocity with which the blood escapes, and the constitutional powers of the patient; but if the hæmorrhage proceeds, in some cases, in a minute or two the pulse sinks, the countenance assumes a wild and exsanguineous aspect, and the surface and extremities of the body become relaxed and bedewed with cold perspiration. The poor creature sighs repeatedly and deeply; vomits; becomes extremely restless, with hurried respiration; gasps, and expires.

Torpor of the uterus, or *irregular contraction* of its fibres, is almost an essential feature of uterine hæmorrhage occurring after the expulsion of the child; except in those cases which arise from the placenta being partially detached, whilst the mass, being still adherent and retained in utero, prevents the complete contraction of the uterus.

Torpor, or a loss of contractile power, exists in various degrees, and sometimes to such an extent that the hand, when introduced into the uterus, may be carried up to the scrobiculus cordis; whilst a well-contracted uterus will be found like a hard tumour in the pubic region, not larger than an ordinary sized cricket-ball.

Constitutional debility may produce this condition of the organ. It is also a consequence of protracted labour; of over-distention of the uterus, as in twin cases; of the reprehensible practice of rapidly emptying the uterus, without permitting it gradually to contract; of omitting to support the uterus with a bandage passed round the abdomen; and of the exhibition of stimuli. It may also be brought on by prematurely raising a recently delivered woman from a horizontal posture, and from inversion of the uterus, &c. &c.

[Too rapid expulsion of the child, the effect of a preternaturally large pelvis, may sometimes give rise to hæmorrhage. When this condition obtains, the uterus is, as it were, taken by surprise, and its fibres go on contracting and dilating in the same manner as when the child is in utero. The womb, not having

had time to contract in the ordinary way, may thus become the seat of irregular contractions; and when these occur at the cervix uteri, a case of internal hæmorrhage may be very readily induced.—J. M. W.]

A very superficial retrospect of the causes of uterine hæmorrhage which have been enumerated, will teach the vast importance,

First, of securing or restoring the contractile powers of the uterus; and,

Secondly, of avoiding everything that can even increase the force or frequency of the action of the heart and arteries.

[A third and most important indication must not be overlooked—that of removing the placenta, when this hæmorrhage is owing to adhesion, retention, or partial separation of this organ.—J. M. W.]

To secure these objects, much that is *preventive* may be done by the mere avoidance of those causes which have been specified, and many of which are under our control; and much that is *curative*, by the observance of those general directions which were given for the management of cases of accidental hæmorrhage occurring during labour.

Although the loss of a small quantity of blood is common on the detachment and expulsion of the placenta, and does not demand interference, yet it is of the highest moment not to defer the adoption of energetic measures until formidable consequences begin to appear; because, if hæmorrhage is allowed to proceed, although it may not immediately endanger the life of the patient, the constitution may be so en-

feebled as to be unable to acquire its former vigour, or the foundation may be laid for chronic and fatal disease.

The *primary object* in the management of those cases of flooding which result from a diminution of the contractile energy of the uterine fibres, is to *re-excite the contraction of the uterus*, if they shall have entirely ceased; and to quicken their activity, if they be continued feebly.

Whether, then, the placenta be detached or not, the practice ought to be the same, for surely nothing can be more culpable than the dangerous custom of some men, who recommend "that the hand must be immediately introduced within the uterus to grasp the placenta, and instantly extract it." The consequence of such irrational practice is an augmentation of peril; for the very obvious reason, that the open mouths of a great number of vessels are exposed.

[Although it is not expedient to introduce the hand roughly and to extract the placenta hastily, there cannot be a question as to the propriety of its removal in a careful and gradual manner, provided the hæmorrhage be persistent after the birth of the child. Occasionally, the mere introduction of the hand into the vagina is sufficient to excite the uterus to contract; but if this fail, the hand, compressed into the form of a cone, must be insinuated through the os uteri. The placenta is then to be carefully separated with the fingers and slowly withdrawn from the uterus. It is preferable, when there is sufficient contractile force, to allow the hand and the

separated placenta to be excluded by the uterine efforts; by this means the womb contracts more effectually than when tractile force alone is used. — J. M. W.]

In some rare instances, the placenta is thrown off, and lies loose in the uterus, preventing the complete contraction of the organ. Whenever that is the case, there can be no hesitation about the propriety of carefully withdrawing it, but not unless the uterus has firmly contracted on it.

Internal irritation of the uterus with the hand, and external pressure and friction, together with the application of cold, and the exhibition of the ergot of rye, are the principal means on which our dependence must be placed to re-excite the action of the uterus, and without which a woman is not secure.

Whenever the uterus is found to be uncontracted, the hand is to be gently passed into it; and, when introduced, to be freely but tenderly moved about within its cavity. Whilst this is being done, an assistant may employ friction to the abdomen, round which a broad bandage should have been previously applied, that it may be gradually tightened without disturbing the patient; or whilst the left hand of the accoucheur is in utero, the right may grasp the uterus externally; a measure which is often eminently conducive to the attainment of the object so much to be desired.

If these means be employed (and *especially such a degree of pressure by a pad and bandage as will cause the parietes of the uterus to press against each other*),

almost every case of hæmorrhage may be restrained.

In less dangerous cases of hæmorrhage *the application of cold* to the pubes, perineum, abdomen, and loins will frequently arrest its progress. This remedy may be applied by cloths wrung out of cold vinegar, or salt and water; or by the more impressive method of dashing the parts with cold water; or by the still more efficacious use of pounded ice in a bladder, allowed to dissolve gradually on the abdomen, or a piece of ice introduced into the vagina or rectum.

Should there be *irregular contraction* of the muscular fibres of the uterus, either constituting the *hour-glass* contraction, when the circular fibres are affected with spasm about the centre of the organ; or the *oviform* contraction, when all the circular fibres act spasmodically, whilst those which take a longitudinal course appear to be more than usually relaxed; the hæmorrhage will be checked by such means as relax spasm, and induce regular and universal contractile efforts.

[Irregular contractions of the uterus may be divided into three varieties,—the globular form, the variety in which partial contraction takes place at the fundus, and the hour-glass contraction.

There is another form which occasionally but rarely occurs, and which has been termed the hog's-back contraction. In this form, the fibres, in front of the uterus, form an acute longitudinal projection, bearing some resemblance to the back of a hog.—
J. M. W.]

Flooding, from this cause, must be attacked by a full dose of opium (not less than forty minims of the tincture, or three grains of the gum), and immediately on the cessation of spasmodic action, which is manifested by the diminution of pain in the back, the hand of the accoucheur must be introduced into the uterus, for the purpose of gently dilating the stricture, emptying the organ of its coagula, and stimulating it to more healthy contraction.

[Care must be taken, in administering opium, that it be not given in very large doses, lest the muscular contractility of the uterus be destroyed, and a condition induced more serious than that of irregular contraction. It is preferable, before having recourse to opium, to attempt to reduce the strictured portion of the uterus by the gradual introduction of the hand; and as the fibres are generally relaxed to some extent, in consequence of the previous hæmorrhage, the task is not so difficult as it would be in a case unattended with flooding. — J. M. W.]

Syncope, or fainting, is not an unfrequent consequence of flooding; and, although it is beneficial, when contrasted with continued hæmorrhage, yet it must ever be viewed as an evidence of danger, and as indicative of extreme loss of energy in the vascular system.

It may be here observed, that there are *three* important agents concerned in restraining uterine hæmorrhage; uterine contraction, the formation of coagula, which block up the mouths of the bleeding vessels, and the contraction of the vessels themselves;

for although muscular irritability or volition may have ceased, the *contractility* of the arteries continues. It is, therefore, of great importance not to interfere with either of these powers; and as *syncope* never exists with that diminished action on the heart and arteries, which cannot send the blood to the brain or extremities with sufficient power to prevent a collapse of them, it becomes highly momentous to regard moderate fainting as a salutary symptom, because, during its continuance, the mouths of the vessels may, and often do, become so sealed by contraction and the formation of coagula that hæmorrhage ceases.

Syncope, then, being useful in checking the force of the circulation, and, as a consequence, in putting a stop to flooding, it ought never to be rashly interfered with (as it too frequently is) by the exhibition of large and repeated doses of brandy and other powerful stimulants. Still women must not be permitted to die from exhaustion, if it can be prevented; and, therefore, when extreme prostration of the vital powers exists with syncope, small and repeated doses of such stimuli as brandy or ammonia must be given. Under such circumstances sprinkling cold water on the face and chest will sometimes rouse the almost ex-animate woman. Ammonia may also be applied to the region of the heart, whilst the flow of blood is invited to the extremities by the application of warmth.

It must be admitted, that the administration of stimulants and cordials to a woman exhausted by uterine hæmorrhage, is one of the nicest points in obstetric practice, and it may be laid down as a

general rule, that they are admissible in but few instances, and ought only to be exhibited to such an extent as may be necessary to restore and sustain the circulation.

[In hæmorrhage from any other source than that of the uterus, syncope is sometimes of service, but in the cases under consideration it cannot be depended upon. Modern research has shown that the only effectual means of arresting the flow of blood, is to induce contraction of the uterus; to effect this it will often be necessary to exhibit brandy and ergot with a liberal hand.—J. M. W.]

It is not unusual for a woman to be apparently doing very well for some little time after delivery; and yet, although the uterus shall have contracted in a great measure, blood may be poured out into its cavity, so as to re-distend it, and, in consequence of the coagula blocking up the mouth of the womb, no hæmorrhage shall appear per vaginam. A woman under such circumstances will complain of being faint, and of tinnitus aurium; her countenance will become pallid; nausea, vomiting, and extreme restlessness sometimes follow; the pulse sinks; and, if she be not speedily relieved, she expires after one or two gasps, or a slight convulsive paroxysm.

Such symptoms naturally lead to an external and internal examination, which detects a re-distended uterus, filled with coagulated and fluid blood.

Under these circumstances no time must be lost, or vacillating and inefficient treatment may soon place the patient beyond the reach of remedies. One

hand should be immediately introduced within the uterus, to empty it of coagula, and to stimulate it to contract, whilst pressure is made on the abdomen and the uterus grasped with the other. Besides this, such other means as have been already recommended to restrain the flow of the blood should be promptly and perseveringly adopted; and, as a last resource, *transfusion* may be employed.

[Transfusion is attended with danger, and has failed in the hands of many experienced practitioners. The liability to the entrance of air, during the operation, unless it be performed with the greatest caution, would lead us never to recommend it except as a *dernière ressource*. It is, moreover, a matter of consideration whether many of the successful cases of transfusion, which have been placed on record, might not have done equally well under ordinary treatment.

Although the majority of transfusion cases have terminated fatally, we are glad to state that there have been a few exceptions to this rule. With regard to one of the cases related by Dr. Waller, there is some doubt whether the patient would have recovered, had it not been for the transfusion of blood into her veins. — J. M. W.]

When the uterus does not readily and completely contract, a small portion of blood is poured out, which coagulates, and keeps up hæmorrhage until it is removed from the organ by manual interference, or uterine contractions. Its expulsion will be accelerated by friction on the uterus externally.

Now and then, uterine hæmorrhage is the conse-

quence of partial or complete inversion of the uterus. This is in most cases referable to mismanagement; and if it be produced by the forcible extraction of the placenta, it ought to be known to the accoucheur, if he attends to the directions given for the removal of the placenta from the vagina; and, when discovered, should be immediately reduced.

The *consequences* of uterine hæmorrhage are sometimes highly distressing, and not unfrequently indicate considerable peril. Whenever intense pain in the head, extreme exhaustion, urgent thirst, and great restlessness supervene, the patient's recovery is doubtful, and her circumstances demand the most judicious management.

These symptoms require for their removal small quantities of the most nutritious and easily digestible food, with the exhibition of camphor and opium, and other cordial and sedative articles of the materia medica, with mild aperients: and it occasionally occurs that the local determination and congestion are so considerable that, notwithstanding the enfeebling cause primarily producing them, the comfort and safety of a woman will absolutely require local bleeding by leeches, or by the application of cupping-glasses.

The exhibition of very large doses of *opium* to restrain uterine hæmorrhage, has been recommended by several deservedly eminent accoucheurs.

Both reason and experience appear to concur in condemning this practice; for, whilst it is admitted that under some circumstances opium is highly beneficial, its indiscriminate employment is undoubtedly fraught with mischief.

The result of calm and dispassionate investigation on this subject is, that opium in large doses, in cases of uterine hæmorrhage, generally does harm, by paralysing the contractile energies of the uterine and arterial fibres; and that this valuable medicine is useful, and only useful, under the existence of some such circumstances as the following: —

It is decidedly beneficial when hæmorrhage has gone on until the vital powers have become reduced extremely low; and when, with other symptoms of exhaustion, the stomach manifests great irritability.

It is a no less valuable agent when hæmorrhage is the consequence of irregular contraction of the uterine fibres, whether circular or longitudinal.

In either of these cases it is a very efficacious article; but it appears most dangerous to attempt to maintain its utility, or to rely on its efficacy, in cases of active and alarming uterine hæmorrhage.

When exhibited under the before-mentioned circumstances, to secure its full effect, it is necessary to give it in doses of four or five grains, repeating it every second or third hour whilst necessary, with a diminution of one grain from each successive dose.

[After the objections urged against the use of opium (*vide* p. 242.), it need scarcely be added, that I consider four or five grains too large a dose to be generally given with safety. I should fear that, in some constitutions, so large an amount of opium would induce serious prostration of the whole nervous system. I have never ventured on giving more than two grains in cases of uterine hæmorrhage,

and, as a general rule, I consider opium contra-indicated in the treatment of these affections. — J. M. W.]

Sixth Order

OF LABOURS, OR THOSE ATTENDED WITH LACERATION OF THE UTERUS OR VAGINA.

No occurrence is more sudden, unaccountable, and disastrous than *this* melancholy catastrophe.

After an indefinite time from the commencement of uterine contractions, whilst every circumstance connected with parturition appears to be favourable, a woman may be seized by a most acute abdominal, rather than uterine, pain, very sudden in its accession, and spasmodic in its character, accompanied by too unequivocal sensations of something bursting within the abdomen. This feeling is immediately followed by a cessation of pain; indescribable prostration of the vital powers; hurried and laborious respiration; feeble, rapid, or intermitting pulse; and vomiting. Sometimes the patient gives one or two deep sighs, becomes extremely restless, gasps, and expires. At other times she gets gradually more feeble, till she dies from internal hæmorrhage, after a few hours. Now and then she lives until destroyed by the slower process of inflammation; still more rarely, notwithstanding the laceration shall have been so extensive as to permit the child to escape into the cavity of the abdomen, some well-authenticated instances are recorded, in which it has been extracted *per vias natu-*

rales, and the women lived to bear children subsequently; and others, in which the child has remained for years *in abdomine*, and has then been discharged by the rectum, or by an abscess in some other part.

When the symptoms just enumerated occur, they naturally lead to an *external* examination, which detects the different parts of the child through the abdominal parietes, and a loss of the uniform circumscribed uterine tumour. An *internal* examination discovers hæmorrhage, and the partial or entire recession of the fœtus, unless it had previously entered the cavity of the pelvis, or been impacted at the superior aperture.

[The laceration may occur at any part of the uterus; it generally extends through all the membranes of the womb. Sometimes the fibrous structure alone may be rent, the peritoneum remaining uninjured. Occasionally, but very rarely, the peritoneum is the chief seat of the lesion.

The rupture is most commonly situated at the neck of the uterus, and it usually takes an oblique direction.

Sometimes the injury is preceded by warnings. The patient may have suffered from severe and fixed pains in the uterus during pregnancy, and these have become aggravated on the accession of labour. Occasionally the accident has been preceded by a dreadful sense of distention and a consciousness of the approaching calamity. Too often, however, there have been no premonitory indications of the approaching danger.

Laceration of the vagina is often associated with rupture of the uterus, but it may occur independent of the latter injury.

The whole of the circumference of the cervix has, in a few instances, been separated from the uterus, in consequence of excessive rigidity of the os uteri.—
J. M. W.]

The Cause

Of this mournful occurrence is very obscure, unless the general explanation of *powerful action*, with *unusual resistance*, be admitted as satisfactory. On this principle, it is obvious that this fearful catastrophe may occur to women with distorted pelves; or in those cases of preternatural labour in which the liquor amnii has escaped prematurely, and in which there has been impetuous and irregular uterine contractions on some projecting part of the child. It has also resulted from unjustifiably forcible efforts to turn the fœtus in utero, or to afford instrumental relief.

[Violent action alone does not appear to be sufficient to account for laceration of the uterus in every instance, otherwise the accident would be more common. It is probable that softening of the fibrous structure (the effect of inflammation) is an occasional cause of rupture. An atrophied and thin condition of the coats of the uterus may be another pathological condition likely to induce laceration.—
J. M. W.]

Management.

Notwithstanding the recommendation of some very celebrated accoucheurs, to do nothing when the child has escaped through the laceration into the abdomen (but there to let it be smothered and remain, that the woman may have the chance of conflicting successfully with the constitutional disturbance which inevitably ensues, and which, if she bears up under, may leave her in a state to permit of her surviving till the child escapes by the slow and destructive process of suppuration), the practice appears most reprehensible.

A woman under these circumstances should never die undelivered. If the head of the child be within the reach of the short forceps, they must be applied; but if it be at the brim of the pelvis, should there be room enough, an attempt ought to be made to save the child's life, by the long forceps, or the operation of cephalotomia must be had recourse to.

When the child has receded altogether through the rupture into the abdomen, it must be traced into that cavity, and its feet or knees sought for, and cautiously brought back through the laceration.

In those truly melancholy cases in which the os and cervix uteri have not dilated, but remain rigid, and also in those cases in which the uterus empties itself into the abdomen, and is found contracted, the accoucheur ought promptly and fearlessly to perform the operation of *Gastrotomia*, by which he gives even

to the woman, and certainly to the child, a better chance of escape, than when they are left to the risk of dependence on the preservative and restorative powers of nature. Still, on this method of proceeding there exists great diversity of sentiment: some justly eminent men think that more women would recover if left to themselves, than when the additional injury of Gastrotomia has been inflicted.

[*After-treatment.* — Should the patient be in a state of collapse, stimulants will be required; but immediately on reaction taking place it will be advisable to give a powerful opiate. Opiates and leeches, with warm poultices to the abdomen, are the remedies which are likely to be of most service. — J. M. W.]

ON THE USE OF CHLOROFORM IN LABOUR.

[To Dr. Simpson, of Edinburgh, the merit is due, of not only having been the first to employ chloroform as an anæsthetic agent, but also of having been the first to adopt the use of *anæsthetics* in the practice of midwifery.

There can be no question that chloroform is an invaluable remedy in the treatment of a large class of labours; nevertheless, it must be deplored by every unprejudiced observer, that the talented discoverer of the virtues of chloroform has allowed his zeal for the cause of humanity and science to lead him into errors. In consequence of his too-unqualified recommendation of anæsthesia in labour, I regret to learn that chloroform is frequently administered by *midwives* and *even nurses* in Scotland, and with the approval of Dr. Simpson!* Chloroform is powerful for evil as well as for good, and serious consequences must follow the indiscriminate use of so potent a remedy. It is unquestionably one of the greatest boons ever conferred on suffering humanity; but, like every other blessing, it is open to abuse. I shall briefly take a review of the physiological effects of chloroform, and then state the description of cases in which it may be employed with safety and advantage.

* Vide Medical Times and Gazette, June 19th, 1852, p. 628.

It will be unnecessary, for my purpose, to consider whether the vapour of chloroform acts on the system directly through the nerves of the lungs or indirectly through the medium of the blood: it is enough to know its manifestations. Its first effect is marked by blunted sensibility of the cerebro-spinal nerves. During the first stage, the pains of labour are lessened, but consciousness is unimpaired. The second stage is indicated by loss of control over the voluntary muscles, and by the suspension of consciousness; the excito-motor power is also lessened to such an extent that the conjunctiva may be roughly touched without producing contraction of the levator palpebræ, and the severest operations may be undertaken without occasioning the slightest pain. Whilst this condition lasts the patient should be narrowly watched, as it is very apt to lapse into the third stage, which has been not unhappily termed "*the commencement of death.*" This last or third stage is marked by stertorous breathing, a sinking pulse, and the usual signs of approaching dissolution. It is also worthy of notice, that frequently, in less than twelve minutes after death from the use of chloroform, the body becomes perfectly rigid, a fact which clearly indicates the intensity of the poison.

It must be borne in mind that the effects of chloroform are often cumulative, and that some individuals are peculiarly susceptible of its influence. Neither must we blink the fact, that deaths from chloroform have been by no means of unfrequent

occurrence. Dr. Crisp has drawn up* an account of all the deaths from chloroform which have been reported since 1848. He has tabulated no less than forty deaths, and he considers this amount far below the actual number of fatal cases. It is highly probable that many deaths have occurred of which we possess no record.

A few years since, a case, which very nearly proved fatal, came under my own notice. The patient was a young lady who suffered from the most violent hysterical convulsions I ever witnessed. For the relief of these paroxysms I had frequently employed chloroform with the happiest result. An intelligent relative of the lady, having witnessed the good effects of the remedy, was induced to administer it herself on one occasion when I was prevented from being in immediate attendance. On my arrival I was horrified to find her apparently lifeless. The pulse was imperceptible, and the breathing had ceased. By the assiduous application of the vapour of the strongest liquor ammoniæ, cold affusion, &c., consciousness was restored. I need not say that chloroform has been rigidly excluded from her house ever since the occurrence of this most alarming accident.

Can any one, after a due appreciation of the facts which have been advanced, assert that the exhibition of chloroform may be safely entrusted to old women and nurses?

I trust it will not be inferred, from what has been

* Vide *Lancet*, Jan. 4th, 1853.

adduced, that I am opposed to the judicious and cautious use of chloroform: on the contrary, I consider it of great service in the management of many cases; but it is my duty to caution students against the unqualified approbation which has been lavished upon it by many of the leading obstetricians of the day.

In cases of rigid os uteri, of transverse presentation, and of impacted head, requiring instrumental aid, I have found chloroform an invaluable auxiliary.

In natural labour it is indicated in those cases in which the patient suffers from *morbid* pain. When used simply as an anodyne, anæsthesia should not be allowed to pass beyond the first stage.

The fears that some entertained as to the possibility of its causing convulsions or mania are perfectly groundless. Several cases of puerperal convulsions are on record, in which anæsthetics proved of signal benefit.

In employing chloroform, it must not be forgotten that it paralyses the excito-motor nerves of the uterus as well as those which supply the abdominal muscles with voluntary power. Its use is, therefore, clearly contra-indicated in cases where expulsive power is required. The *organic* nerves of the uterus are supposed to maintain their power during the second as well as the first stage of anæsthesia. Be this as it may, we can vouch for the entire suspension of the action of the uterus during a case of turning, in which we employed chloroform, although anæsthesia was not allowed to pass beyond the second stage.

To lull hysterical excitement, to allay *morbid* pain (by which we mean *excessive* pain, as it occurs in morbidly sensitive females), to suspend convulsions, to relax the passages, and to blunt pain during severe operations, are the principal conditions which demand the use of chloroform.

One of the simplest and best modes of exhibiting chloroform is by means of a cambric handkerchief. Twenty or thirty drops should be poured on the handkerchief, which must be held lightly over the nose and mouth until anæsthesia commences. The pores of the handkerchief admit atmospheric air, and by this means the chloroform is prevented from acting too powerfully on the nervous system. As soon as the conjunctiva loses its sensibility, the handkerchief must be withdrawn; to be applied as occasion may require. In skilful hands and in appropriate cases, chloroform is not only a safe, but a valuable remedy. — J. M. W.]

ON THE
MANAGEMENT OF MOTHER AND CHILD
SUBSEQUENT TO DELIVERY.

A most important revolution has taken place in this department of midwifery within the last half century; so that the treatment of puerperal women is very generally now as natural and prudent, as it was formerly unwise and detrimental.

Supposing, then, the child and placenta to be expelled, the accoucheur being satisfied that the uterus is well contracted, the bandage, or belt, which had been passed loosely round the abdomen previous to delivery *, is to be moderately tightened; and after the removal of any coagula that may have escaped from the uterus, soft and well-aired napkins are to be applied to the labia pudendi, and above and below the nates, so as to be interposed between them and the wet clothes.

Presuming that neither hæmorrhage nor any other circumstance requires a state of absolute rest for a

* It is of the greatest moment not to omit this article of dress, for to its omission may be traced many of the most distressing *sequelæ* of parturition. Perhaps nothing answers so well as an ordinary towel or long napkin, and a bandage with buckles.

longer time, the woman may remain for half an hour in the same situation as when delivered; after which, her soiled linen may be removed, and the clean clothes, which had been previously passed round her chest, may be drawn down, and she very gently moved up in the bed, by one assistant at her shoulders and another at her feet. Whilst these things are done, the patient should be a *passive* being; and on no account be raised from her horizontal position, as hæmorrhage, syncope, prolapsus, or *inversio uteri*, may be the consequence.

After this, she may take some simple nourishment; the room should be kept dark, cool, well ventilated, and free from talkative friends; and the medical man, on seeing her before leaving (it being presumed that he remains in the house until the woman is comfortably in bed), should enjoin strict quietude of body and mind, with abstinence from fermented liquors or spiced food.

For some time after delivery, the food of a puerperal woman should be less in its quantity, and more simple in its quality, than she was accustomed to before; because, whilst a lying-in room is not a sick room, yet so sudden and so great is the change in the habits of the patient, perhaps from high activity to perfect quietude, that the same diet which she had previously taken could not now be borne without inconvenience.

It is customary to compel a woman, after delivery, to live almost exclusively on gruel or broths; and it is no uncommon thing for her stomach to be most

inordinately distended with several pints of these articles daily. The practice seems extremely irrational, and is often highly injurious. It frequently not only enfeebles the stomach, but, by keeping up constant perspiration, debilitates the whole system, and renders it very susceptible of cold; and is one cause of an immoderate secretion of milk, which becomes a source of great distress to the patient. For some days after delivery, therefore, whilst these articles may constitute a part of her diet, their quantity may be less, if in the middle of the day a light pudding, containing an egg or two, be substituted. The components may be varied until the woman resumes the ordinary family diet, which, if nothing unfavourable has occurred, she may begin to do in a few days.

And whilst it is not intended to enter fully into this subject, still it is one of so much moment as to justify a few more remarks, which are purposely very general and familiar in their character, and bear equally on parent and child.

The diet of a nurse should be simple, nutritious, and such as is easily digested. It is an established fact, that, if plain and nourishing, a mother may, with impunity to a child, gratify herself in any article of food, if she at first habituate her stomach to it, and it will rarely be found that anything will disagree with an infant which agrees with herself.

Unless the state of the health requires wine or beer, most nurses, who have good sense enough to try, will find the comfort of their feelings best consulted, their constitution best supported, and the im-

provement of their infants most rapid, when they avoid spirits, wine, or beer, and drink milk as their ordinary beverage. Some women may require a draught of good ale twice a day, but the cases are rare.

A nurse should live on a proportionate quantity of animal and vegetable food. No objection, but such as is traditionary and unfounded, can be advanced to her partaking moderately of any well-boiled vegetables or ripe subacid fruit. Her meat should not be much salted or fat, and rich pastry, for her own sake, as well as for the welfare of the child, should be avoided.

At least, one hearty meal of meat should be eaten daily, with a proper quantity of vegetables, and in general the diet of a nurse ought not to be greatly altered from that to which she has been previously accustomed.

It is a common prejudice, and a great error, to direct that a nurse should "live well," in the vulgar acceptation of the words. Nutritious diet is certainly necessary, but rich living renders the milk gross and indigestible.

It is of some importance that food be taken frequently, and in small quantities, as the milk is secreted in a few hours, probably in about five, after the stomach receives its nourishment. The milk is then fit for the sustenance of the child; but if secreted much longer, it becomes unfit, because the serum or thinner parts become absorbed, and those parts only which are digested with more difficulty, remain in the breast.

There is an evil too generally prevalent, and most pernicious in its consequences on individuals and on society, and by no means confined to mothers in the lowest classes of the community, which cannot be too severely reprobated,—it is the wretched habit of taking wines or spirits to remove the languor present during pregnancy and suckling. It is a practice fraught with double mischief, being detrimental both to mother and child. The relief afforded is temporary, and is invariably followed by a greater degree of languor, which demands a more powerful stimulus, which at length weakens, and eventually destroys, the tone of the stomach, deteriorates the milk, and renders it altogether unfit to supply that nutriment which is essential to the existence and welfare of the child.

Some young mothers greatly increase their fatigue in suckling by the awkward manner in which they place their children at the breast. A woman should use her child to such positions in giving it suck, as are most easy to herself. If in bed, the child should take the breast as it lies, and not incommode the mother by obliging her to sit up in bed; because, without any benefit to the child, the mother's fatigue is greatly augmented. When up, the mother should by all means sit upright, and raise the child to her breast. The distorted posture so commonly seen in suckling produces excessive pain in the back and limbs, without relieving the child in any respect.

Fretfulness, agitation, and violent emotions of the mind invariably do injury to an infant at the breast.

The milk becomes vitiated, its secretion very often diminished or altogether suspended, and the little sufferers have, in many well-authenticated instances, fallen victims to the indulgence of these passions by the nurse or mother.

Unless very peculiarly urgent reasons prohibit, a mother should support her infant on the milk she herself secretes. It is the dictate of nature, of common sense, and of reason. Were it otherwise, it is not probable that so abundant a supply of suitable food would be provided to meet the wants of an infant, when it enters on a new state of existence.

It is difficult to estimate the mischief resulting from infants being deprived of their natural nourishment; for, however near the resemblance may be between food artificially prepared, and breast milk, still reason and observation demonstrate the superiority of the latter to the former.

No children exhibit such unequivocal signs of health, or bear up so well under disease, as those that live exclusively on the breast. Whenever instinct and nature are permitted to teach, such is the course which they point out; and happy would it be for mankind, if parents would so far return to a state of nature as to regulate their own diet, and that of their children, by her simple and salutary dictates.

In many parts of the world where children attain to the greatest beauty and vigour, they are not permitted to have any other nourishment but the mother's milk till they have attained the age of twelve months; and some of the finest and most robust

children to be seen in this country are those that are reared in a similar manner.

And, as a further inducement, it should be remembered that medical men concur in their opinion, that very rarely does a constitution suffer from secreting milk; whilst the health of many women is most materially improved by the performance of the duties of a nurse. Delicate females are generally strengthened by nursing, and many of the complaints incident to women are removed by it. If we except the period of pregnancy, fewer women die whilst nursing than at any other period of life; and it is a very common observation, that their spirits are more lively and uniform, their tempers milder and more even, and general feelings more healthy and pleasant, than under any other circumstances.

A very serious evil resulting from a woman neglecting this imperious duty, is the probability of her becoming more frequently pregnant than the constitution of most females can sustain without permanent injury. A woman who suckles her children has generally an interval of a year and a half, or two years, between each confinement; but she who, without an adequate cause for the omission, does not nurse, must expect to bear a child every twelve months, and must reconcile her mind to a shattered constitution and early old age.

But few mothers, comparatively, are to be found, who, if willing, would not be able to support their infants, at least for a few months; and parental affection and occasional self-denial would be abun-

dantly recompensed by blooming and vigorous children.

Presuming that the laudable determination is formed to indulge the child with that nutriment which is designed for its support, it becomes necessary to state, that, unless very strong objections should exist, *twelve hours* should never elapse before the infant has been put to the breasts. Instinct directs it what to do, and the advantages of allowing it to suck soon after birth are many and important, both to the mother and child.

By this commendable practice, the parent is generally preserved from fever, from inflamed and broken breasts, and from the distressing and alarming consequences resulting from these complaints.

If the breasts should not have secreted milk previous to delivery, the act of suckling will encourage and expedite the secretion. Thus the mother will be saved from much of the pain connected with distended breasts. Besides which, if the infant be not put to the nipple till the breasts become full and tense, the nipple itself will sometimes almost disappear, on account of its being stretched; and without much, and often ineffectual, labour on the part of the child, it cannot be laid hold of, and even then the pain endured by the mother is exquisitely severe, and not unfrequently the cause of sore nipples.

It must be admitted that some mothers cannot suckle their infants: still it should be attempted, unless it is altogether impossible; for, though a woman may not be able to persevere for any consider-

able time, yet suckling, if but through three or four weeks, may avert those local and general complaints which have been before named. Many nurses are too often discouraged when children are awkward in taking the breast, or when the nipples are flat and sore.

And here it may be as well to say a few words on those troublesome and painful complaints. *Flat and sore nipples* are in some instances produced by the unnatural practice of pressing them by tight stays. A strong healthy child should be applied to draw them out, when too flat for a new-born infant to take hold of. The superficial ulcers and cracks which so often take place on the nipples, and give such exquisite pain, may generally be *prevented* by washing the nipples night and morning, for some months before lying-in, with brandy and water, or with the liquor aluminis compositus. It is of much importance to keep the nipples dry after the child has done sucking. When they become sore, great attention is required. The infant should draw them through an ivory, or glass, or india-rubber shield*, with the prepared teat of an heifer. The nipples must be always covered with the shield, so that they may not be liable to pressure; and great care should be taken that the newly-formed tender skin be not torn off, by the coverings of the breast being permitted to stick to it.

* A very simple and ingenious instrument, made of caoutchouc, is made by Messrs. Maw, of Aldersgate-street.

Not unfrequently, if the mother have but resolution to make the attempt, she will be able to suckle, though she may have been foiled in two, three, or more previous confinements.

It would be endless to enumerate the variety of things which have been recommended to invigorate the constitution and increase the flow of milk. Let it suffice to affirm, that, if no positive disease exists, plain, generous, and nutritious diet, regular exercise, and cold bathing two or three times a week, embrace all that is necessary to accomplish so desirable an object.

A medical man ought never to think it beneath him to direct a nurse or a mother on those little attentions which a newly-born infant demands on its being ushered into the world. The temperature which it leaves is about ninety-eight; consequently care is required that it be not suddenly exposed to a reduced temperature, or to the heat and glare of a fire.

A receiver of fine flannel, with a square of old soft linen or calico tacked in its centre, should be in readiness for its removal when born. Flannel itself is too harsh for immediate contact with the delicate skin of an infant at first, though well adapted to keep up that degree of warmth which it brings with it.

Cold is very unfriendly to the tender state of an infant; and though a child over-heated by an immoderate load of clothes will suffer from porrigo and other complaints, yet, for a time, warm clothing,

with that quantity of animal heat which a mother's bosom communicates, are requisite for its comfort, and essential to its thriving. The modern refinement of cots, and the injurious apprehensions of children being overlaid, have banished many a weak and delicate infant from a nurse's bosom (its natural and best bed) to a crib, where it has passed night after night in cries, from its inability to generate sufficient heat for its own comfort, and eventually has fallen a victim to cold and neglect. Still it should have plenty of pure air, which must freely circulate about its bed, whilst prevented by a curtain from passing in a current immediately over its body.

The mucus which covers the body of a child at its birth, is best removed by a soft sponge with warm water and soap. A nurse should not be over anxious to remove every particle at the first washing, because, by too much rubbing, the skin becomes irritated and inflamed, and by the second attempt the surface of the body may be thoroughly freed from this substance. This indeed is necessary, or perspiration becomes obstructed, and the skin liable to eruptive diseases.

Many nurses never wash the head of an infant after the first time, except with spirits. The omission of washing it is unjustifiable on every principle, and the custom of rubbing the head with spirits has nothing to recommend it; but, on the contrary, is the common cause of giving cold, on account of its speedy evaporation, which carries off heat that can never be spared. Let a mother rub a little spirits

between her own hands, and she will never allow the tender head of her babe to undergo the same operation.

The navel-string may be wrapped round with a piece of soft and well-aired linen, and carefully laid down. Burnt rag is very objectionable: it is in no case of any use, and frequently produces inflammation, and an ulcer that heals with difficulty. Should any ulcer remain after the funis drops off, which generally takes place in a few days, the part may be moistened with a little goulard water, and afterwards have applied to it a little spermaceti or simple ointment spread on it. This may be renewed every time the child is dressed, till the wound is healed.

Were it not that the brutal practice of forcibly pressing out the fluid which distends the breasts of some infants at birth yet prevails, it would be unnecessary to refer to the unfeeling custom; nothing can justify it, for not one child in a hundred requires any attention on this point, and when it does, an emollient poultice is all that is required.

The object of *clothing* is to defend us from cold, and happy would it be for the rising generation if mothers and nurses could be convinced that this may be accomplished by light, warm clothing, without confining the body by bandages, or loading it with covering weighty enough for half a dozen children; and surely nothing but a slavish adherence to custom can sanction a practice as absurd as hurtful—the ridiculous length of an infant's clothing, which in many cases by its weight produces deformity of the

feet, and must always be a source of considerable pain to a feeble child.

Ease and moderate warmth are the two grand objects to be habitually kept in view in clothing infants, and because they are disregarded it is that we wander so far from the simplicity of nature and the obvious dictates of common sense.

The ease and comfort of a child may be consulted and promoted by avoiding all unnecessary bandaging. Every species of swathing prevents the free performance of the various functions. Flexion and extension of the joints should be quite unrestrained; and clothing which in any degree impedes free motion, and thus counteracts, by its confinement, the natural efforts of a child, must be extremely injurious.

An infant has been not unaptly compared to a bundle of fine vessels, through which a fluid is to pass undisturbed, to be distributed equally through the body. For this purpose it is surrounded by a soft medium, which cannot sustain pressure to any degree without injury. Yet what is more common than, under the idea of weakness, to roll tightly a delicate babe which just before swam in fluid, to preserve it from the pressure of surrounding parts? Opposition is, by this means, continually made to the freedom of circulation and of breathing: and the fruitless efforts made by an infant to relieve itself, when bound, not only retard its progress, interfere with its growth, and waste its powers, but are common causes of that deformity which so frequently

and loudly condemns the unnatural practices of nurses.

The modern art of dressing not only impedes the growth of children, but most sensibly diminishes their enjoyment; for every attentive observer must have noticed the evident pleasure experienced by them when undressed and permitted to roll about free and unharnessed.

Having made these general remarks on the *domestic* management of the mother and infant, it remains to add a few suggestions on their *medical* treatment.

Nothing can be more irrational than the too prevalent custom of exhibiting large and repeated doses of *opium* to a woman after delivery. It is true that a patient after labour is found in a state of fatigue and irritability, and may therefore be benefited by a single and moderate dose of this article; but the frequent repetition of it is decidedly injurious, not only by producing the ordinary unpleasant effects of opium, but more especially by its influence over uterine action, which it enfeebles or suspends, so as to counteract the efforts which it makes to expel coagula, and perfect its restoration to its original dimensions by those secondary and very salutary contractions, termed *after-pains*, and for the removal of which opiates are so generally prescribed. These should rather be encouraged than counteracted, by the occasional employment of friction over the uterine and lumbar regions, and by the exhibition of a purgative,

which, during its operation, materially assists and accelerates the contractile energies of the uterus.

On the second day subsequent to delivery the bowels should be acted on by a common domestic enema*, or by the exhibition of a moderate dose of castor oil, or any other mild aperient.

The early employment of purgatives also moderates the secretion of the milk, by which the woman is saved from considerable suffering. Should it happen that the breasts become extremely tumid, hot, and painful, it will be necessary to act more freely upon the bowels, so as to obtain several loose motions daily, and this object will be best secured by repeated doses of some saline aperient. In addition to this, the breasts must be kept very cool, and every few hours gentle friction of them should be enjoined on the nurse. This may be performed by the hand, between which and the mammæ there should be interposed a little hair powder or oil, and the latter may be medicated by the addition of camphor, as in the *linimentum camphoræ*.

The patient should live rather low, and take every article of food cool. She should be allowed ripe sub-

* Many well-instructed nurses consider one of Maw's syringes for the administration of a clyster, to be an essential part of their travelling apparatus. This should be encouraged by medical men, because there can be no doubt but this method of acting on the bowels is preferable to the taking of purgative medicines by the mouth, inasmuch as the large intestines are found at this time most torpid from the long-continued pressure of the gravid uterus. At all events, no family should be without the instrument.

acid fruit, and prohibited from taking any more fluid than is absolutely necessary, by which the *plethora ad molem* may be in a great measure avoided. The lactiferous tubes must be kept frequently emptied by the infant.

The *bladder* now and then does not perform its functions as it should after delivery; and this inability occurs sufficiently often to render it a part of the duty of an accoucheur, on his first visit, to inquire of the nurse into the state of this organ, and to reiterate his inquiries until he is convinced, by the most unequivocal language, that his patient has really emptied the bladder, and not merely parted with a small quantity of urine by *stillicidium*; and should any doubt remain on his mind, he should examine externally above the pubes.

Many women suffer during the remainder of their lives from the very general and very reprehensible custom of indulging prematurely in an upright position; and even those who are solicitous to remain longer than is necessary in bed, often do themselves much mischief by a half recumbent posture, presuming that, if the lower extremities are kept horizontal, the position of the trunk is unimportant. The absurdity of this opinion is so manifest that it needs no refutation, nor can it excite surprise that *procidencia uteri*, sanious discharge, and subsequently leucorrhœa, should be the consequences of such malpractice, when the relaxation of the passages and the size and weight of the uterus are considered. Still there can be no necessity for a woman to be confined

under the bed-clothes for a month; and, if the horizontal posture of the body be preserved, she may be on the outside of the bed, or on a sofa, the day after delivery. In England, lying-in women are kept too long in bed, and sit up too early.

OF THE LOCHIA.

The lochial discharge (or "cleansings," as it is called by nurses) is a sanguineous discharge from the vessels of the uterus, which, being mixed with detached and decomposed filaments of the tunica decidua uteri, continues to flow from the passages from five to thirty days after parturition.

At first it is decidedly sanious and coagulates, but in a few days it becomes of a much paler and brownish, or of a dirty green hue, so as to acquire among women the term of "green waters."

The quantity of this discharge varies very much in different women; in some being extremely scanty, especially in those who have lost much blood by uterine hæmorrhage, whilst in others the secretion is so profuse as to require medical treatment.

When the discharge is excessive, it is not unfrequently hæmorrhagic, constituting the *menorrhagia lochialis* of authors, and may generally be traced to sitting up prematurely; or to improper diet and regimen, such as high-seasoned food and fermented liquors; or keeping the lying-in room at a high temperature. For the removal of this local affection and the consecutive constitutional derangement, it becomes necessary to employ cool air; absolute quietude

of mind, and body in a recumbent posture; and a cold and astringent injection, per vaginam, for which nothing answers better than equal parts of aqua distillata and liquor aluminis compositus. This may be thrown up two or three times daily, and, conjoined with it, the bidet may be used to the loins and pubes. Sea bathing, with any other means likely to give tone to the system, should be recommended. Every circumstance and engagement, with all such articles of food as accelerate the frequency and increase the force of the action of the heart, must be avoided. The internal exhibition of the mineral acids, with catechu, often does good; and sometimes benefit is derived from a combination of myrrh and iron, as in the *pilula* or *mistura ferri composita*.

[*Sudden cessation of the lochial discharge*, soon after delivery, should be regarded with great apprehension, as it generally indicates the approach of puerperal fever or of some serious inflammatory disease of the uterus or its appendages. — J. M. W.]

With respect to the medical management of the *infant*, it is merely necessary to state, that there can be no doubt, by what is observed in wild animals, that, if the habits of the human species were equally natural with those of the brute creation, the breasts of the mother would contain a sufficiency of the first milk to purge the infant, and carry off that quantity of dark-coloured mucus which is found in the bowels of infants when born. But as this is not the case, it is the least of two evils to have recourse to the unnatural practice of exhibiting a little opening medicine,

which will accomplish what, in a state of nature, the milk first formed would do.

The absurd practice of compelling the child to devour a quantity of sugar and butter immediately on its entering the world, should be strictly forbidden. Yet something is necessary to carry off the contents of the bowels (a dark secretion termed *meconium*), and nothing answers better than about half a drachm of castor oil, which may be repeated once or twice, if found necessary.

GENERAL OBSERVATIONS ON THOSE DISEASES WHICH OCCUR SUBSEQUENTLY TO DELIVERY.

On the interesting and important subject of puerperal diseases, a great deal might be written; but anything beyond a brief notice of them would be incompatible with the character of this volume, which is intended merely as a text book for students, and a book of reference for junior practitioners. In this spirit the author offers the following observations on some of the most fatal and common of puerperal complaints.

Fatal Syncope.

This affecting occurrence does not very frequently present itself to the notice of the accoucheur, but it occurs sufficiently often to require that its *causes* and *management* should be adverted to. It manifests itself by the sudden accession of general exhaustion, and speedily runs on to its fatal issue.

Of its Causes. — It is unconnected with uterine

hæmorrhage; for, on opening the body after death, the uterus is found firmly contracted, and consequently not containing an unusual quantity of coagula. Nor is it referable to aneurismal hæmorrhage, or to any organic disease of the heart. Several circumstances combine to produce this fatal fainting; but the principal one seems to be, the loss of balance in the circulation, in consequence of the sudden removal of pressure from the iliac vessels by the diminution in the bulk of the uterus, which permits the blood to rush to the lower extremities. This is associated with a corresponding emptying and collapse of the vessels of the brain, and, as a consequence of this, the action of the heart and arteries is impaired, and finally suspended.

The labour may have been in every respect favourable; but within an hour after delivery a slight vertiginous sensation and nausea are felt, which are aggravated into a sense of fainting and sinking, with severe pain at the pit of the stomach. The countenance becomes speedily and awfully depressed; there is extreme restlessness, hurried respiration, feeble and intermitting pulse, and frequent and deep sighing, which, if not immediately relieved, are the preludes of inevitable and speedy death.

Of its Management. — If the explanation given of the causes of this complaint be correct, the object of paramount importance is, to equalise the distribution of the vital fluid; for which purpose all means must be employed which will prevent collapse of the cere-

bral vessels, or restore them to a healthy degree of repletion.

Moderate pressure over the uterine region should never be omitted after parturition, were it only to obviate this occasional bad consequence of the sudden emptying of the uterus. When there is a disposition to it, the body should be kept in a strictly horizontal position, or even with the head in a depending position over the edge of the bed, so that the blood may gravitate into the cerebral vessels. In addition to these means, such powerful stimulants must be administered as are at hand, as brandy and ammonia; and these must be administered to an extent proportioned to the urgency of the symptoms.

[The late Dr. Ramsbotham observed that syncope happened most frequently when the infant was still-born; an occurrence which he attributes to the excessive grief consequent on the frustration of the mother's dearest hopes. — J. M. W.]

Inversion of the Uterus.

When the uterus is inverted, it is, in plain language, turned inside out, having the os uteri at the superior part of the tumour; and by this sign the disease may be distinguished from prolapsus uteri, in which complaint there is an opening at the most depending part.

Cause.—This accident may almost always be traced to the employment of an immoderate degree of force in withdrawing the placenta before the uterus has contracted on the mass. It can scarcely happen to

a cautious practitioner, who, instead of hastily extracting the placenta, exclusively aims at securing its detachment and expulsion by exciting the uterus to its secondary contractions, and who never permits the mass to slip out of the vagina without ascertaining, by one or two fingers of the left hand, that, as it passes, it does not drag the inverted uterus with it.

The uterus is not always completely inverted, but is sometimes only depressed at its fundus. Between simple depression of the fundus uteri and complete inversion, every degree of mischief is met with in practice. This accident is discovered only by examination through the abdominal parietes, and by the vagina; but should always be suspected, when hæmorrhage, severe pain, and great prostration of the vital powers exist, without the uterus being sensible to the hand above the pubic region.

Death generally follows inversion of the uterus, few women being able to bear up under the sudden shock and loss of blood which the constitution sustains. In some few cases the powers of the system have not so readily given way, and a miserable existence has been dragged on through several years.

Management.—It is of essential importance to re-invert the organ immediately, for the delay of a single hour may render it impracticable. The re-inversion is to be accomplished by steadily grasping the uterus, and carefully and by degrees thrusting up first the superior part, and subsequently the most depending portion. As soon as possible after the re-inversion is effected, some cold water should be thrown into the

uterus, and the hand introduced for the purpose of exciting it to contraction, and kept in, without which it is very apt to invert itself again and again.

The placenta, if it be not detached, must not be separated until after the re-inversion is effected. If the organ has not been replaced at once, and has become tumefied, it will be prudent to employ fomentations before proceeding to its reduction.

Should the uterus remain inverted, the woman generally falls a victim to repeated hæmorrhage and hectic fever; but in many cases it may be carried up within the vagina, and there retained by an oviform pessary, and the patient's comfort consulted by the use of astringent and narcotic injections; or the organ may be removed by ligature, as it has been in several instances.

[The application of a ligature is a hazardous expedient, on account of its tendency to induce peritonitis. Should it be employed, a piece of whipcord or silver wire must be placed around the upper part of the tumour. If it produce vomiting, the ligature must be slackened and not re-applied until all tendency to sickness has subsided. Opium will be found of great service in quieting the irritation consequent on the application of a ligature to an organ possessing such extensive sympathies as the uterus.—J. M. W.]

Puerperal Inflammation.

By Puerperal Inflammation, correctly so called, is meant one of those affections which are known among practitioners under the vague and indefinite term of

*Puerperal Fever**; a generic term, which in reality designates only a prominent symptom of disease, but which, in ordinary usage, embraces complaints having little or no resemblance or connection, either in their essential nature, their seat, or their treatment.

It is of moment to dissociate this disease from several others with which it is often confounded, and for which it is treated in every-day practice; for, unless our diagnosis be correct, there will ever be the most conflicting statements as to the nature and seat of Puerperal Inflammation, and the utmost discordance of opinion as to the treatment to be pursued.

Those complaints to which reference is more particularly made, are,

First, That high, though transitory febrile excitement of the constitution, to which lying-in women are liable, called Ephemera, or Weed, referable to some slight and casual disturbance in the breasts or small intestines. This is never epidemic.

Secondly, Various disturbances and disorganisations of the brain.

Thirdly, Derangement of the intestinal canal, constituting puerperal diarrhoea.

Fourthly, Remittent pain of the intestines, from detained fæces, producing violent spasm of the larger bowels.

Fifthly, Irritative fever, from a portion of retained placenta, or membranes, or coagula.

* As long back as the year 1728, Chomel; in 1779, Johnston; and in 1785, Walker described this disease as an inflammatory affection of the peritoneum.

Sixthly, Hysteria.

Seventhly, Hysteralgia, or that alarmingly painful spasm of the uterus characterised by the earliness and rapidity of its accession and departure, the periodical remission of pain, and the absence of rigors: And,

Eighthly, All that train of anomalous symptoms referable to exhaustion from fatigue, anxiety, or loss of blood. All these affections are incessantly liable to be mistaken and treated for genuine Puerperal Inflammation.

It is scarcely possible to form a correct notion of what is called the proximate cause, or rather essential nature, of this disease, until we better understand and more accurately define the pathology of inflammation itself; and, unquestionably, Puerperal Peritonitis would be better understood and more successfully treated, if men of intelligence and disinterestedness in their investigations could approximate and agree in their views of inflammation. May not inflammation be *primarily* a state of nervous depression and collapse, and *secondarily* and consecutively a state of morbidly increased action and sensibility?

It is not improbable that much of the difference of opinion which exists on this subject, may be traced to the reluctance with which many pathologists admit the possibility of the existence of inflammation without pain, notwithstanding several conclusive proofs of this fact. Pain is the consequence of turgescence and tension of a part; it is not essential to inflammation, and is only present as it advances. If this be admitted, we may explain and account for most of the phe-nomena

mena of all the varieties of the frightful malady now under consideration. And does not the pathology of the disease justify this theory? Look impartially at the result of its scrutiny, in connection with every leading feature of the disease. Let us banish far away mere gratuitous assumption, and calmly and legitimately deduce a theory from unalterable and indisputable facts; for the grand barrier and the most fatal hinderance to the advancement of medical science, from its earliest history, has been the substitution of hypothesis and speculation for patient research and plain inductive reasoning. Examine the detail of symptoms presently to be brought forward; compare them with post-mortem investigations, and see how far they accord with the proposed theory. When this disease runs a very rapid and fatal course, destroying the patient within twenty-four or forty-eight hours, it is astonishing how little will be found to account for death. Perhaps there may be slight efflorescence and turgescence of parts, with a very little serosanguineous effusion, or an isolated spot of discolouration; and these disputable evidences of inflammation are sometimes confined to a Fallopian tube or an ovary. These equivocal and unimportant changes are more particularly noticed in those most distressing and untractable cases, ushered in by extreme and overwhelming depression of the nervous energies, with almost irrecoverable prostration of the vital powers; and these occur in great numbers in particular districts, in lying-in hospitals, in crowded neighbourhoods, and under a peculiar condition of

atmosphere, when puerperal diseases have not borne the abstraction of blood, or any other depletory measure, but with extreme caution. Under these circumstances, although there is effusion, it is small in quantity and peculiar in quality. It is like dirty red water, without any flakes of coagulable lymph, and often pervades every part of the contents of the pelvis. The uterus itself becomes unnaturally soft, and not only is there this effusion formed between the muscular parietes, and in the cellular tissue, but under the peritoneal covering. It may also be traced under the investment of the broad ligaments, ovaries, and every contiguous organ.

All destructive febrile affections which follow parturition are invariably associated with, if not directly caused by, inflammation of some of the textures of the womb, or of its appendages; but the type or character of the fever is probably dependent upon the particular tissue most involved: thus, in the inflammatory pyrexia, the peritoneal lining chiefly is inflamed; in the congestive, the muscular substance; and in the low typhoid, the veins of the uterus and ovaria.

In ordinary phlogistic cases, the appearances after death are very diversified. The substance of the uterus is sometimes infiltrated with pus, and becomes livid and spongy, or it may contain small abscesses; and the uterine veins, particularly those containing blood from the spermatic arteries, may be inflamed and contain coagula or pus. At other times, spots and patches of gangrene will be perceived ex-

ternally; and not unfrequently the inner surface or cavity is black, ragged, and covered with flakes of coagulable lymph. When the disease has originated with, or been principally confined to, the peritoneal investments of the uterus, bladder, and pelvic and abdominal viscera, they will be agglutinated in one morbid mass, or there will be more or less turbid serous effusion of a dirty white colour, mixed with pus and flakes of coagulable lymph.

In the chest, particularly in those cases in which respiration has been hurried from the commencement, there will be found slight effusion in the cavity of the pleura, in the bronchial tubes, and in the cellular substance of the lungs.

But so anomalous is Puerperal Inflammation, that not unfrequently the extent and variety of mischief shall be infinitely more than could have been expected, *à priori*, from the duration or severity of symptoms during life, and only to be explained by admitting that the disease must have existed, and been making sure though unnoticed progress, before delivery: or to the possibility of the inflammation having run a very rapid course, and destroying in a few hours the vitality of parts which had been previously brought into such a condition, in consequence of the prostration of nervous energy, as to be unable to resist high excitement; and effusion or destruction inevitably and rapidly follows.

Puerperal inflammation, as it is presented to us in that best of schools, the lying-in room, attacks women irrespective of the duration, mildness, or severity of

their labours, women of all ages, and during every season of the year; but the type of the inflammation will be so varied and modified by circumstances as to be scarcely recognised as the same disease in its essential character in different women, in different districts, and during peculiar constitutions of the atmosphere. It will sometimes be strictly tonic and phlogistic, and at other times atonic and typhoid.

In some cases in which the pulse has been full and hard, but slow, the breathing has been laborious, the countenance dusky, and every function oppressed, there has appeared to be venous congestion overpowering arterial action, and preventing the full manifestation of disease. The crassamentum of the blood first drawn has less firmness, and it does not become buffy and cupped until the circulation is relieved by bleeding. It is true the appearance of the blood supplies but very fallacious guidance. In these cases depletion will lessen the simulated debility, and the concealed disease will become more clearly developed.

We possess strong presumptive evidence in support of the opinion, that this disease may be conveyed by medical men and nurses, as well as by patients themselves.

The disease is most frequently epidemic during the winter and spring, and has always been most fatal during and immediately after severe and long-continued frosty weather; and yet, strange and inexplicable as is the fact, during the prevalence of cold it

runs its course most rapidly, and often assumes the low type.

It is important to establish,

First, The momentous and influential fact, that gestation and parturition produce a change in the physical condition of the female, which so modifies disease as to give to it a *specific character*. This is familiar to every medical man who frequents the lying-in room, and is remarkably illustrated when puerperal patients become the subjects of scarlatina, or of any other exanthematous disease. Such women will lose their lives, although many other members of the same family, labouring under the same disease, have escaped with the most trifling and unimportant indisposition. This is, as it were, a clue to the peculiarities and difficulties of all puerperal diseases, and, if not borne in mind, it is impossible to understand or to manage complaints incident to parturient women.

Secondly, It is of importance never to forget the inexplicable and pernicious influence of season, or the constitution of the atmosphere, and of certain situations, as they produce and characterise the inflammatory diseases of the puerperal female. This is occasionally seen when the complaints of the lying-in room become epidemic and very unmanageable. Nothing is more common than for particular districts of large towns to be thus infested.

Thirdly, It must ever be borne in mind, that this dire disease may, and generally does, begin during gestation, from mental depression, impure air, bodily

fatigue, low living, or stimulating food, and bursts forth in its full development after the uterus has expelled its contents. Many sporadic cases of this character must be familiar to every observant practitioner, in which he has been able to connect pre-existing threatened mischief with the subsequent inflammatory action. How often does this occur in young women of previously good character, who have been seduced, and who suffer bitterly from mental despondency and broken spirits during the long and tedious months of seclusion which precede their confinement!

If the uterus be primarily affected, constituting *hysteritis*, it is manifested by severe, constant, and darting pain about the hypogastric region, greatly augmented by pressure. Constitutional excitement, with bluish-white tongue, thirst, and vomiting, are present, and the lochia become suppressed. Generally, although the inflammation begins in the uterus, sooner or later it extends to the duplicatures of the peritoneum, producing *peritonitis*, or inflammation of the peritoneal lining of the abdomen, which often exists at its commencement, independently of inflammation of the uterus, and without suppression of the lochia. Sometimes the approach of this formidable inflammation is so extremely obscure, that extensive and important disease, amounting to destruction, will elude detection. In many cases even pain is absent, or so unimportant a symptom as not to be adverted to but in common with general uneasiness, restlessness, and exhaustion; and it is only by long-con-

tinued and deep pressure that the slightest degree of suffering can be detected. This is principally the case when the disease is epidemic, and assumes a low type; while, in sporadic and phlogistic cases, either a particular part, or the entire superficies of the abdomen, will be the seat of constant, acute, and agonising pain.

Puerperal Inflammation usually seizes women within a few days, but sometimes not till some weeks, after delivery, and is ordinarily ushered in by severe rigors, though often only by horripilatio, or slight chills. The temperature of the surface is usually augmented; but, should the disease be of a typhoid character, it will be even below the standard of heat. The pulse is accelerated, though varying much in frequency, force, and fulness, being either hard and incompressible, or yielding and powerless. The countenance always expresses either anxiety or suffering; now and then, from the commencement, it puts on a distressingly saddened and apprehensive character, with severe and tensive headach. The tongue is not always white and foul: sometimes it is perfectly clean through the entire course of the malady, and amendment will follow when the tongue loses its loaded, cream-coloured appearance, and becomes brown and dry.

If the disease is not checked and subdued, it generally proceeds rapidly, and the abdomen becomes tympanitic, and swollen to a size nearly equal to what it was before delivery. From the inflamed condition of the parts, and the exquisite pain which

exists, the very weight of the hand or bed-clothes is intolerable; and, in order to endure her distress, the patient is obliged to lie on her back, with her knees bent upwards, to relax the abdominal muscles. The slightest pressure or motion greatly harasses her. The stomach is often severely affected from the first, and vomiting of green secretion is a not unfrequent attendant; regurgitation of the contents of the stomach almost always attends the disease towards its close. The bowels are constipated, but this is not uniformly the case; now and then numerous scanty and extremely offensive motions rather tease than relieve the intestines. The hepatic and intestinal secretions are not healthy. The bladder is usually affected, either with a constant inclination to empty itself, or there is a suspension of the renal functions. The secretion is turbid and high-coloured, sometimes milky, and this has been deemed a highly dangerous symptom. As the disease advances, the abdominal tumefaction augments, and great difficulty of breathing ensues. The secretion of milk, in most cases, becomes diminished, and it soon ceases altogether. The breasts are flaccid and empty, and, if the uterus was not primarily concerned, now the lochial discharge is put a stop to, in consequence of participating in the disease. If the disease proceeds in its course, all the symptoms become highly aggravated; and, at last, a deceitful remission, or a total cessation, of pain occurs, though occasionally the patient is agonised to the last; the pulse becomes extremely small, feeble, intermittent, and scarcely to be counted;

the tongue dry and brown; the countenance wild, and expressive of great distress; the skin alternately hot and cold; and the teeth covered with sordes; cold, clammy sweats break out over the whole body; the urine and the fæces come away involuntarily; the extremities are cold; and the patient, often in full possession of her intellectual consciousness, dies within four or six days from the accession of disease, —sometimes within a few hours, from the prostration of the sensorial functions, owing to inexplicable sympathy subsisting between the vital powers and the destructive process in a remote organ, however trifling may be its degree. But there is a great difference in the duration of this disease. In strictly active inflammatory cases, death occurs more distantly from the accession of the complaint, than in those cases which commence with extreme prostration of the vital powers, and rapidly assume a typhoid character.

In approaching the *management* of this insidious and formidable complaint, one is appalled and discouraged by the difficulties which press on every side. The epidemic of one season may differ essentially from the epidemic of a preceding and following year, and may, consequently, demand very different management; and it is always found that, the more generally prevalent the disease may be, the more fatal is its course. Sporadic cases are managed more successfully than those more strictly epidemic. Every case must be isolated and studied alone, and looked at by itself; and its management must depend on its type and its stage. Measures of paramount value and

of imperative necessity in one case, and at some periods of the disease, will be valueless and detrimental under other circumstances. It is very unusual for any case to preserve an unwavering uniformity of character during its entire progress; and, consequently, the treatment must vary with its exigencies: and if we expect to bring the disease to a satisfactory termination, we shall be compelled so to alter our course of proceeding as to incur the risk of being chargeable, by the novitiate and inexperienced, with vacillation and indecision.

Our treatment must be at once simple and decided: promptitude is as necessary as activity, because the curable stage rapidly passes away, — often in a few hours. Should the case be decidedly inflammatory, with a hard, unyielding, vibrating pulse, and acute constant pain, the abstraction of blood locally and generally, early and copiously, with the steady exhibition of purgatives, mercury, and opiates, constitute the remedial means on which our hopes must be suspended; all other measures being merely auxiliary and subordinate. Much depends on the early and liberal detraction of blood. One bleeding of twenty or thirty ounces within the first six hours of the attack, will accomplish more than the loss of twice the quantity in several small bleedings after twelve hours have elapsed. *Neque temere, neque timide*, should be engraven on every lancet. Blood-letting will always be in discredit in the management of inflammation of vital parts, if used with timidity, or resorted to too late. It is owing to the inefficient influence of a small bleeding, begun too late, or repeated after too long an

interval, that the natural and rapid tendency of the disease to assume a low typhoid character has been supposed to be the result, or at least to have been aggravated by this invaluable, but in these cases ill-managed, remedy. The necessity of proportioning blood-letting in all cases to the actual effect which it is observed to produce on the pulse of the patient, and on her pain, and not on any arbitrary measures of ounces, if we would do justice to our patient, and obtain the full agency of the remedy, must be the only limitation of the quantity of blood to be withdrawn, provided all that is requisite be abstracted within the first twelve or twenty-four hours of the disease.

One early and plentiful bleeding, inducing a temporary collapse of the system, will generally suffice for an acute attack of the most active kind: the *temporary debility* resulting from *such* a bleeding may be greater, but the *permanent weakness* is certainly less. Fainting is very desirable in the abstraction of blood in this, and, indeed, in all inflammatory diseases, because it implies an almost entire cessation of circulation. This is most readily accomplished by having our patient's head raised, preserving the body in a recumbent posture, and by suddenly drawing away blood from a large orifice, or permitting it to flow from two veins at the same time. It will thus be found that the abstraction of a less quantity of blood will be required for every stage of this disease, superseding the practice of small and repeated bleedings, which exhaust the strength as much as the original excitement, and inevitably accelerate the fatal

termination of our patient's sufferings. Still, blood-letting is not allowable beyond a certain extent, and must not be repeated when the danger of organic mischief has disappeared, or general exhaustion rapidly ensues. Immediate depletion may produce a universal and irrecoverable suspension of the vital principle, or at least leave a vacillating state of the circulation, or a hurried re-action of the heart and arteries, or congestion of the venous system, or effusion of serum; thus instituting a disease almost as dangerous as the one removed. The application of leeches to the abdomen, and cupping from the loins, are adjuvants of considerable value; and especially when some dregs of inflammatory disease may remain after copious general bleeding.

Yet there are, unquestionably, very many cases so modified by constitution, by season, and by other circumstances above noticed, and which run so rapidly towards a state of collapse, that the abstraction of blood from the arm is tantamount to signing the death-warrant of the patient, especially in inflammation of the subperitoneal tissues. It is in these cases, and they are by far the most numerous in and about the metropolis, that *local bleeding* by leeches is an invaluable remedial measure. While *general* bleeding diminishes the force of arterial action, *topical* bleeding unloads and relieves the capillary vessels. When copious and general bleeding is inadmissible and injurious, fifty or a hundred leeches should be applied to the abdomen; and this will scarcely ever be done without sensible relief, — often to such an extent

that the poor woman will again and again solicit their re-application. In the epidemic and typhoid form, this is often the only allowable method of abstracting blood; and in every stage of this unmanageable disease, even when effusion is manifest and death is inevitable, leeches will smooth the ruggedness of the path. The bleeding may be encouraged by a large, soft, warm poultice.

Considerable benefit will result from the application of a *blister* over the entire abdomen, when topical bleeding is no longer advisable; and sometimes very marked relief will be afforded, on the principle of revulsion or counter-irritation, by repeatedly covering the bowels with flannel dipped in hot oil of turpentine. This may be used every six hours, for ten minutes each time, until high erythematous efflorescence takes place.

Immediately after bleeding, the most effectual means of emptying the bowels must be had recourse to, so that an evacuation once in three or four hours may be obtained for two or three days, or longer if necessary. The existence of diarrhœa, which is sometimes attendant on this disease, must not prevent the exhibition of purgatives, because the fæces are scybalous, slimy, and fœtid; such only keep up an incessant irritation in the abdomen, which will be best remedied by cathartics. *Saline purgatives* do not appear to be well adapted to this disease. They produce irritation and distention, and lead the unwary to suspect inflammation. They seem to accelerate the peristaltic action of the bowels, discharg-

ing frequent and watery stools, while the hardened scybala, in the arch and head of the colon, remain unmoved by their operation.

A full dose of *calomel*, say a scruple, or half a drachm, with or without jalap, or jalap in cinnamon water, with a little citric acid, may be exhibited. If jalap be not combined with the calomel, castor oil should be given an hour or two after it. By these means we shall completely unload the intestinal canal of its contents, allaying irritation in its course.

Perhaps *oil of turpentine*, in all cases not admitting of much reduction of power, is the best purgative that can be given. It can be combined with castor oil and laudanum; and by this combination we shall freely unload the intestines, and produce gentle excitement and a healthy action of their mucous coat. In those alarming cases of *spasm* of the uterus and large intestines, which are constantly being mistaken for puerperal inflammation, this combination will act as a charm. It is principally, if not exclusively, useful in those cases in which great tympanitic distention exists.

Purgative and emollient clysters are decidedly beneficial, and fomentations of the abdomen are always found to be soothing and useful.

Opiates combined with mercurials are invaluable. Opium used to be thought to afford only an insidious truce, and rather tend to obscure and prolong the disease than to contribute to its subjugation. Great dependence may be placed on large doses of opium and calomel in all cases, after bleeding and purging.

They must be exhibited in such doses as will make a decided impression on the sensorial functions, and speedily bring the constitution under the specific influence of mercury; and when we succeed in doing this, the case will generally assume a favourable character.

Camphor in scruple doses, combined with opium, will be found a very efficient anodyne in cases of great restlessness, with comparatively little acute suffering; particularly if hystericalgia exists.

Digitalis, *nitrate of potass*, *ippecacuanha*, and *antimony*, are of great value as adjuvants, but cannot be exclusively relied upon, because irreparable mischief may take place while waiting for their operation. The *infusion* of *digitalis* is most speedy in its influence, most decided in its effects, and most capable of being controlled in its operation.

[Used in a *specific sense*, I consider the term *puerperal fever* far less vague than that of *puerperal inflammation*, which implies any and every inflammatory lesion that may occur after labour, whether arising from a specific or any other cause. *Puerperal fever* is a peculiar disease, distinct from puerperal peritonitis (although very often complicated with it), arising sporadically or epidemically, and induced, most probably, by a vitiated state of the blood consequent on the absorption of an animal poison.

Puerperal fever is one of the most distressing and fatal diseases to which women are liable. It would be out of place for me to enter into a consideration of

the various views which have been adduced respecting its pathology ; a lengthened treatise would be required for the purpose. I shall merely subjoin a few remarks based on my own experience, which differs in a few particulars from that of the author.

It would appear that the poison which induces puerperal fever is derived from a variety of sources ; it may not only be engendered by the same poisons which produce erysipelas and scarlet fever, but by those which occasion the majority of zymotic diseases ; that it may, in fact, be developed by any animal poison.

One of the worst cases I ever met with occurred in a lady who had been delivered the day after her attendant had examined the body of a patient who had died from an accidental cause. This, and many other cases on record, show the propriety of interdicting students who are immediately engaged in dissections from attending to midwifery cases ; when this is impracticable, they should be strictly enjoined to thoroughly cleanse their hands with a solution of chlorine previous to making any vaginal examination. This practice was adopted at Vienna by Dr. Semelweiss with the best effects.

Granting that puerperal fever is a blood disease, the heroic plan of treatment recommended by many high authorities must not be adopted as a general rule. General bleeding has, no doubt, been of occasional use in the sthenic form of the disease. The remedies which I have found of most service are—local depletion, *opium in frequent doses*, calomel, and the

internal administration of oil of turpentine combined with castor oil.

The consecutive inflammation of the serous membranes is best met by *the reiterated application* of blisters. Should diarrhœa arise, it ought not to be hastily interfered with, as it sometimes acts beneficially, forming, as it were, a natural outlet for the materies morbi.

The tendency to inflammation during the puerperal state is, very probably, owing to the highly fibrinous condition which obtains during that period. This fact suggests the propriety of giving those remedies which have the power of altering the state of the blood. I should, therefore, recommend the free use of *nitrate of potass*, a remedy which is said to have the power of defribinising the blood to a remarkable extent. This medicine could be safely given in those inflammatory forms of puerperal fever, accompanied by great debility, in which general bleeding could not be had recourse to.

In an interesting article, published in the "British and Foreign Medical Review" for Oct. 1853, the author infers, from statistical returns, that the mortality, even in small lying-in hospitals well appointed and in healthy districts, is much greater than that which obtains when women are confined at their own habitations, be they ever so wretched.

Affections of the joints occasionally occur as a consequence of puerperal fever, and are almost invariably fatal. They are frequently associated with distractive inflammation of the eye. In these cases, pus is

deposited in the joints and occasionally in the muscles of the arms, legs, or back. For a particular account of these affections, we beg to refer to Mr. Coulson's valuable work on "Diseases of the Hip Joint, with Observations on Affections of the Joints in the Puerperal State." — J. M. W.]

Ephemera, or Sympathetic Fever.

In consequence of the debility and irritability of the constitution which often exist for some time after labour, the nervous and vascular systems are excited by causes which, under ordinary circumstances, would produce no disturbance. This febrile excitement is usually of such short duration as to have obtained the term *Ephemera*, or *Weed*. A little careful investigation will generally detect some source of irritation in the alimentary canal, or in the breasts; and on the removal of the cause the effect speedily ceases.

It is of considerable importance not to confound these transitory attacks of fever with those more severe febrile paroxysms which indicate the existence of local inflammation.

Miliary Fever.

Since the "heating and sweating system" of managing puerperal women has given way to a cool and less stimulating regimen, what is termed "Miliary Fever" is but seldom met with. Whenever it does occur in practice, it will be found associated with excessive perspiration, produced by an accumulation of

heat, and by liberal indulgence in hot drinks and stimulating diet. That this opinion is correct, may be inferred from the success which follows the exhibition of a few doses of some saline purgative, with cooling diet, and the free admission of pure cold air.

The eruption which constitutes the disease (the consequence of the excessive action of the cuticular vessels) consists of innumerable minute vesicles, about the size of millet seeds, surrounded by rose-coloured bases, generally confined to the face, neck, and back, but occasionally diffused over the trunk and extremities.

Sometimes the cuticular vessels are left in so unhealthy a condition as to require the exhibition of the mineral acids for some time.

*Phlegmasia Dolens, and Uterine Phlebitis.**

In some women, within a few days after delivery, one of the lower extremities takes on a peculiarly glabrous, hot, white, unyielding enlargement. It is termed *œdema puerperarum*, or *phlegmasia dolens*, or the *white swelling of lying-in women*, and *uterine phlebitis*. The pain and swelling of the extremity is usually preceded by a heavy and distressing sensation in the loins and upper part of the thigh or calf of the leg, and in the labium of the affected side.

[*Phlegmasia dolens* seldom comes on before the twelfth day. I have recently attended a case which

* Vide the valuable monographs of Drs. Davis and Robert Lee, in the *Medico-chirurgical Transactions*.

did not supervene until the twenty-first day. It is, therefore, probably quite a distinct disease from uterine phlebitis, which generally shows itself at a much earlier period. — J. M. W.]

The constitution soon becomes disturbed by all those symptoms which attend or follow febrile excitement.

After a few days, the morbid heat, hardness, and sensibility of the limb diminish, leaving it in a state of œdema, which, by degrees, subsides, though in some instances very slowly, and in rare cases terminates in suppuration.

This disease consists in inflammation and obstruction of the iliac vessels, lymphatic glands, and vessels of the pelvis, groin, ham, and every other part of the enlarged extremity.

[Many facts tend to militate against Dr. R. Lee's notion that phlegmasia dolens is merely an extension of uterine phlebitis. In 1852, I met with a case, in which the disease was exclusively confined to an *upper extremity*. Since then, Dr. Mackenzie has related at the Medico-chirurgical Society an instance of the disease occurring simultaneously in the upper and lower extremities.

Dr. Mackenzie tried, by way of testing Dr. Lee's theory, to induce a disease similar to phlegmasia dolens in the veins of animals. He applied a variety of irritants, but in no instance could he succeed: he therefore comes to a conclusion, to which I am inclined to assent, that the peculiar condition of the veins, nerves, and areolar tissue in this disease is not

the result of the extension of uterine phlebitis, but that it is owing to a morbid condition of the blood.

Dr. Locock recently mentioned at the Medico-chirurgical Society a singular instance of hereditary tendency to the disease. Four daughters of a nobleman who had suffered from the disease, were all attacked with the same affection after their first confinements. — J. M. W.]

Treatment. —Leeches should be applied as speedily as possible to the groins, and the abstraction of blood by their repeated application must be regulated by the urgency of the symptoms. The inner part of the thigh, and of the calf of the leg, should have small blisters applied as soon as active disease begins to subside. The bowels must be kept steadily acted upon by saline purgatives, and some determination may be given to the skin by diaphoretics. A combination of opium, ipecacuanha, or antimony, and the sub-muriate of mercury, may be advantageously exhibited at bed-time, and the limb is to be fomented with *tepid* water several times daily.

When the extremity has lost its morbid heat and sensibility, and remains cold and œdematous, its restoration to a healthy condition may be accelerated by the regular employment of a stimulating embrocation, or even by simple friction, together with the habitual use of a thin flannel roller, well applied from the toes to the groin.

During the progress of the cure, even in the most advanced or inactive stage of the disease, much benefit will be derived from the occasional administra-

tion of purgatives, and such medicines and regimen as will invigorate the enfeebled and constitutional powers.

Puerperal Insanity.

That disturbance of the functions of the brain which constitutes either mania or melancholia, is one of the most interesting of the diseases which attack puerperal women. It usually occurs in females of extreme sensibility, whose mental or physical powers dispose them to be inordinately influenced by causes which would scarcely affect other women, or even themselves, but for the susceptibility to disease, and the peculiarity of condition consequent to delivery.*

When mental alienation follows parturition within a few days, it is in the form of mania; but when it occurs some months afterwards, during lactation, it usually appears as melancholia.

Its duration is uncertain, for, although it generally disappears very soon, sometimes several months will elapse without any mitigation of the symptoms; nevertheless, in most instances women eventually recover, although occasionally the disease has deprived the patient of life, or the aberration of intellect has been permanent.

Insanity having once attacked a puerperal woman, does not leave her greatly disposed to its recurrence

* This fact is remarkably exemplified on the occurrence of diarrhoea, or of any exanthematous disease, which becomes so modified and aggravated by the puerperal state as very often to terminate fatally.

in subsequent confinements, and much may be done to prevent it, by avoiding all circumstances calculated to produce mental emotion, or cerebral excitement, especially such as may have induced the former attack, and by strict attention to the state of the digestive apparatus.

The paroxysm is not always sudden in its approach, and is manifested by monosyllabic answers to questions, and by mental delusions, which are particularly exhibited after disturbed sleep. There is usually extreme irritability and restlessness, the pulse is somewhat accelerated, the tongue furred, the skin hot, the bowels costive, and the urine and milk in diminished quantities.

The *management* of puerperal insanity resolves itself into what may be designated the *moral* and the *physical* treatment. The patient should always be under the control of a nurse accustomed to the insane, and her moral treatment should combine the greatest mildness with inflexible firmness. When the mind begins to return to its former state, change of scene and society, with cautious renewed intercourse with valued friends, may be permitted.

The physical treatment should have reference principally to *three* objects: to diminish vascular excitement; to remove irritation from the stomach and intestines; and to subdue nervous irritability. The *first* object may be obtained by leeches to the temples; by cold applications to the head; and by a blister between the shoulders. The *second*, by emetics and aperients, and these should be of an active character.

The *third*, by large doses of camphor combined with henbane, or some other narcotic.

[*Puerperal mania* must not be confounded with the temporary delirium which supervenes during a painful labour, nor with that which, not unfrequently, accompanies the most fatal kind of puerperal fever. The maniacal form of puerperal insanity rarely occurs *before* the third, or *subsequent* to the fourteenth, day after delivery. It may come on suddenly, but its accession is often marked by premonitory symptoms. The earliest indications are restlessness, an anxious expression, peevishness, slight incoherence, and extreme talkativeness. Sometimes there is an opposite condition in which the patient is taciturn and listless. As the disease advances, all the symptoms become aggravated, and the patient's mind is occupied with various delusions. She often expresses a hatred towards her husband or child, and frequently utters oaths and obscene language. A tendency to suicide is very common; and the persistence of extreme watchfulness is often one of the most inveterate symptoms. Sleeplessness will often continue for nights together, and resist the influence of the most powerful narcotics.

Hereditary tendency is the most frequent predisposing cause of puerperal mania. Out of 111 cases occurring at Bethlehem Hospital, 45 were hereditary.

Under proper treatment, the disease is generally remediable. Fatal cases, however, occasionally occur. When the complaint terminates fatally, death

usually takes place within seven or eight days after the onset of an attack.

Puerperal mania is probably the result of extreme irritability of the brain associated with great nervous exhaustion. Antiphlogistic treatment is, therefore, contra-indicated. A few leeches may be employed to allay the crethism of the brain, but on no account as a depleting measure. A nourishing diet is always required, and stimulants will often be found useful.

Puerperal melancholia is generally the result of undue lactation. In this form of insanity there is an anæmic condition of the system combined with emaciation. The patient is depressed, listless, giddy; her mind is confused and dejected, and she complains of a sinking sensation at the pit of the stomach. There can be no question as to the propriety of weaning and of administering tonics in *this* form of the complaint.

In both forms of insanity the inhalation of chloroform will be found of service to allay excitement, should ordinary measures fail to give relief.

On removing the patient to an asylum.—Although this step has been condemned, we have no hesitation in urgently recommending it in those cases which occur in the humbler walks of life, provided the disease does not quickly subside under home-treatment. For rich patients it may not always be necessary: they can obtain a quiet residence, all the comforts, and many of the advantages of an asylum. Not so, however, with the poor. Confined, perhaps, to a close room, in a narrow and noisy

street, insufficiently nourished and badly nursed, the poor patient is cut off from all hope of a cure. For cases of this description an asylum offers the only chance of recovery.

Some excellent observations on puerperal mania will be found in Nos. 1, 2, and 5, of the "Psychological Journal." — J. M. W.]

Laceration of the Perineum.

This accident is met with in every degree, from the mere rupture of the frænum labiorum, to a destruction of continuity, not only throughout the whole length of the perineum, but of the parietes of the lower part of the rectum and vagina, so as to lay the two passages into one. The slightest degree of the accident is very common in first labours, and is a circumstance of no importance; but when the sphincter ani is completely divided, the woman is ever afterwards incapable of retaining her fæces.

Sometimes this melancholy occurrence is unavoidable, but most commonly it is referable to negligence. It may occur occasionally notwithstanding the best management, and that even in *natural labour*, if the os externum be small and rigid, the head of the child large, and the pains very powerful; but sometimes it may be traced to mismanagement of the forceps, particularly if the instrument be constructed without the curve of the shank; or to the omission of necessary support of the perineum, as the head is excluded from the vagina.

If the laceration be trifling in its extent, approximation of the parts, by binding the knees together, with poultices and cleanliness, will generally effect a cure; and if the mischief be more extensive, these are the only means that are admissible at the time of the accident. At some remote period the callous surfaces may be removed by a scalpel, and the cure effected by an operation similar to that performed for the cure of hare-lip.

[When the laceration is extensive and deep-seated, the plan recommended by Mr. J. Baker Brown offers the best chance of success. His mode consists in making a deep incision, three-quarters of an inch, on each side of the rupture, and completely into the vagina. The divided portions of the mucous membrane are to be effectually removed. A portion of the membrane which embraces the rectum, in the intermediate space, is also to be detached. The next stage of the operation is to divide the sphincta on each side of the os coccygis: this is a most important part of the proceeding, and must be effectually performed. The sutures are then to be passed deeply on each side. The sutures must be double, so as to permit the passage of a piece of elastic bougie through them on each side. Mr. Brown thinks twine preferable to silk, as it is not so likely to excite suppuration. After the operation, opium must be freely given, in order to keep the parts in a quiescent state. — J. M. W.]

Effusion of Blood within the Labia.

Now and then blood is effused within the cellular tissue of the labia during labour, and, as a consequence of this, there will be a considerable tumefaction and inflammatory action, which, if not subdued, terminates in suppuration. Should the accident be detected early, a small puncture would permit the effused fluid to escape; but, if this has been omitted, the labia should be poulticed, and, if necessary, when the suppurative process is completed, the abscess must be opened at the most depending point.

Sloughing of the Vagina and contiguous parts.

From long-continued pressure of the head of the child in the vagina, and as a consequence of mischief done by the *abuse* of instruments, inflammation, and subsequent sloughing of parts, may either lay the vagina and rectum into one passage, or form a communication between the vagina and bladder. This is a very deplorable sequel of the pangs of child-bearing, and, if not well managed, renders the unhappy patient an offensive burden to herself and to every one with whom she may associate. Whenever this destruction of parts is suspected, from the escape of fæces or urine per vaginam, or from an incessant stillicidium urinæ, the bladder and rectum should be examined by a catheter. It is of primary importance that this condition of things be discovered early, because, if suitable measures be adopted soon after the accident,

and assiduously persevered in, a cure may sometimes be effected; but, at all events, much may be done by mechanical contrivance towards the comfort of the unfortunate woman.

The same means are to be employed, whether we have reason to hope for a cure, or whether we limit our expectations to mere alleviation. They consist in the application of some mechanical contrivance, which, being fixed in the vagina, closes the unnatural opening into the bladder or rectum; and in strict attention to preserve these organs (especially the bladder) always empty.

To accomplish these desirable objects, a hollow gum elastic bottle should be judiciously selected, corresponding in its size to the dimensions of the vagina. To that part which, on its introduction, will cover the artificial opening, a thin piece of sponge is to be fastened, by which contrivance the aperture is closed, and a constant easy pressure kept up against its edges. In addition to this, if the rectum be the injured organ, it must be emptied twice a day by clysters; but if the bladder, the woman should as constantly as possible sit up, whether asleep or awake, and always preserve the organ empty by wearing a very short catheter, which must not enter the bladder more than half an inch, so that the urine will escape immediately on its dropping from the ureters.

[*Cases of vesico-vaginal fistula* must not be abandoned as hopeless. Instances are on record in which cures have been effected when the lesions have not only been extensive, but deep-seated. Mr. Baker

Brown, of St. Mary's Hospital, has been eminently successful in the management of these cases. Through his courtesy, I have lately had the satisfaction of seeing him operate on two extremely severe cases, and I am pleased to learn that they are likely to be completely successful. In one instance, the fistulous opening, which was originally the size of a sixpence, is already reduced to the dimension of a pin's head.

Mr. Brown's plan consists in making a longitudinal incision through the mucous and cellular coats of the bladder on each side of the fistula. This is done with a view of relieving tension, a mode of proceeding which has been found of service in the operation for cleft palate. The next step in Mr. Brown's operation is either to apply the actual cautery to the opening or to pare the edges of the fistula. When the cautery is not used, Mr. Brown draws the sides of the wound together by silver ligatures, the end of which he fastens by means of split shot.

Recto-vaginal fistula. — This affection is more easily remedied than the former lesion, and is to be cured by the same means which have been recommended for that complaint. — J. M. W.]

Retention of Urine.

The bladder often refuses to perform its office correctly after protracted labour, and, although it occasionally manifests considerable irritability, it more commonly exhibits a loss of contractile power, in con-

sequence of which the urine escapes *guttatim*, or is altogether retained. As a consequence of the long-continued pressure between the head of the child and the pubes, the urethra, or the neck of the bladder, loses its tone, and sustains a temporary paralysis. Usually, this state of parts disappears spontaneously in a few days, during which time it is necessary to introduce the catheter night and morning. Should there be no *ardor urinæ*, or any other evidence of inflammation, *spiritus ætheris nitrici* in the dose of one drachm, three or four times daily, will aid the restoration of the bladder to the healthy discharge of its function. When the case continues for any length of time, *tinctura ferri sesquichloridi*, or *tinctura cantharidis*, may be administered with advantage.

In some instances, the retention may be traced to the partially contracted uterus pressing on the neck of the bladder. Such cases merely require for their relief that the heavy uterus should be elevated twice a day, by the introduction of one or two fingers into the vagina.

Inflammation of the Breasts.

Taking cold is generally believed to be the cause of what are termed "milk abscesses," or "broken breasts;" but that which most commonly produces inflammation of these delicate and irritable organs is, *over-distention of the lactiferous tubes*.

Whenever the nipples become tender, or when, from negligence, these tubes become much distended

from milk, inflammation is very apt to occur, and, if this be not speedily subdued, suppuration will follow. Provided the nipples be not sore, inflammation of the breasts may generally be traced to mismanagement, and will but seldom take place if the secretion of milk be invited early, by permitting the infant to suck within a few hours after delivery, and by repeating this act frequently, that the breasts may be gradually and frequently emptied. Besides this, whenever the secretion is excessive, the bowels should be opened several times daily, by some saline purgative; the quantity of *fluids* taken into the stomach should be as small as possible; the breasts should be gently rubbed by the nurse for some time every few hours; and if, notwithstanding these measures, the lactiferous tubes continue to be inordinately filled, they must be occasionally emptied by some one of those numerous contrivances which, acting on the principle of exhaustion, unload the distended organs.

Occasionally the best concerted means fail, and inflammation ensues, demanding the prompt application of leeches and evaporating lotions, recumbent position of the body, with steady perseverance in the employment of the measures already suggested. It is but seldom that suppuration can be prevented, and when once throbbing, with diminution of pain, and tumefaction, indicate the formation of matter, anodyne poultices and fomentations should be substituted; and as soon as fluctuation is perceptible, a lancet must be passed into the abscess, or else the integu-

ments above it will slough, and leave a foul ulcer, which will be healed with difficulty.

[It is highly important that the inflamed breast should be constantly supported. Lint moistened with warm water and covered with oiled silk is a better remedy than a poultice. If a troublesome sinus should remain after the abscess has been opened, it may be stimulated by a weak solution of nitrate of silver. If this fail, a seton may be passed through the sinus and allowed to remain until the discharge is diminished or its quality improved. The system must, at the same time, be supported by tonics and a generous diet. — J. M. W.]

If tenderness, and superficial ulceration, or fissures of the nipples, be the exciting cause of the inflammatory action, it is of considerable importance that they be closely attended to; for, amongst the complaints of puerperal women which do not actually endanger their lives, there is perhaps no one more painful and harassing than *sore nipples*: and it is as well for the patient, as for the medical attendant, that there exists a long catalogue of applications which are adapted to this vexatious and intractable disease, for not one of them will always succeed. Already several remarks have been made on this subject, which bear principally on the prevention of this state of nipples. Sometimes, merely washing the papillæ with port wine, or equal parts of brandy and water, will diminish their sensibility and harden them. These objects may also be secured, and superficial ulcerations healed, by a solution in distilled water of the sul-

phates of zinc, or copper, or alum, or nitrate of silver, of such strength as will, upon application, produce a slight degree of pain. But if the nipples be extremely sensible, the application of *almond* or *palm oil*, or of the *mucilago acaciæ*, or of the *albuminous part of an egg*, frequently applied by means of a camel's hair pencil, will act as a defence, and facilitate the re-establishment of the healthy condition of the nipples.

[It is highly expedient that a system of hardening the nipples should be adopted many months before delivery. This may be effected by washing them daily with brandy, tincture of myrrh, or salt and water.

The nipples may be often kept intact by squeezing, drying, and sprinkling them with arrow-root after each application of the infant to the breast. — J. M. W.]

OF ASPHYXIA, OR SUSPENDED ANIMATION AT BIRTH.

To understand the cause of Asphyxia in new-born infants, it must be borne in mind that the placenta supplies to the fœtus in utero the want of respiration. If by pressure on the umbilical cord, or by detachment of the placenta, the fœtus is deprived of the natural supply of blood before respiration commences, it is in the condition of an adult deprived of atmospheric air.

Nothing can be more criminal than the conduct of some persons, who permit what are termed *still-born* children to be laid aside as dead, without making any efforts to ascertain whether the vital principle be extinct, or whether animation be merely suspended.

Several very interesting and well-authenticated instances are recorded of infants born apparently dead, who, by persevering exertions, have been resuscitated, although for nearly two hours after birth the evidences of vitality were so indistinct as to leave it doubtful whether or not they existed. Nothing less than sensible proof of absolute death should be deemed a justification of abandonment of a still-born child: and if these evidences of its death be wanting, all the usual methods of restoring suspended animation should be had recourse to, and persevered in for at least half an hour; for, even should there be no prospect of success, the attempt is always pleasing to the parents of the infant, and satisfactory to a feeling mind.

Whenever, then, a child is still-born from compression of the funis, from long-continued pressure of the cranium; from labour, protracted by a small or distorted pelvis; from feebleness; or any other cause, by the insertion of a curved silver tube into the trachea (without which no medical man should ever go to a labour) respiration should be imitated by alternately inflating the lungs, and expelling the air by pressure on the abdomen and thorax. In addition to this, friction about the region of the heart, the soles of the feet, and nostrils must be employed,

and some gentle cordial or stimulant should be exhibited.

Should the circulation in the funis have ceased, no possible advantage can arise from deferring the separation of the child from the mother; but, should the pulsation be going on feebly, without respiration having commenced, it may be well not to divide the funis until the child decidedly breathes or cries.

The funis of a still-born child never ought to be tied immediately, because it will be often found that feeble, and laborious, and even suspended respiration (not unfrequently the consequence of long-continued pressure of the brain) will be changed to perfect and regular breathing, by permitting a drachm or two of blood to flow.

A warm bath is improper, because, independently of its depressing influence on the muscular and nervous systems, it deprives the surface of the body of the stimulating power of the atmospheric air, the oxygen of which, acting on the extremities of the nerves of the skin, greatly assists in carrying on the functions of life.

[Dr. Radford has strongly recommended *Galvanism* as a means of resuscitating asphyxiated infants, and there is every reason to suppose that it will prove a valuable adjunct to other remedies.—J. M. W.]

I N D E X.

- Abdomen, pendulous, 127.
Abortion, 83.
Anchylolysis of the os coccygis, 127.
Asphyxia in new-born infants, 316.
- Bladder, irritation of the, during pregnancy, 77.
 distention of the, 126.
Breasts, inflammation of the, 313.
Breech, presentations of the, 189.
- Cæsarian operation, the, 179.
Cardialgia, 74.
Catheter, directions for introducing the, 23.
Cephalotomia, 163.
Cephalotribe, the, 179.
Chloroform, use of, in labour, 253.
Conception, 52.
Constipation during pregnancy, 76.
Convulsions attending labour, 218.
Corpora lutea, 34.
Craniotomy forceps, 163.
 application of, 178.
Crotchet, the, 167.
 application of, 177.
- Dietetic treatment of mother and child after delivery, 258.
Dysmenorrhœa, 46.
Ear presentations, 157.
Elbow presentations, 200.
Emansio mensium, 42.
Face presentations, 153.

- Feet, presentation of the, 186.
- Fever, puerperal, 297.
 ephemeral, 300.
 miliary, 300.
- Fistula, vesico-vaginal, 311.
 recto-vaginal, 312.
- Fœtus, description and dimension of the fœtal head, 16.
 fœtal structure and peculiarities, 59.
 circulation, 62.
 spontaneous evolution of the, 200.
- Forceps, short, 134.
 directions for applying, 140.
 long, 159.
 Dr. Conquest's craniotomy, 163.
 Ferguson's, 166.
- Forehead presentations, 156.
- Funis umbilicalis, 58.
 preternatural shortness of the, 126.
 presentations, 201.
- Galvanism in labour, on the use of, 120.
 as a means of resuscitating asphyxiated infants, 318.
- Gastrotomia, 251.
- Generation, organs of, structure and functions of, 20.
- Hæmorrhoids, 75.
- Hand presentations, 194.
- Head, pain in the, during pregnancy, 74.
- Hook, blunt, 169.
- Hydatids, 215.
- Hysteria during labour, 125.
- Insanity, puerperal, 304.
- Instruments, obstetric, classification and description of, 131.
 short forceps, 134.
 application of, 140.
 vectis, 144.
 long forceps, 159.
 craniotomy forceps, 163.
 application of, 178

- Instruments, crotchet, 167.
 application of, 177.
 blunt hook, 169.
 perforator, 170.
 application of, 176.
 catheter for replacing the funis, 202.
- Labia, effusion of blood within the, 310.
- Labour, classification of, 89.
 stages of, 91.
 symptoms preceding, 94.
 accompanying, 95.
 natural, 98.
 preternatural, 112.
 galvanism in, 120.
 retardation of, from mental emotion, 125.
 embarrassment of, from hysteria, 125.
 protracted, 129.
 production of premature, 182.
 with plurality of children, 205.
 attended by convulsions, 218.
 with uterine hæmorrhage, 226.
 use of chloroform in, 253.
- Lochial discharge, 274.
- Mennorrhagia, 48.
- Mensium, emansio, 42.
 suppressio, 44.
- Menstruation, premature, 41.
 painful, 46.
 immoderate, 48.
- Mental emotion, retardation of labour from, 125.
- Moles, 216.
- Monsters, 214.
- Edema of cervix uteri, 123.
- Os coccygis, anchylosis of the, 127.
- Os uteri, rigidity of the, 122.
 descent of, before the head, 124.
- Osteotomist, the, 179.

- Ovaria, 33.
Ovariectomy, 35.
Ovum, description of the, 53.
- Parturition, 89.
 general observations on, 91.
- Pelvis, structure of the, 1.
 ligaments of the, 6.
 uses of the, 7.
 dimensions of the adult female, at its brim, cavity, and outlet, 7.
 axes of the, 11.
 deformed pelves, 12.
 mensuration of the, 15.
 distinctions between the male and female, 16.
 want of room in the, 127.
- Perforator, 170.
 application of, 176.
- Perineum, laceration of the, 308.
- Phlegmasia dolens, 301.
- Placenta, 55.
 management of the, 107.
 prævia, 229.
- Pregnancies, extra-uterine, 212.
- Pregnancy, evidences of, 66.
 duration of, 72.
- Presentation of the vertex, 147.
 face, 153.
 forehead, 156.
 ear, 157.
 feet, 186.
 breech, 189.
 hand, 194.
 elbow, 200.
 funis, 201.
- Puerperal diseases, 276.
 inflammation, 280.
 insanity, 304.
- Secale cornutum, remarks on the, 117.
- Speculum uteri, 51.

- Superfœtation, 211.
Suppressio mensium, 43.
Symphysis pubis, division of the, 182.
Syncope, fatal, 276.
- Turning, operation of, 191.
- Urine, retention of, 312.
Utero-gestation, duration of, 72.
 phenomena and diseases of, 72.
- Uterus, unimpregnated, structure, &c. of the, 26.
 appendages of the, 32.
 ovaria, 33.
 corpora lutea, 34.
 physiology of the unimpregnated uterus, 38.
 speculum uteri, 51.
 gravid uterus, 65.
 retroversio uteri, 80.
 malposition of the uterus, 124.
 evidences of the death of the child in utero, 172.
 hæmorrhage of uterus during labour, 226.
 laceration of, during labour, 248.
 inversion of, 278.
 phlebitis of, 301.
- Vagina, the, 26.
 examination per vaginam, 92.
 laceration of, during labour, 248.
 sloughing of the, and of the contiguous parts, 310.
- Vectis, or lever, the, 144.
Vertex presentations, 147.
Vesiculæ Graafianæ, 34.
Vulva, 22.

THE END.



LONDON :
A. and G. A. SPOTTISWOODE,
New-street-Square.

NEW WORKS

IN

MEDICAL, SURGICAL, SCIENTIFIC,

AND

GENERAL LITERATURE.

	<i>£</i>	<i>s.</i>	<i>d.</i>
Miss Acton's Modern Cookery Book, fcp. 8vo. Plates, &c. - - -	-	0	7 6
Adams's Anatomy and Diseases of the Prostate Gland, 8vo. - - -	-	0	5 0
Ancell's Treatise on Tuberculosis, 8vo. - - -	-	1	1 0
Annesley's Researches on the Diseases of India, 8vo. - - -	-	0	12 0
The Artisan Club's Treatise on the Steam Engine, 4to. - - -	-	1	7 0
Balman On Scrofulous Diseases of the External Lymphatic Glands, 8vo.	0	7	6
Beck's Elements of Medical Jurisprudence, 8vo. - - -	-	1	1 0
Bird's Lectures on Electricity and Galvanism, fcp. 8vo. - - -	-	0	5 6
Birkett on Diseases of the Breast and Mammary Gland, 8vo. - - -	-	0	12 6
Black's Practical Treatise on Brewing, 8vo. - - -	-	0	10 6
Blaine's Canine Pathology, by Mayer, 8vo. - - -	-	0	7 6
——— Compendium of the Veterinary Art, New Edition, by Mayhew, 8vo. - - - - - - - - -			<i>In the Press.</i>
Blair and Davy on the Yellow Fever of Guiana, 8vo. - - -	-	1	1 0
Bowman's Lectures on the Parts concerned in Operations on the Eye, 8vo. - - - - - - - - -		0	6 0
Brande's Dictionary of Science, Literature, and Art, 8vo. - - -	-	3	0 0
Brewster's Treatise on Optics, fcp. 8vo. - - -	-	0	3 6
Brodie's Lectures illustrative of Pathology and Surgery, 8vo. - - -	-	0	12 0
——— Physiological Researches, 8vo. - - -	-	0	6 0
——— Observations on Diseases of the Joints, 8vo. - - -	-	0	10 6
——— Lectures on Diseases of the Urinary Organs, 8vo. - - -	-	0	12 0
Bull's Hints to Mothers (Pregnancy, Lying-in, &c.), fcp. 8vo. - - -	-	0	5 0

London: LONGMAN, BROWN, GREEN, and LONGMANS.

	£	s.	d.
Bull's Maternal Management of Children, fcp. 8vo.	-	-	0 5 0
Burrows On Disorders of the Cerebral Circulation, 8vo.	-	-	0 10 6
Catlow's Popular Conchology, New Edition, fcp. 8vo. Woodcuts			<i>In the Press.</i>
Conquest's Outlines of Midwifery, edited by Dr. J. M. Winn, fcp. 8vo.			
Woodcuts.			
Cooper's First Lines of Surgery, 8vo.	-	-	0 18 0
————— Surgical Dictionary, 8vo.	-	-	1 10 0
Copland's Medical Dictionary, Vols. I. and II. 8vo. each	-	-	1 10 0
Cust's (Lady) Invalid's Own Book, fcp. 8vo.	-	-	0 3 6
De la Rive's Treatise on Electricity, Vol. I. 8vo.	-	-	0 18 0
Donovan's Treatise on Chemistry, fcp. 8vo.	-	-	0 3 6
————— Domestic Economy, 2 vols. fcp. 8vo.	-	-	0 7 0
Elliotson's Human Physiology, 8vo.	-	-	2 2 0
Faraday's Lectures on the Non-Metallic Elements, by Dr. Scoffern, fcp.			
8vo.	-	-	0 5 6
Field's Veterinary Records, 8vo.	-	-	0 8 0
Henslow's Descriptive and Physiological Botany, fcp. 8vo.	-	-	0 3 6
Herschel's Preliminary Discourse on Natural Philosophy, fcp. 8vo.	-	-	0 3 6
————— Treatise on Astronomy, fcp. 8vo.	-	-	0 3 6
————— Outlines of Astronomy, with Plates, &c. 8vo.	-	-	0 18 0
Holland's (Sir H.) Chapters on Mental Physiology, 8vo.	-	-	0 10 6
————— Medical Notes and Reflections, 8vo.	-	-	0 18 0
————— (J.) Treatise on Manufactures in Metal, 3 vols. fcp. 8vo.	-	-	0 10 6
Hooker's (Sir W. J.) Kew Guide, 16mo.	-	-	0 0 6
————— British Flora, 12mo. 14s. plain; or with coloured			
Plates	-	-	1 1 0
Hooper's Medical Dictionary, by Dr. Klein Grant, 8vo.	-	-	1 10 0
Hughe's (Dr. H. M.) Clinical Introduction to the Practice of Auscultation, 2d edition, fcp. 8vo.	-	-	0 6 0
Humboldt's Cosmos, translated by Sabine, 2 vols. 16mo. 5s.; or 2 vols.			
post 8vo.	-	-	1 4 0
————— Vol. III. 16mo. Part I. 2s. 6d.; Part II. 3s.; or			
post 8vo. Vol. III. complete	-	-	0 12 6
————— Aspects of Nature, translated by Sabine, 16mo.	-	-	0 6 0
Hunt's Researches on Light, 8vo.	-	-	0 10 6
Kater and Lardner's Treatise on Mechanics, fcp. 8vo.	-	-	0 3 6
Kemp's Natural History of Creation, 16mo.	-	-	0 1 0
————— Indications of Instinct, 16mo.	-	-	0 1 0

London: LONGMAN, BROWN, GREEN, and LONGMANS.

	£	s.	d.
Lardner's Treatise on Heat, fcp. 8vo. - . - . - . - . - .	0	3	6
————— Hydrostatics and Pneumatics, fcp. 8vo. - . - . - . - . - .	0	3	6
————— and Walker's Electricity, Magnetism, and Meteorology, 2 vols. fcp. 8vo. - . - . - . - . - .	0	7	0
Latham On Diseases of the Heart, 2 vols. 12mo. - . - . - . - . - .	0	16	0
Lee's (Dr. R.) Lectures on Midwifery, 8vo. - . - . - . - . - .	0	15	0
—— (Mrs. R.) Elements of Natural History, fcp. 8vo. - . - . - . - . - .	0	7	6
Lindley's Introduction to Botany, 2 vols. 8vo. - . - . - . - . - .	1	4	0
————— Theory of Horticulture, New Edition, 8vo. <i>Preparing for Publication.</i>			
Little (Dr. W.) On the Nature and Treatment of Deformities, 8vo. - . - . - . - . - .	0	15	0
Loudon's Encyclopædia of Plants, New Edition, 8vo. - . - . - . - . - .			<i>In the Press.</i>
Mackenzie's Treatise on Diseases of the Eye, New Edition, 8vo. - . - . - . - . - .			<i>In the Press.</i>
Marcet's Conversations on Chemistry, 2 vols. fcp. 8vo. - . - . - . - . - .	0	14	0
————— Natural Philosophy, fcp. 8vo. - . - . - . - . - .	0	10	6
————— Vegetable Physiology, fcp. 8vo. - . - . - . - . - .	0	9	0
Matteucci's Lectures on the Physical Phenomena of Living Beings, translated under the Superintendence of Dr. Pereira, post 8vo. - . - . - . - . - .	0	9	0
Maunder's Scientific and Literary Treasury, fcp. 8vo. - . - . - . - . - .	0	10	0
Montgomery's Exposition of the Signs and Symptoms of Pregnancy, New Edition, 8vo. - . - . - . - . - .			<i>Preparing for Publication.</i>
Moore's (Dr. G.) Man and his Motives, fcp. 8vo. - . - . - . - . - .	0	6	0
————— Power of the Soul over the Body, fcp. 8vo. - . - . - . - . - .	0	6	0
————— Use of the Body in relation to the Mind, fcp. 8vo. - . - . - . - . - .	0	6	0
————— Health, Disease, and Remedy, post 8vo. - . - . - . - . - .	0	7	6
Nevins's Translation of the New London Pharmacopœia, post 8vo. - . - . - . - . - .	0	18	0
Owen's Lectures on the Comparative Anatomy and Physiology of Vertebrate Animals, Vol. I. 8vo. - . - . - . - . - .	0	14	0
Paget's Lectures on Surgical Pathology, 2 vols. 8vo. - . - . - . - . - .	1	8	0
————— Tumours, 8vo. - . - . - . - . - .	0	16	0
Percivall's Anatomy of the Horse, 8vo. - . - . - . - . - .	1	0	0
————— Diseases of the Chest and Air-Passages of the Horse, 8vo. - . - . - . - . - .	0	10	0
————— Lameness in the Horse, 8vo. - . - . - . - . - .	1	1	0
————— Twelve Lectures on the Form and Action of the Horse, 8vo. - . - . - . - . - .	0	12	0
Pereira's Treatise on Food and Diet, 8vo. - . - . - . - . - .	0	16	0
————— Materia Medica, Vol. I. 8vo. - . - . - . - . - .	1	5	0
————— Vol. II. Part I. 8vo. - . - . - . - . - .	0	17	0
————— Vol. II. Part II. 8vo. - . - . - . - . - .	1	4	0
Peschel's Elements of Physics, 3 vols. fcp. 8vo. - . - . - . - . - .	1	1	0

London: LONGMAN, BROWN, GREEN, and LONGMANS.

	£	s.	d.
Phillips's Treatise on Geology, 2 vols. fcp. 8vo. - - -	0	7	0
——— Introduction to Mineralogy, post 8vo. - - -	0	18	0
Rees (Dr. G. O.) On the Analysis of the Blood and Urine, 8vo. - - -	0	7	6
——— On Diseases of the Kidney, 8vo. - - -	0	5	0
Schleiden's Scientific Botany, translated by Dr. E. Lankester, 8vo. -	1	1	0
Seymour (Dr. E.) On the Nature and Treatment of Severe Diseases, 8vo. - - - - - - - - -	0	10	0
Smee's Elements of Electro-Metallurgy, post 8vo. - - -	0	10	6
Solly On the Human Brain, 8vo. - - - - - - - - -	1	1	0
Stanley's Treatise on Diseases of the Bones, 8vo. with folio Atlas of Plates - - - - - - - - -	3	13	6
——— the Treatise separately - - - - - - - - -	0	10	6
Swan's Plates of the Brain, in Explanation of the Nervous System, 4to.	1	1	0
Tamplin's Lectures on Deformities, fcp. 8vo. - - - - -	0	7	6
Teale's Practical Treatise on Abdominal Hernia, 8vo. - - -	0	15	0
Thomas's Modern Practice of Physic, New and greatly improved Edition, 2 vols. 8vo. - - - - - - - - -	1	8	0
Thomson's (Dr. A. T.) Conspectus of the Pharmacopœias, 18mo. -	0	5	6
——— with tuck, as a pocket-book - - - - - - - - -	0	6	6
——— London Dispensatory, corrected by Dr. A. B. Garrod, 8vo. - - - - - - - - -	1	1	0
——— (Dr. R. D.) School Chemistry, fcp. 8vo. - - - - -	0	7	0
Todd's Cyclopædia of Anatomy and Physiology, 8vo. Vol. I. £2; Vol. II. £2. 10s.; Vol. III. £2. 10s.; Vol. IV. £3. 10s.— Supplement, in course of publication in Parts, each - - - - -	0	5	0
*** Subscribers to Todd's <i>Cyclopædia of Anatomy and Physiology</i> are requested to complete their Sets, as the sale of separate Parts in the body of the work will be shortly discontinued.			
Travers's Observations in Surgery, 8vo. - - - - -	0	7	6
Ure's Dictionary of Arts, Manufactures, and Mines, 2 vols. 8vo. -	3	0	0
West's Lectures on the Diseases of Infancy and Childhood, 8vo. -	0	14	0
White's Compendium of the Veterinary Art, 8vo. - - - - -	0	14	0
——— Cattle Medicine, 8vo. - - - - -	0	9	0
Wilson's (Erasmus) Dissector's Manual of Practical and Surgical Ana- tomy, 12mo. - - - - - - - - -	0	12	6
——— (Dr. G.) Electricity and the Electric Telegraph, 16mo. -	0	1	0

London: LONGMAN, BROWN, GREEN, and LONGMANS.

A CATALOGUE
OF
NEW WORKS
IN GENERAL LITERATURE,

PUBLISHED BY
LONGMAN, BROWN, GREEN, AND LONGMANS,
39, PATERNOSTER ROW, LONDON.

CLASSIFIED INDEX.

Agriculture and Rural Affairs.

	Pages
Baydon on Valuing Rents, etc. - - -	5
Caird's Letters on Agriculture - - -	7
Cecil's Stud Farm - - -	7
Loudon's Encyclopædia of Agriculture -	14
" Self-Instruction for Farmers, etc.	14
" (Mrs.) Lady's Country Companion	15
Low's Elements of Agriculture - - -	15
" Domesticated Animals - - -	15

**Arts, Manufactures, and
Architecture.**

Bourne's Catechism of the Steam Engine	6
" On the Screw Propeller - - -	6
Brande's Dictionary of Science, etc. -	6
Chevreul on Colour - - -	8
Cresy's Encyclo. of Civil Engineering -	8
Eastlake on Oil Painting - - -	9
Gwilt's Encyclopædia of Architecture -	9
Jameson's Sacred and Legendary Art -	12
" Commonplace Book - - -	12
Loudon's Rural Architecture - - -	14
Moseley's Engineering and Architecture	17
Richardson's Art of Horsemanship - -	19
Steam Engine, by the Artisan Club - -	6
Tate on Strength of Materials - - -	22
Ure's Dictionary of Arts, etc. - - -	24

Biography.

Bunsen's Hippolytus - - -	6
Chesterton's Autobiography - - -	8
Cockayne's Marshal Turenne - - -	23
Freeman's Life of Kirby - - -	12
Haydon's Autobiography, by Taylor -	10
Holcroft's Memoirs - - -	23
Holland's (Lord) Memoirs - - -	10
Lardner's Cabinet Cyclopædia - - -	13
Maunder's Biographical Treasury - -	16
Memoir of the Duke of Wellington -	23
" Lord Peterborough - - -	18
Merivale's Memoirs of Cicero - - -	16
Russell's Memoirs of Moore - - -	17
" Life of Lord William Russell -	19

Southey's Life of Wesley - - -	21
" Life and Correspondence - - -	21
Stephen's Ecclesiastical Biography -	22
Taylor's Loyola - - -	22
" Wesley - - -	22
Townsend's Eminent Judges - - -	24
Waterton's Autobiography and Essays -	24

Books of General Utility.

Acton's (Eliza) Cookery - - -	5
Black's Treatise on Brewing - - -	6
Cabinet Gazetteer - - -	7
" Lawyer - - -	7
Cust's Invalid's Own Book - - -	8
Hints on Etiquette - - -	10
Hudson's Executor's Guide - - -	11
" On Making Wills - - -	11
Lardner's Cabinet Cyclopædia - - -	13
Loudon's Self Instruction - - -	14
" Lady's Companion - - -	15
" (Mrs.) Amateur Gardener - - -	15
Maunder's Treasury of Knowledge - -	16
" Biographical Treasury - - -	16
" Scientific Treasury - - -	16
" Treasury of History - - -	16
" Natural History - - -	16
Pocket and the Stud - - -	10
Pycroft's English Reading - - -	19
Reece's Medical Guide - - -	19
Rich's Companion to Latin Dictionary -	19
Riddle's Latin Dictionaries - - -	19
Richardson's Art of Horsemanship - -	19
Roget's English Thesaurus - - -	19
Rowton's Debater - - -	19
Short Whist - - -	21
Thomson's Interest Tables - - -	22
Traveller's Library - - -	23
Webster's Domestic Economy - - -	24
Willich's Popular Tables - - -	24
Willnot's Abridgment of Blackstone's Commentaries - - -	24

Botany and Gardening.

Conversations on Botany - - -	7
Hooker's British Flora - - -	11
" Guide to Kew Gardens - - -	11

	Pages
Lindley's Introduction to Botany	- 14
" Theory of Horticulture	- 14
Loudon's Hortus Britannicus	- 14
" (Mrs.) Amateur Gardener	- 15
" Self-Instruction for Gardeners	14
" Encyclopædia of Trees & Shrubs	14
" " Gardening	- 14
" " Plants	- 14
Rivers's Rose Amateur's Guide	- 19

Chronology.

Blair's Chronological Tables	- 6
Bunsen's Ancient Egypt	- 7
Haydn's Beatson's Index	- 10
Nicolas's Chronology of History	- 13

Commerce and Mercantile Affairs.

Bewley's Decimal Interest Tables	- 5
Francis On Life Assurance	- 9
Lorimer's Letters to a Young Master Mariner	14
M'Culloch's Commerce and Navigation	- 15
Steel's Shipmaster's Assistant	- 22
Thomson's Interest Tables	- 22

Criticism, History, and Memoirs.

Austin's Germany	- 5
Balfour's Sketches of Literature	- 5
Belfast's English Poets	- 5
Blair's Chron. and Historical Tables	- 6
Bunsen's Ancient Egypt	- 7
" Hippolytus	- 6
Burton's History of Scotland	- 7
Chalybaeus's Modern Speculative Philosophy	- 7
Conybeare and Howson's St. Paul	- 8
Eastlake's History of Oil Painting	- 9
Erskine's History of India	- 9
Felice's French Protestants	- 8
Francis's Annals of Life Assurance	- 9
Gleig's Leipsic Campaign	- 23
Gurney's Historical Sketches	- 9
Hamilton's Essays from the Edinburgh Review	- 10
Haydon's Autobiography, by Taylor	- 10
Holland's (Lord) Foreign Reminiscences	- 10
" Whig Party	- 10
Jeffrey's (Lord) Contributions	- 12
Kemble's Anglo-Saxons in England	- 12
Lardner's Cabinet Cyclopædia	- 13
Macaulay's Crit. and Hist. Essays	- 15
" History of England	- 15
" Speeches	- 15
Mackintosh's Miscellaneous Works	- 15
" History of England	- 15
M'Culloch's Geographical Dictionary	- 15
Martineau's Church History	- 16
Maunder's Treasury of History	- 16
Memoir of the Duke of Wellington	- 23
Merivale's History of Rome	- 16
" Roman Republic	- 16
Milner's Church History	- 16
Moore's (Thomas) Memoirs, etc.	- 17
Mure's Greek Literature	- 17
Ranke's Ferdinand and Maximilian	- 23
Rich's Companion to Latin Dictionary	- 19
Riddle's Latin Dictionaries	- 19
Rogers's Essays from Edinburgh Review	19

	Pages
Roget's English Thesaurus	- 19
Russell's (Lady Rachel) Letters	- 19
" Life of Lord William Russell	- 19
St. John's Indian Archipelago	- 20
Schmitz's History of Greece	- 20
Sinclair's Popish Legends	- 21
Smith's Sacred Annals	- 21
Southey's The Doctor etc.	- 22
Stephen's Ecclesiastical Biography	- 22
" Lectures on the History of France	- 22
Sydney Smith's Works	- 21
" Lectures on Moral Philosophy	- 21
Taylor's Loyola	- 22
" Wesley	- 22
Thirlwall's History of Greece	- 22
Townsend's State Trials	- 24
Turkey and Christendom	- 23
Turner's Anglo-Saxons	- 24
" Middle Ages	- 24
" Sacred History of the World	- 24
Zumpt's Latin Grammar	- 24

Geography and Atlases.

Butler's Geography and Atlases	- 7
Cabinet Gazetteer	- 7
Hall's Large Library Atlas	- 10
Hughes's Australian Colonies	- 23
Johnston's General Gazetteer	- 12
M'Culloch's Geographical Dictionary	- 15
Murray's Encyclopædia of Geography	- 18
Sharp's British Gazetteer	- 20

Juvenile Books.

Amy Herbert	- 20
Calling, etc. of a Governess	- 7
Corner's Children's Sunday Book	- 8
Earl's Daughter (The)	- 20
Experience of Life	- 20
Gertrude	- 20
Howitt's Boy's Country Book	- 11
" (Mary) Children's Year	- 11
Laneton Parsonage	- 20
Mrs. Marcet's Conversations	- 16
Margaret Percival	- 20
Pycroft's English Reading	- 19

Medicine and Surgery.

Bull's Hints to Mothers	- 6
" Management of Children	- 6
Copland's Dictionary of Medicine	- 8
Cust's Invalid's Own Book	- 8
Holland's Mental Physiology	- 11
Latham On Diseases of the Heart	- 12
Little on Treatment of Deformities	- 14
Moore On Health, Disease, and Remedy	- 17
Pereira On Food and Diet	- 18
Reece's Medical Guide	- 19

Miscellaneous and General Literature.

Austin's Sketches of German Life	- 5
Calling, etc. of a Governess	- 7
Carlisle's Lectures and Addresses	- 23
Chalybaeus's Modern Speculative Philosophy	- 7
Defence of <i>Eclipse of Faith</i>	- 9
Eclipse of Faith	- 9
Greg's Essays on Political and Social Science	- 9

	Pages
Haydn's Book of Dignities - - -	10
Hole's Essay on Mechanics' Institutions	10
Holland's Mental Physiology - - -	11
Hooker's Kew Guide - - -	11
Howitt's Rural Life of England - - -	11
" Visits to Remarkable Places - - -	11
Jameson's Commonplace Book - - -	12
Jeffrey's (Lord) Contributions - - -	12
Loudon's Lady's Country Companion - - -	15
Macaulay's Critical and Historical Essays	15
" Speeches - - -	15
Mackintosh's (Sir J.) Miscellaneous Works	15
Memoirs of a Maître d'Armes - - -	23
Maitland's Church in the Catacombs - - -	16
Pascal's Works, by Pearce - - -	18
Pycroft's English Reading - - -	19
Report on Industrial Instruction - - -	11
Rich's Companion to Latin Dictionary - - -	19
Riddle's Latin Dictionaries - - -	19
Rowton's Debater - - -	19
St. John's Nemesis of Power - - -	20
Schoolmaster's Difficulties - - -	20
Seaward's Narrative of his Shipwreck - - -	20
Sir Roger De Coverley - - -	21
Smith's (Rev. Sydney) Works - - -	21
Southey's Common-Place Books - - -	21
" The Doctor etc. - - -	22
Souvestre's Attic Philosopher - - -	23
" Confessions of a Working Man	23
Stephen's Essays - - -	22
Stow's Training System - - -	22
Thomson's Outline of the Laws of Thought	22
Townsend's State Trials - - -	24
Willich's Popular Tales - - -	24
Zumpt's Latin Grammar - - -	24

Natural History in General.

Catlow's Popular Conchology - - -	7
Ephemera and Young on the Salmon - - -	9
Gosse's Natural History of Jamaica - - -	9
Kemp's Natural History of Creation - - -	23
Kirby and Spence's Entomology - - -	12
Lee's Elements of Natural History - - -	12
Maunder's Treasury of Natural History - - -	16
Turton's Shells of the British Islands - - -	24
Waterton's Essays on Natural History - - -	24
Youatt's The Dog - - -	24
" The Horse - - -	24

1-Volume Encyclopædias and Dictionaries.

Blaine's Rural Sports - - -	6
Brande's Science, Literature, and Art - - -	6
Copland's Dictionary of Medicine - - -	8
Cresy's Civil Engineering - - -	8
Gwilt's Architecture - - -	9
Johnston's Geographical Dictionary - - -	12
Loudon's Agriculture - - -	14
" Rural Architecture - - -	14
" Gardening - - -	14
" Plants - - -	14
" Trees and Shrubs - - -	14
M'Culloch's Geographical Dictionary - - -	15
" Dictionary of Commerce - - -	15
Murray's Encyclopædia of Geography - - -	18
Sharp's British Gazetteer - - -	20
Ure's Dictionary of Arts, etc. - - -	24
Webster's Domestic Economy - - -	24

Religious and Moral Works.

Amy Herbert - - -	20
Bloomfield's Greek Testament - - -	6
" Annotations on ditto - - -	6

	Pages
Calling and Responsibilities of a Governess	7
Calvert's Wife's Manual - - -	7
Conybeare and Howson's St. Paul - - -	8
Corner's Sunday Book - - -	8
Dale's Domestic Liturgy - - -	8
Defence of <i>Eclipse of Faith</i> - - -	9
Discipline - - -	9
Earl's Daughter (The) - - -	20
Eclipse of Faith - - -	9
Englishman's Greek Concordance - - -	9
" Heb. and Chald. Concord. - - -	9
Experience of Life (The) - - -	20
Félice's French Protestants - - -	8
Gertrude - - -	20
Harrison's Light of the Forge - - -	10
Hook's (Dr.) Lectures on Passion Week	11
Horne's Introduction to Scriptures - - -	11
" Abridgment of ditto - - -	11
Jameson's Sacred Legends - - -	12
" Monastic Legends - - -	12
" Legends of the Madonna - - -	12
Jeremy Taylor's Works - - -	12
Kippis's Hymns - - -	12
Laneton Parsonage - - -	20
Letters to My Unknown Friends - - -	14
" on Happiness - - -	12
Litton's Church of Christ - - -	14
Maitland's Church in the Catacombs - - -	16
Margaret Percival - - -	20
Martineau's Church History - - -	16
Milner's Church of Christ - - -	16
Montgomery's Original Hymns - - -	16
Moore On the Use of the Body - - -	17
" " Soul and Body - - -	17
" " Man and his Motives - - -	17
Neale's Closing Scene - - -	18
" Resting Places of the Just - - -	18
" Riches that bring no Sorrow - - -	18
" Risen from the Ranks - - -	18
Newman's (J. H.) Discourses - - -	18
Ranke's Ferdinand and Maximilian - - -	23
Readings for Lent - - -	20
" Confirmation - - -	20
Robinson's Lexicon to the Greek Testa- ment - - -	19
Saints our Example - - -	20
Self-Denial - - -	20
Sermon on the Mount, illuminated - - -	20
Sinclair's Journey of Life - - -	21
" Popish Legends - - -	21
Smith's (Sydney) Moral Philosophy - - -	21
" (G.) Sacred Annals - - -	21
Southey's Life of Wesley - - -	21
Stephen's (Sir J.) Ecclesiastical Biography	21
Taylor's Loyola - - -	22
" Wesley - - -	22
Thumb Bible (The) - - -	24
Turner's Sacred History - - -	24

Poetry and the Drama.

Arnold's Poems - - -	5
Aikin's (Dr.) British Poets - - -	5
Ballie's (Joanna) Poetical Works - - -	5
Belfast's Lectures on the English Poets	5
Bode's Ballads from Herodotus - - -	6
Calvert's Wife's Manual - - -	7
Flowers and their Kindred Thoughts - - -	18
Goldsmith's Poems, illustrated - - -	9
Kippis's Hymns - - -	12
L. E. L.'s Poetical Works - - -	12
Linwood's Anthologia Oxoniensis - - -	14
Macaulay's Lays of Ancient Rome - - -	15
Montgomery's Poetical Works - - -	17
" Original Hymns - - -	16

	Pages		Pages
Moore's Poetical Works - - -	17	Cecil's Stable Practice - - -	7
,, Lalla Rookh - - -	17	,, Records of the Chase - - -	7
,, Irish Melodies - - -	17	,, Stud Farm - - -	7
,, Songs and Ballads - - -	17	The Cricket Field - - -	8
Roby's Poetical Remains - - -	19	Ephemera on Angling - - -	9
Shakspeare, by Bowdler - - -	21	,, 's Book of the Salmon - - -	9
,, 's Sentiments and Similes - - -	11	The Hunting Field - - -	10
Southey's Poetical Works - - -	21	Loudon's Lady's Country Companion - - -	15
,, British Poets - - -	21	Pocket and the Stud - - -	10
Swain's English Melodies - - -	22	Practical Horsemanship - - -	10
,, Letters of Laura D'Auverne - - -	22	Pulman's Fly-Fishing - - -	19
Thomson's Seasons, illustrated - - -	22	Richardson's Horsemanship - - -	19
Thornton's Zohrab - - -	22	St John's Sporting Rambles - - -	20
Watts's Lyrics of the Heart - - -	24	Stable Talk and Table Talk - - -	10
		Stonchenge on the Greyhound - - -	22
		The Stud, for Practical Purposes - - -	10
Political Economy & Statistics.			
Banfield's Statistical Companion - - -	5	Veterinary Medicine, etc.	
Caird's Letters on Agriculture - - -	7	Cecil's Stable Practice - - -	7
Francis on Life Assurance - - -	9	,, Stud Farm - - -	7
Greg's Essays on Political and Social Science - - -	9	The Hunting Field - - -	10
Laing's Notes of a Traveller - - -	12	Morton's Veterinary Pharmacy - - -	17
,, Notes Denmark and the Duchies - - -	12	Pocket and the Stud - - -	10
M'Culloch's Geographical, Statistical, etc. Dictionary - - -	15	Practical Horsemanship - - -	10
,, Dictionary of Commerce - - -	15	Richardson's Horsemanship - - -	19
,, London - - -	23	Stable Talk and Table Talk - - -	10
,, Statistics of the British Empire - - -	15	The Stud for Practical Purposes - - -	10
Marcet's Political Economy - - -	16	Youatt's The Dog - - -	24
Willich's Popular Tales - - -	24	,, The Horse - - -	24
The Sciences in General and Mathematics.			
Bourne's Catechism of the Steam Engine - - -	6	Voyages and Travels.	
,, on the Screw Propeller - - -	6	Adams's Canterbury Settlement - - -	5
Brande's Dictionary of Science, etc. - - -	6	Baker's Rifle and Hound in Ceylon - - -	5
Cresy's Civil Engineering - - -	8	Barrow's Continental Tour - - -	23
DelaBeche's Geology of Cornwall, etc. - - -	8	Davis's China - - -	8
,, 's Geological Observer - - -	8	Eöthen - - -	23
De la Rive's Electricity - - -	8	Ferguson's Swiss Men and Mountains - - -	23
Faraday's Non-Metallic Elements - - -	9	Forester and Biddulph's Norway - - -	9
Herschel's Outlines of Astronomy - - -	10	Gronière's Philippines - - -	23
Holland's Mental Physiology - - -	11	Hill's Travels in Siberia - - -	10
Humboldt's Aspects of Nature - - -	11	Hope's Brittany and the Bible - - -	23
,, Cosmos - - -	11	,, Chase in Brittany - - -	23
Lardner's Cabinet Cyclopædia - - -	13	Howitt's Art Student in Munich - - -	11
Marcet's (Mrs.) Conversations - - -	16	Huc's Tartary, Thibet, and China - - -	23
Moseley's Engineering and Architecture - - -	17	Hughes's Australian Colonies - - -	23
Owen's Lectures on Comparative Anatomy - - -	18	Humboldt's Aspects of Nature - - -	11
Our Coal Fields and our Coal Pits - - -	23	Jameson's Canada - - -	23
Peschel's Elements of Physics - - -	18	Jermann's Pictures from St. Petersburg - - -	23
Phillips's Fossils of Cornwall, etc. - - -	18	Laing's Norway - - -	23
,, Mineralogy - - -	18	,, Denmark and the Duchies - - -	12
,, Guide to Geology - - -	18	,, Notes of a Traveller - - -	12
Portlock's Geology of Londonderry - - -	19	Osborn's Arctic Journal - - -	18
Smee's Electro-Metallurgy - - -	21	Peel's Nubian Desert - - -	18
Steam Engine, by the Artisan Club - - -	6	Pfeiffer's Voyage round the World - - -	23
Tate on Strength of Materials - - -	22	Power's New Zealand Sketches - - -	19
Todd's Tables of Circles - - -	22	Richardson's Arctic Boat Voyage - - -	19
Wilson's Electricity and the Electric Telegraph - - -	23	Seaward's Narrative of his Shipwreck - - -	20
		St. John's (H.) Indian Archipelago - - -	20
		,, (J. A.) Isis - - -	20
		,, There and Back again - - -	20
		,, (Hon. F.) Rambles - - -	20
		Sutherland's Arctic Voyage - - -	22
		Traveller's Library - - -	23
		Werne's African Wanderings - - -	23
Rural Sports.			
Baker's Rifle and Hound in Ceylon - - -	5	Works of Fiction.	
Berkeley's Reminiscences of a Huntsman - - -	5	Lady Willoughby's Diary - - -	24
Blaine's Dictionary of Sports - - -	6	Macdonald's Villa Verocchio - - -	15
		Sir Roger De Coverley - - -	21
		Southey's The Doctor etc. - - -	22

ALPHABETICAL CATALOGUE
OF
NEW WORKS AND NEW EDITIONS

PUBLISHED BY

MESSRS. LONGMAN, BROWN, GREEN, AND LONGMANS,
PATERNOSTER ROW, LONDON.

Miss Acton's Modern Cookery-

Book.—Modern Cookery in all its Branches, reduced to a System of Easy Practice. For the use of Private Families. In a Series of Receipts, all of which have been strictly tested, and are given with the most minute exactness. By ELIZA ACTON. New Edition; with Directions for Carving, and other Additions, Plates and Woodcuts. Fcp. 8vo. price 7s. 6d.

Adams.—A Spring in the Can-

terbury Settlement. By C. WARREN ADAMS, Esq. With Five Illustrations. Post 8vo. price 5s. 6d.

Aikin.—Select Works of the

British Poets, from Ben Jonson to Beattie. With Biographical and Critical Prefaces by Dr. AIKIN. New Edition, with Supplement by Lucy AIKIN; consisting of additional Selections, from more recent Poets. 8vo. price 18s.

Arnold.—Poems. By Matthew

Arnold, Author of *Poems by A.* A New Edition, greatly altered; With a Preface. Fcp. 8vo. price 5s. 6d.

* * * *More than one-third of the contents of this volume consists of Poems now first published.*

Austin.—Germany from 1760 to

1814; Or, Sketches of German Life from the Decay of the Empire to the Expulsion of the French. Reprinted from the *Edinburgh Review*; with large Additions. By Mrs. AUSTIN. Post 8vo. [Nearly ready.]

Joanna Baillie's Dramatic and

Poetical Works, complete in One Volume: Comprising the Plays of the Passions, Miscellaneous Dramas, Metrical Legends, Fugitive Pieces, (several now first published), and *Ahalya Bacc*. Second Edition, including a new *Life of Joanna Baillie*; with a Portrait, and a *View of Bothwell Mause*. Square crown 8vo. 21s. cloth or 42s. bound in morocco.

Baker.—The Rifle and the Hound

in Ceylon. By S. W. BAKER, Esq. With several Illustrations printed in Colours, and Engravings on Wood. 8vo. price 14s.

Balfour.—Sketches of English

Literature from the Fourteenth to the Present Century. By CLARA LUCAS BALFOUR. Fcp. 8vo. 7s.

Bayldon's Art of Valuing Rents

and Tillages, and Tenant's Right of Entering and Quitting Farms, explained by several Specimens of Valuations; with Remarks on the Cultivation pursued on Soils in different Situations. Adapted to the Use of Landlords, Land Agents, Appraisers, Farmers, and Tenants. New Edition; corrected and revised by JOHN DONALDSON. 8vo. 10s. 6d.

Banfield.—The Statistical Com-

panion for 1854: Exhibiting the most Interesting Facts in Moral and Intellectual, Vital, Economical, and Political Statistics, at Home and Abroad. Corrected to the Present Time; and including the Census of the British Population taken in 1851. Compiled from Official and other Authentic Sources, by T. C. BANFIELD, Esq., Statistical Clerk to the Council of Education. Fcp. 8vo. price 5s.

Lord Belfast.—Lectures on the

English Poets and Poetry of the Nineteenth Century. By the Right Hon. the EARL OF BELFAST. 8vo. price 6s. 6d.

Berkeley.—Reminiscences of a

Huntsman. By the Honourable GRANTLEY F. BERKELEY. With four Etchings by John Leech (one coloured). 8vo. price 14s.

Bewley.—Decimal Interest

Tables, calculated at 5 per Cent. from 1 Day to 365 Days, and from 1 Month to 12 Months, on from £1 to £40,000: To which are added, Tables of Commission, from $\frac{1}{4}$ per Cent. to 5 per Cent. advancing by Eighths. By JOHN BEWLEY. 8vo. price 21s.

Black's Practical Treatise on

Brewing, Based on Chemical and Economical Principles: With Formulæ for Public Brewers, and Instructions for Private Families. New Edition, with Additions. Svo. price 10s. 6d.

Blaine's Encyclopædia of Rural

Sports; or, a complete Account, Historical, Practical, and Descriptive, of Hunting, Shooting, Fishing, Racing, and other Field Sports and Athletic Amusements of the present day. A New and thoroughly revised Edition; with numerous additional Illustrations. The Hunting, Racing, and all relative to Horses and Horsemanship, revised by HARRY HIEOVER; Shooting and Fishing by EPHEMERA; and Coursing by Mr. A. GRAHAM. With upwards of 600 Woodcuts. Svo. price 50s.

Blair's Chronological and His-

torical Tables, from the Creation to the present Time: with Additions and Corrections from the most authentic Writers; including the Computation of St. Paul, as connecting the Period from the Exode to the Temple. Under the revision of SIR HENRY ELLIS, K.H. New Edition, with corrections. Imperial Svo. price 31s. 6d.

Bloomfield.—The Greek Testa-

ment: With copious English Notes, Critical, Philological, and Explanatory. Especially formed for the use of advanced Students and Candidates for Holy Orders. By the Rev. S. T. BLOOMFIELD, D.D. F.S.A. New Edition. 2 vols. Svo. with Map, price £2.

Dr. Bloomfield's Additional

Annotations on the above. Svo. price 15s.

Bloomfield.—College and School

Greek Testament; with shorter English Notes, Critical, Philological, and Explanatory, formed for use in Colleges and the Public Schools. By the Rev. S. T. BLOOMFIELD, D.D., F.S.A. New Edition, greatly enlarged and improved. Fcp. Svo. 10s. 6d.

Dr. Bloomfield's College and

School Lexicon to the Greek Testament. Fcp. Svo. price 10s. 6d.

Bode.—Ballads from Herodotus:

With an Introductory Poem. By the Rev. J. E. BODE, M.A., late Student of Christ Church. 16mo. price 5s.

A Treatise on the Steam Engine,

in its Application to Mines, Mills, Steam Navigation, and Railways. By the Artisan Club. Edited by JOHN BOURNE, C.E. New Edition. With 30 Steel Plates, and 349 Wood Engravings. 4to. price 27s.

Bourne.—A Treatise on the

Screw Propeller: With various Suggestions of Improvement. By JOHN BOURNE, C.E. With 20 large Plates and numerous Woodcuts. 4to. price 38s.

Bourne.—A Catechism of the

Steam Engine, illustrative of the Scientific Principles upon which its Operation depends, and the Practical Details of its Structure, in its Applications to Mines, Mills, Steam Navigation, and Railways; with various Suggestions of Improvement. By JOHN BOURNE, C. E. New Edition. Fcp. Svo. price 6s.

Brande.—A Dictionary of Sci-

ence, Literature, and Art; comprising the History, Description and Scientific Principles of every Branch of Human Knowledge; with the Derivation and Definition of all the Terms in general use. Edited by W. T. BRANDE, F.R.S.L. and E.; assisted by Dr. J. CAUVIN. The Second Edition, revised and corrected; including a Supplement, and numerous Wood Engravings. Svo. price 60s.

The SUPPLEMENT separately, price 3s. 6d.

Bull.—The Maternal Manage-

ment of Children in Health and Disease. By T. BULL, M.D., Member of the Royal College of Physicians; formerly Physician Accoucheur to the Finsbury Midwifery Institution. New Edition, Fcap. Svo. 5s.

Bull.—Hints to Mothers, for

the Management of their Health during the Period of Pregnancy and in the Lying-in Room: with an Exposure of Popular Errors in connexion with those subjects, etc.; and Hints on Nursing. By T. BULL, M.D. New Edition. Fcp. price 5s.

Bunsen.—Hippolytus and his

Age; Or, Doctrine and Practice of the Church of Rome under Commodus and Alexander Severus; and Ancient and Modern Christianity and Divinity compared. By C. C. J. BUNSEN, D.D., D.C.L. A New Edition, corrected, remodeled, and extended. 7 vols. Svo. [Nearly ready.

1. Hippolytus and his Age; or, the Beginnings and Prospects of Christianity. New Edition, 2 vols. Svo.

Separate Works connected with *Hippolytus and his Age*, as forming its Philosophical and Philological Key:—

2. Sketch of the Philosophy of Language and Religion; or, the Beginnings and Prospects of Mankind. 2 vols. Svo.

3. *Analecta Ante-Nicæna*. 3 vols. Svo.

I. *Reliquiæ Literariæ*;

II. *Reliquiæ Canoniciæ*;

III. *Reliquiæ Liturgicæ*.

Bunsen.—Egypt's Place in Uni-

versal History: An Historical Investigation, in Five Books. By C. C. J. BUNSEN, D.D., D.C.L. Translated from the German, by C. H. COTTRELL, Esq. M.A.—Vol. I. containing the First Book, or Sources and Primeval Facts of Egyptian History: With an Egyptian Grammar and Dictionary, and a complete List of Hieroglyphical Signs; an Appendix of Authorities, embracing the complete Text of Manetho and Eratosthenes, *Ægyptiaca* from Pliny, Strabo, etc., and Plates representing the Egyptian Divinities. With many Illustrations. 8vo. price 28s.

. The second Volume is preparing for publication.

Burton.—The History of Scot-

land, from the Revolution to the Extinction of the last Jacobite Insurrection (1689—1748.) By JOHN HILL BURTON, Author of *The Life of David Hume*, etc. 2 vols. 8vo. price 26s.

Bishop Butler's General Atlas

of Modern and Ancient Geography; comprising Fifty-two full-coloured Maps; with complete Indexes. New Edition, nearly all re-engraved, enlarged, and greatly improved; with Corrections from the most authentic Sources in both the Ancient and Modern Maps, many of which are entirely new. Edited by the Author's Son, the Rev. T. BUTLER. Royal 8vo. price 24s. half-bound.

Separately { The Modern Atlas, of 28 full-coloured Maps. Rl. 8vo. 12s.
The Ancient Atlas of 24 full-coloured Maps. Rl. 8vo. 12s.

Bishop Butler's Sketch of Mo-

dern and Ancient Geography. New Edition, carefully revised, with such Alterations introduced as continually progressive Discoveries and the latest Information have rendered necessary. Edited by the Author's Son, the Rev. T. BUTLER. 8vo. price 9s.

The Cabinet Gazetteer: A Popu-

lar Exposition of all the Countries of the World; their Government, Population, Revenues, Commerce and Industries; Agricultural, Manufactured, and Mineral Products; Religion, Laws, Manners, and Social State: with brief Notices of their History and Antiquities. From the latest Authorities. By the Author of *The Cabinet Lawyer*. Fcap. 8vo. price 10s. 6d. cloth; or 13s. calf lettered.

The Cabinet Lawyer: A Popu-

lar Digest of the Laws of England, Civil and Criminal; with a Dictionary of Law Terms, Maxims, Statutes, and Judicial Antiquities; Correct Tables of Assessed Taxes, Stamp Duties, Excise Licences, and Post-Horse Duties; Post-Office Regulations, and Prison Discipline. 16th Edition, comprising the Public Acts of the Session 1853. Fcap. 8vo. price 10s. 6d.—SUPPLEMENT, price 1s.

Caird.—English Agriculture in

1850 and 1851; its Condition and Prospects. By JAMES CAIRD, Esq., of Baldoon, Agricultural Commissioner of *The Times*. The Second Edition. 8vo. price 14s.

Calvert.—The Wife's Manual;

or, Prayers and Thoughts on Several Occasions of a Matron's Life. By the Rev. WILLIAM CALVERT, Rector of St. Antholin, and one of the Minor Canons of St. Paul's. Post 8vo. [In the Press.]

The Calling & Responsibilities

of a Governess. By AMICA. Fcp. 8vo. price 4s. 6d.

Catlow.—Popular Conchology;

or, the Shell Cabinet arranged: being an Introduction to the modern System of Conchology; with a Sketch of the Natural History of the Animals, an Account of the Formation of the Shells, and a complete Descriptive List of the Families and Genera. By AGNES CATLOW. New Edition, with numerous additional Woodcuts. Post 8vo. [In the Press.]

Cecil.—The Stud Farm; or,

Hints on Breeding Horses for the Turf, the Chase, and the Road. Addressed to Breeders of Race Horses and Hunters, Landed Proprietors, and especially to Tenant Farmers. By CECIL. Fcp. 8vo. with Frontispiece, 5s.

Cecil.—Records of the Chase,

and Memoirs of Celebrated Sportsmen, illustrating some of the Usages of Olden Times and comparing them with prevailing Customs: Together with an Introduction to most of the Fashionable Hunting Countries; and Comments. By CECIL. With two Plates by B. Herring. Fcp. 8vo. price 7s. 6d.

Cecil.—Stable Practice; or Hints

on Training for the Turf, the Chase, and the Road, with Observations on Racing and Hunting, Wasting, Race Riding, and Handicapping. Addressed to Owners of Racers, Hunters, and other Horses, and to all who are concerned in Racing, Steeple-Chasing, and Fox Hunting. By CECIL. Fcap. 8vo. with Plate, price 5s. half-bound.

Chalybaeus's Historical Survey

of Modern Speculative Philosophy, from Kant to Hegel. Translated from the German by ALFRED TULK. Post 8vo. [Just ready.]

Conversations on Botany. New

Edition, improved; with 22 Plates. Fcp. 8vo. price 7s. 6d.; or with the Plates coloured, 12s.

Captain Chesterton's Autobiography.

— Peace, War, and Adventure: Being an Autobiographical Memoir of George Laval Chesterton, formerly of the Field-Train Department of the Royal Artillery, subsequently a Captain in the Army of Columbia, and at present Governor of the House of Correction at Cold Bath Fields. 2 vols. post 8vo. price 16s.

Chevreur on Colour.—The Principles of Harmony and Contrast of Colours,

and their Applications to the Arts: Including Painting, Interior Decoration, Tapestries, Carpets, Mosaics, Coloured Glazing, Paper-Staining, Calico Printing, Letterpress Printing, Map Colouring, Dress, Landscape and Flower Gardening, etc. By M. E. CHEVREUL, Membre de l'Institut de France, etc. Translated from the French by CHARLES MARTEL. Illustrated with Diagrams, etc. Crown 8vo. [*In the press.*]

Conybeare and Howson.—The Life and Epistles of Saint Paul:

Comprising a complete Biography of the Apostle, and a Translation of his Epistles inserted in Chronological order. By the Rev. W. J. CONYBEARE, M.A., late Fellow of Trinity College, Cambridge; and the Rev. J. S. HOWSON, M.A. Principal of the Collegiate Institution, Liverpool. With 40 Engravings on Steel and 100 Woodcuts, 2 vols. 4to. price £2. 8s.

Copland.—A Dictionary of Practical Medicine:

Comprising General Pathology, the Nature and Treatment of Diseases, Morbid Structures, and the Disorders especially incidental to Climates, to Sex, and to the different Epochs of Life, with numerous approved Formulæ of the Medicines recommended. By JAMES COPLAND, M.D., Consulting Physician to Queen Charlotte's Lying-in Hospital, etc. Vols. I. and II. 8vo. price £3; and Parts X. to XVI. 4s. 6d. each.

The Children's Own Sunday-

Book. By Miss JULIA CORNER, Author of *Questions on the History of Europe*. With Two Illustrations. Square fcp. 8vo. price 5s.

Cresy.—An Encyclopædia of

Civil Engineering, Historical, Theoretical, and Practical. By EDW. CRESY, F.S.A., C.E. Illustrated by upwards of 3000 Woodcuts, explanatory of the Principles, Machinery, and Constructions which come under the Direction of the Civil Engineer. 8vo. price £3. 13s. 6d.

The Cricket-Field; or, the Science and History of the Game.

Illustrated with Diagrams, and enlivened with Anecdotes. By the Author of *Principles of Scientific Batting*. Fcp. 8vo. with 2 Plates price 6s. half-bound.

Lady Cust's Invalid's Book.—

The Invalid's Own Book: A Collection of Recipes from various Books and various Countries. By the Honourable LADY CUST. Fcp. 8vo. price 3s. 6d.

Dale.—The Domestic Liturgy

and Family Chaplain, in Two Parts: The First Part being Church Services adapted for Domestic Use, with Prayers for every Day of the Week, selected exclusively from the Book of Common Prayer. Part II. Comprising an appropriate Sermon for every Sunday in the Year. By the Rev. THOMAS DALE, M.A., Canon-Residentiary of St. Paul's Cathedral. 2d Edition. Post 4to. 21s. cloth; 31s. 6d. calf; or £2. 10s. morocco.

Separately { THE FAMILY CHAPLAIN, 12s.
THE DOMESTIC LITURGY, 10s. 6d.

Davis.—China during the War

and since the Peace. By Sir J. F. DAVIS, Bart., F.R.S., late H.M. Plenipotentiary in China; Governor and Commander-in-Chief of the Colony of Hongkong. 2 vols. post 8vo. price 21s.

De Felice.—History of the Pro-

testants of France, from the Commencement of the Reformation to the Present Time. Translated from the French of G. DE FELICE, D.D., Professor of Theology at Montauban, by E. WEST: With a Supplemental Chapter, written expressly for this translation by Dr. DE FELICE. 2 vols. post 8vo. price 12s.

"We can speak with confidence of the idiomatic accuracy of Mr. West's translation, whose critical acquaintance with the French language has enabled him to produce a rendering of the French Professor's work in the highest degree creditable to his scholarly ability and taste. He has turned good French into good English, without taking unclassical liberties with either one language or the other. As the work is from the pen of a writer of singular perspicuity, enlarged research, and fervent devotion to the cause of evangelical Protestantism, it will be justly regarded by all competent judges as a valuable addition to the literature of our country."—*Evangelical Magazine*.

Delabeche.—The Geological Ob-

server. By Sir HENRY T. DELABECHE, F.R.S. Director-General of the Geological Survey of the United Kingdom. New Edition; with numerous Woodcuts. 8vo. price 18s.

Delabeche.—Report on the Geo-

logy of Cornwall, Devon, and West Somerset. By Sir HENRY T. DELABECHE, F.R.S., Director-General of the Geological Survey. With Maps, Woodcuts, and 12 Plates. 8vo. price 14s.

De la Rive.—A Treatise on Elec-

tricity, in Theory and Practice. By A. DE LA RIVE, Professor in the Academy of Geneva. In Two Volumes, with numerous Wood Engravings. Vol. I. 8vo. price 18s.

Discipline. By the Author of "Letters to My Unknown Friends," etc. Second Edition, enlarged. 18mo. price 2s. 6d.

Eastlake.—Materials for a History of Oil Painting. By Sir CHARLES LOCK EASTLAKE, F.R.S., F.S.A., President of the Royal Academy. Svo. price 16s.

The Eclipse of Faith; or, a Visit to a Religious Sceptic. New Edition. Post 8vo. price 9s. 6d.

A Defence of The Eclipse of Faith, by its Author: Being a Rejoinder to Professor Newman's *Reply*. Post 8vo. price 5s. 6d.

The Englishman's Greek Concordance of the New Testament: Being an attempt at a Verbal Connexion between the Greek and the English Texts; including a Concordance to the Proper Names, with Indexes Greek-English and English-Greek. New Edition, with a new Index. Royal 8vo. price 42s.

The Englishman's Hebrew and Chaldee Concordance of the Old Testament: Being an attempt at a Verbal Connexion between the Original and the English Translations; with Indexes, a List of the Proper Names and their Occurrences, etc. 2 vols. royal 8vo. price £3. 13s. 6d.; large paper, £4. 14s. 6d.

Ephemera.—A Handbook of Angling: Teaching Fly Fishing, Trolling, Bottom Fishing, and Salmon Fishing; with the Natural History of River Fish, and the best Modes of Catching them. By EPHEMERA. Third and cheaper Edition, corrected and improved; with Woodcuts. Fcp. 8vo. 5s.

Ephemera.—The Book of the Salmon: Comprising the Theory, Principles, and Practice of Fly-Fishing for Salmon; Lists of good Salmon Flies for every good River in the Empire; the Natural History of the Salmon, all its known Habits described, and the best way of artificially breeding it explained. With numerous coloured Engravings of Salmon Flies and Salmon Fry. By EPHEMERA; assisted by ANDREW YOUNG, Fcp. 8vo. with coloured Plates, price 14s.

W. Erskine, Esq.—History of India under the House of Taimur (1526 to 1707). By Wm. ERSKINE, Esq., Editor of *Memoirs of the Emperor Baber*. The First Volume—History of Baber; His Early Life, 1483-1526; his Reign in India, 1526-1530. The Second Volume.—History of Humayun, 1530-1556. Vols. I. and II. 8vo. [Just ready.]

Faraday (Professor).—The Subject-Matter of Six Lectures on the Non-Metallic Elements, delivered before the Members of the Royal Institution in 1852, by Professor FARADAY, D.C.L., F.R.S., etc. Arranged by permission from the Lecturer's Notes by J. SCOPPERN, M.B., late Professor of Chemistry in the Aldersgate College of Medicine. To which are appended Remarks on the Quality and Tendencies of Chemical Philosophy, on Allotropy, and on Ozone; together with Manipulative Details relating to the Performances of Experiments indicated by Professor FARADAY. Fcp. 8vo. price 5s. 6d.

Forester and Biddulph's Norway.—Norway in 1848 and 1849: Containing Rambles among the Fjelds and Fjords of the Central and Western Districts; and including Remarks on its Political, Military, Ecclesiastical, and Social Organisation. By THOMAS FORESTER, Esq.; and Lieutenant M. S. BIDDULPH, Royal Artillery. With Map, Woodcuts, and Plates. Svo. price 18s.

Francis.—Annals, Anecdotes, and Legends: A Chronicle of Life Assurance. By JOHN FRANCIS, Author of *The History of the Bank of England*, "Chronicles and Characters of the Stock Exchange," and *A History of the English Railway*. Post 8vo. price 8s. 6d.

The Poetical Works of Oliver Goldsmith. Edited by BOLTON CORNEY, Esq. Illustrated by Wood Engravings, from Designs by Members of the Etching Club. Square crown 8vo. cloth, 21s.; morocco £1. 16s.

Mr. W. R. Greg's Contributions to the Edinburgh Review.—Essays on Political and Social Science. Contributed chiefly to the *Edinburgh Review*. By WILLIAM R. GREG, 2 vols. 8vo. price 24s.

Gurney.—Historical Sketches; Illustrating some Memorable Events and Epochs, from A.D. 1400 to A.D. 1546. By the Rev. JOHN HAMPDEN GURNEY, M.A., Rector of St. Mary's, Mary-le-bone. Fcp. 8vo. 7s. 6d.

Gosse.—A Naturalist's Sojourn in Jamaica. By P. H. GOSSE, Esq. With Plates. Post 8vo. price 14s.

Gwilt.—An Encyclopædia of Architecture, Historical, Theoretical, and Practical. By JOSEPH GWILT. Illustrated with more than One Thousand Engravings on Wood, from Designs by J. S. GWILT. Second Edition, with a Supplemental View of the Symmetry and Stability of Gothic Architecture: Comprising upwards of Eighty additional Woodcuts. 8vo. price 52s. 6d.

The SUPPLEMENT separately, price 6s.

Sidney Hall's General Large

Library Atlas of Fifty-three Maps (size 20 in. by 16 in.), with the Divisions and Boundaries carefully coloured; and an Alphabetical Index of all the Names contained in the Maps. New Edition, corrected from the best and most recent Authorities; with the Railways laid down, and many entirely new Maps. Colombier 4to. price £5. 5s. half-russia.

Hamilton.—Discussions in Phi-

losophy and Literature, Education and University Reform. Chiefly from the *Edinburgh Review*; corrected, vindicated, enlarged, in Notes and Appendices. By Sir WILLIAM HAMILTON, Bart. Second Edition, with Additions. Svo. price 21s.

Hare (Archdeacon).—The Life

of Luther, in Forty-eight Historical Engravings. By GUSTAV KÖNIG. With Explanations by Archdeacon HARE. Square crown Svo. [In the press.]

Harrison.—The Light of the

Forge; or, Counsels drawn from the Sick-bed of E. M. By the Rev. WILLIAM HARRISON, M.A., Rector of Birch, Essex, and Domestic Chaplain to H. R. H. the Duchess of Cambridge. With 2 Woodcuts. Fcp. Svo. price 5s.

Harry Hieover.—The Hunting-

Field. By HARRY HIEOVER. With Two Plates, one representing *The Right Sort*; the other, *The Wrong Sort*. Fcp. Svo. 5s.

Harry Hieover.—Practical

Horsemanship. By HARRY HIEOVER. With 2 Plates, one representing *Going like Workmen*; the other, *Going like Muffs*. Fcp. Svo. 5s. half-bound.

Harry Hieover.—The Stud, for

Practical Purposes and Practical Men; being a Guide to the Choice of a Horse for use more than for show. By HARRY HIEOVER. With 2 Plates, one representing *A pretty good sort for most purposes*; the other, *Rayther a bad sort for any purpose*. Fcp. Svo. price 5s. half-bound.

Harry Hieover.—The Pocket

and the Stud; or, Practical Hints on the Management of the Stable. By HARRY HIEOVER. Second Edition; with Portrait of the Author on his favourite Horse *Harlequin*. Fcp. Svo. price 5s. half-bound.

Harry Hieover.—Stable Talk

and Table Talk; or Spectacles for Young Sportsmen. By HARRY HIEOVER. New Edition, 2 vols. Svo. with Portrait, 24s.

Haydn's Book of Dignities: con-

taining Rolls of the Official Personages of the British Empire, Civil, Ecclesiastical, Judicial, Military, Naval, and Municipal, from the Earliest Periods to the Present Time: compiled chiefly from the Records of the Public Offices. Together with the Sovereigns of Europe, from the Foundation of their respective States; the Peerage and Nobility of Great Britain; and numerous other Lists. Being a New Edition, improved and continued, of Beaton's Political Index. By JOSEPH HAYDN, Compiler of *The Dictionary of Dates*, and other Works. Svo. price 25s. half-bound.

Haydon.—The Life of Benjamin

Robert Haydon, Historical Painter, from his Autobiography and Journals. Edited and compiled by TOM TAYLOR, M.A., of the Inner Temple, Esq.; late Fellow of Trinity College, Cambridge; and late Professor of the English Language and Literature in University College, London. Second Edition, with Additions and an Index. 3 vols. post Svo. price 31s. 6d.

Sir John Herschel.—Outlines

of Astronomy. By Sir JOHN F. W. HERSCHEL, Bart. etc. New Edition; with Plates and Wood Engravings. Svo. price 18s.

Hill.—Travels in Siberia and

Russia. By S. S. HILL, Esq. 2 vols. post Svo. with Map.

Hints on Etiquette and the

Usages of Society: With a Glance at Bad Habits. By Αγωγός. "Manners make the Man." New Edition, revised (with Additions) by a Lady of Rank. Fcp. Svo. price Half-a-Crown.

Hole.—Prize Essay on the His-

tory and Management of Literary, Scientific, and Mechanics' Institutions, and especially how far they may be developed and combined so as to promote the Moral Well-being and Industry of the Country. By JAMES HOLE, Hon. Secretary of the Yorkshire Union of Mechanics' Institutes. Svo. price 5s.

Lord Holland's Memoirs.—

Memoirs of the Whig Party during My Time. By HENRY RICHARD LORD HOLLAND. Edited by his Son, HENRY EDWARD LORD HOLLAND. Vols. I. and II. post Svo. price 9s. 6d. each.

Lord Holland's Foreign Remi-

niscences. Edited by his Son, HENRY EDWARD LORD HOLLAND. Second Edition; with Facsimile. Post Svo. price 10s. 6d.

Holland.—Chapters on Mental

Physiology. By Sir HENRY HOLLAND, Bart., F. R. S., Physician-Extraordinary to the Queen; and Physician in Ordinary to His Royal Highness Prince Albert. Founded chiefly on Chapters contained in *Medical Notes and Reflections*, by the same Author. Fcp. 8vo. price 10s. 6d.

Hook.—The Last Days of Our

Lord's Ministry: A Course of Lectures on the principal Events of Passion Week. By WALTER FARQUHAR HOOK, D.D., Chaplain in Ordinary to the Queen. New Edition. Fcp. 8vo. price 6s.

Hooker and Arnott.—The Bri-

tish Flora; Comprising the Phanogamous or Flowering Plants, and the Ferns. The Sixth Edition, with Additions and Corrections, and numerous Figures, illustrative of the Umbelliferous Plants, the Composite Plants, the Grasses, and the Ferns. By Sir W. J. HOOKER, F.R.A. and L.S. etc., and G. A. WALKER ARNOTT, LL.D., F.L.S. 12mo. with 12 Plates, price 14s., with the Plates coloured, price 21s.

Hooker.—Kew Gardens; or, a

Popular Guide to the Royal Botanic Gardens of Kew. By Sir WILLIAM JACKSON HOOKER, K.H., D.C.L., F.R.A. and L.S., etc. etc. Director. New Edition; with numerous Wood Engravings. 16mo. price Sixpence.

Horne.—An Introduction to the

Critical Study and Knowledge of the Holy Scriptures. By THOMAS HARTWELL HORNE, B.D. of St. John's College, Cambridge. Prebendary of St. Paul's. New Edition, revised and corrected; with numerous Maps, and Facsimiles of Biblical Manuscripts, 5 vols. 8vo. price 63s.

Horne.—A Compendious Intro-

duction to the Study of the Bible. By THOMAS HARTWELL HORNE, B.D. of St. John's College, Cambridge. Being an Analysis of his *Introduction to the Critical Study and Knowledge of the Holy Scriptures*. New Edition, corrected and enlarged; with Maps and other Engravings. 12mo. price 9s.

Howitt.—(A. M.) An Art Stu-

dent in Munich, By ANNA MARY HOWITT, 2 vols. post 8vo. price 14s.

Howitt.—The Children's Year.

By MARY HOWITT. With Four Illustrations, engraved by John Absolon, from Original Designs by ANNA MARY HOWITT. Square 16mo. price 5s.

William Howitt's Boy's Coun-

try Book. Being the real Life of a Country Boy, written by Himself: Exhibiting all the Amusements, Pleasures, and Pursuits of Children in the Country. New Edition; with 40 Woodcuts, Fcp. 8vo. price 6s.

Howitt.—The Rural Life of En-

gland. By WILLIAM HOWITT. New Edition, corrected and revised; with Woodcuts by Bewick and Williams; uniform with *Visits to Remarkable Places*. Medium 8vo. 21s.

Howitt.—Visits to Remarkable

Places; Old Halls, Battle-Fields, and Scenes illustrative of Striking Passages in English History and Poetry. By WILLIAM HOWITT. New Edition; with 40 Woodcuts. Medium 8vo. 21s.

Second Series, chiefly in the

Counties of Northumberland and Durham, with a Stroll along the Border. With upwards of 40 Woodcuts. Medium 8vo. 21s.

Hudson.—Plain Directions for

Making Wills in conformity with the Law: with a clear Exposition of the Law relating to the Distribution of Personal Estate in the case of Intestacy, two Forms of Wills, and much useful Information. By J. C. HUDSON, Esq., late of the Legacy Duty Office, London. New and enlarged Edition; including the provisions of the Wills Act Amendment Act of 1852, (introduced by Lord St. Leonards). Fcp. 8vo. 2s. 6d.

Hudson.—The Executor's Guide.

By J. C. HUDSON, Esq., New and enlarged Edition; with the Addition of Directions for paying Succession Duties on Real Property under Wills and Intestacies, and a Table for finding the Values of Annuities and the Amount of Legacy and Succession Duty thereon. Fcp. 8vo. price 6s.

Humboldt's Aspects of Nature.

Translated, with the Author's authority, by Mrs. SABINE. New Edition. 16mo. price 6s.; or in 2 vols. 3s. 6d. each cloth; 2s. 6d. each sewed.

Humboldt's Cosmos.—Trans-

lated with the Author's authority, by Mrs. SABINE. Vols. I. and II. 16mo. Half-a-Crown each, sewed; 3s. 6d. each cloth; or in post 8vo. 12s. 6d. each cloth. Vol. III. post 8vo. 12s. 6d. each cloth; or in 16mo. Part I. 2s. 6d. sewed, 3s. 6d. cloth; and Part II. 3s. sewed, 4s. cloth.

Humphreys.—Sentiments and

Similes of Shakspeare: A Classified Selection of Similes, Definitions, Descriptions, and other remarkable Passages in Shakspeare's Plays and Poems. With an elaborately illuminated border in the characteristic style of the Elizabethan Period, massive carved covers, and other Embellishments, designed and executed by H. N. HUMPHREYS. Square, post 8vo. price 21s.

The Report of the Committee

appointed by the Council of the Society of Arts to inquire into the Subject of Industrial Instruction. With the Evidences. 8vo. price 5s.

Jameson.—A Commonplace Book

of Thoughts, Memories, and Fancies, Original and Selected. Part I. Ethics and Character; Part II. Literature and Art. By Mrs. JAMESON. With Etchings and Wood Engravings. Square crown 8vo.
[Just ready.]

Mrs. Jameson's Legends of the

Saints and Martyrs. Forming the First Series of *Sacred and Legendary Art*. Second Edition; with numerous Woodcuts, and 16 Etchings by the Author. Square crown 8vo. price 28s.

Mrs. Jameson's Legends of the

Monastic Order, as represented in the Fine Arts. Forming the Second Series of *Sacred and Legendary Art*. Second Edition, corrected and enlarged; with 11 Etchings by the Author, and 88 Woodcuts. Square crown 8vo. price 28s.

Mrs. Jameson's Legends of the

Madonna, as represented in the Fine Arts. Forming the Third Series of *Sacred and Legendary Art*. With 55 Drawings by the Author, and 152 Wood Engravings. Square crown 8vo. price 28s.

Lord Jeffrey's Contributions to

the Edinburgh Review. A New Edition, complete in One Volume, with a Portrait engraved by HENRY ROBINSON, and a Vignette View of Craigcrook, engraved by J. Cousen. Square crown 8vo. 21s. cloth; or 30s. calf.

*. Also a LIBRARY EDITION, in 3 vols. 8vo. price 42s.

Bishop Jeremy Taylor's Entire

Works: with Life, by Bishop HEBER. Revised and corrected by the Rev. CHARLES PAGE EDEN, Fellow of Oriel College, Oxford. In Ten Volumes. Vols. II. to X. 8vo. price Half-a-Guinea each. Vol. I. comprising Bishop Heber's Life of Jeremy Taylor, extended by the Editor, is nearly ready.

Johnston.—A New Dictionary of

Geography, Descriptive, Physical, Statistical, and Historical: Forming a complete General Gazetteer of the World. By ALEXANDER KEITH JOHNSTON, F.R.S.E., F.R.G.S.F.G.S.; Geographer at Edinburgh in Ordinary to Her Majesty. In One Volume of 1,440 pages, comprising nearly 50,000 Names of Places. 8vo. price 36s. cloth; or half-bound in russia, 41s.

Kemble.—The Saxons in Eng-

land: A History of the English Commonwealth till the period of the Norman Conquest. By JOHN MITCHELL KEMBLE, M.A., F.C.P.S., etc. 2 vols. 8vo. price 28s.

Kippis's Collection of Hymns

and Psalms for Public and Private Worship. New Edition: including a New Supplement by the Rev. EDMUND KELL, M.A. 18mo. price 4s. cloth; or 4s. 6d. roan.—The SUPPLEMENT, separately, price Eightpence.

Kirby.—The Life of the Rev.

WILLIAM KIRBY, M.A., F.R.S., F.L.S., etc. Rector of Barham. Author of one of the Bridgewater Treatises, and Joint-Author of the *Introduction to Entomology*. By the Rev. JOHN FREEMAN, M.A., Rector of Ashwicken, Norfolk, and Rural Dean. With Portrait, Vignette, and Facsimile. 8vo. price 15s.

Kirby & Spence's Introduction

to Entomology; or, Elements of the Natural History of Insects: comprising an account of noxious and useful Insects, of their Metamorphoses, Food, Stratagems, Habitations, Societies, Motions, Noises, Hybernation, Instinct, etc. New Edition, 2 vols. 8vo. with Plates, price 31s. 6d.

Laing's (S.) Observations on the

Social and Political State of Denmark and the Duchies of Sleswick and Holstein in 1851: Being the Third Series of *Notes of a Traveller*. 8vo. price 12s.

Laing's (S.) Observations on the

Social and Political State of the European People in 1848 and 1849: Being the Second Series of *Notes of a Traveller*. 8vo. price 14s.

L. E. L.—The Poetical Works

of Letitia Elizabeth Landon; comprising the *Imprisonatrice*, the *Venetian Brucelet*, the *Golden Violet*, the *Troubadour*, and Poetical Remains. New Edition; with 2 Vignettes by Richard Doyle. 2 vols. 16mo. 10s. cloth; morocco, 21s.

Dr. Latham on Diseases of the

Heart. Lectures on Subjects connected with Clinical Medicine: Diseases of the Heart. By P. M. LATHAM, M.D., Physician Extraordinary to the Queen. New Edition. 2 vols. 12mo. price 16s.

Mrs. R. Lee's Elements of Na-

tural History; or First Principles of Zoology: comprising the Principles of Classification, interspersed with amusing and instructive Accounts of the most remarkable Animals. New Edition, enlarged; with numerous additional Woodcuts. Fcp. 8vo. price 7s. 6d.

Letters on Happiness, addressed

to a Friend. By the Author of *Letters to My Unknown Friends*, etc. Fcp. 8vo. price 6s.

LARDNER'S CABINET CYCLOPÆDIA.

Of History, Biography, Literature, the Arts and Sciences, Natural History, and Manufactures: A Series of Original Works by

SIR JOHN HERSCHEL,
SIR JAMES MACKINTOSH,
ROBERT SOUTHEY,
SIR DAVID BREWSTER,
THOMAS KEIGHTLEY,
JOHN FORSTER,

SIR WALTER SCOTT,
THOMAS MOORE,
BISHOP THIRLWALL,
THE REV. G. R. GLEIG,
J. C. L. DE SISMONDI,
JOHN PHILLIPS, F.R.S., G.S.

AND OTHER EMINENT WRITERS.

Complete in 132 vols. fcp. 8vo. with Vignette Titles, price, in cloth, Nineteen Guineas.
The Works *separately*, in Sets or Series, price Three Shillings and Sixpence each Volume.

A List of the Works composing the CABINET CYCLOPÆDIA:—

- | | |
|---|---|
| 1. Bell's History of Russia . . . 3 vols. 10s. 6d. | 34. Lardner on Heat . . . 1 vol. 3s. 6d. |
| 2. Bell's Lives of British Poets, 2 vols. 7s. | 35. Lardner's Hydrostatics and Pneumatics . . . 1 vol. 3s. 6d. |
| 3. Brewster's Optics, . . . 1 vol. 3s. 6d. | 36. Lardner and Walker's Electricity and Magnetism, 2 vols. 7s. |
| 4. Cooley's Maritime and Inland Discovery . . . 3 vols. 10s. 6d. | 37. Mackintosh, Forster, and Courtenay's Lives of British Statesmen . . . 7 vols. 24s. 6d. |
| 5. Crowe's History of France, 3 vols. 10s. 6d. | 38. Mackintosh, Wallace, and Bell's History of England . . . 10 vols. 35s. |
| 6. De Morgan on Probabilities, 1 vol. 3s. 6d. | 39. Montgomery and Shelley's Eminent Italian, Spanish, and Portuguese Authors, 3 vols. 10s. 6d. |
| 7. De Sismondi's History of the Italian Republics . . . 1 vol. 3s. 6d. | 40. Moore's History of Ireland, 4 vols. 14s. |
| 8. De Sismondi's Fall of the Roman Empire . . . 2 vols. 7s. | 41. Nicolas's Chronology of History . . . 1 vol. 3s. 6d. |
| 9. Donovan's Chemistry . . . 1 vol. 3s. 6d. | 42. Phillips' Treatise on Geology . . . 2 vols. 7s. |
| 10. Donovan's Domestic Economy . . . 2 vols. 7s. | 43. Powell's History of Natural Philosophy . . . 1 vol. 3s. 6d. |
| 11. Dunham's Spain and Portugal . . . 5 vols. 17s. 6d. | 44. Porter's Treatise on the Manufacture of Silk . . . 1 vol. 3s. 6d. |
| 12. Dunham's History of Denmark, Sweden, and Norway . . . 3 vols. 10s. 6d. | 45. Porter's Manufacture of Porcelain and Glass . . . 1 vol. 3s. 6d. |
| 13. Dunham's History of Poland . . . 1 vol. 3s. 6d. | 46. Roscoe's British Lawyers, 1 vol. 3s. 6d. |
| 14. Dunham's Germanic Empire . . . 3 vols. 10s. 6d. | 47. Scott's History of Scotland . . . 2 vols. 7s. |
| 15. Dunham's Europe during the Middle Ages . . . 4 vols. 14s. | 48. Shelley's Lives of Eminent French Authors . . . 2 vols. 7s. |
| 16. Dunham's British Dramatists . . . 2 vols. 7s. | 49. Shuckard and Swainson's Insects . . . 1 vol. 3s. 6d. |
| 17. Dunham's Lives of Early Writers of Great Britain, 1 vol. 3s. 6d. | 50. Southey's Lives of British Admirals . . . 5 vols. 17s. 6d. |
| 18. Fergus's History of the United States . . . 2 vols. 7s. | 51. Stebbing's Church History, 2 vols. 7s. |
| 19. Fosbroke's Greek and Roman Antiquities . . . 2 vols. 7s. | 52. Stebbing's History of the Reformation . . . 2 vols. 7s. |
| 20. Forster's Lives of the Statesmen of the Commonwealth . . . 5 vols. 17s. 6d. | 53. Swainson's Discourse on Natural History . . . 1 vol. 3s. 6d. |
| 21. Gleig's Lives of British Military Commanders 3 vols. 10s. 6d. | 54. Swainson's Natural History and Classification of Animals . . . 1 vol. 3s. 6d. |
| 22. Grattan's History of the Netherlands . . . 1 vol. 3s. 6d. | 55. Swainson's Habits and Instincts of Animals . . . 1 vol. 3s. 6d. |
| 23. Henslow's Botany . . . 1 vol. 3s. 6d. | 56. Swainson's Birds . . . 2 vols. 7s. |
| 24. Herschel's Astronomy . . . 1 vol. 3s. 6d. | 57. Swainson's Fish, Reptiles, etc. . . . 2 vols. 7s. |
| 25. Herschel's Discourse on Natural Philosophy . . . 1 vol. 3s. 6d. | 58. Swainson's Quadrupeds . . . 1 vol. 3s. 6d. |
| 26. History of Rome . . . 2 vols. 7s. | 59. Swainson's Shells and Shell fish . . . 1 vol. 3s. 6d. |
| 27. History of Switzerland . . . 1 vol. 3s. 6d. | 60. Swainson's Animals in Menageries . . . 1 vol. 3s. 6d. |
| 28. Holland's Manufactures in Metal, . . . 3 vols. 10s. 6d. | 61. Swainson's Taxidermy and Biography of Zoologists 1 vol. 3s. 6d. |
| 29. James's Lives of Foreign Statesmen . . . 5 vols. 17s. 6d. | 62. Thirlwall's History of Greece . . . 8 vols. 28s. |
| 30. Kater and Lardner's Mechanics . . . 1 vol. 3s. 6d. | |
| 31. Keightley's Outlines of History . . . 1 vol. 3s. 6d. | |
| 32. Lardner's Arithmetic . . . 1 vol. 3s. 6d. | |
| 33. Lardner's Geometry . . . 1 vol. 3s. 6d. | |

Letters to my Unknown Friends

By a Lady, Author of *Letters on Happiness*. Fourth and cheaper Edition. Fcp. 8vo. price 5s.

Lindley.—The Theory of Horti-

culture; Or, an Attempt to explain the principal Operations of Gardening upon Physiological Principles. By JOHN LINDLEY, Ph.D. F.R.S. New Edition, revised and improved; with Wood Engravings. 8vo. [In the press.]

Dr. John Lindley's Introduction

to Botany. New Edition, with Corrections and copious Additions. 2 vols. 8vo. with Six Plates and numerous Woodcuts, 24s.

Linwood.—Anthologia Oxonien-

sis, sive, Florilegium e lusibus poeticis diversorum Oxoniensium Græcis et Latinis decerptum. Curante GULIELMO LINWOOD, M.A. Ædis Christi Alummo. 8vo. price 14s.

Dr. Little on Deformities.—On

the Nature and Treatment of Deformities of the Human Frame. By W. J. LITTLE, M.D., Physician to the London Hospital, Founder of the Royal Orthopædic Hospital, etc. With 160 Woodcuts and Diagrams. 8vo. price 15s.

Litton.—The Church of Christ,

in its Idea, Attributes, and Ministry: With a particular Reference to the Controversy on the Subject between Romanists and Protestants. By the Rev. EDWARD ARTHUR LITTON, M.A., Vice-Principal of St. Edmund Hall, Oxford. 8vo. price 16s.

Lorimer's (C.) Letters to a Young

Master Mariner on some Subjects connected with his Calling. New Edition. Fcp. 8vo. price 5s. 6d.

Loudon's Self-Instruction for

Young Gardeners, Foresters, Bailiffs, Land Stewards, and Farmers; in Arithmetic, Book-keeping, Geometry, Mensuration, Practical Trigonometry, Mechanics, Land-Surveying, Levelling, Planning and Mapping, Architectural Drawing, and Isometrical Projection and Perspective: With Examples shewing their applications to Horticultural and Agricultural Purposes; a Memoir, Portrait, and Woodcuts. 8vo. price 7s. 6d.

Loudon's Encyclopædia of Gar-

dening; comprising the Theory and Practice of Horticulture, Floriculture, Arboriculture, and Landscape Gardening: Including all the latest improvements, a General History of Gardening in all Countries; a Statistical View of its Present State; and Suggestions for its Future Progress in the British Isles. With many hundred Woodcuts. New Edition, corrected and improved by Mrs. LOUDON. 8vo. price 50s.

Loudon's Encyclopædia of Trees

and Shrubs; or the *Arboretum et Fruticetum Britannicum* abridged: Containing the Hardy Trees and Shrubs of Great Britain, Native and Foreign, Scientifically and Popularly Described: with their Propagation, Culture, and Uses in the Arts; and with Engravings of nearly all the Species. Adapted for the use of Nurserymen, Gardeners, and Foresters. With about 2,000 Woodcuts, 8vo. price 50s.

Loudon's Encyclopædia of Agri-

culture: comprising the Theory and Practice of the Valuation, Transfer, Laying-out, Improvement, and Management of Landed Property, and of the Cultivation and Economy of the Animal and Vegetable Productions of Agriculture; Including all the latest improvements, a general History of Agriculture in all Countries, a Statistical View of its present State, and Suggestions for its future progress in the British Isles. New Edition; with 1,100 Woodcuts. 8vo. price 50s.

Loudon's Encyclopædia of

Plants, including all the Plants which are now found in, or have been introduced into, Great Britain, giving their Natural History, accompanied by such descriptions, engraved Figures, and elementary details, as may enable a beginner, who is a mere English reader, to discover the name of every Plant which he may find in flower, and acquire all the information respecting it which is useful and interesting. New Edition, corrected throughout and brought down to the year 1854, by Mrs. LOUDON and GEORGE DON, Esq., F.L.S., etc. 8vo.

[In the Spring.]

Loudon's Encyclopædia of Cot-

tage, Farm, and Villa Architecture and Furniture; containing numerous Designs, from the Villa to the Cottage and the Farm, including Farm Houses, Farmeries, and other Agricultural Buildings; Country Inns, Public Houses, and Parochial Schools, with the requisite Fittings-up, Fixtures, and Furniture, and appropriate Offices, Gardens, and Garden Scenery: Each Design accompanied by Analytical and Critical Remarks. New Edition, edited by Mrs. LOUDON; with more than 2,000 Woodcuts. 8vo. price 63s.

Loudon's Hortus Britannicus;

Or, Catalogue of all the Plants Indigenous to, cultivated in, or introduced into Britain. An entirely New Edition corrected throughout: With a Supplement, including all the New Plants, and a New General Index to the whole Work. Edited by Mrs. LOUDON; assisted by W. H. BAXTER and DAVID WOOSTER. 8vo. price 31s. 6d.—The SUPPLEMENT separately, price 14s.

Mrs. Loudon's Amateur Gardener's Calendar: Being a Monthly Guide as to what should be avoided as well as what should be done in a Garden in each Month: with plain Rules *how to do* what is requisite; Directions for Laying Out and Planting Kitchen and Flower Gardens, Pleasure Grounds, and Shrubberies; and a short account, in each Month, of the Quadrapeds, Birds, and Insects, then most injurious to Gardens. 16mo. with Woodcuts, price 7s. 6d.

Mrs. Loudon's Lady's Country Companion; or, How to Enjoy a Country Life Rationally. Fourth Edition, with Plates and Wood Engravings. Fcp. Svo. price 5s.

Low.—A Treatise on the Domesticated Animals of the British Islands: comprehending the Natural and Economical History of Species and Varieties; the Description of the Properties of external Form; and Observations on the Principles and Practice of Breeding. By D. Low, Esq., F.R.S.E. With Wood Engravings. Svo. price 25s.

Low.—Elements of Practical Agriculture; comprehending the Cultivation of Plants, the Husbandry of the Domestic Animals, and the Economy of the Farm. By D. Low, Esq., F.R.S.E. New Edition; with 200 Woodcuts, Svo. price 21s.

Macaulay.—Speeches of the Right Hon. T. B. Macaulay, M.P. Corrected by HIMSELF. Svo. price 12s.

Macaulay.—The History of England from the Accession of James II. By THOMAS BABINGTON MACAULAY, New Edition. Vols. 1. and 11. Svo. price 32s.

Mr. Macaulay's Critical and Historical Essays contributed to the Edinburgh Review. Four Editions, as follows:—

1. LIBRARY EDITION (the *Seventh*), in 3 vols. Svo. price 36s.
2. Complete in ONE VOLUME, with Portrait and Vignette. Square crown Svo. price 21s. cloth; or 30s. calf.
3. ANOTHER EDITION, in 3 vols. fcp. Svo. price 21s.
4. PEOPLE'S EDITION, in course of publication, crown Svo. in Weekly Numbers at 1½d. and in 7 Monthly Parts, price One Shilling each.

Macaulay.—Lays of Ancient Rome, with *Ivry and the Armada.* By THOMAS BABINGTON MACAULAY. New Edition. 16mo. price 4s. 6d. cloth; or 10s. 6d. bound in morocco.

Mr. Macaulay's Lays of Ancient Rome. With numerous Illustrations, Original and from the Antique, drawn on Wood by George Scarf, jun., and engraved by Samuel Williams. New Edition. Fcp. 4to. price 21s. boards; or 42s. bound in morocco.

Macdonald.—Villa Verocchio; or the Youth of Leonardo da Vinci: A Tale. By the late DIANA LOUISA MACDONALD. Fcp. Svo. price 6s.

Sir James Mackintosh's History of England from the Earliest Times to the final Establishment of the Reformation. Being that portion of the *History of England* published in Dr. Lardner's *Cabinet Cyclopædia*, which was contributed by SIR JAMES MACKINTOSH. Library Edition, revised by the Author's Son. 2 vols. Svo. price 21s.

Mackintosh.—Sir James Mackintosh's Miscellaneous Works: Including his Contributions to the Edinburgh Review. A New Edition, complete in One Volume; with Portrait and Vignette. Square crown Svo. price 21s. cloth; or 30s. bound in calf.

M'Culloch.—A Dictionary, Practical, Theoretical, and Historical, of Commerce and Commercial Navigation. Illustrated with Maps and Plans. By J. R. M'CULLOCH, Esq. New Edition (1854), adapted to the Present Time; and embracing a large mass of new and important Information in regard to the Trade, Commercial Law, and Navigation of this and other Countries. Svo. price 50s. cloth; half-russia, with flexible back, 55s.

M'Culloch.—A Dictionary, Geographical, Statistical, and Historical, of the various Countries, Places, and Principal Natural Objects in the World. By J. R. M'CULLOCH, Esq. Illustrated with Six large Maps. New Edition, with a Supplement, comprising the Population of Great Britain from the Census of 1851. 2 vols. Svo. price 63s.

M'Culloch.—An Account, Descriptive and Statistical of the British Empire; Exhibiting its Extent, Physical Capacities, Population, Industry, and Civil and Religious Institutions. By J. R. M'CULLOCH, Esq. New Edition, corrected, enlarged, and greatly improved. 2 vols. Svo. price 42s.

Maitland.—The Church in the

Catacombs: A Description of the Primitive Church of Rome, illustrated by its Sepulchral Remains. By the Rev. CHARLES MAITLAND. New Edition, with many Woodcuts. 8vo. price 14s.

Mrs. Marcet's Conversations on

Chemistry, in which the Elements of that Science are familiarly Explained and Illustrated by Experiments. New Edition, enlarged and improved. 2 vols. fcp. 8vo. price 14s.

Mrs. Marcet's Conversations on

Natural Philosophy, in which the Elements of that Science are familiarly explained. New Edition, enlarged and corrected; with 23 Plates. Fcp. 8vo. price 10s. 6d.

Mrs. Marcet's Conversations on

Political Economy, in which the Elements of that Science are familiarly explained. New Edition. Fcp. 8vo. price 7s. 6d.

Mrs. Marcet's Conversations on

Vegetable Physiology; comprehending the Elements of Botany, with their Application to Agriculture. New Edition; with Four Plates. Fcp. 8vo. price 9s.

Mrs. Marcet's Conversations on

Land and Water. New Edition, revised and corrected; with a coloured Map, shewing the comparative Altitude of Mountains. Fcp. 8vo. price 5s. 6d.

Martineau.—Church History in

England: Being a Sketch of the History of the Church of England from the Earliest Times to the Period of the Reformation. By the Rev. ARTHUR MARTINEAU, M.A., late Fellow of Trinity College, Cambridge. 12mo. price 6s.

Maunder's Biographical Trea-

sury; consisting of Memoirs, Sketches, and brief Notices of above 12,000 Eminent Persons of all Ages and Nations, from the Earliest Period of History; forming a new and complete Dictionary of Universal Biography. The Eighth Edition, revised throughout, and brought down to the close of the year 1853. Fcp. 8vo. 10s. cloth; bound in roan, 12s.; calf lettered, 12s. 6d.

Maunder's Historical Treasury;

comprising a General Introductory Outline of Universal History, Ancient and Modern, and a Series of separate Histories of every principal Nation that exists; their Rise, Progress, and Present Condition, the Moral and Social Character of their respective Inhabitants, their Religion, Manners, and Customs, etc., etc. New Edition; revised throughout, and brought down to the Present Time. Fcp. 8vo. 10s. cloth; roan, 12s.; calf, 12s. 6d.

Maunder's Scientific and Lite-

rary Treasury: A New and Popular Encyclopædia of Science and the Belles-Lettres; including all Branches of Science, and every subject connected with Literature and Art. New Edition. Fcp. 8vo. price 10s. cloth; bound in roan, 12s.; calf lettered, 12s. 6d.

Maunder's Treasury of Natural

History: Or, a Popular Dictionary of Animated Nature: In which the Zoological Characteristics that distinguish the different Classes, Genera, and Species, are combined with a variety of interesting Information illustrative of the Habits, Instincts, and General Economy of the Animal Kingdom. With 900 Woodcuts. New Edition. Fcp. 8vo. price 10s. cloth; roan, 12s.; calf, 12s. 6d.

Maunder's Treasury of Know-

ledge, and Library of Reference. Comprising an English Dictionary and Grammar, an Universal Gazetteer, a Classical Dictionary, a Chronology, a Law Dictionary, a Synopsis of the Peerage, numerous useful Tables, etc. The Twentieth Edition carefully revised and corrected throughout: With some Additions. Fcp. 8vo. price 10s. cloth; bound in roan, 12s.; calf, 12s. 6d.

Merivale.—A History of the

Romans under the Empire. By the Rev. CHARLES MERIVALE, B.D., late Fellow of St. John's College, Cambridge. Vols. I. and II. 8vo. price 28s.; and Vol. III. completing the History to the Establishment of the Monarchy by Augustus, price 14s.

Merivale.—The Fall of the Ro-

man Republic: A Short History of the last Century of the Commonwealth. By the Rev. CHARLES MERIVALE, B.D., late Fellow of St. John's College, Cambridge. 12mo. price 7s. 6d.

Merivale.—Memoirs of Cicero:

A Translation of Cicero in his Letters, by Bernard Rudolph Abeken. Edited by the Rev. CHARLES MERIVALE, B.D. 12mo.

Milner's History of the Church

of Christ. With Additions by the late Rev. ISAAC MILNER, D.D., F.R.S. A New Edition, revised, with additional Notes by the Rev. T. GRANTHAM, B.D. 4 vols. 8vo. price 52s.

Montgomery.—Original Hymns

for Public, Social, and Private Devotion. By JAMES MONTGOMERY. 18mo. 5s. 6d.

James Montgomery's Poetical

Works: Collective Edition; with the Author's Autobiographical Prefaces. A New Edition, complete in One Volume; with Portrait and Vignette. Square crown 8vo. price 10s. 6d. cloth; morocco, 21s.—Or in 4 vols. fcp. 8vo. with Portrait, and Seven other Plates, price 20s. cloth; morocco, 36s.

Moore.—Man and his Motives.

By GEORGE MOORE, M.D., Member of the Royal College of Physicians. *Third* and cheaper Edition. Fcp. 8vo. price 6s.

Moore.—The Power of the Soul

over the Body, considered in relation to Health and Morals. By GEORGE MOORE, M.D., Member of the Royal College of Physicians, etc. *Fifth* and cheaper Edition. Fcp. 8vo. price 6s.

Moore.—The Use of the Body in

relation to the Mind. By GEORGE MOORE, M.D., Member of the Royal College of Physicians. *Third* and cheaper Edition. Fcp. 8vo. price 6s.

Moore.—Health, Disease, and

Remedy, familiarly and practically considered in a few of their Relations to the Blood. By GEORGE MOORE, M.D. Post 8vo. 7s. 6d.

Moore.—Memoirs, Journal, and

Correspondence of Thomas Moore. Edited by the Right Hon. LORD JOHN RUSSELL, M.P. With Portraits and Vignette Illustrations. Vols. I. to IV. post 8vo. price 10s. 6d. each.

The Fifth and Sixth Volumes

of MOORE'S MEMOIRS, JOURNAL, and CORRESPONDENCE; with Portraits of Lord John Russell and Mr. Corry, and Vignettes, by T. Creswick, R.A., of Moore's Residence at Paris and at Sloperton. Vols. V. and VI. post 8vo. price 21s.

Thomas Moore's Poetical Works.

Containing the Author's recent Introduction and Notes. Complete in One Volume; with a Portrait, and a View of Sloperton Cottage. Medium 8vo. price 21s. cloth; morocco 42s.

•• Also a New and Cheaper Issue of the First collected Edition of the above, in 10 vols. fcp. 8vo. with Portrait, and 19 Plates, price 35s.

Moore.—Songs, Ballads, and

Sacred Songs. By THOMAS MOORE, Author of *Lalla Rookh*, etc. First collected Edition, with Vignette by R. Doyle. 16mo. price 5s. cloth; 12s. 6d. bound in morocco.

Moore's Irish Melodies. New

Edition, with the Autobiographical Preface from the Collective Edition of Mr. Moore's Poetical Works, and a Vignette Title by D. Maclise, R.A. 16mo. price 5s. cloth; 12s. 6d. bound in morocco.

Moore's Irish Melodies. Illus-

trated by D. Maclise, R.A. New and cheaper Edition; with 161 Designs, and the whole of the Letter-press engraved on Steel, by F. P. Becker. Super royal 8vo. price 31s. 6d. boards; bound in morocco, £2. 12s. 6d.

The Original Edition of the

above, in Imperial 8vo. price 63s. boards; morocco, £4. 14s. 6d.; proofs, £6. 6s. boards,—*may still be had.*

Moore's Lalla Rookh: An Ori-

ental Romance. New Edition; with the Autobiographical Preface from the Collective Edition of Mr. Moore's Poetical Works, and a Vignette Title by D. Maclise, R.A. 16mo. price 5s. cloth; 12s. 6d. bound in morocco.

Moore's Lalla Rookh: An Ori-

ental Romance. With 13 highly-finished Steel Plates, from Designs by Corbould, Meadows, and Stephanoff, engraved under the superintendence of the late Charles Heath. New Edition. Square crown 8vo. price 15s. cloth; morocco, 28s.

A few copies of the Original Edition, in royal 8vo. price One Guinea, *still remain.*

Morton.—A Manual of Pharmacy

for the Student of Veterinary Medicine: Containing the Substances employed at the Royal Veterinary College, with an attempt at their Classification; and the Pharmacopœia of that Institution. By W. J. T. MORTON, Professor of Chemistry and Materia Medica in the College. *Fifth Edition* (1854). Fcp. 8vo. price 10s.

Moseley.—The Mechanical Prin-

ciples of Engineering and Architecture. By the Rev. H. MOSELEY, M.A., F.R.S., Professor of Natural Philosophy and Astronomy in King's College, London. 8vo. price 24s.

Mure.—A Critical History of

the Language and Literature of Ancient Greece. By WILLIAM MURE, M.P. of Caldwell. 3 vols. 8vo. price 36s.

Vol. IV. comprising His-

torical Literature from the Rise of Prose Composition to the Death of Herodotus. 8vo. with Map, price 15s.

- Murray's Encyclopædia of Geography:** Comprising a complete Description of the Earth: exhibiting its Relation to the Heavenly Bodies, its Physical Structure, the Natural History of each Country, and the Industry, Commerce, Political Institutions, and Civil and Social State of All Nations. Second Edition; with 82 Maps, and upwards of 1,000 other Woodcuts. 8vo. price 60s.
- Neale.**—“Risen from the Ranks;” Or, Conduct *versus* Caste. By the Rev. **ERSKINE NEALE, M.A.**, Rector of Kirton, Suffolk. Fcp. 8vo. price 6s.
- Neale.**—The Riches that bring no Sorrow. By the Rev. **ERSKINE NEALE, M.A.**, Rector of Kirton, Suffolk. Fcp. 8vo. price 6s.
- Neale.**—The Earthly Resting Places of the Just. By the Rev. **ERSKINE NEALE, M.A.**, Rector of Kirton, Suffolk. Fcp. 8vo. with Woodcuts, price 7s.
- Neale.**—The Closing Scene; or Christianity and Infidelity contrasted in the Last Hours of Remarkable Persons. By the Rev. **ERSKINE NEALE, M.A.**, Rector of Kirton, Suffolk. New Editions of the First and Second Series. 2 vols. fcp. 8vo. price 12s.; or separately, 6s. each.
- Newman.**—Discourses addressed to Mixed Congregations. By **JOHN HENRY NEWMAN**, Priest of the Oratory of St. Philip Neri. Second Edition. 8vo. price 12s.
- Lieutenant Osborn's Arctic Journal.** Stray Leaves from an Arctic Journal; or, Eighteen Months in the Polar Regions in search of Sir John Franklin's Expedition. By Lieut. **SHERARD OSBORN, R.N.**, Commanding *H.M.S.V. Pioneer*. With Map and Four coloured Plates. Post 8vo. price 12s.
- Owen Jones.**—Flowers and their Kindred Thoughts. A Series of Stanzas. By **MARY ANNE BACON**. With beautiful Illustrations of Flowers printed in Colours by Owen Jones. Imperial 8vo. price 31s. 6d. elegantly bound in calf.
- Owen.**—Lectures on the Comparative Anatomy and Physiology of the Invertebrate Animals, delivered at the Royal College of Surgeons in 1843. By **RICHARD OWEN, F.R.S.** Hunterian Professor to the College. New Edition, corrected. 8vo. with Wood Engravings.
(In the press.)
- Professor Owen's Lectures on the Comparative Anatomy and Physiology of the Vertebrate Animals,** delivered at the Royal College of Surgeons in 1844 and 1846. With numerous Woodcuts. Vol. I. 8vo. price 14s.
- The Complete Works of Blaise Pascal.** Translated from the French, with Memoir, Introductions to the various Works, Editorial Notes, and Appendices, by **GEORGE PEARCE, Esq.** 3 vols. post 8vo. with Portrait, 25s. 6d.
- Vol. 1. Pascal's Provincial Letters;** with M. Villemain's Essay on Pascal prefixed, and a new Memoir. Post 8vo. Portrait, 8s. 6d.
- Vol. 2. Pascal's Thoughts on Religion and Evidences of Christianity.** with Additions from original MSS.: from M. Faugère's Edition. Post 8vo. 8s. 6d.
- Vol. 3. Pascal's Miscellaneous Writings, Correspondence, Detached Thoughts, etc.** from M. Faugère's Edition. Post 8vo. 8s. 6d.
- Captain Peel's Travels in Nubia.**—A Ride through the Nubian Desert. By **Captain W. PEEL, R.N.** Post 8vo. with a Route Map, price 5s.
- Pereira's Treatise on Food and Diet.** With Observations on the Dietetical Regimen suited for Disordered States of the Digestive Organs; and an Account of the Dietaries of some of the principal Metropolitan and other Establishments for Paupers, Lunatics, Criminals, Children, the Sick, etc. 8vo. 16s.
- Peschel's Elements of Physics.** Translated from the German, with Notes, by **E. WEST**. With Diagrams and Woodcuts. 3 vols. fcp. 8vo. 21s.
- Peterborough.**—A Memoir of **Charles Mordaunt, Earl of Peterborough and Monmouth.** With Selections from his Correspondence. By the Author of *Hoche-laga*, etc. 2 vols. post 8vo. price 18s.
- Phillips.**—A Guide to Geology. By **JOHN PHILLIPS, M.A. F.R.S. F.G.S.**, Deputy Reader in Geology in the University of Oxford; Honorary Member of the Imperial Academy of Sciences of Moscow, etc. Fourth Edition, corrected to the present Time; with 4 Plates. Fcp. 8vo. price 5s.
- Phillips's Elementary Introduction to Mineralogy.** A New Edition, with extensive Alterations and Additions, by **H. J. BROOKE, F.R.S., F.G.S.**; and **W. H. MILLER, M.A., F.G.S.**, Professor of Mineralogy in the University of Cambridge. With numerous Wood Engravings. Post 8vo. price 18s.
- Phillips.**—Figures and Descriptions of the Palæozoic Fossils of Cornwall, Devon, and West Somerset; observed in the course of the Ordnance Geological Survey of that District. By **JOHN PHILLIPS, F.R.S. F.G.S.** etc. 8vo. with 60 Plates, price 9s.

Captain Portlock's Report on

the Geology of the County of Londonderry, and of Parts of Tyrone and Fermanagh, examined and described under the Authority of the Master-General and Board of Ordnance. Svo. with 48 Plates, price 24s.

Power's Sketches in New Zealand,

with Pen and Pencil. From a Journal kept in that Country, from July 1846 to June 1848. With Plates and Woodcuts. Post Svo. 12s.

Pulman's Vade-Mecum of Fly-

Fishing for Trout; being a complete Practical Treatise on that Branch of the Art of Angling; with plain and copious Instructions for the Manufacture of Artificial Flies. Third Edition, with Woodcuts. Fcp. Svo. price 6s.

Pycroft's Course of English

Reading, adapted to every Taste and Capacity; With Literary Anecdotes. New and cheaper Edition. Fcp. Svo. price 5s.

Dr. Reece's Medical Guide; for

the use of the Clergy, Heads of Families, Schools, and Junior Medical Practitioners: Comprising a complete Modern Dispensatory, and a Practical Treatise on the distinguishing Symptoms, Causes, Prevention, Cure, and Palliation of the Diseases incident to the Human Frame. With the latest Discoveries in the different departments of the Healing Art, *Materia Medica*, etc. Seventeenth Edition, corrected and enlarged by the Author's Son, Dr. H. REECE, M.R.C.S. etc. Svo. price 12s.

Rich's Illustrated Companion

to the Latin Dictionary and Greek Lexicon: Forming a Glossary of all the Words representing Visible Objects connected with the Arts, Manufactures, and Every-day Life of the Ancients. With Woodcut Representations of nearly 2,000 Objects from the Antique. Post Svo. price 21s.

Sir J. Richardson's Journal of

a Boat Voyage through Rupert's Land and the Arctic Sea, in Search of the Discovery Ships under Command of Sir John Franklin. With an Appendix on the Physical Geography of North America; a Map, Plates, and Woodcuts. 2 vols. Svo. price 31s. 6d.

Richardson (Captain).—Horse-

manship; or, the Art of Riding and Managing a Horse, adapted to the Guidance of Ladies and Gentlemen on the Road and in the Field: With Instructions for Breaking-in Colts and Young Horses. By Captain RICHARDSON, late of the 4th Light Dragoons. With 5 Line Engravings. Square crown Svo. price 14s.

Riddle's Complete Latin-Eng-

lish and English-Latin Dictionary, for the use of Colleges and Schools. *New* and cheaper Edition, revised and corrected. Svo. 21s.

Separately { The English-Latin Dictionary, 7s.
The Latin-English Dictionary, 15s.

Riddle's Copious and Critical

Latin-English Lexicon, founded on the German-Latin Dictionaries of Dr. William Freund. *New Edition*. Post 4to. price 31s. 6d.

Riddle's Diamond Latin-Eng-

lish Dictionary: A Guide to the Meaning, Quality, and right Accentuation of Latin Classical Words. Royal 32mo. price 4s.

Rivers's Rose-Amateur's Guide;

containing ample Descriptions of all the fine leading varieties of Roses, regularly classed in their respective Families; their History and Mode of Culture. *New Edition*, Fcp. Svo. 6s.

Dr. E. Robinson's Greek and

English Lexicon of the Greek Testament. A *New Edition*, revised and in great part re-written. Svo. price 18s.

Roby.—Remains, Legendary &

Poetical, of John Roby, Author of *Traditions of Lancashire*. With a Sketch of his Literary Life and Character by his Widow; and a Portrait. Post Svo. price 10s. 6d.

Rogers.—Essays selected from

Contributions to the Edinburgh Review. By HENRY ROGERS. 2 vols. Svo. price 24s.

Dr. Roget's Thesaurus of Eng-

lish Words and Phrases classified and arranged so as to facilitate the Expression of Ideas and assist in Literary Composition. *New Edition*, revised and enlarged. Medium Svo. price 14s.

Rowton's Debater: A Series of

complete Debates, Outlines of Debates, and Questions for Discussion; with ample references to the best Sources of Information on each particular Topic. *New Edition*. Fcp. Svo. price 6s.

Letters of Rachael Lady Rus-

sell. A *New Edition*, including several unpublished Letters, together with those edited by Miss BERRY. With Portraits, Vignettes, and Facsimile. 2 vols. post Svo. price 15s.

The Life of William Lord Rus-

sell. By the Right Hon. Lord JOHN RUSSELL, M.P. The Fourth Edition, complete in One Volume; with a Portrait engraved on Steel by S. Bellin, from the original by Sir Peter Lely at Woburn Abbey. Post Svo. price 10s. 6d.

St. John (the Hon. F.)—Rambles

in Search of Sport, in Germany, France, Italy, and Russia. By the Honourable FERDINAND ST. JOHN. With Four coloured Plates. Post 8vo. price 9s. 6d.

St. John (H.)—The Indian Archipelago; Its History and Present State.

By HORACE ST. JOHN, Author of *The British Conquests in India*, etc. 2 vols. post 8vo. price 21s.

St. John (J. A.)—There and

Back Again in Search of Beauty. By JAMES AUGUSTUS ST. JOHN, Author of *Isis*, etc. 2 vols. post 8vo. price 21s.

St. John (J. A.)—The Nemesis

of Power: Causes and Forms of Political Revolutions. By JAMES AUGUSTUS ST. JOHN, Author of *There and Back again*, etc. Fcp. 8vo. [Just ready.]

Mr. St. John's Work on Egypt.

Isis: An Egyptian Pilgrimage. By JAMES AUGUSTUS ST. JOHN. 2 vols. post 8vo. 21s.

The Saints our Example. By

the Author of *Letters to my Unknown Friends*, etc. Fcp. 8vo. price 7s.

Schmitz.—History of Greece,

from the Earliest Times to the Taking of Corinth by the Romans, B.C. 146, mainly based upon Bishop Thirlwall's History of Greece. By Dr. LEONHARD SCHMITZ, F.R.S.E. Rector of the High School of Edinburgh. New Edition. 12mo. price 7s. 6d.

A Schoolmaster's Difficulties at

Home and Abroad:—1. In regard to his Calling; 2. In relation to Himself; 3. As concerning his Charge; 4. About Committees; 5. With Pupil-Teachers; 6. Touching Inspectors; 7. On the Matter of Society; 8. In Prospect of the Future; and 9. Affecting Personal Relations. Fcp. 8vo. 4s. 6d.

Sir Edward Seaward's Narra-

tive of his Shipwreck, and consequent Discovery of certain Islands in the Caribbean Sea: With a detail of many extraordinary and highly interesting Events in his Life, from 1733 to 1749. Third Edition; 2 vols. post 8vo. 21s.

AN ABRIDGMENT, in 16mo. price 2s. 6d.

The Sermon on the Mount.

Printed on Silver; with Picture Subjects, numerous Landscape and Illustrative Vignettes, and Illuminated Borders in Gold and Colours, designed expressly for this work by M. LEPELLE DU BOIS-GALLAIS, formerly employed by the French Government on the great work of Count Bastard. Square 18mo. price in ornamental boards, One Guinea; or 31s. 6d. bound in morocco.

Self-Denial the Preparation for

Easter. By the Author of *Letters to my Unknown Friends, Letters on Happiness*, etc. Fcp. 8vo. price 2s. 6d.

Sewell.—Amy Herbert. By a

Lady. Edited by the Rev. WILLIAM SEWELL, B.D. Fellow and Tutor of Exeter College, Oxford. New Edition. Fcp. 8vo. price 6s.

Sewell.—The Earl's Daughter.

By the Author of *Amy Herbert*. Edited by the Rev. W. SEWELL, B. D. 2 vols. fcp. 8vo. 9s.

Sewell.—Gertrude: A Tale. By

the Author of *Amy Herbert*. Edited by the Rev. W. SEWELL, B.D. New Edition. Fcp. 8vo. price 6s.

Sewell.—Laneton Parsonage: A

Tale for Children, on the practical Use of a Portion of the Church Catechism. By the Author *Amy Herbert*. Edited by the Rev. W. SEWELL, B.D. New Edition. 3 vols. fcp. 8vo. price 16s.

Sewell.—Margaret Percival. By

the Author of *Amy Herbert*. Edited by the Rev. W. SEWELL, B.D. New Edition. 2 vols. fcp. 8vo. price 12s.

By the same Author,

The Experience of Life. New

Edition. Fcp. 8vo. price 7s. 6d.

Readings for a Month Prepara-

tory to Confirmation: Compiled from the Works of Writers of the Early and of the English Church. Fcp. 8vo. price 5s. 6d.

Readings for Every Day in

Lent: Compiled from the Writings of BISHOP JEREMY TAYLOR. Fcp. 8vo. 5s.

Sharp's New British Gazetteer,

or Topographical Dictionary of the British Islands and Narrow Seas: Comprising concise Descriptions of about Sixty Thousand Places, Seats, Natural Features, and Objects of Note, founded on the best Authorities; full Particulars of the Boundaries, Registered Electors, etc. of the Parliamentary Boroughs; with a reference under every name to the Sheet of the Ordnance Survey, as far as completed; and an Appendix, containing a General View of the Resources of the United Kingdom, a Short Chronology, and an Abstract of certain Results of the Census of 1851. 2 vols. 8vo. price £2. 16s.

The Family Shakspeare; in

which nothing is added to the Original Text; but those Words and Expressions are omitted which cannot with propriety be read aloud. By T. BOWDLER, Esq. F.R.S. New Edition, in volumes for the Pocket. 6 vols. fcp. 8vo. price 30s.

. Also a LIBRARY EDITION; with 36 Wood Engravings from designs by Smirke, Howard, and other Artists. 8vo. price 21s.

Short Whist; Its Rise, Pro-

gress, and Laws: With Observations to make any one a Whist Player. Containing also the Laws of Piquet, Cassino, Ecarté, Cribbage, Backgammon. By Major A***** New Edition; to which are added, Precepts for Tyros. By Mrs. B***** Fcp. 8vo. 3s.

Sinclair.—The Journey of Life.

By CATHERINE SINCLAIR. Author of *The Business of Life* (2 vols. fcp. 8vo. price 10s.) New Edition, corrected and enlarged. Fcp. 8vo. price 5s.

Sinclair.—Popish Legends or

Bible Truths. By CATHERINE SINCLAIR. Dedicated to her Nieces. Fcp. 8vo. 6s.

Sir Roger de Coverley. From

The Spectator. With Notes and Illustrations by W. HENRY WILLS; and Twelve fine Wood Engravings, by John Thompson from Designs by FREDERICK TAYLER. Crown 8vo. price 15s. boards; or 27s. bound in morocco.—Also a Cheap Edition, without Woodcuts, in 16mo. price One Shilling.

Smee's Elements of Electro-

Metallurgy. Third Edition, revised, corrected, and considerably enlarged; with Electrotypes and numerous Woodcuts. Post 8vo. price 10s. 6d.

Smith's Sacred Annals.—Sacred

Annals: Vol. III. The Gentile Nations; or, The History and Religion of the Egyptians, Assyrians, Babylonians, Medes, Persians, Greeks, and Romans, collected from ancient authors and Holy Scripture, and including the recent discoveries in Egyptian, Persian, and Assyrian Inscriptions: Forming a complete connection of Sacred and Profane History, and shewing the Fulfilment of Sacred Prophecy. By GEORGE SMITH, F.A.S., etc. In Two Parts, crown 8vo. price 12s.

By the same Author,

Sacred Annals: Vol. I. The

Patriarchal Age; or, Researches into the History and Religion of Mankind, from the Creation of the World to the Death of Isaac. Crown 8vo. 10s.

Sacred Annals: Vol. II. The

Hebrew People; or, The History and Religion of the Israelites, from the Origin of the Nation to the Time of Christ. In Two Parts, crown 8vo. price 12s.

The Works of the Rev. Sydney

Smith; including his Contributions to the Edinburgh Review. New Edition, complete in One Volume; with Portrait and Vignette. Square crown 8vo. price 21s.; or 30s. bound in calf.

. Also a LIBRARY EDITION (the Fourth), in 3 vols. 8vo. with Portrait, price 36s.

The Rev. Sydney Smith's Ele-

mentary Sketches of Moral Philosophy, delivered at the Royal Institution in the Years 1804, 1805, and 1806. Second Edition. 8vo. price 12s.

The Life and Correspondence of

the late Robert Southey. Edited by his Son, the Rev. C. C. SOUTHEY, M.A. Vicar of Ardsleigh. With Portraits; and Landscape Illustrations. 6 vols. post 8vo. 63s.

Southey's Life of Wesley; and

Rise and Progress of Methodism. New Edition, with Notes and Additions, by the late Samuel Taylor Coleridge, Esq., and the late Alexander Knox, Esq. Edited by the Rev. C. C. SOUTHEY, M.A. 2 vols. 8vo. with 2 Portraits, price 28s.

Southey's Commonplace Books.

Comprising—1. Choice Passages; with Collections for the History of Manners and Literature in England; 2. Special Collections on various Historical and Theological Subjects; 3. Analytical Readings in various branches of Literature; and 4. Original Memoranda, Literary and Miscellaneous. Edited by the Rev. J. W. WALTER, B.D. 4 vols. square crown 8vo. price £3 18s.

Each *Commonplace Book*, complete in itself, may be had separately as follows:—

FIRST SERIES—CHOICE PASSAGES, etc. 18s.

SECOND SERIES—SPECIAL COLLECTIONS. 18s.

THIRD SERIES—ANALYTICAL READINGS. 21s.

FOURTH SERIES—ORIGINAL MEMORANDA, etc. 21s.

Robert Southey's Complete Poet-

ical Works; containing all the Author's last Introductions and Notes. Complete in One Volume, with Portrait and Vignette. Medium 8vo. price 21s. cloth; 42s. bound in morocco.

. Also a New and Cheaper Issue of the First collected Edition of the above, in 10 vols. fcp. 8vo. with Portrait and 19 Plates, price 35s.

Select Works of the British

Poets; from Chaucer to Lovelace, inclusive. With Biographical Sketches by the late ROBERT SOUTHEY. Medium 8vo. 30s.

Southey's The Doctor etc. Complete in One Volume. Edited by the Rev. J. W. WALTER, B.D. With Portrait, Vignette, Bust, and coloured Plate. New Edition. Square crown 8vo. price 21s.

Stephen.—Lectures on the History of France; By the Right Hon. Sir JAMES STEPHEN, K.C.B., LL.D., Professor of Modern History in the University of Cambridge. Second Edition, 2 vols. 8vo. price 24s.

Stephen.—Essays in Ecclesiastical Biography; from the Edinburgh Review. By the Right Hon. Sir JAMES STEPHEN, K.C.B., LL.D. Third Edition. 2 vols. 8vo. 24s.

Steel's Shipmaster's Assistant, for the use of Merchants, Owners and Masters of Ships, Officers of Customs, and all Persons connected with Shipping or Commerce; containing the Law and Local Regulations affecting the Ownership, Charge, and Management of Ships and their Cargoes; together with Notices of other Matters, and all necessary Information for Mariners. New Edition, rewritten, by G. WILLMORE, Esq., M.A., Barrister-at-Law; G. CLEMENTS, of the Customs, London; and W. TATE, Author of *The Modern Cambist*. 8vo. price 28s.

Stonehenge.—The Greyhound: Being a Treatise on the Art of Breeding, Rearing, and Training Greyhounds for Public Running; their Diseases and Treatment: Containing also, Rules for the Management of Coursing Meetings, and for the Decision of Courses. By STONEHENGE, With numerous Portraits of Greyhounds, etc., engraved on Wood, and a Frontispiece engraved on Steel. Square crown 8vo. price 21s.

Stow.—The Training System, the Moral Training School, and the Normal Seminary or College. By DAVID STOW, Esq., Honorary Secretary to the Glasgow Normal Free Seminary. Ninth Edition; with Plates and Woodcuts. Post 8vo. price 6s.

Dr. Sutherland's Journal of a Voyage in Baffin's Bay and Barrow's Straits, in the Years 1850 and 1851, performed by H. M. Ships *Lady Franklin* and *Sophia*, under the command of Mr. William Penny, in search of the Missing Crews of H. M. Ships *Erebus* and *Terror*, with Charts and Illustrations. 2 vols. post 8vo. price 27s.

Swain.—English Melodies. By CHARLES SWAIN. Fcp. 8vo. price 6s. cloth; bound in morocco, 12s.

Swain.—Letters of Laura D'Auvergne. By CHARLES SWAIN. Fcp. 8vo. 3s. 6d.

Tate.—On the Strength of Materials; containing various original and useful Formulæ, specially applied to Tubular Bridges, Wrought Iron and Cast Iron Beams, etc. By THOMAS TATE, F.R.A.S. 8vo. price 5s. 6d.

Taylor.—Loyola: and Jesuitism in its Rudiments. By ISAAC TAYLOR. Post 8vo. with a Medallion, price 10s. 6d.

Taylor.—Wesley and Methodism. By ISAAC TAYLOR. Post 8vo. with a Portrait, price 10s. 6d.

Thirlwall.—The History of Greece. By the Right Rev the LORD BISHOP of ST. DAVID'S (the Rev. CONNOP THIRLWALL). An improved Library Edition; with Maps. 8 vols. 8vo. price £4. 16s.

Also, an Edition in 8 vols. fcp. 8vo. with Vignette Titles, price 28s.

Thomson (The Rev. W.)—An Outline of the Laws of Thought: Being a Treatise on Pure and Applied Logic. By the Rev. W. THOMSON, M.A. Fellow and Tutor of Queen's College, Oxford. Third Edition, enlarged. Fcp. 8vo. price 7s. 6d.

Thomson's Tables of Interest, at Three, Four, Four-and-a-half, and Five per Cent., from One Pound to Ten Thousand, and from 1 to 365 Days, in a regular progression of Single Days; with Interest at all the above Rates, from One to Twelve Months, and from One to Ten Years. Also, numerous other Tables of Exchanges, Time, and Discounts. New Edition. 12mo. 8s.

Thomson's Seasons. Edited by BOLTON CORNEY, Esq. Illustrated with Seventy-seven fine Wood Engravings from Designs by Members of the Etching Club. Square crown 8vo. price 21s. cloth; or, 36s bound in morocco.

Thornton.—Zohrab; or, a Midsummer Day's Dream: And other Poems. By WILLIAM THOMAS THORNTON, Author of *An Essay on Over-Population*, etc. Fcp. 8vo. price 4s. 6d.

Todd (Charles).—A Series of Tables of the Area and Circumference of Circles; the Solidity and Superficies of Spheres; the Area and Length of the Diagonal of Squares; and the Specific Gravity of Bodies, etc.: To which is added, an Explanation of the Author's Method of Calculating these Tables. Intended as a Facility to Engineers, Surveyors, Architects, Mechanics, and Artizans in General. By CHARLES TODD, Engineer. The Second Edition, improved and extended. Post 8vo. price 6s.

THE TRAVELLERS LIBRARY,

In course of Publication in Volumes at Half-a-Crown, and in Parts price One Shilling each. Comprising books of valuable information and acknowledged merit, in a form adapted for reading while Travelling, and also of a character that will render them worthy of preservation.

	<i>s. d.</i>
VOL. I. MACAULAY'S ESSAYS on WARREN HASTINGS and LORD CLIVE ..	2 6
II. ————— ESSAYS on PITT & CHATHAM, RANKE & GLADSTONE	2 6
III. LAING'S RESIDENCE in NORWAY	2 6
IV. PFEIFFER'S VOYAGE ROUND the WORLD	2 6
V. EOTHEN, TRACES of TRAVEL from the EAST	2 6
VI. MACAULAY'S ESSAYS on ADDISON, WALPOLE, and LORD BACON	2 6
VII. HUC'S TRAVELS IN TARTARY, etc.	2 6
VIII. THOMAS HOLCROFT'S MEMOIRS	2 6
IX. WERNE'S AFRICAN WANDERINGS	2 6
X. Mrs. JAMESON'S SKETCHES in CANADA	2 6
XI. JERRMANN'S PICTURES from ST. PETERSBURG	2 6
XII. The Rev. G. R. GLEIG'S LEIPSIK CAMPAIGN	2 6
XIII. HUGHES'S AUSTRALIAN COLONIES	2 6
XIV. SIR EDWARD SEAWARD'S NARRATIVE	2 6
XV. ALEXANDRE DUMAS' MEMOIRS of a MAITRE-D'ARMES	2 6
XVI. OUR COAL-FIELDS and OUR COAL-PITS	2 6
XVII. M'CULLOCH'S LONDON and GIRONIERE'S PHILIPPINES	2 6
XVIII. SIR ROGER DE COVERLEY and SOUTHEY'S LOVE STORY	2 6
XIX. JEFFREY'S ESSAYS on SWIFT and RICHARDSON and } LORD CARLISLE'S LECTURES AND ADDRESSES	} 2 6
XX. HOPE'S BIBLE in BRITTANY and CHASE in BRITTANY	2 6
XXI. THE ELECTRIC TELEGRAPH and NATURAL HISTORY of CREATION	2 6
XXII. MEMOIR of DUKE of WELLINGTON and LIFE of MARSHAL TURENNE	2 6
XXIII. TURKEY and CHRISTENDOM and RANKE'S FERDINAND } and MAXIMILIAN	} 2 6
XXIV. FERGUSON'S SWISS MEN and SWISS MOUNTAINS and } BARROW'S CONTINENTAL TOUR	} 2 6
XXV. SOUVESTRE'S WORKING MAN'S CONFESSIONS and } ATTIC PHILOSOPHER in PARIS	} 2 6
XXVI. MACAULAY'S ESSAYS on LORD BYRON, and the COMIC DRAMA- } TISTS and his SPEECHES on PARLIAMENTARY REFORM (1831-32) }	} 2 6
XXVII. SHIRLEY BROOKS'S RUSSIANS of the SOUTH and } DR. KEMP'S INDICATIONS of INSTINCT	} 2 6
XXVIII. LANMAN'S ADVENTURES in the WILDS of NORTH AMERICA.....	2 6
XXIX. De CUSTINE'S RUSSIA, Abridged	3 6

The Thumb Bible ; or, Verbum

Sempiternum. By J. TAYLOR. Being an Epitome of the Old and New Testaments in English Verse. Reprinted from the Edition, of 1693, bound and clasped. In 64mo. price Eighteenpence.

Townsend.—The Lives of Twelve

Eminent Judges of the Last and of the Present Century. By W. C. TOWNSEND, Esq., M.A., Q.C. 2 vols. 8vo. price 28s.

Townsend.—Modern State Tri-

als, revised and illustrated with Essays and Notes. By W. C. TOWNSEND, Esq., M.A. Q.C. 2 vols. 8vo. price 30s.

Sharon Turner's Sacred His-

tory of the World, attempted to be Philosophically considered, in a Series of Letters to a Son. New Edition, edited by the Author's Son, the Rev. S. TURNER. 3 vols. post 8vo. price 31s. 6d.

Sharon Turner's History of En-

gland during the Middle Ages: Comprising the Reigns from the Norman Conquest to the Accession of Henry VIII. Fifth Edition, revised by the Rev. S. TURNER. 4 vols. 8vo. price 50s.

Sharon Turner's History of the

Anglo-Saxons, from the Earliest Period to the Norman Conquest. The Seventh Edition, revised by the Rev. S. TURNER. 3 vols. 8vo. price 36s.

Dr. Turton's Manual of the Land

and Freshwater Shells of the British Islands. New Edition, with considerable Additions. By JOHN EDWARD GRAY: with Woodcuts, and 12 coloured Plates. Post 8vo. price 15s.

Dr. Ure's Dictionary of Arts,

Manufactures and Mines: Containing a clear Exposition of their Principles and Practice. The Fourth Edition, much enlarged and corrected throughout; with all the Information comprised in the *Supplement of Recent Improvements* brought down to the Present Time, and incorporated in the *Dictionary*. Most of the Articles being entirely re-written, and many New Articles now first added. With nearly 1,600 Woodcuts. 2 vols. 8vo. price 60s.

Waterton.—Essays on Natural

History, chiefly Ornithology. By C. WATERTON, Esq. With an Autobiography of the Author and Views of Walton Hall. New and cheaper Edition. 2 vols. fcp. 8vo. 10s.

Separately: Vol. I. (First Series), 5s. 6d. Vol. II. (Second Series), 4s. 6d.

Alaric Watts's Lyrics of the

Heart, and other Poems. With 41 highly-finished Line Engravings, executed expressly for the work by the most eminent Painters and Engravers. Square crown 8vo. price 31s. 6d. boards, or 45s. bound in morocco; Proof Impressions, 63s. boards.

Webster and Parkes's Ency-

clopædia of Domestic Economy; Comprising such subjects as are most immediately connected with Housekeeping: As, The Construction of Domestic Edifices, with the Modes of Warming, Ventilating, and Lighting them—A Description of the various Articles of Furniture, with the Nature of their Materials—Duties of Servants, etc. New Edition; with nearly 1,000 Woodcuts, 8vo. price 50s.

Willich's Popular Tables for

ascertaining the Value of Lifehold, Leasehold, and Church Property, Renewal Fines, etc. Third Edition, with additional Tables of Natural or Hyperbolic Logarithms, Trigonometry, Astronomy, Geography, etc. Post 8vo. price 9s.

Lady Willoughby's Diary (1635

to 1663). Printed, ornamented, and bound in the style of the period to which *The Diary* refers. New Edition; in Two Parts. Square fcp. 8vo. price 8s. each, boards; or, bound in morocco, 18s. each.

Wilmot's Abridgment of Black-

stone's Commentaries on the Laws of England, intended for the use of Young Persons, and comprised in a series of Letters from a Father to his Daughter. A New Edition, corrected and brought down to the Present Day, by Sir JOHN E. EARDLEY WILMOT, Bart., Barrister-at Law, Recorder of Warwick. 12mo. price 6s. 6d.

Youatt.—The Horse. By Wil-

LIAM YOUATT. With a Treatise of Draught. A New Edition; with numerous Wood Engravings from Designs by William Harvey. (Messrs. Longman and Co.'s Edition should be ordered). 8vo. price 10s.

Youatt.—The Dog. By William

YOUATT. A New Edition; with numerous Engravings from Designs by William Harvey. 8vo. 6s.

Zumpt's Larger Grammar of

the Latin Language. Translated and adapted for the use of the English Students, by Dr. L. SCHMITZ, F.R.S.E., Rector of the High School of Edinburgh: With numerous Additions and Corrections by the Author and Translator. The Third Edition, thoroughly revised; to which is added, an Index (by the Rev. J. T. White, M.A.) of all the Passages of Latin Authors referred to and explained in the Grammar. 8vo. price 14s.

March, 1854.







Shirley Dunn & Wilson Ltd
EXPERT CONSERVATORS & BOOKBINDERS

