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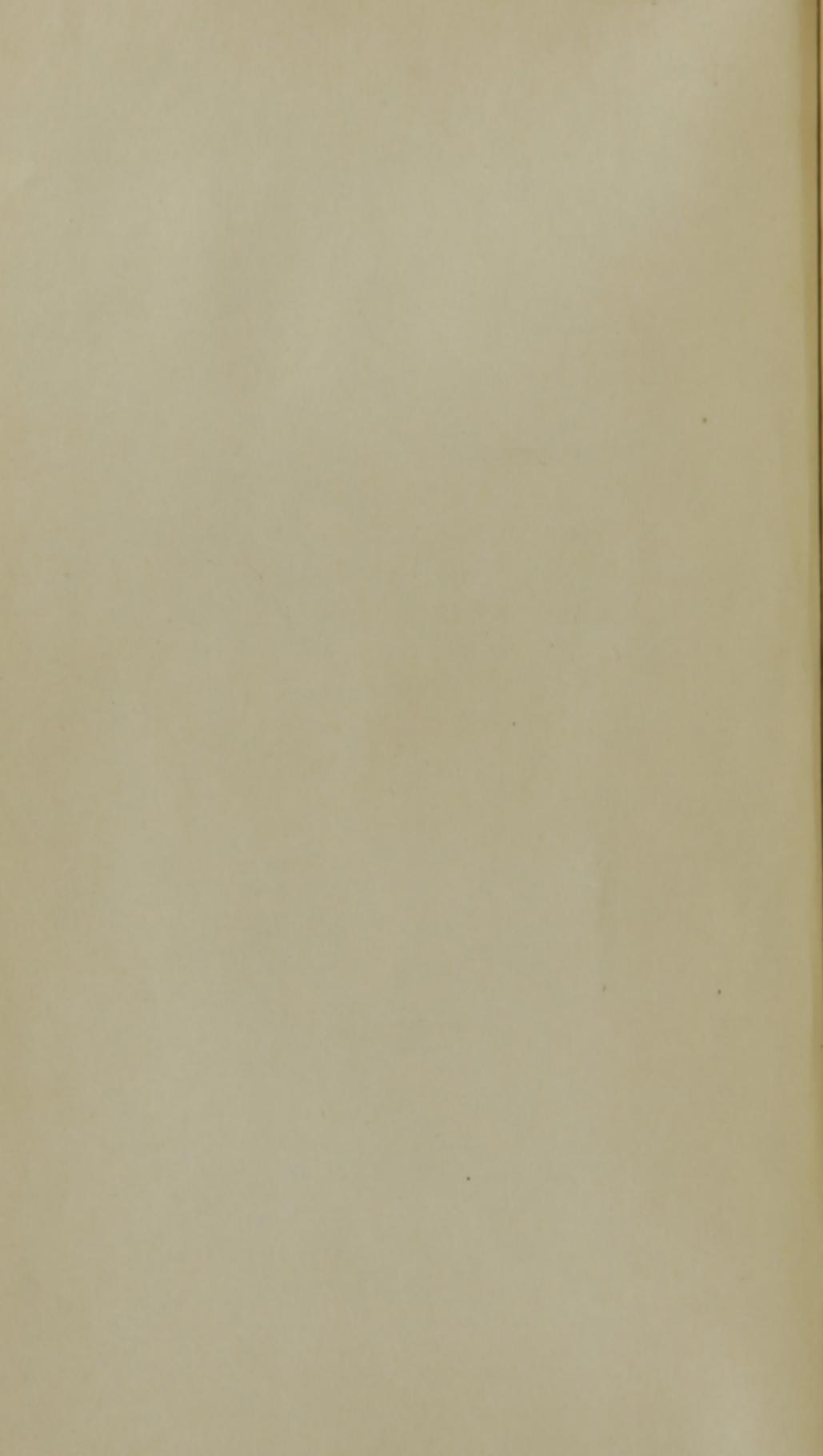
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A S E T O F
ANATOMICAL TABLES,
WITH
E X P L A N A T I O N S,
AND AN ABRIDGMENT OF THE
PRACTICE OF MIDWIFERY,

WITH A VIEW TO ILLUSTRATE

A TREATISE ON THAT SUBJECT, AND
COLLECTION OF CASES.



BY WILLIAM SMELLIE, M. D.



TO WHICH ARE ADDED,
NOTES AND ILLUSTRATIONS,
Adapted to the present IMPROVED METHOD OF PRACTICE.

BY A. HAMILTON, M. D. F. R. S. EDINBURGH,
and Professor of Midwifery in the University of Edinburgh.

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ANATOMICAL TABLES

EXPLANATIONS

AND AN ABBREVIATION OF THE

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M.DCCCXXXIII.

P R E F A C E.

AS, in a long course of teaching and practice in Midwifery, I hope I may without vanity say, that I have done something towards reducing that Art into a more simple and mechanical method than has hitherto been done; I have attempted to explain the same in my Treatise on the Theory and Practice of Midwifery and Collection of Cases; and finding that most of the representations hitherto given of the parts subservient to Uterine Gestation and Parturition were in many respects deficient, I have been induced to undertake the following Tables, with a view to supply in some measure the defects of others, and at the same time to illustrate what I have taught and written on the subject. How far I have obtained those ends, it belongs to others to judge. I shall only beg leave to observe here by way of Preface, that the greatest part of the figures were taken from subjects prepared on purpose, to show every thing that might conduce to the improvement of the young Practitioner: Avoiding, however, the extreme Minutiæ, and what else seemed foreign to the present design; the situation of parts, and their respective dimensions, being more particularly attended to, than a minute anatomical investigation of their structure.

As these Tables may possibly fall into the hands of some who have not seen my former work, I have

have added an abridgment of the *Præctice*; which, though far from being complete, may serve to illustrate several things which otherwise by a bare representation would be hardly intelligible.

References are made to *Vol. I, II, and III*. By *Vol. I*, I mean that which I first published in the year 1752, and contains a view of the *Theory and Præctice of Midwifery*; *Vol. II, and III*, contain the *Collection of Cases* mentioned above. My first plan for these *Tables* confined them to the number of twenty two, which *Mr. Rymfdyke* had finished above two years ago; but I soon saw that a farther illustration, and consequently an addition to that number, was necessary. In eleven of these, *Dr. Camper*, formerly Professor of *Medicine at Franeker in Friesland*, now Professor of *Anatomy and Botany at Amsterdam*, greatly assisted me, viz. *Table XII, XVI, XVII, XVIII, XIX, XXIV, XXVI, XXVII, XXVIII, XXXIV, and XXXVI*. The rest were drawn by *Mr. Rymfdyke*; except the thirty seventh and thirty ninth, which were done by another hand. The whole of the drawings are faithfully engraved: In which, however, delicacy and elegance have not been so much consulted, as to have them done in a strong and distinct manner; with this view chiefly, that from the cheapness of the work it may be rendered of more general use.

EXPLANATIONS

OF A SET OF

ANATOMICAL TABLES,

WITH AN ABRIDGMENT OF THE

PRACTICE OF MIDWIFERY.



FIRST TABLE

REPRESENTS, in a front view, the bones of a well formed *Pelvis*.

- A. The five *Vertebræ* of the loins.
- B. The *Os Sacrum*.
- C. The *Os Coccygis*.
- D. D. The *Ossa Iliûm*.
- E. E. The *Ossa Ischiûm*.
- F. The *Ossa Pubis*.
- G. The *Foramina Magnus*.
- H. H. The *Acetabula*.
- I. I. I. I. I. I. The brim of the *Pelvis*, or that circumference of its cavity, which is described at the sides, by the inferior parts of the *Ossa Iliûm*,

A

and

and at the back and fore parts, by the superior parts of the *Offa Pubis* and *Sacrum*.

In this table, besides the general structure and figure of the several bones, the dimensions of the brim of the *Pelvis*, and the distance between the under parts of the *Offa Ischiûm*, are particularly to be attended to, from which it will appear that the cavity of the brim is commonly wider from side to side, than from the back to the fore part, but that the sides below are in the contrary proportion. The reader, however, ought not from this to conclude, that every *Pelvis* is similar in figure and dimensions, since even well formed ones differ in some degree from each other. In general, the brim of the *Pelvis* measures about five inches and a quarter from side to side, and four inches and a quarter from the back to the fore part; there being likewise the same distance between the inferior parts of the *Offa Ischiûm*. All these measures, however, must be understood as taken from the skeleton, for in the subject, the cavity of the *Pelvis* is considerably diminished by its teguments and contents. Correspondent also to this diminution, the usual dimensions of the head of the full grown *Fœtus* are but three inches and a half from ear to ear, and four inches and a quarter from the fore to the hind head.

Vide Tab. XVI, XVII, XVIII. Also, Vol. I. Chap. 1. Sect. 1, 2, 3. where the form and dimensions of the *Pelvis*, as well as of the head of the *Fœtus*, and the manner in which the same is protruded

11



11

Plate II.



protruded in labour through the bafon, are fully treated of. Consult likewise Vol. II. Coll. 1. No. 1, 2. where cafes are given of complaints of the *Pelvis* arifing from difficult labours.



SECOND TABLE

Gives a lateral and internal view of the *Pelvis*, the fame being divided longitudinally.

- A. The three lower *Vertebrae* of the loins.
- B. The *Os sacrum*.
- C. The *Os Coccygis*.
- D. The left *Os Ilium*.
- E. The left *Os Ischiium*.
- F. The *Os Pubis* of the fame fide.
- G. The acute procefs of the *Os Ischiium*.
- H. The *Foramen Magnum*.
- I. I. I. The brim of the *Pelvis*.

This plate fhows the diftance from the fuperiour part of the *Os Sacrum* to the *Ossa Pubis*, as well as from the laft mentioned bones to the *Coccyx*, which in each amounts to about four inches and a quarter. The depth likewise is fhown of the posterior, lateral, and anterior parts of the *Pelvis*, not in the line of the body, but in that of the *Pelvis* from its brim downward, which

is generally three times deeper on the posterior than anterior part, and twice the depth of the last at the sides.

From this view appears also the angle which is formed by the last *Vertebra* of the loins and the superior part of the *Os Sacrum*, as likewise the concavity or hollow space in the posterior internal part of the *Pelvis*, arising from the curvature of the last mentioned bone and *Coccyx*; finally, the distance from which to the posterior parts of the *Ossa Ischiûm* is here expressed.

Vide Tab. XVI, XVII, XVIII, XIX, Also, Vol. I, and II, as referred to in the former table.



T H I R D T A B L E

Exhibits a front view of a distorted *Pelvis*.

A. The five *Vertebræ* of the loins.

B. The *Os Sacrum*.

C. The *Os Coccygis*.

D, D. The *Ossa Iliûm*.

E, E. The *Ossa Ischiûm*.

F. The *Ossa Pubis*.

G, G. The *Foramina Magna*.

H, H. The *Acetabula*.

From this plate may appear the great danger incident to both mother and child when the *Pel-*

Plate III.

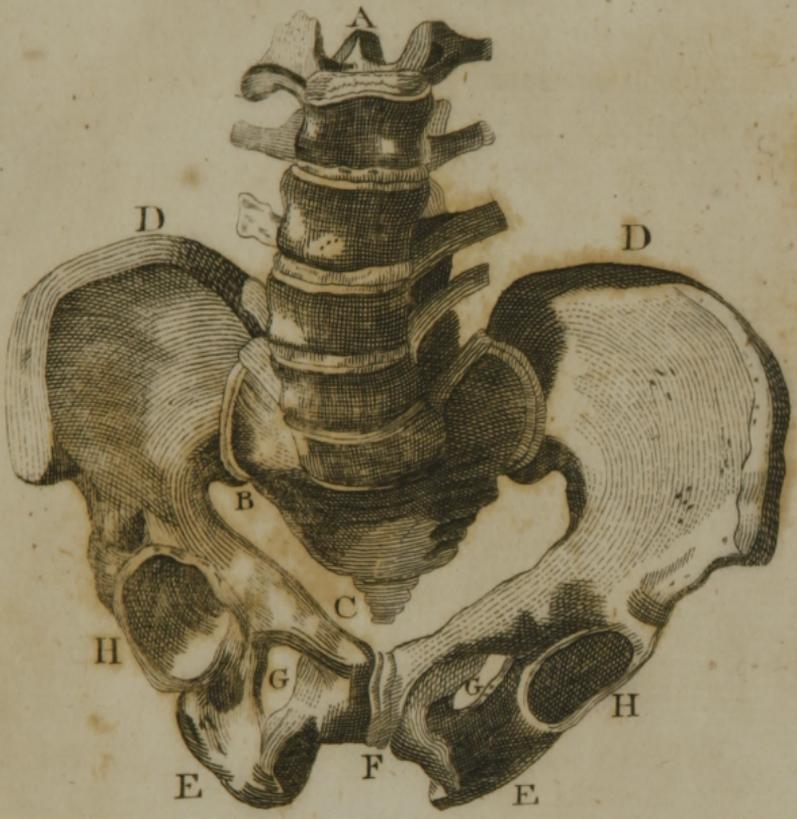
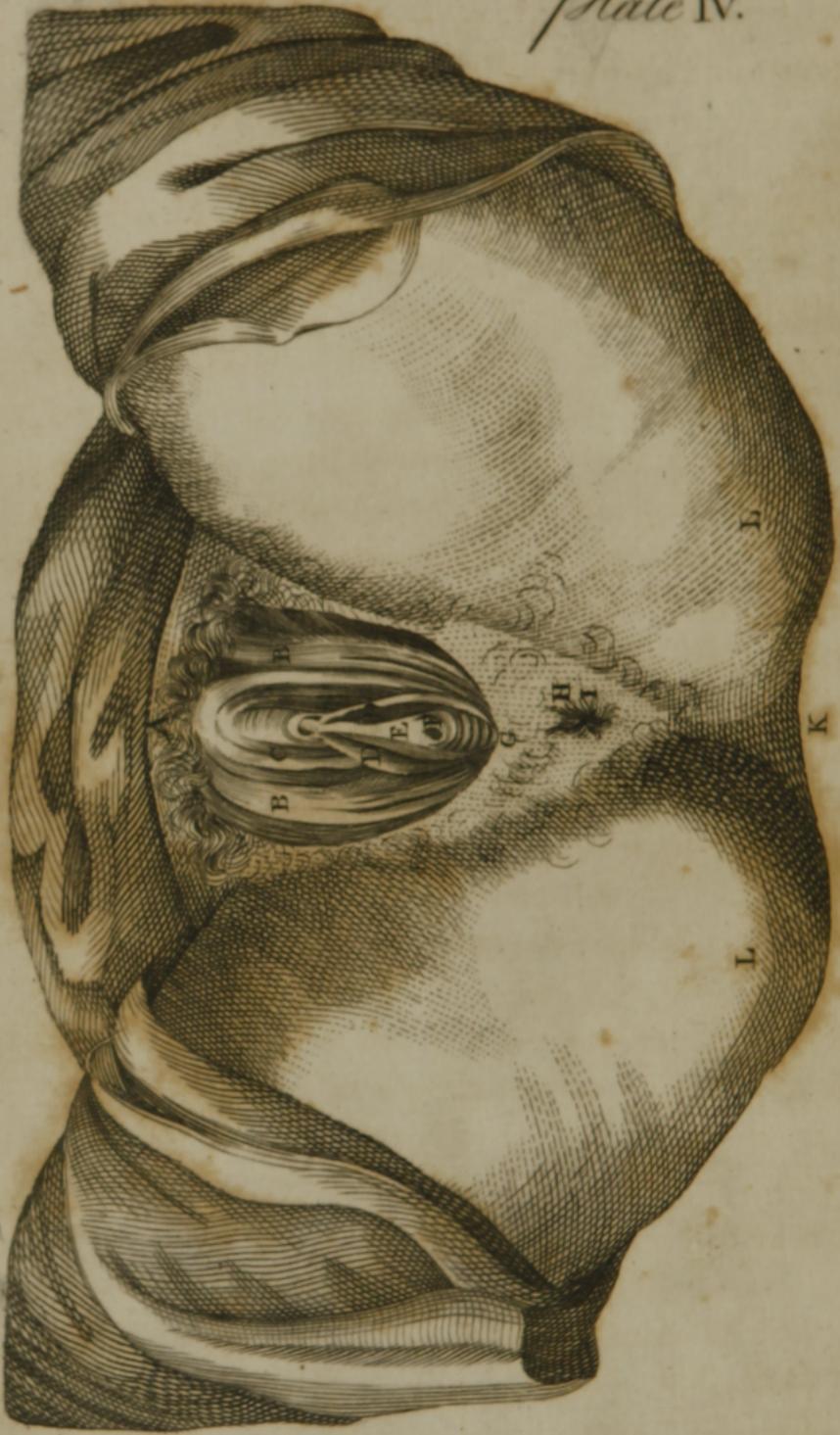


Plate IV.



vis is distorted in this manner; it being only two inches and an half at the brim from the posterior to the anterior part, and the same distance between the inferior parts of each *Os Ischiûm*. Vide Tab. XXVII, where the *Pelvis* is one quarter of an inch narrower at the brim than this, but sufficiently wide below. Various are the forms of distorted basons, but the last mentioned is the most common. It is a great happiness, however, in practice, that they are seldom so narrow, though there are instances where they have been much more so. The danger in all such cases must increase or diminish, according to the degree of distortion of the *Pelvis*, and size of the child's head.

Vide Vol. I. Book 1. Chap. I. Sect. 4, 5. And Vol. II. Coll. 1. No. 3, 4, 5. Also, Coll. 21, 27, and 29.

FOURTH TABLE.

Shows the external female parts of generation.

A. The lower part of the *Abdomen*.

B. B. The *Labia Pudendi* separated.

C. The *Clitoris* and *Præputium*.

D. D. The *Nymphæ*.

E. The *Fossa Magna*, or *Os Externum*.

A 3

F. The

- F. The *Meatus Urinarius*.
 G. The *Frænum Labiorum*.
 H. The *Perinæum*.
 I. The *Anus*.
 K. The part that covers the extremity of the *Coccyx*.
 L. L. The parts that cover the tuberosities of the *Offa Ischiûm*.

As it is of great consequence to every practitioner in midwifery, to know exactly the situation of the parts concerned in parturition, and which have not been accurately described by former Anatomists, with a view to this particular branch, I have given this draught from one of the preserved subjects which I keep by me, in order to demonstrate these parts in the ordinary course of my lectures. From a view then of the situation of the parts, it appears that the *Os Externum* is not placed in the middle of the inferior part of the *Pelvis*, but at the anterior and inferior part of the *Pubes*, and that the *Labia* cover likewise the anterior part of these bones.

Secondly, It may be observed, that as the *Frænum Labiorum*, which is nearly adjoining to the inferior part of the *Offa Pubis*, is only about an inch from the *Anus*, between which and the *Coccyx* there is about three inches distance, it follows, that the *Anus* is nearer to the first mentioned bones than to the latter.

Thirdly,

Thirdly, The view of this and the following table will furnish proper hints, with respect to the method of touching or examining the *Os Uteri*, without hurting or inflaming the parts, as it appears that the *Os Externum* is placed forwards towards the *Pubes*, and the *Os Uteri* backwards towards the *Rectum* and *Coccyx*. By this wise mechanism of nature many inconveniences are often prevented, which must happen if these parts were opposite to each other, and situated in the middle of the inferior part of the *Pelvis*, particularly a *Prolapsus* of the *Vagina* and *Uterus*, either in the unimpregnated state, or in any of the first four months of pregnancy; as also too sudden deliveries in any of the last months.

Fourthly, From a view of the situation of the parts, it will appear, that in labour, when the *Os Uteri* is sufficiently opened to allow a passage for the head of the *Fœtus*, the same is protruded to the lower part of the *Vagina*, by which the external parts are pushed out in form of a large tumor, as in Table XV.

Lastly, It may be observed, that when it is necessary to dilate the *Os Externum*, the principal force ought to be applied downwards and towards the *Rectum*, to prevent the *Urethra* and neck of the bladder from being hurt or inflamed.

Vide Vol. I. Book I. Chap. 2. Sect. 1. Vol. II. Coll. 2.

FIFTH TABLE.

FIGURE I. Gives a front view of the *Uterus* in *Situ* suspended in the *Vagina*; the anterior parts of the *Ossa Ischiûm* with the *Ossa Pubis*, *Pudenda*, *Perinæum*, and *Anus*, being removed in order to shew the internal parts.

A. The last *Vertebra* of the loins.

B. B. The *Ossa Iliûm*.

C. C. The *Acetabula*.

D. D. The inferior and posterior parts of the *Ossa Ischiûm*. *Vide* Tab. XXIX, where the *Ossa Pubis* and the anterior parts of the *Ossa Ischiûm* are represented by dotted lines.

E. The part covering the extremity of the *Coccyx*.

F. The inferior part of the *Rectum*.

G. G. The *Vagina* cut open longitudinally, and stretched on each side of the *Collum Uteri*, to shew in what manner the *Uterus* is suspended in the same.

H. H. Part of the *Vesica Urinaria* stretched on each side of the *Vagina* and inferior part of the *Fundus Uteri*.

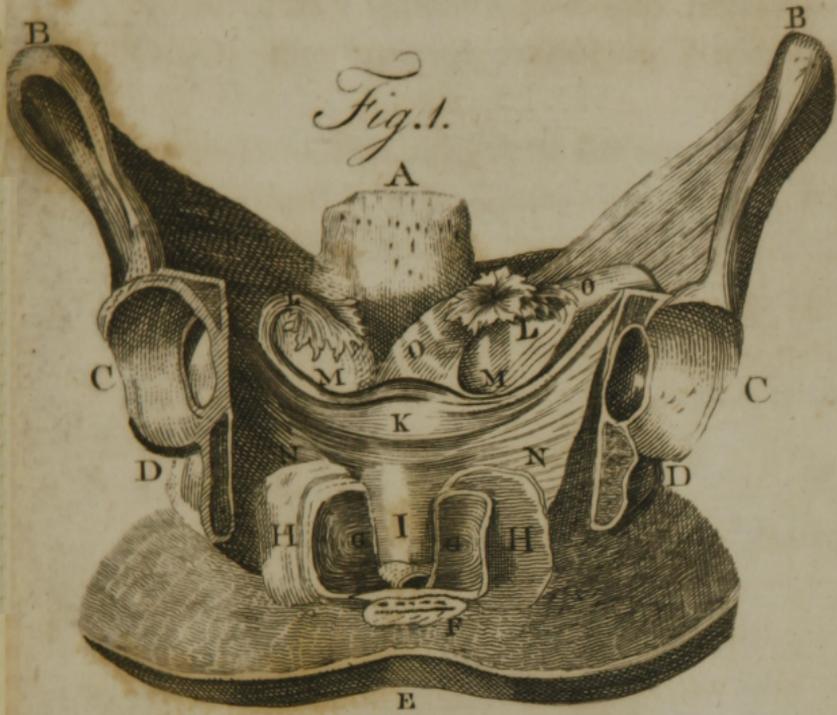
I. The *Collum Uteri*.

K. The *Fundus Uteri*.

L. L. The *Tubæ Fallopiantæ* and *Fimbriæ*.

M. M. The *Ovaria*.

Plate V.



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N. N. The *Ligamenta Lata* and *Rotunda*.

O. O. The superior part of the *Rectum*.

FIGURE II. Gives a view of the internal parts as seen from the right *Groin*, the *Pelvis* being divided longitudinally.

A. The lowest *Vertebra* of the loins.

B. C. The *Os Sacrum* and *Coccyx*, with the Integuments.

D. The left *Os Ilium*.

E. The inferior part of the left *Os Ischiium*.

F. The *Os Pubis* of the same side.

G. The *Foramen Magnum*.

H. The *Acetabulum*.

I. I. I. The inferiour part of the *Rectum* and *Anus*.

K. The *Os Externum* and *Vagina*; the *Os Uteri* lying loosely in the same.

L. The *Vesica Urinaria*.

M. N. The *Collum* and *Fundus Uteri*, with a view of the cavity of both. The attachment of the *Vagina* round the outside of the lips of the mouth of the *Womb* is here likewise shown, as also the situation of the *Uterus*, as it is pressed downwards and backwards by the *Intestines* and *Urinary Bladder*, into the concave, and inferiour part of the *Os Sacrum*.

O. The *Ligamenta Lata* and *Rotunda* of the left side.

P. P. The *Fallopian* tube, with the *Fimbriae*.

Q. The *Ovarium* of the same side.

R. R.

R. R. The superior part of the *Rectum*, and inferior part of the *Colon*.

FIGURE III. Gives a front view of the *Uterus* in the beginning of the first month of pregnancy; the anterior part being removed, that the *Embryo* might appear through the *Amnois*, the *Chorion* being dissected off.

A. The *Fundus Uteri*.

B. The *Collum Uteri*, with a view of the rugous canal that leads to the cavity of the *Fundus*.

C. The *Os Uteri*.

Vide Vol. I. Book I. Chap. 2. Sect. 2, 3. Vol. II. Coll. 3.

SIXTH TABLE.

FIGURE I. In the same view and section of the parts as in the first figure of the former table, shows the *Uterus* as it appears in the second or third month of pregnancy, its anterior part being here likewise removed.

F. The *Anus*.

G. The *Vagina* with its *Plicæ*.

H. H. The posterior and inferior part of the *Urinary*

Fig. 1.



Fig. 2.



PLATE I
THE BUST OF THE EMPEROR



Urinary Bladder extended on each side, the anterior and superior part being removed.

I. I. The mouth and neck of the *Womb*, as raised up when examining the same by the touch, with one of the fingers in the *Vagina*.

K. K. The *Uterus* as stretched in the second or third month, containing the *Embryo* with the *Placenta* adhering to the *Fundus*.

It appears from this and the former table, that at this time nothing can be known, with respect to pregnancy, from the touch in the *Vagina*, as the resistance of the *Uterus* is so inconsiderable that it cannot prevent its being raised up before the finger; and even were it kept down, the length of the neck would prevent the stretching being perceptible. The *Uterus* likewise not being stretched above the *Pelvis*, little change is made as to the figure of the *Abdomen*, further than that the *Intestines* are raised a little higher; whence possibly the old observation of the *Abdomen* being a little flatter at this period than usual from the *Intestines* being pressed more to each side. Women at this period miscarry oftener than at any other: It is a great happiness, however, in practice, that although they are frequently much weakened by large discharges, yet they rarely sink under the same, but are sooner or later relieved by labour coming on, which gradually stretches the neck and mouth of the *Womb*, by the *Membranes* being forced down with the waters, and if the *Placenta* is separated from the internal surface

of

of the *Uterus*, all its contents are discharged. But if the *Placenta* still adheres, the *Membranes* break, the waters and *Fœtus* are expelled, and the flooding diminishes from the *Uterus* contracting close to the *Secundines*, which also are usually discharged sooner or later.

From the structure finally of the parts, as represented in this and the former table, it may appear that it is much safer to restrain the flooding, and support the patient, waiting with patience the efforts of nature, than to endeavour to stretch the *Os Uteri*, and deliver either with the hand or instruments, which might endanger a laceration and inflammation of the parts.

Vide C. in Table XXXVII. Also, Vol. I. Book II. Chap. 2. Sect. 2, 3, 4. Vol. II. Coll. 12. No. 2.

FIGURE II. Represents the *Uterus* in the fourth or fifth month of pregnancy, in the same view and section of the parts with the former figure, excepting that in this the anterior part of the *Collum Uteri* is not removed.

In the natural situation, the mouth and lips of the *Womb* are covered with the *Vagina*, and these parts are contiguous to each other, but here the *Vagina* G. is a little stretched from the neck and lips of the former, in order to show the parts more distinctly. I. The neck of the *Womb*, which appears in this figure thicker, shorter, and softer than in the former. K. The inferiour part of the *Fundus Uteri*, the stretching of which can sometimes

sometimes be felt through the *Vagina*, by pushing up a finger on the anterior or lateral part of the same.

The *Uterus* now is so largely stretched as to fill all the upper part of the *Pelvis*, and begins also to increase so much as to rest on the brim, and to be supported by the same, the *Fundus* at the same time being raised considerably above the *Pubes*. From the *Abdomen* being now more stretched, the woman is more sensible of her growing bigger, and the *Uterus* also, from the counterpressure of the contents and parietes of the *Abdomen*, is kept down, and the *Os Uteri* prevented from rising before the finger as formerly. In lean women, the stretching of the *Uterus* can sometimes be perceived in the *Vagina* at this period as well as above the *Pubes*: But nothing certain can be discovered from the resistance or feel of the mouth of the *Womb* or *Lips*, which are commonly the same in the first months of pregnancy as before it.

The size or bulk of the *Fœtus* is finally here to be observed, with the *Placenta* adhering to the posterior part of the *Uterus*.

Vide the references to Vol. I, and II, in the former table.

SEVENTH

S E V E N T H T A B L E

Represents the *Abdomen* of a woman opened in the sixth or seventh month of pregnancy.

A. A. A. A. The parietes of the *Abdomen* opened, and turned back to shew

B. The *Uterus*.

C. C. C. The *Intestines* raised upwards.

D. The *Labia Pudendi*, which are sometimes affected in pregnancy with *Oedematous* swellings, occasioned by the pressure of the *Uterus* upon the returning veins, and *Lymphatics*. If the *Labia* are so tumefied as to obstruct the patient's walking, the complaint is removed by puncturing the parts affected. By which means the serous fluid is discharged for the present, but commonly recurs; and the same operation must be repeated several times, perhaps, before delivery, after which, however, the tumefaction entirely subsides. Here it may be observed, that this complaint can seldom or never obstruct delivery, as the *Labia* are situated at the anterior part of the *Ossa Pubis*, and can rarely affect the stretching of the *Frænum*, *Perinæum*, *Vagina*, and *Rectum*. From this figure it appears that the stretching of the *Uterus* can easily be felt at this period in lean subjects, through the parietes of the *Abdomen*; especially if the *Intestines* do not lie before it. In general, indeed, as the *Uterus* stretches, it rises higher,

Plate VII.

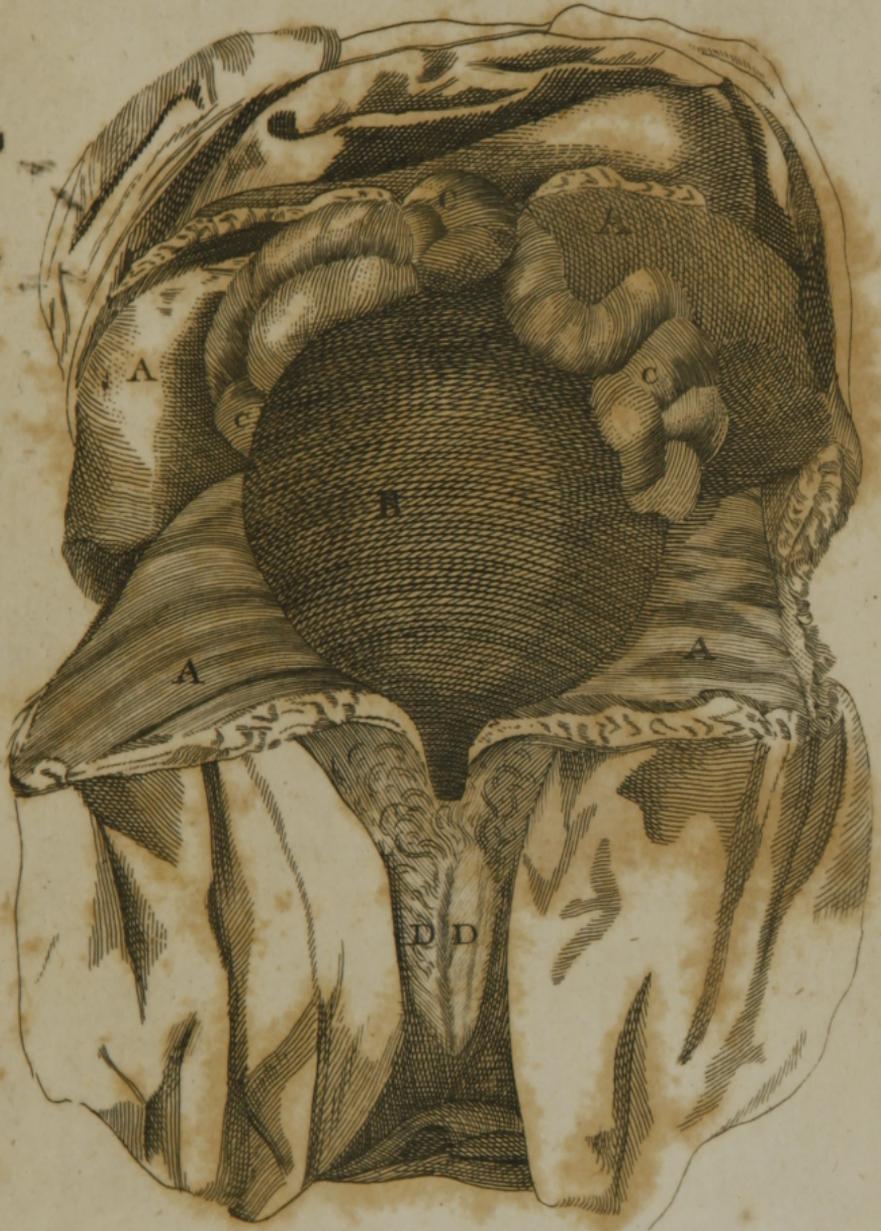
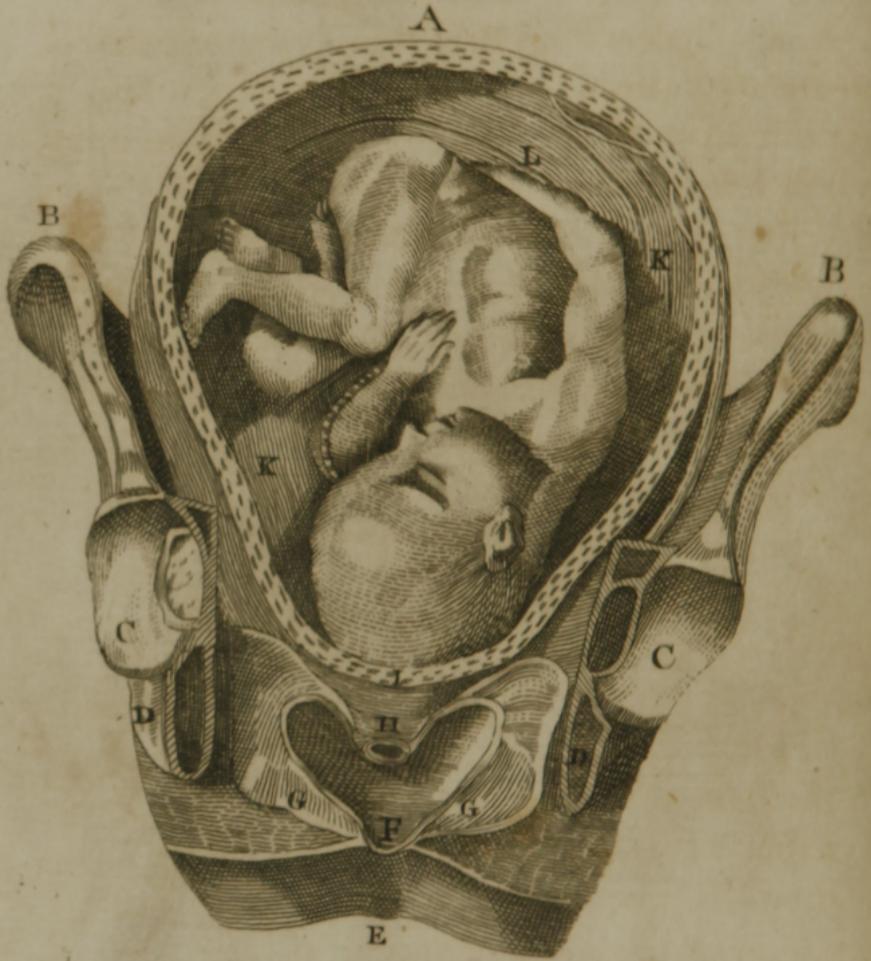


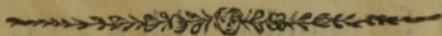
Plate VIII.



higher, by which means the *Intestines* are likewise raised higher, and are also pressed to each side. Hence the nearer the woman is to her full time, the stretching is the more easily felt.

N. B. Oedematous swellings, symptomatick of pregnancy, affecting the labia, have in few, if any instances, been observed to interrupt the progress of labour; therefore the discharge of the ferrous fluid by puncture is seldom requisite; and repeated puncture in advanced gestation might be attended with disagreeable consequences.

Vide Vol. I. Book I. Chap. 3. Sect. 3. Book III. Chap. 1. Sect. 2. and Vol. II. Coll. 12, 13.



E I G H T H T A B L E.

In the same view and section of the parts as in Table VI. is represented the *Uterus* of the former table, in order to shew its contents, and the internal parts as they appear in the sixth or seventh month of pregnancy.

A. The *Uterus* stretched up to the *Umbilical* region.

B. B. The superior part of the *Ossa Ilium*.

C. C. The *Acetabula*.

D. D. The remaining posterior parts of the *Ossa Ischium*.

E. The *Anus*,

F. The

F. The *Vagina*.

G. The bladder of *Urine*.

H. The neck of the *Womb* shorter than in Table VI, and raised higher by the stretching of the *Uterus* above the brim of the *Pelvis*.

I. The vessels of the *Uterus* larger than in the unimpregnated state.

K. K. The *Placenta* adhering to the inferior and posterior part of the *Uterus*.

L. L. The *Membranes* that surround the *Fœtus*, the head of which is here represented, as well as of those in Table VI, situated downwards at the inferior part of the *Uterus*, and which I am apt to believe is the usual situation of the *Fœtus*, when at rest, and surrounded with a great quantity of waters, as the head is heavier than any other part. With respect to the situation of the body of the *Fœtus*, though the fore parts are often turned towards the sides and posterior parts of the *Uterus*, they are here as well as in the foregoing table represented at the anterior part or forwards, in order to show them in a more distinct and picturesque manner.

Vide Vol. I. Book I. Chap: 3. Sect. 3, 4. Vol. II. Coll. 13. No. 1.

From this table may appear the difficulty of stretching the *Os Uteri* in flooding cases, even at this period, from the length and thickness of the neck of the *Womb*, especially in a first pregnancy: Much the same method, however, is to be followed here as was directed in table VI, until labour

comes



Plate IX.



comes on to dilate the *Os Uteri*. If the flooding is then considerable, the *Membranes* should be broken, that the *Uterus* may contract, and thereby lessen the discharge. The labour likewise, if it is necessary, may be assisted by dilating the *Os Uteri* in time of the pains ; which also, if wanting, may be provoked by the same method when the patient is in danger. If this danger is imminent, and the woman seems ready to expire, the *Uterus*, as appears from this table, is at this time sufficiently stretched to receive the operator's hand to extract the *Fœtus*, if the *Os Inter-num* can be safely dilated.

Lastly, It may be observed that women are in greater danger at this period, and afterwards, than in the former months.

Vide Vol. I. Book III. Chap. 4. Sect. 3. No. 1, 2, 3. Vol. III. Coll. 33. No. 2. See also in the *Edinburgh Physical and Literary Observations*, Art. XVII, the dissection of a woman with child, by Dr. *Donald Munro*, physician at *London*.

See, Directions for the management in cases of flooding, Dr. *Hamilton's* *Outlines of Midwifery*, page 401.



N I N T H T A B L E,

In the same view and section of the parts with the former, represents the *Uterus* in the eighth or ninth month of pregnancy.

B

A. The

A. The *Uterus* as stretched to near its full extent, with the waters, and containing the *Fœtus* entangled in the *Funis*, the head presenting at the upper part of the *Pelvis*.

B. B. The superior part of the *Offa Ilium*.

C. C. The *Acetabula*.

D. D. The remaining posterior parts of the *Offa Ischiûm*.

E. The *Coccyx*.

F. The inferior part of the *Rectum*.

G. G. G. The *Vagina* stretched on each side.

H. The *Os Uteri*, the lips of which appear larger and softer than in the foregoing table, the neck of the *Womb* being likewise stretched to its full extent, or entirely obliterated.

I. I. Part of the *Vesica Urinaria*.

K. K. The *Placenta* at the superior and posterior part of the *Uterus*.

L. L. The *Membranes*.

M. The *Funis Umbilicalis*.

This and the foregoing table show in what manner the *Uterus* stretches, and how its neck grows shorter, in the different periods of pregnancy; as also the magnitude of the *Fœtus*, in order more fully to explain Vol. I. Book I. Chap. 3. Sect. 4, 5. Also Book III. Chap. 1. Sect. 1, 2. Likewise Vol. II. Coll. 13. No. 1.

Notwithstanding it has been handed down as an invariable truth, from the earliest accounts of the art, to the present times, that when the head of the *Fœtus* presented, the face was turned to the

posterior

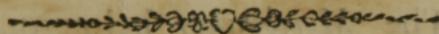
The first of these is the...
and the second is the...
the third is the...
the fourth is the...
the fifth is the...
the sixth is the...
the seventh is the...
the eighth is the...
the ninth is the...
the tenth is the...
the eleventh is the...
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the thirteenth is the...
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the fifteenth is the...
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the eighty-eighth is the...
the eighty-ninth is the...
the ninetieth is the...
the ninety-first is the...
the ninety-second is the...
the ninety-third is the...
the ninety-fourth is the...
the ninety-fifth is the...
the ninety-sixth is the...
the ninety-seventh is the...
the ninety-eighth is the...
the ninety-ninth is the...
the hundredth is the...

Plate X.



posterior part of the *Pelvis*, yet from Mr. *Ould's* observation, as well as from some late dissections of the *gravid Uterus*, and what I myself have observed in practise, I am led to believe that the head presents for the most part as is here delineated, with one ear to the *Pubes*, and the other to the *Os Sacrum*; though sometimes this may vary, according to the form of the head, as well as that of the *Pelvis*.

Consult Dr. *Hunter's* elegant plates of the *gravid Uterus*.



T E N T H T A B L E

Gives a front view of Twins in *Utero*, in the beginning of labour, the anterior parts being removed, as in the preceding tables.

A. The *Uterus*, as stretched with the *Membranes* and waters.

B. B. The superior parts of the *Ossa Ilium*.

C. C. The *Acetabula*.

D. D. The *Ossa Ischium*.

E. The *Coccyx*.

F. The lower part of the *Rectum*.

G. G. The *Vagina*.

H. The *Os Internum* stretched open about a finger's breadth with the *Membranes* and waters in time of labour pains.

I. I. The inferior part of the *Uterus* stretched with the waters which are below the head of the child that presents.

K. K. The two *Placentas* adhering to the posterior part of the *Uterus*, the two *Fætuses* lying before them, one with its head in a proper position, at the inferior part of the *Uterus*, and the other situated preternaturally, with the head to the *Fundus*: The bodies of each are here entangled in their proper *Funis*, which frequently happens in the natural as well as preternatural positions.

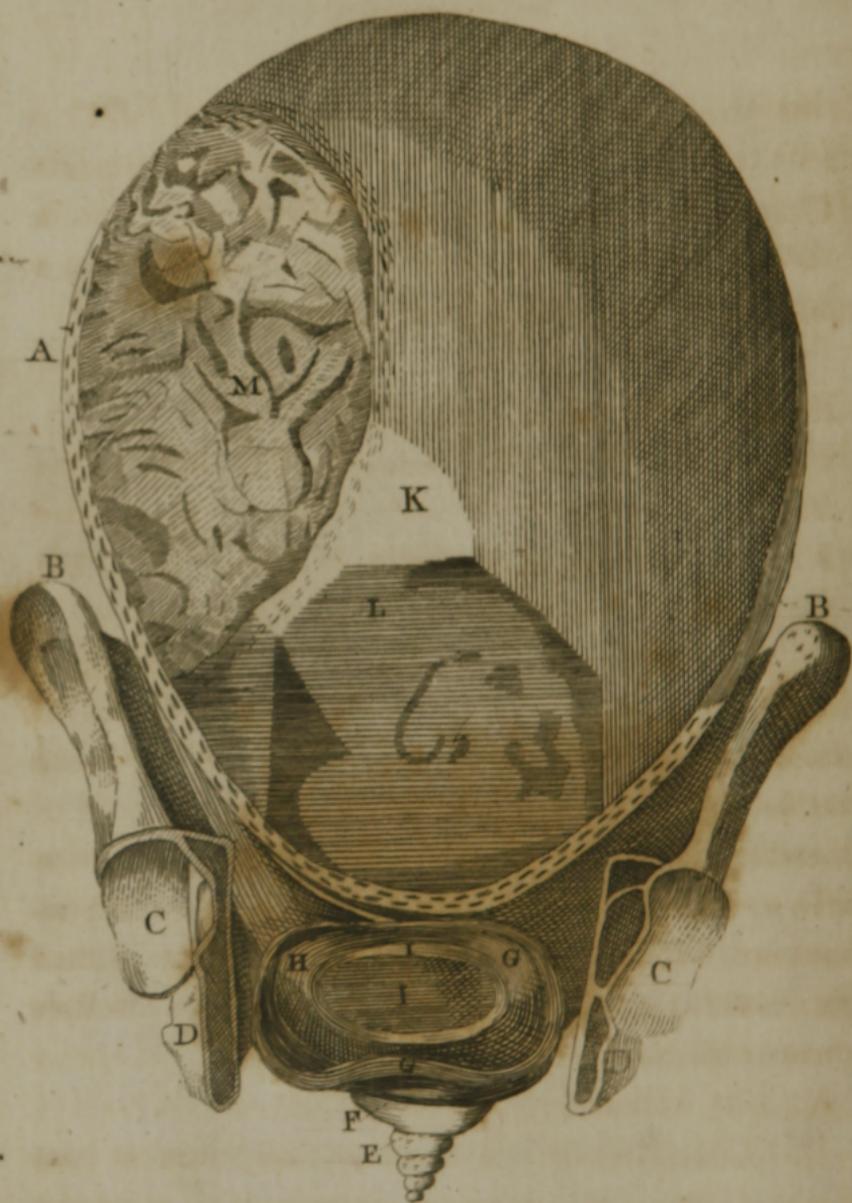
L. L. L. The *Membranes* belonging to each *Placenta*,

This representation of twins, according to the order observed in my Treatise of Midwifery, ought to have been placed among the last tables; but as that was of no consequence, I have placed it here in order to show the *Os Uteri* grown much thinner than in the former figure, a little open, and stretched by the waters and *Membranes* which are pushed down before the head of one of the *Fætuses* in time of a labour pain. With respect to the position of twins, it is often different in different cases; but was thus, in a late dissection of a *gravid Uterus* by Dr. Mackenzie.

Vide Vol. I. Book III. Chap. 1. Sect. 4. and Chap. 5. Sect. 1. and Vol. II. Coll. 14. and Vol. III. Coll. 37.

For the improved management in cases of plurality of children, see Dr. *Hamilton's* Outlines of Midwifery, page 412.

Plate XI.



E L E V E N T H T A B L E

Exhibits another front view of the *gravid Uterus* in the beginning of labour ; the anterior parts being removed, as in the former table ; but in this the *Membranes*, not being broken, form a large bag containing the waters and *Fœtus*.

A. The substance of the *Uterus*.

B. B. C. C. D. D. The bones of the *Pelvis*.

E. The *Coccyx*.

F. The inferior part of the *Rectum*.

G. G. G. G. The *Vagina*.

H. H. The mouth of the *womb* largely stretched in time of a pain, with I. the *Membranes* and waters. This circumstance makes it usually certain that labour is begun, whereas from the degree of dilatation represented in the former table, there is little to be ascertained, unless the pains are regular and strong, the *Os Uteri* being often found more open several days, and even weeks, before labour commences.

K. The *Chorion*.

L. The same dissected off at the inferior part of the *Uterus*, in order to show the head of the *Fœtus* through the *Amnion*. N. B. This hint is taken from one of Dr. *Albinus's* tables of the *gravid Uterus*.

M. The *Placenta*, the external convex surface of which, divided into a number of *Lobes*, is here represented, its concave internal parts being covered by the *Chorion*.

The *Placenta* has been found adhering to all the different parts of the internal surface of the *Uterus*, and sometimes even over the inside of the *Os Uteri*; this last manner of adhesion, however, always occasions floodings as soon as the same begins to dilate.

Tables VI, VIII, IX, X, show the internal surface of the *Placenta* towards the *Fœtus*, with the vessels composing its substance proceeding from the *Funis* which is inserted, in different *Placentas*, into all the different parts of the same, as well as in the middle.

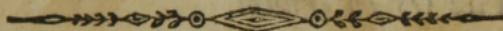
The thirtieth and thirty third tables shew the insertion of the *Funis* into the *Abdomen* of the *Fœtus*.
 With respect to the expulsion of the *Placenta*, when the *Membranes* break, the *Uterus* contracts as the waters are evacuated until it comes in contact with the body of the *Fœtus*: The same being delivered, the *Uterus* grows much thicker, and contracts closely to the *Placenta* and *Membranes*, by which means they are gradually separated, and forced into the *Vagina*. This shews that we ought to follow the method which nature teaches, waiting with patience, and allowing it to separate in a slow manner, which is much safer practice, especially when the patient is weak; as the discharge is neither so great or sudden as when the
Placenta

The first part of the work is devoted to a description of the external anatomy of the human body, and is divided into three books. The first book contains a description of the head and neck, the second of the trunk, and the third of the limbs. The second part of the work is devoted to a description of the internal anatomy of the human body, and is divided into three books. The first book contains a description of the organs of the respiratory system, the second of the organs of the digestive system, and the third of the organs of the circulatory system. The third part of the work is devoted to a description of the anatomy of the various parts of the human body, and is divided into three books. The first book contains a description of the anatomy of the eye, the second of the anatomy of the ear, and the third of the anatomy of the nose. The fourth part of the work is devoted to a description of the anatomy of the various parts of the human body, and is divided into three books. The first book contains a description of the anatomy of the heart, the second of the anatomy of the lungs, and the third of the anatomy of the stomach. The fifth part of the work is devoted to a description of the anatomy of the various parts of the human body, and is divided into three books. The first book contains a description of the anatomy of the bladder, the second of the anatomy of the uterus, and the third of the anatomy of the prostate. The sixth part of the work is devoted to a description of the anatomy of the various parts of the human body, and is divided into three books. The first book contains a description of the anatomy of the testis, the second of the anatomy of the epididymis, and the third of the anatomy of the vas deferens. The seventh part of the work is devoted to a description of the anatomy of the various parts of the human body, and is divided into three books. The first book contains a description of the anatomy of the penis, the second of the anatomy of the scrotum, and the third of the anatomy of the urethra. The eighth part of the work is devoted to a description of the anatomy of the various parts of the human body, and is divided into three books. The first book contains a description of the anatomy of the bladder, the second of the anatomy of the uterus, and the third of the anatomy of the prostate. The ninth part of the work is devoted to a description of the anatomy of the various parts of the human body, and is divided into three books. The first book contains a description of the anatomy of the testis, the second of the anatomy of the epididymis, and the third of the anatomy of the vas deferens. The tenth part of the work is devoted to a description of the anatomy of the various parts of the human body, and is divided into three books. The first book contains a description of the anatomy of the penis, the second of the anatomy of the scrotum, and the third of the anatomy of the urethra.



Placenta is hurried down in the too common method. But then we must not run into the other extreme, but assist, when nature is not sufficient to expel the same.

Vide Vol. I. Book III. Chap. 1. Sect. 4. Chap. 2. Sect. 2. 5. Vol. II. Coll. 14. 23. Also Dr. *Hamilton's* Outlines of Midwifery, p. 211. et seq.



T W E L F T H T A B L E

Shows, in a lateral view and longitudinal division of the parts, the *gravid Uterus*, when labour is somewhat advanced.

A. The lowest *Vertebra* of the back.

B. The *Scrobiculus Cordis*, the distance from which to the last mentioned *Vertebra* is here shown by dotted lines ; as also part of the region below the *Diaphragm*.

C. C. The usual thickness and figure of the *Uterus* when extended with the waters at the latter end of pregnancy.

D. The same contracted and grown thicker after the waters are evacuated.

E. E. The figure of the *Uterus* when *pendulous*. In this case, if the *Membranes* break when the patient is in an erect position, the head of the *Fætus* runs a risk of sliding over and above the *Offa Pu-*

bis, whence the shoulders will be pushed into the *Pelvis*.

F. F. The figure of the *Uterus* when stretched higher than usual, which generally occasions vomitings and difficulty of breathing. Consult on this subject Mr. *Leuret* sur le mecanisme de differentes grosseffes.

G. The *Os Pubis* of the left side.

H. H. The *Os Internum*.

I. The *Vagina*.

K. The left *Nympha*.

L. The *Labium Pudendi* of the same side.

M. The remaining portion of the bladder.

N. The *Anus*.

O. P. The left hip and thigh.

In this period of labour, the *Os Uteri* being more and more stretched by the *Membranes* pushing down, and beginning to extend the *Vagina*, a great quantity of waters is forced down at the same time, and, if the *Membranes* break, is discharged ; whence the *Uterus* contracts itself nearer to the body of the *Fætus*, which is here represented in a natural position, with the *Vertex* resting at the superior part of the *Offa Pubis*, and the forehead towards the right *Os Ilium*. As soon as the *Uterus* is in contact with the body of the *Fætus*, the head of the same is forced backward towards the *Os Sacrum* from the line of the *Abdomen* B. G. into that of the *Pelvis*, viz. from the uppermost F. to near the end of the *Coccyx*, and is gradually pushed lower, as in the following Table.

If

If the *Membranes* do not break immediately upon their being pushed into the *Vagina*, they should be allowed to protrude still further in order to dilate the *Os Externum*.

Vide Vol. I. Book I. Chap. 2. Sect. 2. Chap. 3. Sect. 3. Book III. Chap. 1. Sect. 1, 2. 4. Chap. 2. Sect. 3. Chap. 3. Sect. 4. No. 5. Vol. II. Coll. 10. No. 4. Case 3, 4. Coll. 14. Vol. III. Coll. 34. No. 2. Case 4.

THIRTEENTH TABLE,

In the same view and section of the parts as in Table VI, shows the natural position of the head of the *Fætus* when sunk down into the middle of the *Pelvis* after the *Os Internum* is fully opened, a large quantity of the waters being protruded with the *Membranes* through the *Os Externum*, but prevented from being all discharged, by the head's filling up the *Vagina*.

A. The *Uterus* a little contracted, and thicker, from some of the waters being sunk down before the child, or discharged.

B. B. The superior parts of the *Os Ilium*.

C. The inferior part of the *Rectum*.

D. D. The *Vagina* largely stretched with the head of the *Fætus*.

E. E. The

- E. E. The *Os Internum* fully opened.
 F. A portion of the *Placenta*.
 G. G. The *Membranes*.
 H. H. The *Ligamenta Lata*.
 I. I. The *Ligamenta Rotunda*. Both these last
 stretched upwards with the *Uterus*.

The *Vertex* of the *Fætus* being now down at the inferior part of the right *Os Ischiûm*, and the wide part of the head at the narrow and inferior part of the *Pelvis*, the forehead by the force of the pains is gradually moved backwards, and as it advances lower, the *Vertex* and *Occiput* turn out below the *Pubes*, as in the next Table. Hence may be learnt of what consequence it is to know, that it is wider from side to side at the brim of the *Pelvis*, than from the back to the forepart, and that it is wider from the fore to the hind head of the child, than from ear to ear.

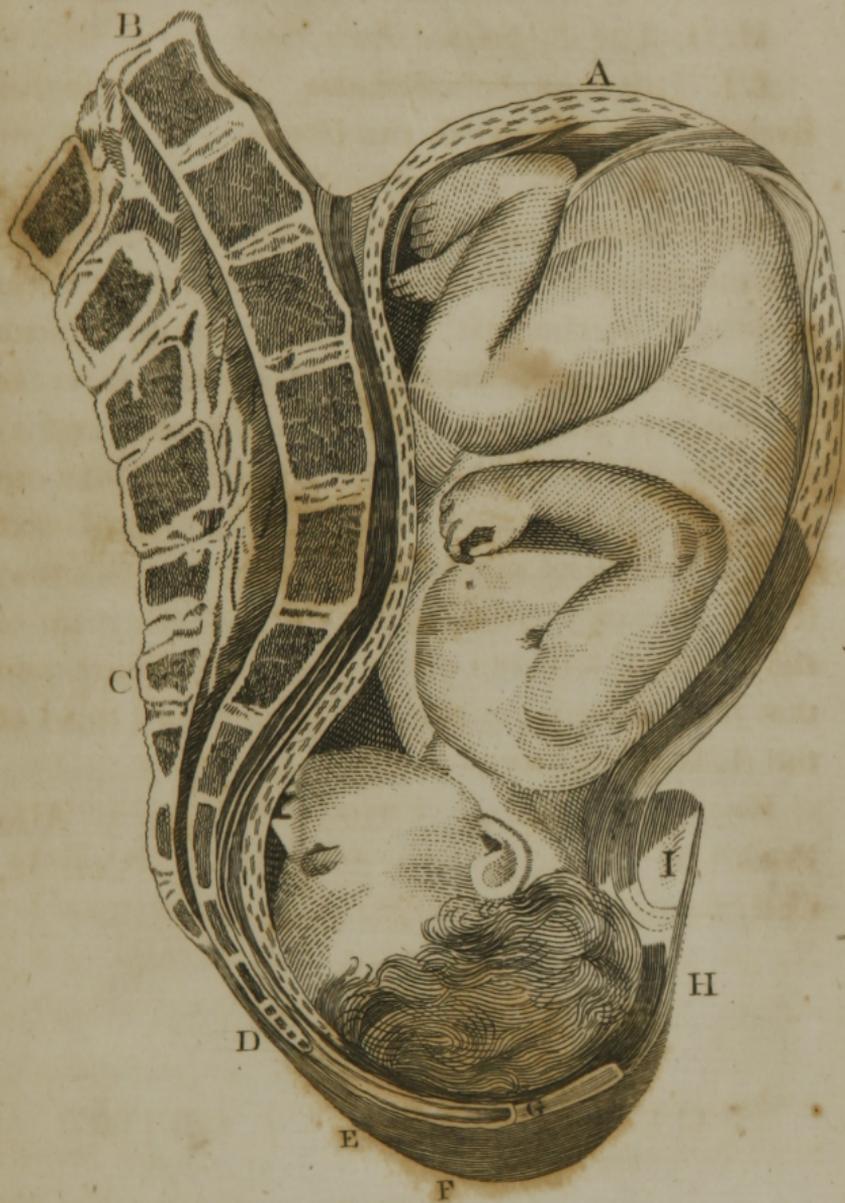
Vide Vol. I. Book I. Chap. 1. Sect. 3. 5. Also Book III. Chap. 3. Sect. 3, 4. No. 3. Vol. II. Coll. 14.



FOURTEENTH TABLE,

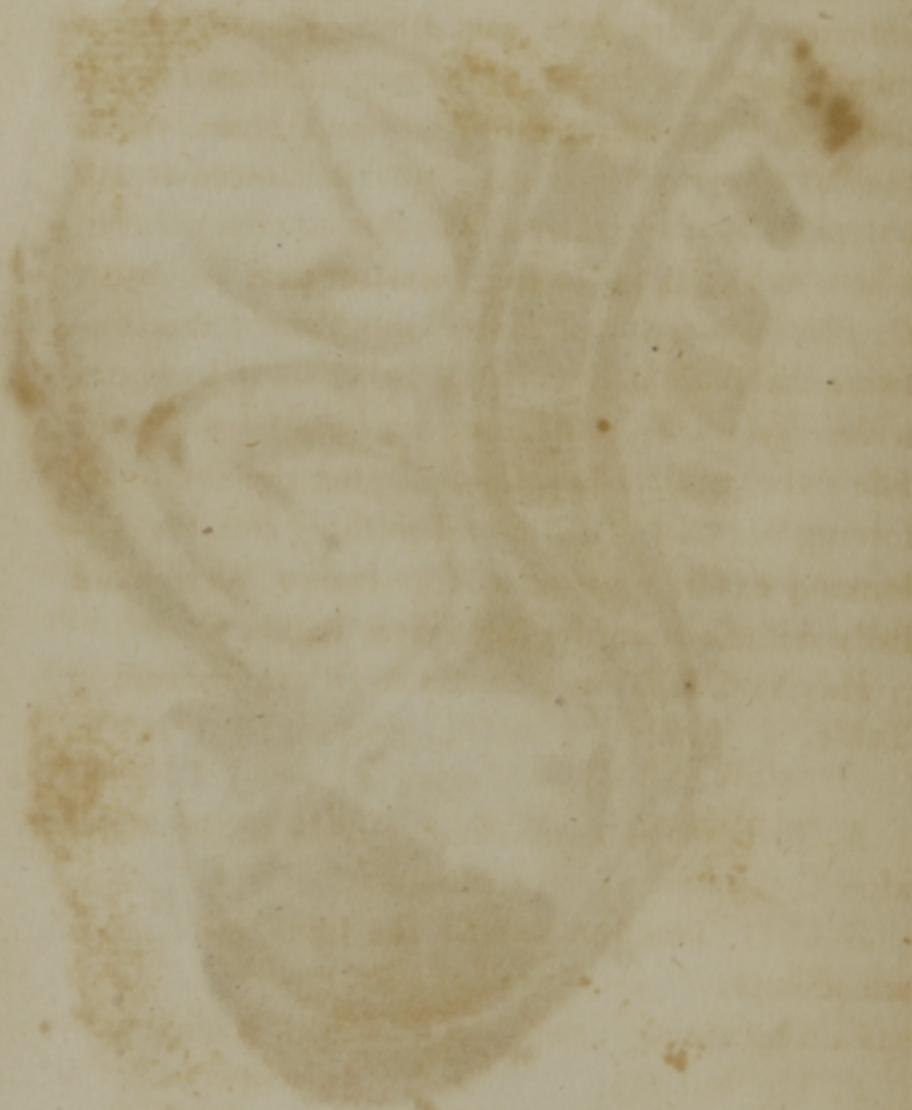
In a similar view and section of the parts with Table XII, shows the forehead of the *Fætus* turned [in its progression downwards, from its position

Plate XIV.



ORIGINAL MANUSCRIPT

The first part of the manuscript is devoted to a description of the various species of plants which are found in the region of the mountains. The author has been very particular in his descriptions, and has given many interesting details of their habits and uses.



The second part of the manuscript is devoted to a description of the various species of animals which are found in the region of the mountains. The author has been very particular in his descriptions, and has given many interesting details of their habits and uses.

tion in the former Table] backwards to the *Os Sacrum*, and the *Occiput* below the *Pubes*, by which means the narrow part of the head is to the narrow part of the *Pelvis*, that is, between the inferior parts of the *Ossa Ischiûm*. Hence it may be observed, that though the distance between the inferior parts of the last mentioned bones is much the same, as between the *Coccyx* and *Pubes*, yet as the cavity of the *Pelvis* is much shallower at the anterior than lateral part, the *Occiput* of the *Fœtus*, when come down to the inferior part of either *Os Ischiûm*, turns out below the *Pubes*; this answers the same end as if the *Pelvis* itself had been wider from the posterior part than from side to side; the head likewise enlarging the cavity by forcing back the *Coccyx*, and pushing out the external parts in form of a large tumor, as is more fully described in the following Table.

Vide Vol. I, II, as referred to in the preceding Table.

A. The *Uterus* contracted closely to the *Fœtus* after the waters are evacuated.

B. C. D. The *Vertebræ* of the loins, *Os Sacrum* and *Coccyx*.

E. The *Anus*.

F. The left hip.

G. The *Perinæum*.

H. The *Os Externum* beginning to dilate.

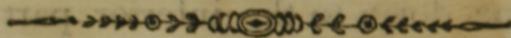
I. The *Os Pubis* of the left side.

K. The remaining portion of the bladder.

L. The posterior part of the *Os Uteri*.

N. B.

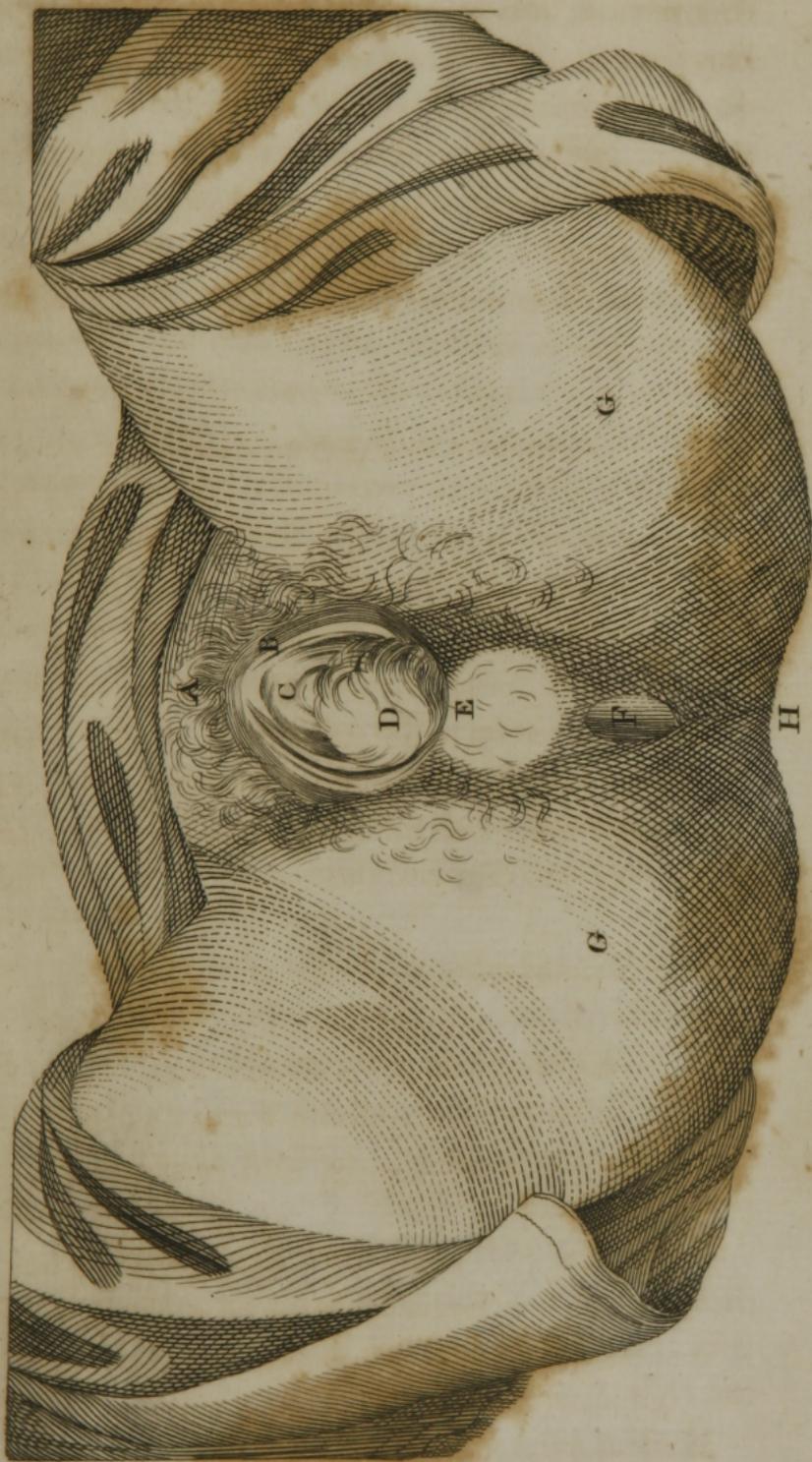
N. B. Although for the most part, at or before this period, the waters are evacuated, yet it often happens, that more or less will be retained, and not all discharged, until after the delivery of the child; occasioned from the presenting part of the *Fœtus* coming into close contact with the lower or under part of the *Uterus*, *Vagina*, or *Os Externum*, immediately, or soon after the *Membranes* break.



FIFTEENTH TABLE

Is intended principally to show in what manner the *Perinæum* and external parts are stretched by the head of the *Fœtus*, in a first pregnancy, towards the end of labour.

- A. The *Abdomen*.
- B. The *Labia Pudendi*.
- C. The *Clitoris*, and its *Præputium*.
- D. The hairy scalp of the *Fœtus* swelled at the *Vertex*, in a laborious case, and protruded to the *Os Externum*.
- E. F. The *Perinæum* and *Anus* pushed out by the head of the *Fœtus* in form of a large *Tumor*.
- G. G. The parts that cover the *Tuberosities* of the *Ossa Ischiûm*.
- H. The part that covers the *Os Coccygis*.





The *Perinæum* in this figure is stretched two inches, or *nearly* double its length in the natural state ; but when the *Os Externum* is so much dilated by the head of the *Fætus* as to allow the delivery of the same, the *Perinæum* is generally stretched to the length of three, and sometimes four inches.

The *Anus* is likewise lengthened an inch, the parts also between it and the *Coccyx* being much distended. All this ought to caution the young practitioner never to precipitate the delivery at this time, but to wait, and allow the parts to dilate in a slow manner, as from the violence of the labour pains, the sudden delivery of the head of the *Fætus* might endanger the laceration of the parts. The palm of the operator's hand ought therefore to be pressed against the *Perinæum*, that the head may be prevented from passing until the *Os Externum* is sufficiently dilated, to allow its delivery without tearing the *Frænum*, and parts betwixt that and the *Anus*, which are at this time very thin.

Vide Vol. I. Book III. Chap. 2. Sect. 2. Chap. 4. Sect. 4. No. 1. and Book IV. Chap. 1. Sect. 1. Also, Vol. II. Coll. 14. 24. Vol. III. Coll. 40. Also, directions for the management of natural labour in Dr. Hamilton's *Outlines of Midwifery*, page 207, and seq. and the *Judicious Observations and directions of Charles White, Esq;* F. R. S. Manchester, third edition of his *Treatise on the Management of Pregnant and Lying in Women*, Chap. 5. page 82 to 113.

S I X T E E N T H T A B L E,

And the three following, show in what manner the head of the *Fœtus* is helped along with the forceps, as artificial hands, when it is necessary to assist with the same for the safety of either mother or child. In this Table the head is represented as forced down into the *Pelvis* by the labour pains, from its former position in Table XII.

A. A. B. C. The *Vertebræ* of the loins, *Os Sacrum* and *Coccyx*.

D. The *Os Pubis* of the left side.

E. The remaining part of the bladder.

F. F. The *Intestinum Rectum*.

G. G. G. The *Uterus*.

H. The *Mons Veneris*.

I. The *Clitoris* with the left *Nympha*.

X. The *Corpus Cavernosum Clitoridis*.

V. The *Meatus Urinarius*.

K. The left *Labium Pudendi*.

L. The *Anus*.

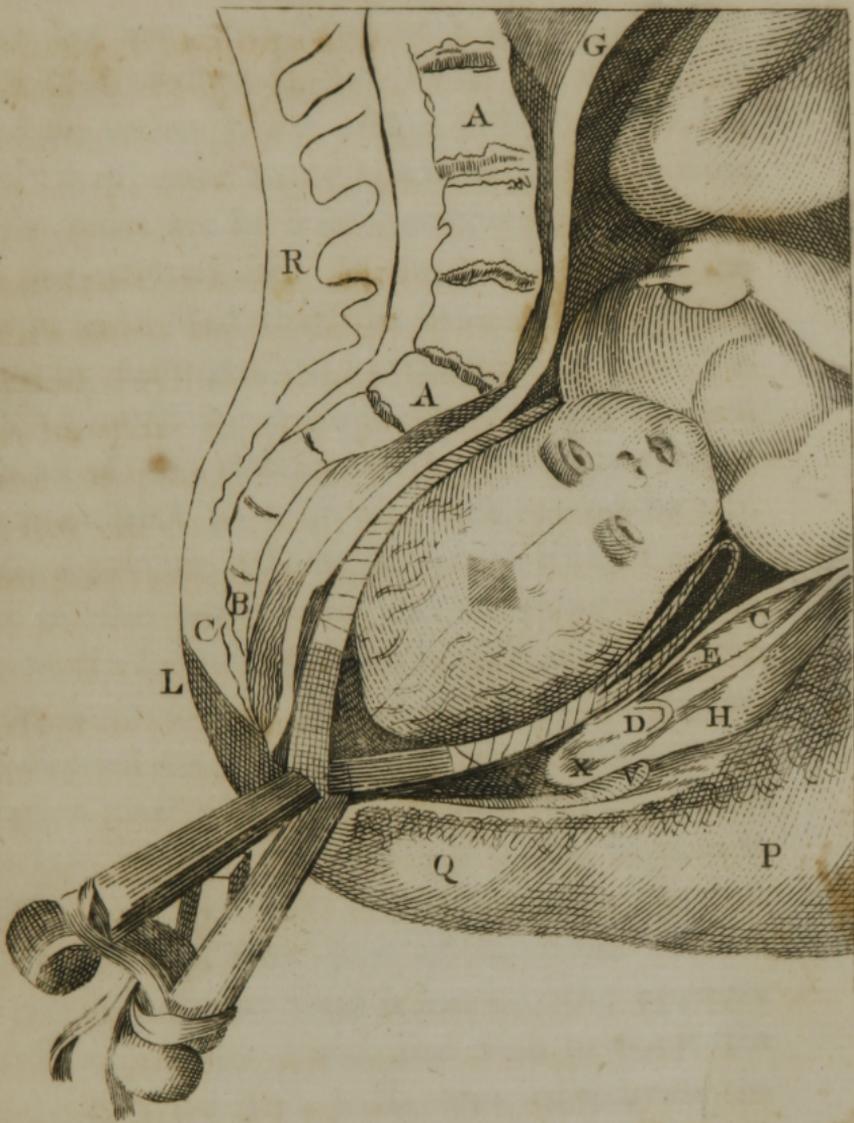
N. The *Perinæum*.

Q. P. The left hip and thigh.

R. The skin and muscular part of the loins.

The

Plate XVI.





The patient in this case may be, as in this Table, on her side, with her breech a little over the side or foot of the bed, her knees being likewise pulled up to her belly, and a pillow placed between them, care being taken at the same time that the parts are by a proper covering defended from the external air. If the hairy scalp of the *Fœtus* is so swelled that the situation of the head cannot be distinguished by the *Sutures* as in Table XXI, or if by introducing a finger between the head of the child and the *Pubes*, or *Groin*, the ear or back part of the neck cannot be felt, the *Os Externum* must be gradually dilated in the time of the pains with the operator's fingers (previously lubricated with hog's lard) until the whole hand can be introduced into the *Vagina*, and slipped up in a flattish form between the posterior part of the *Pelvis* and child's head. This last is then to be raised up as high as is possible, to allow room for the fingers to reach the ear and posterior part of the neck. When the position of the head is known, the operator must withdraw his hand, and wait to see if the stretching of the parts will renew or increase the labour pains, and allow more space for the advancement of the head in the *Pelvis*. If this, however, proves of no effect, the fingers are again to be introduced as before, and one of the blades of the forceps (lubricated with lard) is then to be applied along the inside of the hand or fingers, and left ear of the child, as represented in the table. But if the *Pelvis* is distorted, and projects forward

ward at the superior part of the *Os Sacrum*, and the forehead therefore cannot be moved a little backwards, in order to turn the ear from that part of the *Pelvis* which prevents the end of the forceps to pass the same; in that case, I say, the blade must be introduced along the posterior part of the ear at the side of the distorted bone. The hand that was introduced is then to be withdrawn, and the handle of the introduced blade held with it as far back as the *Perinæum* will allow, whilst the fingers of the other hand are introduced to the *Os Uteri*, at the *Pubes* or right *Groin*, and the other blade placed exactly opposite to the former. This done, the handles being taken hold of and joined together, the head is to be pulled lower and lower, every pain, until the *Vertex*, as in this table, is brought down to the inferior part of the left *Ischiûm*, or below the same. The wide part of the head being now advanced to the narrow part of the *Pelvis* betwixt the *Tuberosities* of the *Ossa Ischiûm*, is to be turned from the left *Ischiûm* out below the *Pubes*, and the forehead backwards to the concave part of the *Os Sacrum* and *Coccyx*, as in Table XVII, and afterwards the head brought along and delivered, as in Table XVIII, and XIX. But if it is found that the delivery will require a considerable degree of force from the head's being large, or the *Pelvis* narrow, the handles of the forceps are to be tied together with a fillet, as represented in this Table, to prevent their position being changed, whilst the wom-

Plate XVII.



an is turned on her back as in Table XXIV, which is then more convenient for delivering the head than when lying on the side.

N. B. When the head is wedged in the *Pelvis*, and the basis not yet protruded below the brim, the forceps can neither be employed with advantage nor safety; and to attempt the mechanical turns recommended here would be difficult and hazardous.

This Table shows that the handles of the forceps ought to be held as far back as the *Os Externum* will allow, that the blades may be in an imaginary line between that and the middle space between the *Umbilicus* and the *Scrobiculus Cordis*. When the forceps are applied along the ears and sides of the head, they are nearer to one another, have a better hold, and mark less than when over the *Occipital* and *Frontal* bones.

Vide Vol. I. Book. III. Chap. 3. from Sect. 1. to 6. and Vol. II. Coll. 25, 26, 27, and 29.



SEVENTEENTH TABLE,

IN the same view with the former, represents, in outlines, the head of the *Fætus* brought lower with the forceps, and turned from the position in the former Table, in imitation of the natural progression by the labour pains, which may

likewise be supposed to have made this turn, before it was necessary to assist with the forceps, this necessity at last arising from many of the causes mentioned in Vol. I.

In this view the position of the forceps, along the ears and narrow part of the head, is more particularly expressed. It appears also that when the *Vertex* is turned from the left *Os Ischiûm*, where it was closely confined, it is disengaged by coming out below the *Pubes*, and the forehead that was pressed against the middle of the right *Os Ischiûm* is turned into the concavity of the *Os Sacrum* and *Coccyx*. By this means the narrow part of the head is now between the *Ossa Ischiûm*, or narrow part of the *Pelvis*, and as the *Occiput* comes out below the *Pubes*, the head passes still easier along. When the head is advanced so low in the *Pelvis*, if the position cannot be distinguished by the futures, it may for the most part be known by feeling for the back part of the neck of the *Fœtus*, with a finger introduced betwixt the *Occiput* and *Pubes*, or towards one of the *Groins*. If the head is squeezed into a longish form, as in Table XXI, and has been detained many hours in this position, the pains not being sufficient to complete the delivery; the assistance of the forceps must be taken to save the child, though the woman may be in no danger.

The assistance of the forceps must be taken to save the child, though the woman be in no danger. This may require a little explanation. The exact dimensions

menfions of a child's head cannot eafily be afcertained before delivery ; nor can it be known *how long* a labour may be protracted, without any material injury to the mother. The changes the head of the *Fætus* fuffers both in its figure and diminution of bulk, by compreffion, render it capable of paffing in fome cafes where we would little expect it. On the contrary, when the head is but little advanced, and wedged in the *Pelvis*, the forceps are applied under obvious difadvantages ; fince it is well known to practitioners, that women fuffer the *natural bruifes* with more fafety than thofe occafioned by the beft con- ftructed modern inftruments, in the hands of the moft fkilful practitioners. The forceps, therefore, in general, fhould not be ufed, efpecially in the early part of a man's practice, except only on the moft *urgent occafions*. And if the head is detained at the brim of the *Pelvis*, as in the former Table, the cafe is *unfavourable* for the forceps.

See this important precaution further enforced, page 37, line 4.

This Table alfo fhows that the handles of the forceps are ftill to be kept back to the *Perinæum*, and when in this pofition are in a line with the upper part of the *Sacrum*, and if held more backwards, when the head is a little higher, would be in a line with the *Scrobiculus Cordis*. If the forceps are applied when the head is in this pofition, they are more eafily introduced when the patient is in a fupine pofition, as in Table XXIV.

Neither is it necessary to tie the handles, which is only done to prevent their alteration when turning the woman from her side to her back.

As I have had several cases where a longer sort of forceps that are curved upwards are of great use to help along the head, when the body is delivered first, as in Table XXXV, the same are represented here by dotted lines. They may be used in laborious cases as well as the others, but are not managed with the same ease.

Most of the parts of this Table being marked with the same letters as the former, the descriptions there given will answer in this, except the following.

L. M. The *Anus*.

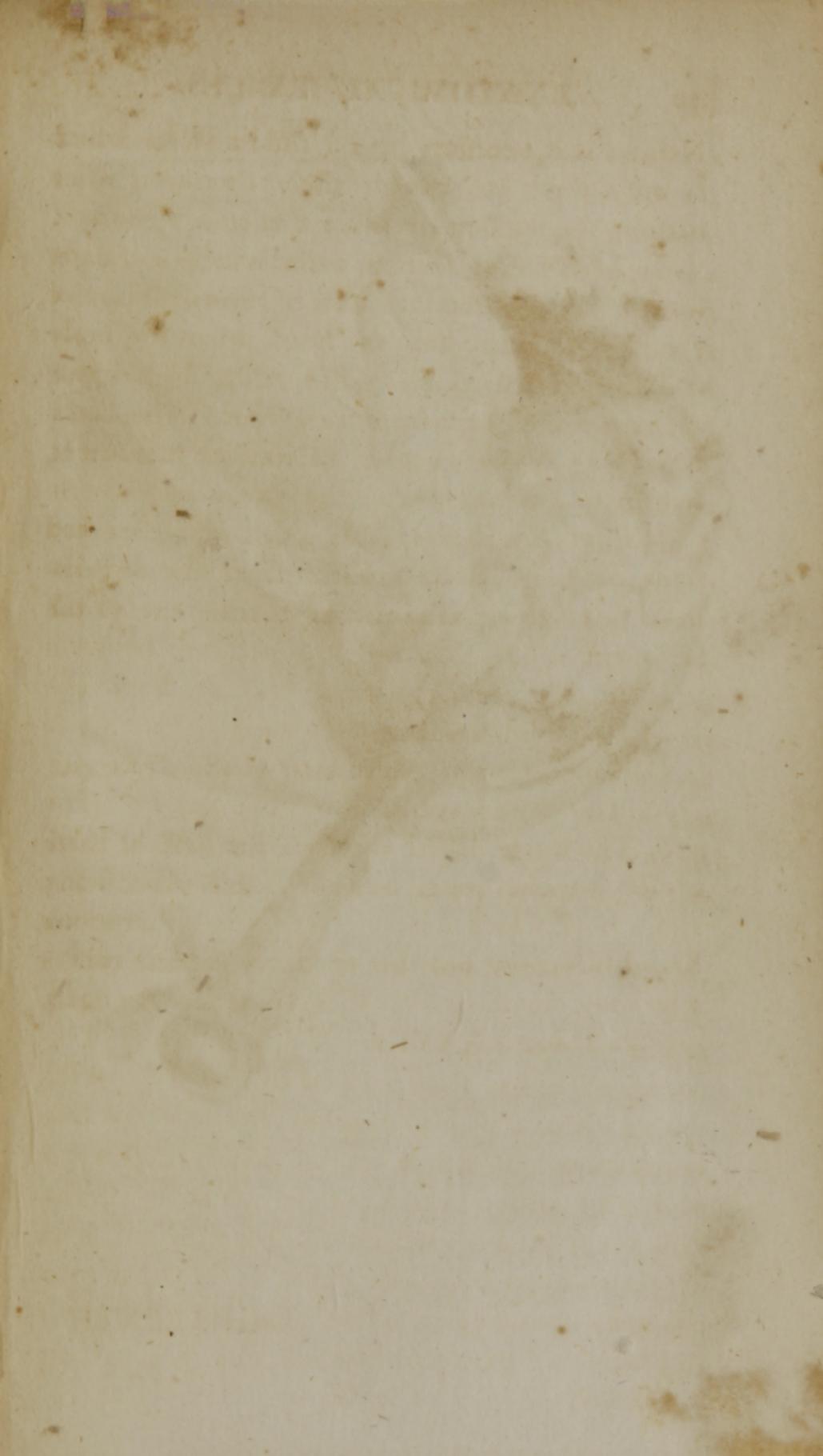
M. N. The *Perinæum*.

O. The common *Integuments* of the *Abdomen*.

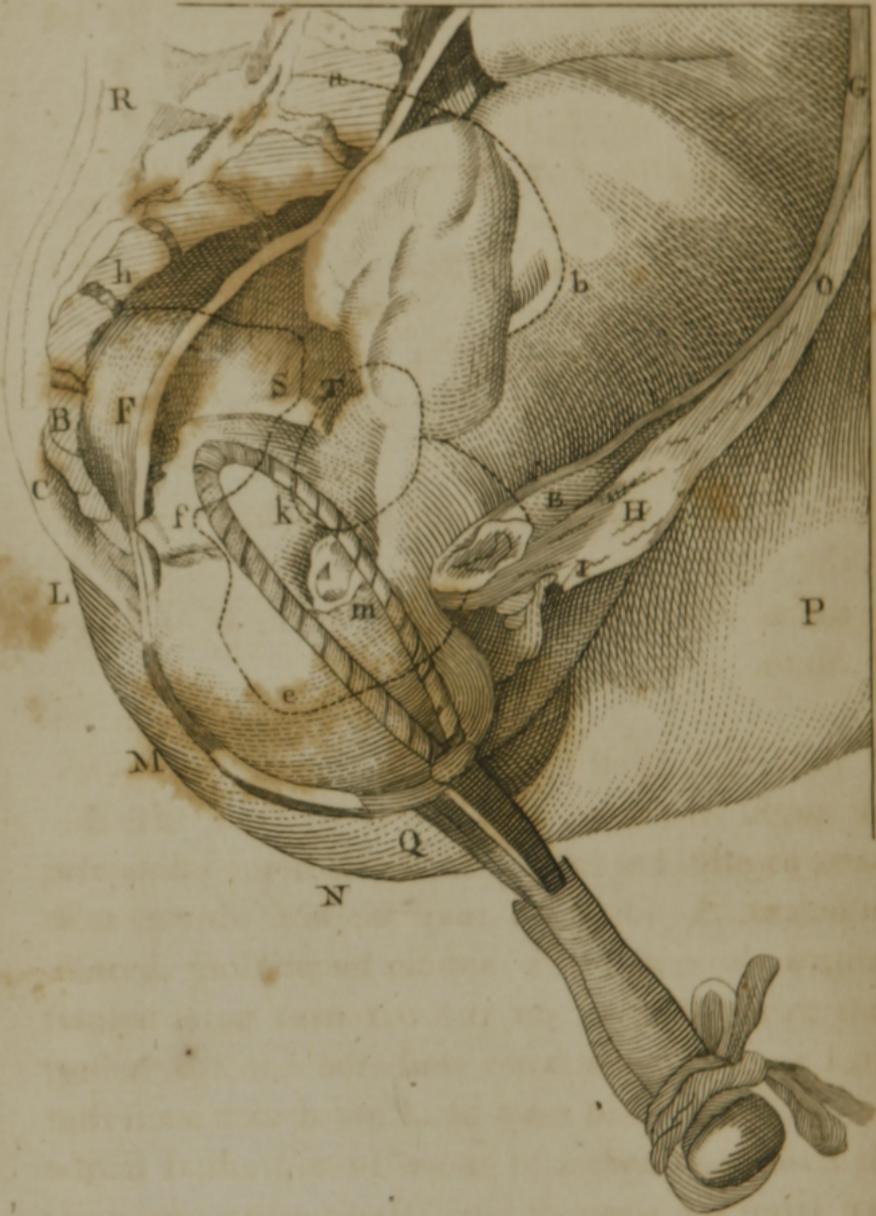
R. The short forceps.

S. The long curved forceps, the first of these is eleven inches long, and the last twelve inches and a half, which I have after several alterations found sufficient, but this need not confine others who may choose to alter them from this standard.

Vide Table XXXVII.



ANATOMIA UNIVERSALIS
Plate XVIII.



E I G H T E E N T H T A B L E,

In the same View and Section of the parts, shows the head of the *Fœtus* in the same position, but brought lower down with the forceps than in the former Table; for in this the *Os Externum* is more open, the *Occiput* comes lower down from below the *Pubes*, and the forehead past the *Coccyx*, by which both the *Anus* and *Perinæum* are stretched out in form of a large tumor, as in Table XV.

When the head is so far advanced, the operator ought to extract with great caution, lest the parts should be torn. If the labour pains are sufficient, the forehead may be kept down, and helped along in a slow manner by pressing against it with the fingers on the external parts below the *Coccyx*: At the same time the forceps being taken off, the head may be allowed to stretch the *Os Externum* more and more in a gradual manner, from the force of the labour pains, as well as assistance of the fingers. But if the former are weak and insufficient, the assistance of the forceps must be continued. *Vide* the description of the parts in Table XVI. S. T. in this represent the left side of the *Os Uteri*. The dotted lines demonstrate the situation of the bones of the *Pelvis*

on the right side, and may serve as an example for all the lateral views of the same,

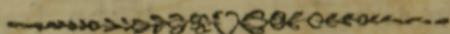
a. b. c. h. The outlines of the *Os Ilium*.

D. e. f. The same of the *Pubis* and *Ischium*.

i. i. k. The *Acetabulum*. And

m. n. The *Foramen Magnum*.

Vide Vol. I. Book III. Chap. 5. Sect. 3. Vol. II. Coll. 25.



NINETEENTH TABLE,

In the same view and Section of the *Pelvis*, is intended by out lines to show, that as the external parts are stretched, and the *Os Externum* is dilated, the *Occiput* of the *Fœtus* rises up with a semicircular turn from out below the *Pubes*, the under part of which bones are as an axis, or fulcrum, on which the back part of the neck turns, whilst at the same time the forehead and face in their turn upwards, distend largely the parts between the *Coccyx*, and *Os Externum*. This is the method observed by nature in stretching these parts in labour, and as nature is always to be imitated, the same method ought to be followed, when it is necessary to help along the head with the forceps.

Vide

Plate XIX.



Plate XX.



Vide the three former Tables for the descriptions and references.



T W E N T I E T H T A B L E,

In the same Section of the parts, but with a view of the right side, shows the head of the *Fœtus* in the contrary position to the three last figures, the *Vertex* being here in the concavity of the *Sacrum*, and the forehead turned to the *Pubes*.

A. B. The *Vertebræ* of the loins, *Os Sacrum* and *Coccyx*.

C. The *Os Pubis* of the right side.

D. The *Anus*.

E. The *Os Externum* not yet begun to stretch.

F. The *Nympha*.

G. The *Labium Pudendi* of the right side.

H. The hip and thigh.

I. I. The *Uterus* contracted, the waters being all discharged.

When the head is small, and the *Pelvis* large, the *Parietal* bones and the forehead will, in this case, as they are forced downwards by the labour pains, gradually dilate the *Os Externum*, and stretch the parts between that and the *Coccyx* in form of a large tumor, as in Table XV, until the

face comes down below the *Pubes*, when the head will be safely delivered. But if the same be large, and the *Pelvis* narrow, the difficulty will be greater, and the child in danger; as in the following Table.

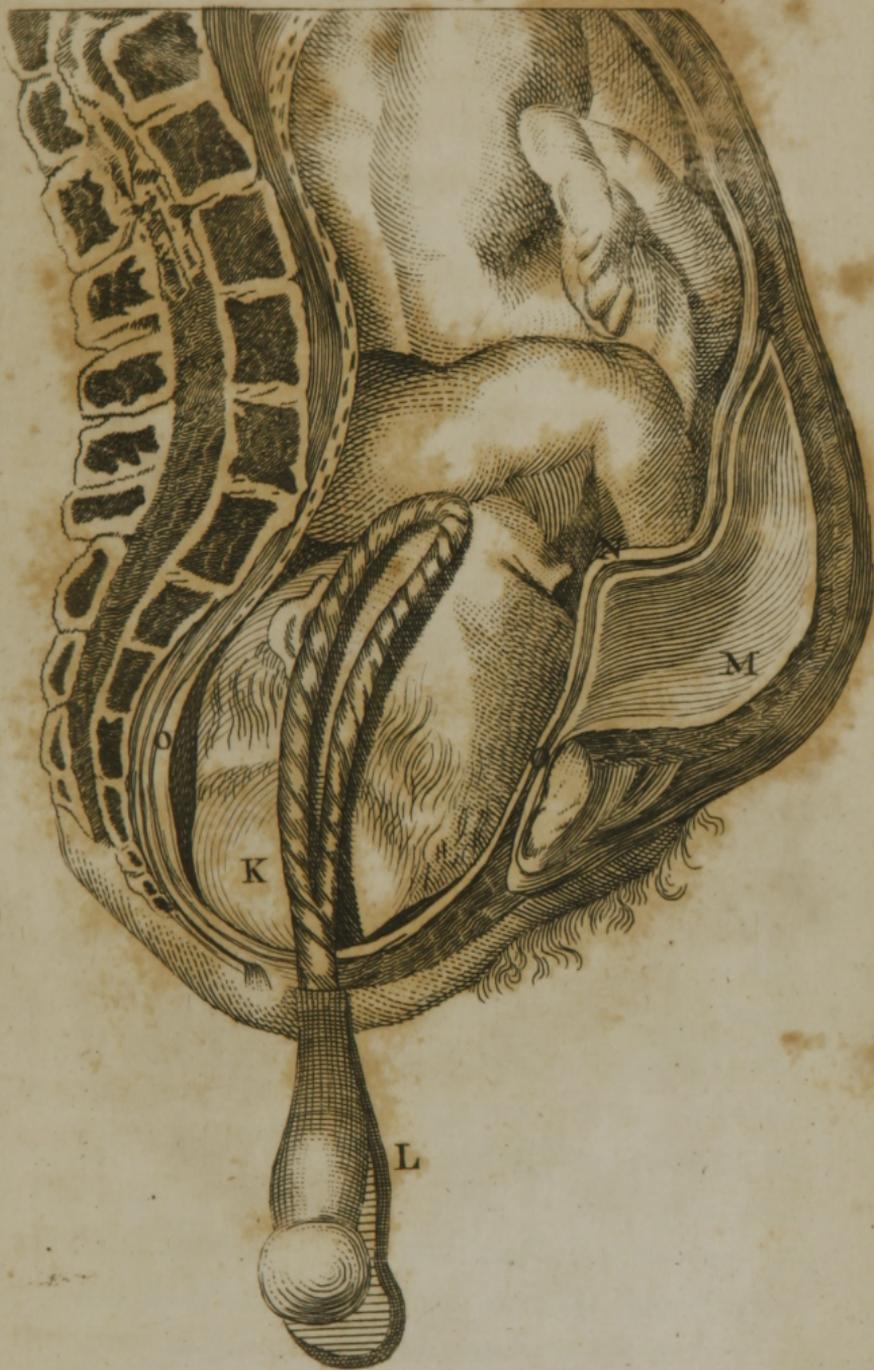
Vide Vol. I, Book III. Chap. 3. Sect. 4. No. 3. Vol. II. Coll. 16. No. 2.



TWENTY FIRST TABLE

Shows the head of the *Fætus* in the same position as in the former Table, but being much larger, it is by strong labour pains squeezed into a longish form with a tumor on the *Vertex*, from the long compression of the head in the *Pelvis*. If the child cannot be delivered with the labour pains, or turned and brought footling*, the forceps are to be applied on the head as described in this figure, and brought along as it presents; but if that cannot be done without running the risque of tearing the *Perinæum*, and even the *Vagina* and *Rectum* of the woman, the forehead must be turned backwards to the *Sacrum*. To do this more effectually, the operator

* *Turning*, when the head is so far advanced in the *Pelvis*, and of a more than usual size, is a *dreadful* practice, and should never be attempted.





operator must grasp firmly with both hands the handles of the forceps, and at the same time pushing upwards, raise the head as high as possible, in order to turn the forehead to one side, by which it is brought into the natural position; this done, the head may be brought down and delivered as in Table XVI. &c.

Vide Vol. I. Book III. Chap. 3. Sect. 4. No. 2. and Vol. II. Coll. 28. Also the former Table for the description of the parts, except

K. The tumor on the *Vertex*. The same compression and elongation of the head, as well as the tumor on the *Vertex*, may be supposed to happen in a greater or less degree in the XVI, XVII, XVIII, XIX Tables, as well as in this, where the difficulty proceeds from the head being large, or the *Pelvis* narrow. *Vide* Tables XXVII, and XXVIII.

L. The forceps. Sometimes the forehead may be moved to the natural position by the assistance of the fingers, or only one blade of the forceps.

N. B. Though the use of a single blade of the forceps, or the simple lever, is still retained in practice, and in a few particular cases may be employed in preference to the double lever, the application is more difficult, more slight and professional judgment are necessary in the management, and the two bladed forceps can be employed with more safety and equal success, in general, by young practitioners. The forceps
may

may either be the straight kind, or such as are curved to one side, when it is necessary to use one or both blades.

M. The *Vesica Urinaria* much distended with a large quantity of *Urine*, from the long pressure of the head against the *Urethra*, which shows that the *Urine* ought to be drawn off with a *Catheter*, in such extraordinary cases, before you apply the forceps, or in preternatural cases, where the child is brought footling.

N. The under part of the *Uterus*.

O. O. The *Os Uteri*.



TWENTY SECOND TABLE

Shows, in a front view of the parts, the forehead of the *Fœtus* presenting at the brim of the *Pelvis*, the face being turned to one side, the *Fontanelle* to the other, and the feet and breech stretched towards the *Fundus Uteri*.

A. A. The superior part of the *Offa Ilium*.

B. The *Anus*.

C. The *Perinæum*.

D. The *Os Externum* ; the thickness of the posterior part before it is stretched with the head of the child.

E. E. E. The

Plate XXII.



Plat. XXIII.



E. E. E. The *Vagina*.

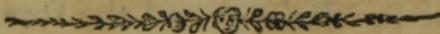
F. The *Os Uteri* not yet fully dilated.

G. G. G. The *Uterus*.

H. The *Membrana Adiposa*.

If the face is not forced down, the head will sometimes come along in this manner; in which case the *Vertex* will be flattened, and the forehead raised in a conical form; and when the head comes down to the lower part of the *Pelvis*, the face or *Occiput* will be turned from the side, and come out below the *Pubes*. But if the head is large, and cannot be delivered by the pains, or if the wrong position cannot be altered, the child must be delivered with the forceps. If they should fail, recourse must be had to *Embryulcia*.

Vide Vol. I. Book III. Chap. 2. Sect. 3. Chap. 3. Sect. 4. No. 3. Vol. II. Coll. 16. No. 4. Coll. 28.



TWENTY THIRD TABLE

Shows, in a lateral view, the face of the child presenting, and forced down into the lower part of the *Pelvis*, the chin being below the *Pubes*, and the *Vertex* in the concavity of the *Os Sacrum*; the waters likewise being all discharged, the *Uterus* appears closely joined to
the

the body of the child, round the neck of which is one circumvolution of the *Funis*.

A. B. The *Vertebræ* of the loins, *Os Sacrum*, and *Coccyx*.

C. The *Os Pubis* of the left side.

D. The inferior part of the *Rectum*.

E. The *Perinæum*.

F. The left *Labium Pudendi*.

G. G. G. The *Uterus*.

When the *Pelvis* is large, the head, if small, will come along in this position, and the child be saved : For, as the head advances lower, the face and forehead will stretch the parts between the *Frænum Labiorum* and *Coccyx* in form of a large tumor. As the *Os Externum* likewise is dilated, the face will be forced through it ; the under part of the chin will rise upwards over the anterior part of the *Pubes* ; and the forehead, *Vertex*, and *Occiput*, turn up from the parts below. If the head, however, is large, it will be detained either when higher or in this position. In this case, if the position cannot be altered to the natural, the child ought to be turned, and delivered footling.

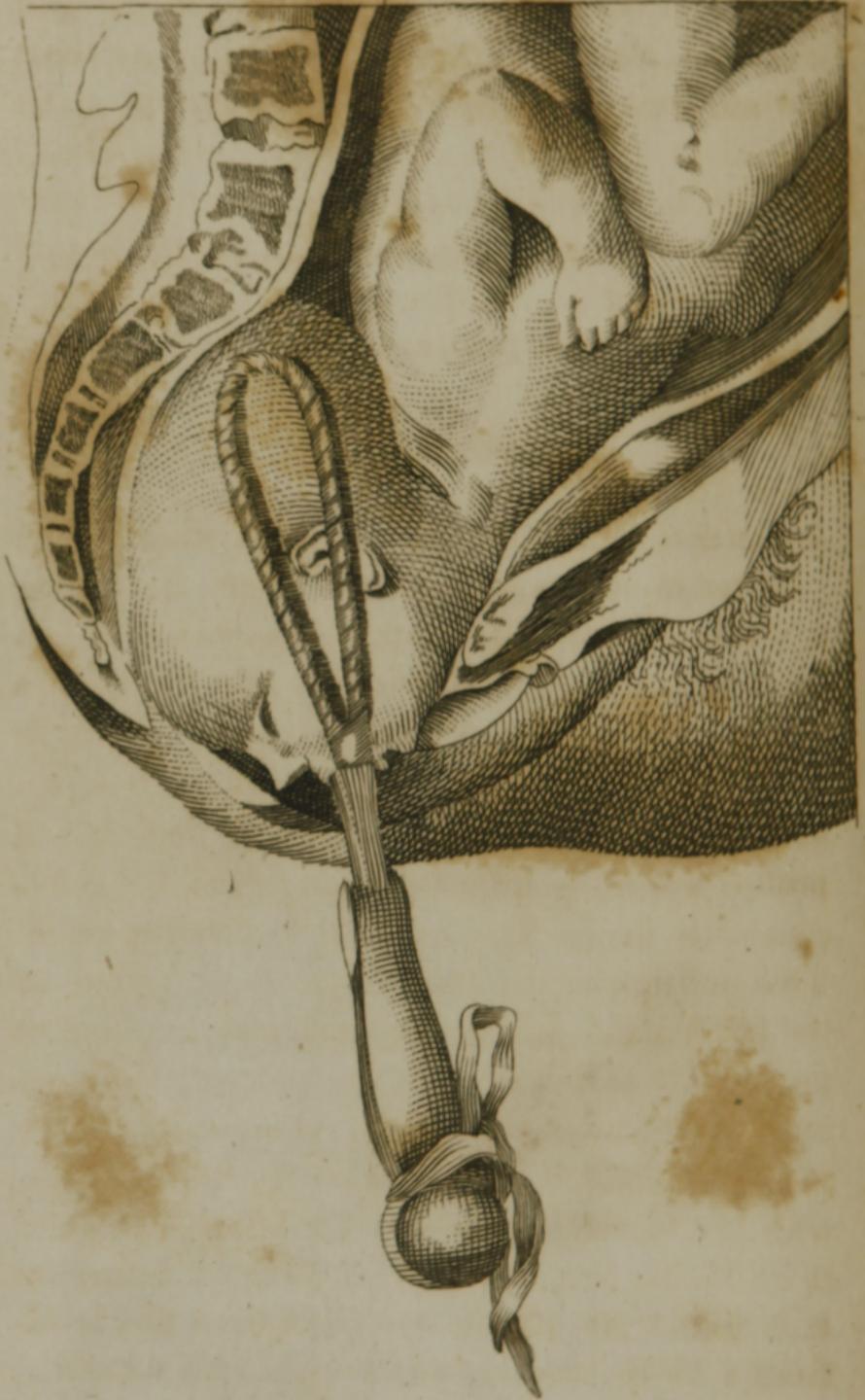
See *N. B.* at the end of explanation of Table XXV. page 51.

If the *Pelvis*, however, is narrow, and the waters not all gone, the *Vertex* should, if possible, be brought to present ; but if the *Uterus* is so closely

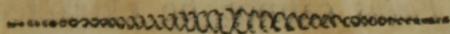
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Plate XXIV.



closely contracted that this cannot be effected, on account of the strong pressure of the same, and slipperiness of the child's head, in this case the method directed in the following table is to be taken.



T W E N T Y F O U R T H T A B L E



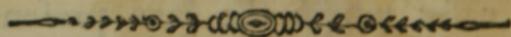
Represents, in the lateral view, the head of the *Fœtus* in the same position as in the former Table ; but the delivery is supposed to be retarded from the largeness of the head, or a narrow *Pelvis*.

In this case, if the head cannot be raised, and pushed up into the *Uterus*, it ought to be delivered with the forceps, in order to save the child. This position of the chin to the *Pubes* is one of the safest cases where the face presents, and is most easily delivered with the forceps ; the manner of introducing of which over the ears is shown in this Table. The patient must lie on her back, with her breech a little over the bed, her legs and thighs being supported by an assistant sitting on each side. After the parts have been slowly dilated with the hand of the operator, and the forceps introduced, and properly fixed along the ears of the child, the head is to be brought down
by

by degrees, that the parts below the *Os Externum* may be gradually stretched : The chin then is to be raised up over the *Pubes*, whilst the forehead, *Fontanelle*, and *Occiput*, are brought out slowly from the *Perinæum* and *Fundament* to prevent the same from being hurt or lacerated. But if the *Fætus* cannot be extracted with the forceps, the delivery must be left to the labour pains, as long as the patient is in no danger ; but if the danger is apparent, the head must be delivered with the curved crotchets. *Vide* Table XXXIX.

When the face presents, and the chin is to the side of the *Pelvis*, the patient must lie on her side ; and after the forceps are fixed along the ears, the chin is to be brought down to the lower part of the *Os Ischiûm*, and then turned out below the *Pubes*, and delivered in a slow manner as above.

Vide Vol. II. Coll. 16. No. 6. As also Tables XVI, XVII, XVIII, and XIX, for the description of the parts.



T W E N T Y F I F T H T A B L E

Shows, in a lateral view of the right side, the face of the *Fætus* presenting, as in Table XXIII, but in the contrary position ; that is, with the chin

Plate XXV.



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chin to the *Os Sacrum*, and the *Bregma* to the *Pubes*, the waters evacuated, and the *Uterus* contracted.

A. The *Os Externum* not yet begun to stretch.

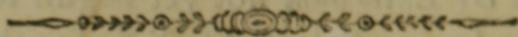
B. The *Anus*. *Vide* Table XX, for the further description of the parts.

In such cases, as well as in those of the last mentioned Table, if the child is small, the head will be pushed lower with the labour pains, and gradually stretch the lower part of the *Vagina* and the external parts ; by which means the *Os Externum* will be more and more dilated, until the *Vertex* comes out below the *Pubes*, and rises up on the outside ; in which case the delivery is then the same as in natural labours. But if the head is large, it will pass along with great difficulty ; whence the brain, and vessels of the neck, will be so much compressed and obstructed, as to destroy the child. To prevent which, if called in time, before the head is far advanced in the *Pelvis*, the child ought to be turned, and brought footling. If the head, however, is low down, and cannot be turned, the delivery is then to be performed with the forceps, either by bringing along the head as it presents, or as in the following Table. See the references in the preceding Table.

N. B. Alarming floodings only excepted, it is bad practice to turn the child when the head presents ; and in cases of relative disproportion between

tween it and the *Pelvis*, we can never propose to save the child by *turning*.

See note, Table XXI, page 45.



T W E N T Y S I X T H T A B L E

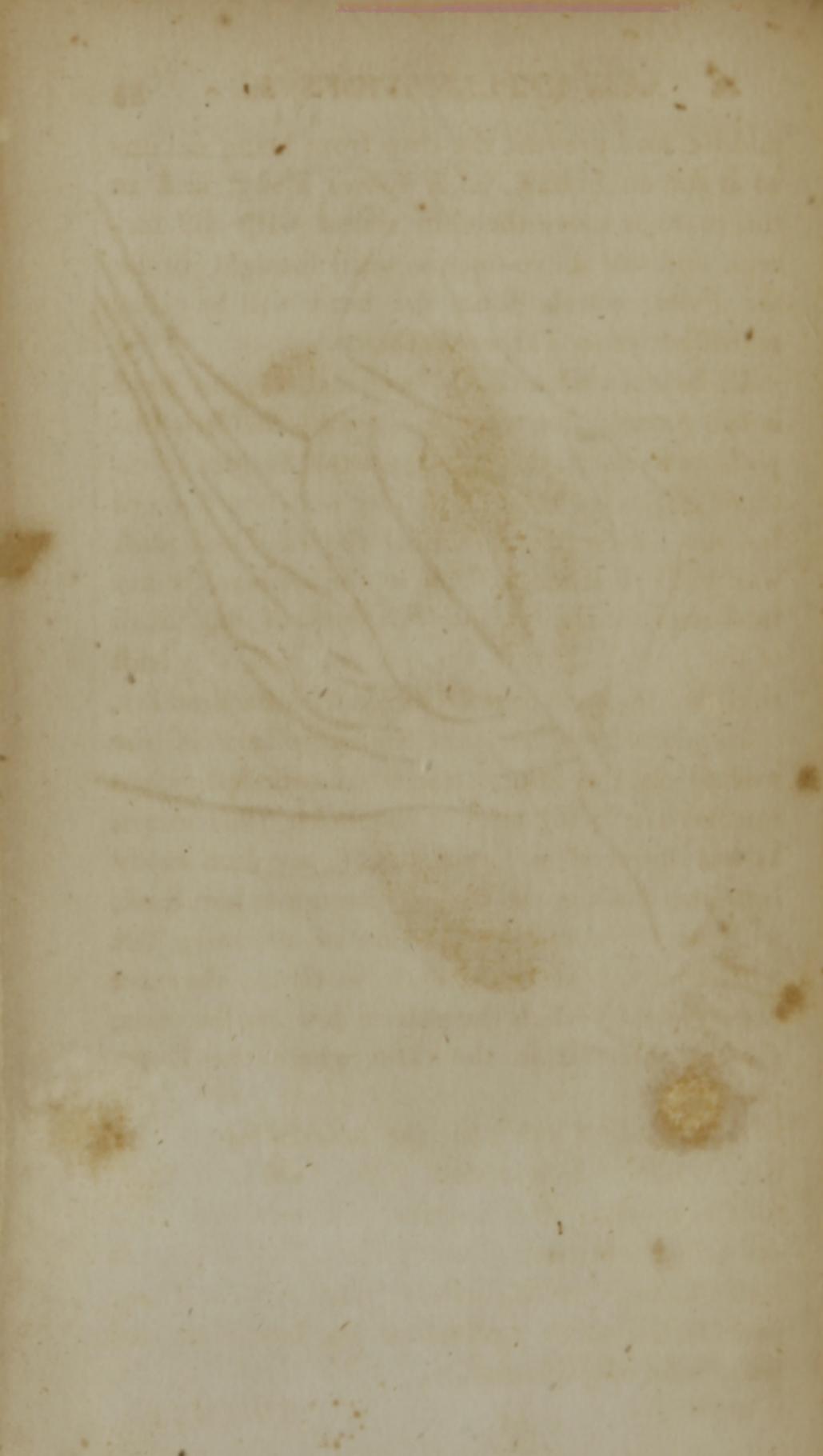
Represents, by outlines, in a lateral view of the left side of the subject, the *Fætus* in the same situation as in the former Table.

The head here is squeezed into a very oblong form ; and though forced down so as fully to dilate the *Os Externum*, yet the *Vertex* and *Occiput* cannot be brought so far down, as to turn out from below the *Pubes*, as in the foregoing Table, without tearing the *Perinæum* and *Anus*, as well as the *Vagina* and *Rectum*.

The best method in this case, after either the short or long curved forceps have been applied along the ears, as represented in the Table, is to push the head as high up in the *Pelvis* as is possible ; after which the chin is to be turned from the *Os Sacrum* to either *Os Ischiûm*, and afterwards brought down to the inferior part of the last mentioned bone. This done, the operator must pull the forceps with one hand, whilst two fingers of the other are fixed on the lower part of the chin or under jaw, to keep the face in the middle

Plate XXVI.





middle, and prevent the chin from being detained at the *Os Ischiûm*, as it comes along, and in this manner move the chin round with the forceps, and the above fingers, until brought under the *Pubes*, which done, the head will be easily extracted, as in Table XXIV.

If, before assistance has been called, the head is so squeezed down into the *Pelvis*, that it is impossible to move the chin from the *Sacrum* to either *Os Ischiûm*, so as to deliver with the Forceps for the safety of the child, the operator must wait with patience, as long as the woman is not in danger, or there is no certainty of the death of the *Fœtus* : but if the patient runs the least risk, the head must be delivered with the crotchet.

In general, with respect to the posture of the woman in the application of the forceps, when the ears are to the sides of the *Pelvis*, the forceps, as was observed in Table XXIV, are most easily introduced when the patient lies upon her back, with her breech over the side of the bed ; but when the ear is to the *Pubes* or *Groin*, they are better applied when the patient lies on her side, as was observed in the cases where the *Vertex* presented.

Vide Table XXIV, for the description of the parts, and the references. Also Table XXXIX, for the manner of using the crotchet. See also *general rules* for using the forceps in Dr. *Hamilton's* Outlines of Midwifery, page 269, and seq. and Dr. *Denman's* Aphorisms on laborious and preternatural presentation.

TWENTY SEVENTH TABLE

Gives a lateral internal view of a distorted *Pelvis*, divided longitudinally, with the head of a *Fætus* of the seventh month passing the same. *Vide* the explanation of Table III.

A. B. C. The *Os Sacrum* and *Coccyx*.

D. The *Os Pubis* of the left side.

E. The *Tuberosity* of the *Os Ischiûm*, of the same side.

The head of the *Fætus* here, though small, is with difficulty squeezed down into the *Pelvis*, and changed from a round to an oblong form before it can pass, there being only the space of two inches and one quarter between the projection of the superior part of the *Sacrum* and the *Offa Pubis*. If the head is soon delivered, the child may be born alive: But if it continues in this manner many hours, it is in danger of being lost, on account of the long pressure on the brain. To prevent which, if the labour pains are not sufficiently strong, the head may be helped along with the forceps, as directed in Table XVI.

Dr. Osburn has endeavoured to prove, "that the fætal head, at full maturity, cannot bear compression to a volume much smaller than three inches, from one parietal bone to the other, consistently with safety to the child's life." He therefore

Plate XXVII.



Plate XXVIII.



therefore concludes : “ Through a *Pelvis* which has its cavity so contracted, that the bones approach nearer to each other than three inches, it is utterly impossible for a living child, at full maturity, by any means to pass.”

See Dr. Osburn’s Essay on Laborious Parturition, page 28. et seq.

This figure may serve as an example of the extreme degree of distortion of the *Pelvis*, between which and the well formed one are many intermediate degrees, according to which the difficulty of delivery must increase or diminish, as well as from the disproportion of the *Pelvis* and head of the *Fætus* ; all which cases require the greatest caution, both as to the management and safety of the mother and child.

Vide Vol. I. Book III. Chap. 2. Sect. 3. No. 5. Chap. 3. Sect. 4. No. 3. Vol. II. Coll. 21. No. 1. and Coll. 29.



TWENTY EIGHTH TABLE

Gives a side view of a distorted *Pelvis*, as in the former Table, with the head of a full grown *Fætus* squeezed into the brim, the *Parietal* bones decussating each other, and compressed into a conical form.

D a

A. B. C.

- A. B. C. The *Os Sacrum* and *Coccyx*.
- D. The *Os Pubis* of the left side.
- E. The *Tuberosity* of the *Os Ischiûm*.
- F. The *Processus Acutus*.
- G. The *Foramen Magnum*.

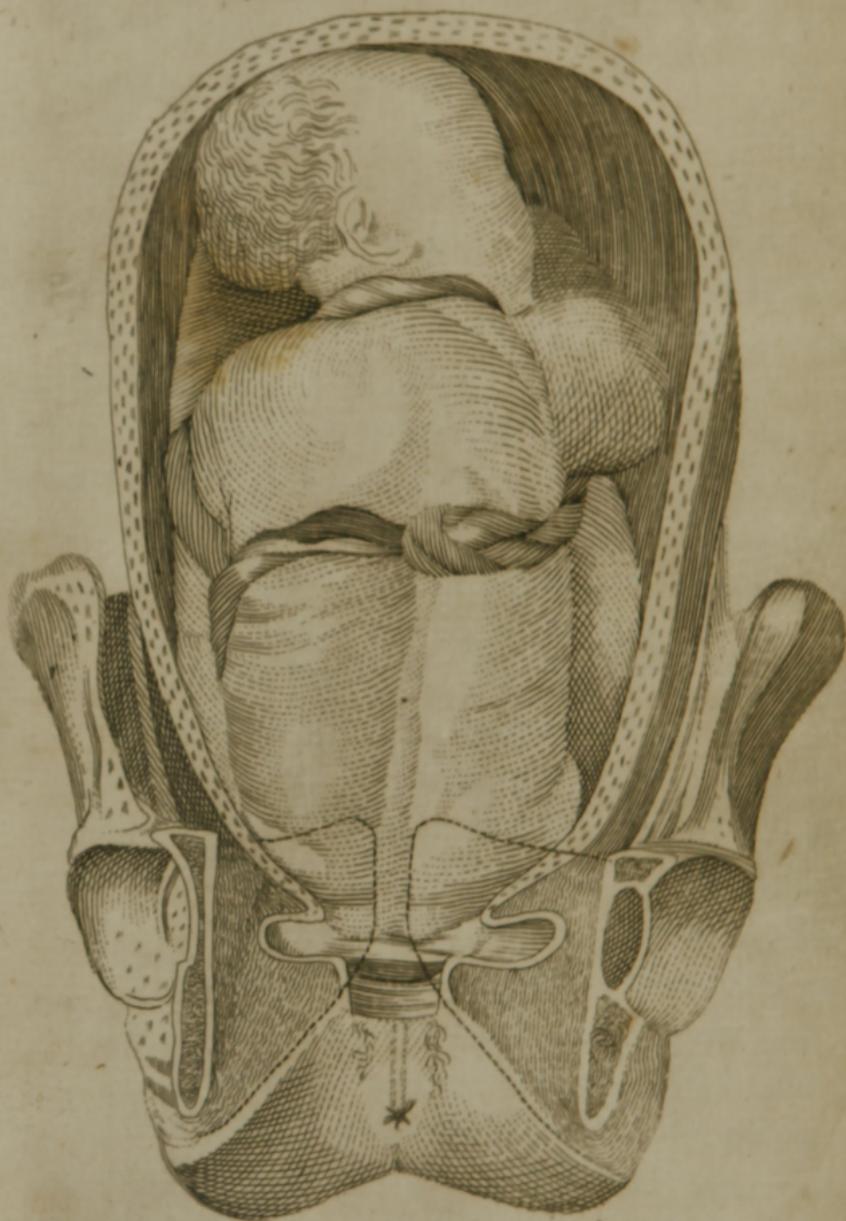
This Table shows the impossibility in such a case to save the child, unless by the *Cæsarian* operation ; which, however, ought never to be performed, excepting when it is impracticable to deliver at all by any other method. Even in this case, after the upper part of the head is diminished in bulk, and the bones are extracted, the greatest force must be applied in order to extract the bones of the face and basis of the skull, as well as the body of the *Fœtus*.

Vide Vol. I. Book III. Chap. 3. Sect. 7. Chap. 5. Sect. 3. and Vol. III. Coll. 31. 39.

N. B. In opposition to the opinion of Dr. Smellie, and sentiments of former authors, Dr. Osborn has proved, from the case of Elizabeth Sherwood, that “ a child at full maturity may be extracted by the crotchet through a *Pelvis* whose aperture does not exceed one inch and a half from *Pubes* to *Sacrum*, with tolerable facility to the operator, and perfect safety to the mother ; dimensions much less than what have been supposed to require the *Cæsarian* operation, even in the latest and best books.” *Essay on Laborious Parturition*, page 64.—251, &c.



Plate XXIX.



T W E N T Y N I N T H T A B L E

Represents, in a front view of the *Pelvis*, as in Table XXII, the breech of the *Fætus* presenting, and dilating the *Os Internum*, the *Membranes* being too soon broke. The fore parts of the child are to the posterior part of the *Uterus*; and the *Funis* with a knot upon it, furrounds the neck, arm, and body.

Some time after this and the following Tables were engraved, Dr. *Kelly* showed me a subject he had opened, where the breech presented itself, and lay much in the same position with its body as in the ninth Table, supposing the breech in that figure turned down to the *Pelvis*, and the head up to the *Fundus Uteri*.

I have sometimes felt, in these cases [when labour was begun, and before the breech was advanced into the *Pelvis*] one hip at the *Sacrum*, the other resting above the *Os Pubis*, and the private parts to one side: But before they could advance lower, the *Nates* were turned to the sides and wide part of the brim of the *Pelvis*, with the private parts to the *Sacrum*, as in this Table; though sometimes to the *Pubes*, as in the following Table. As soon as the breech advances to the lower part of the basin, the hips again return to their former position, *viz.* one hip turned out

below the *Os Pubis*, and the other at the back parts of the *Os Externum*.

N. B. In this case the child, if not very large, or the *Pelvis* narrow, may be often delivered alive by the labour pains ; but if long detained at the inferior part of the *Pelvis*, the long pressure of the *Funis* may obstruct the circulation. In most cases where the breech presents, the effect of the labour pains ought to be waited for, until at least they have fully dilated the *Os Internum* and *Vagina*, if the same have not been stretched before with the waters and *Membranes*. In the mean time, whilst the breech advances, the *Os Externum* may be dilated gently during every pain, to allow room for introducing a finger or two of each hand to the outside of each groin of the *Fœtus*, in order to assist the delivery when the *Nates* are advanced to the lower part of the *Vagina*. But if the *Fœtus* is larger than usual, or the *Pelvis* narrow, and after a long time and many repeated pains the breech is not forced down into the *Pelvis*, the patient's strength at the same time failing, the operator must in a gradual manner open the parts, and, having introduced a hand into the *Vagina*, raise or push up the breech of the *Fœtus*, and bring down the legs and thighs. If the *Uterus* is so strongly contracted that the legs cannot be got down, the largest end of the blunt hook is to be introduced, as directed in Table XXXVII. As soon as the breech or legs are brought down, the body and head are to be delivered as described in

the

XXXVII

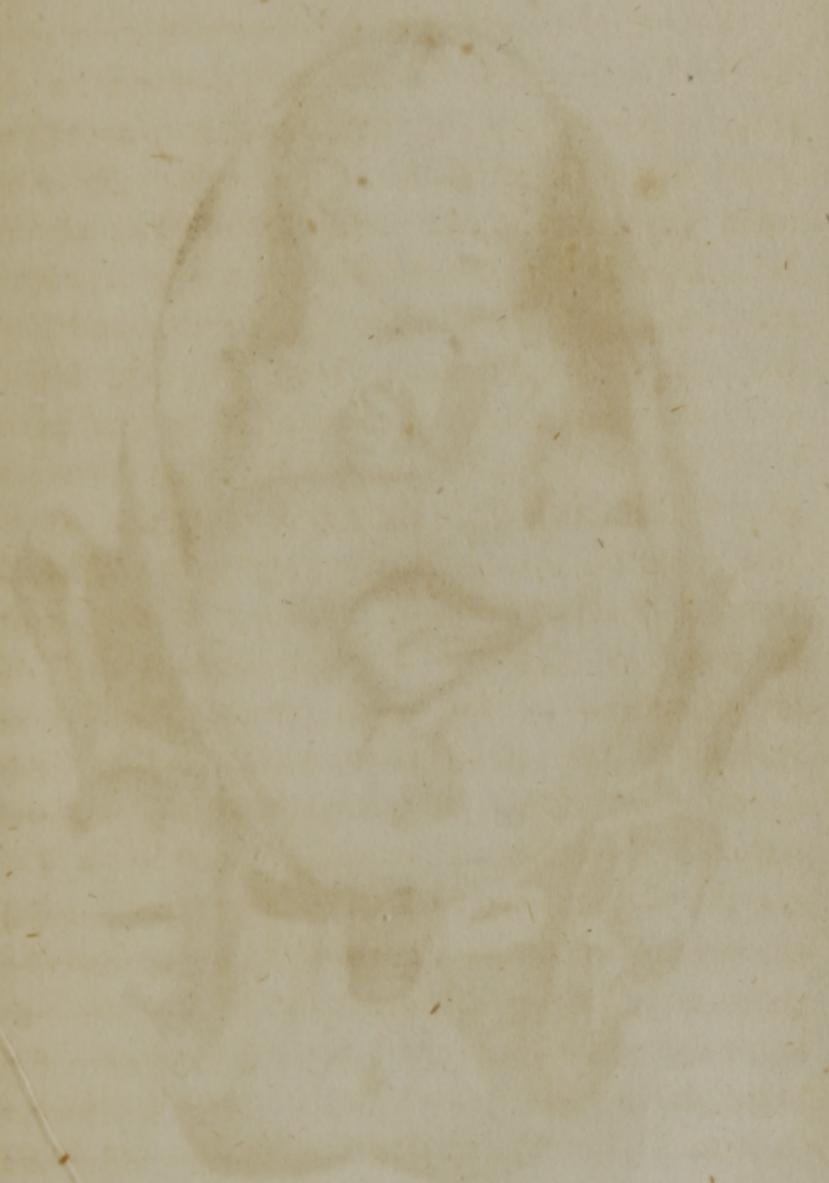


Plate XXX.



the next Table, only there is no necessity here to alter the position of the child's body.

Vide Vol. I. Book III. Chap. 4. Sect 1, 2. Vol. III. Coll. 32.

The description of the parts in this, and the following Table, is the same as in Table XXII, only the dotted lines in this describe the place of the *Ossa Pubis*, and anterior parts of the *Ossa Ischiûm* which are removed, and may serve in this respect as an example for all the other front views, where, without disfiguring the Table, they could not be so well put in.

N. B. The use of the blunt hook, in breech cases, is a hazardous expedient ; and manual assistance of every kind should be avoided, the most urgent cases only excepted.

See Dr. *Hamilton's* Outlines of Midwifery, page 370, et seq.



T H I R T I E T H T A B L E

Shows, in the same view, and with the same references as the former, the breech of the *Fætus* presenting ; with this difference, however, that the fore parts of the child are to the fore part of the *Uterus*. In this case, when the breech coming double, as it presents, is brought down to the hams, the legs must be extracted, a cloth wrap-

ped round them, and the fore parts of the child turned to the back parts of the woman. If a pain should in the mean time force down the body of the child, it ought to be pushed up again in turning, as it turns easier when the belly is in the *Pelvis*, than when the breast and shoulders are engaged; and as sometimes the face and forehead are rather towards one of the groins, a quarter turn more brings these parts to the side of the *Pelvis*, and a little backwards, after which the body is to be brought down. If the child is not large, the arms need not be brought down, and the head may be delivered by pressing back the shoulders and body of the child to the *Perinæum*, and whilst the chin and face are within the *Vagina*, to bring the *Occiput* out from below the *Pubes*, according to *Daventer's* method. Or the operator may introduce a finger or two into the mouth, or on each side of the nose, and, supporting the body on the same arm, fix two fingers of the other hand over the shoulders, on each side of the child's neck, and in this manner raise the body over the *Pubes*, and bring the face and forehead out with a semicircular turn upwards, from the under part of the *Os Externum*. All this may be easily done when the woman lies on her side; but if the child is large, and the *Pelvis* narrow, it is better to turn the patient on her back, as described in Table XXIV; and after the legs and body are extracted as far as the shoulders, the arms are to be cautiously brought down, and the head delivered. If the woman has strong

pains,

pains, and when by the felt pulsation of the vessels of the *Funis Umbilicalis*, or the struggling motions of the *Fætus*, it is certain that the child is still alive, wait with patience for the assistance of the labour : But if that and the hand are insufficient, and the pulsation of the *Funis* turns weaker, and if the child cannot be brought double, the breech must be pushed up ; and if the resistance of the *Uterus* is so great as to prevent the extraction of the legs, the patient ought to be turned on her knees and elbows. When the legs are thus brought down, the woman, if needful, is to be again turned to her back, to allow more freedom to deliver the body and head, as before described. If the head, after several trials, cannot be delivered, without endangering the child, from overstraining the neck, the long curved forceps ought to be applied, as in Table XXXV. If these fail, and the patient is not in danger, some time may be allowed for the effect of the labour pains ; which likewise proving insufficient, the crotchet must be used as in Table XXXIX, and when it is certain that the child is dead, or that there is no possibility of saving it.

N. B. Under proper management, if there is no considerable relative disproportion between the head and the *Pelvis*, the hand of the operator will be sufficient to relieve the head, when retained after the delivery of the body, in breech, and other preternatural presentations. See Dr. *Hamilton's* Outlines of Midwifery, p. 366 to 368.

THIRTY FIRST TABLE

Represents, in a front view of the *Pelvis*, the *Fætus* compressed by the contraction of the *Uterus* into a round form, the fore parts of the former being towards the inferior part of the latter, and one foot and hand fallen down into the *Vagina*. In this figure the anterior part of the *Pelvis* is removed by a longitudinal section through the middle of the *Foramen Magnum*.

A. A. The superior parts of the *Ossa Iliûm*.

B. B. The *Uterus*.

C. The mouth of the *Womb* stretched, and appearing in

O. O. O. O. The *Vagina*.

D. The inferior and posterior part of the *Os Externum*.

E. E. E. E. The remaining part of the *Ossa Pubis* and *Ischiûm*.

F. F. F. F. The *Membrana Adiposa*.

This and the three following Tables, representing four different preternatural positions of the *Fætus in utero*, may serve as examples for the manner of delivery in these as well as in all other preternatural cases.

In all preternatural cases, the *Fætus* may be easily turned and delivered by the feet, if known

before

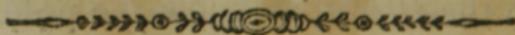
See 1785 or 1797 edition of this work
for plate 31.

before the *Membranes* are broke, and the waters discharged ; or if the *Pelvis* is narrow, and the patient is strong, the head, if large, may be brought down so as to present in the natural way : But if all the waters are discharged, and the *Uterus* is strongly contracted to the body of the *Fætus*, this last method can seldom take place, on account of the strong pressure of the *Uterus*, and slipperiness of the child's head.

In the present case, the woman may either be laid on her back or side, as described in Tables XVI, and XXIV ; and the operator, having slowly dilated the *Os Externum* with his fingers, must introduce the same into the *Vagina*, and push up into the *Uterus* the parts of the *Fætus* that present ; or if there is space for it, his hand may pass in order to dilate the *Os Internum* if not sufficiently stretched previously by the *Membranes* and waters. This done, he must advance his hand into the *Uterus*, to know the position of the *Fætus* ; and, as the breech is rather lower than the head, search for the other leg, and bring down both feet without the *Os Externum*. A cloth must then be wrapped round them ; and, having grasped them with one hand, he is to introduce the other into the *Uterus*, in order to raise the head of the *Fætus*, whilst the legs and thighs are pulled down by the hand that holds the feet. When the head is raised, and does not fall down again, the hand of the operator may be withdrawn from the *Uterus*, and the delivery completed as directed in the two former Tables. By the artless method

method of taking hold and pulling one or both feet, the breech may come down and the head rise to the *Fundus* ; but if this should not happen, there will be great danger of overstraining the *Fœtus*, which is prevented by the former method. If the *Membranes* are broken before the *Os Uteri* is largely opened, and the hand of the operator cannot be introduced, which sometimes happens in a first pregnancy, the parts of the *Fœtus* should be allowed to protrude still further, by which means the rigidity of the *Os Internum* will in time be lessened.

☉ *Vide* Vol. I. and III. on preternatural labours.
 ☉ See also directions for the management of preternatural labours in Dr. *Hamilton's* Outlines of Midwifery, page 357, et seq. and Dr. *Denman's* Aphorisms respecting the Distinction and Management of preternatural presentation.



THIRTY SECOND TABLE

Represents, in the same view with the former, the *Fœtus* in the contrary position ; the breech and fore parts being towards the *Fundus Uteri*, the left arm in the *Vagina*, and fore arm without the *Os Externum*, the shoulder being likewise forced into the *Os Uteri*.

The

Plate XXXII.





The operator in this case must introduce his fingers between the back part of the *Vagina* and the arm of the *Fætus*, in order to raise the shoulder and make room for passing his hand into the *Uterus* to distinguish the position. This being known, he ought to push up the shoulder to that part of the *Uterus*, where the head is lodged, in order to raise the same to the *Fundus*. If the body of the *Fætus* does not move round, and thereby lie in a more convenient position for bringing down the legs, the hand of the operator ought to be pushed up still higher to search for, and take hold of the feet, which are to be brought down as far as is possible. If this should not change the position, the shoulder is to be pushed up, and the legs pulled down alternately, until they are brought down into the *Vagina*, or without the *Os Externum*, after which the delivery may be completed as in the former case.

If the feet cannot be brought down lower than into the *Vagina*, a noose may be introduced over both ankles, by which the legs are brought lower by pulling the noose with one hand, whilst the other, previously introduced into the *Uterus*, pushes up the shoulders and head. By this double force the position of the *Fætus* is to be altered, and the delivery effected. In these cases, as the shoulder is raised to the *Fundus*, the arm commonly returns into the *Uterus*; but if the arm is so swelled as to prevent the introduction of the operator's hand, and cannot be folded up or returned into the *Uterus*, it must be taken off at the
 shoulder,

shoulder, or elbow, in order to deliver and save the woman*. If both arms come down, when the breast presents, the methods above described are to be used.

Vide the explanations and references of the foregoing Table to illustrate this and the following.



THIRTY THIRD TABLE

Exhibits, in the same view likewise of the *Pelvis* with the former, a third position of the *Fetus* when compressed into the round form, the belly, *viz.* or *Umbilical* region, presenting at the *Os Internum*, and the *Funis* fallen down into the *Vagina*, and appearing at the *Os Externum*.

The delivery in this case is to be effected as in the former Table, by pushing up the breast, and bringing down the legs. When the belly presents, it is easier coming at the legs, than when the breast presents, because in the former case the head is nearer to the *Fundus Uteri*, and the legs and thighs

* The protruding arm of the child does not impede the introduction of the operator's hand in turning; and the horrid expedient of *amputation* recommended here, and by former practitioners, is seldom necessary, even in cases of considerable narrowness of the *Pelvis* from distortion.

See Dr. Hamilton's *Outlines of Midwifery*, page 392, et seq.

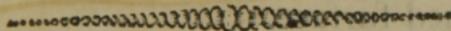




thighs lower. If the belly or breast is forced down into the lower part of the *Pelvis*, the child will be in danger from the bending of the *Vertebræ*, and the pressure of the spinal marrow, so great force is also required to raise these parts up into the *Uterus*, in order to come at the feet, that it will sometimes be necessary to turn the woman to her knees and elbows, to diminish the resistance of the *Abdominal* muscles. When the *Funis* comes down without the *Os Externum*, if there is a pulsation felt, it must immediately be replaced, and kept warm in the *Vagina*, to preserve the circulation, and prevent a stagnation, from its being exposed to cold air. If the *Funis* comes down when the head presents, the child is in danger, if not speedily delivered with the pains, or brought footling.

N. B. For an ingenious method of reducing the prolapsed cord, See London Medical Journal, Vol. VII. 1786, page 38.

See the two former Tables for the explanations and references.



THIRTY FOURTH TABLE

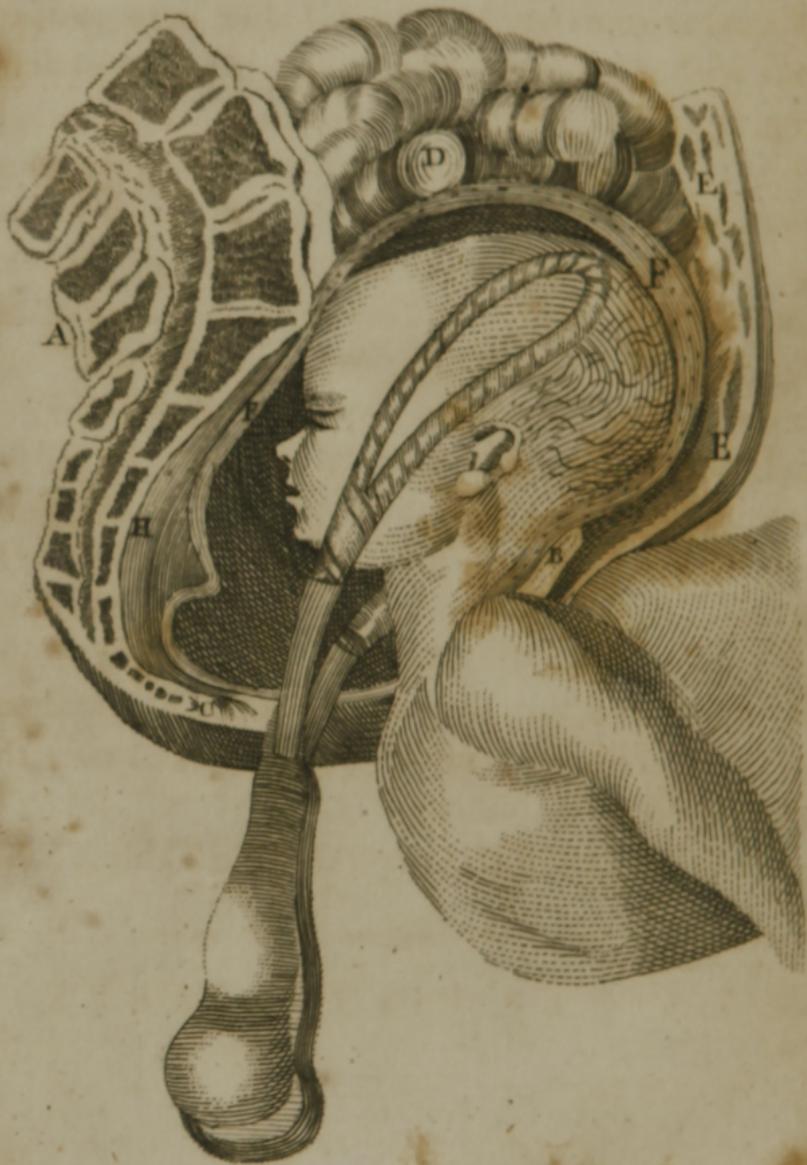
Shows, in a lateral view of the *Pelvis*, one of the most difficult preternatural cases. The left shoulder, breast, and neck of the *Fætus* presenting,

senting, the head reflected over the *Pubes* to the right shoulder and back, and the feet and breech stretched up to the *Fundus*, the *Uterus* contracted at the same time, in form of a long sheath round the body of the *Fætus*.

- A. B. C. The *Os Sacrum* and *Coccyx*.
 D. The *Os Pubis* of the left side.
 E. Part of the *Urinary* bladder.
 F. The *Rectum*.
 H. I. K. The private parts.
 M. The *Anus*.
 M. N. The *Perinæum*.
 V. The *Meatus Urinarius*.
 O. The *Os Uteri* not yet opened, and situated backwards towards the *Rectum* and *Coccyx*.
 R. S. The same represented in dotted lines, as opened when the labour is begun.
 T. U. The same more fully dilated, but nearer to the posterior than anterior part of the *Pelvis*.
 W. P. The same not fully stretched at the fore part, though intirely obliterated at the back part; the *Uterus* and *Vagina* being there only sometimes one continued surface.

HENCE it appears why the anterior part of the *Os Uteri* is frequently protruded before the head of the *Fætus* at the *Pubes*, which, if it retards delivery, is removed by sliding it up with a finger or two between the head and last mentioned part. The practice recommended here is attended with considerable hazard; and in a favourable presentation

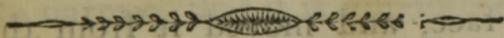




sentation of the *Fœtus* the dilatation may be safely trusted to nature. *Vide* Tables IX, X, XI, XII, XIII.

The manner of delivery, in the position of the *Fœtus*, as represented in this Table, is to endeavour with the hand to force up the part presenting, in order to raise the head to the *Fundus*. If this is impossible from the strong contraction of the *Uterus*, the operator must push up his hand in a slow and cautious manner along the breast and belly of the child, in order to come at the legs and feet, which are to be taken hold of, and brought down as far as the position of the *Fœtus* will admit of. The body is then to be moved round by pushing up the lower parts, and pulling down the upper, until the feet are brought without the *Os Externum*, and the delivery completed, as in Table XXXI. But if the feet cannot be got down, so as to be taken hold of without the *Os Externum*, a noose must be fixed over the ankles, as in Table XXXII.

Vide Vol. I, and III, as directed in Table XXXI.



THIRTY FIFTH TABLE

Shows, in a lateral view of the *Pelvis*, the method of assisting the delivery of the head of the *Fœtus* with the long curved forceps, in præternatural cases, when it cannot be done with the hands, as described in Tables XXIX, and XXX.

A. The three lowest *Vertebræ* of the loins, with the *Os Sacrum* and *Coccyx*.

E

B The

- B. The *Os Pubis* of the left side.
- C. C. The *Perinæum* and *Anus* pressed backwards with the forceps.
- D. The *Intestines*.
- E. E. The *Parietes* of the *Abdomen*.
- F. F. F. The *Uterus*.
- G. The posterior part of the *Os Uteri*.
- H. The *Rectum*.
- I. The *Vagina*.

After the body and arms of the child are delivered, and the different methods used to bring down the head with the hands, as directed in the above Table, and more fully described in Vol. I, and III, the following method is to be tried in order to save the child, which must otherwise be lost by overstraining the neck and spinal marrow. The woman being in the supine position, as in Table XXIV, one of the assistants ought to hold the body and arms of the child up towards the *Abdomen* of the woman, to give more room to the operator, who having introduced one hand up to the child's face, and moved it from the side a little backwards, for the easier application of the forceps along the sides of the head, must then turn his hand to one of the ears, and introduce one of the blades with the other hand between the same and the head, with the curved side towards the *Pubes*, as in this Table. This done, the hand is to be brought down to hold the handle of the blade of the forceps, until the other hand is introduced to the other side of the head, by which means the same is pressed against the
blade

blade that is up, and which is thus prevented from slipping, whilst the other hand introduces the second blade on the opposite side. The blades being thus introduced, care must be taken, that in joining them no part of the *Vagina* is locked in. After the forceps are firmly fixed along the sides of the head, the face and forehead must be turned again to the side of the brim of the *Pelvis*, by which means the wide part of the head is to the wide part of the brim. This done, the head is to be brought lower, and the force gradually increased, according to the resistance from the largeness of the head, or narrowness of the *Pelvis*. The forehead, when brought low enough down, is then to be turned into the concavity of the *Os Sacrum* and *Coccyx*, the handles of the forceps raised upwards, and the same caution used in bringing the head through the *Os Externum*, as described in Table XIX, and XXX. By this method the head will be delivered, the child frequently saved, and the use of the crotchet prevented, except in those basins that are so narrow, that it is impossible to deliver without diminishing the bulk of the head.

Vide Table XXXIX. Also, Vol. I. Book III. Chap. 4. Sect. 5. Vol. III. Coll. 34, 35.

N. B. In preternatural labours, if the head cannot be relieved by the hands of the operator, the child can seldom be saved by mechanical expedients. In difficult cases the long curved forceps may, however, be attempted to be applied. Those of Dr. *Leak*, in those circumstances, are preferable to any others. See note after explanation of Table XXX.

THIRTY SIXTH TABLE

Represents, in a lateral view of the *Pelvis*, the method of extracting, with the assistance of a curved crotchet, the head of the *Fætus*, when left in the *Uterus*, after the body is delivered and separated from it, either by its being too large, or the *Pelvis* too narrow.

A. B. C. The *Os Sacrum* and *Coccyx*.

D. The *Os Pubis* of the left side.

E. E. The *Uterus*.

F. The locking part of the crotchet.

g. h. i. The point of the crotchet on the inside of the *Cranium*.

If this case happens from the forehead's being towards the *Pubes*, or the child long dead, and so mortified that both the body and under jaw are separated unexpectedly, the long forceps that are curved upwards will be sufficient to extract the head; but if the same is large, and the *Pelvis* narrow, and the delivery cannot be effected by the above method, then the head must be opened, that its bulk may diminish, as it is extracted. The patient being placed either on her back, or side, as in the explanation of Table XVI, and XXIV, the left hand of the operator is to be introduced into the *Uterus*, and the forehead of the *Fætus* turned to the right side of the brim of the *Pelvis*, and a little backwards, the chin being downwards;





downwards ; after which the palm of the hand and fingers are to be advanced as high as the *Fontanelle*, and the head grasped with the thumb and little finger on each side, as firm as is possible, whilst an assistant presses on each side of the *Abdomen* with both hands, to keep the *Uterus* firm in the middle and lower part of the same. This done, the operator having with his right hand introduced and applied the crotchet to the head (the point being turned towards the forehead, and the convex part towards the *Sacrum*) he must go up along the inside of the left hand as high as the *Fontanelle*, and there, or near it, fix the point of the crotchet, keeping still the left hand in the former position, until with the other he pierces the *Cranium* with the point of the instrument, and tears a large opening in it from K to I ; after this, keeping the crotchet steady, he may slide down his left hand in a cautious manner, lest the former position should be altered, and the head will sink lower down by the assistant's pressing on the *Abdomen*. The two fore fingers of the left hand are then to be introduced into the mouth, and the thumb below the under jaw, the hand being above the blade of the crotchet. When this firm hold is taken, the operator may begin and pull slowly with both hands, and as the brain discharges through the perforation, the head will diminish, and come along. If this method should fail from the slipperiness of the head, or its being so much ossified that a sufficient opening cannot be made, the *Vertex* must

be turned down to the brim of the *Pelvis*, the *Fontanelle* backwards, and each blade of the long forceps introduced along the sides of the head, with the curved side towards the *Pubes*. After they are joined and locked, the handles are to be tied together with a fillet, to keep them firm on the head, an assistant is to keep the handles backwards until the *Cranium* is largely opened with the long scissars shown in Table XXXIX. This done, the head is to be extracted in a slow manner, first turning the forehead to the side of the brim, and as the brain evacuates, and the head comes lower down, again turning the forehead into the concavity of the *Sacrum*, and completing the delivery, as in Table XVI.

This Table may also serve for an example, to show the method of fixing the crotchet on the head, when although the body is not separated from it, yet it cannot be delivered with the operator's hands, or the long forceps, as in Table XXIX, and XXXV.

Vide Vol. I. Book III. Chap. 3. Sect. 7. Chap. 4. Sect. 5. Also, Vol. III. Coll. 31, 36.

N. B. It is the safest practice, where the resistance is considerable from relative disproportion, to diminish the volume of the child's head previous to the extraction with the hook.

The first of these is the...
The second is the...
The third is the...
The fourth is the...
The fifth is the...
The sixth is the...
The seventh is the...
The eighth is the...
The ninth is the...
The tenth is the...
The eleventh is the...
The twelfth is the...
The thirteenth is the...
The fourteenth is the...
The fifteenth is the...
The sixteenth is the...
The seventeenth is the...
The eighteenth is the...
The nineteenth is the...
The twentieth is the...
The twenty-first is the...
The twenty-second is the...
The twenty-third is the...
The twenty-fourth is the...
The twenty-fifth is the...
The twenty-sixth is the...
The twenty-seventh is the...
The twenty-eighth is the...
The twenty-ninth is the...
The thirtieth is the...
The thirty-first is the...
The thirty-second is the...
The thirty-third is the...
The thirty-fourth is the...
The thirty-fifth is the...
The thirty-sixth is the...
The thirty-seventh is the...
The thirty-eighth is the...
The thirty-ninth is the...
The fortieth is the...
The forty-first is the...
The forty-second is the...
The forty-third is the...
The forty-fourth is the...
The forty-fifth is the...
The forty-sixth is the...
The forty-seventh is the...
The forty-eighth is the...
The forty-ninth is the...
The fiftieth is the...
The fifty-first is the...
The fifty-second is the...
The fifty-third is the...
The fifty-fourth is the...
The fifty-fifth is the...
The fifty-sixth is the...
The fifty-seventh is the...
The fifty-eighth is the...
The fifty-ninth is the...
The sixtieth is the...
The sixty-first is the...
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The sixty-fifth is the...
The sixty-sixth is the...
The sixty-seventh is the...
The sixty-eighth is the...
The sixty-ninth is the...
The seventieth is the...
The seventy-first is the...
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The seventy-fourth is the...
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The seventy-sixth is the...
The seventy-seventh is the...
The seventy-eighth is the...
The seventy-ninth is the...
The eightieth is the...
The eighty-first is the...
The eighty-second is the...
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The eighty-fifth is the...
The eighty-sixth is the...
The eighty-seventh is the...
The eighty-eighth is the...
The eighty-ninth is the...
The ninetieth is the...
The ninety-first is the...
The ninety-second is the...
The ninety-third is the...
The ninety-fourth is the...
The ninety-fifth is the...
The ninety-sixth is the...
The ninety-seventh is the...
The ninety-eighth is the...
The ninety-ninth is the...
The hundredth is the...

Plate XXXVII.



THIRTY SEVENTH TABLE

And the two following, represent several kinds of instruments useful in laborious and difficult cases.

A. The straight short forceps, in the exact proportion as to the width between the blades, and length from the points to the locking part : The first being two and the second six inches, which with five inches and a half (the length of the handles) makes in all eleven inches and a half. The length of the handles may be altered at pleasure. I find, however, in practice, that this standard is the most convenient, and with less difficulty introduced, than when longer, having also sufficient force to deliver in most cases, where their assistance is necessary. The handles and lowest part of the blades may as here be covered with any durable leather, but the blades ought to be wrapped round with something of a thinner kind, which may be easily renewed when there is the least suspicion of venereal infection in a former case ; by being thus covered, the forceps have a better hold, and mark less the head of the child. For their easier introduction, the blades ought likewise to be greased with hog's lard.

B. Represents the posterior part of a single blade, in order to show the width and length of the open part of the same, and the form and proportions of the whole. The handles, however, as here represented, are rather too large.

Vide Table XXI, for the figure and proportions of the long forceps, that are curved upwards, and covered in the same manner as the former.

The forceps were at first contrived to save the *Fætus*, and prevent, as much as possible, the use of sharp instruments ; but even to this salutary method recourse ought not to be had but in cases where the degree of force requisite to extract will not endanger, by its consequences, the life of the mother. For, by the imprudent use of the forceps, much more harm may be done than good.

See the explanation of Table XVI, also the Preface to Vol. II, with the cases in the collection on that subject.

C. The blunt hook, which is used for three purposes.

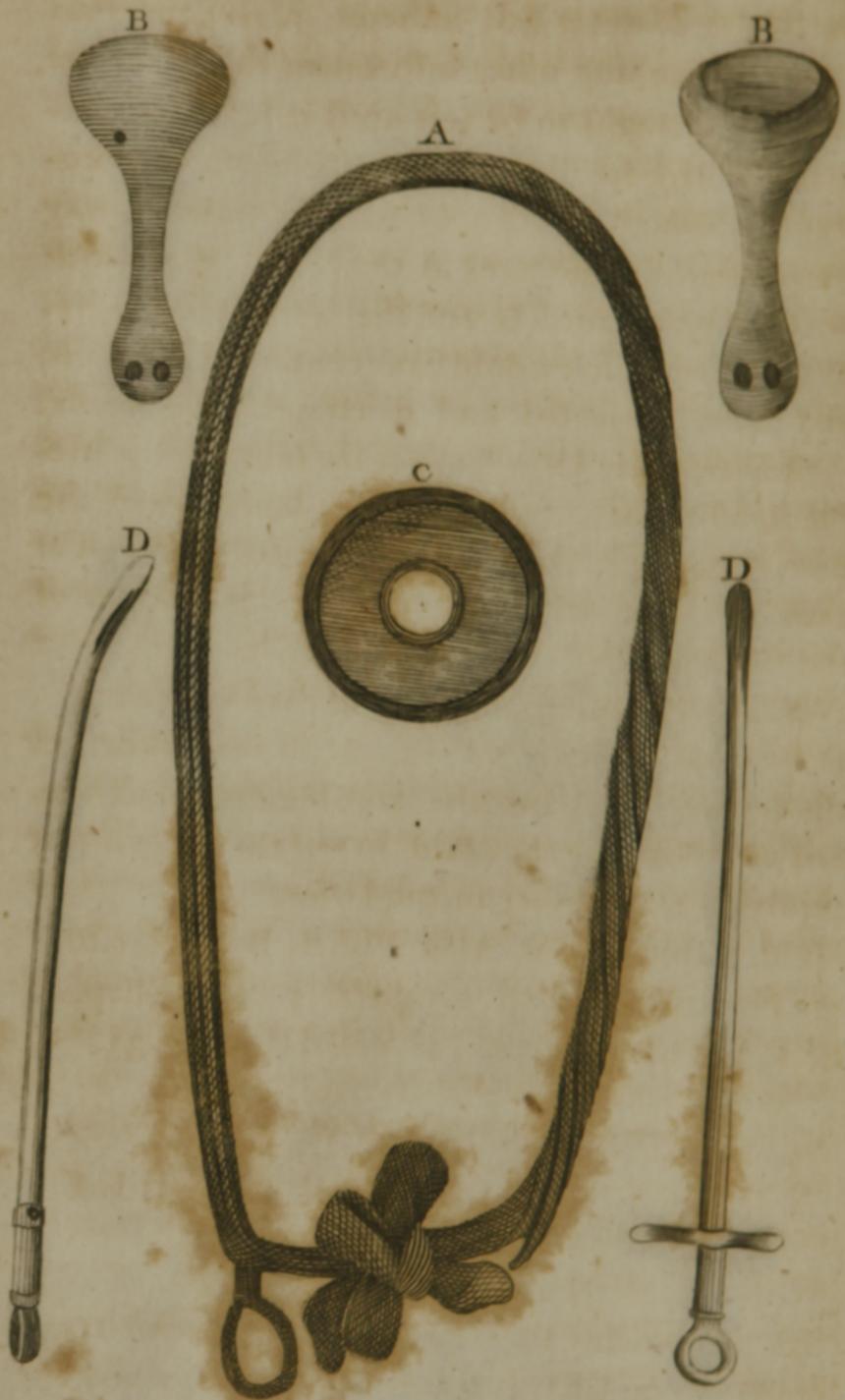
First, To assist the extraction of the head after the *Cranium* is opened with the scissars, by introducing the small end along the ear on the outside of the head to above the under jaw, where the point is to be fixed ; the other extremity of the hook being held with one hand, whilst two fingers of the other are to be introduced into the forefaid opening, by which holds the head is to be gradually extracted.

Secondly, The small end is useful in abortions in any of the first four or five months, to hook down the *Secundines*, when lying loose in the *Uterus*, when the patient is much weakened by floodings from the too long retention of the same, the pains also being unable to expel them, and when they cannot be extracted with the fingers.

But



Plate XXXVIII



But if the *Placenta* still adheres, it is dangerous to use this or any other instrument to extract the same, as it ought to be left until it separates naturally. If a small part of the *Secundines* is protruded through the *Os Uteri*, and pulled away from what still adheres in the *Uterus*, the mouth of the *Womb* contracts, and that irritation is thereby removed which would have continued the pains, and have separated and discharged the whole.

Thirdly, The large hook at the other end is useful to assist the extraction of the body, when the breech presents, but should be used with great caution, to avoid the dislocation or fracture of the thigh.

N. B. The small extremity of the hook can never be employed without danger to the mother in the former case; nor the large hook without hazard of destroying the child, or occasioning violent injury to the mother in the latter.

Vide Table XXIX. Also, Vol. I. Book II. Chap. 3. Book III. Chap. 3. Sect. 7. and Chap. 4. Sect. 2. Vol. II. Coll. 12. Vol. III. Coll. 31, 32.



THIRTY EIGHTH TABLE.

A, Represents the whalebone fillet, which may sometimes be useful in laborious cases, when the operator is not provided with the forceps in sudden and unexpected exigencies.

When

When the *Vertex* of the *Fœtus* presents, and the head is forced down into the lower part of the *Pelvis*, the woman weak, and the pains not sufficient to deliver it, the double of the fillet is to be introduced along the fore part of the *Parietal* bones to the face, and if possible above the under jaw ; which done, the whale bone may be either left in or pulled down out of the sheath, and every weak pain assisted by pulling gently at the fillet. If the head can be raised to the upper part of the *Pelvis*, the fillet will be more easily got over the chin, which is a safer and better hold than on the face. If the face or forehead presents, the fillet is to be introduced over the *Occiput*.

Vide Vol. I. Book III. Chap. 3. Sect. 2. Vol. II. Coll. 24.

In such cases, likewise, the whale bone may be supplied by a twig of any tough wood, mounted with a limber garter or fillet sowed in form of a long sheath.

N. B. Fillets, of whatever construction, being difficult of application, trifling in their powers, liable to cut or gall the child's head, though a secure hold should be obtained, and in other respects inferior to the forceps, are now with justice rejected from practice.

B. B. Gives two views of a new kind of pessary for the *Prolapsus Uteri*, being taken from the French and Dutch kind. After the *Uterus* is reduced, the large end of the pessary is to be introduced into the *Vagina*, and the *Os Uteri* retained in the concave part, where there are three holes to prevent the stagnation of any moisture. The

small

small end without the *Os Externum* has two tapes drawn through the two holes, which are tied to four other tapes, that hang down from a belt that surrounds the woman's body, and by this means keep up the pessary. This sort may be taken out by the patient when she goes to bed, and introduced again in the morning; but as this sometimes rubs the *Os Externum*, so as to make its use uneasy, the round kind marked C are of more general use. They are made of wood, ivory, or cork (the last covered with cloth and dipt in wax :) the pessary is to be lubricated with pomatum, the edge forced through the passage into the *Vagina*, and a finger introduced into the hole in the middle lays it across within the *Os Externum*. They ought to be larger or smaller, according to the wideness or narrowness of the passage, to prevent their being forced out by any extraordinary straining. *Vide* Vol. I. Book IV. Chap. 1. Sect. 7. Vol. III. Coll. 24.

See a description of a globe pessary, recommended by Dr. Denman, London Medical Journal, Vol. VII, for 1786, page 56.

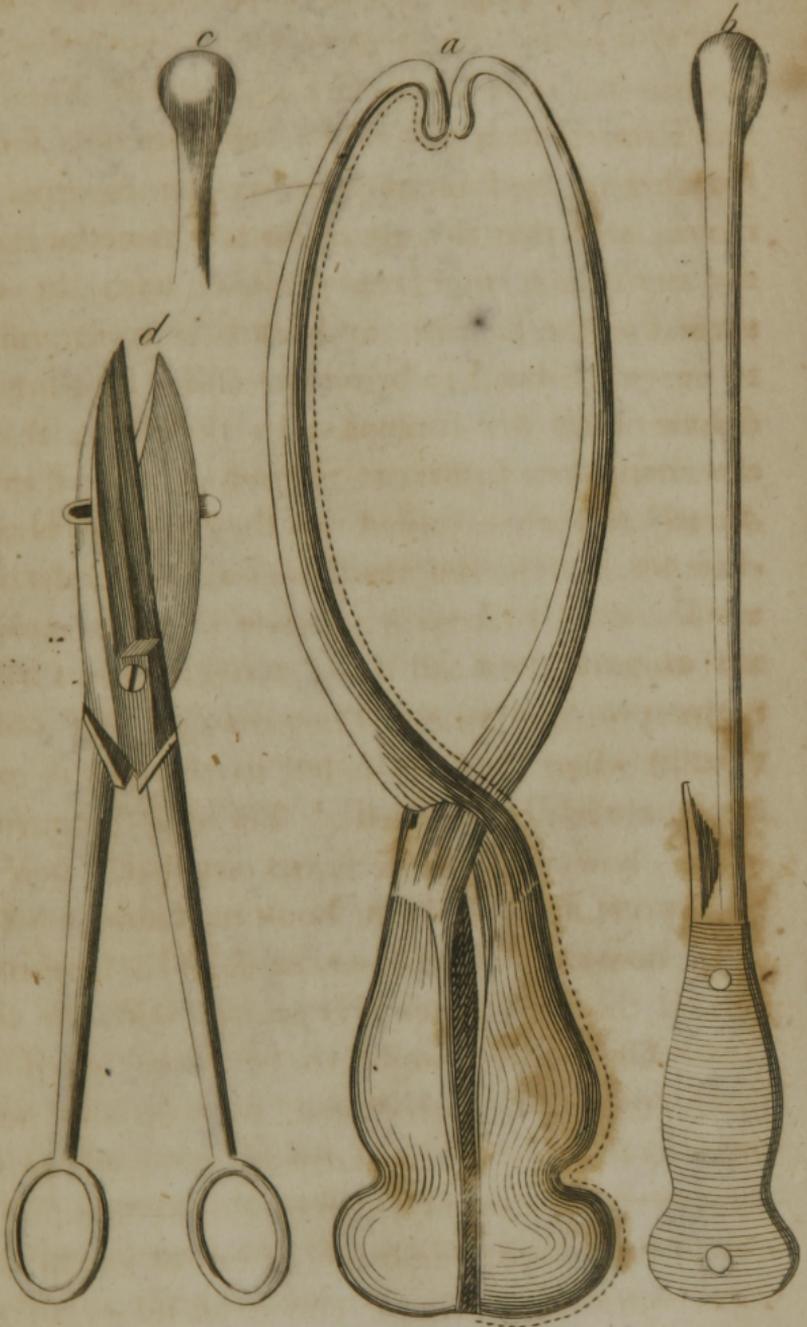
D. D. Gives two views of a female catheter, to show its degree of curvature and different parts. Those for common use may be made much shorter for conveniency of carrying in the pocket; but sometimes when the head or body of the child presses on the bladder above the *Pubes*, it requires one of this length; and in some extraordinary cases I have been obliged to use a male catheter.

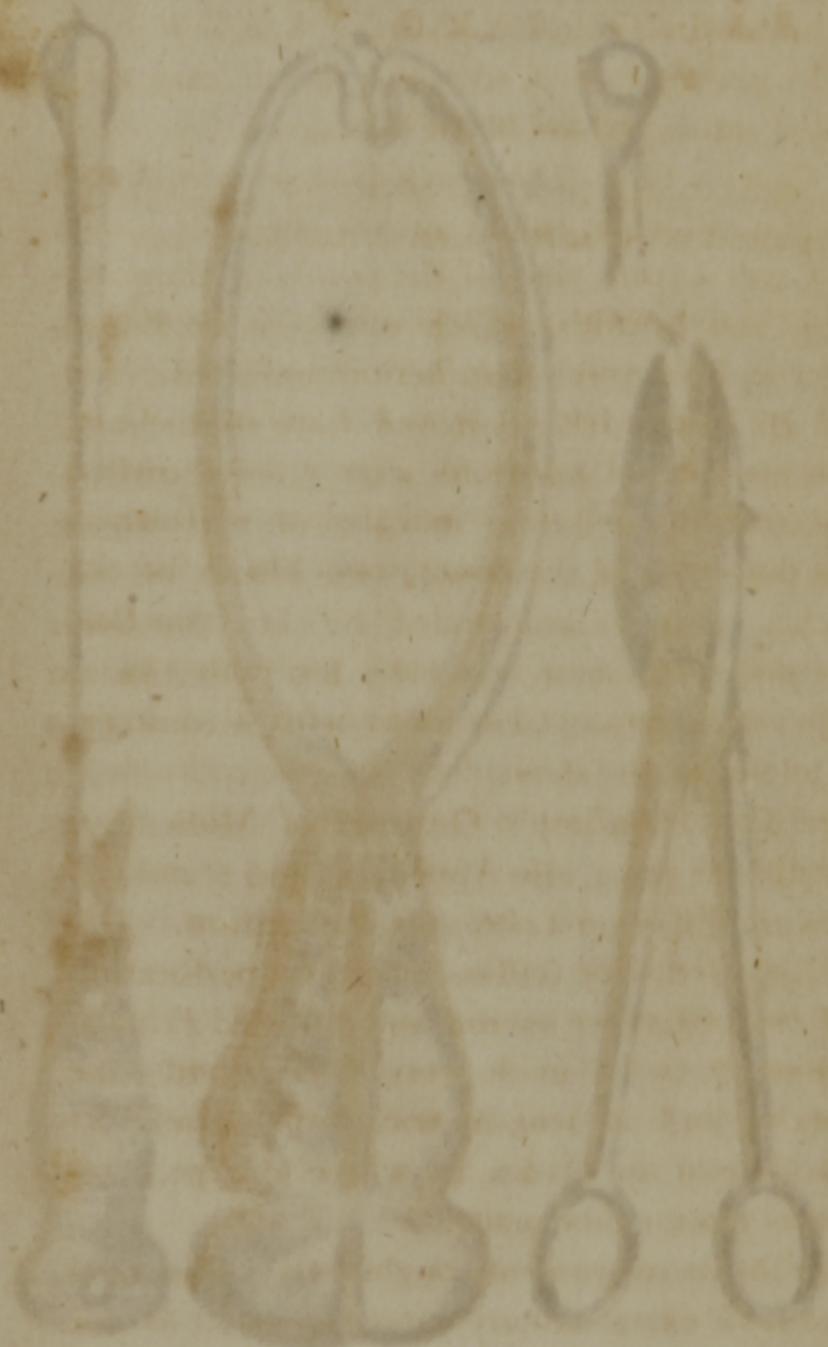
Vide Vol. I. Book II. Chap. 1. Sect. 1, 2. Vol. II. Coll. 10. No. 2.

THIRTY NINTH TABLE.

a Represents a pair of curved crotchets locked together in the same manner as the forceps. It is very rare that the use of both is necessary, excepting when the face presents with the chin turned to the *Sacrum*, and when it is impossible to move the head to bring the child footling, or deliver with the forceps. In that case, if one crotchet is not sufficient, the other is to be introduced, and when joined together will act both as crotchets, in opening the *Cranium*, and as the head advances, will likewise act as forceps in moving and turning the head more conveniently for the delivery of the same. They may also be useful to assist when the head is left in the *Uterus*, and one blade is not sufficient. There is seldom occasion, however, for the sharp crotchet, when the head presents, the blunt hook in Table XXVII, being commonly sufficient, or even the forceps to extract the same, after it is opened with the scissars. Great care ought to be taken when the sharp crotchet is introduced, to keep the point towards the *Fætus*, especially in cases where the fingers cannot be got up to guide the same. The dotted lines along the inside of one of the blades, represent a sheath that is contrived to guard the point until it is introduced high enough; the ligature at the handles marked with the two dotted lines is then to be untied, the sheath withdrawn,

Plate XXXIX.





drawn, and the point, being uncovered, is fixed as directed in Table XXXVI.

The point guarded, with this sheath, may also be used instead of the blunt hook.

b Gives a view of the back part of one of the crotchets, which is twelve inches long.

c Gives a front view of the point, to show its length and breadth, which ought to be rather longer and narrower than here represented.

N. B. In the less improved state of the art, when mechanical exertions were chiefly trusted to accomplish delivery, in cases of narrowness from distortion of the bones, two blades of the crotchet were recommended by Dr. Smellie. That practice is now rejected; for both blades can never be employed at once with advantage, and seldom with safety.

See Dr. Hamilton's *Outlines of Midwifery*, page 285 to 302; also Appendix, 420; and Dr. Osburne's *Essay on Laborious Parturition*.

d Represents the scissars proper for perforating the *Cranium* in very narrow and distorted *Pelvises*. They ought to be made very strong, and nine inches at least in length, with stops or rests in the middle of the blades, by which a large dilatation is more easily made.

The above instruments ought only to be used in the most extraordinary cases, where it is not possible to save the woman without their assistance.

Vide Vol. I. Book III. Chap. 3. Sect. 5. Chap. 5. No. 1. Vol. III. Coll. 31, 35.

ADDITIONAL TABLE.

NUMBER XL.

By the late Dr. THOMAS YOUNG, with improvements by Dr. HAMILTON, both Professors of Midwifery at *Edinburgh*.

Among the few improvements which have been made in the obstetrical apparatus since the days of Dr. Smellie, the most important are the alterations in the *forceps*, by which the inconveniences formerly attending the use of that instrument are obviated, and the operation is rendered more safe and easy.

In contriving these alterations, the intentions were, 1. That the large curves should correspond as nearly as possible with that of the *Pelvis*. 2. That their points should be thrown forwards and made round, to prevent their hitching, or even pressing uneasily against any part of the *Pelvis*; and likewise to maintain their hold of the head, whilst it is to be brought forwards in that curved line of direction which nature observes. 3. That an inverted curve should be made towards the joints, whereby the *Perinæum* may be saved from injury, the extracting force rightly conducted, and the handles at the same time kept from pressing uneasily on the inferior and anterior parts of the *Pubes*. 4. That their substance should be reduced as much as possible, so that they are not made flexible, or so thin at the edges as to hurt the part. 5. That their clams be made to press equally

Fig. 2.



Fig. 1.

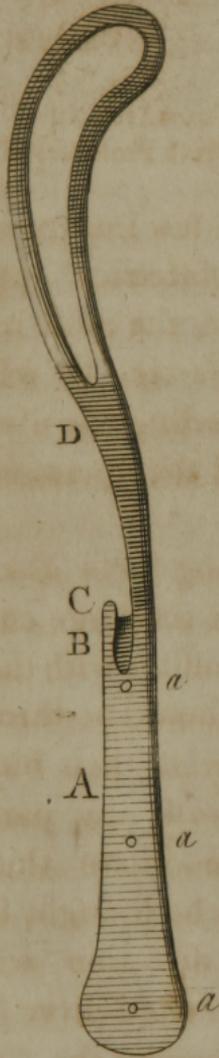
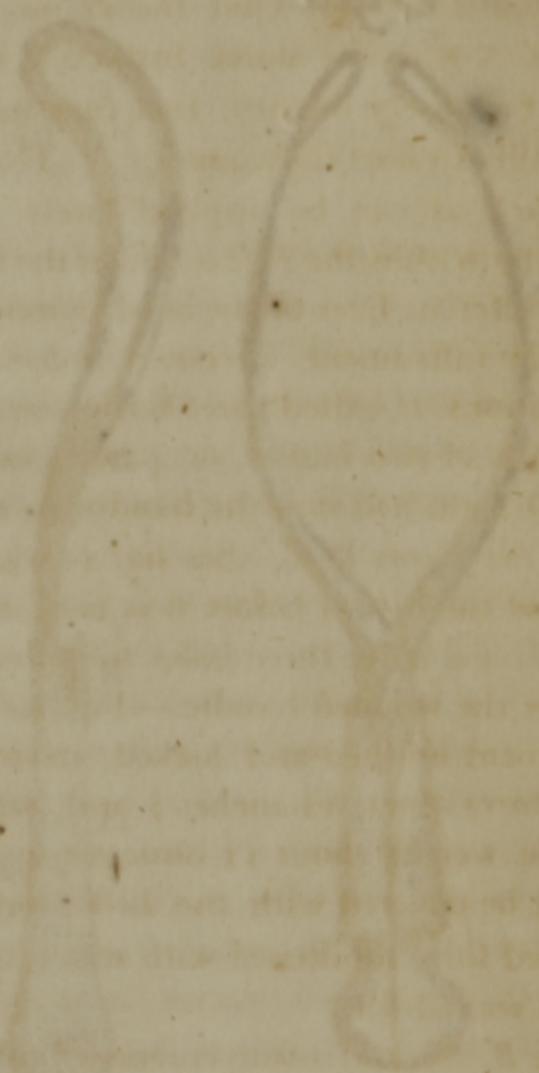


Fig. 3.



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equally on the child's head, and spread gradually from the joint, so as not to dilate the *Os Vaginæ* too suddenly. 6. That the clams be of a due breadth, with the outer surface a little convex, and extremely smooth, that they may not press uneasily or hurt the woman. 7. That their length be such as can be applied safely and commodiously within the *Pelvis*, and at the same time suit the different sizes of the head as much as possible.

The instrument, executed according to these intentions, is called the *Short Curved Forceps*. It consists of two blades, or parts; each of which is distinguished into the handle A, the joint B C, and the clams D E. See fig. 1. which represents one of the blades before it is bent into its perfect state: *a a a* are three holes for admitting screws to fix the wooden handle.—Fig. 2. shows the instrument finished and locked, in which state it measures about 11 inches; and, when properly made, weighs about 11 ounces troy. The clams must be covered with the best Morocco leather, shaved thin, moistened with water, and sewed on with waxed silk.

N. B. Several inconveniences, both in the introduction and consequences, having been found to attend the use of the forceps with the clams covered, practitioners at present very generally prefer those of polished steel.

Fig. 3. A catheter, with a small curve towards the point, which is better adapted to the female *Urethra* than the straight. It may be perforated with 8, 12, or 16 holes in rows, as here represented,

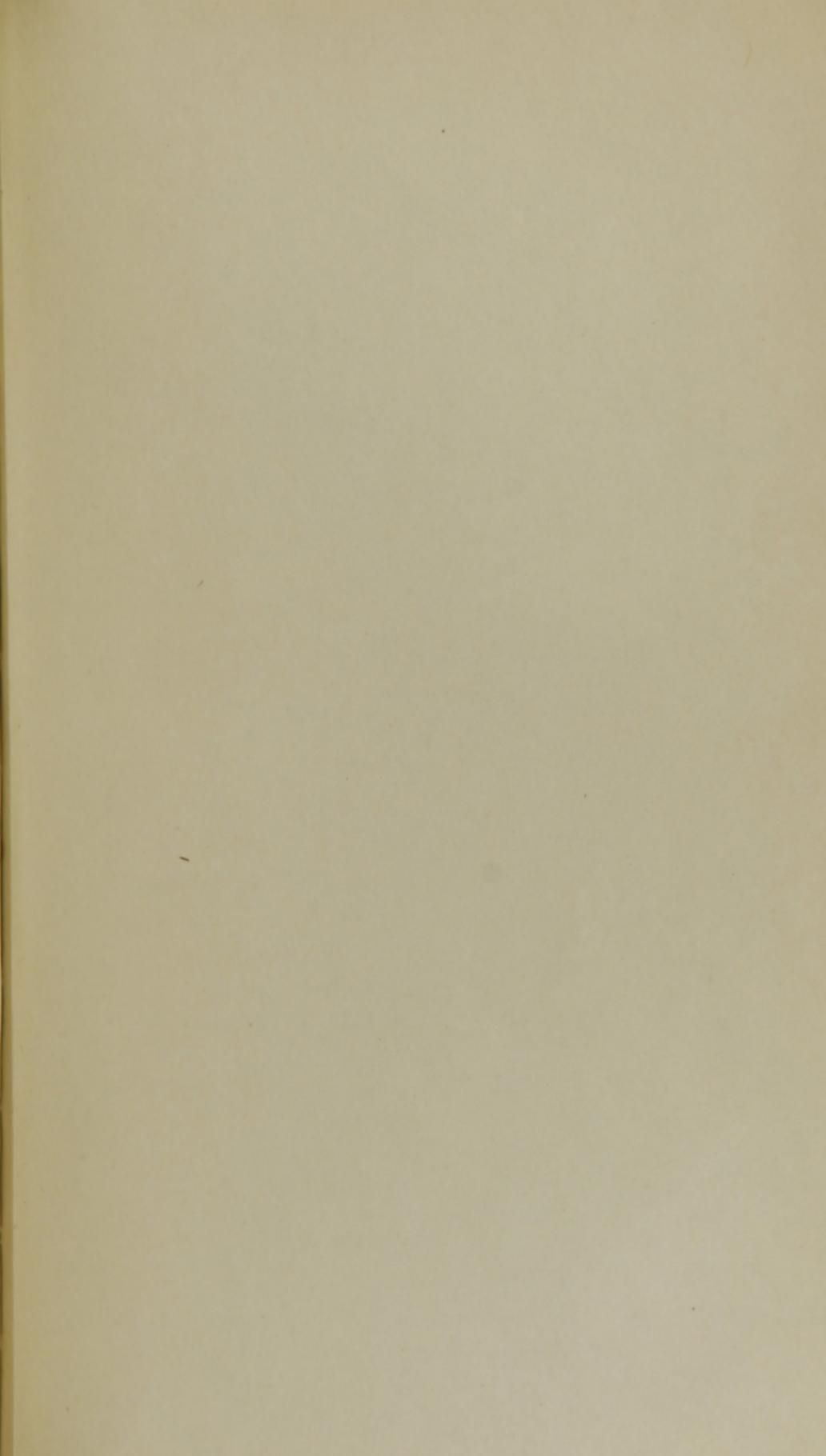
ed, and terminated by a slight, very smooth, rounded, or oblong knob. The length should be nearly six inches, and the diameter not trifling.

Fig. 4. The perforators of Dr. Denman, now employed by many practitioners, in preference to those of Dr. Smellie, *with the angular rests rendered smoother and more rounded*. If the long scissars of Dr. Smellie should be still retained in practice, the sharp edges ought to be removed; they should have, like those of Dr. Denman, a degree of curve towards the points, and be provided with blunt knobs, instead of the angular rests, which expose the patient to the hazard of having the parts wounded or lacerated.

See Dr. Hamilton's *Outlines of Midwifery*, page 290.

N. B. With a view to save the child when the mother is in danger, but the head too high for the *common short forceps*, and also to obviate an inconvenience complained of by many practitioners, of *their* locking within the *Vagina*, the long forceps of Mr. Leveret of Paris, Doctors Smellie and Leak of London, and of Mr. Pugh of Chelmsford in Essex, have been invented. The lightness and neatness of construction of Dr. Leak's, with justice, entitle them to the preference.

Fig. 5. The blunt hook, as presently used, with a swell in the middle, by which a more secure hold can be taken, and the extraction accomplished with more safety and success, than with the straight hook.





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