Essays on various subjects connected with midwifery / by Thomas Radford.

This book having come again
into my possession I am enabled
to present it to my Friend
& Colleague Dr. Collingwood
with my kind regards -
T. Radford

Novr 2nd -
1876

ESSAYS

ON

VARIOUS SUBJECTS

CONNECTED WITH

MIDWIFERY.

BY

THOMAS RADFORD,

Member of the Royal College of Surgeons, London; Consulting Surgeon Extra-ordinary to the Manchester Lying-in Hospital; Lecturer on Midwifery, at the Royal School of Medicine and Surgery, &c. &c.

MANCHESTER:

JAMES LEECH, PRINTER, 32, PALL-MALL,

CONTENTS.

UMBILICAL HÆMORRHAGE.

THE bleedings which occur after birth from the *funis umbilicalis*, and from the *umbilicus* after the separation of the cord, are usually confounded as to the source whence they arise, and the causes by which they are produced.

Bleeding from the Funis.

This species of hæmorrhage may occur immediately after the application of the ligature, when the child, being laid aside for the short space of time required to make the mother comfortable, may be found drenched in blood. It may also happen several hours after birth, and the nurse may be awakened to an inquiry by the feebleness of the infant, and the unusual pallor of the lips and general surface. This hæmorrhage may proceed either from the arteries or from the vein, and generally depends upon an ineffectual application of the ligature, although bleeding would not universally happen if the funis were left untied.* Analogy substantiates this statement. In the brute creation the funis is always left loose, yet hæmorrhage never to my knowledge takes place. This effect may be readily accounted for, by the method which the mother adopts in order to separate the young from its connection with the placenta.—

* "Dr. Eller, Physician at Berlin, relates several instances of the navel strings of children being left untied after they were cut, without being attended with any hæmorrhage or other bad consequence.—Commerc. Norimberg, 1733, Hebd. 48, § 2."—Edin. Medical Essays and Observations, Vol. iii. page 405

As soon as the fœtus and its appendages are expelled from the uterus, the brute mother commences the process of separation, which is accomplished by gnawing and twisting the funis. The influence of contusion and of torsion upon the blood-vessels in preventing hæmorrhage, is well seen in severe gun-shot wounds, and also in some of the serious accidents produced by machinery, in which cases the limb is twisted off from its connection with the body. Under these circumstances, hæmorrhage is comparatively trifling. But here, as under many other circumstances, analogy is insufficient upon which to found rules for general practice. On the other hand, we shall sometimes meet with cases in which a tight application of the ligature will not always prevent this occurrence.—The causes giving rise to this failure of security, and the practice to be adopted in order to avoid their operation, I shall now proceed to detail.

I remark in the first place, that the pulsation of the funis should always have ceased before the ligature is applied, because this circumstance is the surest indication that the process which is essential to the independent circulation of the fœtus has commenced; and also that those changes have taken place in the vessels which afford security against bleeding. We occasionally meet with the funis unusually thick, in consequence of the very large quantity of glutinous matter contained within its coverings. In such cases, if we adopt the usual practice of tying the funis, by "placing one ligature at a certain distance from the abdomen, and the other two inches distant," on the placental side, bleeding will most probably occur. If the extremity of such a funis, tied as above stated, be examined, the orifices of the vessels will be seen patulous, thus proving an ineffectual compression of their sides. Some time ago I was called (about three hours after its birth) to an infant which was bleeding. The hæmorrhage had been considerable; the skin was extremely pallid, and the pulse scarcely perceptible.

The binder, and also the cloth which enveloped the funis were removed. The ligature, which had been tightly placed upon the navel string, was now become loose. The funis, which had diminished in thickness, was raised for the purpose of examining the vessels, and their orifices were seen widely gaping. The practice to be adopted in such cases, in order to prevent the dangers arising from the ordinary method of tying the funis, is as follows: Let the ligature be first tightly placed upon the placental portion of the cord, and then let another ligature be loosely placed upon that portion of the funis which is to remain connected with the fœtus, and which must be tightened after the division; and in order to give additional security, let a second ligature be placed upon this part. The advantage of this method arises from the more decided influence which the ligature produces upon the calibre of the vessels, in consequence of the more serous portion of the gelatinous fluid escaping from the divided extremity.

The umbilical cord may be diseased, being either *ossified* or of a *cartilaginous firmness;* and it will be obvious that such a condition exposes the infant to the dangers of hæmorrhage. If ossification has taken place, the cord will break when the ligature is tightened, in consequence of the extreme fragility of its texture. A case, illustrative of this accident, is related by Mr. Logan, in the number of the Edinburgh Medical and Surgical Journal for April last. He was under the necessity of removing the ligature several times, and re-applying it on account of the bleeding which took place. The application of a broad ligature (such as a piece of tape) in this case, promises a greater chance of security against bleeding than one of the usual thickness, as a thin ligature would inevitably divide the sides of the vessel. A *varicose* state of the umbilical vein is occasionally met with. In some cases the disease occupies only a small portion of the vessel, while in others, its whole canal is

morbidly dilated. In this state of the cord, bleeding will most assuredly occur, either from its extremity, immediately after its division, or, according to Dr. Dewees, in the course of two or three days, in consequence of ulceration taking place in the side of the vessel, from the ligature being tied so as to include the diseased portion, that is, nearer to the placenta than the dilated portion of the vein. To prevent this accident, then, the ligature must never be placed upon the varicose part, but must invariably lie nearer to the abdomen of the child than the situation of the disease.

Bleeding from the Navel.

The complete separation of the navel string is not always accomplished at the same period of time, but generally from the fourth to the seventh day; at which period, the mouths of the umbilical arteries and vein are usually closed. It occasionally happens that this closure is not effected by the powers of nature; and hence when the funis comes away, or in a short space of time after, a hæmorrhage commences from the navel, which generally destroys the infant. This is an occurrence which produces considerable anxiety to the medical attendant; it is generally confounded by the nurse and friends with hæmorrhage arising from displacement of the ligature, and is too often ascribed to the negligent and imperfect tying of the funis at the time of birth. Thus the character of the accoucheur suffers undeservedly.

I was requested to visit an infant seven days after birth, that was bleeding from the umbilicus. The hæmorrhage had commenced in the night, shortly after the separation of the funis. The gentleman (whose case it was) had made a judicious attempt to arrest the bleeding by the application of a graduated compress, supported by straps of adhesive plaster, and a roller. In a short time, however, the blood again appeared, trickling from under the bandages,

and the poor infant was nearly exhausted. The applications were removed, and a second attempt was made to compress the bleeding orifice, but with as little success as before, as in a short time blood was again found oozing from beneath the bandages. A third attempt was made to effectually check the effusion of blood, but again failed, and the child died in the afternoon. Upon examining the part after death, the vein was found uncontracted, and the umbilicus was sloughy, ragged, and of a dark colour. I have seen compresses, moistened with powerful astringents, applied to suppress this hæmorrhage. I have also seen an attempt made (but unsuccessfully) to bring together the sides of the bleeding vessel, by passing a hare-lip pin through the integuments, and thus pinching it up. Several cases of this nature have come under my observation, but they have all been fatal except one.

A hospital midwife, in great alarm, brought an infant eight days old to me. Whilst she was dressing it, the funis came away, and a discharge of blood from the umbilicus commenced. Upon examination, the binder and the under parts of the child's dress were found soaked with blood, but the bleeding had now entirely ceased. A compress, supported by adhesive straps, was applied; and no more hæmorrhage occurred. I was induced to suspect that this bleeding came from one of the arteries. The result of umbilical bleeding in my practice has been invariably fatal, with the exception of the case just related; and, from an extensive inquiry made amongst my professional friends, I have ascertained this to be the usual termination. Converging at the umbilicus are three vessels, two arteries, and one vein,—from all of which vessels hæmorrhage may occur; hence we may have venous and arterial bleeding. The opinion usually entertained as to the dangers arising from these two kinds of hæmorrhage, (as occurring in other parts of the body,) is not true in the cases referred to in these

observations. Venous hæmorrhage from the umbilicus occurs frequently, and in general terminates fatally. Arterial hæmorrhage, on the contrary, in this situation, is more rare, and more fortunate in the result. I have already alluded to the insufficiency of compression to arrest bleeding from the umbilical vein. This is readily accounted for, when we consider the situation of the vessel, which is placed behind the flexible abdominal parietes, to which it is attached, there being nothing firm or resisting behind it, by the aid of which a compress might effectually obliterate the calibre of the vessel.

Another circumstance unfavourable to the operation of compression is the indisposition to contraction in the vein. From my examination of infants after death, I conclude that this vessel is not materially changed immediately after birth. The calibre is not completely and permanently obliterated at the time of the separation of the funis. Its extremity alone is consolidated by adhesive inflammation, the remaining portion of the vessel being filled with coagulated blood, which is gradually absorbed. The removal of this coagulum commences at its umbilical extremity, at which place it is first converted into ligament. Escharotics have been recommended to arrest bleeding from this vessel. The danger of propagating inflammation to the abdominal cavity in consequence of the immediate connection of this vessel with the peritoneum, would be a sufficient objection to the employment of these means, besides their inadequacy to accomplish the end. The actual cautery has also been recommended, but its application is equally dangerous. I have also stated that an attempt to bring together the sides of the bleeding vessel, by passing a hare-lip pin through the integuments, &c. was unsuccessful. The reason of this will be readily understood if the condition of the orifice be considered, which is usually in a ragged state of ulceration, and sloughy, and therefore highly unfavourable

to obliteration by adhesive inflammation. From the preceding observations it will appear that little reliance is to be placed upon the means usually recommended for the management of bleeding from the umbilical vein. Under these circumstances, then, what is to be done? we have no alternative but that of cutting down upon the vessel and placing a ligature upon it. If we have recourse to this expedient, an incision must be made through the integuments in a direction upwards from the umbilicus, cautiously cutting down to the vessel, which, by stretching its extremity, is felt to be of a cord-like firmness. As this vessel lies external to the peritoneum, great care must therefore be taken in detaching the membrane from the vein, neither to wound nor include it within the ligature. This practice promises the greatest chance of success, and at all events does not (if due care be observed in the operation) place the little patient in a more dangerous situation. An inquiry will naturally be made, is a ligature to be applied in all cases, and under all circumstances, of umbilical bleeding? The case before stated of a successful termination by means of a compress, &c. will sufficiently prove that a hasty cutting down upon the vessel, and an indiscriminate application of a ligature is not to be recommended. The bleeding in this instance I suspected to proceed from one of the arteries. Hæmorrhage from these vessels is much more managable on account of their greater length and the contractile power of their coats. A case of fatal umbilical hæmorrhage is related by Mr. Pout in the twelfth volume of the London Medico-Chirurgical Transactions, in which, from the examination after death, Mr. Pout concludes that the hæmorrhage proceeded from one of the arteries. He says, "if ever another case of the kind were to come under my care, I should not hesitate to cut down upon the arteries and tie them as the only means of security."

As the vessels run in opposite directions, it will be

important to have a correct diagnosis, in order not to make fruitless incisions. In cases of venous hæmorrhage, the blood is uniformly thick and dark-coloured, and is never thrown forcibly out, but oozes incessantly from the mouth of the vessel, which is in the condition I have before stated. On the other hand, in cases of arterial hæmorrhage, the blood is of a lighter hue, and must in some measure be influenced in its discharge by the action of the vessel. In order to act upon the most certain grounds, it would be well to try the influence of compression, which, if the hæmorrhage be arterial, I believe would be successful; but if this trial should fail, and the other diagnostics of venous bleeding be present, then I should not hesitate to cut down upon the vein, and place a ligature upon it as the only security.

(Extracted from the Edinburgh Med: and Surg: Jour: No. 112, *July*, 1832.*)*

Children whose heads have suffered pressure in the direction of the occipito-frontal diameter, are frequently born dead, or they die soon after birth, unless the case is properly considered. They are unable to commence effectively the important function of respiration. The lungs are only partially filled with air by the convulsive sobs which take place. The action of the heart is not free; and if the pulsations in the funis continue, they are laboured and oppressed. The countenance is turgid, and of a livid colour, and the vessels of the conjunctiva are quite injected with blood. These symptoms fully prove, that the difficulty of commencing respiration does not depend upon a mechanical obstruction, from mucus in the trachea; but on the injury which the brain has suffered. This organ is in a state of apoplexy, sometimes depending on a very highly congested state of the blood vessels alone, sometimes on an effusion of blood, which takes place in different parts of the brain, and also varies in quantity. This opinion is corroborated by dissection, and the appearance discovered will be best understood by detailing a case or two.

Case 1.—I opened the head of a child which was born with the symptoms already mentioned, and lived twenty minutes. A considerable quantity of extravasated blood was found upon each hemisphere, between the pia mater and the tunica arachnoidea, and at the base of the brain upon the dura mater. The superficial vessels were universally gorged with blood.—Those of the plexus choroides were very turgid.

Case II.—Upon opening a child born dead, after a protracted labour, in which the long forceps* had been applied, on account of distortion at the brim of the pelvis, I found a considerable quantity of coagulated blood upon the left hemisphere of the brain, and also upon and under the cerebellum. The structure of the brain was much softer than natural. The vessels

* The forceps used in this case, as well as in the one related before, were Dr. Haighton's.

upon the surface were very full. Upon opening the ventricles, a clot of a flattened shape was seen in the left. These serious effects are produced by the brain being compressed in a direction contrary to the course of the fibres of some of those parts which lie between the hemispheres, and also to the current of blood along the longitudinal sinus.

The pressure, applied to the fore and hind part of the head, has a tendency to change the relative situation of many parts of the brain. It forces one hemisphere from the other, which, if carried beyond a certain degree, will inevitably produce laceration of the coats of the veins, which pass to the longitudinal sinus ; and this danger is increased by the great congestion which exists.

The practice to be adopted, is to bleed freely as soon as possible after the child is born. The funis ought to be divided before it has ceased to pulsate, as no blood can be obtained if this be neglected. If the pulsations in the vessels of the funis have ceased, two leeches must be applied to the temples.

If these means have not been adopted, convulsions generally ensue, as happened in the two following cases, for the particulars of the first of which I am indebted to my esteemed friend and partner Mr. Hunt, and I shall cite it in his own words.

Case III.—"In a case of difficult labour, which I attended last December, in conjunction with Mr. Greaves, one of the surgeons of the Lying-In Hospital, and which happened to a female suffering so much from contraction of the brim of the pelvis, as to induce the surgeon, who had attended at her preceding labour, to have recourse to embryotomy; the long forceps, with blades of equal length, were successfully employed, although very considerable difficulty was experienced in applying them. The child's head was not only very much lengthened, but also distorted at the right parietal region, in consequence of the pressure occasioned by the combined action of the con-

tracted pelvic bones and the blades of the forceps. The face was tumified and dark coloured, and respiration oppressed. It was thought desirable to allow some blood to flow from the funis, but as this was not divided until its pulsation had ceased, although no ligature was applied, no bleeding of the fœtal portion followed. Next day the child continued to suffer from the state of the head, and had two convulsions; a leech was applied to each temple, gentle aperients ordered, and the child gradually recovered."

Case IV.—I was requested by Mr. Dick to visit a poor woman in New Blakely-street, who was suffering from protracted labour, caused by contraction of the brim of the pelvis. The long forceps were applied, and the child delivered alive. A depression of considerable size was produced on the left parietal bone, from the pressure it had sustained from the promontory of the sacrum. The signs which the child manifested were those of apoplexy. The funis was divided, but no blood followed, as the pulsation had previously ceased. The child continued in the same state during the day, and in the evening was attacked with convulsions, which were frequent. Two leeches were applied to the temples, the bowels were opened, and the child recovered.

(These Essays are extracted from the London Medical and Surgical Journal, Vol. 4, 1834, *No.* 103, *and Vol.* 5, *No.* 109.*)*

Case of Protracted Labour from Malposition of the Fœtal Head at the Superior Aperture of the Pelvis; with Descent of the Funis.

About five o'clock in the morning, September 13, 1825, I was requested to visit Mrs. Carpenter, who was represented to be in severe labour of her second child. Mrs. Buckley, the midwife, informed me that she was called to this patient at eight o'clock the preceding night, and in consequence of not being able to ascertain the presentation, she ruptured the membranes. In the course of a short time, she was again examined, per vaginam, but as yet no part of the child was accessible to the finger, but she found the funis protruding very considerably through the os uteri. After hearing this statement, I proceeded to investigate the real nature of the case. I found the os uteri dilated to about the size of a half crown, and situated very high, and very much backwards; it was also extremely rigid, and projected into the vagina. The head was so distant as to be with very great difficulty touched; so that it was impossible at this period to ascertain its exact position relative to the pelvis. The funis was very considerably prolapsed, and pulsated very strongly. The pains were very feeble, and the intervals between them long.

The os uteri being so rigid, a temporising practice was recommended; the funis was passed into the vagina, and retained by means of a napkin applied externally and a T bandage. The operation of version,

or an attempt made to carry the funis upwards into the uterus, in order to save the child, would have proved equally unsuccessful; whilst the forcible dilatation of the os uteri, and the unwarrantable introduction of the hand into the contracted uterus, the liquor amnii having been discharged eight hours, would have been a most formidable and dangerous operation.

At noon the funis had ceased to pulsate, but in other respects no great change was observed,—indeed the descent of the head was so slow, that an advance was scarcely to be perceived the next day at 11 o'clock, A.M. In the afternoon of this day the pains became stronger, so that now the os uteri was rendered tense during their continuance, from the pressure produced upon it by the head. At this time the head lay over the superior aperture of the pelvis, and I was able, for the first time, to ascertain its precise situation relative to the pelvis. It was found entering in a very unfavourable position; the posterior fontanelle was placed behind and above the symphysis pubis, the sagittal suture in a direction from this point backwards to the promontory of the sacrum. The left parietal bone was more accessible to the touch than its fellow, in consequence of a slight obliquity of the head. The edge of this bone was very considerably raised, and offered through the os uteri a sharp edge, not unlike an ivory paper-folder. This change fully proves the great pressure sustained by the head in its long diameter. During every pain the os uteri was most violently stretched upon this ridge; so much so, as to make the writer dread its laceration.

The difficulties produced by malpositions of the fœtal head are fully appreciated by obstetricians. In none is the influence upon labour, from this want of relative adaptation, more conspicuous than in the case under consideration. The head enters the brim of the pelvis with its long diameter, which measures from four inches and a half to four inches and three-quarters, parallel to the short one of this cavity, which

does not usually measure more than from three inches and a half to four inches. It appears quite evident then from this statement, that a long time must elapse, and a considerable change in the figure of the cranium must take place, (an alteration which is frequently fatal to the child,) before it can get into the pelvis. In the present case the perforator was used; and as the child had been dead for some hours, and the time was at hand when some decided steps must be taken to protect the mother from danger, no compunction was felt in having recourse to this destructive instrument. As soon as an opening was made into the cranium, the brain was forcibly discharged through it, in consequence of being so completely destroyed in texture by the pressure it had previously sustained. Notwithstanding this, considerable time elapsed before the head passed through the os externum. This delay, doubtless, was caused by the position of the base of the cranium, which is an incompressible part, and consequently is not influenced in any material degree by perforation. The ancients regarded this position of the fœtal head as the most frequent and the most natural; but this opinion, as experience has proved, is entirely untrue; it cannot be doubted they judged this to be the case, from what they occasionally observed in the situation of the head, when it emerges from the inferior aperture of the pelvis.

Baudelocque, Gardien, Dubois, Flamant, Dewees, Desormeaux, Velpeau, James, and Madame Boivin, admit this variety of labour into their classification; but these writers consider that it is of rare occurrence. Naegelè, Maygrier, Capuron, Dugès, Dr. Burns, Dr. Campbell, and Dr. Rigby, deny in toto the possibility of its happening, which opinion the case now related, as also those of Dr. Dewees and Madame Boivin, entirely disprove. Notwithstanding, my opinion is, that this position of the fœtal head, at the brim of the pelvis, does occasionally happen, yet I must in some measure qualify this statement, by remarking, that I

consider it to be the result of an undue interference on the part of the obstetrician at the commencement of labour. To the same unjustifiable conduct may be attributed the prolapsion of the funis, which is so frequently fatal to the child. When uterine pains take place, and no presentation can be felt, we have grounds for suspecting a preternatural position of the child; although this is presumptive, it is not positive evidence of such being the case, and does not warrant the practitioner to make any interference. It sometimes happens that this remote situation of the presenting part of the child depends upon the condition of the cervix uteri, this part not being obliterated or fully developed; or in other words, the full period of gestation not being completed.

Previous to the commencement of natural labour, and subsequent to the complete developement of the cervix uteri, the head of the child falls down upon this extended portion of the organ; and as a next step in the process of labour, the uterus, and its contents also, sink down, so as to be supported by the margin of the superior aperture. Before these changes take place, the presenting part of the child is with great difficulty discovered, if the examination is made through the os uteri; but if the finger is applied to the cervix, behind the symphysis pubis, it is much more readily felt.

In many instances also, where the liquor amnii exists in large quantity, the presenting part will be obscurely felt, as it so readily recedes before the touch even when only slight pressure is made. The practice of rupturing the membranes, in all the cases now mentioned, in order to ascertain the presentation, is universally to be condemned, as highly detrimental to the welfare of both the mother and the child.—When the head of the child is not in contact with the lower portion of the uterus at the time the liquor amnii is suddenly discharged, there is great danger of the funis falling down before the presenting part, and

passing through the os uteri; the risk of such an occurrence is much greater if it happens that the cord is of an unusual length; this was the state of the cord in the case just related. In breech presentations, there is a greater chance of prolapsion taking place, if the obstetrician adopts the practice which I have just been animadverting upon. If the membranes are ruptured before the uterus is prepared for action, the head will rarely enter the pelvis favourably; for previous to the sinking of the uterus and its contents, into the superior aperture of the pelvis, the child is easily moveable in the waters; this floating of the child may be readily ascertained, when it becomes necessary to make an examination per vaginam, before the completion of pregnancy. But when the uterus has undergone the preliminary changes, preparatory to active labour, the head of the child may be felt through the substance of the uterus, as a globular body, presenting considerable resistance to the finger. At this period it assumes its final position, in relation to the pelvis. These preparatory steps of adaptation are beautifully illustrated in the graphic delineations of Hunter and Smellie. When the membranes are ruptured prematurely, the head sinks down, as also the body of the child, embraced by the contracting uterus, and it is then prevented entering the pelvis in a favourable manner. From such interference the child generally falls a sacrifice, and all the evils of protracted labour are produced upon the mother.

We come now to speak of the treatment of those labours, in which the head is placed with its long diameter parallel with the short one of the pelvis, as happened in the case now detailed. The means which have been recommended are rectification, turning, and perforation. The operation of rectifying the position of the head must never be attempted if the os uteri is rigid and undilated. Those measures, which have a tendency to relax the soft parts, and protect

the adjacent organs from injury, must be adopted. Bleeding, carried to the extent that the case demands, or the powers of the constitution admit, emollient enemata, the catheter, and the recumbent position must be prescribed. Two methods of operating are to be considered; one by the use of the hand alone, the other by the aid of the long forceps. If the first method be adopted, the head must be seized in such a manner that the thumb is placed on the posterior edge of the parietal bone, close upon the lambdoidal suture, whilst the fingers are to be fixed upon the anterior edge of the parietal bone, or upon the coronal suture, of the opposite side of the cranium. Then, in the absence of the pains, the head must be slightly raised, and turned by a double action of the thumb and fingers, so as to place it in the oblique diameter of the brim of the pelvis.

The bulk of the fœtal head offers a great obstacle to any attempt made to change its position by the hand alone. The difficulties are increased by contraction of the uterus after the escape of the liquor amnii. These circumstances induce me to give a preference to the second method mentioned, or the application of the long forceps. The blades of these instruments must be placed on the *sides* of the pelvis, and over the *lateral* parts of the head. The first object must be, slightly to raise the head; afterwards a very limited rotatory movement must be made, only sufficient to place the face opposite to the sacro-iliac symphysis. When this is effected, the instrument must be withdrawn. If the energy of the uterus is impaired, then such means must be adopted as are known to excite the contractions of this organ, friction, secale cornutum, &c. If these means fail, the forceps must be re-applied over the *face* and *occiput*, and the delivery finished in the usual manner. The perforator must be used, if the child is dead. This is ascertained by the funis being prolapsed, and by the sensations of the woman.

On the Injury which the Head of the Child sometimes sustains in its passage through the Pelvis.

The injuries which the head of the child sustains during its passage through the pelvis in protracted labours are very numerous. But that which is more particularly considered in the following remarks, is what is technically called the "mould shot head."

When the head enters a narrow pelvis, and its occipito-frontal diameter corresponds with the oblique or the transverse of this cavity, and it is propelled through it by the unaided natural powers, an alteration in its figure is produced. The occipito-frontal diameter is considerably increased, whilst the conjugate is in an equal degree diminished. The same change in shape is observed in the head when it is long detained at the outlet of the pelvis, in consequence of rigidity of the soft parts. The brain bears this alteration in the figure of the cranium with comparative little inconvenience, because the pressure it sustains is parallel with the fibres of some of those parts which lie between the two hemispheres, and with the falx, which in its natural state supports this organ. The pressure is also less injurious, because it is applied upon the sides of the vessels, but not in such a degree as considerably to influence their calibres.

The figure of the "mould shot head" is very different from the one just described. It is very considerably increased from the base to the crown, and diminished in its occipito-frontal diameter. It does not take place in all cases of protracted labour, but

only in such as are produced by a malposition of the fœtal head. It sometimes occurs when pressure is artificially applied in the same direction.

When the head presents with its long diameter lying parallel with the short one of the superior aperture of the pelvis, the occiput may be situated towards the pubis, or towards the sacrum. In both cases the labour is slow and difficult, even if the pelvis is well-formed; but if, along with an unfavourable position, the pelvis be narrow, or if the head is larger than ordinary, the difficulties are considerably increased. In this presentation the alteration which takes place in the head is as follows:—a considerable diminution in the length of the occipito-frontal diameter is produced, in consequence of approximation between the frontal and occipital bones, the fontanelles become nearly obliterated, the parietal bones are forcibly separated, and the sagittal suture is wider and more prominent. The brain is pushed into this space, which is insufficient for its accommodation, its organization is injured, and the child, when born, is either dead, or dies soon after birth.

Injuries of a similar character are sometimes met with, when the long forceps have been used. This mischief will inevitably occur if the obstetrician has no regard to the kind of instrument he uses, or to the degree of pressure he applies. If the head is forcibly and rapidly dragged through the pelvis, regardless of the axis, instead of waiting for that moulding of the bones, which nature adopts when left to herself, effects of the most serious nature are produced upon both the mother and the child. In all instrumental labours, when the head presents naturally, the pains, however trifling, if attended to, have a tendency to effect those salutary changes in the cranial bones whereby the delivery is accomplished more successfully. But if the instruments are brought into their full action, the tendency of these feeble efforts will be completely overcome.

ON THE LONG FORCEPS.

It is not my intention to enter into a general description of the forceps, but my observations will be confined to that instrument usually termed the Long Forceps, as used in British Midwifery. Those of our profession who are anxious to obtain further information, as to the several characters of the forceps of early or modern invention, are referred to the excellent work of Mulder, "Historia litteraria et critica forcipum et vectium Obstreticiorum;" as also to two papers read by Dr. Edward Rigby, before the Medico-Chirurgical Society of London, and afterwards published, the first intituled, "An Historical Analysis of the English Forceps," in the London Medical Gazette. vol. 7, p. 456, and the second, "A Description of Midwifery Instruments of Dr. Chamberlen," in vol. 40, p. 339, of the Edinburgh Medical and Surgical Journal.

The value of this instrument has not heretofore been duly appreciated by British obstetricians. By the early writers, the powers of the long forceps were not known; Smellie appearing to be the first who adopted their use; he says, "To remedy this inconvenience, I contrived a longer pair, curved on one side, and convex on the other; but these ought never to be used except when the head is small; for, as we have already observed, when the head is large, and the greatest part of it remains above the brim, the parts of the woman may be inflamed and contused by the exertion of too much force;"—vol. 1, p. 222.—and again, "In my first, among the improvements and alterations that have been made in the forceps, I mentioned a

long pair, curved to one side, which I contrived several years ago, for taking a firmer hold of the head in the pelvis when high; but, I did not then recommend the use of them, because I was afraid of encouraging young practitioners to exert too great force, and give their assistance too soon. Of late, however, I have found them very serviceable in helping along the child's head, in preternatural cases, after the body and arms of the fœtus were brought down, and it could not be delivered without destroying the child, by overstraining the neck and jaw."—vol. 2, preface, p. 5. This cautious recommendation of the instrument by Smellie, evidently depends on the circumstance, that the practitioners of his day were but too apt to interfere with the natural operations.

My friend, Dr. Hamilton, the present talented professor of Midwifery, in the University of Edinburgh, made use of the long forceps in the case of Elizabeth Gray, in 1794, (*Select Cases in Midwifery, p.* 17) and still continues to recommend their application in particular cases. (*Practical Observations, &c. part 2nd. pages*, 112, 113.) The measurements of the forceps commonly used by Dr. Hamilton, are the following—length of instrument, $13\frac{3}{8}$ inches; length of blade from lock, $7\frac{5}{8}$ inches; length of handles, $5\frac{1}{2}$ inches; greatest distance between the blades when joined, $2\frac{5}{8}$ inches; (*Practical Observations, p.* 94); and as the learned professor uses an instrument longer than this as a long forceps, we may be allowed to infer, that its dimensions exceed those just given; but of the precise measurements I am unable to speak.

The late Dr. Haighton, who occupied for many years the Obstetrical Chair of Guy's Hospital, London, and who was an excellent and successful practitioner, very strongly recommended the use of the long forceps, when I attended his lectures, and I have the best of reasons for believing that his opinions remained unchanged during his life. The forceps of Dr. Haighton are made with the double curve, their

length from extremity of the handle to the point of the blade, $13\frac{1}{2}$ inches, length of blades from lock, 8 inches; length of handles, $5\frac{1}{2}$ inches; greatest distance between the blades when joined, $2\frac{7}{8}$; fenestræ widest at the upper part, measuring $1\frac{1}{8}$ inches, gradually narrowing as it advances towards the shank; the thickness of the clam or ala amounts to nearly $\frac{1}{4}$ inch; length of the shanks, which diverge from the lock, as they advance to the fenestræ, is $3\frac{3}{8}$ inches. Dr. H. was in the habit of applying the instrument at the sides of the pelvis, the blades being of equal length, one thrown over the occiput, the other over the face.—A sketch of the forceps is subjoined.

My worthy friend, Dr. Blundell, succeeded his uncle, Dr. Haighton, as a Lecturer on Midwifery at the same Medical School. He has adopted the same views relative to the long forceps, as those of his predecessor, warmly urging the use of the instrument in particular cases. (*Lectures in Lancet, vol.* 2, *p.* 34. *also Principles of Obstetricy, &c. p.* 500.) Dr. Blundell's instrument differs somewhat from Dr. Haighton's, measuring from extremity of handles to points of blades 14 inches, the blades are of equal length, and pass off from the shanks more abruptly, the shanks lying parallel with each other from the lock to the points of divergence. He recommends that the instrument should be applied on the sides of the pelvis, one blade lying over the occiput, and the other over the face of the child.

Dr. Burns, formerly professor of Midwifery in the University of Glasgow, and now Regius professor of Surgery, has for several years adopted the use of the long forceps. I am, however, unable to speak of the form or measurements of the professor's instrument, but it is evidently Dr. Burns' view, that the long forceps should always be applied on the sides of the pelvis. (*Principles of Midwifery, p.* 455, *Eighth Edition.*)

Dr. Conquest strongly recommends the use of the

long forceps. "This invaluable instrument, now recommended by several respectable authors and lecturers, is but little known, and much less estimated; or it would be employed, by accoucheurs, as a most important substitute for the perforator and crotchet, in many of those cases in which children are destroyed."—(*Outlines of Midwifery, Fifth Edit. p.* 3.) One peculiarity of the instrument which Dr. C. uses, "is the curvature of the intermediate part between the blade and the handle, which is intended to save the perineum from pressure and laceration." Another peculiarity is, "the construction of the handle of the blade, which is usually applied last and uppermost." This consists in "the simple contrivance of a moveable handle, by means of a screw."—(*Outlines, p.* 96-99.) The following are the measurements—entire length $14\frac{1}{2}$ inches, of which $6\frac{1}{2}$ inches belong to the blades, 2 inches to the shanks, and 6 inches to the handles. The greatest width of the blades is in the middle, and is 2 inches, the fenestræ being at that part $1\frac{1}{2}$ inches wide; at the points and the shoulders $\frac{1}{2}$ an inch; the ala of the blades should not exceed $\frac{1}{4}$ inch in width. The widest space between the blades when joined "ought not to measure more than $2\frac{1}{2}$ inches." The instrument, "when applied at the brim, is to be fixed on the occiput and face," and at the sides of the pelvis.—(*Op. cit. p.* 96, *note.*) A sketch of the forceps is subjoined.

Dr. Davis considers the ordinary long forceps of this country as not at all fit to be applied to the head of the child, at the brim of the pelvis, in all the positions which it may there come to assume, but that these "can only be applied with safety to the sides of the child's head." And further, "but considering as I do, that a large majority of the cases usually deemed proper objects of forceps operations, before the entry of the head into the pelvis, are such as do not properly admit of the use of a pair of forceps, under the circumstances of their commonly prescribed

mode of application, viz: to the sides of the child's head; I have the honor of proposing, for the special relief of the cases in question, a particular modification of the obstetric forceps, better, in my opinion, adapted for their purpose than any variety of that instrument that I have yet seen."—(*Elements of Operative Midwifery, p.* 235.) "It consists of two counterparts of unequal length, as well as of different and unequal powers. The long one is covered with leather, and lined with a padding of the softest flannel; a considerable part of its blade being intended to apply firmly to the face of the child. At the distance of about $1\frac{3}{4}$ inches from its extremity, the blade has a joint, admitting of a limited degree of flexion and extension. When this branch of the instrument is carried up to its proper destination, the jointed part of the blade will be found to correspond to the superior portions of the face. The movements of the part of the instrument anterior to the joint, are made obedient to the will of the practitioner. The blade is to be passed up along the left side of the pelvis, in the state of full extension. When distinctly felt to have passed over the great convexity of the forehead, and ascertained, by examination, to be so far properly applied, the anterior part of the blade is to be bent down, and applied closely to the face; which is to be effected by moving a nut upwards. This little contrivance is very simple, and its mechanism is" represented in the accompanying drawing. "The anterior portion of the blade is made capable of two degrees of flexion with the other parts, at the pleasure of the operator. In general it will be advisable to push up the nut to the highest catch, so as to produce the greater degree of flexion, which will give to the anterior part of the blade an ample purchase over the child's forehead and face. The shorter branch is then to be passed up along the right side of the pelvis, and applied to the child's occiput, to act both as a fulcrum and an antagonist to the other. The power of the instrument is only par-

tially that of a pair of forceps. There is here no co-equal counterpressure applied to directly opposite parts of the head. It acts principally as an adductor; the attracting power being applied to a surface nearly opposite to the presenting part of the head. The short blade being applied to the occiput, the two branches of the forceps are then to be mutually adjusted at the lock."—(*Elem: Op: Midwifery, p.* 242.)

The following measurements have been accurately taken from a pair of forceps in my possession, made by Mr. Botschan, as recommended by Dr. Davis:—length of the two long blades, from end to end, 15 inches; length of blades from the lock to the extremities, 11 inches; breadth of blades at the widest part, 2 inches; length of the handles, 4 inches; length of the short blade from end to end, $11\frac{1}{2}$ inches; length of the short blade from the lock, 7 inches; length of handle, $4\frac{1}{2}$ inches; breadth of short blade at widest part, 2 inches; length of fenestra of short blade, $3\frac{3}{8}$ inches, and $1\frac{1}{8}$ inches in width.—A sketch of the forceps is subjoined. It may be well to mention here, that Dr. Davis' forceps possesses three blades; two of them being long blades, provided with the above described contrivances, and the other being the short blade, capable of being locked with either of the other blades. The long blades are intended to be applied on the face, as has just been shown, a different blade being required, accordingly as the face is towards one or the other side of the pelvis.

Dr. Waller, an eminent teacher of Midwifery in London, has been much in the habit of using the long forceps, and has in some degree modified the form of the instrument. The dimensions of his forceps are the following—length of instrument, from end to end, 15 inches; length of blade from the lock to the point, $9\frac{1}{2}$ inches; length of the shank, 4 inches; length of fenestræ, 4 inches; and width, $1\frac{1}{8}$ inches; breadth of the widest part of the blade, $2\frac{3}{8}$ inches; length of the handle, $5\frac{1}{2}$ inches. A sketch of the forceps is subjoined.

Dr. Ramsbotham, whose "Practical Observations in Midwifery" stand unrivalled, is accustomed to apply the long forceps, (*see Case* 50, *part* 1*st*) in certain cases. Dr. F. H. Ramsbotham is also an advocate for the use of the long forceps. And in his admirable lectures on Difficult Labour, speaks of them to the following effect: "One of the most valuable instruments employed in Midwifery, is the long forceps, if formed according to the size and dimensions which I shall presently demonstrate, and used in the cases to which it is particularly appropriate; for although it must certainly be regarded as more capable of inflicting injury than the shorter kind,—inasmuch as it is introduced higher within the woman's person, and its extremities are actually received somewhat into the cavity of the uterus itself,—still its powers and capabilities are such as frequently to render it a substitute for the horrible operation of craniotomy. This value I have often myself experienced, for I have extracted many children alive by the agency of the long forceps, who had been doomed to death by other parties, and who must have been sacrificed, to preserve the mother, unless we had possessed this instrument."—"The instrument which I have formed for my own use, and recommend for your choice, measures, from the extreme of the handle to the tip, $12\frac{3}{4}$ inches; of which $4\frac{1}{4}$ inches form the handles, and $8\frac{1}{2}$ inches the blades, being $1\frac{1}{2}$ inches longer in the blade than the short forceps, and $\frac{1}{4}$ inch longer in the handles. The greatest width between the blades is about their centre, and measures $2\frac{7}{8}$ inches; the points are an inch asunder. It weighs $12\frac{1}{4}$ oz. From the handles, two parallel straight shanks arise, of $1\frac{1}{2}$ inches in length; and it is in the addition of this shank that the instrument differs principally from the curved forceps of Osborn, the curve of the blades springing, not from the handles, but from the extremity of the shank."—(*Medical Gazette, vol.* 14, *p.* 337. *No. for June* 7, 1834.) A sketch of the forceps is subjoined.

Having now, as far as I am able, given a description, and the measurements of the principal instruments used by British practitioners, I shall proceed to point out what I consider to be their defects in construction, so that I may feel myself warranted in proposing a pair of different make, and which I hope are better adapted to fulfil the indications for their use. It was Dr. Haighton's forceps which I first made use of, but in consequence of finding them ill adapted for application to the parts of the child's head to be grasped, I was led after a few trials to discontinue their employment. Now, as the head of the child usually presents at the brim of the pelvis in a diagonal direction, with the occiput to one or the other side, this lying lower than the anterior part of the head, it is demonstrably clear, that if two blades of equal length are passed, and applied over the hind and fore parts of the head, that this must be seized very unfavourably; not as usually stated, and as reported by Dr. Haighton, by one blade lying over the occiput, and the other over the face, but, on the contrary, one blade will take its position over the occiput, and the point of the other blade will rest upon, or below, the supra-orbitary ridge of the frontal bone, with great danger of injuring the eye. This, although a most serious objection, is not the only one; for in such position the instrument must be greatly expanded near the lock, as the head is not fully received into the general curve of the blades, but on one side is only partially impinged upon by a small portion of the incurvated extremity. The shanks of the instrument, continuous with the line of curve of the blades, very gradually approximate each other at the lock, consequently when the head is embraced by the instrument, (as just stated) the structures situated at the lower parts of the pelvis, are most injuriously stretched and contused. Dr. Blundell must have had the same objections as myself, relative to this part of his uncle's forceps, as we find that in his instrument the shanks

lie parallel with each other, and consequently the soft parts are considerably relieved from pressure. I am further supported in these remarks, by the alterations which have been made in the forms of the respective instruments, of Dr. Davis, Dr. F. H. Ramsbotham, and Dr. Waller.

To save the life of the child is the object of every obstetrician who operates with the forceps; for unless this were his intention, it would be better at once to have recourse to the perforator and crotchet, as this operation is much more easily performed, and is less hazardous, as regards the maternal structures; it is, therefore highly important, to take into consideration the character of form of the instrument with which we operate. The head of the child cannot bear more than a certain degree of pressure, compatibly with life, and although it is wisely ordained, that it is enabled to bear more pressure *before* than *after* birth, yet there is a limit; also in our calculation, as to the powers of the head to sustain the force applied, we ought not to forget, that it will bear *in one direction a greater degree of pressure than in another.* We ought, then, particularly to notice whether our instrument is so constructed, as to produce such an undue influence upon the head, unattended with equivalent advantages. It is my opinion, that one of the greatest faults of construction in Dr. Haighton's forceps, is, that the length of the handles from the lock is so great, as to afford a leverage of great power when extracting.

Dr. Conquest's forceps are liable to the same objections, and the vaunted advantage of the curve in the shank is no advantage at all; and they are too short to be available in all cases, which may demand the use of the long forceps.

The only advantage which the instruments of Dr. Blundell, Dr. F. H. Ramsbotham, and Dr. Waller, possess over those just mentioned, consists in the parallelism of the shanks; but the same injurious conse-

quences may result in their application, from the extreme pressure which may be exerted on the head of the child, by means of the lengthened lever handles.

Dr. Davis' three bladed instrument is too complex for general adoption; and in one case in which I made an attempt to use it, I could not cause the moveable extremity of the long blades, (intended, as the inventor states, to be thrown over the face,) to alter its position, although I used great exertion. The short blade is too short to fulfil the object it is intended to serve; it measures from lock to point of blade, only 7 inches, and if we calculate the depth of the pelvis as at least 4 inches, and add to this the extent of the surface of the child's head, over which the point has to pass in order to obtain a fixed hold, we shall at once be convinced that it is inadequate to subserve its intended use.

I shall now proceed to describe the instrument, which I submit to the members of the profession, trusting to their impartiality for its adoption in practice, if it be found upon trial to possess advantages over those already in use.

The blades have only one curve to correspond with the convexity of the fœtal head, and are of unequal length. The longest blade measures, from end to end, $13\frac{3}{4}$ inches; $10\frac{3}{4}$ of which belong to the blade and shank measured from the lock to the extremity, the shank from the lock to the point of divergence of the blades, measures $3\frac{1}{2}$ inches; the breadth of the blade at its widest part is $2\frac{3}{8}$; the fenestra is $5\frac{1}{8}$ inches long, and $1\frac{1}{2}$ broad at its widest part; each clam or limbus is $\frac{1}{8}$ inch wide, and the handle measures 3 inches in length. The short blade of the instrument measures from end to end, 13 inches; 10 inches belong to the blade, measured as before mentioned; the shank from the lock to the point of divergence, $3\frac{1}{2}$ inches; breadth at widest part of blade, $2\frac{3}{8}$; fenestra, $5\frac{3}{8}$ inches long, and $1\frac{1}{2}$ inches broad at widest part; each clam, or limbus, $\frac{1}{8}$ wide—the handle being 3 inches in length;

a straight line drawn from the inner side of the end of the shank, to the extremity of the blade, shows the length of the curve; and if a perpendicular be let fall from this to the most curved portion of the blade, we shall then know the depth of the curve, amounting to $1\frac{3}{8}$ inches. Each limbus of both blades is on its cranial surface, bevelled from without inwards towards the fenestra, and the extremity of the blades is *turned* from within outwards. The lock in this instrument is placed differently from the manner usually adopted, so as to supersede the necessity of the screw, recommended by Dr. Conquest. But its position and form, relative to other instruments, will be better understood when I come to speak of the mode of introduction.

The head of the child usually enters the pelvis with its fronto occipital diameter corresponding to the oblique diameter of the pelvis, the vertex, or face, being placed towards the right or left acetabulum. But in cases where the antero-posterior diameter of the pelvis is shortened, by an increased projection of the promontory of the sacrum; the head, instead of being thus placed, assumes a more directly transverse direction. Sometimes, however, the head engages itself in the brim of the pelvis, with its bi-parietal or short diameter corresponding to the transverse diameter of the pelvis; the face being placed towards the sacrum, or towards the pubis. These two last positions of the fœtal head very seldom occur at this part of the pelvis, and are, most generally the result of improper, and premature interference on the part of the obstetrician. (*Vide case of Malposition, &c. reported in London Medical and Surgical Journal, and also in preceding essay.*)

Now, as the fœtal head assumes these several positions at the brim of the pelvis, a question arises whether the long forceps are always to be applied along its surface on the same line, and the answer naturally suggests itself in the negative. In all cases which

demand the assistance of the long forceps, whether the vertex be towards the pubis or sacrum, or whether it is to the left or right side of the pelvis, I should recommend as an invariable rule, that one blade of the instrument be placed on each side of the pelvis; so that, in two of these presentations, the transverse, or bi-parietal diameter is embraced by the forceps, whilst in the other presentations, one blade is applied upon the occiput, the other lying over the face. My reasons for this practice are the following:—if the antero-posterior diameter of the pelvis be so lessened as to prevent the head from engaging in it without artificial assistance, it would be preposterous to attempt to place two pieces of metal, occupying a certain degree of space, in a cavity already too small; and not only so, but are not the important maternal structures of the bladder in front, and the rectum behind liable to be contused and lacerated, by any other mode of introducing and applying the instrument. The chances of producing these injuries alone, ought to be sufficient to deter any reflecting obstetrician, from applying in any case, the long forceps, on the anterior and posterior parts of the pelvis; there are other grounds why the sides of the pelvis are to be preferred, as, that there is more room, and that the instrument is more easily passed and adjusted, &c.

In all cases in which we determine upon the use of the instrument, it is one of our first duties, to ascertain accurately the relative position of the fœtal head, and more especially when we contemplate the use of the instrument now recommended. It consists, as before stated, of a long and a short blade, and the advantages of its make cannot be procured unless these are properly applied. When the head of the child enters the brim, with the vertex to one or the other side, the short blade must invariably be passed in a corresponding direction, so as to be placed upon it; the long blade is to be carried on to the opposite side of the pelvis, and is applied over the face.—

When the head is placed, with the face to the pubis, or sacrum, it is of little consequence on which side of the pelvis the long blade lies, for in these cases the first object of the obstetrician would of necessity be to attempt to rectify the position, by a gradual and partial rotatory movement, so as to place the long diameter of the head in correspondence with the oblique of the maternal pelvis; the instrument to be withdrawn when this is effected, and the case left to the natural efforts, unless some complication demands further interference, and then reapplying the blades on the anterior and posterior portions of the head.

When the instrument is properly applied over the face and occiput, the handles of the instrument must be carried very much backwards towards the coccyx, thus stretching in some degree the perineum, and, on account of the obliquity of the line of the child's head, the vertex lying lower than the forehead, they must incline towards the right or left side of the female, accordingly as the hind head of the child may be placed.

When the instrument is placed upon the head, it has been customary to place a ligature very tightly round the handles, after having firmly compressed the head; a practice which is in my opinion exceedingly injurious to the child. The fœtal cerebral circulation is doubtless acted upon when the uterus contracts and forcibly pushes forwards the head amidst the pelvic bones, when the pain abates in a great measure, this is recovered from;—but not so when it is violently and permanently compressed within the grasp of the forceps. It will, therefore, be proper to place on the ligature so loosely, as merely to keep the blades in situ. One object in the construction of this instrument has been to make it as much as possible a tractor, by having the handles very short, and thereby limiting the power of squeezing the head; the handles are sufficiently long to afford a firm grasp of the instrument, and to compress the head, with as

much force as is necessary to maintain a firm hold upon it, whilst by passing a silk handkerchief through the circle formed in the shanks, the practitioner can exercise as much tractile force as his powers will allow, and certainly to a greater extent than is compatible with the safety of the maternal structures. In extracting with this instrument, a slight degree of pendulum motion may be used, but if the principles of traction, above recommended, be adopted, the head of the child is gradually accomodated to the passage, "and renders it unnecessary to make almost any degree of lateral pressure, upon the parts of the mother in contact with the infant, which is the principal cause of danger." (*Hamilton's Practical Observations, p.* 112.) This gradual accomodation of the child's head is produced partly by the pressure of the instrument, and partly by the pressure it receives from the anterior and posterior parts of the pelvis; and from the depth in the curve of my instrument, an elongation of the head readily takes place whilst engaged within its grasp.—(*Vide Remarks on the injury which the head of the child sometimes sustains in its passage through the pelvis, in the essay preceding this.*)

It is the custom in this country, to place the parturient female on the right hand side of the bed, and reclining on her left side; so that respective blades of the long forceps are called the upper and lower blade. Most writers speak of the great difficulty experienced in passing the upper blade, in consequence of the bed, or mattrass, below, preventing that depression of the handle of the instrument, which is necessary to raise the point, so that it can be carried over the head to its ultimate destination. According to the usual construction of the lock of the English forceps, the lower blade must first be introduced, and however well placed the woman at first has been, during this part of the operation her position is changed, she recedes from the operator further upon the bed, and thus is caused difficulty in passing the second or upper blade.

Several contrivances have been made to enable the practitioner to pass the upper blade with more ease; such as, having a moveable hinge in the handle, (*Dr. Hamilton's and Dr. Davis' forceps*) or by means of a screw, through which the handle is fastened to the shank.—(*Dr. Conquest's forceps.*) The fears of the woman are usually awakened during the introduction of the first blade, and the anticipation of some dreadful operation, leads her to recede from the accoucheur, placing herself in a most unfavourable position, perhaps on the opposite side of the bed; he cannot, therefore, proceed in his operation, until she is again placed in the original position. In order, then, to meet this difficulty, the lock of my long forceps is reversed, so that the upper blade may be passed first, and then there will be no difficulty in introducing the second or under blade.

Great difficulty is experienced in knowing which blade of the forceps ought first to be introduced, in consequence of all locks not being of a similar construction; but if the simple rule be adopted, which I have been in the habit of giving to the students of my class, this imaginary evil will disappear; it is this, *let the blade of the instrument, intended to be first passed, be held by the operator in a position, relatively to the pelvis, the same as it will take when placed upon the head, and if the ear-like projection at the lock, and the mortice depression stand before the shank, looking towards the front of the pelvis, it is the one to be passed first, but if on the contrary, these parts look backwards, it is the one to be passed last.*

The two blades, when introduced, should be parallel, and the locking should be effected without any twisting, the mortice depressions so standing that the shank of the one blade should be readily admitted into the mortice of the other.

If the instrument be properly placed within the pelvis, and over the child's head, it should lie in a line drawn from a little above the umbilicus, to the

point of the coccyx, so that the handles project very much backwards. When the operator draws down, it must be in correspondence with this imaginary line, and his efforts must be used to keep the instrument in that direction, until the head has so far descended as to occupy the cavity of the pelvis; the handles must not suddenly be brought forward, but in a gradual manner, so that when the head emerges they may look obliquely upwards and forwards; that is to say, the blade which rests on the occiput, in this position, comes to place itself in apposition with the descending ramus pubis, and ascending ramus ischii, instead of immediately beneath the pubic arch, whilst the other blade lies in apposition with the tuber ischii of the opposite side of the pelvis, resting upon the face; so that in the change of position assumed during the delivery, fully a quarter of a circle is described, obliquely from behind forwards. (*Represented in an accompanying drawing.*) The instrument may be removed when the obstacle (if any existed at the brim) has been overcome, and if the powers of the uterus are then found equal to the expulsion; not so, if otherwise, but each blade may be retained in its position over the head, until the delivery is completed, disregarding the rule of those who say that the instrument ought to be withdrawn at the lower parts of the pelvis, and reapplied over different portions of the child's head.

I have purposely avoided entering into minute detail of the plan to be pursued in the introduction of the instrument, supposing that most practitioners must be fully acquainted with the rules to be observed in passing the long forceps.

I shall now briefly advert to certain cases in which the value and superiority of this instrument is particularly evident.

In convulsions occurring during labour, the necessity for delivery being established, these instruments are of essential benefit in all those cases, when at a

later period of the accouchment, the propriety of applying the short forceps would be evident; it being understood that the bony canal of the pelvis, and the dilated and dilatable state of the soft passages is such, as to allow of, the passing of the instrument, and the subsequent steps of the delivery.

In cases of *accidental* hæmorrhage, and those which depend for their cause upon *partial* attachment of the placenta to the os uteri, where delivery, from depression of the physical powers is rendered necessary, the waters being evacuated, the os tincæ being sufficiently dilated to allow of the safe passing of the instrument, and further dilatable, so as to allow of the extraction of the head, the application of this instrument possesses great advantages over other means of delivery; in my opinion, giving a greater chance of safety to the child, and not making such demands on the already exhausted powers of the woman.

It must be confessed, that the powers of the instrument are very limited, in cases where rupture of the uterus has taken place; however, in some cases, as where the muscular structure alone is lacerated, and where recession of the fœtus does not occur, the application of the long forceps may be advisable, supposing that we have sufficient pelvic capacity, and that the soft parts are so dilated, as to allow of the instrument being passed. The remote prospect of saving the child's life, is a strong incentive to induce a practitioner to have recourse to this instrument, in such desperate circumstances, in preference to the use of the perforator and crotchet.—(*Vide case by Mr. Haden, in vol. 2nd. of Transactions of Society for Improvement of Med: and Chirurg: Knowledge; page* 184.)

In cases where the physical powers of the woman are exhausted, and fatal syncope supervenes, the before-mentioned indications being present, it is evidently our object to deliver as early as can be done with safety; so that this instrument may then become of the greatest possible utility.

In cases, where the pelvis being natural, arrest of the head at the brim seems to depend upon exhaustion of the physical powers, the result of previous disease, (such as phthisis,) the instrument is of the greatest value; since it is well known, (and has occurred in my practice,) that in many of these subjects, the first stage of labour is gone through easily and actively; the pains then subside altogether, and the result would be that the woman would die undelivered, thus sacrificing two lives, if the forceps were not applied, and here the state of the passages is generally such as to allow of an early application of the instrument.

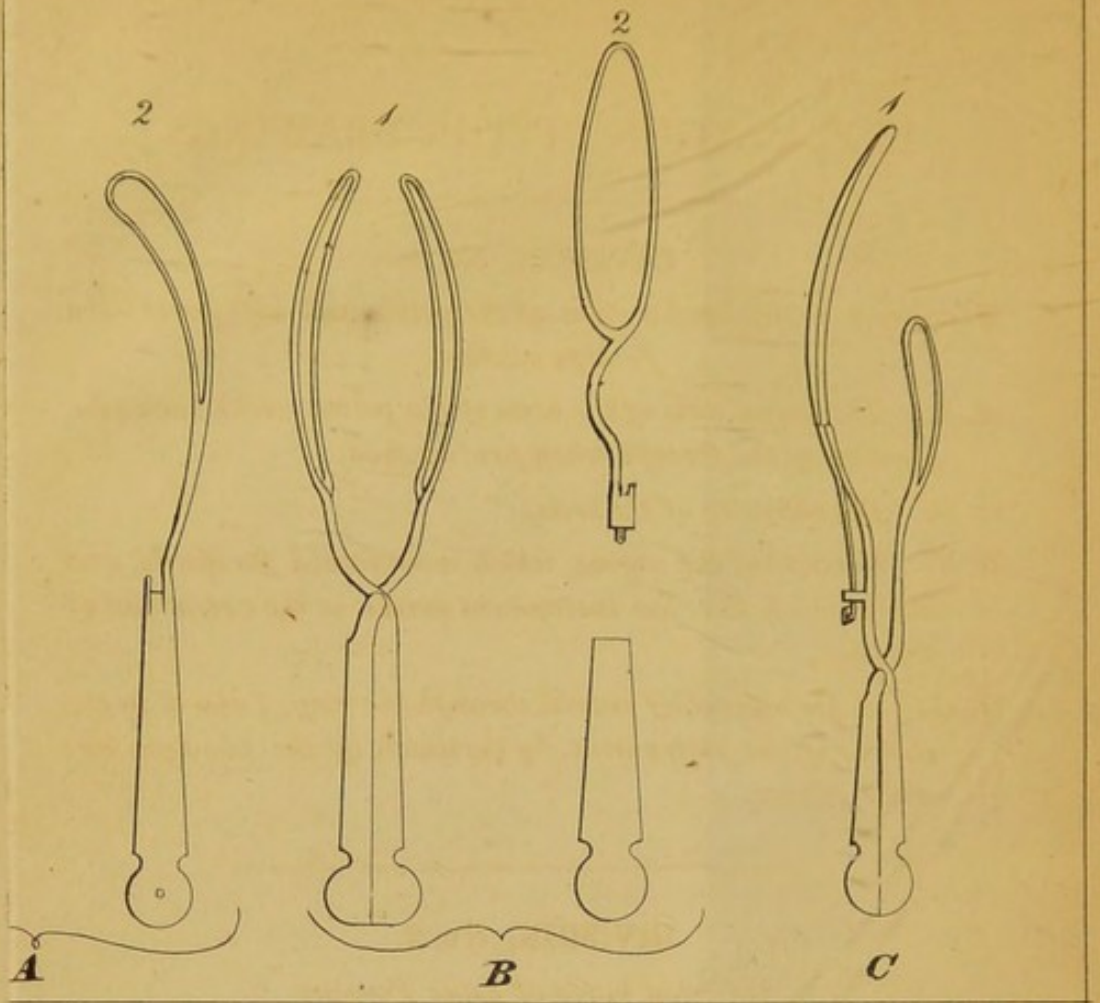
The pelvis may become distorted from the diseases, Malacosteon and Rickets, and may be affected either generally or partially; these also may exist in different degrees. My present observations are confined to those of a partial character. By partial distortion, I understand that condition of the pelvis, where only one of its principal divisions is affected, as the brim, the cavity, or the outlet. As I have stated above, that partial distortion may take place in different degrees, so it must be evident that the resources of the obstetrician must vary, in order to meet the exigencies of the several conditions of the pelvic aperture, as presented in different parturient females; thus, in some cases the powers of nature may, under very judicious superintendance, be adequate to the delivery; in others, the destruction of the child, from the use of the perforator, and the subsequent reduction and extraction by the crotchet and other instruments, can alone answer the demands made by the extreme nature of the case. Now, as I have just said, that there are these two degrees of partial distortion, cases which allow of natural delivery effected by the powers of the uterus, and others, where the use of murderous instruments is necessary, is it not a matter of humanity to inquire whether our art does not furnish any other resources, which promise safety to the two lives, capable of being compromised?

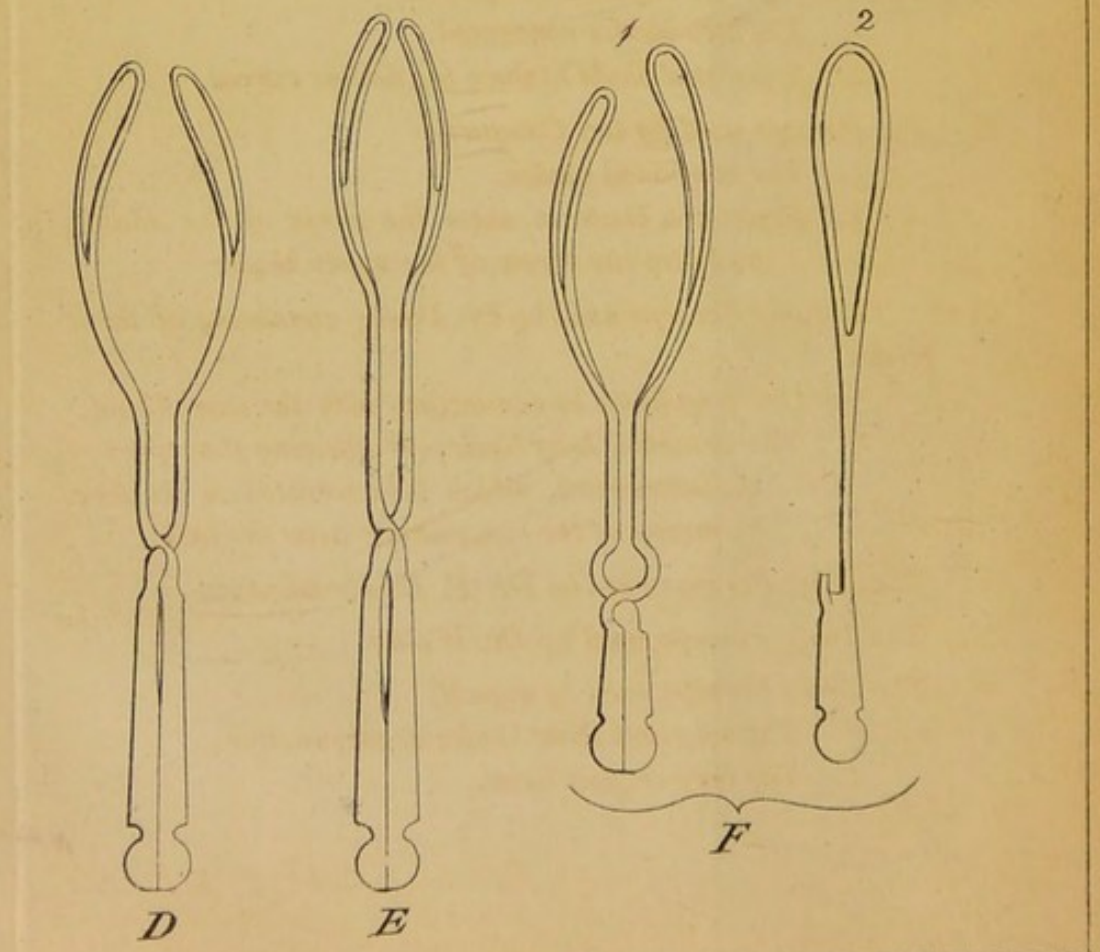
To this interrogatory, I can most conscientiously answer in the affirmative; and can unhesitatingly recommend to the general notice of the profession, the use of the long forceps, whose application to these cases is only justified by a few authors and teachers, as will be readily ascertained, if the reader will take the pains to consult the published manuals and systems. This backwardness to admit into general use this instrument, whose powers I have practically proved, can only be accounted for, from the circumstance, that it has never had afforded to it a fair trial in some of those noble Institutions which adorn our land; probably, also, from the instrument requiring more address in its introduction, and ultimate management, than those means which have been adopted in its stead. Then in labours where the brim of the pelvis is contracted by disease, to such a degree as to prevent the entrance of the fœtal head; or again, where this depends on want of development, the question is, what instrument are we to apply, the perforator and crotchet, or the long forceps? In the use of these instruments successfully, we are limited by the degree of available space, which is present in the upper parts of the pelvis; hence the necessity of making very accurate admeasurements before we decide upon either mode of delivery, more especially upon that which involves the life of the child. Indeed this must be attended to, with respect to the long forceps also; for although their use does not directly involve the question of life and death, it may do so indirectly, if the operation be undertaken wantonly, without regard to the state of the pelvic aperture, or of the soft parts. Also we must not confine our observations to the degree of dilatation of the soft parts which has already taken place, and the state of dilatability present, but must likewise regard the degree of pressure which they may have already endured; since it is an indisputable fact, that if delivery is unduly procrastinated, and the evils of protraction (which Dr. Hamilton, in the 2nd. part of

Practical Observations, has so justly censured) be allowed to present themselves, it would be unwise and unjust to use any instrument which must necessarily expose the structures to such degree of further injury, as will lead most probably to their destruction.

I may be expected to state my opinion as to the smallest degree of space at the brim of the pelvis, through which, a practitioner would be warranted in attempting to extract the child, by means of the long forceps. Knowing, as I do, the great responsibility I incur, in making positive assertions as to a point of such importance, yet having experimentally proved the truth of my statement, I hope I shall not be censured for temerity. I have the more confidence in giving my opinion on this point, because it is clear, that where the long forceps cannot be advantageously used, that the life of the child may be sacrificed to the safety of the mother; and I would rather run the risk of committing a venial error, leaning to the side of mercy, in recommending the application, in the first place, of the long forceps, where any doubt as to the real dimensions existed, and thus give a chance of life to the unborn fœtus. I would say then, that *where the distance from sacrum to pubes is* 3 *inches, and a fraction under*, and where there is sufficient space in the transverse diameter, an experienced practitioner ought to make a cautious but persevering trial of the long forceps, before he has recourse to the perforator.

I give this opinion advisedly, because I know the difficulty of measuring the pelvis with fractional accuracy; and also, that the heads of children vary both in size and compressibility, (*Osborn's Essays on Practice of Midwifery, p.* 190.—*Cases and Observations in 6th letter to Osborn, by Dr. Alex. Hamilton.—Heath's Trans. Baudelocque, vol.* 2, § 1618,—*and Baudelocque, Art des Accouchmens, tome* 2, § 1917) and, the opinion I have thus expressed, is further strengthened by practically knowing, that the dangers are not increased by a judicious trial of the Long Forceps.


2
1
2
1
A
B
C


1
2
D
E
F

EXPLANATION OF THE DRAWINGS.

DIVISION, No. 1.

Represents a supposed section of the pelvis and soft parts—the forceps applied.

A. B. The line of axis of the brim of the pelvis, which shews the position of the forceps when first applied.

C. D. The obliquity of the brim.

E. F. The axis of the vagina, which is continued forwards, and along which line the instrument moves in the extraction of the head.

G. G. A Handkerchief passed through the ring, formed in the shanks of the instrument, by the union of the two semi-circular curves.

DIVISION, No. 2.

Different kinds of Long Forceps.

A. The Forceps used by Dr. Haighton.

1. *The two blades connected.*
2. *Separated blade to shew the double curves.*

B. The Forceps used by Dr. Conquest.

1. *The conjoined blades.*
2. *Separated blade to shew the curve of the shank, and also the screw of the upper blade.*

C. C. The Long Forceps used by Dr. Davis, consisting of three blades.

1. *One long blade in connection with the short blade.*
2. *The detached long blade,—* shewing that part of the instrument, which is incurvated on the face, by means of the contrivance near the lock.*

D. The Long Forceps used by Dr. F. H. Ramsbotham.

E. The Long Forceps used by Dr. Waller.

F. The Long Forceps used by myself.

1. *The long and short blades in conjunction.*
2. *The long or face blade.*

ON TURNING.

By Turning is meant, that obstetric operation, by which the fœtus in utero is changed in its position; and whether the child has been placed, originally, with its long axis correspondent with the long one of the uterus, or otherwise, it must do so after the completion of this operation, and the pedal extremity must be brought first through the os uteri. This operation is not limited in its application to one set of cases, but is essentially demanded, and, indeed, affords the only safe means of rescuing the female, as well as her offspring, from impending danger, in a number of accidents occurring before and during labour. Notwithstanding the great advantages attendant upon this operation, yet it must be allowed, that in many cases the structures of the mother are exposed to great hazard, and the child's life put in jeopardy; and that it cannot be undertaken with the same prospects of success, as the application of the long forceps, when that instrument can be placed upon the head of the child, in cases which are rendered dangerous, by some of those unforeseen and inevitable complications which now and then occur during labour. But in all cases where the long axis of the child's body lies transversely, as regards that of the uterus, there is no other expedient of which we can avail ourselves, in delivering the child, with a chance of saving its life;—and the most frequent of these are presentations of the arm, or shoulder.

The operation consists in three distinct steps,—firstly, in the introduction of the hand: secondly, in the changing of the position of the child: and thirdly,

in the delivery:—each of which, merit from the obstetrician his most serious consideration, since it is his duty, not only to undertake this operation, with a view to the safety of the two lives interested in the event, but also to inflict as little suffering upon the mother as is possible. It is an operation as much, or perhaps more, to be dreaded than any other which our art offers to us, for the relief of a poor suffering parturient female; and this humane object may be achieved, if our exertions are gentle, and if we allow science to direct us; not endeavouring to overcome all difficulties, by the use of inconsiderate mechanical force.

It may be laid down as an incontrovertible axiom, that no female should die undelivered in those cases in which this operation can be justifiably undertaken: and the resources of our art, are sufficiently numerous and effective, if properly put in force, to meet all the exigencies which occur. If we practically examine into the characters of different cases, we are at once struck with their great dissimilarity, as to general features:—and consequently must conclude, that our practice must vary, in order to meet the exigencies of these several cases. They may be conveniently, and I think, profitably divided into four classes. Firstly:—those where the os uteri is dilated to a certain degree, and capable of further dilatation; also the vagina unirritable, and dilatable; the membranes unruptured, and the contractions of the uterus moderate in degree, and not very frequent. Secondly:—those cases where the os uteri is but slightly dilated, yet capable of further dilatation; the vagina of the character observed in cases of the first class; the membranes recently ruptured, and the contractions of the uterus, frequent, but not violent. Thirdly:—where the os uteri is only slightly dilated, rigid, and its lips slightly tumified; the vagina warmer and less moist than natural, and somewhat sensitive and irritable; the membranes having been ruptured for a

long time; the uterus acting strongly, and powerfully embracing the body of the child. Fourthly:—those cases which from neglect have assumed a most unfavourable character; the os uteri more or less dilated, is hot, dry, and swollen; the vaginal membrane being also dry, and hot, and also extremely sensitive; and the muscles in its vicinity exceedingly irritable; the presenting part of the child is wedged in the pelvis; the alternate contractions of the uterus which had been most frequent and powerful, yet producing little influence on the os uteri, are less frequent and intense; the tonic contractions still continuing. There is great abdominal tenderness.

Before I state the rules, which are especially required, for the management of the cases included within these classes, I shall enter upon an enquiry, (in reference to one part of the operation) as to whether there is, or is not, one portion of the child which should *always* be seized, to turn the child; and whether this plan does not possess advantages over that method which is generally adopted. One method, if practically proved to be the best, will answer in *all* cases, to which this operation *can* be applicable. To shew the predicament in which this point of practice at present stands, I shall quote the directions given by the writers, most generally, and (many of them deservedly) esteemed, in Great Britain and Ireland.

1724.—"Whereas, if *this* be neglected until the dry "womb is contracted, then, and in that *condition*, "the *feet* may be looked for, which (in such a pos- "ture) are soon found, with the *knees* next the "*belly*; and may be drawn out by them."—*page* 259. *The Female Physician, &c. by* JOHN MAUBRAY, M. D.

1734.—GIFFARD'S general principle was, to search for the *feet*, but if the child was small, or if any difficulty arose in seizing *both*, he contented him-

self in bringing down *only one.—Cases in Midwifery.*

1786.—DAWE'S plan was, to search for the *feet.—Midwife rightly instructed.*

1737.—MRS. STONES' practice was to search for the *feet.—Complete Practice in Midwifery.*

1742.—"This (hands come first) is one of the most "difficult cases in midwifery for the operator," * * * * "which cannot be put back if far ad- "vanced, so as to give admission to the operator's "hand, for to bring forth the child by the *feet*, "which is the *only* method in this exigency."—*page* 107. *A Treatise of Midwifery, by* FIELDING OULD.

1751.—DR. BURTON'S universal method of turning, was to search for, and bring the *feet* down.—*Vide pages* 187, 189, 203, *in his Essay towards a complete New System af Midwifery, &c.*

1752.—MAURICEAU, speaking of a shoulder case, says, "and sliding it" (the hand) "then along the "child's body, either by the belly, or the side, as "he finds easiest, he shall fetch the *feet*, and turn- "ing it, bring them to the passage; and so deliver "the woman, as is already directed."—*page* 210. *The Diseases of Women with Child, &c. by* FRANCIS MAURICEAU; *translated by* HUGH CHAMBERLEN, M. D.; 8*th Edition; also* MAURICEAU'S 1*st Edit*: *published* 1668.

1753.—DR. EXTON recommends the *feet always* to be sought for, and brought down.—*pages* 77, 78; 3*rd Edition. A New and General System of Midwifery.*

1758.—MR. COUNSELL, invariably brings down *both*

feet.—Vide pp. 135 *to* 145. *The London New Art of Midwifery.*

1759.—Chapman, in his directions for turning, says, "whatever the posture is, you are, with as little "force as possible, to search for the *feet*;" again, he says, "it is much the best to secure *both legs;* "but when I could get only one, without giving the "mother too much pain, and have found the re- "maining leg lying towards the infant's belly, I "have brought the child away by *one leg*, with the "additional assistance of two fingers in the groin, "when the child was so far advanced as to allow it." —*pp.* 104 *to* 119. *Treatise on the Improvement of Midwifery, &c.*

1765.—Dr. Memis always brought *both feet* down.—*Midwife's Pocket Companion.*

1767.—Dr. Young says, "In this second class of "preternatural labours, your constant business is "to search for the *feet*, and deliver by *them.* In "order to this, gradually dilate the orifice, and in- "troduce your hand into the uterus. This done, "first discover the posture of the child, and then, "search for its *feet;* if you *find but one* foot, and "*meet with difficulty* in coming at the other, drop "the pursuit, and content yourself with the *one.* "It may readily happen, that you will not be able "to get this foot beyond a certain length,—in this "case, insinuate your noose over the foot, pull with "one hand, while the other is introduced into the "uterus, in order to push up the superior parts of "the child."—*Manuscript Lectures.*

1772.—Dr. Colin Mackenzie says, "*Remember* "*as a general rule, never to pass your hand while* "*a pain is on,* and if a severe pain comes on, while "you are insinuating your hand, rest till the pain

" is gone off, as the uterus is often torn by such " neglect; we should rest often, and by repeated " lenient efforts, the resistance will be overcome; " when the *feet* are very high up, it may be pro- " per, for an assistant, to press on the abdomen, " by which means the *feet* will be brought nearer. " At the time we are bringing down the *feet*, we " should gently endeavour to push up the body." &c.—*Manuscript Lectures.*

1777-83.—PERFECT'S practice was, to search and bring down the *feet.*—*Cases in Midwifery*, 2 *vols.*

1779.—SMELLIE, especially recommends the *two feet* to be brought down:—but he further says, " If one " leg only can be brought down, the child being " turned, and that member being extracted through " the os externum, let the accoucheur slide his " hand up to fetch the other; but if this cannot be " done, he must fix a finger on the outside of the " groin of that thigh which is folded up along the " belly, and bring along that buttock, as in the " breech case, while he pulls with his other hand " at the other leg; and the body being thus ad- " vanced, deliver as before directed."—*pages* 303, 304, *vol.* 1*st. Treatise on the Theory and Practice of Midwifery.*

1781.—DR. FORSTER says, after the hand is intro- duced, " along the breast and belly of the fœtus, " that its *feet* being caught hold of, and brought " down along the belly, &c." and again, " the hand " should be passed on to the *feet*, which being " brought down, will leave room for the head and " shoulders to be turned upwards, &c."—*page* 201. *Principles and Practice of Midwifery.*

1781.—DR. ORME directs us to pass the " hand along " the breast and fore parts, search for the *feet*, and

" upon bringing down one foot, the shoulder slips " into its old position; if you can bring a foot into " the vagina, fix a noose upon it; sometimes it " happens you cannot bring it down low enough to " do this, one leg being forced over the other, in " this case you are not to persist in bringing down " that foot, but to go in search of the other."—*Manuscript Lectures.*

1782.—Dr. Lowder, in his lectures, taught, that " the *feet* are first to be found and extracted; to " find them, the hand must be passed when there " is no pain." "Get hold of the *feet* if possible, " though this cannot always be done, and one foot " answers the purpose."—*Manuscript Lectures.*

1784.—Dr. Spence says, "The hand ought to be " gently introduced, the *feet* are to be sought for, " and brought down, with the greatest care."—Again, he further states, " *These*, (*the feet*) in cases " of this kind, are at a considerable distance, and " sometimes it is perfectly impossible to reach " them;"—a knee is then to be taken hold of, then a foot, and the noose applied, and the feet extracted.—*pages* 237, 243. *System of Midwifery.*

1784.—Dr. Osborne says, that the under foot is to be brought down, *the first*, and a ligature fastened upon it.—*Manuscript Lectures.*

1786.—Dr. Robt. Wallace Johnson, recommends the practitioner, to " glide his hand along as above " directed, till it gets to the *feet;* but if *these* can- " not be readily come at, he may take hold of the " hams, then bring the legs gradually down, either " singly, (preferring that which belongs not to the " same side of the prolapsed arm), the first across " the other, taking as much care as he can that the

" foot does not press hard against the uterus, as it " is brought down, &c." If difficulties arise in attempting to follow this method, " then he must ad- " vance higher, (though the task may be great) " till he can insinuate his fingers between *their* " *soles* and the uterus; then having seized *them*, " he must bring *them* carefully round till *they* pre- " sent to the pelvis," &c.—*page* 234. In the next page, he says, " Having come *at one*, (*or both if* " *he can*) he must hold it between his fingers, and " bring it round towards the os uteri, and *then pro-* " *ceed for the other*, and bring that down."—*A New System of Midwifery.*

1803.—Dr. Alex. Hamilton says, (in his rules for turning) rule 9th, " The hand should, if possible, " be introduced by the fore parts of the child, as " the feet are generally folded along the belly, and " *both feet, if easily come at*, should be laid hold " of."—*page* 356. Rule 16th. " When *both feet* " *cannot readily be found*, the practitioner *should* " *content himself with one foot;* and after securing " it with a ligature, he may make a cautious at- " tempt to bring down the other foot."—*page* 358. *Outlines of the Theory and Practice of Midwifery.*

1813.—Hogben says, if the hand " cannot be kept " up above the brim of the pelvis, the child must " be delivered by the *feet*."—*page* 59. *Obstetric Studies, &c.*

1818.—Dr. Haighton recommends the obstetrician " to convey it " (his hand) " to the *feet*, in the most " gentle manner possible;" also that he should be careful " to carry his hand sufficiently high to " reach the *feet*," and also, " to be certain that " *both feet belong to the same child*."—*Manuscript Lectures.*

1818.—Dr. Breen says, "In the interval of pain, "the hand must be pushed upwards, until it ar- "rive at *one* of the *knees;* one or two fingers should "now be hooked in the flexure of this part. The "operator must then draw the knee downwards and "forwards, towards the centre of the great diame- "ter of the brim of the pelvis, and, if any difficulty "occur, he will, at the same time, endeavour gen- "tly to push up the presenting part. Should the "child still continue jammed, after using moderate "force, I would recommend the situation of the "hand, in utero, to be varied, and the fingers to "be hooked in the flexure of the *other knee.* When "by this procedure, *one foot* is brought within "reach of a noose, it may be sometimes *necessary,* "after applying one, to retrace the same steps, *to* "*bring the second* within the power of a similar ap- "plication."—*page* 30. *Edinb. Med. and Surg. Journ. vol.* 14.

1820.—Dr. Hopkins says, "Having obtained *one,* "or *both* of the feet, either in the hand or between "the fingers, guide them slowly down the belly of "the fœtus, which commonly turns without diffi- "culty."—(*Directions for turning,* 10*th rule, vol.* 2, *p.* 94.)—*The Accoucheur's Vade-Mecum.*

1820.—Dr. Merriman states, "The established "practice, then, is for the operator to pass his "hand into the uterus, to take hold of the *feet,* and "bring *them* without the os externum; thus con- "verting the presentation of the arms into a pre- "sentation of the *feet.*"—*p.* 80. Again, at *p.* 84, where in some cases the practitioner finds greater difficulty in taking hold of the *two feet,* he must "sometimes, therefore, be content with *one* only," but it is "more safely and easily accomplished," when *both feet* are brought down, than when *only one* is seized.—*Synopsis of Difficult Parturition.*

1828.—Dr. Ashwell recommends that "the *feet*" be taken hold of.—*page* 358. *Practical Treatise on Parturition.*

1831.—Dr. Ryan observes, that "The palm of the "hand is to be passed along the shoulder, side, "thighs, legs, and to the *feet*, and *both these* "brought down into the pelvis, though sometimes "one foot only can be grasped."—*page* 527. *Manual of Midwifery.*

1831.—Dr. Gooch says, "If *both feet cannot readily* "be grasped, and brought down *together*, bring "down *one first*, and *then the other*," &c.—*page* 236. *Practical Compendium of Midwifery.*

1832.—Dr. Denman (Dr. Waller's Edition, of "1832) gives the following directions. "If *both* "*the feet* should be lying together, we must grasp "them in our hand; but if they be at a distance "from each other, we may *commonly deliver with* "*one foot without much additional difficulty*, though "as in some particular positions we cannot turn "the child, if it be large, by *one* foot, *it is better* "*to make it a general rule, to bring down both feet* "*together*, when they are in power."—*page* 347. *Introduction to Practice of Midwifery.*

1832.—Mr. Radford recommends that *one foot, or one knee* only, should be brought down in *all cases.*" —*Edin. Med. and Surg. Journal, vol.* 37; *April*, 1832; *page* 256.

1832.—Dr. Ramsbotham says, "The presenting "part is now to be pushed away or passed by; and "the *feet* or a *foot* to be sought for." "Having "met with the *feet* or a *foot*, engrasp the part firmly "within the hand, and bring it through the brim of "the pelvis into the vagina."—*Practical Observations, page* 49.

1832.—Professor Burns observes, "The hand is "then to be immediately carried into the uterus, "and, if we have decided upon turning, upwards "until the *feet* be found. *Both feet* are to be grasp- "ed betwixt the fingers, and brought down into "the vagina, taking care that the toes be turned "to the back of the mother."—*page* 385. "Having "passed the hand beyond the cervix, we carry it "on, betwixt the body of the child, and the sur- "face of the uterus, which is felt hard and smooth, "from the tonic or permanent contraction of the "fibres, until we reach the *feet*, *both* of which, if "near each other, we seize; but if we cannot *easily* "*bring both*, *one* is to brought down into the va- "gina, and retained there. The child will be born, "with the other folded up upon the belly."—*page* 387. *Principles of Midwifery.*

1833.—"We should then gently begin again to di- "late till we get our hand into the womb; when "we search for the *feet*, and carefully bring them "down."—*page* 246. *London Practice of Mid- wifery; edited by* Dr. Jewel.

1833.—Dr. Campbell says, "The extraction should "be accomplished by grasping *one of the knees*, as "originally recommended by Dr. Breen, and not "one or both feet, as generally advised; after "which it is to be drawn downwards over the ab- "domen; by the opposite limb being retained, the "dilatation of the vagina will be increased, and "the head afterwards more easily disengaged.— "Delivery by the knee only requires a fair trial, to "be prefered to that by any other part, in a pelvis "of natural formation."—*page* 285. *Introduction to the Study and Practice of Midwifery.*

1834.—Dr. Maunsell recommends the *feet* to be sought for, and says, "when the *feet, or knees,*

" have been laid hold of, we should carefully as-
" certain that there is no mistake; and then with-
" draw them slowly, and with a wary motion, out
" of the uterus."—*page* 150. *Dublin Practice of Midwifery.*

1834.—Dr. Blundell, after recommending the accoucheur to seize the *feet*, cautions him to be sure that they are not the *hands*, or *a foot and a hand.* —*pages* 397, 405. He further states, " If *both legs*
" are seized, the child will *turn more easily*. If you
" can grasp *one leg* only, let this be brought down;
" often you may turn by one leg, but should it be
" necessary to draw down the other, the access to
" the second will be facilitated by the descent of
" the first. Should the seizure of the leg be im-
" practicable, I would recommend you to lay hold
" of the knees, gradually working your fingers to-
" wards the feet."—*Principles and Practice of Midwifery.*

1835.—Dr. Davis remarks, " after introducing the
" other hand, which should be conducted closely to,
" and in a flat form over, the surface of the child, as
" far as the *feet;* and the *foot, or feet,* having been
" distinctly recognized by the proper distinctions
" to be attended to, an attempt should be made to
" grasp *one or both feet.*"—*page* 1010. *Principles and Practice of Obstetric Medicine.*

1835.—Dr. Collins advises, that the situation of the *feet* should be ascertained previous to introducing the hand, " that we may reach them readily." He cautions the practitioner not to mistake an arm for a leg, and then remarks, " It is quite sufficient to
" bring down *one foot,* and it is of great advantage
" to have an assistant to press upon the uterus,
" with both hands, so as to render it as fixed as
" possible, during the operation; the extraction

" should be made slowly and gently."—*page* 69.—*Practical Treatise on Midwifery.*

Dr. Ryan has changed his opinions since the publication of his "Manual of Midwifery," in 1831, and from which work I have already quoted. He says, (in his edition of Denman's "Aphorisms on Natural and Difficult Parturition," published in 1836; and in note on the eighth Aphorism) "Mr. "Radford, Lecturer on Obstetricy, at the Man- "chester Medical School, contends that it is most "prudent to bring down but one lower extremity, "as in such case there is *less* volume," (misprinted for *greater*) "in the pelvis of fœtus, than when "both extremities are extracted at the same time. "I agree with him in opinion; but would caution "the young practitioner to be careful, as he will be "much more likely to injure the hip joint of the "infant, when he extracts *one* instead of both ex- "tremities."

These quotations prove, that the operation of turning, as generally practised in Great Britain and Ireland, consists in bringing down *both* feet to the os externum, and then delivering forthwith: if the difficulties encountered in attempting to seize *both feet, are very great*, the practitioner is *then* allowed to content himself, with the bringing down of *one foot only*.

The presentations of different parts of the child's body, ascertained during labour, before the os uteri is dilated, are not all equally safe to the mother, or the child. Presentations of the vertex are accepted as natural, because they are the most frequent, the most safe, and are capable of being accomplished by the unaided powers of nature. The different presentations of the head constitute varieties, but are nevertheless, more safe both to the mother, and child, than any other. The presentation, which ranks the next in point of safety, is the breech, after which are pla-

ced, presentations of the lower extremities. In labours where the trunk, or superior extremities of the child, present, the process cannot be completed by the natural powers, except in those rare cases, where spontaneous evolutions takes place. If the mother were left to her own powers, unaided, she would inevitably perish, and also her offspring.

In these cases, therefore, manual assistance becomes necessary. The practice is, evidently, that of changing the position of the child, so that it may be delivered by the accoucheur. The means most desirable to adopt in such cases, would be, if possible, to change the presentation to *that of the head*, this being the safest and most natural. This practice was inculcated, and attempted, by the older writers, but cannot be put in execution, from our inability to seize a body of such magnitude as the child's head, so as to bring it to lie over the os uteri. As the *breech* is the presentation next in point of safety, we might on this account be induced to seize this part to effect a change of position, but the same objections exactly apply to this, as to the attempt at bringing down the head. We are, therefore, reduced to the necessity of adopting the practice of bringing down the feet. A superficial view of these cases, might lead us to the conclusion, that if it were possible to effect a breech presentation, little comparative advantage would be obtained over bringing down the feet. But the results of practice prove, what might be inferred by reasoning, that *the child's life is much more frequently preserved in those cases in which it presents the* BREECH, *than where the* FEET *come down first.* The measurement of the child, round the hips and thighs, when the latter are turned up towards the belly, as in breech cases, approaches nearly to the circumference of that portion of the head, which lies parallel with the pelvic cavity, in natural labour. The dilatation of the os uteri and os externum, is effected so completely, by the passage of the breech, that very little

resistance is offered to the expulsion of the head, or to a dexterous extraction of it, when the umbilical cord shows signs of compression, hazarding the life of the child. But this is not the case in presentations of the lower extremities; the child in these cases descends in a wedge like form, constantly presenting an increase of measurement in the successively protruded portions of its body: which parts, in comparison with the head, are rather more yielding. At the time the head which presents the greatest circumference, comes to enter the pelvis, compression of the funis takes place; and if the cervix, and os uteri, are not sufficiently dilatable and dilated, which is most generally the case, (especially in first labours) the child will be lost. Attempts made to bring the child rapidly through the pelvis, have a tendency to increase the opposition, by inducing spasmodic action of the cervix, which, coupled with the inadequate dilatability of the os uteri, becomes, pro tempore, an insurmountable obstacle to extraction. Is there, then, no practice which would enable us to bring down a part, approximating in its measurements to those of the breech presentation, which we have already stated to be so safe to the child, but which cannot be effected in turning operations? There is—and this practice consists *in* NEVER *bringing down more than* ONE FOOT in the manual operation of *turning* a child.

The propriety of adopting this practice is evident, when we regard the greater safety of breech presentations, compared with those of the feet; and consider how nearly the measurements of the breech, (with the thighs flexed upon the pelvis) approach those of the head. If, as above stated, we are not able, in turning the child, to effect a breech presentation by the hand in utero, that operation which produces a presentation, possessing a measurement nearest to it, is the one we ought to prefer; and this consists *in bringing down one foot only, leaving the other*, which would become turned up towards upon the abdomen

of the child, thus producing a presentation, compounded of the breech, and one lower extremity.—The circumference of the hips in this position of parts, varies very little from that of the breech, and must consequently be attended with nearly all the advantages of such a presentation. In considering this subject, it will be desirable to attend carefully to the subjoined measurements, which have been accurately obtained from children born at the full period of gestation.

The circumference of that portion of the head which presents in labour, is from	12 to 13½ *in.*
Do. of the breech, with the thighs flexed upon the abdomen, as in breech presentations, from	12 to 13½ *in.*
Do. of the breech, *with one thigh turned upwards towards the abdomen, the other extended*, from.....	11 to 12½ *in.*
Do. of the hips, the legs extended as in feet presentations, from..	10 to 11½ *in.*

These measurements prove several points:—First, That breech cases differ very little in their power to dilate the passages of the mother, as extensively as the head, and, therefore, that whenever the breech passes, we may reasonably expect the head to pass with moderate ease, either by the natural efforts, or by judicious artificial aid. They also shew, secondly, That when one thigh is turned up towards the abdomen of the child, that the measurement is very little less, than that of the presenting part in pure breech cases, and, therefore, that we may expect the head to pass with nearly as much ease as in those cases.—Thirdly, That where both feet are down, the measurements of the hips differ much from those of the head, and are insufficient to accomplish that dilatation of the

soft parts, which will allow the head to pass, or be extracted, with sufficient celerity to save the child, when its life is threatened by compression of the funis.

The foregoing observations authorize the conclusion, that in undertaking this operation of turning, we should make it a positive and invariable rule, NEVER TO BRING DOWN MORE THAN ONE FOOT, OR ONE KNEE.

Whenever any such circumstances occur during labour, (as large hæmorrhages, preternatural presentations, &c.) for the relief of which, we adopt the practice of turning, the uterus will be found in one or other of the following conditions; either fully distended, the liquor amnii not having escaped; or more or less contracted upon the body of the child, the liquor amnii having been discharged. In the first class of cases, the operation is effected in a short space of time, with great ease to the practitioner, and with comparative safety to the mother and child. In the second class of cases, where the liquor amnii has escaped, and the contraction of the uterus is more or less powerful, and the organ closely embraces the body of the child, the difficulties and dangers of turning manifest themselves. In these cases, we are recommended to bring down *both feet;* but if we find *great difficulty* in doing so, to content ourselves by bringing down *one foot* only. The interrogatory is naturally suggested by the last sentence, Why?—The answer to which, is, *because it is more easy, and more safe, to both mother and child, to do so.* In the rules given by authors, for the management of these cases, we are restricted to the operation, most complex and difficult to the practitioner, most riskful to the mother, and most dangerous to the child, when the operation is of easy accomplishment; whilst we have the option of adopting the most easy plan, only when the most serious and difficult circumstances are presented.

In all cases, when the liquor amnii has been discharged, it is our especial duty *to bring down one foot only*. If but a short time has elapsed since this occurrence, the case will still maintain a favourable aspect, the presenting part will not be wedged in the superior aperture of the pelvis, the uterus will not be powerfully contracted upon the body of the child, and our operation may be accomplished, *with moderate facility, and additional safety, by bringing down only one foot.*

But when the liquor amnii has been long evacuated, the case assumes a different character, the presenting part is wedged firmly in the superior part of the pelvis, the uterus is powerfully embracing the body of the child, the os uteri is hard, tumified, and indisposed to dilate. The hand of the operator is impeded by the arm of the child, presenting at the os externum, and all the parts exposed to the mechanical influence of pressure, have sustained injury, from the long continued, but ineffective action. In such cases, we *should never contemplate bringing down two feet*, not abandoning this plan, because we cannot find, or cannot secure the second foot, but we should make the principle of our operation, *the bringing down of one foot only;* and where the contraction of the uterus upon the child's body, is so strong as to create a difficulty, *we should not search for the* FOOT, *provided we can secure and bring down* ONE KNEE; for as the knee is brought down, the foot will descend, and come within reach, so that it may be seized, and brought through the os uteri, with facility.

The position in which the patient is placed, for this operation, is not the same in all countries; nor do all obstetricians, in the same country, adopt similar views upon this subject. In Germany, as well as in America, the patient lies upon the back, across the bed, with her pelvis resting upon its edge. Her back should be supported by pillows, and each foot is to be placed upon a chair, at a convenient distance, the

knees being held by an assistant. In Great Britain, the female is put on the right side of the bed, lying upon her left side, with her hips close upon the edge of, or rather projecting over the bedstead, with the trunk at a right angle with this part, and the knees bent upwards. I have adopted this plan, in my own practice, as I consider it as good as any other, and perhaps it has the appearance of delicacy to recommend it.

Some obstetricians recommend the patient to be placed upon the elbows and knees, and think this position the best, in every case where turning is difficult.

Another important point to settle, is, which hand is to be used in the operation? If we could always say, what position the child holds in the uterus, the question would be easily determined; but in all the cases which demand this operation, we cannot come to this knowledge; as for instance, when the placenta is implanted over the os uteri; the practitioner then ought to use the hand, which he is the most dextrous in the use of; if he is right-handed, the right hand must be used; if on the contrary, he is left-handed, he must use his left hand. But in cases of arm, or shoulder presentation, the position of the feet relative to the maternal pelvis can be accurately ascertained, and therefore, in such cases we know which hand we ought to use. The rule to be followed is simple, and is as follows:—the palmar surface of the hand, when introduced, must correspond with the anterior part of the child; so that when the foreparts of the child lie forwards, the right hand must be used, and when they are towards the back of the mother, we must pass the left hand.

In the cases included in our first division, every attendant circumstance is favourable to the operation. The vagina is moist, and dilatable,—the os uteri is already dilated to some extent, and is further dilatable,—the uterine action is moderate in degree,—and the uterus is still distended with the liquor amnii, the

membranes not being ruptured. It is the bounden duty of the obstetrician, to preserve these membranes entire, as long as it is possible, in every case, in which this operation is contemplated; in order to obtain as full a degree of dilatation of the os uteri, as is possible, by their influence, which is so much superior to all artificial means. The recumbent position must be enjoined, and after a correct knowledge of the presentation, and the condition of the passages, is obtained, the obstetrician ought carefully to abstain from frequent vaginal examinations. But occasionally he must examine, in order to apprize himself of the changes which the os uteri is undergoing, so as to enable him to take advantage of the most favourable opportunity of carrying his hand through. He should constantly remain by the bed side, lest the membranes should spontaneously burst, when he must immediately pass his hand.

The operator will find the kneeling posture, the most convenient, and the least irksome:—in the first part of the operation, he must place himself a little forward of the patient, that is, nearer to the foot of the bed, in order to bring the hand and fore arm, in a line corresponding with the axis of the outlet of the pelvis; as his hand proceeds, he must gradually change his position, so as ultimately to be nearer the head of the bed, and behind his patient.

The fingers must then be brought together, with the thumb placed in the hollow groove, between the first and little finger, so as to form a kind of cone: the back of the hand alone must be covered with lard, as any unguent applied to the palm would render the grasp uncertain. The points of the fingers must be slowly insinuated between the labia, and then the hand carried cautiously upwards, first in the axis of the outlet of the pelvis, on through that of the cavity, and lastly of the brim. If the arm does not lie parallel with the axis of the brim, it will be nearly impossible to use the hand with ease, or indeed with

safety. When it is favourably placed, the elbow will be in the vicinity of the coccyx, stretching the perineum backwards. The hand, when it reaches the os uteri, is to be very gradually passed through, and with a slight rotatory movement, letting the advance be in accordance with the degree of yielding of this orifice. Before the membranes are pierced, the hand, insinuated between them and the uterus, must be carried upwards to a short distance, so that the waters may not immediately pass away, and thus induce the contractions of the uterus. After the hand is passed through the membranous sac, it must *be carried on in search of the* FOOT, which must be firmly grasped, and brought down in such a direction, that the curve of turning and traction will correspond with the natural flexure of the child's body. The whole of this part of the operation must be undertaken during the interval of pain, resting always when the uterus contracts. The child readily turns upon its imaginary axis, and the head now becomes placed towards the fundus. The *foot* is now to be slowly brought down into the vagina, until the breech comes to bear upon the os uteri. Now that the long axis of the child, corresponds with that of the uterus, there is no necessity for hurry, because we know that the delivery can be accomplished by the natural powers. And every effort, that is now made by the obstetrician, ought to be in correspondence with them. If at this period the child is drawn down, and rapidly abstracted, (as is generally recommended,) several serious evils may arise. The cervix, and os uteri, are not prepared to bear the effects produced by the great distension they must endure in the passage of a child, so much larger than the operator's hand, and are, therefore, liable to be lacerated, or so contused, as to lay the foundation of subsequent chronic disease. But these are not the only mischiefs accrueing to the mother. General and partial atony of the uterus, may be produced, and thus lead to serious, if not fatal flooding.

The child also, suffers from this precipitate practice:—its life is frequently sacrificed. In vertex presentations, the chin of the child is kept closely in apposition with its chest, and this solely by the agency of the uterine pains; so that the shortest of the long diameters (or what is called the fronto-occipital) of the fœtal head, corresponds with the oblique diameter of the mother's pelvis; and thus it is, in all cases, where the child passes with breech, feet, or foot first; this most favourable adaptation of the chin, taking place if the uterus be allowed, without interference, to act upon the head, the tendency being to depress the chin towards the sternum. But, if instead of allowing the natural forces to act above, the practitioner pulls at the leg, or legs, so as to drag the child out of the reach of uterine contraction, or action at the fundus, a state of inertia is produced in that part of the uterus, and a free space is left, so that the chin of the child easily leaves the breast. It is obvious that this will be the result, if we consider the point of attachment between the head and neck. A greater obstacle to delivery, as well as increased danger to the child, results from precipitate delivery, when the child's head enters the brim of the pelvis, with its long diameter parallel with the short measurement of the pelvis.

The os, and cervix uteri, are more obedient to, and undergo, the changes of dilatation much better, which are produced by the natural powers, because they are gradual; but when the child's body is rapidly, and artificially abstracted, their natural sympathies are disturbed, and instead of a passive condition persisting, until the whole of the body of the child is withdrawn, morbid and active contraction takes place, seizing the child by the neck, or by a great part of the head, which is retained so long within its grasp, before it can be freed, that the death of the child is the inevitable result. It is then the duty of the obstetrician, after he

has brought down the foot, diligently to superintend the process of delivery, but not forcibly to interfere. No danger attends delay, until the child is so far advanced, that the funis is liable to be compressed, and, therefore, we need not be anxious to abstract,—but we must wait until the os and cervix uteri are disposed to yield, and, indeed, it is to be supposed, that some short rest is now required by the uterus, in order to recover from the shock it sustained during our manœuvres. We should then in all our efforts, cooperate with the uterus, and endeavour by every means in our power, to bring into full operation, this most important natural agent.

If the uterus does not act so powerfully as is deemed necessary, the cause of the delay should be investigated, and the rational principles of treatment adopted for its removal. The same remedies act here, as are found useful in cases of tedious labour, when the head presents:—friction applied to the abdomen, grasping pressure, bandages, Secale Cornutum, T. Opii administered by the mouth, and per anum, and sometimes stimulants may be demanded. Great care must be taken to place the child, (if necessary) so that the line across the shoulders corresponds to one of the oblique diameters of the pelvis; by which we are assured that the head will enter favourably; as under these circumstances it must lie with its long diameter parallel with the oblique of the pelvis. When the funis can be felt externally, it should be so placed that it may be compressed as little as possible; and it should also be drawn down so as to become slackened. If the child jerks with its body, and if the pulsations of the funis are weakened, and intermit, our efforts to excite the energies of the uterus must be increased, and we must assist by cautiously drawing along the child, duly cooperating with the uterus: but if the pains do not come on, and the child's life is in danger, the lesser of two evils must be chosen, and the child removed, by carefully adapting the head to the passages, as it is with-

drawn. During this part of the operation, uniform and equal pressure must be made by a judicious assistant upon the uterus.

The cases which constitute our second class, differ in one important circumstance, from those which have just been considered, the liquor amnii is discharged, consequently the uterine cavity is diminished, and the body of the child is embraced by the uterine parietes. The pains are frequent, but not violent, and the passages are in quite as favourable a condition. The practice to be adopted, differs only in the manner in which the hand is to be carried on to the foot of the child. When the hand arrives at the os uteri, it must, with a very slow and slightly rotatory motion, be gradually carried through this opening, resting always when a pain comes on. It is to be carried on to search for a foot, resting when the uterus contracts, and again advancing during the interval of contraction. The hand should be directed along the anterior parts of the child, and is always to be placed flat upon that part of the child's body, over which it is passing, when the pain is renewed; as it is of great importance that no angular projections of any part of the operator's hand, as the knuckles, or points of the fingers, should be offered to the uterine surface during its contraction. Before the hand is removed, the operator should be quite certain that he has possessed himself of a foot, and not of a hand of the child; for it is quite possible to make such a mistake; as under the influence of uterine contraction, the sensibility of the hand may be destroyed. The foot, then, firmly grasped, must be drawn down along the anterior surface of the child, moving on very slowly, and only when the pain ceases. While the hand, within the uterus, is thus drawing the parts seized, down towards the os uteri, the other hand must be occupied externally, in steadying the uterus, and as far as possible in assisting to carry the head and shoulders up towards the fundus. The child does

not so easily turn as in the other case, but by maintaining a firm and passive hold, during the action of the uterus, and steadily using traction when it ceases, the desired evolution will be shortly effected. The foot is then brought into the vagina, and a noose slipped over the operator's hand, is to be fixed upon it. The case is now to be managed according to the principles already laid down.

In our third class, are included cases, in which the difficulties of performing the operation are in a very great degree increased, and the danger to the structures of the mother, and to the life of the child, are also in tenfold degree aggravated, as compared with the circumstances of those already considered. The vagina has become warmer, and less moist, than natural; it is somewhat painful when pressure is made, and its neighbouring muscles are more irritable: the os uteri is but slightly dilated,—it is dry, rigid, and its lips in some degree tumified; the membranes have been ruptured a long time, the pains are violent, and the tonic contraction so strong, as to powerfully encase (as it were) the child. The presenting part is wedged firmly, in the superior aperture of the pelvis. In such a condition of the organ, &c., it is evident that every remedy which has a tendency to lessen irritation, and soothe, and subdue, the morbid sympathies, already abundantly excited by the pressure of the child, and which must be increased, by the manual movements of the operator, is of the most vital importance to the female.

These cases of difficulty, and danger, are most commonly found in preternatural presentations, neglected in early stages; and are to be met with in consultation practice, but most frequently attendant upon that of females.

Notwithstanding the difficulties we have to contend with in these cases, I must at once declare, firmly, that delivery should be effected; but, in making this assertion, I would wish it to be understood, that the

operation must be undertaken, only, with a moral conviction, that it can be performed safely. I am no advocate for delay in these cases, beyond the period necessary to bring the organs, into such a condition, as to render, so far as is possible, the operation more safe and more easy. It is acting upon an erroneous principle to expect, by delay, that the uterus, worn out by its own powerful exertion, a state of quiescence will be induced in this organ, so that the operator can take advantage of it, and now pass the hand to accomplish his object. The uterus may rupture while sustaining the violent contractions, which are to atonize its fibres; the circulatory system of the child, must be so much compressed, by the violent and continued uterine action, as inevitably to destroy it.

Can we then, with such important facts before us, advocate a system of delay? Certainly not: but on the contrary, should endeavour by all possible means, to control these inordinate contractions, which are not alone simple, and natural, but are complicated with spasm. This object will be answered, by strictly attending to the three following indications:—First,—To render the os uteri dilatable. Secondly,—To suspend, or abate, uterine action. Thirdly,—To subdue the inflammatory and irritable condition of the first passages.

The first indication is answered by bleeding, and the exhibition of nauseating doses of tartar-emetic.—The second indication is fulfilled by the same remedies, combined with full doses of opium. And the objects required by the third, are also accomplished, in a great measure, by the same plans of treatment; but in addition, we must use, externally, anodyne fomentations, injections of thick linseed infusion, or large quantities of lard. The opium should be administered in a large dose, (from one drachm, to one and a half, of laudanum;) it should also be taken sometime before the operator passes the hand into the

uterus, not less than half an hour previous. If the intention is not fully answered, the dose must be repeated. It would be better to mix the laudanum in a little starch, in order to its being thrown up as a clyster, if the practitioner intends to give the tartar emetic: and if this be done, not less than from two to three drachms, with about four ounces of starch, should be used. If the patient is vigorous, from 12 to 20 ounces of blood may be drawn from the arm.—The patient should be raised in bed, and the orifice in the vein should be large, in order to obtain the full effects of bleeding, with an abstraction of blood, as small as may be. It is desirable that some degree of faintness should be induced. When the patient is strong, and plethoric, we must also give the tartar emetic, in solution, in doses of about one third of a grain, every half hour, until the desired effect is produced. Should the patient not be strong, this medicine may be tried alone, omitting the bleeding.

Dr. F. Ramsbotham strongly objects to the plan, of adopting measures which have such depressing influence, as those above mentioned: his objections extend to the use of tobacco, a remedy advocated by some, but which I have not ventured to recommend. He says, "If then, by such means as bleeding, opium, tobacco, or any other depressing, or narcotic agent, we bring the system into such a torpid state, as entirely to remove uterine contraction, we deprive the woman of that very power, which is to place her in safety after her delivery, and we prevent the closure of the uterine vessels, a patulous state of which must lead to fearful hæmorrhage. I contend, that if we deliver the patient, either while under syncope from bleeding, or stupefaction from opium or tobacco, we should be emptying the uterus, at a time when it could not exercise its contractile energies; we should consequently leave it in a flaccid state, and bring the patient into the greatest peril. Besides, I very much doubt the power of these means, in ensuring the end

proposed; for it is not only the occasional action of the uterus, which prevents the introduction of the hand, but the permanent contraction of its fibres, which is induced by, and consequent upon, that occasional action. When the difficulty merely arises from the violence of the labour pains, we may gradually insinuate the hand during the interval of action; but when a permanent decrease in the capacity of the uterine cavity, has taken place, through a continuance of that occasional, or intermitting action, constituting the throes of parturition, a state of tonic contraction is induced, which is constant and unyielding, and which it would be fruitless to endeavour to remove, either by bleeding, opiates, or any other antispasmodic power. Of all the means spoken of, bleeding, and fomentation, are perhaps the only ones, which I would be inclined to employ; and that not with the view of taking off uterine contraction, but of subduing inflammation, consequent on pressure."—*Medical Gazette, No.* 347.

It is evident, that this excellent practitioner has not fully tried the practice, he so strongly deprecates; although in another place, he says, "During eleven years, I have delivered more than 120 women, under transverse presentations," &c. "Many of these cases presented a formidable appearance, for in one, the membranes had been ruptured a whole week; another 69 hours; in a third, 58 hours; in another, 55; in another, 53; and in many, more than 48." &c. He did not administer opium;—"in those few where bleeding was practised, that operation was had recourse to, not for the purpose of relaxing the rigidity of the uterine fibre, but to relieve the inflammation, which the soft structures were suffering, and to remove tension." No injury succeeded.—"In four cases only, was the uterus so powerfully contracted, as to refuse admittance to the hand, and compel me to adopt the alternative, of eviscerating, or decapitating the fœtus."

The above statement of his practice, does not convince me, that any bad consequences would follow the use of the remedies before mentioned,—in reference to the effects of tobacco in these cases, I cannot give an opinion, not having tried it;—but must say, I should have more confidence in the other means.

The constitutional, and local energies of both the vascular, and nervous systems, are exalted to a high degree; there is not only regular, but irregular uterine contraction; and I would venture to enquire, whether a correspondēnt state of exhaustion, or of depression, follows the use of active remedies, applied in other cases, where the system is excited, as they do when no such disturbance exists? So far from the energy of the uterus being destroyed, so as to interfere with its natural power to contract, and thus to prevent flooding, I can most positively state, that I have never witnessed such an effect; but on the contrary, it is my opinion, that bleeding, and opium, properly administered, restore to a natural equilibrium, those energies, local and constitutional, which have been inordinately excited; and thus, consequently, lessening the chance of hour glass contraction, retention of the placenta, and flooding.

Great caution should be observed in the mode of introducing the hand, not only through the os uteri, but along the vaginal canal; it is also of great consequence, to attend to the length of the period, during which the hand remains introduced. When the hand has passed through the os uteri, it is to be carried on, along the anterior part of the child's body, to find the *foot*, which, when found, is to be seized and brought slowly down to the os uteri. I have never yet met with a case, where the liquor amnii has been evacuated for more than 24 hours, where the difficulty of turning was not increased, by a strong circular band of uterine muscular fibres, which embraced, closely and firmly, the lower part of the chest and the abdomen of the child, leaving the breech and the inferior extremities

in a kind of chamber at the fundus; the head, shoulder, and superior extremities, lying beneath, and the presenting part protruding through the os uteri, which is partially dilated. In accordance with the principles so frequently urged, it will be manifest that the evolution of the child, and the easy recession of the presentation, will be better accomplished, by not accumulating too great a bulk upon this part at the os uteri. If the evolution does not take place, after the lapse of a short time, it may be proper to fix a fillet upon the leg, and by it cautiously draw down with one hand, while a slight attempt is made to raise the shoulder with the other. When there appears a disposition in the shoulder to go up, one hand should be applied externally to the abdomen, in order to assist its rise, and regulate the change. The hand, during its course into and out of the uterus, must only move, when the pain is absent, and be placed flat upon the body of the child, so that no projections of the knuckles, or fingers, can injure the uterus, when this organ begins to contract. Great patience is to be exercised during this part of the operation; as, when the hand is first passed into the uterus, it has a tendency to excite contraction,—and, indeed, every movement of the hand in utero, has the same effect. So that in order to reach the *foot*, the hand must slowly advance, during the interval of pain, and rest when the pain recommences; and by steadily maintaining the ground successively obtained, it will at length safely arrive at its proper destination. We must exercise the same care, when we attempt to change the position by traction; it is only in the interval of the pains, that we ought to act:—the uterus would be ruptured by a contrary practice.

The cases supposed to constitute our fourth class, are those which have been neglected, and have been allowed to proceed too far, so that turning cannot be safely undertaken. The constitutional energies have sustained such an injurious impression, that now there

is a great want of agreement, between the power and action of the blood vessels. The pulse is very frequent, and compressible, the skin has lost some of the heat which is to be observed at an earlier period, in such cases; and is partially, or generally, covered with slightly clammy sweat. The countenance is suffused, and of a bluish hue, and has an anxious expression; the tongue is thickly coated with a whiteish brown fur; the voice is rather husky; pressure upon the abdomen gives pain; and sometimes there is slight muttering delirium. The os uteri is more or less dilated, and its lips are thick from infiltration;—it has, in greater or less degree, lost its original vital character to the finger, when applied to it; it communicates a feeling such as is produced by the edge of a circle, made through an inanimate body. The vagina is somewhat painful, and seems to have lost its natural elastic feel,—it is void of its mucus, but is moist from the fluids, which pass off from the uterus, and which are very fœtid: the presentation is firmly wedged in the pelvis.

The alternate contractions of the uterus, which occur at longer intervals, are much reduced in power, and differ in this respect, from the violent throes observed at an earlier period, in these cases; notwithstanding, the tonic contraction is of such degree, that the body of the child is very firmly embraced; the tonic contractile forces not being diminished in power, in the same ratio as those of the alternate contraction; these symptoms certainly assure us, that the soft passages have sustained such a degree of pressure, as to render it exceedingly questionable, whether the female may recover, even if delivered by art; and, therefore, it becomes important to decide upon that mode of practice, that operation, which will add in the least degree, to the evils already existing.—The period has been arrived at, when all attempts at the common operation of turning, must be unsuccessful, and all rational expectations dissipated, of the oc-

currence of the "*spontaneous evolution*," described by my much respected friend, Dr. Douglass:—and the important question then arises to the accoucheur, whether it will be proper to pass the hand into the wearied, and contused uterus, with the almost inevitable risk of laceration; or whether, imitating nature in her attempts to relieve such cases, he should not perforate, and eviscerate the chest and abdomen of the child; and fixing his blunt hook, or crotchet, on the fœtal pelvis, deliver his patient with as little further pressure on the soft parts, as is possible. Thus adopting an operation, which has for its base, an imitation of the spontaneous changes occasionally presented, and which has been so admirably described by Dr. Douglass.—(*Vide Essay.*)

On Inversion of the Uterus.

Inversion of the uterus differs in degree, and the terms partial and complete have been applied to characterize them. In partial inversion the fundus may be more or less depressed, from a slight dimpling, to a protrusion through the os uteri into the vagina, or through the os externum. Under this division the writer classes all cases where any portion of the cervix remains uninflected above the os uteri, however short the angle of inflection may be. In complete inversion the cervix is not inflected upon itself, or embraced by the os uteri; but this orifice is effaced, and the vagina is inverted to a greater or less extent, the fundus uteri projecting beyond the os externum very considerably.

Inversion has been denominated *active* or *passive*, more perhaps from the lapse of time, than from the particular condition of the organ. The writer suggests, for the consideration of the profession, whether the words *reducible* and *irreducible* are not more proper. This accident may be called *reducible*, however long it has existed, provided the practitioner can by any safe means accomplish its replacement; and *irreducible* when every effort has been made, but unsuccessfully. By adopting this nomenclature the practitioner is imperatively called upon to exercise fully the powers of his art, before he can classify the disease.

It is happily one of those misfortunes which does not so very often take place; although the writer is inclined to think much more frequently than is usually

admitted.* The reason of this concealment is clear, if it is considered what opinion is entertained of the practitioner who has been so unfortunate as to meet with such an event; there is no occurrence which throws more odium upon him, although generally very undeservedly. This feeling paralyzes the energies of the surgeon, and concealment is adopted to shield himself from this unjust imputation.

Most writers ascribe the accident to rude pulling at the funis, and to violence in removing the placenta. This opinion, as well as others connected with this subject, equally important, will be found to be erroneous, if published cases are carefully investigated. The nature of this accident is extremely alarming; the patient either dies suddenly if it is not replaced, or gradually sinks, after a life of protracted misery, by the irritation, and the profuse mucous, purulent, and sanguineous discharges which take place. The irreducible inverted uterus has been removed six times in the course of a few years in Great Britain; but the opinion of the writer is, that the operation of extirpation, sometimes fatal, always dangerous, and which does not in every instance relieve the patient from those discharges which induced her to submit to it, will become altogether unnecessary, if early, judicious, and persevering attempts be made to reduce the tumour. Great odium is deserved by the practitioner who allows a reducible inversion to pass on to the irreducible state.

The great fatality which occurred in the cases detailed by the early writers upon this subject, was doubtless owing to the obstetric practice being in the hands of ignorant females: the inverted organ was frequently mistaken for the head of a second child, or for some preternatural tumour which ought to be re-

---

* Dr. King is of the same opinion. Mr. Mackenzie found two or three instances in subjects brought into the dissecting-room. Mr. Windsor, Med. Chir. Trans. vol. ii. Doctor Ramsbotham, Practical Observations, Part I. page 137.

moved, and in consequence great mechanical violence was used, and the constitutional powers greatly exhausted before a surgeon was called upon. In the present day the result is, or ought to be, different; the tumour may be easily reduced, and the result is generally successful.

From the number of cases detailed, inferences, in a great measure correct, may be drawn of the nature of the causes which have produced it, and also of the circumstances which attend it. But notwithstanding the great advantages arising from this source, we find practitioners resting satisfied by merely repassing the tumour through the os externum into the vagina; by which the miseries already alluded to are entailed upon the unhappy patient, or her life is the forfeit, and the grave conceals his ignorance.*

Systematic writers in general adopt the opinion entertained by their predecessors of the circumstances which occur at the time of the inversion, more from respect to authority, than an accurate analysis of the cases which have been published. But in some material points of practice a great difference in opinion is to be found.

Case I.—Mr. Wood, my late partner and respected relative, was requested to visit a poor woman who was delivered by a midwife about two hours previously. He found the patient very much exhausted, with pallid countenance, and a cold surface. Upon a vaginal examination he found a large tumour, with the placenta attached, and which he at once recognized as the *uterus inverted.* There was *no hæmorrhage* or convulsion; the funis was of the ordinary length, and was not entwined round any part of the child. The midwife assured him that she had made no effort to remove the placenta, nor could she attribute the occurrence to any treatment she had adopted.

---

* See Case 24. Dr. Ramsbotham's Practical Observations. Glasgow Journal, vol. i. p. 171.

Mr. Wood detached the placenta, and then reduced the uterus, which he accomplished without any great difficulty. The patient went on well, and recovered without any further inconvenience, except that of a longer confinement.

Case II.—The writer is indebted for the following case to his respected friend Mr. Mann, a truly intelligent practitioner.

"The subject of this accident was Mrs. Birch of Great Bridgewater-street, a well formed, healthy young woman, and this was her third confinement. I was summoned to her on the 17th day of May, 1826, about three o'clock in the afternoon. I found her walking about the room, with the pains bearing down, and effective. In a short while after my arrival, whilst leaning forward on the bed, she was delivered of a fine healthy male child; from this position (as soon as the child was separated) she was removed carefully into the bed; in less than ten minutes she had a slight pain or two. My patient expressed some fears lest the placenta '*should stick*' but on my making an examination per vaginam, I distinctly felt the insertion of the funis into the placenta, and relieved my patient of her fears as to its being retained unduly. I had scarcely assured her all was likely to terminate well, when she was suddenly seized with a violent bearing down pain; and on making a further investigation I discovered, what I took for the instant to be the placenta pushed forward by a second child's head; but having recourse to ocular investigation, I was soon undeceived in this respect, and found the uterus inverted, which had passed externally from the vagina, with the placenta attached to it. I felt very much alarmed for the fate of my patient. I first peeled the placenta from the fundus uteri, and then grasping the extruded part with my hand, I did not find it very difficult to reintroduce it into the vagina, and carry it through the os uteri. I followed with my hand, or rather pushed it forwards, when I observed

it suddenly start from me as a piece of Indian rubber would. By a subsequent examination I found all the parts *in situ*. I was now called by the nurse to examine the state of my patient, which indeed was very alarming; her face became suddenly pale, and bedewed with cold sweat: her pulse was rapid and unsteady; there was great prostration of strength, and a threatening of convulsions and death. Brandy and laudanum were immediately administered in free doses; hot flannels and friction were applied to the extremities, &c.; but it was more than two hours before I could consider my patient safe. She afterwards did well, and has since borne children.

"The above is the only case which has ever occurred in my practice, and I would remark, *firstly*, that this inversion was entirely spontaneous, as I had not even taken hold of the funis at the time it happened. I mention this fact, because it was formerly considered that inversion was occasioned by pulling at the funis 'as you would at a bell-rope.' *Secondly*, as there was no hæmorrhage, and as the reinversion was effected in a few seconds, it was somewhat difficult, in my mind, to account for the sudden depression of the vital powers, amounting nearly to dissolution."

Case III.—Mrs. Capper, midwife, requested me to visit Mary Wilson, Mount-street, Knot Mill, who had been delivered forty-eight hours. I was informed her labour was propitious; that the placenta was naturally detached and expelled. There was no hæmorrhage afterwards, nor indeed any other symptom which required further assistance. She was induced to send for me at this time, because the patient had discovered something protruding from the os externum, and which she, upon a first examination, considered to be a coagulum contained within the membranes.—She applied a slight force, but it gave the patient great pain, and not succeeding in bringing it away, abstained from further violence. When I made a vaginal examination, I found a tumour of considerable

size passing partly through the os externum; it was hard and resistant; externally it felt flaky; it was broader below than above. It was with great difficulty I could reach the os uteri, which tightly embraced the upper part of the tumour. The lochial discharge was greater than usual, and more sanguineous.

Although the case was somewhat obscured by nothing having occurred immediately after the labour, yet I was convinced, from a very careful investigation, that it was one of partial inversion; I therefore determined to make every effort to replace it. My exertions were continued for two hours, and only given up on account of the pain produced, and the exhausted state of the poor woman. Further attempts I considered would be dangerous. From this time her health declined. Her first symptoms were those of peritoneal inflammation, retention of urine, &c. The antiphlogistic plan was adopted, as general and local bleeding, fomentations, turpentine lotion, febrifuge medicines, &c. When the inflammatory excitement was subdued, I again attempted to reduce the tumour, but was again unsuccessful. Her health declined. She now suffered from sanguineous, mucous, and purulent discharges from the vagina, which produced great debility, diarrhœa, apthous affections of the mouth, &c. These symptoms continued to harass her for six months, during which period I had in view the operation of extirpation as soon as circumstances would warrant its adoption. I frequently examined *per vaginam*, and found the uterus gradually lessen, until it acquired the size of a large pear. During the whole progress of the case the os uteri very tightly girt the neck of the tumour. The discharge was now more decidedly purulent. She now left town for about a month, and upon her return I again visited her. Her general health was improved; the vaginal discharge lessened, but still purulent. I made a vaginal examination, but could detect no tumour. I felt the remains of the os

uteri, but no regular aperture; the upper part of the vagina formed a complete cul de sac. I inquired if she had discovered any substance passing from the vagina; she said she had felt something pass away, but thought it was "a lump of blood." Her general health gradually improved, and she lived several years. She died of cholera; and I regret much I was not apprized of her death until some months afterwards.

The case is truly interesting; it shows what resources Nature has in her own power. It justifies the operation of extirpation, when, as in the present case, that period, so precious, has been passed by, when reduction can be effected. It may be thought that a spontaneous reinversion took place, as happened in the cases related by M. Delabarre and the justly celebrated Baudelocque.* The writer does not think it possible for this spontaneous change to occur, notwithstanding the ingenious explanation of M. Dailliez. †

The os uteri acted here as a ligature, and induced the process of ulcerative absorption, by which the part was separated. The writer made every justifiable attempt to reduce the part, but has since thought that something further should have been tried, as he has been lately consulted in a case which was reduced on the seventh day after labour.‡ But a material difference existed in the two cases; in the one the os uteri was atonic; in the subject of the present history, it was rigidly constricting the cervix; and in such cases an incision made on each side of the os uteri would, in the writer's opinion, add to the chance of reduction. Millot has advised this incision in cases more advanced.§ Nauche also advocates the same proce-

---

* Gardien Traité Complet D'Accouchemens, &c. Tome iii. p. 318, 19.

† Dissertation sur le Renversement.

‡ Vide Case VI.

§ Supplement a tous les Traités, &c. Tome ii. p. 262.

dure.* Would the tobacco enema aid us in our attempt at reduction?

Case IV.—I was requested by the late Mr. Dick to visit a patient who was in labour of her first child. The pains commenced at bed time the night before. The liq. amnii was discharged twelve hours before my visit, and I learned that the os uteri was then dilated to nearly the diameter of a crown piece. After the discharge of the water the pains became more feeble, especially when the patient was recumbent, but when she changed her position to walk or sit, they increased in power; on this account the patient was placed upon the lap of a female friend, and was delivered in this posture. After the child had freely cried, and the placento-fœtal pulsation had ceased, the funis was divided; it was of ordinary length, and did not encircle the neck. The patient was now put in bed, and I placed my hand upon the abdomen, and found the uterus hard, and rather larger than is usual. I now took the funis in the left hand, and gently stretched it, and passed the finger of the right into the vagina to examine for the placenta, but was not able to feel it. Whilst I made the inquiry, Mr. Dick placed his hand rather suddenly upon the belly, a strong forcing pain came on, and the woman exclaimed, "Oh! the after-birth is coming!" The placenta was now found to be rapidly advancing, and in a moment it passed through the os externum. I then discovered it was not the placenta alone, but this mass adherent to the uterus, constituting an extreme degree of partial inversion. The protrusion was sudden and forcible, and was attended by a bearing down effort. The tumour was about the size of a child's head, hard and firm, but smooth, being covered by the membranes. The placenta adhered to the fundus; little discharge took place, but the patient complained of being faint.

---

* Des Maladies propres aux Femmes, premiere Partie, p. 141. Boivin et Dugès Traltè Pratique des Maladies de l'Uterus.

I now detached the placenta, and easily accomplished it. I then compressed the uterus between the hands, and felt it to diminish in bulk. It was now passed through the os externum, and easily carried up, until the vagina was made tense. Resistance was now found to its further progress, but keeping a steady bearing upon it for some time, it gradually gave way, and persevering, it was passed through the os uteri. The hand was carried into the uterine cavity, and retained until contraction took place. The os uteri grasped the wrist, assuring me that regular action was in operation. The patient recovered without any interruption. She was desired to keep the recumbent position longer than is usual, and to pay great attention to the bowels.

In an attempt to reduce an extreme degree of partial inversion, it will be found that the tumour will freely pass through the os externum, and as only one hand can be admitted into the vagina, the chief compression should be effected whilst it lies externally. And as the upper part of the vagina descends along with the uterus, no real effect can be produced until it is made tense by carrying this organ upwards.—When it arrives at this point, resistance is met with, but by keeping a steady pressure upwards, the inflected portion of the cervix then yields, and it gradually recedes, followed by the hand of the operator, until the reduction is completed. If, instead of the plan now recommended, a forcible and quick attempt be made, the vagina may be separated from the uterus, and a fatal injury inflicted.

Case V.—Mrs. Jeal, midwife, desired me to visit Mrs. ———, Union-street, Ancoats, who was in labour of her fourth child. The labour was tedious, and when I made a vaginal examination, I discovered the cause of tediousness to be a contracted pelvis. I found the os uteri dilated, and the head of the child lying at the brim of the pelvis. I applied the long forceps, but not succeeding in bringing the head

down, I determined upon using the perforator and crotchet. The child delivered, I divided the funis: it was of the common length, and was not entwined round any part of the child. In about half an hour the poor woman said she had a "violent pain, and the after-birth was coming." As I was engaged with the instruments I desired Mrs. Jeal to ascertain whether this was the case. She was then absent from the bed, but at my request she went to make the examination, and immediately exclaimed, "there is another child, for the head is advancing." I made the necessary examination, and found a large globular tumour, hard and resistant, with the placenta attached nearly in the centre. This I at once discovered to be an inverted uterus. The fundus had partially passed through the os uteri. I introduced the hand into the vagina, and pushed the tumour upwards without much difficulty. The depending part of the tumour seemed to retire from my hand with considerable force. I then detached the placenta, which was not withdrawn until I was assured that the uterus would contract. There was no flooding, faintness, or convulsion, and the patient recovered without an untoward symptom.

Case VI.—(Communicated by a friend.) The subject of the present case was about 40 to 43 years of age. She has had a number of children. Her complexion is sallow, and habit leucophlegmatic. During the whole period of this, her last pregnancy, she suffered very much from irritation in the pelvic organs. Her bowels were almost always constipated. Complained of great weakness during the whole time she carried the child. When called to her in labour, I was told she had suffered grinding pains for several hours. As the pains increased, I proposed to make a vaginal examination. I found the os uteri dilated, and the head of the child low down in the pelvis.—The labour advanced, and in about four hours after my arrival, the child, which was living, was expelled. The funis was divided as soon as the respiratory func-

tion was established. It was of the ordinary length, and was not twisted round any part of the child's body. A discharge of blood now occurred, but it was considerably less than what happened in two of her former labours. Considerable uterine contraction now came on, and the placenta was therefore immediately removed, and the discharge greatly abated. When I made my evening visit I found she had great difficulty in voiding her urine; I therefore passed the catheter; and at the same time satisfied myself that the uterine tumour was to be felt above the pubes.—She was very low, and grew weaker for two or three days; and as the lochial discharge was greater than usual, I was induced to make an examination, and found a tumour low down in the vagina, and indeed protruding through the os externum. From the imperfect information I gained, I at first thought it was procidentia uteri. I attempted to return it, but did not succeed. I now proposed a consultation, but it was not acceded to until several days elapsed, when the pain was very great from the trials made to reduce it. An eminent surgeon was now consulted, and agreeing with me that the case was most serious, proposed having a third party brought into consultation. Agreeing that it was a case of inversion, we determined to attempt the reduction, and in about fifteen minutes it was happily accomplished. She has gone on very favourably ever since, presenting no threatening symptoms; only complaining of extreme weakness, and a slightly irritable bladder.

In the case above detailed, there was no effort made to remove the placenta by pulling the funis.

Cases are only valuable inasmuch as they illustrate practical points. Those above detailed prove that inversion is easily remediable by perseverance at the time of its occurrence, and also after the lapse of several days. This happy result, in connexion with others, I shall have to allude to, is much more encouraging to the practitioner than the opinion of Dr. Denman would lead him to anticipate.

This accident has been attributed to causes purely mechanical, the uterus being unresisting, and passively obedient to their influence. The practice of pulling too early and violently at the funis, after the expulsion of the child, before the uterus has contracted, so as to detach and expel the placenta, has been generally considered as the cause of inversion. But we know that the accident happens before any force has been applied to the funis.* In Case IV. the descent was so rapid and forcible through the pelvis and os externum, that it would have been quite impossible to resist the unnatural action by which the organ was carried down. † It has occurred, when the patient had been delivered of a dead child, the funis so putrid as to break with a very slight effort.‡ It has been found before the cord was separated, and the child given to the nurse.§ In the practice of Ruysch this circumstance took place after he had extracted a dead child, &c.‖ These circumstances show that there is a power inherent in the uterus to become inverted. The pulling of the funis is so common a practice amongst our midwives, and done without the least consideration of the condition of the uterus, that if it was so frequent a cause as is usually stated, inversion, instead of being one of the most rare, would be the most common accident in midwifery. Some writers have thought that a short funis is a frequent cause of inversion; whilst others think, in order to act, it must be inserted in the centre of the placenta, and that this mass must be attached to the fundus uteri.¶ Now it is evident, if brevity of the

---

* Vide cases already cited. Also Dr. Albers Duncan's Annals of Medicine, vol. v. p. 390. Mr. Dickenson's case, Med. Gazette, No. 372. Mr. Windsor, Med. Chir. Trans. vol. x. p. 359. Dr. Dewees' Cases, Essays on various Subjects connected with Midwifery.

† Vide Smith, Med. and Phys. Journal, vol. vi. p. 503.

‡ Brown, Memoirs of London Medical Society. vol. v. p. 292.

§ Welsh, Med and Phys. Journal, vol. v. p. 451.

‖ Observation, Anatom. Chirurg. Obs. x. p. 13. Translation, p, 34.

¶ Gardien.

cord is capable of producing so serious an accident, these peculiarities will greatly add to its influence.—But amongst the published cases of inversion there is, so far as the writer knows, but one where this shortness existed.* Inversion often occurs without diminished length in the cord; whilst, on the contrary, children are frequently born where it is very short, and yet no such event happens.† The funis has been ruptured,‡ and the placenta disrupted,§ and yet the uterus was not inverted.

In order that the causes which have been now alluded to, can operate effectually to produce inversion, there must be such condition of the uterus present, that it becomes tacitly obedient to their influence. Most systematic writers, as also others, have supposed such to be the case. They have said that the uterus, previous to inversion, is in a state of extreme relaxation, exhaustion, or collapse, and that it offers no resistance to any force applied by the funis.||—These opinions are at variance with that of the writer,¶ which is founded upon an analysis of the cases published and those detailed in this paper. The fundus came down with strong bearing pain, in some cases extremely violent. In Cases, Nos. II., IV., V., detailed in this paper, the protrusion was forcible,

---

* Dr. King's Case. Several coils of the funis were round the neck of the child, and it was also twisted round one arm. Glasgow Journal, vol. i. p. 17.

† The inquiries and deductions of the writer's respected friend, Dr. Churchill, are strong evidence of the truth of the above statement; and he is glad to have his opinions corroborated by so respectable a practitioner.

‡ Med. and Phys. Journal, vol. liv. p. 205. Giffard's Cases, Nos. 92, 127, 175, 194, 199. Perfect's Cases, Nos. 109, 132.

§ Ramsbotham, Practical Observations, Part I. Cases, Nos. 28, 31, 32, 33, 34.

|| Mr. Ingleby, Facts and Cases in Obstetric Med. p. 221. Dr. James' American edition of Burns, Note 104. Dr. C. M. Clarke, Observations p. 15. London Practice of Midwifery, p. 310: Dr. Jewell, Dr. Denman, Dr. Francis, Dr. Gooch, Dr. Aitken, Dr. Spence, &c. &c.

¶ Dr. Dewees' Essays.

and attended with a strong bearing down pain. In Dr. Cleghorn's case,* "the pains, so far from being alleviated by delivery, grew every moment more intense: those of the back, in particular, were so excruciating, and the throes, which the women call bearing pains, so violent, that the patient, worn out with fatigue and suffering, became alternately insensible and delirious." And in Mr. Brown's case, the pains are described as becoming "more excessive, with a degree of bearing down hardly to be conceived, and an actual inversion of the uterus took place."— Violent pain, bearing down, and forcible protrusion, are not characteristic of relaxation or collapse of the uterus, but are here, as before the expulsion of the child, the consequence of contraction. Other circumstances show that the uterus is not in a state of relaxation. Such is its distention previous to labour, that great contraction must take place to enable the inverted fundus to pass down through the pelvis and os externum. The fundus and body must at least be so contracted as to represent a body not larger than the size of a child's head, as we know that there is such an exact relation between the pelvis and the fœtal head. The tumour has frequently been mistaken for the head of a second child,† and in some instances severely used before the error has been discovered;‡ in others it has been compared in size to it.§ A tumour which can be mistaken for a child's head, must have similar tangible properties, as firmness, hardness,

---

* Medical Commentaries, vol. ii. p. 226. Brown, Memoirs of London Medical Society, vol. v. p. 202. C. White's Treatise, p. 431. Smith, Med. and Phys. Journal, vol. vi. p. 502. White, Med. Comment. vol. xx. p. 248. Hamilton, Med. Comment. vol. xvi. p. 316.

† Cases II. and V.

‡ Bartholin. Note in Burn's System of Midwifery. Ruysch. Dr. Hamilton, Med. Commentaries, vol. 16. Cawley, London Med. Journal, vol. vi. p. 366.

§ Mr. Dickenson's Case, Medical Gazette, No. 372, p. 351. Dr. King, Glasgow Journal, vol. i. p. 172.

&c. It has been described as of the size of a fist,* of a large pear ;† it has been compared to a printer's ball ;‡ it has been found between the thighs of the patient of the size of a foot-ball ;§ compared in size and shape to the indentation at the bottom of a blacking bottle ;‖ and in one case after death it was found resembling "a cup with a number of plicæ or folds round it, and was so strongly contracted, as to require the utmost efforts of myself and son, &c. to reduce it, &c."¶ Mr. Ingleby says, "The vagina was filled by a very bulky round tumour, &c., and resembled a very large sized polypus.** Dr. Ramsbotham says, "the inverted uterus, which had now become flaccid, during life it had been firm and resistant."††

It appears to the writer that the uterine pain, diminution of bulk, firm, resisting feel, sudden formation, and rapid protrusion, warrant him in the deduction, that the *fundus* and *body* of the uterus, so far from being in a state of *collapse* or *relaxation*, are really in a state of *unnatural excitement and action.* But this is not the case with the os uteri ; on the contrary, it is soft and yielding, as we find that it offers no resistance to the coming down of the tumour, whose protrusion is forcible and rapid. If these statements be true, it is evident that the fundus and os uteri are in directly opposite conditions ; the former is in a state of violent contraction, the latter in a state of relaxation ; and that this relative difference in these two parts of the organ is indispensably necessary to exist where inversion occurs. Dr. Douglass has en-

---

* Lamotte, Treatise, p. 497. Obs. 384.

† Dr. Hunter, Annals of Medicine, vol. iv. p. 367.

‡ White, Med. Comment. vol. xx. p. 247.

§ Smellie's Cases; Collect. 44, Case 4, p. 445.

‖ Dr. Dewees' Essays, &c. Case 1.

¶ Dr. Merriman's Synopsis, Appendix, Case 3.

** Facts and Cases, p. 227.

†† Practical Observations, Case 24.

deavoured to prove that the structure and economy of the fundus and body of the uterus are different from that of the cervix.*

In natural labour the escape of the liquor amnii is succeeded by a permanent and general contraction of the uterus upon the child, increased as the several parts of its body are expelled. Now the fundus and body act powerfully, whilst the os uteri is completely overcome and obliterated. But when the child is expelled, this opening is diminished by the lips becoming again apparent, and which are to be felt soft and projecting. This change is also shewn in twin labours, for however soon the second child succeeds to the first, the uterine orifice offers a slight resistance; and in the expulsion of the placenta, as it passes through this opening, slight uneasiness, pain, and bearing down, are the result. But sometimes the regular and uniform contraction does not take place, from causes obscure; and many inconveniences follow.† There are several varieties of irregular uterine contraction, and in all, some part of the organ must be in a state of weakened action, whilst another is in a highly excited condition. It is not essential to inquire here which of these two states lays the foundation of the mischief. The uterus is divided, in hour-glass contraction, into two compartments: in the upper the placenta is uniformly found. A contraction sometimes takes place in the body and cervix, leaving a chamber at the fundus, in which also the placenta is always found. There again occurs a contraction in the os uteri, with deficient action in the body and fundus. This condition leads to a retention of the placenta, and in some instances it takes place after the placenta has been removed, giving rise to internal flooding. There are states of the uterus where some portion or portions contract with greater force

---

* Medical Transactions, vol. vi. p. 379.

† Dr. Douglass, Med. Trans. vol. vi.

than the rest. Now it appears to the writer that inversion is another instance of irregular contraction, in which the fundus contracts powerfully, whilst the cervix and os uteri are in a state of atony. It is obvious that if the fundus and body continued their action after the expulsion of the child, before the cervix and os uteri have regained their proper powers, that an inversion must take place. We find this exemplified in other organs; the power of expulsion is increased in proportion to the relaxation of their sphincters. Certain states of the bladder and of the rectum are examples. In natural labour the principle is well illustrated: and in the management of many cases of protraction, our treatment is particularly directed to the object of relaxing the orifice, and thereby increasing the energy of the other part of the uterus.

If the writer is not mistaken, the case related by his respected friend, Mr. Ingleby of Birmingham, is a further evidence of the view he has taken as to the excited state of some particular parts of the uterus when it becomes inverted; and although his inference differs from that of this highly respectable practitioner, yet he will, without further apology, transcribe the case.

"I was compelled, in conjunction with another practitioner, to apply the forceps under the disadvantage of uterine inertia; after the delivery of the child, there was no tendency to expel the placenta, but a portion of the mass having separated, a slight effort was made by the funis. The placenta descended considerably beyond the os internum, together with a quantity of the uterus, apparently the whole of its right side, the left not being sensibly depressed.—Flooding ensued. At the moment we were rather perplexed; but the nature of the displacement became evident, and the inverted part was immediately returned, together with the placenta. The adherent portion of the mass was then separated without delay,

and the case treated in the usual manner."* Again, the way in which the fundus retired from the hand in Cases II. and V., and also in those related by Dr. Merriman,† are further illustration.

In labour, if it is to proceed regularly, a just balance must exist between the several parts of the uterus; and anything which irritates the fundus or os uteri, during the process, to produce violent action or rapid dilatation, are causes of irregular contraction.

In the cases of inversion which have been detailed, we find numerous sources of irritation mentioned, which are equal to the production of irregular contraction. Hastening the labour ;‡ artificial rupture of the membranes ;§ delivery of the patient in a sitting position ;‖ rapid labour ;¶ mental alarm and agitation ;** hasty extraction of the placenta ;†† erect position during delivery ;‡‡ leaning forwards over the bed during labour ;§§ premature giving way of the membranes ;‖‖ tedious labour ;¶¶ pulling at the funis ;*** to these causes many more might be added, but these are sufficient to shew that great mismanagement has existed. They are causes which are capable of hastening or interrupting the parturient process. Many of them are put in force to increase the power of the pains during labour; they have a direct tendency to

---

* Facts and Cases in Obstetric Medicine, p. 222.

† Synopsis, Appendix, No. 30, Cases 1, 2, 3.

‡ Loffler, Medical and Physical Journal, vol. 11th p. 207.

§ Welsh, Do. Do. vol. v. p. 450.

‖ Charles White's Treatise, &c. p, 429, also Case IV. of this paper.

¶ Dr. Albers' Annals of Medicine, vol. v. p. 391, Dr. Ramsbotham's Case, Dr. Dewees' Cases. 1, 3.

** Smith, Medical and Physical Journal, vol. vi. p. 503.

†† Dr. Hamilton, Medical Commun. vol. xvi. p. 616. Lamotte.

‡‡ Dr. Cleghorn, Med. Commun. vol. ii.

§§ Case II. ‖‖ Dr. Dewees' 2nd. Dr. King.

¶¶ Cases IV. and V. of this paper; Dr. Belcombe; Dr. Perfect's Cases, 71 and 72. *** Most systematic writers.

effect a too rapid, premature, and forcible dilatation of the os uteri, and not a less tendency to produce spasmodic and irregular contraction in the womb.

The rapid extraction of the child's body after the head is expelled, is a practice fraught with evil, it is one which the writer has witnessed frequently, notwithstanding the strong language used upon this subject, and the able exposition given, by our late highly gifted townsman, Mr. Charles White. The temporary cessation of the expulsive efforts after the extrication of the head, is of the utmost importance to the female; and the abrupt removal of the stimulus of distention given to the os uteri, by the shoulders and body of the child, leaves the organ without excitement before it has recovered its power of contraction. Fainting and hæmorrhage frequently occur in consequence of the hasty extraction of the child's body, and result from the sudden removal of uterine and abdominal distention.

From what has been stated, it may be concluded, that quick labour, whether natural or artificial, a disturbance of this process in any of its stages, or any of those circumstances which produce irregular contraction of the uterus, are singly, or combined, the causes of inversion.

The opinions of writers and teachers are so discrepant upon the practice which ought to be adopted in cases of inversion, where the placenta still adheres to the uterus, that it appears important to the writer to inquire into their validity. When we find modern writers of the highest authority ranking hæmorrhage in these cases,* as always dangerous, and sometimes

---

* Waller's Edition of Denman; Francis' American Ed: Burns 8th Ed: and also James' American Ed: Ramsbotham, Practical Observations. Newnham's Essay. Ingleby, Obstetric Medicine. Gardien Traitè Complet D'Accouchemens, &c. tome iii. p. 309. Boivin and Dugès Traitè pratique des Maladies de l'Uterus, &c. tome i. p. 289; and also Heming's Trans. p. 119. Sir C. M. Clarke, Observations on those Diseases of Females, &c. p. 151.

fatal, we ought to have strong grounds before we contradict those statements: but authority, however eminent, ought, and must yield to that opinion which is founded upon facts. The frequent absence of hæmorrhage in this accident is a truth so certain, that the writer is astonished that any practice should have been based upon the idea of the universality of its occurrence: he alludes to the practice of not detaching the placenta, before re-version of the uterus is effected. In speaking of the absence of hæmorrhage, the writer wishes it to be understood, that he alludes only to those cases which have been well managed. It would be folly to deny that bleeding may be produced in inversion, as in other cases, by injudicious treatment. The tumour in this accident has been mistaken, and the placenta brought away in part, leaving a portion attached to the fundus;* the uterus has been forcibly pulled at,† lacerated,‡ cut into,§ and even torn away with the crotchet.‖ In such cases it is no wonder that hæmorrhage is a prominent feature.

When considerable flooding occurs during labour, it always depends upon a partial or complete separation of the placenta; but in inversion we find, generally, that the placenta is adherent. There are exceptions to this found in the published cases, but some of these are not to be depended upon.

In all cases hæmorrhage is more violent, when the placenta is partially detached, than when it is completely separated; and nothing increases it so much as partially detaching, and breaking into the structure of this organ. The placenta, whilst adherent to the uterus, is in free vascular communication with it, and if a partial separation and disruption be effected,

---

* Brown, Annals of Med. vol ii. p. 278. Ingleby, Facts and Cases in Obst. Medicine, Case p. 228.

† Cawley, London and Med. Journal, vol. vi. p. 278. Hamilton, Med. Comment. vol. xvi. p. 317. Cleghorn, Case, Med. Comment. vol. ii. p. 229.

‡ Bartholinus, Burns' Note, 8th Ed. p. 522.

§ Ruysch, Obs. 26. ‖ Journal de Med. Burns' Note, p. 521.

bleeding mouths are exposed. But if the placenta be completely detached from the uterus, this organ contracts as under ordinary circumstances, and the bleeding ceases. The validity of this opinion is shown on reference to those cases where the placenta was removed previously to re-verting the uterus. In many cases in which hæmorrhage is stated to have occurred, there is great reason to suspect that the reports have been exaggerated from alarm; and in many of these cases the accounts are second-hand. After natural labour there is a greater or less lochial discharge, some part of which may be concealed from observation, remaining in the cavity of the uterus; but in inversion it is otherwise, for the whole of the discharge must pass externally. In five of the cases connected with this paper no hæmorrhage took place, and in the sixth, after the birth of the child, "a discharge of blood now occurred, but it was considerably less than what happened in two of her former labours." In numerous cases on record the sanguineous discharge is stated, most distinctly, to have been trifling.* In others hæmorrhage is not even alluded to as an immediate effect; a strong presumption, that an occurrence which always claims the active energies of the practitioner, could not have existed.† We find in Dr. Hamilton's observations on this case, that he decidedly states that hæmorrhage did not take place, and also that he had seen five cases in which this symptom was altogether absent.‡

As corroborative of the writer's view, it may be

---

* Brown, Annals of Med. vol ii. p. 278. Brown, Memoir of Med. Soc. vol. v. p. 203. White, Med. Comment. vol. ii. p. 268. Dr. Albers, Annals of Medicine, vol. v. p. 392. Chapman, Treatise, p. 123. Welsh, Med. and Phys. Journal, vol. v. p. 451. Smith, Ditto, vol. vi. p. 504. Loffler, Ditto, vol. xi. p. 208. Harvie, Pract. Directions, p. 21.

† Cawley, London Med. Journal, vol. vi. p. 367. Mauriceau, tome ii. p. 559. Lamotte, p. 496. Smellie, Case 3rd, Coll. 11. White, Two Cases, p. 435 and 436. Treatise, &c. Edit. 5.

‡ Med. Comment. vol. xvi. p. 316.

well to state, that in many of those instances, in which it is mentioned that hæmorrhage was present, there is the strongest ground to infer that it was not alarming,* although in some cases, rude treatment of the uterus or placenta had been adopted. In the case related by Mr. C. White, the discharge could not be serious, as the obstetrician, after separating the placenta, and making an attempt to reduce the uterus, left the patient, to wait upon that celebrated practitioner, who did not see the case for an hour afterwards.†

Dr. Davis, in his additional statement to Mr. Newnham's case, mentions that the hæmorrhage was more than ordinary, and that it was observed "to gush out from the passage with much force, and as if the source of it had been much nearer to the outlet, than what is common on such occasions. The manner of its escape resembled the spurting from the vessels of a stump during the relaxation of the tourniquet, in the operation of amputation." From this quotation, we might infer, that the discharge was both copious and rapid, but we are further told, that "about a pint of blood was lost, *perhaps something more.*"‡ Now, every obstetrician knows that this quantity is often lost in common labour.

Hæmorrhage rarely occurs as a primary symptom, but if published cases are consulted, it will be found to happen accidentally, or in consequence of injudicious treatment and violence. In the cases related by early writers on midwifery, we find it stated that the accident was frequently fatal, but at that period the practice was in the hands of ignorant midwives. In the present day a different result takes place.

It has been stated by authors that convulsions frequently occur in this accident, but the cases detailed

---

* Hunter, Annals of Med. vol. iv, Dyson, Mem. Med. Society, vol. vi. Clarke, Edin. Med. and Surg. Jour. vol. ii.

† Treatise, &c. p. 431. ‡ Newnham's Essays, p. 35.

by the writer warrant him in concluding differently. It was long thought that wounds of the uterus were assuredly mortal, and that they were always accompanied by convulsions. This opinion gave rise to the impression, that accidents, or derangements of this organ, would be attended by this formidable symptom. But greater experience has proved that convulsions are not essentially an accompaniment of wounds of the uterus.* The same unerring guide teaches us that convulsion rarely occurs in inversion, unless the womb has sustained some serious injury from violence, and the same result would frequently be produced from injury of organs less important than this, if the same mischief was inflicted. Those convulsive agitations which are precursory of dissolution, are not the same as the convulsions referred to in the above remarks.

It has frequently happened that death has suddenly taken place, when neither hæmorrhage nor convulsion existed. The event is to be ascribed to that dreadful state of syncope which so generally attends this accident.† This most constant symptom depends upon the strong sympathy existing between the nervous and uterine system; and upon the deficient supply of blood to the brain, and other important organs, in consequence of accumulation in the vascular system of the abdomen, produced by the sudden removal of that pressure which all the abdominal viscera had previously received. The pulse is quick and feeble, in consequence of these sudden changes, and it is worthy of remark, that it acquires power as soon as the uterus is reduced.‡

In this accident, the patient's appearance is such, as to lead to the conclusion that she must have lost a large quantity of blood; when, in reality, the quick feeble pulse and deliquium, arise from the shock sustained by the nervous and vascular systems, in con-

---

* See Hull on the Cæsarean Operation.

† Vide authors already quoted. ‡ White, Treatise, p. 133.

sequence of the displacement of so important a viscus, which, a short period before, contained the child, placenta, and liquor amnii, and occupied so large a proportion of the abdominal cavity. Some delicate females do not bear the changes which occur in natural labour, without suffering from the effects of syncope.* Practical obstetricians are so well acquainted with this circumstance, that position and a regulating bandage are constantly adopted to guard against such a result. Mr. White urged the necessity of not accelerating the passage of the shoulders,† and Dr. Osborne advised the practice of retarding the exit of the head in order to prevent these consequences. In ascites, the withdrawal of the water without regard to position, and abdominal support, may induce a fatal syncope.

Although the fainting which happens in inversion is of so serious a nature, yet it is a great satisfaction to know, that if it does not soon prove fatal, there is not much occasion to apprehend danger from its future occurrence. When the first shock of this accident is overcome, and the equilibrium of the circulation restored, other dangers then threaten the unfortunate patient.

When the uterus is inverted, only in a slight degree, the reduction may be accomplished with great ease, and the attempt should be made as soon as it is discovered. As the fundus uteri has not, or only slightly passed through the os, the placenta cannot wholely protrude through this orifice, and, consequently the fundus should be returned before the placenta is separated.‡ For if an attempt were made to detach the placenta, the operation must be slow, uncertain, and incomplete, and the danger of hæmorrhage incurred, or a greater degree of inversion produced. When the hand is introduced through the os uteri, the fingers

---

* Ramsbotham, Prac. Obs. part 1, p. 206. Dr. Davis, Obstetric Medicine.

† Treatise, &c. p. 364.

‡ See Case 5th of this paper.

should be slightly bent, so as to form a kind of crutch, to carry up the fundus, which sometimes rapidly springs up.* The placenta is now to be separated, and the hand retained until the uterus contracts. In the higher degrees of inversion, the uterus in general remains only a short time unaffected. The os, irritated by the body protruding through it, begins to contract, and soon closely embraces it, and becomes ere long rigid and unyielding.† The fundus soon tumifies in consequence of its circulation being interrupted, by the constricting os uteri, and likewise from the unfavourable position in which it lies:‡ it is not long before this part becomes tender and inflamed.§

The os uteri is more or less irritable in different individuals, and consequently does not always become an obstacle to reduction equally, and at the same time.‖

In cases where the accident increases in degree after a certain time has elapsed; or where it becomes irreducible, the patient suffering but little pain, which occasionally happens; the os uteri will be found comparatively soft, and not constricting the body in an equal degree. But when the fundus enlarges and inflames soon after the occurrence, then the os uteri is found rigid, and firmly embracing the part.

It is of great practical importance to know that the fundus is so frequently found enlarged, and that the os uteri soon contracts and acquires a rigid character. In one or two hours these changes may have taken place. Dr. Denman was unable to reduce the organ

---

* Cases 2nd and 5th of this paper. Merriman, Cases 1st, 2nd. No. 30, Appendix.

† See Case 3rd. White, Med. Comment. p. 250. Dr. Denman, Introd. Waller's Ed., p. 420. Dr. Hamilton, Med. Comment. vol. xvi. p. 318.

‡ Mauriceau, Obs. Heister, vol. x. p. 1087. Newnham's Essay. Peu, Pratique des Accouchemens, p. 421. Ruysch, Obs. 10. C. White, Treatise, p. 432.

§ Case 3rd.

‖ Cases 3rd and 6th, Ingleby's Tracts and Cases, &c. pp. 226, 227. Dickenson, Med. Gazette, No. 372. Dr. Belcombe, Ditto, vol. vii. p. 783.

after the lapse of four hours.* When the os uteri is found soft and yielding, it is in a state favourable for the operation of re-inverting the fundus;† but if it is rigid, and girds the body firmly, the fundus being enlarged and tender, then the reduction will always be difficult if not impossible.‡

In the treatment of this accident, the great object to be constantly kept in view, is to attempt the reinversion as soon as possible after the occurrence.—But in general the placenta adheres to the inverted organ, and the question is, whether it should be separated or not, before, or after the reduction. It is an important point to settle, especially as there is such a difference of opinion upon the subject. Dr. Denman leaves too much to the judgment of the young practitioner. Dr. Burns advises the fundus to be returned, with the placenta adhering. Dr. Merriman says, "in a case of this kind, which occurred in my practice, the placenta was removed without prejudice, but I think I should not, in future, remove the attached placenta, till after the uterus was restored to its right position."§ But why? The dread of hæmorrhage is the reason assigned, why the placenta should not be first detached, but the writer trusts, that the cases he has adduced, and the references he has made, are sufficient evidence to the contrary. In no case has this dreaded effect been induced, or even aggravated by a *complete* separation of the placenta. The uterine vessels are as effectually constricted under this accident as when the organ is in its natural situation, if the placenta be entirely detached; and flooding is produced here, in the same manner as in ordinary cases, by a partial separation or disruption. As the greatest disadvantages arise from failing in our first attempt, it is the more necessary that every impediment should be removed, so that we can proceed with

---

* Introduction, &c. Waller's Ed. p. 420. † Case 6th.

‡ Case 3rd. § Synopsis, p. 151.

the greatest chance of success. By delay the organ becomes less fit to bear the operation, not only from the increased size of the fundus, and the contraction of the os, but also from the increased sensibility, and irritability, which it has acquired, even previously to its becoming actually inflamed.* The attached placenta must increase the obstacle, because the fundus cannot be so freely and sufficiently compressed. The result of free manipulation would be partial detachment and disruption, and consequent flooding.

By detaching the placenta great advantages are gained; the bulk of the part is diminished, the operator is enabled further to reduce the size of the fundus itself by compression; and he has more freedom to judge of the changes he has effected. If these advantages are denied and the plan be objected to, what method must be adopted, in case we should fail in our endeavours to reduce the uterus whilst the placenta still adheres to it? Surely no obstetrician would, in such a case, think of leaving his patient in that state, until the placenta was detached by the efforts of nature.

But if he then determined to remove this mass, he would have to run the risk of this dreaded hæmorrhage, not lessened by his interference.—When the placenta is detached, our next object should be, to attempt the reduction of the general bulk of the tumour by compressing it,† We are indebted to Mr. C. White for this method. The plan recommended by some writers,‡ to push the fundus directly upwards should not be adopted. There are strong reasons to think that the fundus is, after the os uteri, the most irritable part of the organ. When the accident has existed a short time, pressure upon this portion induces pain, bearing down, and hæmorrhage, but the body may be taken hold of and compressed.§ If we

---

* See Case 3rd. Hunter, White, Windsor. † See Case 4th.

‡ Burns. § Hunter's Annals of Med. vol. iv. p. 208.

could press the fundus upwards, and thereby dimple it within itself, we should find ourselves opposed by a double inflexion, for the body would be grasped by the os uteri, and the fundus would be within the body. It is obvious that our force should be directed so as to act upon the angle of inflexion, or where it turns into itself. The plan to be further adopted is stated in the cases related in this paper. Every means should be used to insure the full contraction of the uterus after reduction, and writers dwell upon this point because a second accident has happened.

Dr. Denman's want of success, in not having been able to re-invert the uterus, after it had been down four hours, has tended to paralyze the energies of the obstetrician when called to cases at a late period. If the immediate effects of the shock sustained in this accident are overcome, and the organ remains unreduced, either from inability or want of determination on the part of the practitioner, a number of inconveniences and dangers are to be expected. On account of the dependent position of the tumour. bandages and supports are always required, and the active exertions of the patient are greatly impeded.— The tumour falls down upon the slightest straining, and influences the functions of the adjacent organs. The uterus itself is liable to inflammation, ulceration, and gangrene, life is miserable, and the patient, sooner or later, falls a sacrifice to the muco-purulent and sanguineous discharges.

These circumstances, with others, relating to the married state, demand and justify the removal of the uterus when irreducible. But it is the opinion of the writer, that this operation, as before stated, will not be often required, if a proper view is taken of the circumstances which impede the reduction. The energies of the obstetrician should not give way, if unsuccessful in his first trial, but he should repeat the attempt. When the inflammatory symptoms come on, they are to be combated by active remedies, and when

subdued further exertions should be made to re-invert the organ.* In some of the cases which are detailed in periodicals, we find no attempt made after the first has failed. The inverted womb has, however, been re-inverted after a considerable length of time,—of six or seven hours,† of seventeen hours,‡ of twenty-four hours,§ of three days,‖ of twenty-seven hours,¶ of seven days,** of eight days,†† and in one case after it had existed twelve weeks.‡‡

---

* See Case 3rd. † Loffler's Case. ‡ White's Case.
§ Mr. Wynter's Case. ‖ Mr. Cawley's Case. ¶ Mr. Dickenson's Case.
** Case 6th. †† Mr. Ingleby's Case. ‡‡ Dr. Belcombe's Case.

(Extracted from the 34th and 35th Nos. of the Dublin Journal of Medical Science, 1837.)

Since the foregoing paper was first published, my talented friend, Dr. Churchill, has given to the profession, "Outlines of the Principal Diseases of Females," in which will be found a very valuable chapter on Inversion of the Uterus.

RECORD OF TREATMENT, EXTRACTION, REPAIR, etc.

Pressmark:

Binding Ref No: MED 98/13

Microfilm No:

Date	Particulars
27-7-99	Chemical Treatment
	Fumigation
	Deacidification ✓ AQUEOUS
	Lamination ✓
	Solvents
	Leather Treatment
	Adhesives
	Remarks