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PRACTICAL MEDICINE.

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MASSACHUSETTS MEDICAL SOCIETY,

FOR THE USE OF ITS FELLOWS.

VOL. XXIII.

CONTAINING

PLACENTA PRÆVIA; ITS HISTORY AND TREATMENT.

BY

WILLIAM READ, M.D.

PHILADELPHIA :

J. B. LIPPINCOTT & CO.

1861.

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WILLIAM READ, M.D.

THE LIPPINCOTT COMPANY

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1861

PLACENTA PRÆVIA;

2.

ITS

HISTORY AND TREATMENT.

BY

WILLIAM READ, M.D.,

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PHILADELPHIA :

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1861.

"Cette continuelle experience me persuade qu'il n'y a aucune regle générale, et absolument certaine dans les accouchements, et qu'un accoucheur doit toujours être entre la crainte, et l'esperance jusqu'a l'accomplishment de son ouvrage."—
LAMOTTE.

"The practitioner of midwifery must, in order to do justice to his patients and obtain credit for himself, direct his mind to the *pros* and *cons* of every individual case, and apply the rules of practice (in which he ought, without excuse, to be well grounded) with such modifications as will meet the peculiar circumstances in which he may be placed in any and every case of unusual difficulty or danger."—
COPEMAN.

"A careful practitioner will watch for the moment beyond which he thinks it unsafe to wait, and will perform his duty by not delaying his operation till it is too late."—MERRIMAN, *manuscript note to Harvey's Lectures*.

P R E F A C E.

IN view of the treatises on Placenta Prævia already published, a doubt may arise in the minds of some, whether another is needed.

To this objection the author would reply, that the work was begun for his own information, at a time when there was more doubt upon many points relating to this subject than at present. As the investigation proceeded, and materials accumulated, it was found that, although the labors of Prof. Simpson, Dr. Trask, and Dr. Barnes had thrown much light upon Placenta Prævia, there were, nevertheless, many questions upon which there might be a great difference of opinion.

If it shall be adjudged a worthy addition to the obstetric literature of the present day, and the mode of presenting the author's views meet the approbation of the profession, he will have been more than repaid for whatever labor and toil has been bestowed upon it.

Desirous of avoiding the errors which arise from vague reports of cases, and believing also that the reader has a right to verify, if he choose, every quotation taken from any author or source, it was determined at the outset to make use of no cases, and to quote no opinions at second hand, or through intermediate channels of communication, and to point out the source of every fact or statement quoted. How far the author has adhered to this, the copious notes and references will show,

and he sincerely hopes that by so doing, he has avoided the admixture of facts and opinions which so often render reports unreliable, and leading to erroneous conclusions.

To those of his friends who, by their aid and assistance in accumulating materials, and in various ways expediting the progress of the work, have laid him under deep obligation, the author would take this opportunity of tendering his most profound acknowledgments and thanks.

ERRATA.

Page 68, 6th line from the bottom, after "have" supply "in."

" 70, 6th line from the top, for "vessels" read "vessel."

" 71, 9th line from the top, for "corelative" read "correlative."

" 71, 15th line from the bottom, for "anastmoses" read "anastomoses."

" 77, 13th line from the top, for "developments" read "development."

" 77, 17th line from the top, for "alterations" read "alteration."

" 77, 17th line from the top, for "tha" read "the."

" 80, 18th line from the top, for "be" read "being."

" 83, 8th line from the top, supply "its" before "organization."

" 84, Note at the bottom. The second case quoted, should be transferred to the note at the bottom of page 74.

" 107, 19th line from the top, for "dilation" read "dilatation."

" 112, 5th line from the bottom, for "557" read "555."

" 112, 8th line from the bottom, for "contain" read "contains."

" 130, 3d line from the top, for " $4\frac{1}{2}$ " read " $5\frac{1}{2}$."

" 132, 2d line from the bottom, insert "51b." between "51-58."

" 132, 2d line from the bottom, for "7" read "8."

" 176, Table V., No. 264, for "New Bedford News" read "New Bedford, Mass."

ERRATA

- Page 68, 6th line from the bottom, after "have" supply "in."
 " 70, 6th line from the top for "vessels" read "vessel."
 " 71, 9th line from the top, for "containing" read "containing."
 " 71, 18th line from the bottom, for "anatomical" read "anatomical."
 " 77, 18th line from the top, for "development" read "development."
 " 77, 17th line from the top, for "distention" read "distention."
 " 77, 17th line from the top, for "the" read "the."
 " 80, 18th line from the top, for "be" read "being."
 " 83, 8th line from the top, supply "the" before "organization."
 " 84, Note at the bottom. The second case quoted should be transferred to the note at the bottom of page 74.
 " 107, 19th line from the top, for "distillation" read "distillation."
 " 112, 5th line from the bottom, for "657" read "655."
 " 113, 8th line from the bottom, for "contains" read "contains."
 " 120, 3d line from the top, for "41" read "41."
 " 122, 2d line from the bottom, insert "51b" between "61-58."
 " 123, 2d line from the bottom, for "7" read "8."
 " 126, Table V, No. 284 for "New Bedford News" read "New Bedford, Mass."

PLACENTA PRÆVIA;

ITS HISTORY AND TREATMENT.

INTRODUCTORY.

AMONG all the causes which make labor difficult and dangerous, none are so much to be dreaded as PLACENTA PRÆVIA.

"There are none more perilous," says Lamotte,¹ "than that in which the after-birth presents itself before the child." "Hemorrhage," says Deleurye,² "is a fearful occurrence to a woman in labor; it may be slight or considerable, dependent upon the partial or total separation of the placenta during convulsions, with which the mother has been attacked, or from the attachment of the placenta upon the os." Conquest³ says, that "hemorrhage from this cause, places the woman in most imminent danger." Maunsell⁴ remarks, "a severe and dangerous flooding *must* take place, calling for the promptest assistance from art." Denman⁵ considers it to be "attended with the greatest danger." The elder Rigby⁶ opens his admirable essay by stating that "no circumstance that attends parturition, exposes women to so much danger, as profuse hemorrhages from the uterus, toward the latter end of pregnancy." Dr. Collins⁷ says, "the attachment of the placenta to the mouth of the womb, is one of the most dangerous complications to be met with in the practice of midwifery." Dr. John Ramsbotham⁸ says, "a woman placed in this perilous situa-

¹ Traite des Accouch. Part II., chap. xl.

² Traite des Accouch. Liv. 1, sec. 8, ¶ 847.

³ Outlines of Mid. Sixth ed., p. 157.

⁴ Dublin Prac. of Med., p. 167.

⁵ Intro. to Mid. Chap. xv., sec. 6.

⁶ Essay on Ut. Hem. Sixth ed., p. 1.

⁷ Prac. Observ. on Mid. Art. Unavoidable Hemorrhage.

⁸ Prac. Observ. Second ed., p. 292.

tion, therefore, holds her life under a very uncertain tenure." Duncan Stewart¹ says, "it is generally admitted, that in the practice of midwifery, no cases occur which require more presence of mind, more prompt decision, or more active treatment, than cases of profuse uterine hemorrhage." Mr. J. T. Ingleby² remarks, that "the patient is necessarily exposed to danger of a *peculiar* kind, imminent in degree, involving the deepest responsibility, and demanding the exercise of the highest judgment." Mad. La Chapelle³ remarks, "for these reasons it follows, that hemorrhage, which depends upon the adherence of the placenta to the internal orifice of the uterus, is one of the most dangerous accidents to which females are exposed during their pregnancy." Dr. Edward Rigby⁴ says, "there are few dangers connected with the practice of midwifery which are more deservedly dreaded." Mr. Burns⁵ remarks, that "when the placenta presents, we have no hope of safety to the woman from the accession of labor. The very circumstance which in some other cases should save the patient, shall here, in general, increase the danger." Dr. James Hamilton⁶ says, "of the untoward accidents to which pregnant women are occasionally liable, one of the most alarming certainly is a discharge of blood from the womb after the completion of seven calendar months." Dr. F. H. Ramsbotham⁷ states, that "placental presentations are always fraught with extreme peril; I look upon them, indeed, as the most dangerous of all cases of hemorrhage." Cazeaux⁸ remarks, that "with relation to the cause which produces the hemorrhage, that which is owing to the attachment of the placenta to the inferior segment of the womb is the most dangerous of all." Dr. F. Churchill⁹ remarks, "there is no deviation from the ordinary course of labor so trying to the medical attendant as flooding; during the last month of gestation and at the commencement of labor, patients are exposed to two forms of hemorrhage, differing in their causes, but depending upon the situation of the placenta. The first has been called '*accidental hemorrhage*,' be-

¹ Treat. on Ut. Hem., p. 47.

² Prac. Treat. on Ut. Hem., p. 139.

³ Pratique des Accouch., tome ii. p. 362.

⁴ System of Med., chap. xii.

⁵ Principles of Med., sec. 38.

⁶ Prac. Observ. Edinburgh, 1840. Second ed., p. 306.

⁷ Prin. and Prac. of Obstet. Med. and Surg. Am. ed., p. 350.

⁸ Traite Theorique et Pratique de l'art des Accouch. Fifth ed., Paris, 1856, p. 716.

⁹ Theory and Pract. of Med. Phil., 1860, chap. xx.

cause it arises from a partial and accidental separation of the placenta, which occupies its usual situation; and the second is justly termed 'unavoidable,' because the placenta being placed partially or wholly over the os uteri, the dilatation of this orifice will unavoidably separate the after-birth and give rise to hemorrhage; as Nægelè has observed, 'the very action which nature uses to bring the child into the world is that by which she destroys both it and its mother.' " Prof. C. D. Meigs¹ speaks of it as an accident which "when it does occur, can scarcely ever fail to produce much anxiety and alarm." Prof. J. Y. Simpson² has prepared a table of 654 cases, from various sources, of which 180 proved fatal. The mortality, according to this proportion, is 1 in $3\frac{6}{10}$.³ Dr. Churchill⁴ has collected 182 cases, of which 51 proved fatal. The proportion derived from this number, does not materially differ from that which we get from the table of Prof. Simpson. To this extensive analysis, subsequent researches have enabled me to make large additions. For

¹ Obstetrics; the Science and the Art. Second ed., p. 433.

² Collected Works. Am. ed., vol. i. p. 601.

³ In commenting upon this he goes on to say, "the danger of placental presentations to the mother may appear stronger to some minds if I state them in other terms: Two of the most fatal epidemics of modern times are yellow fever and Indian or malignant cholera. In the well-known yellow fever of Gibraltar of 1828, the mortality among those attacked was nearly 1 in $4\frac{1}{2}$. (Out of 5383 persons attacked, 1183 died. See Researches on the Yellow Fever of Gibraltar, by Dr. Louis, of Paris, Boston, 1839, p. 259.) In 1832-33, about 1 in $3\frac{1}{2}$ of those affected in England with the epidemic cholera, died. (Dr. Merriman has calculated from official returns, that 49,594 individuals were affected with epidemic cholera in England, and that 14,807 of them died, giving the proportion in the text. In Scotland and Ireland the mortality was greater. See Med.-Chirurg. Trans., vol. xxvii. p. 416.) Hence those mothers, who are the subjects of placental presentations, are submitted to as great peril of life from these obstetric complications, as they would be if seized with yellow fever or malignant cholera. Further, the operation of lithotomy is generally regarded as one of the most formidable in surgery, and is calculated to be fatal in the proportion of 1 in every 6 or 8 subjected to it. 'The average mortality from lithotomy, on all hands, appears at present to be about 1 in 8.' Dr. Willis's Urinary Diseases, 1838, p. 347. Mr. Inman has calculated the mortality from lithotomy to be 1 in every $7\frac{1}{2}$ cases, 765 patients having died out of 5900 operations which he had collected. See Lancet for Oct. 5, 1844. The occurrence of Placenta Prævia is twice as dangerous and fatal as the operation of lithotomy, 1 in every 3 perishing under the first, and 1 in every 6 or 8 under the last."

⁴ Op. cit., *ibid.*

convenience, they have been arranged in the same form, as those quoted by the authors just named.

Authority.	No. of Cases.	Deaths.
Busch, Brit. and For. Rev., vol. v. p. 58.....	13	2
Schweighauser, Prat. des Accouch., p. 224.....	65	16
Dr. J. Ramsbotham, Simpson, op. cit., p. 601.....	122	36
Dr. Wilson, <i>ibid</i>	28	10
Dr. Schwarz, Ranking's Absfr., No. 26, p. 196.....	332	86
Dr. Granville, Churchill, op. cit., p. 421.....	2	0
Edinburgh Hospital, <i>ibid</i>	2	1
Dr. Cusack, <i>ibid</i>	6	0
Dr. Maunsell, <i>ibid</i>	5	1
Dr. Beatty, <i>ibid</i>	4	0
Mr. French, <i>ibid</i>	1	0
Dr. Reid, <i>ibid</i>	3	0
Mr. Warrington, <i>ibid</i>	2	0
Dr. Churchill, <i>ibid</i>	1	0
Dr. Richter, <i>ibid</i>	5	0
A. E. v. Siebold, <i>ibid</i>	3	0
Dr. Voigtel, <i>ibid</i>	1	0
Dr. Jansen, <i>ibid</i>	7	0
Tables accompanying this.....	1026	228
	<hr/> 1628	<hr/> 380

Of the 1628 cases in the preceding table, 380 died. In other words, 1 in $4\frac{1}{4}$.¹ This proportion is somewhat less than what was obtained by either Prof. Simpson or Dr. Churchill, but the larger number from which the result is derived makes it probable that it is a nearer approximation to the actual ratio than theirs.

¹ It will be seen by comparing the number of the quoted cases, that the figures do not always correspond with the original. Whenever this apparent discrepancy exists, the balance of the cases will be found in my own tables, credited to the proper authorities.

CHAPTER I.

HISTORY

THAT the after-birth is sometimes found presenting at the os uteri, in front of the child, has been known from the earliest periods of medical history. Hippocrates remarks, "that the after-birth should come forth last, for if it come first, the child cannot live, because he takes his life from it, as a plant does from earth, by means of the joined umbilical artery and vein (spread out) within the after-birth, which is attached to the walls of the uterus, and when this is detached and comes first, the child remaining within, it loses its respiration and nourishment, without which it cannot live."¹ Ambrose Paré merely mentions the fact.² Guillemeau, from whom the extract quoted from Hippocrates is taken, adopts this view entirely, and commences the fifteenth chapter of the second book of his "Happy Delivery"³ by saying that "to help a woman when the after-birth presents first at the passage, the surest and most proper method is to deliver the woman without delay, the more so because there usually follows a continual flow of blood, because the mouths of the veins, in the walls of the uterus, (to which that of the after-birth were joined,) are opened: and as the mouth contracts and becomes smaller to expel the child, causes the blood which is in it, and which has been drawn thither (by the heat and the pains) to flow. On the other hand, the child remaining shut up in the womb, the orifice being closed by the after-birth, and no longer respiring through the arteries of the mother, will be soon suffocated for want of assistance, and even drowned in the blood contained in the uterus, and which flows from its open veins." He also, in the same chapter, instances a case which proved fatal, both to mother and child, from want of this assistance. In reasoning from this passage, Dr. Robert Lee remarks,⁴ "He (Guillemeau) distinctly affirms that when the placenta

¹ De Morbis Mulierum, lib. 1.

² Johnson's Transl. Lond., 1649, chap. xxv. p. 612.

³ Œuvres de Chirurgie. Paris, 1612, p. 320.

⁴ Lond. Lan., 1847, vol. ii. p. 547.

comes first, the veins of the placenta are joined to those of the uterus, and that on a separation taking place, the blood escapes from the veins laid open in the lining membrane. It is impossible therefore to deny that Guillemeau *was aware that the placenta* originally adhered to the neck of the uterus, and that its separation was the cause of the hemorrhage," etc. Guillemeau's words are, "D'autant qu'il s'ensuit ordinairement continuel flux de sang, pour ce que les embouscheures des veins, qui sont situes aux parois de la matrice, (esquelles celles de l'arrièrefaix estoient jointes,) sont ouvertes." It is impossible to perceive how, by any torturing of the text above, the conclusion arrived at by Dr. Lee can be drawn from it. The statement of the general fact that the placenta adheres to the walls of the uterus, does not in the slightest degree define its position on those walls, and an argument that the placenta never adheres to the cervix, may be drawn from the premises, with just as much propriety, as that it does so adhere. But beyond all this, by the translation which he has given of the paragraph, he has made himself liable to the charge of misrepresentation, for the construction of the sentence and the use of the words "estoient jointes," which Dr. Lee has rendered as if they expressed present time, incontestably prove that Guillemeau referred to some former condition of the placenta, which did not, in his estimation, exist at the time specified, *i.e.* when that organ was found at the mouth of the womb.

This view was also adopted by Viardel and Mauriceau. Viardel¹ says, "it is a well-assured fact, and one which admits of no contradiction, that when a branch of a tree is cut off and entirely separated from the trunk, it necessarily follows that the fruit which is attached to it is deprived of that moisture which proceeded from the tree, and cherished it and gave it life; just so when the after-birth, which is as a branch adhering to its trunk, that is to say, to the uterus, becomes detached before the child, which is adherent to it, comes to be born, it (the child) necessarily suffocates and loses its life, for lack of nourishment and respiration, of which it is deprived by the separation of the after-birth." Under these circumstances he advocated immediate delivery, and advises that the child or placenta be first extracted, according as the membranes are entire or broken, and gives his

¹ Observ. sur la Prat. des Accouch., chap. vii. Paris, 1748. First published in 1671.

reasons in a note appended to a case which he instances in illustration, and which are mainly, the fear of endangering the life of the mother, by passing the hand into the uterus unprotected by the membranes.

Mauriceau's¹ cases have elicited much discussion, and it is to be regretted, that some of the participants in the controversy, should have so far forgotten themselves, as to lose sight of those amenities, which, under all circumstances, should be observed in literary or scientific discussions. The question, to be sure, is one which to a certain extent is inferential, but if we are guided by the ordinary rules of interpretation, there can be no doubt as to the point, whether Mauriceau did or did not know the nature of the connection between the placenta and the uterus, when that organ was found at the mouth of the latter. No author has been more thoroughly canvassed, and with greater variety of result as to his statistics; and it argues more for the zeal of the critics, than for their care in collating his cases, that any of them should have escaped search. But it is true, nevertheless.² All who have quoted him, have overlooked the fact, that under Observ. 454 are recorded two cases, which occurred in the same woman at an interval of ten months, and which makes the whole number of his cases of Placenta Prævia, 19. There is not in any of these observations, a single remark, whatever may have been asserted, which goes to show that he even surmised that the after-birth is ever attached to the cervical portion of the uterus. On the contrary, all his explanations are based upon the supposition that when in that position it had come there accidentally. In Observ. 8, in which is recorded the first of his cases of Placenta Prævia, his language is, that "the adherence of the after-birth which it retained on this occasion came rather *from the membranes of the child*, to which, as yet, it strongly held." In Observ. 68, June 22d, 1672, he speaks of "a part of the after-birth which presented."

This fact, if it stood alone, might afford some grounds for a belief that he recognized its true character, but his explanation of the cause puts an end to all doubt. He says that, finding the cord twice around the neck and between the thighs of the child, he was led to suppose that this was the true cause of the flooding, "for the cord

¹ Observat. sur la Grossesse et l'Accouchement des Femmes. Paris, 1738, vol. ii.

² See Simpson, loc. cit. Lee, ibid.

thus wound round the child, had become shortened, and, pulling upon the after-birth, had partially detached it from the uterus, and in this way excited the flooding." Is it to be supposed, if he really understood the connection between the placenta and uterus in this case, he would have given so detailed a reason as the above, particularly when a moment's reflection would have convinced him, that there could be but little probability of detaching the edge of the placenta by pulling upon the cord, which springs from near the center? In Observ. 106, in the first part, he speaks of the "after-birth presenting first," but toward the end he says, "it may be remarked that the child cannot live while it is in the womb, except by means of the mother's blood, nor will it fail to perish, as happened to this one, as soon as it breaks its connection with this blood by the *entire detachment* of the after-birth, unless it receives immediate assistance." Here we see how little reliance is to be placed upon our author's terms. In the first place, he speaks simply of the after-birth presenting, while further on, as we have seen, he states it was *entirely detached*. This looseness of statement should warn us against placing too much reliance upon the letter of his reports. In Observ. 170 he uses the term "detachment" in the same sense, apparently, as in the previous cases, and further on, in a few words gives us the true reason of his unwillingness to extract the placenta, unless the membranes had previously ruptured themselves, and which was a belief that it subjected the woman to great danger, to carry the hand into the uterus, when its walls were unprotected by the membranes. "For who," says he, "would willingly introduce the hand between the membranes of the child and the proper substance of the uterus, to put the woman into the greatest possible danger of her life?" In Observ. 175 is another instance where in his estimation the shortening of the cord, by its involution about the neck of the child, produced an entire detachment of the placenta. Observ. 210 is a case of entire detachment, with prolapse of the cord, and he declines to extract the after-birth for the same reasons that are adduced in Observ. 170. In Observ. 423 we find a remark, that at first glance, appears in proof that Mauriceau knew the true nature of Placenta Prævia, and which has been proposed by the advocates of this theory, as unanswerable. A little examination, however, will satisfy any one that it proves the contrary. The fact that the child was born alive and lived, seems to have much astonished

our author. So much so, indeed, that he feels it necessary to explain this strange occurrence. In *Observ.* 106 he had stated that when the connection between the mother and child was broken, the child must die unless succored on the instant; and to get rid of the dilemma in which he was placed by the result of the present case, he says, "but although I have said that the after-birth of this woman presented first, *when I delivered her*, and that the excessive flooding which she had, came from this detachment, it is not necessary to suppose that the after-birth had been thus entirely detached from the womb for the whole time that this flooding had been going on in this woman, for if that had been the case, the child would have died in a very short time, nor could it have been kept alive except by communication with the blood of its mother, of which it would have been deprived as soon as the after-birth was entirely separated from the womb; but as only a small portion of it was separated at the commencement of this flooding, it could not have deprived the child from being nourished by all the rest of the after-birth, which had not been separated so entirely as it was when I delivered her of her child, which by want of such aid would not have lived more than an eighth of an hour. Because being in the belly of the mother it could not breathe, as it had absolute necessity, in default of the blood which could no longer be communicated to it after the entire detachment of the after-birth." In *Observ.* 57 of the supplement to his works, Mauriceau has recorded another case of partial separation of the placenta. His words are, "this flooding which came from the detachment of a portion of the after-birth which presented at the passage." This means no more nor less than the same remarks under *Observ.* 68, and there is nothing in the remaining portion of the observation, to warrant us in a belief that he knew any more in 1696 than he did in 1672.

And moreover, in the treatise upon midwifery, to be found in the first volume of his works,¹ in which he enters into a consideration both of the cause of the danger and its remedies, we find the strongest confirmation of the position here assumed. The extract is somewhat lengthy, but we trust not more so than is warranted by the importance of it, to a true understanding of the case, particularly as in the controversy which has been carried on, Mauriceau, upon

¹ *Op. cit.*, vol. i. book 2, chap. xxvii.

the evidence here obtained, has been cited by Dr. Lee, as knowing the true anatomical relation of the placenta to the uterus in *Placenta Prævia*. "The prolapse of the cord, before the child, of which we have spoken in the preceding chapter, is often the cause of death, for the reasons already stated; but that of the after-birth is still more dangerous, for, besides that the child generally dies if it is not aided almost at the very instant, the mother also is very often in peril of her life, from the great flooding which ordinarily occurs, when it is detached from the womb before the proper time, because it leaves open the mouths of the vessels over against which it was adherent, from which the blood flows in abundance and without ceasing, until the child is born, for the reason that while it is in the womb, that is continually making efforts to expel it, (the child,) by doing which it compresses itself and causes a continual flow of blood from the vessels which remain open, as we have oftentimes already explained, when the after-birth is thus detached, as long as it remains in its distended condition, and do not close until having emptied itself of all that it contained, it compresses their mouths by the condensation of its membranous substance. If then we should be diligent to deliver the child when the cord presents, it is still more necessary to act with promptness when the after-birth is entirely detached and fallen from the womb, and the delay, little though it be, is always the cause of the speedy death of the child, if it is not delivered at once, for since it cannot remain a long time without suffocating, the rather that there is need of respiration by the mouth, (as I have explained in the preceding chapter,) so long as the blood is not vivified by the change which it undergoes in the after-birth, the function and use of which cease the instant it becomes separated from the vessels of the womb, with which it was joined, in consequence of which this great flooding comes on all the more speedily, which is so dangerous to the mother that if she is not immediately helped, she will in a short time lose her life by this unfortunate accident.

"I have remarked in most women, not otherwise diseased, that the after-birth had become thus detached and entirely separated from the womb on account of the umbilical cord of the child becoming embarrassed and wound about some part of the child's body, and particularly about its neck; this causes, that in the slight motions which the child makes to adjust himself for birth, the cord being no

longer of its usual length and freedom, is all the time dragging on the after-birth, and in this way entirely separates it from the womb before the time.

“When then the after-birth presents itself first, we perceive a substance soft throughout, without any of the resistance of a solid body to the touch, and the blood flowing profusely from the uterus, with many clots, and the woman often fainting. As soon as the surgeon shall have ascertained that the substance is of this kind, he must hasten promptly to deliver the woman, if he wishes to save her life and that of her child, if it is still living. In order to do this, if the after-birth presents only, and is not expelled, and the membranes are not broken as it sometimes happens, he should go a little to one side of the presenting after-birth, as far as may be to the right of the membranes, which he should break immediately with his fingers, to let the waters pass off, and turn the child at the same time in case it presents in any other position than feet first, by which he should promptly draw it out. *For it is necessary to observe once more that the after-birth which presents itself in this manner first, is nothing more than a strange body in the uterus, when it is separated entirely, as it is at the time, and under these circumstances we ought, it seems to me, to attempt to draw it out before the child, notwithstanding it is strongly attached to the membranes which surround it, which cannot easily be overcome because we cannot draw the body of the after-birth without at the same time drawing the membranes which envelop the body of the child, and beyond all that, it is these membranes which line the whole interior of the uterus, and by their smooth and slippery substance seem to render the turning of the child more easy, and by their interposition prevent the womb from being so easily injured at the time of the operation, which would not succeed so well if we should have delivered the after-birth first.* For these reasons it is much better to deliver the child first, which, for various reasons, is always so feeble on these occasions, that it hardly fails to die unless it is very promptly aided. But if the surgeon sees that the after-birth is almost entirely expelled from the womb, and that the membranes are completely broken up and torn in pieces, in this case he ought to attempt to deliver it. For besides that it would be then useless to replace it within the womb, it will greatly incommode the surgeon in his operation, and in the mean time cause him to lose the time when he could have advantageously assisted the child.

“If we should not put back the after-birth, which is almost entirely without the womb, and the membranes of which are all broken, with much more reason should it not be replaced in those cases where it is completely expelled. We need only to take care not to wait to tie and cut the cord before the delivery of the child, not with the hope that by that it will any longer receive any sustenance during the remaining period of the delivery, but in order not to lose a moment of time in making the immediate extraction of the child, which is always on this account in the greatest danger of its life, as well as, finally, to arrest as soon as possible the flooding of the mother, which usually ceases as soon as she is delivered, for which reason we should be as expeditious as possible.”

We have translated the whole of this chapter, with the exception of the last clause, which relates to the treatment of the child after birth, for two reasons. In the first place, Chamberlayne's translation gives but a digest of the original; not only are some portions mere paraphrases of the French text, but a great deal of it is left out, as may be seen by comparing the two together. That portion particularly in which Mauriceau gives the reason why the after-birth is separated, (by the shortening of the cord, produced by the turning of the child in the womb,) is entirely omitted, and hence those who have relied on the translation have been greatly misled as to what his true opinions were.

In the second place, a connected, and as far as space will allow, a complete translation of all that relates to the subject in the writings of this author, is necessary to show how little reliance is to be placed upon the deductions drawn by Dr. Robert Lee from the same passages. It is deeply to be regretted, that in his earnestness to defeat his antagonist, the doctor should have paid less regard to the fidelity of his extracts; for, in a case like this, a suppression of facts is as wide a departure from the truth, as the direct assertion of what is false. If any one will take the trouble to compare with the original the extract made by Dr. Lee from *Observ.* 423, and which may be found in an article communicated by him to the *London Lancet*,¹ it will be found that the doctor quotes just so far as suits his purpose and no further. The last sentence does not end where the period is put, but proceeds “Ainsi quil étoit dans le temps que jaccouchai cette femme

¹ 1847, vol. ii. p. 439.

de cet enfant, qui faute de ce secours n'auroit pas été encore une demi-quart d'heure sans mourir; *parce qu'étant au ventre de sa mere il ne pouvoit pas respirer, comme il avoit indispensablement besoin, au défaut du sang qui ne lui pouvoit plus être communiqué après cet entier détachement de l'arrièrefaix.*" Whether this case in reality, to use Dr. Lee's own words, "may be adduced as a proof that Mauriceau was aware of the fact that the placenta had not been wholly detached from the uterus," every candid and intelligent reader can judge for himself. Not only is the assertion that "when the placenta was entirely separated, then only did he consider it as a foreign body, and recommend its extraction before the child,"¹ unwarranted by the text, but Mauriceau, in addition to his explanation of the cause of the detachment of the placenta, (see *ante*, p. 18,) and his reasoning upon those cases when the placenta *presents* only, and is not expelled from the uterus, (see *ante*, p. 19,) has repeatedly stated his reasons for not extracting to be, not that the child could be benefited by its remaining within the womb, but from a fear lest the introduction of the hand should injure the uterus, and thereby greatly endanger the life of the mother, a belief which he entertained in common with his contemporaries, and which governed him in all cases where it was possible to act in accordance with it. Whenever a different course was pursued, it was under the evident conviction that the case admitted of no delay, that the question was not what he might prefer to do, but what *must be done*, the most speedily to relieve the mother from the danger of her position.

Dr. Edward Rigby, in adhering to his father's opinions,² has also fallen into an error, when he asserts³ that "Mauriceau invariably speaks of the placenta, when at the os uteri, as 'entirely detached.'" In case 58, as has been already remarked, the latter states that it was partially detached, "*l'avoit fait detacher en partie de la matrice,*" but for the reasons quoted (see *ante*) it is evident that he had no idea that it was planted on the cervix uteri. To repeat then, what we have already asserted, there is not in any one of Mauriceau's observations, a single remark which goes to show, that he even supposed that the after-birth is ever attached to the cervical portion of

¹ Lond. Lancet, vol. ii. p. 439, 1847.

² Essay upon Uterine Hemorrhage. Sixth ed., p. 21.

³ Rigby's Midwifery. Second Am. ed., p. 339, chap. xii.

the womb; but all the evidence tends to prove, that when the former was found at the os, presenting in front of the child, he believed it had been separated to a greater or less degree from some other part of the womb, and was there by accident. His claims to priority of discovery must, therefore, be set aside.

Amand, 1691 to 1706, records eight cases, in which great flooding occurred, and required immediate delivery. In four of these he distinctly states that the placenta presented. He, however, seems to have been totally ignorant of their real nature, and as Levret has well remarked, passed them by without bestowing upon them that attention they merited.

Portal, 1664-1682, whose observations, like those of Mauriceau, his illustrious contemporary, have been the source of so much trouble to the critics, records sixteen cases. He states in the first, *Observ.* 2, that he had previously *saved* several women in the same condition, and in *Observ.* 39, that he had seen several *die* in like cases. The first, those who recovered, Dr. Lee chooses to interpret as three, for the reason that the word "*plusieurs*" in the original, always means three or more, but he entirely avoids making mention of the "*several*" who died. Without dwelling any longer upon the propriety of such an interpretation, and such an omission, except to remark that to base any estimates of the comparative mortality of any particular treatment upon such facts, is more than absurd, it may be remarked that in these cases, as in Mauriceau's, the zeal of controversy has caused some of them to be overlooked. The case recorded in *Observ.* 73 has been passed by entirely, so that the real record stands sixteen instead of fifteen cases of Placenta Prævia, which we owe to Portal.

In his first recorded case, *Observ.* 2d, we find an expression which might lead us to suppose that Portal was aware of its true nature. But taken in connection with the remark that "the only way to save her life was to deliver immediately," and that he "had saved divers women in the same condition," and as from the text following, this remark must have been made before the real state of the case could have been verified by the subsequent examination he made of the parts, it is but fair to suppose that he looked upon it merely as a case of flooding, in which the cause was of less consequence than the immediate danger to the woman; produced, it may have been, by some unusual disposition of the parts, but one of those occurrences

which any physician of large experience is liable to meet with, and which, unless recurring with sufficient frequency to form a distinct variety, are set down as exceptions to a general rule, affording no guides for treatment, because from their rarity no rule can be deduced from them, and which must therefore be treated upon general principles. For this reason, he proposed the remedy then in vogue, for any and all kinds of difficult labor,—the immediate delivery of the child, the “accouchment forcé.” That this view is correct, is proved by the course he pursued in the next case, which occurred to him seven years later, in 1671. This woman had been flowing three weeks, and was almost moribund. Finding, upon examination, that the placenta presented, he told the friends that as the labor proceeded, the flooding would cease, which did so, as the child was forced through the placenta, the head presenting.

Dr. Lee, in remarking upon this case,¹ says that “no fact is stated which proves that it was an example of complete placental presentation.” It is difficult to understand how the placenta could have been *perforated by the child's head*, unless the presentation had been complete. In Observ. 39—the date of which is only four months later in the same year—which is the case of a woman in almost precisely similar conditions to the one last quoted, and where, if Portal had had any fixed rules of conduct, we should suppose he would have followed a similar course, we find this remark, “wherefore, in such cases as this, the delivery ought to be dispatched with all possible speed, without which the woman must expect nothing but present death.” A course totally at variance with what he had pursued in the case recorded under Observ. 29. In Observ. 41, Feb., 1672, three months later, he says, “I put my whole hand into the womb, where the first thing I felt was the after-burden; I separated it gently from the inner orifice, into which it adhered.” Here seems to be a distinct affirmation of the fact in language that cannot be mistaken. In this case at least, whatever might have been his ideas previously, he recognized the real nature of the connection between the placenta and the uterus. In the 43d case, a few weeks later, he separated and extracted the after-birth, “that it might not be in my way afterward.” This unusual variation of treatment, adopted moreover in cases which, so far as can be judged by the

¹ Lon. Lan., sup. cit.

reports, were very similar in all respects, would seem to be sufficient proof that Portal was actuated, as we have already remarked, by no rule. For it is beyond belief that an accoucheur of his experience, who had served in the public hospital, and must have been conversant with the knowledge of that day upon this subject, and who had acquired a reputation sufficient to place him in the position of a consulting accoucheur, could have designedly adopted such opposite modes of treatment, without giving some reasons therefor, particularly, when an examination of his cases shows, that when in other forms of difficult labor, he has pursued a course at variance with what was practiced by others, he has given the fullest reasons for so doing: *e.g.* in Observ. 37, where he disagrees upon a certain point with Viardel.

In Observ. 51 we find the facts still more explicitly stated. He says, "and at its entrance found the said after-burden placed just before and quite across the whole inner orifice, *which had actually been the occasion of the flux of blood, for by the opening of the orifice the said after-burden, then being loosened from the parts to which it adhered to before, and the vessels containing the blood torn and opened, produced this flooding.*" Nothing can be plainer than this, and, apparently, it establishes beyond a doubt, that the subject, in all its bearings, was well understood and appreciated by Portal. A little further on, however, he states that "the after-burden being separated before, followed (the birth of the child) without much trouble." That is to say, that it was separated when he found it at the os uteri. A little further still in the same observation, he remarks, "this observation ought to serve as a rule, *That whenever a woman is seized with a violent flux of blood, and there is the least hopes of her delivery, the same ought not to be delayed, but put in practice with as much forwardness as is generally practiced in acute diseases.*" Is it not a fair inference from this, that he considered these cases dangerous from the severity of the flooding, rather than from the position of the placenta? And granting this, can we avoid the conclusion, that he looked upon the precedence of the placenta before the child, merely as a strange occurrence, as an anomalous condition of things, which needed no peculiar treatment, and was not worthy of any especial consideration?

Passing over Observ. 55, which as simply stating the fact, is of no weight so far as evidence is concerned, we find in Observ. 69 corroborating proof of the position assumed above. In this he states

that it was "closely joined round the inner orifice of the womb, which was the cause of the excessive flux of blood; * * * * and I peeled it off by degrees and brought it out," (before the child.) In the 73d Observation, which has by some oversight escaped all the writers upon this subject, he states: "The after-burthen closely adhering to the inner orifice of the womb, I was obliged to loosen it with my fingers." In this observation also may be found a discussion of the term of pregnancy, which shows how acute he was to notice facts, and that he was not in the habit of passing by in silence anything which he considered of actual value. In the 79th and last observation which he records of *Placenta Prævia*, he says, "I felt the after-burthen fastened quite round the circumference of the orifice." All these extracts prove, that Portal was as well acquainted with the fact, that the placenta was attached there, when found at the os uteri presenting in front of the child, as we are at the present time. But as to the probability that he appreciated the effect of this malposition upon the result of the labor any further than that in these cases, as in all others in which hemorrhage occurs, the mother was in great danger of her life, as was also her child; and that he discriminated between what Dr. Rigby calls accidental and unavoidable hemorrhage, there seems to be, upon all the evidence to be derived from his records, the greatest doubt. Dr. Lee's remark,¹ that Portal's method of bringing down the feet and turning the child will be regarded as the "very best practical inference which he could have drawn, or has yet been drawn by others, from a knowledge of the fact," must be considered rather as a piece of special pleading than warranted by the evidence. Moreover, was there necessity of any further proof, it may be found in the omission of this subject entirely, in the preliminary essay which is affixed to Portal's work, and in which, while providing for every other species of difficult labor, including those complicated with flooding, he does not in any way, nor by any implication, refer to the subject of *Placenta Prævia*.²

Guillaume Mauquest de Lamotte, surgeon at Valogne, Normandy, whose cases date from 1676 to 1713, a period of nearly forty years,

¹ Lect. on Mid. Lond., 1844, p. 366.

² The opinion expressed above is founded upon facts derived from an English translation of Portal, Lond., 1763, from which the data made use of were taken, a copy in the original not being procurable.

commences the fortieth chapter of his works¹ by saying that "women are exposed to a variety of mishaps, which often disturb the course of the most favorable pregnancies, and prejudice their deliveries, the commencement of which has given reason to hope for a speedy and fortunate termination. It is in such that there is need of prompt assistance in order to rescue them from the danger to which they are evidently exposed: but among all there are none more perilous than where the after-birth presents itself before the child, whether at the bottom of the vagina, or partially or completely expelled, because its detachment is accompanied by so great a flooding that it is impossible that the female should not perish outright, if she is not succored in the promptest manner." He has noted in *Obsers.* 321, 322, 323, 324, four cases, in which, while his treatment is very good and judicious, his reasons and explanations given in the reflections which follow each case, prove that he entertained the same opinion in regard to its general character, as Mauriceau and other of his contemporaries, and justify a remark made by Levret,² that "it is truly astonishing that this great practitioner should not have pondered more upon this circumstance." * * * * "Authors are full of observations, the loose compilation of which prove at the same time that they have seen the facts and that they have not recognized them for what they really were."

Gottlieb Schacker,³ professor at Leipsic, wrote a dissertation in 1709, entitled "*Disputatio de placentæ uterinæ morbis.*" One of his observations was upon the death of a woman from flooding, at the end of pregnancy. The autopsy revealed the fact that the placenta was attached to the cervical portion, and closed the os uteri. The membranes were unbroken and intimately connected with the whole of the internal surface of the uterus.

Dionis, who wrote in 1721,⁴ adopted the prevalent opinion of his day, and while recognizing the fact that the placenta is often found presenting at the os uteri, controverts the opinion of Mauriceau that its detachment was caused by the shortening of the cord. To this opinion of Mauriceau, he opposes what he asserts as a fact, that the

¹ *Traite Complet des Accouchments.* Second ed., Paris, 1765, first ed., in 1715.

² *Obser. sur Accouch. Labor.* Paris, 1780, *Suite des Obser.*, p. 56.

³ Dunal, *L'hém. prod. par l'insert. du plac. etc.* Montpellier, 1855, p. 16.

⁴ *Traite General des Accouch.*, liv. 2, chap. xiii., liv. 3, chap. xxiv.

shortening of the cord cannot take place until the foetus has made the turn to present itself at the passage, and that even supposing this shortening had taken place, the cord would break from lack of strength before the detachment would be caused. His practice was the same with his contemporaries, and the "accouchment forcé" was his only resource.

Deventer¹ devotes a portion of his 31st chapter to a consideration of labors complicated by Placenta Prævia. One of the symptoms he states to be, that neither the head nor the membranes can be found upon examination, but in their stead "a thick and soft flesh, which is easily to be distinguished from that of the infant, which is always more solid, or by means of the os, which it covers." Another sign of "*the falling of the placenta*" is the flooding which accompanies it, and which renders it necessary to deliver as soon as it can possibly be done. This, he recommends, should be accomplished by introducing two fingers, either successively or together, pressing the placenta to one side, and rupturing the membranes. If the placenta cannot be thus separated, the two fingers are to be pushed into its substance, an opening made through it by separating them, and the membranes ruptured. The method of piercing the placenta with a crimping-pin he objects to, from the danger of injuring the child, and thinks it much better to make an opening sufficiently large to admit the passage of the child, if the head presents, or to allow turning through it when this operation is required. In chapter 33d, he says that the only method to save the woman, when flooding, continuously and in great quantity, happens from a separation of the placenta, is by artificial delivery, particularly if it is found by the touch, that that organ has fallen to the orifice.

Petit,² in 1722, communicated to the Academy of Sciences a case of "a woman who was at the end of her pregnancy, and, having been three days in fruitless labor, with great hemorrhage, died, and was opened for the purpose of finding out what had prevented the delivery. It was found that the placenta, which ought to be at the bottom of the uterus, was, on the contrary, at the internal orifice, and closed it completely, except on the right side, where it was not joined; and it was from that that the blood flowed."

¹ Observ. Import. sur le Manuel des Accouchments. Paris, 1734; Leyden, 1701-1724.

² Dunal, op. cit., p. 18.

Ehrard Brunner,¹ in 1730, wrote a thesis upon the "insertion of the placenta over the internal orifice of the uterus," and defended it before the University of Strasbourg. This position he established by proofs drawn from anatomical examinations, and cases in his own and his father's practice. He pointed out that the placenta may adhere to the os uteri at any portion of its circumference, designated the signs by which this may be recognized, whether during pregnancy or at delivery, and proposed as a remedy, to separate the placenta on the side where it was least adherent, rupture the membranes, and turn the child.²

In 1734, two or three years after his death, Giffard's observations were edited and published by his friend, Dr. Hody, a physician of London.³ Among them are recorded many cases of Placenta Prævia. Of this writer, the elder Rigby remarks, that he "has seen more than twenty cases where the placenta was found at the os uteri; but he plainly supposes that it had not been originally fixed there, for he says, 'it is customary in floodings to find the placenta *sunk down* to the mouth of the womb.'"⁴ Dr. Edward Rigby,⁵ the son of the latter, also remarks, that "the value of his (Giffard's) evidence on this subject is considerably modified, by his having made no allusion to the implantation of the placenta upon the os uteri in the first ten cases of flooding, when he found the placenta presenting, but repeatedly describes the placenta as being wholly separated and lying in the passage; and in some, he expressly mentions that the placenta had fallen down to the os uteri. In Cases 115, 116, 224, he gives a perfectly correct explanation of the cause of flooding, but the opinion is expressed with such a degree of hesitation, and so cursorily, that we doubt much if it attracted more notice than the observations of Portal; more especially, as in the six cases of Placenta Prævia, which occur between the last two above mentioned, viz., Nos. 120, 121, 158, 160, 185, 209, he returns to his former mode of describing them."

This statement of Dr. Rigby is more plausible than just, as a reference to Giffard's text will show; and one cannot resist the con-

¹ Dunal, *ibid.*

² *Dissertatio inauguralis de partu præternaturali ob situm placentæ super orificium internum uteri*, 1730. Coll. thes. Argent., B. 15.

³ *Cases in Mid.*, by William Giffard. Lond., 1734.

⁴ *Essay on Uterine Hemorrhage*. Sixth ed., p. 24.

⁵ *System of Mid.*, chap. xii.

clusion that, in the natural and laudable anxiety to preserve the reputation of a parent who seems to have been eminently worthy of such championship, a fear lest the laurel should be wrested from the father's brow, has led the son into a line of argument which was unnecessary, when we consider the broad foundation, upon which the professional reputation of the elder Rigby rests, and which, if followed out, robs one member of the profession, at least, of his share in the honor of directing opinion into its proper channel.

In the first of his cases, which Giffard records as showing this complication, Case 10, Dec. 5th, 1725, he found the placenta "lying foremost," and "pressing hard upon the os almost on every side." His next, No. 18, May, 1728, he speaks of it as "being separated from the bottom of the womb." In Cases 19, 25, 41, 56, 82, 84, 85, 88, the same idea is conveyed, though not in exactly the same terms. In Case 115, under date of Feb. 9th, 1729-30, he remarks "I cannot implicitly accede to the opinion of most writers in midwifery, which is, that the placenta *always* adheres to the Fundus uteri, for in this, as well as many former instances, I have good reason to believe, that it sometimes adheres to or near the Os internum, and that the opening of it occasions a separation and consequently a flooding." In the next observation, on the 25th of the same month, he says: "the first thing I met with was the Placenta, which I found closely adhering round the Os internum of the Uterus, which, among many other instances, is a proof that the Placenta is not always fixed to the bottom of the Uterus, according to the opinion of some writers in midwifery: *its adhering to the Os internum* was, in my opinion, the occasion of the flooding, for, as the Os internum was gradually dilated, the Placenta at the same time was separated, from whence proceeded the effusion of blood." What can be more explicit than this; or in what way could an opinion be more definitely pronounced? Nothing can be found more exactly to the point in the writings of the elder Rigby himself, nor, indeed, in any of the numerous essays which the discussion of this subject has called forth. In Case 120, his language is: "the first thing I met with was the *Placenta*, which, upon my first passing my Hand, I found partly protruded out beyond the opening of the *Os internum*." At the close of the same observation, the remark that, "the *Placenta* being before loosened from the *Uterus*, readily followed," evidently is not intended to apply to its state previous to the operation of turning, which was resorted to in

this case; for the same phrase is used indiscriminately throughout the volume to express a condition of things opposite to that in which it adheres to the uterus, and of which he quotes many examples; and were we to adopt this method of interpretation, most of our modern practitioners, in whose reports it is very commonly used, might be proved to be ignorant of what Placenta Prævia really is, and to believe that the placenta was attached to some other part of the uterus, and had fallen down to the os.

In the next, Case 121, almost exactly the same terms are used, and the idea conveyed by them is *precisely* the same. So of Case 158, where he "first met with one edge of the *Placenta*, and next, the Head and Body of the child;" and after the operation of turning and extraction, "found it entirely loosened from the Uterus and sunk down into the Vagina," a phrase, as before remarked, which can be found in almost any report made at the present day. In Case 160, he says: "I first met with the *Placenta* entirely separated on one side from it," and after the operation, "the *Placenta* was now wholly loosened from the *Uterus*, and so I easily brought it away." In Case 185, he found "part of the *Placenta* loosened from the *Uterus*," and "upon passing up my Hand to fetch the *Placenta*, I found it wholly separated from the *Uterus*, and partly sunk down into the *Vagina*." In Case 209, he says: "The first thing I met with was the *Placenta*, which lay opposite to, and stopped up the *Os Tincæ*; from whence I concluded it was wholly separated from the *Uterus*; I therefore first endeavored to pass my Hand up between the *Placenta* and the *Uterus*, but as I could not readily pass it, I pushed my fingers through it," and also "which I found," after the operation of turning, "wholly loosened from the *Uterus*, and sunk down into the *Vagina*." Taken by itself, this case would justify any one in supposing that Giffard was as much in error as were most of his contemporaries, and that he knew nothing definitely as to the connection between the placenta and the uterus, when the former was found in this position. But viewed as one of the last of a series of cases occurring in the space of six years, from Dec. 1725 to 1731, and numbering twenty in all, it proves nothing, one way or another, particularly if taken in connection with the next and last case, 224, which occurred only eight weeks later in point of time, and which, from its important bearing, and also for the purpose of giving an instance of the style of our

author, and thereby determining what meaning is to be derived from his phraseology, is here given almost entire.

“Upon passing in my whole hand, I observed that the *Os internum* was dilated wide enough to admit the ends of my four fingers, and Clods of Blood stopping up the same; which being removed, I then found part of the *Placenta* presenting first, and therefore gave it as my opinion that her delivery ought to be hastened, fearing, if the flooding continued, she would be so much reduced that she would not be able to assist with her Throws, should they come on; or that her blood, the fountain of life, being exhausted, she would die before the child could be born by a natural delivery. * * * I immediately set about my work, and passing the ends of my four fingers into the *Os internum*, I endeavored to dilate it by separating them one from the other, so soon made way to get in my Thumb, and presently after my whole Hand, which being passed through the *Os internum*, I felt part of the *Placenta* adhering round about it. I beg leave, before I proceed to give any further account of the delivery, to give my opinion on a point of midwifery, in which I differ from most Authors that have wrote on that Subject. It is generally believed, that the *Ovum*, after its impregnation and separation from the *Ovarium*, and its passing through the *Tuba Fallopiana*, always adheres, and is fixed after some time to the *Fundus Uteri*; in this case the *Placenta* adhered, and was fixed close to and round about the *Cervix Uteri*, as I have found it in many other cases; so that upon a dilatation of the *Os Uteri*, a separation has always followed, and hence a flooding naturally ensues. It has been observed, that the *Ovum*, if it is stopped in the *Tuba Fallopiana*, and does not readily pass through, will sometimes adhere to the Tube, (though 'tis very rarely it so happens,) and there make it's *nidus*, and a *Fætus* will be formed there; of which I have given an instance, where a *Fœtus* was formed and contained several months in a *Sacculus* out of the Womb, so likewise if the *Ovum* passes through the Tube, and it falls into the Womb, it may adhere to the Sides of it, or near it's Neck, as well as to the Bottom; but most commonly it is fixed at the Bottom of the Womb, as being the part where the Bloodvessels are the largest and most plentiful, whereby the *Fætus* must of consequence receive most nourishment. But to return: when I had passed my whole hand into the *Uterus*, I found the *Placenta* adhering all round the *Os internum*, so that I was

forced to separate it on one side to reach the membranes, which I tore, and passing my hand within them, I searched for the feet, which I soon met with, and drew both out beyond the *Os internum*. * * * Upon passing my Hand to fetch the *Placenta*, I found it wholly loosened from the Uterus, so that it readily came out. The Child was dead, which was occasioned by the separation of the *Placenta*."

We have thus at some length, but not more than the importance of the subject demands, given Giffard's opinions upon Placenta Prævia, as expressed by his own text. Is it possible to arrive at any other conclusion, upon the evidence thus presented, than that he knew what Placenta Prævia was, recognized it when present, and treated it judiciously, nearly half a century before the date of Rigby's first case?

A case which occurred in his own practice, in 1743, attracted the attention of Smellie, and in his treatise¹ he sets forth as a principle, that the amount of the flooding will be in proportion to the separation of the placenta, and that when the os begins to dilate, in some cases weeks before labor sets in, "a flooding begins at the same time, and seldom ceases entirely until the woman is delivered." In chapter 4th, his directions for proceeding in these cases are substantially the same with those which govern our practice at the present time. There is also to be found in the same author² a letter, dated 1747, in which the writer, Mr. E. W., after stating the case, upon which he desires advice and information, goes on to say: "This plainly convinced me of the error of some who have asserted that the *Placenta* always adheres to the *Fundus Uteri*; seeing, in this case, it was the reverse. With regard to this case, the information I should be glad to receive is this: Suppose the child had not been born as it was, whether I should have endeavored to pass by the *Placenta*, or extracted it before the child? and suppose part of the *Os Tincæ* is covered with part of the *Placenta*, how to act?" Smellie's advice was given, by stating the particulars of a case of his own, in which, from a bad state of the os, he was obliged to delay the delivery until it was fully open; when, after putting the patient in proper position, "introduced my hand into the *Vagina*, passed by the *Placenta* into the *Uterus*, broke the membranes, and delivered the child by the feet; by which

¹ Sixth ed. Lond., 1766, chap. iii., sec. 3, vol. i.

² Op. cit., vol. ii. p. 275.

means I prevented the *Placenta* from coming down first. The child was alive, because part of the *Placenta* adhered to the lower side of the *Uterus*. I have had cases where the *Placenta* has come down into the *Vagina* before the child's head, and was obliged to deliver it first; but in such cases the child is commonly dead."

In 1752, Roederer, Professor of Anatomy and Midwifery in Göttingen, published his "*Elementa Artis Obstetricæ*," in which ample directions are given for the management of this deviation from natural labor.¹

Wessel, in 1753,² published a thesis, entitled "*Dissertatio de partu cum hemorrhagiâ ob placentæ orificio uteri adherentem*." In this he warmly opposes the opinions of Mauriceau, Lamotte, and Deventer, gives the peculiar signs for recognizing the cause of this hemorrhage *præviâ*, determines its mechanism, and thinks that a different prognosis should be given, according as the placenta is inserted laterally or completely over the orifice. Like Brunner, Wessel praises the therapeutics of Fried, insists upon the rupture of the membranes before the partial separation of the placenta, and goes even as far as to propose a proper needle for this operation, when the finger is insufficient. Wessel rejects the employment of astringents, and the method of going through the placenta, recommended by Deventer, as very dangerous, and does not accept the operation of extraction, vaunted by Van Hoorn,³ and brought into repute at the present day by Prof. Simpson. Extraction does not seem to him to be useful unless the placenta is entirely separated and extruded into the vagina.

In the same year, Levret published his "*Art des Accouchments*," designed principally as a manual for those attending his lectures. He had recorded a case as early as 1748, and, in the work just quoted,⁴ undertakes to prove three things: 1st. That the placenta is oftentimes implanted over the os uteri. 2d. That in such a case hemorrhage is inevitable in the latter months of pregnancy. 3d. That the surest remedy for this accident is delivery by art.

In 1758,⁵ Platner wrote: "*Reperiuntur etiam feminae quibus secundæ et id quod placentam vocamus ipsi ori uteri inhærescat, quæ dum illud os doloribus ampliatur, deducuntur ut ex patentioribus arteriarum osculis, vel iis etiam disruptis sanguis cum periculo*

¹ Op. cit., sec. 682, et seq.

² Dunal, op. cit., p. 21.

³ In tractatu.

⁴ Third ed. Paris, 1766, p. 354.

⁵ Dunal, op. cit., p. 23.

profundatur;" and as the remedy, advises that the child should be immediately delivered, even at the expense of some force.

Puzos, whose work was published after his death by M. Morisot Deslandes, in speaking of the placenta,¹ remarks: "There have been more than one example of women who could not be delivered, because the placenta was fastened upon the mouth of the womb—le placenta s'etoit colle sur l'orifice de la matrice—which it held hermetically closed, and which forbid its dilatation at the term of delivery." He also states, that Deventer was too hasty in concluding that it was always situated at the bottom of the womb, and instances cases where it adhered to the tubes, and other situations, in which the foetus was nourished, and grew for many months, "by means of the adhesions which the placenta had made to different vessels of this kind." From this, he goes on to say: "We can, therefore, bring this opinion of Deventer to the tribunal of experience, and conclude that, if the placenta can attach itself to portions so little disposed to such an adherence, it can, much more easily, in the whole interior of the uterus, where it finds on all sides lacunes, from whence there flows a continual moisture, from an infinite number of little arteries, which are most fit to unite themselves with the corresponding veins of the placenta, and which become in this way the source of the connection between the uterus and placenta."

In 1775 Rigby published his world-famous "Essay upon Uterine Hemorrhage." In this the whole subject is discussed in the fullest manner, and with a vigor and perspicuity of style which rank the author among the purest writers of the English language. He was the first to propose the division of uterine hemorrhage into two great classes, one of which, from its varying causes, he termed *Accidental*, and the other, from the necessity of its occurrence under particular circumstances, *Unavoidable*. Of his right to the title of being the first to establish the true principles of the treatment of Placenta Prævia, the extracts already made from previous and contemporary writers do not sustain the claim. On the contrary, he was anticipated both on the continent and in England. But, whatever may be his claim to priority of discovery, there can be no doubt that to his essay, more than to any other single cause, is due the universal interest which from this time invested the subject.

¹ Traite des Accouch., Paris, 1759, chap. ix., article 1.

In the next year, 1776, Leroux de Dijon published his "*Observations sur les pertes de Sang des Femmes en Couche*," in which while recognizing the true anatomical relation of the placenta to the uterus, and fully understanding the cause of the hemorrhage, he proposes as the best and surest remedy therefor, the tampon.¹ "It does not," says he, "require long preparation; it can be found as easily in the cabin of the poor as in the palace of the great. * * * It is astonishing that a method of arresting hemorrhage, so simple and so efficacious, recommended by the ancients, should have been so entirely abandoned by the majority of men at the present day, that many may be found who make no mention of it at all, and who regard the death of a woman from uterine hemorrhage as one of those predestined misfortunes which no human prudence could have prevented. Nevertheless, I dare assert that we have not in surgery so sure a remedy against the accidents which render a resort to it necessary, as is the tampon in flooding." From this time all doubt as to the true nature of Placenta Prævia ends. Its history may be traced as an integral and most important subject in obstetric medicine, and the controversy which was so rife, and so strenuously waged in regard to the very existence of such a relative state of things, has been transferred with scarce any abatement to another field—the nature of the utero-placental connection.

¹ P. 215, ¶ 265.

CHAPTER II.

HOW PRODUCED.

PLACENTA PRÆVIA, according to all analogy, should be limited in its occurrence to the human female, or to those of the animal creation who maintain an upright posture. It may be produced in two ways.

The fecundated ovum may gravitate, or by any other cause be carried, from the cavity of the fundus uteri, into which it is first discharged from the Fallopian tubes, to the lower or cervical portion, where it may attach itself in obedience to the law of its organization.¹

Irregular growth may also produce it. For while the placental radicles may have originally attached themselves to the uterine walls, at a point sufficiently distant from the os and the cervical portion, to be out of the reach of the disturbing causes which are at work in the last months of pregnancy, its growth may have been developed so exclusively in one direction, as to take the shape of the battledoor placenta, more or less perfect, and by the same process advance one of its edges deep into the cavity of the cervical portion, or over the os uteri itself even.

In noticing these two methods, Mr. Doherty² remarks, that partial presentation of the placenta probably arises from that organ being "originally attached in a natural situation, as denoted by the insertion of the cord, growing irregularly, and thus extending a por-

¹ Dr. Lee mentions a case of a young woman who poisoned herself in the second month of pregnancy, wherein he found (as in his opinion is invariably the case) that the Fallopian tubes were pervious, and the ovum had taken up its position at the os, and was forming its placenta there. (*Med.-Chirurg. Trans.*, vol. xvii. p. 493, also *Lect. on Mid.*, chap. xi. p. 79.) Sir Everard Home also details a case of a female pregnant eight days, in whom a small ovum was detected near the cervix uteri, in the midst of long filaments of coagulable lymph; in her, the os was completely closed, but the orifices of the superior angles of the uterus were uncovered by decidua. (*Philos. Trans.*, 1817, part 2, p. 252.)

² Braith. *Retrospect*, No. 12, 1845, pt. 2, p. 268, from *Dublin Journ. of Med. Science*, July, 1845, p. 332.

tion of its margin into the cervical region of the uterus, and this is the more usual form of the anomaly. But the occurrence of full placental presentation when that substance springs from the whole disk of the mouth of the womb, is, I believe, referable to a deficiency in the decidua, which should naturally extend across the orifice of the Fallopian tube, and the absence consequently of the support, which, ordinarily, it is thus enabled to give to the ovum as it enters the womb."

If we admit the theory that the ovum may be impregnated by the male fluid as well *after* it has left the ovary, as while still retained within the unruptured vesicle, the difficulty of accounting for Placenta Prævia is to a great extent removed. For the vivifying influence of the semen may not have been communicated to it, until just at the time the ovum was leaving the cavity of the uterus, at the os uteri itself, where, in consequence of this impulse, it attaches itself, and as the pregnancy goes on, develops the phenomena of Placenta Prævia.

Frequency.—The ratio of Placenta Prævia to the whole number of births must, to a certain extent, be always conjectural. From the nature of the case it is impossible to arrive at absolute certainty, but it is highly probable that a proportion derived from so large a number of cases as is here appended, will approximate very near to the true ratio. With the view of determining this as far as existing statistics admit, the following table has been prepared:—

Authority.	No. of Births.	No. of Pla. Præ.
Dr. F. H. Ramsbotham, Murphy's Lectures, p. 603....	48,996	82
Hardy and McClintoc, <i>ibid</i>	6,634	8
Med. Times and Gaz., Oct. 11, 1856, Duchy of Nassau.	304,150	85
Collins, Dublin Hospital, 1825 to 1831.....	16,414	11
J. Thomson, Glasgow Med. Jour., 1855.....	3,300	3
Jansen, the elder, Ghent, Eclectic Jour., iv. p. 339....	13,365	7
Metcalfe, Med. Com. Mass. Med. Soc., vol. ix. No. 2, 1856.....	1,768	4
Burwell, Metcalfe, <i>ibid</i>	598	1
Bellevue Hospital, Metcalfe, <i>ibid</i>	1,348	1
Van Bibber, Metcalfe, <i>ibid</i>	4,192	3
Dr. Schwarz, Hesse-Cassel, Rankin's Abstract, No. 26, p. 196.....	519,328	332
Dr. A. F. Carr, Goffstown, N. H.....	500	1
Dr. Goodrich, Letter from Dr. H. Eaton, Merrimac, N. H.....	4,000	0
Dr. H. Eaton, <i>ibid</i>	570	3
Dr. S. W. Butler.....	250	1

Authority.	No of Births.	No. of Pla. Præ.
Dr. O. H. Taylor, Camden, N. J.....	2,646	9
Dr. D. H. Storer, Boston Med. and Surgical Journal, vol. liii. p. 287	2,000	1
Saxtorph, Dunal, op. cit., p. 47.....	3,200	1
Mme. Boivin, Murphy's Lectures, p. 604.....	20,357	8
M. Riechle, Dunal, op. cit., p. 48.....	219,333	300
M. Gruner, <i>ibid</i>	301,040	368
J. Hall Davis, London Lancet, April 17, 1858.....	2,449	3
Mme. La Chapelle, Murphy's Lectures, p. 604.....	22,243	22
Dr. Arneth, <i>ibid</i>	6,527	9
Dr. Klein, <i>ibid</i>	35,417	11
Boston Lying-in Hospital.....	650	1
Dr. Peter P. Woodbury, Bedford, N. H.....	1,500	1
	<hr/> 1,542,772	<hr/> 1276

From these data, the ratio will be found to be 1 in 1200 and a small fraction.

Diagnosis.—The period of pregnancy at which those symptoms occur which lead us to anticipate Placenta Prævia, is very uncertain. They may manifest themselves at any time after the third month; but, as a general rule, are more frequent during the sixth, seventh, and eighth, than at an earlier period. When, therefore, attacks of hemorrhage come on in the later months of pregnancy, without apparent cause, no time should be lost in ascertaining if this complication is present. Dr. Robert Collins¹ remarks, “whenever hemorrhage is met with to any extent, in the last three months of pregnancy, it is impossible to be too watchful of our patient: as we know not the moment it may become so profuse as greatly to endanger life.” In this opinion all obstetric writers agree, and the importance of an early examination cannot be over-estimated nor too strongly urged.

¹ Op. cit., p. 60.

CHAPTER III.

PHYSIOLOGY.

No question in anatomy has been more zealously studied, than that which relates to the nature of the utero-placental circulation. From the very nature of the case, investigations during life are impossible, and the great danger of being misled by appearances, when imitating vital processes upon the dead body, tends to weaken the conclusions arrived at from even the most careful experiments. But, while on one hand it is manifestly wrong, to insist upon interpreting the phenomena of life, by the strict rule of parallel experiments made upon the dead body, without at the same time having regard to analogy and the general purpose of the functions in question, on the other hand, it would be equally unfair, to discard the evidence gained in this way, and decide all questions upon a theoretical basis alone.

By one school, the blood of the mother is supposed to "enter the cavernous structure of the placenta by the decidual arteries, and flow back by the decidual veins into the venous system of the uterus."¹ Under this view, the placenta has been compared to a sponge filled with water, in which the fibrous portion represents the foetal, and the interstices the maternal circulation.² By such an arrangement, the foetal vessels are everywhere in contact with, and, as it were, bathed in the blood supplied from the maternal sources. In this way, also, "the blood of the mother contained in the placental sac, and the blood of the foetus contained in the umbilical vessels, can readily act and react upon each other through the spongy and cellular walls of the placental vessels and the thin sac ensheathing them, in the same manner as the blood in the branchial vessels of aquatic animals is acted upon by the water in which they float."³

By the other school, the existence of these decidual vessels is

¹ Dr. Robert Lee, *op. cit.*, p. 135.

² Weber, *Braith. Retros.*, No. 13, (1846,) art. 184, about the middle.

³ Dr. J. Reid, *Braith. Retros.*, No. 3, art. 81.

denied. They also reject the twofold—foetal and maternal—nature of the placenta.

Based upon these anatomical differences, two theories, equally at variance with each other, have been proposed, to account for the hemorrhage which ensues, when the attachment between the placenta and the uterus is broken up. On the one hand, it has been maintained that this hemorrhage, “in most instances, proceeds entirely from the surface of the placenta.”¹ In opposition to this, many contend that it comes from the uterus, and from that alone; “from the great, semi-lunar, valvular-like, venous openings in the lining membrane of the uterus, which are laid open by the separation of the placenta.”²

According to the first, the hemorrhage proceeds from the placental surface alone. But here, at the outset, we are met with a difficulty. Admitting, for the sake of the argument, that the communication between all parts of the maternal portion of the placenta is as complete as it is claimed to be by Prof. Simpson,³ and, therefore, that the blood, which is constantly coming into the placenta through that portion which remains adherent, will flow directly out from the openings in the separated surface; what is to prevent an equal amount from pouring at the same time out of the uterine vessels, whose mouths are exactly similar in size and number to those of the placenta at the point of separation, and with which, before this took place, they were in exact apposition? Separation, *per se*, has no power to check or put an end to the flooding; neither does it remove the difficulty, to suppose that these vessels, being venous, the current of the blood is *from* the placenta to the uterus, instead of in an oppo-

¹ Simpson, *op. cit.*, p. 643. ² Dr. Robert Lee, *Lect. on Mid.* Lond., 1844, p. 361.

³ “To understand the true source of the flooding in unavoidable and accidental hemorrhage, the cause of the continuance when the separation of the placenta is partial, and the mechanism of its arrestment when that separation is complete, we must take into consideration the following different points: *First*. The maternal portion of the placenta is of a cavernous structure; that is to say, it consists of a series of maternal vascular cells, or dilatations, or, perhaps, more properly speaking, of one large maternal vascular bag, into which the blood of the mother is conveyed by the utero-placental arteries, and from which it is removed by the utero-placental veins. *Secondly*. The vascular maternal cells, or immensely dilated capillaries, which contain the blood of the mother in the placenta, communicate so freely with each other throughout all the different portions of the organ, that the blood which has access into one part, may in this way be rapidly diffused into the other portions of the placental mass.” (*Op. cit.*, p. 643.)

site direction. According to all analogy, the venous and arterial system would be found commingled in the uterus, as in other parts of the body; so that, instead of all these openings being venous, we should expect, *a priori*, that a proportionate number of them would be arterial, and that a direct flow of blood would proceed from *them*; and besides, the veins of the uterus having no valves, the blood, under the impulse communicated to it by the collateral circulation, the *vis a tergo*, would flow as freely from these openings also, as in what might be considered its proper direction.

And again: under any other supposition than that the supply comes from vessels of larger caliber and less reticulated structure than is found in the placenta, and in a more direct way than is afforded by the tortuous and intermingled channels of that organ, it seems impossible to account for those profuse gushes, which pour down on the hand of the accoucheur like a torrent, and often prove instantaneously fatal to the mother.¹

The evidence derived from those cases, in which the uterus has been inverted with the placenta still adherent, tends also to strengthen the opinion that it is from the uterus, and not from the placenta, that the flooding proceeds. Smellie² reports a case, furnished by a correspondent, Mr. Lucas, in which the hemorrhage was seen to come from the *uterus*, (the italics are his own,) which was "so lax" as to have no power of contraction.

Dr. Chowne³ quotes a case from Dr. Lever, in which, after an unsuccessful attempt to replace the womb with the placenta adherent, the after-birth was peeled off, "but as there had been some blood lost already, owing to its partial detachment, the entire separation was attended with such fearful flooding, that she sank almost immediately."⁴ Moreover, the fact that the substance of the placenta can be cut, divided, torn, or perforated, without materially increasing the hemorrhage, as the experience of every practitioner will confirm, affords additional proof that, to some other source than the placenta,

¹ See p. 56, for details of Dr. Madge's case, with reference to this point.

² Midwifery. Second ed., vol. iii. p. 445.

³ Braith. Retros., No. 16, art. 159, from Lond. Lan., Sept. 4, 1847, p. 250.

⁴ See also two other cases, quoted by Dr. Chowne, Braith. Retros., *ibid.*, from Lond. Lan., Aug. 28, 1847, p. 226. In these there was fatal intra-uterine hemorrhage, from complete detachment of the placenta before delivery.

is the hemorrhage due. Case 31, table 1st, may be cited as bearing on this point.¹

Now, upon the terms of this theory, the absence of hemorrhage—which did not reappear when the placenta was divided to discharge the waters—can be accounted for, only by assuming that complete separation had previously taken place at all points of its attachment, which is highly improbable; for, under any other condition, a portion of the placenta still remaining adherent to the uterus, a very much greater amount of flooding ought to have occurred, in propor-

¹ Case 31, from Boston Med. and Surg. Journal, Sept. 21, 1853. Mrs. M., of this city, (Lawrence,) became pregnant, with her third child, in February, 1853. After the second month, she was attacked with frequent floodings, which would last a day or two, and then subside. During the last two months which she carried the child, the bleeding became more profuse, so as to waste her strength, and at times became alarming; so much so, that I was called in several times to arrest the hemorrhage.

On the 20th of August I was called to see her; found her with labor-pains, and saying she was going to be confined; that she was about six months along. I made an examination per vaginam; found the os tincæ somewhat dilated, and, what I had before suspected, the placenta attached over the mouth of the womb, and presenting. As the dilatation was not great, nor the flooding profuse, I left her to nature for three or four hours.

All this time I was expecting to be summoned in haste to arrest the hemorrhage, which I supposed might ensue; but no very troublesome bleeding occurred. The labor slowly progressed, and, upon making a second examination, four hours after the first, I found the same presentation, with the parts a little more dilated. I could feel no part of the child, but the placenta protruding through the os tincæ. I now commenced manipulating, and attempted for some time to remove the placenta, or some portion of it, to one side, in order to give the foetus room to pass down. After nearly exhausting my patience, without gaining ground, during a strong pain I made a thrust, and my finger went through the placenta. The liquid flowed out in large quantity. I was at first alarmed, thinking it might be blood, but soon found that it was mostly water. I could now feel the head of the foetus. The pains continued strong; the parts were *well* dilated; yet the descent of the child was slow, and only with the placenta. At length this was expelled. I felt for the cord, but could find neither cord nor membranes. Upon opening the placenta, I found it to contain the foetus, weighing two pounds or more; the cord, fourteen inches in length, of the medium size, and a portion of the liquor amnii, which had not escaped through the opening I had previously made with my finger. The placenta was a complete sac, the cord starting off from its smooth inner surface, like the trunk of a tree from its roots. The child was a male, and breathed a few times. It seems that the placenta had entirely surrounded the membranes, attaching its inner surface to them, while the exterior was attached to the whole surface of the womb.

tion as the surface of the uterus, with which the placenta in this case was in contact, exceeded what it is in ordinary cases where the placenta is of average size.¹

Again, obstetrical writers, up to the present time—with one exception, so far as known—have stated that the hemorrhage in Placenta Prævia differs in character from what is noticed in labors where this complication is not present. In proof of this may be cited the opinions of the elder Rigby,² Dr. Edward Rigby,³ F. H. Ramsbotham,⁴ Blundell,⁵ Maunsell,⁶ Mme. La Chapelle,⁷ Jacquemier,⁸ Gardien,⁹ Murphy,¹⁰ Churchill,¹¹ Simpson,¹² Cazeaux,¹³ all of whom agree in ascribing to the hemorrhage, which makes its appearance in Placenta Prævia, a different and diagnostic character from that of any other uterine hemorrhage. In the language of Dr. Edward Rigby, already cited, “the character of the hemorrhage is also different from that of common hemorrhages, inasmuch as it *increases during a pain*, and *diminishes or ceases during the intervals*; whereas in hemorrhages, as in ordinary circumstances, it is the reverse.”

In reasoning upon this statement, Prof. Simpson¹⁴ says: “I am not aware that any solution has been hitherto attempted of this peculiarity in unavoidable hemorrhage; and while it seems very explicable upon the idea generally received, that the discharge comes from the exposed surface of the uterus, it is a condition which we might have *a priori* anticipated from the opposite opinion, that the effusion flows from the detached surface of the placenta; for, if in Placenta Prævia the hemorrhage proceeded from the vascular orifices laid open on the interior of the uterus, *it ought to be diminished, and not increased in quantity during the pains, as the orifices will neces-*

¹ See also Mr. Ingleby's case, Lond. Lan., 1839, vol. i. p. 943, (No. 696, Table VI.;) Dr. J. H. Schenck's case, quoted by Dr. Chowne, Braith. Retros., No. 16, art. 159, from Lond. Lan., Sept. 4th, 1847, p. 250; Dr. Lee's cases; Table VII., *passim*.

² Op. cit., p. 77.

³ Op. cit., chap. xii. ¶ Symptoms.

⁴ Op. cit., p. 341.

⁵ Op. cit., p. 445.

⁶ Op. cit., p. 167.

⁷ Pratique des Accouch., tome ii. p. 358, note.

⁸ Manuel des Accouch., tome ii. p. 253.

⁹ Traite des Accouch. First ed., tome ii. p. 421.

¹⁰ Lectures on Parturition. Lond., 1852, p. 335.

¹¹ Op. cit., sec. 648.

¹² Op. cit., p. 648.

¹³ Traite Theorique et Pratique. Fifth ed., p. 714.

¹⁴ Op. cit., p. 648.

sarily be temporarily diminished under the contraction of the uterine fibers."¹

If the fact in regard to uterine hemorrhage under these conditions, really was what Dr. Rigby has stated it to be, there cannot be a moment's doubt that Prof. Simpson's explanation is the correct one. For, if we take into consideration the structure of the uterus, it becomes at once apparent, that when that body by the vigor of its own action, has separated enough of the placenta, or by the artificial detachment of a sufficient portion, has been put in a condition where condensation as the result of contraction can be attained, the caliber of the uterine vessels must necessarily be diminished, if not completely obliterated, and the loss of blood from this source prevented. If it continues after this, it *must* be from the placental vessels, which would not be affected by this change in the uterine walls.

Cazeaux,² and the opponents of Prof. Simpson's theory, endeavor to meet this point, by assuming that the *neck dilates* during labor. By this assumption they endeavor to reconcile the generally received opinion in relation to the hemorrhage, with their theory of its source. For, if the flow of blood does not come from the placenta, and occurs in the greatest quantity during a pain, it is very certain that it must proceed from some portion whose vessels are not then compressed, but remain open, in a dilating or dilated state.

But it is the *os uteri* which dilates as the pains increase, while the cervical portion *shortens and becomes condensed*. Hence we see why, in cases of partial attachment of the placenta over the *os uteri*, where a portion of its circumference is tied up, as it were, and prevented from partaking in this process, the irregularity of its dilatation tends directly to keep up the flooding; and why also, when the attachment is central or nearly so, there is so much less disposition to excessive hemorrhage; since, in the latter case, the impediment is as much on one side as on the other, and, though the dilatation may not be to so great an extent as is desirable, it is, nevertheless, symmetrical. This is no doubt the mode in which, what Mr. Barnes³

¹ Mr. Ingleby (Essay on Uterine Hemorrhage, p. 143,) remarks of the hemorrhage in Placenta Prævia that, "in consequence of its more ready escape from the uterus, it is said to be more florid and fluid in this than in the accidental species of flooding."

² Op cit., p. 714.

³ Lond. Lan., 1857, vol. ii. p. 211, Aug. 22. Also, Phys. and Treat. of Plac. Præv. Lond., 1858, p. 55.

calls the "zone of safe attachment," is reached; and the reason why, when that is attained, the hemorrhage ceases, rather than what is there assigned by him—that there is a limit, in the cervical portion of the uterus beyond which there is no disposition to hemorrhage: a statement which is not in accordance with what we know of the anatomical or physiological nature of this organ.

What are the proofs, upon which the opinion is based, that in Placenta Prævia the hemorrhage increases during the pains, and diminishes in the intervals? If we search the authors who have adopted this view, and given it their assent, we look in vain for anything of the sort, and, strangely enough, Prof. Simpson himself seems to have been content with the evidence in its favor, which was furnished by the respectability of its indorsers, and given it the weight of his own sanction without challenging its value; which is the more surprising, since, by no member of the profession, have the data upon which obstetric medicine is founded, been more critically or intelligently examined.

To Dr. Legroux¹ belongs the honor of first pointing out the error of this opinion. In the notes of a case of Placenta Prævia, attended by him in May, 1847, he reports that "in exploring the orifice with the finger carried as high as possible to the left, between the internal face of the neck, and the placenta detached on this side only, I proved the following facts. During the uterine diastole, the finger easily penetrated between the separated portions, but at that time the blood poured out by its side into the vagina. During the systole, the finger was driven out by the membranes, distended and closely applied and pressed against the internal surface of the neck; the *blood ceased to flow*, but what had been poured into the vagina during the diastole was expelled by the pressure of the womb. These facts being carefully observed, and verified by repeated observations, I became convinced that the flow of blood from the vessels, the *true hemorrhage*, was diastolic; that the discharge of the blood from the vulva, the *apparent hemorrhage*, was indeed systolic, but coincident with the cessation of the actual hemorrhage. The cessation of the hemorrhage, (*l'hémotase*), was the manifest result of the uterine contraction, of the tension of the membranes forcibly applied to the internal face of the neck."

¹ Archives Gen. de Med, Dec. 1855, p. 649. For details of this case, see Index, sub "Legroux."

The conclusions arrived at by Dr. Legroux are—

“1st. That whatever may be the place of the attachment of the placenta in the uterus, all hemorrhage arising from its separation takes place during the diastole or repose of the uterus.

“2d. Contraction of the uterus suspends it.

“3d. The blood which pours from the vulva while the uterus is contracting, had collected between the separated surfaces and in the vagina, during the diastole.

“4th. The hemorrhage will be arrested if the contraction becomes permanent, or if we can place the detached surfaces in such a position that they cannot be separated during the diastolic movement.

“5th. Hemorrhage is almost exclusively uterine, the placenta not contributing to it except in a small proportion, which is enough to affect the life of the child, but not that of the mother; and it becomes exclusively uterine when the death of the child has put an end to the utero-fœtal circulation.”¹

Admitting the fact thus reported by Dr. Legroux, and the credibility of the witness is such that until greater evidence is brought forward to disprove it, it must stand, the theory advocated by Prof. Simpson loses the support of any inferences which may be drawn from the character of the hemorrhage as generally understood, and rests solely upon the demonstrable evidence of the connection actually existing between the placenta and uterus. For even if we accept the explanation which he offers in its support, in case the fact, with regard to the hemorrhage, should be in reality what Dr. Legroux's experiments have proved it to be, that the hemorrhage being greater during a pain, these contractions, “in pushing down the presenting part of the child against the compressible placental mass, will squeeze out from its maternal cells as from a sponge, a portion of the fluid blood contained in them, and hence during the pressure an increased flow of this blood will issue from the vascular orifices opening upon its detached surface,”² the argument already employed (p. 41) when discussing the incapacity of these tortuous vessels of the placenta, to supply the blood which pours down in the “gushes” which practitioners from time to time meet with, is entirely applicable, and loses none of its force when applied here.

We pass now to a consideration of the anatomical connection be-

¹ Loc. cit., p. 656.

² Loc. cit.

tween the placenta and the uterus. From the nature of the case, opportunities for ascertaining by actual examination, the facts in relation to this much controverted point, must be very rare. The Hunters distinctly affirm the existence of vessels passing from the uterus to the placenta. Wm. Hunter¹ remarks, "these two portions of the placenta (umbilical or infantile, and uterine) are so interwoven with one another as to leave innumerable small vacuities, with free communications, through the whole substance. * * * * This cellular receptacle in the placenta cannot be completely filled after it has been parted from the uterus, because then the fluid, which we may by any contrivance throw in, will be discharged at the innumerable orifices on the outer surface of the placenta; but while it remains attached to the uterus, all the cells may be easily and completely filled by injecting any fluid into the arteries or veins of the uterus. These vessels, and these only, have a demonstrable communication with the spongy cells of the placenta, which receive the maternal blood from the arteries of the uterus, and give it back into the veins of that part. Both these vessels pass into the decidua, and the larger branches of both, with little or no ramification, terminate abruptly in the cells. The arteries are all much convoluted and serpentine; the larger, when injected, are almost of the size of crow-quills. The veins have frequent anastomoses, pass in a very slanting direction, and generally appear flattened; some of them are at least as big as a goose-quill, and many of them are very small. * * * * Notwithstanding the disputes still subsisting among anatomists, whether any bloodvessels pass between the uterus and placenta, and though the texture of these vessels be so exceedingly tender that they break with the least force, *they are as demonstrable in a proper subject as any vessels in the body, not only by injections, but in a fresh subject, without any artificial preparation.*"

A little later, in 1760, Dr. Monro, the younger,² having injected an impregnated uterus with different colored wax, and afterwards cut it longitudinally so as to obtain a section and distinct view, demonstrated before the Philosophical Society, that no sensible vessels pass from the one to the other. The vessels of the uterus were well filled, and in the extremities of the veins the coloring matter was

¹ Anat. Descrip. of the Human Gravid Uterus. Lond., 1794, p. 44.

² Quoted by Dr. Lee, op. cit., p. 134.

found mixed, but not a particle of it was to be seen in the placenta. The advocates of the theory of direct communication, explain this absence of the connecting, the decidual vessels, by supposing that in the cases like the one recorded by *Monro*, the injection failed to run. In reasoning upon this, after giving the details of two preparations of his own, in which the like result happened, preparations injected with the greatest care, in one of which "not a particle of injection entered the placenta," and in the other "there was no appearance of any blood-vessel crossing between the inner surface of the uterus and placental decidua," *Dr. Lee* remarks,¹ "the repeated examination of the uterus and placenta in their natural state, under water, and when the uterine vessels were filled with injection, having led to no conclusive and satisfactory results respecting the connection of the placenta and uterus, it occurred to me soon after the publication of my paper in the *Philosophical Transactions* in 1832, that the most likely means of discovering the real connection of these parts would be to examine the placenta when the vessels of the uterus were filled with their own blood and coagulated." In the next year an opportunity offered, and assisted by *Mr. W. Lawrence*, he made an examination upon the uterus of a woman who had drowned herself in the ninth month of pregnancy.² "The membranes were slowly and cautiously detached from the surface of the uterus, to which they retained their natural adhesion. They separated under gentle dragging, leaving the surface of the placenta smooth, soft, whitish, and entire, except at some points toward its circumference, where the adhesion was firmer, and a passage of the vessels, containing coagulated blood, from the uterus to the placenta, was observed. As the coagula were considerable, we supposed at first that they had proceeded from partial detachment of the placenta and membranes, but we soon found this supposition to be erroneous. The placenta, indeed, adhered more firmly at these points. The coagula, which exceeded in size a large writing-quill, were continued through openings of corresponding magnitude into the uterus. When air was impelled into these openings, the internal surface of the uterus was raised, apparently by the distention of the large uterine veins. On the other side the coagula were continued into vessels running on the surface of the placenta, or of the membranes at its circumference.

¹ *Op. cit.*² *Op. cit.*, p. 136.

When these, which were extremely thin in their coats, were slit open, the internal surface was smooth, like that of a vein. They were large where they commenced at the uterine orifices, but soon lessened, so that they could not be followed more than an inch or two. Their termination was obscure, and its precise mode was not ascertained. Although the placenta adhered to the uterus, at the points where these vessels entered it, more firmly than in any other situations, their texture was so delicate that it separated even here without the employment of much force. In separating one-half of the placenta from the uterus, the passage of vessels between them was observed at four or six points. On the surface of the placenta in the rest of its extent, there were numerous small tortuous vessels, and similar ramifications were seen on the surface of the Uterus. We could not see any open orifices belonging to those vessels on the surface of the placenta, nor ascertain that they derived their origin from the uterus."

A few years later than the investigations of Dr. Lee and Mr. Lawrence, an opportunity offered itself to the late Dr. John Reid, who with Dr. Knox, has left on record a detailed report of the investigations made by them upon the same specimen, but independent of each other. Dr. Knox,¹ after premising that "the first opportunity I had afforded me of examining the impregnated uterus with the placenta adhering and undisturbed, was not a favorable one, but it satisfied me of this, that minute vessels of some kind or other do pass from the placenta to the uterus, and that the mode of the commencement of the uterine veins or sinuses on that surface of the uterus to which the placenta adheres had not been fairly described," goes on to say, with reference to the specimen he was investigating with Dr. Reid, "the whole of the structures to be examined were placed, when I first saw them, under clear spirits, and several sections having been made already through and through all the textures, quite into the cavity of the uterus, the examination was begun upon the margin of one of these sections. On carefully pushing away the placental mass from the uterus, several textures came into view; to take these in the order they were first looked at, I shall commence with the surface of the placenta; I mean of course that surface which adheres *mediately* to the uterus. In the structure of

¹ Braith. Retros., No. 2, art. 67, from Med. Gazette, Oct. 30, 1840, p. 209.

the placenta adjoining this surface, I could observe nothing more than what I had uniformly previously noticed, viz., minute vessels dividing and subdividing until they were just perceptible under the single lens I used. That these were arteries and veins there could be no doubt, since any separate bundle might be traced backward to the large vessels from which they came. In respect to any placental cells or cavities, or large placental sinuses, or decidual spaces, or placental spaces, I may as well say at once, that no such structures were ever seen by me, and that I question, as I always did, the existence of such cavities or spaces.

“Having traced certain minute branches of these placental vessels to that surface of the membrane interposed between the placenta and uterus, (usually called decidua, but obscure in its real nature,) the union of this membrane to the surface of the placenta was found to be comparatively firm, whilst its uterine surface adhered so laxly to the uterus, that it might be pushed from it to a considerable distance without destroying the anatomy of the intermediate textures or organs, owing to their natural elasticity. Being fully convinced, as I had been for many years, that to unravel the anatomy of these textures was to discover probably the whole secret of the mode of connection between the human foetus and its parent, I dissected and observed these intermediate textures with the greatest care. To state in some sort of order what occurred at this point of the inquiry, I shall commence by observing that the minute vessels I had seen in the substance of the placenta passed almost directly through the interposed membrane or decidua, in numerous bundles, being bound at the same time to the edges of the apertures, through which they passed by a delicate but firm membrane, derived from that surface of the decidua which faces the placenta itself. Having passed through it, some of these were observed still to contain a dark-colored fluid, which I naturally thought must be blood. So soon as these bundles of vessels had passed fairly through the decidua, they proceeded toward the inner surface of the uterus, inclosed, as it appeared to me, in funnel-shaped tubes, formed of a membrane connected as well with the inner surface of the uterus as with the uterine surface of the decidua. This membrane resembled a serous membrane, but is probably merely a cellular tissue condensed, extremely delicate, semi-transparent, and not unlike the arachnoid. Many other funnel-shaped portions or tubes had already been torn, so as

to expose the placental tufts of vessels, and I tore through one or two of these tubes so as to be sure that they partially inclosed the tufts. It now became evident that the placental tufts did not terminate in these funnel-shaped tubes, but proceeding onward, adhered apparently by some means or other to the surface of the uterus itself; it was moreover now evident, that to ascertain the mode of adhesion of the tufts to the uterus, was the desideratum. Tracing, therefore, with every possible care, a bundle or tuft of vessels, quite up to the surface of the uterus, it was found suddenly to disappear, plunging into an orifice leading directly into one of the venous sinuses of the uterus. In this sinus or cavity of (the uterus?) the placental tufts floated, extending a considerable way into the sinus, and having distinct terminations, that is, not uniting or anastomosing, so far as could be observed, with any other system of vessels. I now reversed the dissection: an uterine sinus was laid open more on that aspect which faced the substance of the uterus; it now seemed to me that the orifices by which the placental tufts had penetrated into the uterine sinuses were in no sense either the commencement or termination of the uterine veins, but merely lateral openings in the walls of the sinus; and that the peculiar pen-shaped orifices, described by many anatomists as seen on that surface of the impregnated uterus from which the placenta had been detached, and which had been declared to be the commencement of the uterine veins, shut up by the decidua so long as it is present, were appearances occasioned merely by an incautious dissection—a tearing away, in fact, of the placental tufts of the membrane which connects the tufts to the orifices themselves, and of a portion of the delicate inner wall of the sinus itself.”

Dr. Reid¹ reports the result of his investigations as follows: “On separating the adhering surface of the uterus, slowly and cautiously, under water, I satisfied myself, but not without considerable difficulty, of the existence of the utero-placental vessels described by the Hunters. After a portion of the placenta had been detached in this manner, my attention was attracted towards a number of rounded bands passing between the uterine surface of the placenta and the inner surface of the uterus. These bands were generally observed to become elongated, thinner, and of a cellular appearance, when put

¹ Braith. Retros., No. 3, art. 81, from Edin. Med. and Surg. Journ., Jan. 1841, p. 1-13.

upon the stretch, and were easily torn across; while at other times, though much more rarely, they could be drawn out in the form of tufts from the mouths of the uterine sinuses. On slitting up some of the uterine sinuses with the scissors, these tufts could be seen ramifying in their interior, and were more or less elongated, many of them appearing only to dip into the open mouths of the sinuses, while others proceeded from a quarter of an inch to an inch from the open mouths of the sinuses by which they had entered, and in some cases they extended themselves into one of the neighboring sinuses. The next point was to endeavor to ascertain the nature of these tufts, by injection and microscopic examination. A size injection was thrown into the umbilical vein; and, though it ran imperfectly from the injury done to the detached portions of the placenta while tracing the course of the utero-placental vessels, yet several branches of the tufts contained in the uterine sinuses were filled with injection, and their continuity with the umbilical placental vessels was clearly ascertained. On placing portions of these tufts under the microscope, along with portions of the umbilical vessels taken from different parts in the interior of the placenta, their identity was at once apparent. Having thus determined that these tufts, observed in the uterine sinuses of the mother, were prolongations of the foetal placental vessels, I then proceeded to examine their anatomical relations to these sinuses. These tufts were found to protrude into the open mouths of certain of the uterine sinuses only, and, it need scarcely be added, that they were observed only in those sinuses placed next the inner surface of the uterus, and not in any of the deeper sinuses. These tufts were surrounded externally by a soft tube similar to the soft wall of the utero-placental vessel, which passed between the margin of the open mouths of the uterine sinuses and the edges of the orifices in the decidua, through which the tufts protruded themselves into the sinuses. The size of these tufts varied considerably. Some of them appeared to fill up completely the open mouths of the sinuses by which they entered; while others filled them only partially. On examining these tufts as they lay in the sinuses, it was evident that, though they were so far loose and could be floated about, yet they were bound down firmly at various points by reflections of the inner coat of the venous system of the mother upon their outer surface. This reflection of the inner coat of the uterine sinuses upon the tufts was sometimes observed at the point where these

entered the open mouths of the sinuses; at other times it was at or near their apices, and was in general so strong, that the tufts were torn across in attempting to detach them by pulling. In this uterus we thus ascertained that, while some of the utero-placental veins contained no prolongations of the foetal placental vessels, in others these passed along their interior and projected into the uterine sinuses. On tracing these utero-placental veins, which contained no foetal vessels, as far as the placental surface of the decidua, the inner coat of the venous system was seen to be prolonged upon some of the tufts of foetal placental vessels in their immediate neighborhood. On tracing one of the larger of the curling arteries through the decidua, it was also observed, that when it reached the placental surface of that membrane, the interior coat of the arterial system of the mother was prolonged upon some of the tufts of the foetal placental vessels, which projected into their orifices. Those numerous branches of the foetal placental vessels which reach the placental surface of the decidua, and do not pass into the uterine sinuses, nor into the orifice of the utero-placental vessels, are attached by their apices to the placental surface of that membrane.

“On placing some of the filaments, composing those tufts of foetal placental vessels found in some of the uterine sinuses of the mother, under the microscope, they were observed to divide and subdivide into branches more or less elongated, all of which terminated in blunt extremities.

“There is no cellular nor any other tissue filling up the intervals left between the branches of the foetal placental vessels; and the difficulty experienced in unraveling them does not arise from the presence of any connecting medium, but from the crossing and re-crossing of the branches of different tufts, and those of the same tuft with each other. The outer surface of the placental vessels has a smooth appearance, and they are, *we may suppose*, everywhere enveloped in the inner coat of the vascular system of the mother, which, as we have seen above, is reflected upon them.

“As the blood-vessels forming the placenta, and also those prolonged from it into the uterine sinuses, divide and subdivide into numerous branches, which do not anastomose with each other, but all terminate in blunt extremities, we might, on theoretical grounds, as well as from the descriptions given by others, decide that in each of these branches an artery and a vein are bound up together. This

conclusion was fully confirmed by the microscopic examination of some of the injected branches of the tufts of the placenta which passed into the uterine sinuses, and also of three other placentæ, in which the arteries were filled with different colored size injection. I was satisfied that each of the smaller branches of the placental arteries is bound up with another branch of one of the placental veins, which closely accompanies it, forming what appears a single vessel, when viewed through the microscope. Each branch of the umbilical artery is thus closely bound up with a branch of the umbilical veins, and both of them divide and subdivide exactly in the same manner, and terminate in what appears to be blunt extremities, but which actually form the termination of the arteries, and the commencement of the veins. The interior of the placenta is thus composed of numerous trunks and branches, (each including an artery and an accompanying vein,) every one of which, we believe, is closely ensheathed in prolongations of the inner coat of the vascular system of the mother, *or at least in a membrane continuous with it*. If we adopt this view of the structure of the placenta, the inner coat of the vascular system of the mother is prolonged over each individual tuft, so that when the blood of the mother flows into the placenta through the curling arteries of the uterus, it passes into a large sac formed by the inner coat of the vascular system of the mother, which is intersected in many thousand of different directions, by the placental tufts projecting into it like fringes, and pushing its thin wall before them in the form of sheaths, which closely envelop both the trunk and each individual branch composing these tufts. From this sac the maternal blood is returned by the utero-placental veins without having been extravasated, or without having left her own system of vessels. Into this sac in the placenta containing the blood of the mother, the tufts of the placenta hang like the branchial vessels of certain aquatic animals to which they have a marked analogy. This sac is protected and strengthened on the foetal surface of the placenta by the chorion; on the uterine surface of the *decidua vera*, and on the edges or margin by the *decidua reflexa*. The blood of the mother, contained in this placental sac, and the blood of the foetus, contained in the umbilical vessels, can readily act and react upon each other, through the spongy and cellular walls of the placental vessels, and the thin sac ensheathing them, in the same manner as the blood in the branchial vessels of aquatic animals is acted upon

by the water in which they float. According to this view of the structure of the placenta, the foetal and maternal portions of the placenta are everywhere intimately intermixed; and we find tufts of minute placental vessels, with their blunt terminations, lying immediately under the chorion covering its foetal surface, as well as toward its uterine surface. When the fissures dividing the placenta into lobes are so deep as to intersect the whole thickness of the placenta, we may have two or more of these sacs, instead of one. The discovery of the prolongations of the foetal placental vessels into some of the uterine sinuses is principally valuable, as it presents us with a kind of miniature representation of the whole structure of the placenta, and enables us to comprehend it readily; for we have there the foetal blood-vessels, resembling branchial vessels, ensheathed in the inner coat of the vascular system of the mother, and bathed in the maternal blood. The placenta is, therefore, not analogous in its structure to the lungs, but to the branchial apparatus of certain aquatic animals."

Continuing our quotations, we find in the report of Dr. F. W. Mackenzie¹ the following facts: "In the early part of April, 1853, a poor woman, under the care of Messrs. Clark, Norway, and myself, died of hemorrhage, during the progress of a labor, rendered protracted by malposition and impaction of the foetal head. A *post-mortem* examination of the body was made on the following day; and, as it was found that the placenta was still partially adherent, although much of it had been detached, it appeared to me that it would serve the purpose in view. Accordingly, the uterus and placenta were removed to University College, where the following observations were made, under the immediate superintendence of Dr. Sharpey.

"The uterus which had been cut off somewhere above its orifice, was first carefully inverted, and several loose unadherent coagula were removed from its interior. It had the appearance of being very exsanguineous, and on the surface from which the placenta had been detached, the ramifications of the utero-placental arteries could be plainly seen, but free from any plugging or coagula; about a fifth of the placenta was still adherent. In the next place, the vessels

¹ Braith. Retrospect., No. 29, art. 159; also Assoc. Med. Journal, Dec. 23, 1853, p. 1127.

along the cut surface of the uterus were secured by ligatures placed along the line of its division, and the hypogastric and ovarian veins were also secured by ligature. An injecting pipe was now fixed in one of the hypogastric arteries, and some defibrinated blood was steadily injected. The results of the operation were as follows. The blood escaped freely from the orifices of the utero-placental arteries, which had been torn across by the separation of the placenta; none escaped from the torn utero-placental veins, nor did any pass away from the placenta. The injection was continued for some time, but with no variation in the results. It was now thought advisable to ascertain the force with which the blood was injected; and tested by the hæmadynamometer, it was found not to exceed that of the heart, acting under ordinary circumstances. In the next place the opposite hypogastric artery was injected; and in this case it was found, as in the other, that blood escaped freely from the orifices of the torn utero-placental arteries, but none passed out of the utero-placental veins; whilst in this case a small quantity escaped from the surface of the placenta contiguous to that which was still adherent. The injection was repeated several times with the same results; the great bulk of the injected blood escaped readily from the orifices of the torn utero-placental arteries, a small quantity only came from the placenta, whilst none could be observed to pass out from the torn utero-placental veins, whose orifices were plainly visible and carefully watched. Nor, it should be added, were the vessels plugged with coagula."

Dr. Madge¹ reports the following results of the examination of the uterus of a woman who had died in convulsions, and from whom the child was removed by the Cæsarean section. "After the child was removed, I also removed that portion of the uterus to which the placenta was attached. I had previously carefully examined the placenta and membranes *in situ*. The uterus remained in its uncontracted state; its walls had an average thickness of about an inch, and the whole internal surface was lined by the decidua vera. This membrane presented a smooth, whitish appearance, covered here and there by glairy mucus, moistened and probably altered in appearance by the discharged liquor amnii. Except near the placenta it was perfectly detached from the chorion and decidua reflexa. The two

¹ London Lancet, 1856, vol. i. p. 204, also Braith. Retros., No. 33, art. 128.

latter membranes appeared to be somewhat blended; but with a little care, could be easily separated. On approaching the edge of the placenta, to the extent of an inch around its circumference, the blended chorion and decidua reflexa were firmly adherent to the decidua vera, and required considerable care and force for their separation. My impression is that this is one of the means by which the placenta is kept in its position—*i.e.* a placenta situated as in this case at the fundus uteri, losing the support of this circular band of union between the membranes, would fall from its situation.

“The so-called utero-placental vessels and the cellular tissue in which they are imbedded would be too soft; they are almost gelatinous, and therefore too weak to support the weight of the placenta and cord. The amnion was easily separated from the chorion, even as high up as the cord, and it is possible to carry the separation as far as the navel. The chorion, however, could not be separated from the border of the placenta without tearing. Many of these points, with others that I have to describe, may be seen in the preparation. It is well preserved, and is now before me; about two-thirds of the placenta is still adhering to a portion of the uterus.

“After examining the parts in their natural position, I removed them, and hastened home to place the whole in warm water. Then, having cleared the placenta of as much blood as possible, taking care that the water in the basin remained warm and clean, I injected into the umbilical vein a large quantity of warm water colored. This was done with the intention of learning whether any of it would pass into the water in the basin through the large gaping sinuses on the cut surfaces of the uterine walls. I have frequently failed to inject placentæ from the difficulty of getting them whole; but with this one, no portion of the utero-placental connections being disturbed, I was enabled to distend it to a considerable size, and after a long time, some of the injection oozed back through the umbilical arteries. Although I continued injecting colored fluid for upwards of an hour, the water in the basin remained colorless, except indeed being slightly tinged with a little blood, that, notwithstanding the pressure I had employed, still remained in the uterine vessels. No portion of the colored injection passed beyond the placental vessels. This proves, or I should rather say, in deference to the experiments of others, supports the position, that no fluids by means of blood-vessels can pass from the child to the mother. I now

made an opening on the external surface of the uterus, corresponding to about the center of the placenta, and having found a large artery, I threw into it an injection, consisting, for the sake of its running freely, of a small proportion of yellow wax melted in olive oil. After injecting as much of the oil and wax as it was possible to get in, that part of the examination was left for the next day.

"It now occurred to me that I should like to see the utero-placental arteries and veins, or anything else lying or passing between the placenta and the uterus. On very carefully lifting the edge of the placenta, and raising its substance for a few inches from the internal face of the uterus, using at the time a powerful magnifying glass, I found that, instead of having torn through arteries and veins, leaving large open mouths, which have been supposed to be the fruitful source of uterine hemorrhage, there was really nothing of the kind to be seen. The placenta appeared to be merely in apposition with the uterine decidua, and kept there by the means already alluded to, aided probably to some extent by a very slight and imperfect stratum of cellular tissue. The uterine surface of the placenta, covered by a thin, imperfect membrane, by some called the placental decidua, was not entirely free from marks of blood, but these were only small points, almost as few and as far between as the red points seen on making a section of the brain. I am quite aware that in the practice of midwifery we sometimes find the placenta saturated with blood, but this appearance arises from a cause which I am able to explain; and is it not an argument in favor of my views, that after ordinary labors we frequently find the uterine surface of the placenta almost as free from blood as in this case, where it had not to pass through the natural passages? To proceed with the examination. It must be remembered that the uterine decidua as yet remained perfect. Finding a little bulging at a certain part of it, about an inch from the border of the placental attachment, I made a small incision, and immediately a portion of the injection which I had thrown in at the back of the uterus made its appearance. On the following day, the injection having hardened, I dissected the uterine substance from without to within. I found the injection in several parts, but the greater portion was deposited in lumps, about the size of filberts, on the uterine decidua. The sacculi containing the injection seemed to be formed by processes of

the decidua fixed to the uterine walls, forming septa between them; they were irregular in size and form. It was one of these sacculi that I had noticed the day before, on the other side of the decidua, by its bulging appearance.

"In the substance of the uterus, I found that the blood-vessels lose their distinctive characters of arteries and veins from without inwards. The inner third is made up entirely of a net-work of sinuses, without any larger arteries and veins than those necessary for the nutrition of the parts in which they are found. These are the small vessels, or continuations of them, and therefore still smaller, that pass through the uterine decidua, the rupture of which gave rise to the points of blood seen on the uterine surface of the placenta; they are similar to the vessels of new tissues, mere minute canals, as imperfectly organized as the tissues they are intended to nourish. All this goes to prove that fluids do not pass from the mother to the child directly, by means of blood-vessels; and also that there are no utero-placental arteries and veins, the rupture of which can give rise to what we call uterine hemorrhage. Where, then, does the blood come from? My conviction is, that when the placenta is removed, the sacculi I have spoken of become over-distended with blood, and burst; the membrane forming them is easily torn, and one after the other they give way. But by this time the outer muscular fibers of the uterus have probably contracted, which, by preventing more blood from being sent into the sinuses, and these themselves being interlaced with contractile fibers, their caliber is obliterated, and the hemorrhage is arrested. The gush of blood which sometimes comes down upon the hand of the accoucheur, I believe arises from the sudden bursting of one of these sacculi. It is difficult to imagine that the open mouths of either arteries or veins could produce such a result. These, however, the proper blood-vessels of the uterus, are comparatively remote from the surface exposed by the removal of the placenta; they only communicate with it indirectly through the uterine sinuses, which form a supplementary and different kind of circulation. The communication of the uterine arteries and veins with the sinuses is somewhat similar to that of the pudic arteries and veins with the corpus cavernosum. The uterine sinuses may be said to some extent to represent the same structure on a larger scale; and I believe that the uterine arteries and veins have no more to do with uterine hemorrhage from

the removal of the placenta, than the pudic arteries and veins would have with hemorrhage from an exposed surface, proportionate in size—of the corpus cavernosum.”

Velpeau¹ says: “I have vainly sought for these *utero-placental vessels* in a great number of subjects, and the condition of the parts has convinced me that, if they do sometimes exist, they are far more frequently wanting. I can assure the reader that whenever I have examined the ovum in the uterus after the third month, its surface, as well as that of the womb, was smooth throughout its whole extent, and that not a single vessel served to maintain the connection between these two parts.”

Prof. Meigs, of Philadelphia,² says, in an account of an examination of the uterus of a lady who had died pregnant: “In the presence of Dr. Yardley and Dr. Wallace, I detached the whole of the placenta from the womb, after the careful injection of the aorta made by Dr. Wallace, an expert anatomist, who had secured the external iliacs before throwing the injection into the trunk. Neither I nor those gentlemen, upon the most minute and careful search, aided by good lenses, could verify the existence of even a single vessel passing from the womb to the placenta. Much of the injection was effused into the cellular meshes of the placenta. It was an infiltration of the material, and not an injection in the anatomical sense of the term. We arose from the dissection, equally and unanimously convinced that we had not seen a single vessel broken off, or pulled out, in the slow, gentle, and most careful divulsion of the two surfaces, uterine and placental. This examination was made within less than twenty-four hours after the demise of the lady.

“During the epidemic of cholera here, in 1832, I examined a gravid womb at term within a very few hours after the death of a woman, in company with the late Dr. J. Hopkinson, then prosecutor at the University of Pennsylvania. He, though a practical anatomist, was unable, as I was, to detect anything broken, save mucous tractus, though the light and the glasses were good, and the most scrupulous care was used, without precipitation or rudeness in the operation.

“A similar opportunity was enjoyed, a few years since, at the Pennsylvania Hospital, in a womb gravid with twins. Here, also, I detected nothing but mucous tractus. Another very fine speci-

¹ Op. cit., p. 208.

² Treatise on Obstetrics, 2d ed., p. 207.

men, at the seventh month, was afforded to me by Prof. Pancoast, at the Jefferson College. In this case, many medical students observed the divulsion of the surfaces without detecting any vessels. I have had other similar opportunities, and the same results."¹

M. Cazeaux adopts the phraseology of M. Bonami, whose injections he witnessed, and² quotes as follows from that writer's thesis: "An injection was first made of the venous system of the uterus through the primitive iliac vein and one of the veins of the ovaries; the substance of which it was composed was varnish colored with red-lead. The second injection, made up of spirits of turpentine colored with indigo, was thrown into the uterine arteries from the inferior extremity of the aorta. Ligatures had been previously placed upon all vessels capable of transmitting liquids to the abdominal parts. The uterine cavity having next been opened at some distance from the attachment of the placenta, the foetus having been separated from its membranes, a blackish liquid was squeezed from the vessels of the cord which was nothing but blood; injections were immediately made into the vein and one of the umbilical arteries, of linseed oil colored with white wax and yellow ochre. These injections having been made with the utmost prudence, a careful dissection revealed and established the following:

"We perceived, in the first place, very distinctly, on the foetal surface of the placenta the red liquid injected into the uterine veins. But by what channels has the injection penetrated so far? That is the point in question to investigate. In separating the placenta with care, it is easy to see that a sufficiently large number of little vessels appear on the internal surface of the womb, traversing the inter-utero-placental tissue, which we have described, and plunge into the tissue of the placenta. These are the arteries and veins easily recognized by the different color of the injections.

"1st. *The Arteries*.—Their number is considerable; more numerous toward the center of its interior than in any other portion, though we still find some of them, but very much diminished in size, at two centimeters from the circumference of the placenta. Their

¹ The reader is referred to Braithwaite's Retrospect, No. 13, (1846,) art. 184, for a general review of the subject; also to No. 16, art. 158, "On the Constitution of the Placenta," by W. Adams, Esq., from *Med. Gazette*, Sept. 3, 1847, p. 424; also to Mr. Goodsir's "Anatomical and Pathological Observations."

² Op. cit., p. 194.

capacity is generally very small; they have a diameter varying from two millimeters to one-half a millimeter. They take on in a very sensible manner a spiral arrangement. Their course is oblique; they almost always creep along to the extent of a centimeter, sometimes more, before they direct their terminal extremity toward the anfractuositities of the placenta, and evidently penetrate into the tissue even of the placenta. On the uterine side they are evidently continuous with the uterine arteries. Lastly, they have very few ramifications, and these rarely anastomose with each other.

"2d. *The Veins*, which pass from the uterus toward the placenta through the inter-utero-placental membrane, have not the same arrangement with the arteries. The veins, says M. Bonami, have a caliber almost equal to that of the arteries; sometimes they are a little larger; some of them having a diameter of from four to six millimeters. The characters by which it is possible for us to distinguish them from arteries were of the last importance in the piece under examination. Thus these veins were penetrated by liquids thrown into the uterine venous system; they were rectilinear; their very numerous ramifications frequently anastomosed with each other, and formed vast plexuses upon the parietes of the cells. These plexuses penetrated the uterine surface of the placenta at all points, and on the other side the dissection exhibited to the naked eye their termination in the great uterine veins."

In an article published in the *American Medical Monthly*,¹ July, 1858, Prof. Dalton expresses the following opinion upon this point: "If we take the uterus of a woman who has died undelivered at the full term or thereabouts, and open it in such a way as not to wound the placenta, this organ will be seen remaining attached to the uterine surface, with all its vascular connections complete. Let the foetus now be removed by dividing the umbilical cord, and the uterus, with the placenta attached, placed under water with its internal surface uppermost. We then see the foetal surface of the placenta formed by the chorion, and covered still by the thin and transparent amnion. The amnion should next be removed, which can readily be done by gently detaching it from the surface of the chorion. If the end of a blow-pipe be now introduced into one of the divided vessels of the muscular walls of the uterus, and air forced in by gentle insufflation, we can easily inflate, first the venous sinuses of the uterus

¹ *Anatomy of the Placenta*, by J. C. Dalton, M.D., New York.

itself, and next the deeper portions of the placenta; and lastly, the bubbles of air insinuate themselves everywhere between the foetal tufts, and appear in the most superficial portions of the placenta, immediately underneath the transparent chorion. If the chorion be now divided at any point, by an incision passing merely through its own thickness, the air, which was confined beneath it in the placental sinuses, will escape, and rise in bubbles to the surface of the water. Such an experiment shows conclusively that the placental sinuses communicate freely with the uterine vessels, occupy the entire thickness of the placenta, and are equally extensive with the tufts of the foetal chorion.

"It is unnecessary to say that none of the air thus injected finds its way into the umbilical vessels.

"I have now had the opportunity of doing this experiment, with the results just described, on four different occasions since 1853. The first two cases occurred at Bellevue Hospital, in patients who had died of acute disease in the last stages of pregnancy. The third case was that of a woman who died undelivered, owing to hemorrhage from Placenta Prævia, at the end of the seventh month. The fourth was that of a woman who died of puerperal convulsions at the full term. The examinations were made at different times, in presence of Dr. C. R. Gilman, Dr. Geo. T. Elliott, Dr. H. B. Sands, Dr. F. J. Bumstead, Dr. Wm. H. Draper, Dr. Henry D. Noyes, Dr. T. C. Finnell, and Dr. J. W. S. Gouley, all of whom, I believe, were satisfied in every respect with the result of the experiment, and convinced of the existence of the placental sinuses, and of their free communication with the vessels of the uterus.

"The placenta, accordingly, is a double organ, formed partly by the chorion and partly by the decidua; and consisting of maternal and foetal vessels, inextricably entangled and united with each other."

The process of formation, by which the structure thus demonstrated by Prof. Dalton is reached, he explains as follows: that at the time when the villi of the chorion have become fully developed, and penetrate into the follicles of the uterine mucous membrane, their growth going on simultaneously and keeping pace with each other, the former constantly advancing as the cavity of the latter enlarges, "it is not only the follicles of the uterine mucous membrane which increase in size at this period. The capillary blood-vessels, which lie between them and ramify over their exterior, also become unusu-

ally developed. They enlarge and inosculate more freely with each other, so that every uterine follicle is soon covered with an abundant net-work of dilated capillaries, derived from the blood-vessels of the original decidua. * * * As the formation of the placenta goes on, the general anatomical arrangement of the foetal vessels remains the same. These vessels continue to form vascular loops, penetrating deeply into the substance of the decidua; only they become constantly more elongated, and their ramifications more abundant and tortuous.

“The maternal capillaries, however, situated on the outside of the uterine follicles, become considerably altered in their anatomical relations. They enlarge excessively, and, by encroaching constantly upon the little islets or spaces between them, fuse successively with each other; and losing gradually in this manner the characters of a capillary net-work, become dilated into wide sinuses, which communicate freely with the enlarged vessels of the muscular walls of the uterus. As the original capillary plexus occupied the entire thickness of hypertrophied decidua, the vascular sinuses into which it is thus converted are equally extensive. They commence at the inferior surface of the placenta, where it is in contact with the muscular walls of the uterus, and extend through its whole thickness, quite up to the surface of the foetal chorion.”¹

Weber, on the authority of Dr. Willis,² maintains that there is a free communication between the uterus and placenta, but that the vessels are of the nature of capillaries—of a very large size. His words are:—

“1st. That the arteries and veins of the uterus, the channels of the mother’s blood, penetrate in great numbers into the placenta, and are distributed throughout its substance in such wise that every one of its minutest lobules has a canal carrying the blood of the mother, and so comes into contact with the vessels in which the blood of the embryo is flowing. Here we both (Weber and Eschricht) differ from Seiler, who believed himself authorized to conclude that no vessels from the mother penetrated the placenta, but that the maternal vessels only came into contact with the surface of the placenta, where it was bounded by the uterus. 2d. The umbilical arteries of the embryo divide, in the manner of a tree, into very numerous and minute

¹ Op. cit., p. 9.

² See note on p. 201 of his translation of Wagner’s Physiology.

branches, which finally turn round, forming loops and anastomoses, and again collect into larger and fewer branches, which at length unite with a single trunk, and form the umbilical vein. Nowhere do the maternal and foetal vessels anastomose; nowhere is there any transmission of blood from the one class of vessels to the other; nowhere do we encounter open-mouthed terminations of vessels. 3d. The whole placenta, and therefore every individual lobule entering into its structure, consists of two distinct parts, the one a continuation of the chorion and vessels of the embryo, the other a continuation of the membrana decidua and vessels of the uterus. From the chorion, for instance, dendritic processes or elongations are sent out, which, in small ova about a month old, are so small and simple that they are called villi, but which grow by-and-by into large and numerous divided stems and branches.

“Into each of these dendritic processes of the chorion there penetrates a branch of the umbilical artery, and a branch of the umbilical vein. Both vessels divide into branches in the same manner as the process of the chorion in which they run. At the extremities of the branched processes of the chorion, the divisions of the umbilical artery come together in loops or coils; these coils, however, are for the most part not simple; the same capillary winds several times hither and thither, and forms several loops; loops are also frequently formed by the anastomosing of two neighboring capillaries. From these convolutions and loopings of the capillaries, little thickenings or enlargements of the extreme divisions of the processes of the chorion are produced. Each particular trunk, with its divarications of the shaggy chorion, forms a lobe or lobule of the placenta, which is covered by the tunica decidua. To this investment many of the terminal branches of the chorion will be found to have grown. It is in the spaces between the divarications of the chorion that those vessels run which transmit the blood of the mother, and which are prolongations of the uterine arteries and veins; they penetrate in this way to every, the most minute lobule of the chorion. 4th. The object of this structure seems to be that the minute, convoluted, greatly elongated, and extremely thin-walled capillaries, in which the blood of the foetus is circulating, may be brought into the most intimate contact possible, with the larger but everywhere excessively thin-walled canals in which the blood of the mother is flowing, that the two currents, without interfering with each other’s

motion, may pass each other to as great an extent as may be, with nothing interposed but the delicate parietes of each set of vessels; that they may exert an influence one upon another, the blood of the mother abstracting matter from that of the foetus, and the blood of the foetus, taking in its turn, matter from that of the mother. Eschricht differs from me in this, that he believes the uterine arteries and veins distributed to the placenta are connected together by as delicate, or even a more delicate system of capillaries, as that of the umbilical arteries; and in such a way that two systems of capillaries, to wit, that belonging to the child and another to the mother, are brought into intimate contact. I, on the other hand, believe that I have demonstrated that the uterine arteries and veins, once they have entered the spongy tissue of the placenta, do not further divide into branches and twigs, but immediately terminate in a net-work of vessels, the canals of which are of far too large diameter to permit them to be spoken of as capillaries, and of which the parietes are so thin that they cannot be shown apart by the most careful dissection. This vascular rete, which connects the uterine arteries and veins with each other, completely fills the spaces between the branched divisions of the chorion, and the extremely thin parietes of the canals of which it is composed, insinuate themselves at all points into the most intimate contact with the branches and convoluted masses of the capillaries of the umbilical system of vessels. This net-work of vessels, however, with reference to the passage of the uterine arteries into the uterine veins, performs the same office as a rete of true capillaries, so that it may be regarded as a rete of colossal capillaries. Eschricht maintains that plicated processes of the decidua penetrate the placenta, and may be traced between the branched divisions of the chorion, furnishing the several twigs with a delicate investment, and that these plicæ are the supporters of a capillary rete, by which the uterine arteries and veins are connected in the placenta. I, on the other hand, maintain that the walls of the uterine arteries and veins, where they penetrate the placenta, consist of a very delicate tunic, a prolongation, as it seems, of the inner tunic of the vessels of the uterus, covered with a layer derived from the substance of the decidua; that the inner tunic of the blood vessels lines the interspaces between the divisions of the shaggy chorion, and that the little masses of convoluted vessels or villi, which terminate the branches

of the chorion, penetrate the canals which transmit the blood of the mother, and are bathed by it in their interior."¹

These quotations have been made at length, for the double purpose of exhibiting as impartially as possible the opinions of writers upon this subject, and also of showing how little positive proof has been brought forward in favor of the theory of utero-placental circulation, so ably advocated by the Hunters, but in which, according to Dr. Lee,² they were anticipated by Roederer and Noortwyk.

We find in its favor—

I. The evidence of the Hunters themselves, which bears upon three points: 1st. That utero-placental vessels, whose office is to convey the blood of the mother, by direct communication, into the cavities of the placenta and return it to the uterus, do exist. 2d. They are of such size as to be not easily overlooked or mistaken for mere nutrient vessels; so large, in fact, that while the placenta "remains attached to the uterus, all the cells may be easily and completely filled by injecting any fluid into the arteries or veins of the uterus." 3d. These vessels admit of as easy demonstration as any of the vessels of the body, and there need be as little doubt concerning them.

II. The investigation of Dr. Lee and Mr. Lawrence, which if they have any value at all—and the vague manner in which the facts are stated very much weakens their force—go to prove, 1st, that vessels do pass between the uterus and the placenta; but 2d, that these vessels are not demonstrable beyond a doubt as to their nature; and 3d, that they are of limited number, one-half of the placenta containing from "four to six," of which necessarily a proportionate number only could be arterial or vessels of supply.

III. The investigations of Dr. Mackenzie which go to prove: 1st. That utero-placental arteries and veins do exist. 2d. That between the arterial and venous circulation of the utero-placental system there is no apparent connection. 3d. That there is no channel by which the blood once poured into the placenta by the utero-placental arteries can return with any degree of freedom.

IV. The investigations of M. Bonami reported by Cazeaux, in which the possibility of injecting the placenta by means of the uterine vessels is apparently proved.

¹ Braith. Retros., pt. 13, 1846, art. 184.

² Op. cit., p. 131, et seq.

V. The experiments of Prof. Dalton who was able to fill the placenta with air blown into the uterine sinuses, under water.

VI. The statement of Weber that there is a circulation of "colossal capillaries" between the uterus and the placenta.

On the other hand, we find,—

I. The opinion of Dr. Munro the younger, founded upon his want of success in injecting the vessels of the placenta, from those of the uterus; for, in the case referred to, (see *ante*,) "the vessels of the uterus appeared perfectly well filled, and in the extremities of the veins the colored matter is found mixed, but not a *particle of it* in the placenta."

II. The investigations of Dr. Knox which seem to disprove the existence of any vessels of large size passing from the uterus to the placenta, and go to show that the renewal of the foetal blood takes place in the uterine sinuses, where the placental tufts described by Weber float in the midst of the current of maternal blood.

III. The investigations of Dr. Madge which demonstrate: 1st. That no injection can be made to pass from the uterus into the placenta. 2d. That the uterine vessels by their union with each other on the inner surface where the placenta is attached, form large sacculi.

IV. The opinion of Velpeau founded upon his own investigations.

V. The experiments of Prof. Meigs which seem to be equally conclusive with those of Dr. Madge, of the non-existence of any utero-placental vessels.

VI. The opinion of M. Ch. Robin of Paris¹ who denies the possibility of injecting the placenta from the uterus except by rupturing the vessels; thereby causing extravasation, but not injection in any proper meaning of the term.

Finally, we have the investigations of Dr. Reid, undertaken, not so much to ascertain the nature of the connection between the uterus and the placenta, as to determine the character of the so-called "placental tufts," a kind of evidence exactly applicable to neither of these two theories. So far as the existence of the utero-placental arteries and veins is concerned, the mere fact of their

¹ Memoire sur quelques points de l'anatomie et de la physiologie de la muqueuse et de l'epithelium uterins pendant la grossesse. Journal de la Physiol. de l'Homme et des Animaux, pub. by E. Brown-Séquard, Jan. 1858, p. 40.

being found, though with considerable difficulty, is all that is stated.

In view of all that has been adduced pro and con, the present condition of our knowledge may be stated as follows. Since the days of the Hunters, few observers have been able to verify their statements in regard to the number and size of the vessels demonstrated by them in their investigations into the structure of the human placenta. What evidence can be brought forward in support of their opinion, with the exception, perhaps, of that of M. Bonami, is vague and unsatisfactory in its details, and negative only in its bearing upon the point at issue. All the evidence on the other hand which is of a positive and definite character, is totally opposed to the existence of these vessels, and for the same reason tends directly to disprove the theory of placental hemorrhage. For, if it cannot be proved that the maternal blood *enters* the placenta, it settles the question at once, without the necessity of determining the twofold nature of the placenta itself.

And if it does enter the placenta, it is also difficult to perceive how the maternal blood can circulate through it, unless we suppose that the maternal portions of the placenta, both arterial and venous, have grown from the division and subdivision of the comparatively few and small utero-placental arteries and veins which pass from the uterus to the substance of the placenta, and is in the strictest sense a continuation of them.

Prof. Meigs¹ has stated this point very clearly, and presents the argument as follows: "It is admitted that blood-vessels, whether arteries or veins or capillaries, when deeply inserted within the tissue of an organ or viscus, always leave their additional coats, and go within the intimate tissue solely as *membrana vasorum communis*. Professor Burdach calls this lining membrane *Endangium*, a word more easily pronounced than the common Latin term, or the long English compound word, lining membrane of blood-vessels. I greatly prefer therefore, to employ the word *Endangium*, after the illustrious German teacher. Raciborski, in his elegant treatise on the veins, published in the *Transactions of the Royal Academy of Sciences*, clearly shows that the true blood-vessel is in fact this very membrane, and that the other textures found in larger arteries and

¹ Op. cit., p. 208.

veins, are merely the protectors of the real vessel in its transit from the heart to the distal point in which its essential offices are to be performed. On various occasions I have been struck with this appearance in the large sinuses of the womb, some of which are so capacious as to admit the introduction of a finger into them. Here, the lining membrane, *Endangium* or true vessels, seems to sit upon the very substance of the womb, which serves as its basement tissue without intervention of any fibrous coat or other whatever, which, according to Raciborski, are left outside as the vessel enters into an organ.

"It is certain that living blood in motion makes its own channel. This is the case in the first forward movement of the corpuscles in the incubated egg; and it is certain that the track thus marked out is at an early date bounded by a membrane which is *Endangium*, and that in the ulterior development of the vascular tubes the stronger coats are superadded, until at last even the strongest and most elastic portions of the aorta itself become completed. But these strong elastic coats cannot be considered as the real blood-vessel, since they are, in fact, only its muniments and protectors against over-distention or laceration.

"Now it appears to me reasonable to say that, if this true blood-vessel terminates and opens up on the surface of the womb, as it surely does, and rests either obliquely or perpendicularly upon the softish mass of the nascent placenta, which serves as an obturator to its orifice, one might expect the impulse of the blood should make an impression upon that soft substance, and passing a short distance within it, come at last to clothe itself with a *membrana communis* or *Endangium*, and that along this endangium or tube the matter of injection might pass, giving rise to the appearance of what Dr. Hunter calls the spiral vessels. But these spiral vessels cannot carry on any true circulation, since they do not divide into capillaries, and so, returning as venules, allow their blood to re-enter the circulation.

"The same thing happens as to coagula formed in the heart or elsewhere, where they are observed to have become injected by the circulation, and thus endowed, as it were, with a sort of organization.

"I cannot conceive that blood once poured out into placental cells can ever again go back into the course of the circulation, because it is undeniable that blood, when once escaped from the contact of the

Endangium, dies or becomes coagulated, which is indeed the same thing as its death. To say that the blood is extravasated into the placental cells, is to say that it is extravasated or dead. There can be, therefore, no such physical condition."

The strength of this argument as applied to the point at issue will be best seen by recurring to the extract from Dr. Reid's paper, and also by a reference to the sources indicated in the note on p. 61. All of these investigators fail in demonstrating in the placenta a correlative system of arteries and veins, which have their origin and termination in the uterine vessels, while in regard to the foetal system, this connection by anastomosis can be clearly and satisfactorily made out, each branch of the umbilical arteries being closely bound up with a branch of the umbilical vein, and both of them dividing and subdividing exactly in the same manner, and terminating in what appears to be blunt extremities, but which actually form the termination of the arteries, and the commencement of the veins. In proof of this may be cited that portion of Dr. Madge's paper where he reports that the injection which had been thrown into the umbilical vein, made its appearance by oozing from the umbilical arteries, while the water in which the placenta was immersed was not colored at all by it, (see *ante*, p. 57,) showing most conclusively that there was a continuous channel of communication between the two systems of the foetal circulation. And there certainly is no good reason why the same means which enabled him, in the case cited above, to make known the minute and ultimate anastomoses of these foetal vessels, should not have demonstrated in an equally plain manner, if it existed, the same kind of structure as the connecting links between the utero-placental arteries and veins. And it is manifest that until this part of the proof is supplied, until a double system of vessels can be found in the placenta, which have their origin and end in the uterine arteries and veins, by a definite and clearly defined arrangement, which can be demonstrated to be continuous with them, and which are fitted by their nature for the transmission of the maternal blood, having the true *Endangium*, the advocates of this theory have failed in a vital point of their proof.

According to all analogy would there not, ought there not to be, of necessity, in order to preserve the fresh arterial blood of the mother from being intermixed with that which has already been deprived of its oxygen by contact with the foetal circulation, a well-

ordered and systematic arrangement of utero-placental arteries and veins, anastomosing with each other and exactly balancing each other in circulating capacity? Is there any portion of the body, through which the blood flows, where this is not found? To suppose that the blood of the mother is poured into the great sac which is formed by that portion of the placenta not occupied by the foetal vessels, there to remain till it finds its way out as best it may, is neither philosophical nor according to the well-known laws and proofs of design everywhere evinced in the animal economy; and it is surprising that in his elaborate and carefully-written paper, Prof. Dalton should not have met this point, instead of ignoring it entirely, and stating the fact in the following general terms:¹ "The placenta then when perfectly formed, has the following structure. These vessels enter the placenta in an extremely oblique direction, though they are represented in the diagram, for sake of distinctness, as nearly perpendicular. When they have once penetrated, however, the lower portion of the decidua, they immediately dilate into the placental sinuses, which extend through the entire thickness of the organ, closely embracing all the ramifications of the foetal tufts."

Neither is the explanation given by him (*ante*, p. 63,) of the way in which the vessels acquire their great size—their enlargement from capillaries to sinuses—clear and beyond doubt. For it may well be asked if the maternal capillaries fuse together and form the sinuses, why should not their orifices also fuse at the same time, and in this way produce openings on the inner surface of the uterine walls, which could not by any oversight be overlooked? But the result of every injection made on that side fully proves that the uterine sinuses in their undisturbed state have not these gaping mouths. The membrane covering them may be distended till it bulges out into large tumors, but at the same time no fluid escapes. (See Dr. Madge's experiments, *ante*, p. 58.) And moreover many placentæ are observed, the uterine surface of which appears to be whole, and exhibits none of the appearances which ought to be seen if this free communication with the uterine sinuses really existed.²

¹ Loc. cit.

² If we accept this explanation as the true one, does not a difficulty equally as great arise when we undertake to explain how a twofold circulation that is to be, can be originated in this uncertain manner from capillaries, whose relation to the

It is much to be regretted that Prof. Dalton having succeeded so well in injecting air through these utero-placental vessels, should not have made assurance doubly sure by forcing a more substantial and palpable substance along these very channels, and in this way establishing beyond a doubt, upon evidence demonstrable to the eye beyond dispute, the truth of his statements and the existence of a system of utero-placental vessels of communication.¹ It is scarcely an answer to this neglect to say that these vessels are so constituted as to forbid the attempt; for if air can be made to pass, why not a liquid? and, moreover, the perfection to which the art of injecting even the most minute vessels of the foetal and general circulation, and of the various organs of the body, has attained at the present day, leaves nothing to be desired. If the injection therefore fails to run, it is much more probable that no channels for its passage exist, since upon his own terms the maternal vessels are of sufficient size to empty the placental sinuses of their blood when they are torn across by the separation of the placenta from the uterus; and if blood can flow through them in one direction, certainly a liquid of similar consistency ought to penetrate in the opposite course.

If we adopt Weber's explanation, and consider the vessels of the placenta which are in connection with the uterine circulation by continuous channels, as "a rete of colossal capillaries," and performing the office of true capillaries; it is difficult to avoid the inference that in such an arrangement there must necessarily be confusion and intermingling of the arterial with the venous blood. Unless, indeed, the ultimate subdivisions of the utero-placental arteries anastomose

arteries and veins of the uterus is altogether indefinite, and afterwards by a sort of physiological legerdemain, arrange itself upon a definite plan, and connect itself, *secundum artem*, a portion with the uterine arteries and a portion with the uterine veins?

¹ The experiments of Prof. Dalton are hardly beyond a doubt as to their conclusiveness upon the point of inter utero-placental communication, when we take into consideration the nature of the texture of the walls of the vessels through which the air injected into the uterus found its way to every portion of the placenta. The impossibility of verifying by any after examination, whether the air followed the course of these vessels or passed through their walls from one to another, very much weakens the force of the whole experiment. And moreover, if there is this free communication, ought we not to find abundance of coagula all through the placenta after it is thrown off, not only in its substance, but occupying the same places under the chorion itself, and in that situation at once visible to the eye, as was the air which puffed out that coat in the experiments cited? They seem to prove too much.

with the equally minute origins of the utero-placental veins, in the same way that the capillary arteries continue themselves into the capillary veins in every other part of the body. But until such a system can be demonstrated in some way that places it beyond a reasonable doubt, it is more in accordance with analogy and ordinary physiological laws, to question the existence of the utero-placental circulation, than to suppose it carried on, in a manner which would utterly defeat its end. And, besides, it seems incredible, if such an arrangement of vessels as Weber describes (*ante*, p. 65) really exists, that the experiments of Dr. Madge (*ante*, p. 56) should have resulted as they did; or that with such a free communication between the uterus and the placenta, some of the injection should not have penetrated, instead of being completely arrested at the point of union between the placenta and the uterus.

And finally, it is by no means certain that the so-called utero-placental circulation is absolutely essential, and that under no other conditions can the ovum be developed and grow. In proof of this may be cited the facts observed in extra-uterine pregnancies. In this abnormal condition, whether the ovum be arrested in its passage through the tube, or not even entering it at all, has attached itself to some of the abdominal organs, the aeration of the foetal blood goes on to a degree sufficient to maintain the life and nourishment of the child through the whole period of pregnancy.¹

In these cases certainly, there can be found none of the peculiar conditions of circulation which admit of an extension limited only by the necessities of the case, but only the ordinary arrangement of blood-vessels such as is found in every other part of the system, and

¹ The way in which tubal pregnancies terminate, may also be adduced as proof in a limited degree, that the position here taken is correct. In these cases, as is well known, the fatal result is invariably owing to a rupture of the tube, and which, stretched to its utmost capacity by the constantly growing foetus and its appendages, can no longer yield to this ever-acting force. While in extra-uterine pregnancies, properly so called, the envelope of the ovum opposing no obstacle of this nature, allows the pregnancy to go on to its end, and after an ineffectual attempt at parturition, the mother not unfrequently carries the child as a foreign body for the rest of her life, unless it is got rid of by ulceration or otherwise, meanwhile giving birth to living children (see p. 84) as if no interruption to the process had ever taken place. This shows most conclusively that the cause which cuts short the duration of these pregnancies (tubal) is mechanical rather than vital; and hence these cases, if they have any weight at all in argument, bear against the doctrine that the utero-placental circulation must necessarily exist.

which, though they possess the power of enlargement to an extent sufficient to amply nourish the tissues among which they are found, cannot, by any interpretation, be considered as having an additional and superadded function. Their alteration under these circumstances being in no way different from what takes place in the case of ordinary foreign growths in any part of the body. So that if this growth and perfect development of the foetus and foetal appendages can go on elsewhere than in the uterus, without the peculiar arrangement of arteries and veins which the advocates of the utero-placental circulation claim, it is fair to suppose that they are not essential, and if not in one place, then not in another. (See p. 84.)

CHAPTER IV.

SPECIAL CAUSES OF HEMORRHAGE.

THE special causes of hemorrhage in Placenta Prævia are not satisfactorily determined. Since the days of Levret, the mechanical theory advanced by him, and adopted by the majority of the profession, has been the prevailing belief.¹ In brief it may be stated thus. The increase in size which the uterus acquires during the last months of pregnancy, is gained by the dilatation of the neck: this dilatation, in cases of Placenta Prævia, cannot take place without more or less detachment of the placenta, which is not susceptible of the same extension. Hemorrhage therefore, will come on earlier or later in the pregnancy according as the placenta is attached nearer to or farther from the true neck of the womb.

The elder Rigby, in his essay upon uterine hemorrhage, (pp. 15-34,) seems to have taken this view; although the inference may be drawn from his phraseology, that he limited the effect produced in this way, to the time immediately preceding labor; "when the uterus begins to dilate from its approach."

Denman sanctions it, but also states that the hemorrhage "is not always in proportion to the space of the placenta attached over the os uteri, or to the quantity separated."²

Duncan Stewart³ adopts it, but qualifies it with the remark, that in these cases, "the action of gestation is seldom continued to the full period of pregnancy."

Capuron⁴ and Gardien⁵ both recognize it to the fullest extent.

Burns⁶, in addition to the mechanical causes already alluded to, suggests another; "in the eighth or by the middle of the ninth

¹ For the details of this, and a very complete resumé of the literature of Placenta Prævia in the time of this author, see his "Observ. sur les causes et les accidents de plusieurs accouch. labor." Paris, 1766, p. 353, et seq.

² Mid., chap. xv., order 1st, sec. 6.

³ Treatise on Uterine Hemorrhage, London, 1818, p. 42.

⁴ Traite complet d'accouch., vol. i. p. 378.

⁵ Op. cit., vol. ii. p. 419.

⁶ Mid., ed. by James, sec. 38.

month, we find that either the uterus and the placenta no longer grow equally, in consequence of which the fibers about the os uteri are irritated to act, or so much blood as must necessarily, in this situation, circulate about the cervix uteri, interferes with its regular actions, and induces premature contraction of its fibers, with a consequent separation of the connecting vessels." In this way, he proposes to account for the hemorrhages, which occur not only when the presentation of the placenta is complete, and when it is only partially over the os uteri, but also, when the placenta is near the os, but does not cover it at any point.

M. Cazeaux, rejecting the theory of the mechanical school, explains the flooding in this way. The growth of the placenta coincides in point of time with the developments of the fundus, being far more rapid during the first six, than in the last three months of pregnancy; while the lower third of the uterus remaining almost stationary during the first six, takes on its greatest alterations of structure in the last three months, when the fundus is comparatively at rest. When, therefore, the placenta is misplaced, the inability of its substance to expand proportionately with the increase of the part to which it is attached, renders a separation, and consequent hemorrhage unavoidable.¹

Velpeau² observes, "when the placenta is inserted upon the neck of the womb, these two parts proceed together in their development, until about the fifth, the sixth, the seventh, and sometimes even until the eighth month and a half; varieties that are very easily explained by admitting with Busch, that one of the presumable causes of the implantation of the placenta upon the neck is the abnormal development of the uterus. But from that time forwards, the environs of the orifice are so rapidly withdrawn from the center, that a constantly increasing portion of the ovum necessarily remains without any adherence to the womb, and this portion, which is soft, vascular, and constantly on the stretch, may crack, or even tear, and thus give rise to a hemorrhage, which puts the child's life much more at hazard than the mother's. On the other hand, this displacement does not in general take place without the inferior portion of the womb being more or less irritated by it, and soon becoming the seat of an affluxion, a more or less decided congestion, and

¹ Op. cit., p. 702.

² Op. cit., p. 381.

thenceforth the general efficient cause of flooding is superadded to the peculiar cause, constituted by the presence of the placenta on the cervix. It is necessary for me to remark that these two causes, the rupture of some vessels of the placental parenchyma, and a state of congestion of the uterus may exist separately; that although the former almost always superinduces the latter, it is not however impossible for it to exist alone, and that the latter may pre-exist, or even exist to such an extent, as to give rise to imminent danger, without necessarily combining with the other! Besides, it is well known that blows, shocks, vivid emotions and all the other causes of ordinary uterine hemorrhage are equally fitted to produce it when the placenta is inserted over the orifice. It therefore follows, that both these kinds of flooding depend on the same proximate cause, the hemorrhagic *molimen*, and upon the same occasional causes; but that the presence of the placenta upon the cervix, constitutes a peculiar determining cause, which rarely fails of being in itself sufficiently powerful to produce it."

M. Jacquemier,¹ who has discussed this subject at length, gives as the result of his researches: "1st. That floodings at the end of the fourth month, and during the fifth and sixth, which cannot be traced to causes independent of Placenta Prævia, are very rare." 2d. That the increasing frequency of hemorrhages during the seventh, eighth, and part of the ninth month, are not due solely to the development of the cervical portion of the uterus, but also to its dilatation by the presence of the foetal mass. That "the rapidity of the development of the inferior segment of the body of the uterus, and the mechanical distention, during the last months of pregnancy, which make it descend in a short space of time so deeply into the pelvic cavity, particularly when the head of the foetus presents, constitute the ordinary cause of hemorrhage up to a period very near the end of gestation." 3d. That in those cases in which, after hemorrhage has come on, it ceases and does not return before delivery, the result is due to the fact that the distention has been relieved by this separation, and the edge of the placenta removed from the internal os by the gradual approximation of this orifice with the os externum, so that the placenta is not again brought into a similar condition. 4th. Those cases which occur at the end of the eighth month, or just pre-

¹ Manuel des Accouch., vol. ii. p. 237.

vious to delivery, have their origin in the dilatation of the os internum—or at the time when the distinction between the os internum and externum has disappeared. 5th. That in those cases where there is no hemorrhage at all until delivery, it is rather due to the fact that in multipara, the firmness and outline of the os externum having been destroyed by previous deliveries, labor comes on when the os internum begins to dilate, which also accounts for the variation of eight, twelve, or fifteen days, so common in the date of deliveries. 6th. That in some very rare instances the hemorrhage which has occurred at intervals during the pregnancy, ceases at delivery, when the descent of the head by its pressure upon the placenta compresses the vessels. In proof of this, he cites a case from Baudelocque, one from Walter, two from Mercier, and one from Rochefort.

We have now five different propositions to account for the hemorrhage:—

1st. That of Levret, which is purely a mechanical one.

2d. That of Mr. Burns, who traces the origin of the “spasmodic action,” which brings on the separation, to the increased irritability of the os uteri.

3d. That of M. Cazeaux, who ascribes it to a want of correspondence in growth between the placenta and the uterus at the point of their attachment, thereby inducing a separation.

4th. That of M. Velpeau, who, in opposition to M. Cazeaux, assumes that the growth of the placenta and the uterus at their point of contact is equal, and attributes the hemorrhage to the following causes: The placenta and the womb proceed together in their development until the fifth, sixth, seventh, and even to the eighth month and a half. That after these periods the os uteri begins to dilate so rapidly that a portion of the placenta is detached from the uterus and kept constantly on the stretch, and may even be ruptured. This separation and rupture necessarily produce an irritation, succeeding which comes a determination of blood to the part, and finally congestion of the womb in that region. That when matters have arrived at this point, a general efficient cause is added to the special cause which set the whole in operation. That all the general determining causes may act in connection with the special causes. That the reference of this hemorrhage to a rupture of the utero-placental vessels is based upon “false anatomical appearances,” and rather in accordance with “theoretical prejudices,” than with truth.

5th. That of M. Jacquemier, who attributes it to a double cause: unequal growth or development, and mechanical distention; that is to say, in those cases where hemorrhage is really due to Placenta Prævia, it results from the double cause of unequal development and the mechanical distention which takes place when the uterus settles down into the cavity of the pelvis.

Before, however, we proceed to discuss these propositions, to determine to which of the causes therein assigned, if to either, the hemorrhage is due, there are several points of a physiological nature, which they suggest, and which it will be well to consider:—

1st. That brought forward by M. Cazeaux (see *ante*,) who assumes as the basis of his theory, that the growth of the placenta is mainly attained during the first six months of pregnancy; during which time, also, the fundus uteri is developing at a corresponding rate, to remain in comparative inactivity for the rest of the period; thus affording the placenta, when it attaches itself there,—its proper and normal position,—a point of implantation, a foundation, as it were, upon which it will remain undisturbed till its office be no longer needed, it is thrown off by a general and concurrent contraction of the uterus.

2d. The statement of M. Velpeau (see *ante*) that “the placenta constantly augments in the same proportion as the surface of the womb with which it is in immediate contact, so that its width, at birth, depends upon the size of the uterus, or the dimensions of the point left exposed by the decidua at the commencement of gestation.”

3d. The idea advanced by Mr. Carpenter,¹ who sums up the whole matter by saying that after the third month the placenta “goes on increasing in accordance with the growth of the ovum.”

In endeavoring to trace and establish a correlation between the development of the fundus uteri and the placenta, M. Cazeaux it would seem must necessarily imply that that portion of the uterus had been specially intended by nature for the location of the placenta, and that when it is found on any other portion, it is out of place.

But is this the fact? What proofs have we that the normal position of the placenta is at the fundus uteri? Mr. Hugh Carmichael,²

¹ Principles of Human Physiol., 5th Am. ed., 1853, ¶ 983.

² Med. Gaz., Oct. 2, 1840, p. 53; also Braith. Retros., No. 2, art. 58.

availing himself of the well-known mode of determining the position of the placenta by a measurement of the distance between its edge and the opening made in the membranes, by the child's head at its birth, in the course of some investigations made by him at the Coombe Lying-in Hospital, Dublin, has shown that, out of the hundred cases he investigated, the placenta was in the vicinity of this aperture in ninety-six; and in a table quoted by him from Nægelè, it appears that of six hundred cases it was—

At the side of the womb.....	379
Undeterminable.....	180
At the fundus.....	7
Anterior wall.....	13 <i>only</i>
Over the os uteri.....	11
Calcareous deposits.....	10
	<hr/> 600

Von Ritgen¹ remarks that "the bag burst—

At the edge of the placenta in.....	22 cases.
At one inch from.....	8 "
Between one and two inches.....	12 "
Two inches.....	7 "
Between two and three.....	16 "
Three inches.....	5 "
Between three and four.....	4 "
Four inches.....	6 "
Between four and five.....	8 "
Five inches.....	3 "
Six inches.....	6 "
Eight inches.....	3 cases."

From which it appears, that in 100 cases the edge of the placenta was within two inches of the os uteri in 49.

"Of 34 women who died, while pregnant or soon after delivery, at the Hôpital de Perfectionnement, I found," says Velpeau,² "upon examining the parts, that the center of the placenta corresponded to the orifice of the tube in 20 cases; it was in front of it in 3 cases; behind it in 2, below it in 3, and in 6 cases only, toward the fundus."

In 100 cases reported by Mr. Doherty,³ the placenta was attached—

¹ Brit. and Foreign Med.-Chirurg. Rev., April, 1856, p. 554.

² Op. cit., p. 210.

³ Med. Gaz., Nov. 27, 1840, pp. 351-358; also Braith. Retros., No. 2, art. 58.

To the anterior wall in.....	25 cases.
To the left side.....	10 “
To the right side.....	8 “
On the posterior segment.....	54 “

Leaving only 3 cases for all other positions, the fundus included.

Arranging these in a tabular form, for greater facility of reference, the number of instances in which the placenta was situated at the fundus, compared to its position elsewhere in the uterus, is as follows, viz.:—

At the fundus.....	16
At the side, or on the anterior, or posterior wall.....	565
In the vicinity of the os uteri.....	145
Over the os.....	11
Undetermined	187

So that, even if we assume all those set down as “undetermined” to have been cases of attachment at the fundus—which is not by any means probable—the proportion is still entirely against that position, as the usual, or normal seat of placental attachment, by the ratio of more than four to one.

M. Jacquemier conceives, that under the operation of a vital cause, the ovum upon its entrance into the cavity of the womb, has a certain selective power. After the remark, that it is found most usually “upon a space a little elevated, to the right or to the left upon the posterior face, next on a corresponding point in the anterior face, next after this, upon one or the other sides, sometimes exactly at the fundus, and exceptionally on the neck,” he goes on to say, “that it fixes itself there, in obedience to a pre-existing, organic attraction, for it is not to be supposed that all parts of the surface (of the uterine cavity) are alike fitted for the development of the placenta. Like the germs of vegetables, it should have a portion which corresponds to radicles, which, in vegetating, direct themselves by a species of elective affinity, toward a determinate point.”¹

But, if we fall back upon the doctrine of vital causes, and consider the placenta as a body produced for a special purpose, as indeed it is, and following no general law of growth but the necessity of the foetus; and that, independent of everything else it augments up to the period when the foetal circulation reaches its height, and remains so until no longer being needed, it is got rid of by the operation of the

¹ Op. cit., vol. i. p. 273.

same causes that created it; we should expect to find disturbance occurring whenever the placenta attaches itself to any part of the womb, except that intended for it. And earlier, in cases where the ovum, interrupted in its descent through the Fallopian tube, affixes itself in some portion of its length, or earliest of all, when, not having even entered the tube, it attaches itself to some of the abdominal organs. For, while the uterus, in obedience to one of the prime laws of organization, prepares for the reception of the ovum, whether that ovum finally arrives within its cavity or not, no other portions of the system participate in this action; and, therefore, the further the placenta attaches itself from the center of this action, the greater will be the want of mutual fitness in the parts. And, moreover, under such a supposition, the placenta to fulfill its office, must always be attached to a portion of the system pre-ordained for the purpose; and, when attached anywhere else, it ought to remain without growth or increase beyond what takes place in all adventitious or foreign growths.

There is in the Cabinet of the Boston Society for Medical Improvement, a specimen of extra-uterine foetation, which bears directly upon this point, and which shows, that the development and nourishment of the foetus, may go on under these circumstances through the whole of the term of pregnancy, as well as if the embryo had been safely lodged in the cavity of the womb. It also proves, not only that the pregnancy may go on through its entire term without any disturbance whatever, but that the conditions necessary for keeping up the integrity of the foetal circulation, *are not peculiar to, nor found exclusively in the uterus*. It may also be adduced as evidence, up to a certain point, against the doctrine of direct communication between the uterus and placenta. For, if the circulation of the foetus, can be maintained in a sufficiently vigorous condition to supply all the necessary elements of growth, so that the foetus arrives at an average or considerable size, at the end of the term of pregnancy, when the placenta is attached to a part of the system which has not the anatomical structure requisite to furnish channels of communication, similar to the utero-placental vessels, claimed to have been demonstrated by certain writers; does not this very possibility, furnish strong proof against the absolute necessity of such an arrangement, and hence, by inference, that it does not exist? (See *ante*, p. 74, et seq.)

"The patient was a married woman, thirty-four years of age. Pregnancy occurred about seven years since, but nothing remarkable occurred until she arrived at the full period, when the motions of the child became very active, and continued so for about a month; they then ceased altogether, and she felt a dead weight, becoming also, as she said, thinner about the waist; the lochia came on, and continued about a week, and for a time, there was a flow of milk. From this time she kept about her house, her health being sufficiently good; was perfectly sensible of the presence of the foetus, and imagined that she could feel the bones. In about six months she again became pregnant, and, to sum up the case in a few words, she has borne, during the last seven years, three living children, and carried them to the full period, having had one previously. In December, 1840, she consulted Dr. Miller with regard to an operation; for about six weeks there had been considerable pain and tenderness in the abdomen, with loss of appetite and flesh; a very hard tumor was found about the middle of the abdomen, perhaps rather more to the right side, but the parts of the foetus could not be felt. Dr. M. thought the expediency of an operation doubtful, and saw her again in a fortnight, when she had altered decidedly for the worse. About the first of January the operation was performed. A small incision having been made with a trochar, and, when the opening was sufficiently enlarged, the foetus appeared, lying coiled up in the most compact form; the upper extremity presented, but one foot was seized, and by this it was extracted. Something was found which looked like a cord, but nothing like a placenta. The foetus weighed four pounds and a half after the extraction, and appeared fresh, excepting one foot which was somewhat decomposed." (Catalogue of Bos. Soc. Med. Imp., No. 714.¹)

¹ The following cases are still more in point, the foetuses being of "full size and entire."

Gastrotomy for extra-uterine gestation, Lond. Lan., June 2, 1860, p. 559.

This operation was performed on the 31st ult., at the London Hospital, by Mr. Adams. The patient was pregnant for the first time, and the natural term had been exceeded by about six months, menstruation having reappeared. The abdominal cavity had to be opened: the foetus, still entire, was of full size; the cyst and placenta, not admitting of ready extraction, were left. The placenta, it is expected, will be detached in a few days.

Med. Times and Gazette, Nov. 19, 1859, p. 516.—"This case which occurred in the practice of Mr. Gregory Forbes, was that of a woman, who, having menstruated

The facts upon which M. Velpeau (*ante*, p. 77) bases his theory, must necessarily be few and of doubtful value. To compare the size of the placenta, with that of the uterus, except in a post-mortem examination, is of course impossible; and the difficulty of exactly determining to what extent, the uterus has contracted after the expulsion of its contents, must render any conclusions drawn from such sources altogether unreliable. The infinite diversity in size and weight of different placentæ, points to the absence of any fixed law in regard to these conditions, and after all, it remains a matter of conjecture. If the capacity of the uterus always depended upon the size of the child alone, there might be more ground for the opinion, but, as every accoucheur is aware, many small children with a great quantity of water, distend the uterus as much as large children, with little or none; and why we should find a larger, or as large a placenta in the one case, and a smaller one relatively in the other is difficult to understand.

The statement of Prof. Carpenter that "the placenta, after the third month, goes on increasing with the growth of the ovum," is also not warranted by the facts within our knowledge. Were this true, the size and weight of the placenta ought to vary with and according to that of the child; but the data in the following tables, compiled from the records of the Boston Lying-in Hospital, prove that they by no means correspond. It is undoubtedly true, for obvious reasons, that taking the average of any large number of cases, the heavier the child the heavier will be the placenta, but the same facts which prove this, also prove, that there is no agreement between

profusely a month before her death, was seized with pain in the abdomen, on the 8th of October, followed by complete prostration. She died the following morning. On examination of the body, three pints of blood were found in the cavity of the abdomen, which had escaped from the opening in the left Fallopian tube, where an ovum had been developed. The embryo was not found at the time of the post-mortem, nor was the amnion or vesicula umbilicalis discovered; and there was no deciduum in the cavity of the uterus. The Fallopian tube and ovarium were alone permitted to be removed; and these were examined, under spirit, by Dr. Lee, who found a deciduous membrane adhering to the inner surface of the tube, and inclosing the villi and membrane of the chorion on all sides. The hemorrhage was evidently traceable to a rupture in the decidua and adhering portion of the tube, by which a communication was established between the cells of the villi of the chorion and placenta and the sac of the peritoneum, through which the blood flowed from the cells of the chorion into the abdominal cavity."

their weights in individual cases, and that for children of a certain size, the variation of the weight of their placenta will be between very wide extremes, showing most conclusively that there is no regular parallelism between their growth, since the proof of this—some constant relation between the weight of the child and its placenta under normal conditions—is entirely wanting.

The cases by which these propositions have been tested, 338 in number were taken in the order they appear (from No. 1 to No. 338) on the record, and probably contain all the variations of size which may be expected.

Of 19 cases where the placenta weighed *twelve ounces*, the children weighed

3½ pounds in	1	5¾ pounds in	1
3½ " "	1	6 " "	4
4 " "	1	6½ " "	2
4¾ " "	1	7 " "	1
5¼ " "	2	7½ " "	2
5½ " "	2	9½ " "	1

Showing the average weight of the children where the placenta weighs $\frac{3}{4}$ of a pound to be 5·31 pounds. The difference of weight, however, between the extremes is 6½ pounds, the variation being from 3½ to 9½ pounds.

Of 59 cases where the placenta weighed *one pound*, the children weighed

2 pounds in	1	7 pounds in	9
5¼ " "	3	7¼ " "	1
5¼ " "	1	7½ " "	5
5½ " "	1	7¾ " "	2
5¾ " "	3	8 " "	9
6 " "	8	8½ " "	1
6¼ " "	3	8¾ " "	2
6½ " "	7	9 " "	1
6¾ " "	1	10 " "	1

Showing the average weight of the children, where the placenta weighed *one pound*, to be 6·86 pounds, an increase over the former table. But the difference of weight between the extremes is very large, equaling in this instance 8 pounds, the variation being from 2 to 10 pounds.

Of 105 cases, where the placenta weighed *one pound and a quarter*, the children weighed

4 pounds in	1	7 $\frac{3}{4}$ pounds in	11
5 $\frac{1}{2}$ " "	2	8 " "	13
5 $\frac{3}{4}$ " "	1	8 $\frac{1}{4}$ " "	3
6 " "	2	8 $\frac{1}{2}$ " "	6
6 $\frac{1}{4}$ " "	5	8 $\frac{3}{4}$ " "	2
6 $\frac{1}{2}$ " "	4	9 " "	9
6 $\frac{3}{4}$ " "	4	9 $\frac{1}{2}$ " "	3
7 " "	12	10 " "	2
7 $\frac{1}{4}$ " "	6	10 $\frac{1}{2}$ " "	1
7 $\frac{1}{2}$ " "	23		

Showing the average weight of the children, where the placenta weighed *one and a quarter* pounds, to be 7·89 pounds. The difference of weight, however, between the extremes is 6 $\frac{1}{2}$ pounds—from 4 to 10 $\frac{1}{2}$ pounds.

Of 82 cases where the placenta weighed *one pound and a half*, the children weighed

3 $\frac{1}{2}$ pounds in	1	8 pounds in	18
5 " "	1	8 $\frac{1}{4}$ " "	4
6 $\frac{1}{4}$ " "	2	8 $\frac{1}{2}$ " "	10
6 $\frac{1}{2}$ " "	2	8 $\frac{3}{4}$ " "	1
6 $\frac{3}{4}$ " "	3	9 " "	7
7 " "	6	9 $\frac{1}{4}$ " "	1
7 $\frac{1}{4}$ " "	3	9 $\frac{1}{2}$ " "	5
7 $\frac{1}{2}$ " "	12	10 " "	3
7 $\frac{3}{4}$ " "	2	10 $\frac{1}{2}$ " "	1

Showing the average weight of the children where the placenta weighed *one pound and a half*, to be 7·85 pounds, which is a small fraction less than the average of the preceding table. The difference between the extremes of weight is in this instance 7 pounds, the variation being from 3 $\frac{1}{2}$ to 10 $\frac{1}{2}$ pounds.

Of 30 instances where the placenta weighed *one pound and three-quarters*, the children weighed

6 pounds in	1	8 $\frac{1}{2}$ pounds in	2
7 $\frac{1}{4}$ " "	4	8 $\frac{3}{4}$ " "	2
7 $\frac{1}{2}$ " "	4	9 " "	3
7 $\frac{3}{4}$ " "	5	9 $\frac{1}{2}$ " "	1
8 " "	6	13 $\frac{1}{2}$ " "	1
8 $\frac{1}{4}$ " "	1		

Showing the average weight of the children, where the placenta weighed *one pound and three-quarters*, to be 8·13 pounds and a minute fraction. The difference between the extremes of weight, according to this table, is 7 $\frac{1}{2}$ pounds—from 6 to 13 $\frac{1}{2}$ pounds.

Of 21 cases where the placenta weighed *two pounds*, the children weighed

7 pounds in.....1	9½ pounds in.....1
7½ “ “.....2	9¾ “ “.....1
8 “ “.....5	10 “ “.....2
8½ “ “.....2	11 “ “.....1 Twins.
9 “ “.....6	12½ “ “.....1

Showing the average weight of the children, where the placenta weighed *two pounds*, to be 9·28 pounds. The difference between the extremes equaling 5½ pounds—from 7 to 12½ pounds.

Of 4 cases where the placenta weighed *two pounds and a quarter*, the children weighed

7 pounds in.....1	9½ pounds in.....1
8 “ “.....1	11½ “ “.....1 Twins.

Showing the average weight of the child, where the placenta weighed *two and one-half pounds*, to be 8·25 pounds, more than a pound less than the average of the preceding table. The difference between the extremes still remains large, it being 4½ pounds.

Of 4 cases where the placenta weighed *two pounds and a half*, the children weighed

6½ pounds in.....1	9½ pounds in.....1
8½ “ “.....1	12¼ “ “.....1

The average of which is 9·125 pounds. The variation between the weights in this instance is 6 pounds.

There were 3 cases where the placenta weighed *eight ounces*. In these the children weighed

3½ pounds in.....1	7½ pounds in.....1
7 “ “.....1	

In 4 cases where the placenta weighed *one pound and two ounces*, the children weighed

6½ pounds in.....1	8 pounds in.....1
7 “ “.....2	

In 2 cases where the placenta weighed *one pound six ounces*, the children weighed 7½ and 8 pounds respectively.

Of 5 other cases the weights were as follows:—

Child.....5½ pounds.	Placenta.....Ten ounces.
“7½ “	“One pound, three ounces.
“7 “	“One pound, fifteen ounces.
“9½ “	“One pound, seven ounces.
“9¾ “	“One pound, ten ounces.

From these data it is very clear, that while a general law holds good, that the heavier the child the heavier will be the placenta, its application stops here. If it be assumed that the placenta bears any definite proportion in weight to that of the child, *i.e.* that it is $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{6}$, or any other aliquot part of the child's weight, or approximates to it, it will be found that by reversing the process already made use of when analyzing the cases in the foregoing tables, the very opposite is proved.

Of 14 children, whose weight was *six pounds and one-half*, the placenta weighed

12 ounces in.....	2	1 pound 2 ounces in.....	1
1 pound in.....	7	1½ pounds in	4

Showing a variation of 8 ounces.

Of 34 children, whose weight was *seven pounds*, the placenta weighed

8 ounces in	1	1½ pounds in.....	6
12 " "	1	1 pound 15 ounces in.....	1
1 pound "	9	2 pounds in.....	1
1 pound 2 ounces in.....	2	2½ " "	1
1½ pounds in.....	12		

Exhibiting a variation between the weight, of one pound and three-quarters.

Of 38 children, whose weight was *seven pounds and a half*, the placenta weighed

8 ounces in.....	1	1 pound 6 ounces in.....	1
12 " "	2	1¾ pounds in	4
1 pound in.....	5	1 pound 13 ounces in.....	1
1½ pounds in.....	23	2 pounds in.....	2

Showing a variation of *one pound and a half*, between the weights.

Of 54 children, whose weight was *eight pounds*, the placenta weighed

1 pound in.....	9	1½ pounds in.....	18
1½ " "	1	1¾ " "	6
1¾ " "	13	2 " "	5
1¾ " "	1	2½ " "	1

Showing a variation between the weights, of *one pound and a quarter*.

Of 22 children, whose weight was *eight pounds and a half*, the placenta weighed

1 pound in	1	1½ pounds in	2
1¼ " "	6	2 " "	2
1½ " "	10	2¼ " "	1

Showing a variation of *one pound and a quarter*.

Of 26 children, whose weight was *nine pounds*, the placenta weighed

1 pound in	1	1½ pounds in	3
1¼ " "	9	2 " "	6
1½ " "	7		

A variation of *one pound*, between the weights.

From these data, without the necessity of extending the comparison any further, it is clear and indisputable, that there is no fixed proportion between the weight of the placenta and that of the child, and therefore, that they cannot "proceed in their growth in accordance with each other."

The theory of Levret, was purely a mechanical one. But a mechanical theory admits of few or no exceptions; and the result ought therefore to be, that at the time when the dilatation of the cervical portion is said to begin, at about the sixth month, hemorrhage would come on, and increase in quantity, and continue as long as the process was kept up. But while it is indeed true, that in the greatest number of the cases, attacks of hemorrhage occur during the months of pregnancy subsequent to this period, it is equally true, that many proceed to the full term, without any at all.

Mr. Doherty, in commenting upon this point,¹ remarks, that although the distinction is not sufficiently preserved between partial and complete Placenta Prævia, in the cases reported, nor the periods of the first occurrence of hemorrhage stated with the accuracy that is desirable, there are, nevertheless, sufficient details to prove almost conclusively, "that where there is merely a bit of the placenta overhanging the os, the woman scarcely ever goes beyond the seventh or eighth month, without an alarming discharge of blood; while, on the other hand, although with a full implantation, hemorrhage in the greater number of instances, bursts forth at intervals during the latter months, it is not a very unusual circumstance, to find such patients proceed without any sanguineous loss, till their term is completed."

Dr. Edward Rigby² also, seems to have been aware of this differ-

¹ Dublin Jour. Med. Sciences, July, 1845, p. 332; also Braith. Retros., No. 12, art. 175.

² Op. cit., part 5, chap. xii., Am. ed., p. 413.

ence in favor of complete presentations of the placenta, over those in which only a portion of the os is covered; and remarks in relation to it, "our own observations have rather led to the conclusion, that where the placenta is but partially attached over the os uteri, the first attack of flooding is rarely delayed until the full term of pregnancy, but makes its appearance some weeks earlier." In the report of a case of this description,¹ in which no hemorrhage occurred till the full period of pregnancy had passed, he asks, "are not those hemorrhages from *Placenta Prævia* which make their first appearance in the seventh and eighth months of pregnancy, generally connected with a partial attachment of the placenta to the os uteri, and, on the other hand, when it is centrically attached, does not the patient usually go to the full term of gestation, before any hemorrhage takes place?"

These statements are fully verified by the cases in the tables farther on, in many of which the departure from the rule is so marked, as to attract the most casual observer.

In view of such cases as those just referred to, the explanation offered by M. Cazeaux is insufficient, for the reason that it seems almost impossible to reconcile them with the general rule of hemorrhage, which ought to prevail if his reasoning is correct, without substituting them for the rule itself. And, indeed, he himself seems to place but little dependence on it, since, in reference to these very cases, he adopts the theory proposed by Moreau, which he states to be as follows:² "M. Moreau remarks, that in the cases cited, the infants were dead, and without doubt had been so many days. But, says he, when the foetus dies in utero, there follow in the circulation of this organ those changes rendered necessary by the cessation of the foetal circulation; the blood, arrested in the vessels, coagulates there; they become contracted, and oftentimes even obliterated; no more blood comes to the womb than is necessary for its nutrition, the stimulus which called there a great quantity, no longer existing, and, for this reason, the dilatation of the os can proceed without much hemorrhage, although the vessels which unite its border to the placenta, may be ruptured. This appears to me to be the more rational opinion." But by adopting this, he does not remedy the difficulty, for the children are not always dead, and, therefore, the

¹ Braith. Retros., No. 12, art. 175.

² Op. cit., p. 703.

condition of things, upon which M. Moreau has based his explanation, does not always exist, and the reasoning is good for nothing.

Of the existence of these exceptional cases, Levret was well aware, and fully recognized their importance. In his treatise he has noticed them at length,¹ and his language is here quoted entire for two reasons. First, it gives the clearest exposition of the application of the theory, that can be found in any writer; and, in the next place, the theory is essentially his own; the principle upon which it is founded, having been first enunciated by him. "A question naturally presents itself here, which it is interesting to clear up; it consists in knowing why some females, who have the placenta attached to the proper neck of the uterus, go their full period, and why the majority of those who are in the like situation, do not go so long. This variety of effect, which proceeds from the same cause, must necessarily be dependent on the same particular circumstances which constitute a determining cause. I will explain myself and say, that, according as the placenta has been originally attached higher or lower in the true neck of the womb, the hemorrhage will come on sooner or later; moreover, when this vascular mass shall have taken root very near the os tinæ, the woman will approach nearer the natural term of her confinement, than if it had attached itself at the top of the passage of the uterine neck, and in the same proportion between their two extremes; indeed, it is as well demonstrated by the mechanism of pregnancy as by practical experience in the obstetric art, that the neck of the womb does not begin to expand to aid in increasing the size of the cavity of this viscus, until the last months of pregnancy, and that it is by small degrees that the portions of the uterine neck continue in their turn to enlarge from top to bottom, from which it results that the neck cannot aid in this expansion, without causing the placenta which is not susceptible of the same extension, to become partially detached, whether at a point of its circumference, if it is more advanced on one side than the other, or at its center, if that exactly corresponds to the middle of the top of the neck of the womb; it necessarily follows, then, that hemorrhage will ensue at a time more or less near, or more or less remote from the natural term of the pregnancy, just as the placenta happens to be attached nearer or further from the true neck of the womb."

¹ *L'art des accouch.*, Paris, 1766, p. 372.

But, if we accept this application of the principles of his theory, it will be necessary to suppose, in those cases in which the hemorrhage does not come on until the end of pregnancy, that the placenta was situated so low down on the cervical portion, as not to have been reached by the changes which have been going on in the portions above. For, although the true neck, according to the recognized theory of uterine development, does not begin to be obliterated, till the very last period of gestation—the last fortnight according to some authors—a portion of the lower part of the body, has long ere this, been developed to an extent sufficient to produce a separation. To suppose that all the cases which have progressed without hemorrhage till the end of pregnancy, are of this description, would be to exceed the probabilities of the case, and, on the other hand, if we assume that the placenta is thus placed, we must also assume, that it is so small in superficies, that its circumference does not reach to the space where these changes are going on—a supposition equally improbable.

Mr. Doherty endeavors to explain this, by supposing that “when the placenta springs from the cervix, or, as in one patient, although originally commenced in one of the walls of the uterus, as indicated by the root of the cord, it enlarges to such a magnitude as to cover completely the neck also, its growth has been sufficiently concentrated or extensive to keep pace with the circular expansion then progressing in the inferior chamber of the womb; whereas, when the substance, being at first elsewhere affixed, does not exceed its usual proportions, but is merely developed so irregularly as to advance a portion of its margin over that part, its growth is expended in other directions, and it becomes unable to adjust itself to the daily increasing size of the region into which it has, as it were, strayed.”¹

Here are two propositions. The first is, that the placenta, under the circumstances of complete presentation, has attained a growth sufficiently concentrated or extensive, to keep pace with the circular expansion going on in the latter months. The second is, that when only a portion of it covers the os, its growth is expended in other directions, and hence is unable to adjust itself to the daily increasing size of the lower part of the uterus. That is to say, when the cervix is com-

¹ Dub. Jour. Med. Science, July 1845, p. 332; also Braith. Retros, no. 12, art. 175.

pletely covered, the magnitude of the placenta, the concentration and extent of its growth, give it a property of keeping pace with the enlargement going on in the uterine walls, which it loses by being situated elsewhere, in the immediate vicinity it may be, and although it may be just as large. But even if we grant that irregularity of development is the cause; that it has grown so irregularly as to advance its margin over the os uteri, and has extended a portion of its circumference until, as the elder Rigby describes it,¹ "its shape is somewhat like the lines of a very irregular island on the map, and one edge making almost a detached lobe," the probabilities that all the cases of partial presentation are of a like nature, or even a majority of them, are very small indeed.

Moreover, there would still be left unaccounted for, a large number of cases, in which while the placenta does not overlap any portion of the os, it is nevertheless situated so near it, as the researches of Von Ritgen and others already quoted prove, as to be subjected to all the changes assumed by Levret to be going on in this region, and yet no hemorrhage ensues.

Again, the occurrence of hemorrhage before the fifth month,—the earliest period at which, according to authors, the changes in the cervical portion begin,—ought to be of the rarest occurrence, if ever. This difficulty, no doubt, has induced some to ignore these cases entirely. M. Jacquemier almost discredits their existence; his language is, (see *ante*, p. 78,) that "hemorrhages which cannot be attributed to causes independent of the place of the insertion of the placenta, which declare themselves towards the end of the fourth month, and during the fifth and sixth, are in reality very rare." But while it may be true that many of the reported cases of hemorrhage, occurring in consequence of Placenta Prævia, before the fifth month, are of a doubtful nature, there is nevertheless, a number, sufficient to establish the fact, which are guaranteed as to their authenticity, by the names of the observers. Prof. Simpson² reports a case of hemorrhage, in the fifth month, in which, after severe flooding, the child and placenta were expelled together. Mr. Everitt, of Ellesmere,³ one of three months, accompanied with profuse hemorrhage, in which the placenta

¹ Essay on Ut. Hem., p. 40.

² Op. cit., vol. i. p. 606, case 1.

³ Prov. Med. and Surg. Journal, Sept. 30, 1846; also Braith. Retros., No. 14, art. 175.

was extracted. Dunal¹ records one, where the hemorrhage began at the fourth month. Rigby's forty-fifth case² is one of twenty weeks. In this, the placenta was distinctly felt to be attached to the os uteri, and there was flooding with every pain. His seventy-fifth case is one, in which hemorrhage commenced at the third month, and returned at different intervals, till delivery was effected at the middle of the seventh. Dr. Sargent's case, (see *ante*, p. 42,) No. 31, tab. 1st, also began at the third month. If we extend these limits, but still keep within bounds, taking those cases only, in which hemorrhage manifests itself in the fifth or sixth month, the list, instead of being an exceptional one, will form a respectable portion of any collection.

The theory advocated by Mr. Burns, is based upon the double foundation of the unequal growth of the placenta and the uterus at the place of attachment, and premature contraction, brought on by congestion in the region of the os uteri, which interferes with its regular action, and results in a separation of the connecting vessels. These, however, he considers not to be general facts, but rather occasional occurrences, and his language indicates, that in his opinion, they are rather accidental, than to be expected and provided for. In regard to the second proposition, that an undue amount of blood circulates about the os uteri; enough to bring on contraction of its fibers, and finally a separation; the facts already quoted from Mr. Doherty, and generally corroborated by the accompanying tables in this treatise, bear the other way. For in cases of complete, central implantation, when of course there would be the greatest amount of blood present, there is actually less certainty of hemorrhage, than when the attachment is only partial.

The theory advocated by M. Cazeaux, is founded upon a supposed adaptation of the fundus for the attachment of the placenta, and rests for its support upon another assumed fact, that the development of this part of the uterus and the growth of the placenta, are coincident in point of time. But, having already (*ante*, p. 81 *et seq.*) shown, not only that the placenta is situated on the fundus uteri more rarely, even, than on the os itself; but also, that there are no proofs that the placenta acquires its maximum growth, in the

¹ De l'hémorrh. produit par l'insert, du placenta, etc. Montpellier, 1855, p. 181.

² Essay on Ut. Hem.

time specified; it necessarily follows, that the theory cannot be maintained, and must fall for want of proper foundation.

The theory of M. Velpeau is so exceedingly broad in its scope, that its weakness is in accounting for too much, rather than too little. It is hardly according to fact, or the usual modes by which nature accomplishes her work, to suppose that the progressive changes in the uterus may vary in their development, nearly one-half the whole time of the duration of pregnancy. Moreover, if the parts adjacent to the os uteri, are so rapidly withdrawn from the center of the placenta, as he assumes, labor ought to come on immediately after this takes place, and exceptions would be almost unknown. A supposition which is clearly opposed by the testimony reported.

The explanations proposed by M. Jacquemier, upon the whole, are the most satisfactory of all. But even here, we are met at the outset, by a refusal except in the rarest instances, to credit the existence of what we are warranted in declaring to be a recognized class of cases; those in which the hemorrhage makes its appearance at the fifth or sixth month, or even earlier, as the consequence of the Placenta Prævia, and which have already been alluded to. (*Ante*, p. 94.) Their bearing upon the theory is not to be doubted or evaded; for, if they do exist, and occur in sufficient frequency to take them out of the category of simple exceptions, the theory must yield as a matter of consequence. As to the second proposition, the applicability of the explanation therein given, depends entirely upon the final settlement of the question how far the development and dilatation of the uterus are affected by the placenta.¹

The theory of uterine development recognized by writers at the present day is, that the uterus begins to enlarge at the fundus, that the body of this organ next takes part in the process, then the cervical portion, and finally the cervix itself. That this process of enlargement goes on in the fundus and body exclusively, for *five, six, or seven months*, or even longer, and that after this time, the increase of its cavity is gained at the expense of the neck, the rest of the uterus remaining comparatively quiet. That in consequence of this

¹ For an extended discussion of this point, see *Am. Jour. Med. Sciences*, April, 1858. "*The influence of the placenta upon the development of the uterus during pregnancy.*" Read before the Boston Soc. for Med. Improvement, Dec. 28th, 1857.

process, the uterus at the end of gestation acquires a pyriform shape, the smallest end resting in the pelvic cavity.

But while agreeing in the general plan of development, nothing can be more vague and contradictory, than the opinions expressed as to the rate and mode in which this development is carried on.

The absence, also, of any proof whether the cases on record, by which the size and shape of the uterus, at different periods of gestation, have been determined, were all of them normal presentations, or whether a part of them were not presentations other than those of the head, renders the result obtained from them, of doubtful value.

That the uterus enlarges, as the foetal mass increases in size, is a fact that admits of no dispute, but that it expands in one part before another in obedience to any organic law, or as the consequence of the operation of a vital cause, may be doubted.

If it should be proved that, irrespective of the position of the placenta upon the interior surface of the uterus, the fundus always began to expand before any other portion, and that, as the development proceeded gradually downward, the cervical portion was the last to lose its characteristic shape, until at the close of gestation, the outline of the whole organ was constant and symmetrical, whatever may have been the presentation of the child, a strong and unanswerable argument might be made out in support of the present theory. But in this conclusion, we are not sustained by facts. In normal presentations, at the period of its utmost development, the general outline of the uterus is pyriform, the base being above, and the apex resting in the cavity of the pelvis. When the breech presents, it becomes almost globular, and in transverse presentations, the long diameter is nearly at right angles to the axis of the pelvis; proving very conclusively, that the shape of the uterus at the termination of gestation, is not the result of development, but depends upon the position of the contained foetus.

Neither is the uterus symmetrical at the close of pregnancy. According to Mr. Doherty,¹ if a line be drawn round the body of this organ at the insertion of the Fallopian tubes, which in the unimpregnated state are situated nearly in the median line, it will be

¹ Braith. Retros., July-Dec., 1840, art. 58, from Med. Gaz., Nov. 27, 1840, p. 351-358.

found, that three-fifths of its circumference is behind them, and two-fifths in front. Cazeaux¹ also makes the same remark. The insertion of the tube, also, from being nearly at the level of the fundus, is now found to be one-third of the way towards the os, showing that a much greater expansion has taken place in one direction than in another. The gradual mounting of the uterus, into the cavity of the abdomen, proves nothing; for, supposing that the expansion should begin in any portion of its walls, the inability of that expansion, to extend beyond a certain degree, in any other direction than upwards or downwards, and the impossibility of its enlargement being accommodated in the pelvic cavity, would of necessity force the mass in an upward direction, and produce the same apparent effect, as if the fundus alone was enlarging. The mere fact, therefore, that the uterus rises out of the cavity of the pelvis, as the gestation proceeds, is no proof that any particular portion of this organ is being first developed.

Great reliance has been placed on the proofs derived from the changes which the neck undergoes during the latter portion of pregnancy; but except in first pregnancies, even these are not to be depended on. In relation to this point, M. Jacquemier² remarks, that "the period when the dilatation of the neck commences, has not as yet, been fixed with any precision, and seems to offer many individual differences. The dilatation and shortening of the neck, are two phenomena, intimately connected, which are observed simultaneously. But although it has been very generally admitted, that the dilatation and shortening of the neck begin at the fifth or sixth month, it cannot be regarded as a term fixed by any exact observation." M. Cazeaux³ states, that the neck preserves its whole length until the last fortnight, and that in that time only, is it absorbed into the cavity of the uterus. The absence, moreover, of all data which would determine the position of the placenta, or the presentation of the child, in each particular case recorded, renders the results obtained from them almost valueless.

The greatest diversity of opinion also exists, in regard to the period, at which the relative changes in the uterus begin. Dr. E. Murphy places the period during which the cervix expands, from

¹ *Traite theorique et pratique de l'art des accouch.*, 5th ed., p. 94, note.

² *Manuel des Accouch.*, vol. i. p. 177.

³ *Sup. cit.*, p. 101.

the seventh until the ninth month.¹ Mr. Burns² states, that the cervix begins to partake in the development of the uterus, at the fifth month, and continues till the ninth. Dr. F. H. Ramsbotham³ places it at the sixth; "when five months are perfected, or about that period." Mr. J. T. Ingleby⁴ says: "Before the fifth month, the development of the uterus, is confined to its fundus and body; but after the fifth month, the distending power of the ovum, is exerted upon the neck of that organ, which it dilates circularly from above." Dr. John Ramsbotham⁵ remarks, that for six or seven months the uterus "has been more particularly developed in its fundus and body; and that about that period, the cervix uteri becomes shorter and thinner." Dr. Robert Collins⁶ places it in the last three months. Dr. Robert Lee⁷ states, that the shortening of the cervix takes place in the seventh month. Dr. Blundell⁸ says, that "during the two or three months in the end of pregnancy, the cervix uteri gradually dilates itself, so as to form a part of the chamber tenanted by the foetus." Dr. Churchill⁹ remarks, "that the increase in size of the womb, is said to commence at the fundus, and as this is developed, the body enlarges; last of all, and not before the fifth month, the cervix." Prof. C. D. Meigs¹⁰ puts it at the seventh month. Moreau¹¹ states, "that from the first to the third month, the development is principally effected at the expense of the fundus; from the third to the sixth, by the increase in the body; in the last three months, it continues at the expense of the neck. This order cannot be broken, without a change in the duration of pregnancy."

According to Dr. Davis,¹² it is during the last three months. Dr. Conquest¹³ says it begins at the fifth month. Dr. Maunsell¹⁴ at the sixth or seventh. Jacquemier¹⁵ places it at the seventh, but expresses no great confidence in these dates. Velpeau¹⁶ considers that the change has begun before the fifth month, but qualifies his statement, by remarking, that "frequent observation, and the most careful in-

¹ Mid., Lond., 1852, p. 335.

² Mid., ed. by James, sect. 98.

³ Obstet. Med., Am. ed., p. 340, order 4th, sect. 1—a.

⁴ Prac. Treat. on Ut. Hem., p. 140.

⁵ Pract. Observ., second ed., p. 291.

⁶ Pract. Mid., Am. ed., p. 61.

⁷ Lect. on Mid., p. 363.

⁸ Lect., ed. by Castle, p. 444.

⁹ Theory and Pract. of Mid., sect. 157.

¹⁰ Treatise on Obstetrics, p. 433.

¹¹ Transl. by Betton, p. 40.

¹² Obstet. Med., p. 1038.

¹³ Outlines of Mid., sixth ed., p. 157.

¹⁴ Dublin Pract. of Mid., p. 167.

¹⁵ Sup. cit., vol. i. p. 178.

¹⁶ Transl. by Meigs, fourth ed., p. 139.

vestigations, have singularly lessened the confidence I formerly had in them (referring to various assumed facts in regard to the changes in the cervix uteri.) The changes to which the neck is subjected, during gestation, vary almost as much, as its anatomical characters in the unimpregnated state. What I have said on the subject, should, therefore, be understood only in a general sense." M. Cazeaux¹ believes, that "during the first six months of gestation, the uterus is developed at the expense of the fibers in the superior part of the body, or fundus of the organ particularly; while in the last three months, the fibers appertaining to the lower third of the womb, are developed in a rapid manner, and the cavity of the organ is enlarged, in consequence of the distention and growth of this lower part; a proof of which is, that the body of the uterus, which was pyriform in the earlier months, is perfectly ovoidal in shape towards the close of pregnancy." Dr. Edward Rigby² states, that in the fifth month the change is distinctly perceptible. Scanzoni³ says, that during the first six months the uterus enlarges at the expense of the fundus. At the middle of the seventh, the enlargement of the lower division commences. From all this, we see how little reliance can be placed upon mere opinions, which allow a latitude of three months for the commencement of a process, which, according to all analogy, should under equal circumstances, begin at a uniform period.

If the argument already adduced is sound, the explanation offered by M. Jacquemier has no weight at all; for under any other theory of development than that recognized by the profession at the present day, it will not apply; and if that be disproved, his explanation is useless. His third proposition is, that in those cases in which, after hemorrhage has manifested itself, it ceases, and does not return before delivery, the result is due to the fact, that the distention has been relieved by this separation, and the edge of the placenta being removed from the internal os, by the gradual approximation of the latter to the os externum,—the os tinæ—the placenta is not again brought into a similar situation. This is most ingenious, and the mode here proposed to withdraw the edge of the placenta from the os, is apparently corroborated by what Leroux was eye-witness to, in

¹ Sup. cit., p. 702.

² System of Mid., part 1, chap. ii.

³ British and For. Med.-Chi. Rev., April, 1838, p. 446.

a case reported by him.¹ "This portion of the neck of the womb," says he, "sometimes remains very much elongated at the end of pregnancy. In certain women, it is only the anterior lip which is prolonged; in others, the whole neck, I have found it projecting beyond the vulva, and resembling the neck of a bottle, with its lip at the extremity. I introduced a finger into the opening, and pushed it as far as the internal orifice, which was closed by the membranes. When the labor-pains came on, the *neck shortened, and disappeared by degrees in proportion as the interior orifice dilated.*"

Tested by the cases in the tables, his fourth and fifth propositions (*ante*, p. 79) seem to be clear and satisfactory. Of the primiparæ, in those cases where the period at which labor began is mentioned, it was at

<i>The full period</i> in Nos. 33, 111, 129, 391, 622, 661, 762, 763, 783, 784,				
799, 813, 820h				13 cases.
9th month in Nos. 263, 430, 773, 898, 901, 953				6 "
8½ " " 165, 167, 573, 812, 837, 864				6 "
8 " " 253, 610				2 "
8th " " 820m				1 "
7½ " " 69, 382				2 "
7 or 8 " " 966				1 "
7 " " 163, 386, 591, 724, 739, 885				6 "
7th " " 737, 788, 900, 957				4 "
6½ " " 385, 780				2 "
6th or 7th " 902				1 "
6 " " 93				1 "
6th " " 112				1 "
				46

Of which twenty-five, or more than half, came under the limits indicated by M. Jacquemier.

There is a point which writers seem to have overlooked, or passed by as of no value, but which, viewed in connection with what has been already advanced upon the subject, is of no little importance. It is, that the separation of the placenta from the uterus, in *Placenta Prævia*, does not take place indiscriminately, at any part of its surface, but only at a point corresponding to, or in the immediate vicinity of, and in contact with, the os uteri. Not a single case that has been reported, presents an exception to this rule. To whatever

¹ Obser. sur les pertes des sang, 2d. ed., 1810, p. 16, obser. v., note.

extent the separation may ultimately have taken place, and in whatever direction, it *commenced at the os uteri*.

Now if it were really the case, that distention or unequal development (see the second part of M. Jacquemier's second proposition, *ante*, p. 78,) was the cause of this separation, why should it not take place in some instances, somewhere else than at this precise spot? Particularly, when, as is proved by facts observed, in cases where the placenta is in a normal position, separation takes place at any part of its area indiscriminately.

It is susceptible of almost mathematical demonstration, that if the lower portion of the uterus invariably enlarges, during the last period of pregnancy, in all directions, from the os, as from a center, the disturbance of its attachment with any body not able to keep pace with this increase in size, ought to be as much greater, in proportion as we go from the os in any direction, as the space between the radii of a circle, increases as we go from its center; and therefore, if the separation of the placenta is caused by such a force, it ought to be operating just so much earlier, and more powerfully, as the distance from the os increases; and that least of all, should the separation take place at the os, or the center of the development and the point of rest.¹

Viewed in this light, the uniformity with which, independent of the degree of cervical attachment, the separation in Placenta Prævia first commences at the os, in contrast to its occurrence anywhere upon the uterine surface of the placenta, in normal pregnancies, is still more significant. For the distending process, or the unequal development, or the spasmodic action, call it by what term you will, ought to begin to act, and with the greatest force, upon the *edge* of the placenta, when the latter is *centrally situated*, and upon the *center* of the placenta, when its *edge* is at the os uteri; both these points, under these conditions, being equidistant from the os, and therefore, according to our supposition, exposed to an equal degree of the

¹ A familiar illustration of this may be found in the operation of blowing up a bladder. The bladder distends in every part, except just in the spot where the tube is inserted by which it is blown up. This is the "point of rest," as the os uteri is the point of rest in Placenta Prævia according to the theory of development generally received.

separating force, at the time, when, according to authors,¹ the cervical portion begins to develop.

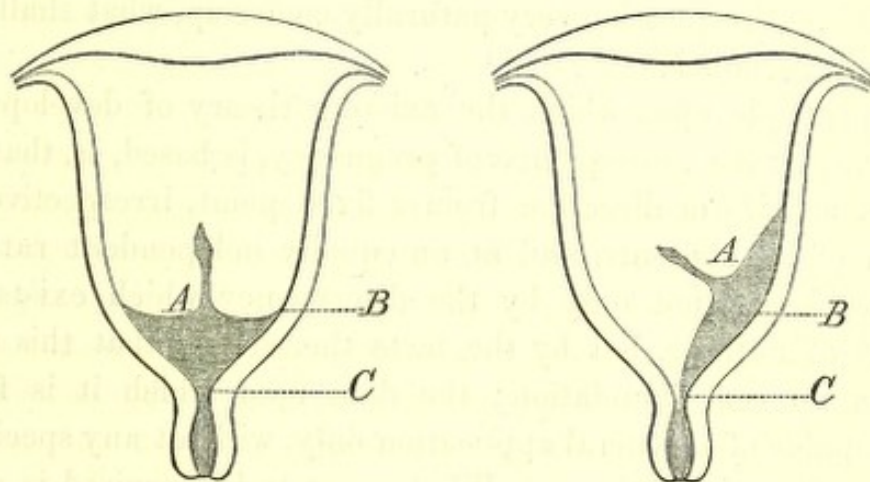
Notwithstanding this, in the former instance, instead of the *edge*, it is the *center*, which first separates; and in the latter, instead of the *center*, it is the *edge*, which first becomes detached from the uterus, the os in both cases being the determining point of the whole. It appears, therefore, to be a perfectly fair inference, that the separation and consequent hemorrhage, is due to some change which the *os uteri* undergoes, and not to any process of development elsewhere.

If it be objected to this theory, that there is a want of uniformity in the period of pregnancy, at which the hemorrhage first makes its appearance; that if it depended upon changes going on in the os, it ought to come on at a definite time; it may be answered, that in ordinary pregnancies, when the situation of the placenta apparently exerts no influence at all to cut short their duration, or hasten the dilatation of the mouth of the womb, there is no exact time at which it can by any method be calculated, that labor will come on. While it may be assumed as a general fact, that a period of forty weeks, or two hundred and eighty days, is the limit of gestation, in the human

¹ This will be more clear by reference to the following figures.

Fig. 1.

Fig. 2.



In Fig. 1, the placenta is supposed to be situated with its center over the os uteri, C. In this case, if the disturbing force proceeds in a direction from the fundus towards the os, its first effect would, of course, be felt at B, where the *edge* of the placenta is. In Fig. 2, the placenta is supposed to be situated on the cervical portion of the uterus, one edge being at C, the os uteri. The disturbing force, acting in the same direction, as in the former case, (fig. 1,) would be felt at B, the *center*, before it would be at C, where the edge of the placenta touches the os. But, contrary to this theory, it is found to be the fact, that the separation always begins in Placenta Prævia at C.

female, exceptions are constantly met with. And, if there are these exceptions, when pregnancy goes on in a perfectly natural manner, no reasons for any disturbance of its successive phenomena presenting themselves, in the malposition of the placenta, or any untoward events during its continuance; if abortions, and miscarriages take place from causes beyond our knowledge, but, nevertheless, in consequence of what Velpeau (*ante*, p. 78,) terms a *general efficient cause*; with how much more justice, may we assume, that there will be even greater latitude, for the occurrence of those changes, which are the efficient cause of the hemorrhage, and finally of the labor, when everything is reversed, so far as relates to the circulation of the uterus. When the greatest amount of blood, is found, not at the fundus, or somewhere in that region, but at the cervix; and when the whole force of this circulation, by a constantly increasing power, is all the while acting to hasten those changes, which under ordinary conditions, do not take place till the end of pregnancy.

Having thus shown, not only that the facts in Placenta Prævia are irreconcilable with the present theory of uterine development, but also, that the theory of uterine development itself, as understood and advocated at the present day, is based upon false premises entirely—the very data upon which it is founded, tending directly to disprove it,—the question very naturally comes up, what shall be substituted in its stead?

The principle upon which the existing theory of development in the uterus, as the consequence of pregnancy, is based, is, that it proceeds in a uniform direction from a fixed point, irrespective of the position of its contents, and at an equally independent rate. But we have shown, not only by the discrepancy which exists in the opinions of authors, but by the facts themselves, that this assumption has no real foundation; the data upon which it is founded, being capable of a general application only, without any special bearing upon the point at issue. What seems to be required is, a theory which allows the development to commence at any portion of the uterine walls, and to go on, not according to arbitrary laws, but in connection with the increasing growth of the ovum, and in obedience to ordinary physiological laws. Not that it is proposed by this, to ignore the vital part of the process—far from it; accepting as one of the essential elements of the problem, and as its very initial term, the vital act of impregnation, it is intended to apply to what follows:

that is to say, to the phenomena which appear in the course of the growth and maturation of the ovum, into the perfect child. As in the explosion of a train of gunpowder, the application of a spark may be considered a special act, while all that follows, proceeds according to well-known chemical laws, just so in pregnancy, the act of impregnation is a vital act, but the development and growth of the ovum, are in obedience to the same physiological laws, which are ordinarily in operation in the organization of living beings.

The substitute which it is proposed to offer, in place of the existing theory, may be stated as follows.

The attachment of the placenta to any portion of the uterus, causes a development at that place, which proceeds pari passu, till the limits of growth in the placenta having been reached, the enlargement is continued, and kept up by the pressure constantly exerted on the uterine walls, by the growing contents, till the time of parturition.

That is to say, at whatever point the radicles of the placenta first attach themselves, after the issue of the ovum from the Fallopian tubes, at that point the development of the uterus commences, and from that point it spreads, as from a common center, and takes shape according to the position of the contained fœtus and its appendages.

That the attachment of the placenta on the uterine walls, should produce a development at that spot, needs no elaborate proof. If we admit that the same effects follow the same causes in pregnancy, as in other processes going on in the human organization, it would follow, that the attachment of the placental radicles, in the first place would produce a determination of blood to that spot, in a greater quantity than previously existed there, and following this, and as a consequence of it, a development.¹

The idea that the ovum can exert an influence sufficiently powerful to distend the uterine walls, is one which has been advocated by some writers, and opposed by others. Mr. Ingleby, already quoted,

¹ "Pour les physiologistes il est si clair qu'il en droit être ainsi, qu'ils ne comprennent pas que les accoucheurs aient pu avoir des doutes à cet égard." Jour. de la Physiologie de l'Homme et des Animaux, pub. sous la direction du Dr. E. Brown-Séquard, Jan., 1859, p. 164.

(see *ante*, p. 99,) distinctly recognizes it; so does M. Jacquemier;¹ and it was a favorite notion of the ancients. M. Cazeaux,² in opposing it, remarks that "the expansive force of the ovum is powerless to overcome their resistance. * * * In a word, the growth of the ovum is the physiological cause, but not the mechanical agent, of the development of the uterine walls." Velpeau³ states, "that the dilating force, altogether foreign to the product of conception, exists in the gestative organ itself. A circumstance that beyond question proves this to be the case, is that, in preternatural pregnancies, as remarked by Levret, Bertrand, Meckel, and Chaussier, and as I have also, myself, remarked in five instances, the uterine cavity, though empty, dilates as it does in ordinary gestation." But in answer to Velpeau, and Cazeaux also, it may be asked, if the uterus expands in obedience to a physiological cause, why do we not always find it developed to the size it ordinarily attains, at the period noticed, in any particular case, when the ovum is not within its cavity? And, even were this proved to be so, the fact that the ovum in growing, has the power to overcome the resistance of the walls of the tube, in tubal pregnancies, shows that a distending force does exist in it, and if so, why should it not act in the same way on the walls of the uterus, as on the walls of the tube? And still further, facts derived from observing the effects of intra-uterine tumors, in enlarging the cavity of that organ, prove that the resistance of the uterine walls is either not so great as is assumed, or that the force brought to bear on them, during the growth of organized bodies contained within them, is sufficient to overcome this resistance, whatever it may be; and if by one body thus constituted, then also by all. We are therefore justified in the conclusion that the uterine walls will expand under the constant pressure exerted upon them by the growing ovum. According to theory, the more complete the placental presentation, the earlier and more profuse ought to be the hemorrhage. According to fact, it is in many instances directly the reverse. Now if we suppose the development to commence at the place where the placenta attaches itself, at the lowest part of the cervical portion of the uterus, at the very os for instance, and keep pace with the growth of this organ—*i.e.* the placenta—the difficulty in a great

¹ Op. cit., vol. ii. p. 237.² Op. cit., p. 91.³ Op. cit., p. 144.

measure disappears. For in those cases where complete presentation exists, by the time when the placenta ceases to grow, the synchronous development of the cervical portion and the placenta, may have obliterated the distinction between the internal and external os, and thus have anticipated the changes, which, under a normal arrangement, would be going on at that place, during the last months of pregnancy, and by the same process prevented the liability to hemorrhage, till the time when the internal os begins to get ready for the labor. (See case 50, tab. 1.)

It is very probable, moreover, that the thick, firm disk of the placenta, by the added support it would give the parts, would in reality, act as a preventive against the pressure of the child on the cervical portion of the uterus, and also against the effect of the largely increased circulation, in producing those conditions which might finally terminate in dilatation at a premature period.

When laterally attached, the placenta involving only a portion of the os uteri, or not extending beyond it far enough to afford the support before mentioned, it would be found that, while the tendency to dilation was at all times operating, the support would be afforded on one side only, and that this very inequality of attachment, (which when equal in every direction from the os as a center, would prevent the process) by being more on one side than the other, becomes of itself a disturbing cause; producing irregularity of action, and in this way accelerating and adding to the dilatation, until the whole circumference of the os uteri becomes freed from its confinement by the placental mass, and its motions are no longer cramped in any part. And hence, in many cases of complete presentation of the placenta, no indications of disturbance manifest themselves until labor comes on; while in others, where there is only a partial occlusion of the os, these indications make their appearance, at any time after the exciting cause is in operation, and the hemorrhage goes on increasing, as the contraction and dilatation become more and more urgent.

And finally, in regard to the absence of hemorrhage, in those cases in which the placenta is on the cervical portion but does not overlap the os, and which have been proved to be of frequent occurrence, it may be assumed that the os not being involved, it does not take on any change other than happens in normal pregnancies, and

is preserved entire, by the same property which keeps it closed until labor sets in, in ordinary and natural gestation.¹

¹ For additional facts bearing upon this subject the reader is referred to a paper "on the cervix uteri in pregnancy," by Dr. J. Matthews Duncan, in *Edinburgh Monthly Journal*, March, 1859. Also to a paper by Dr. A. S. Donkin "on the pathology and treatment of Placenta Prævia," in the same journal, April, 1859, in which the writer proposes to expedite the labor and check the flooding, by inserting into the os uteri a sponge-tent prepared for the purpose.

CHAPTER V.

TREATMENT.

HAVING thus disposed of the preliminary questions, which are necessary to a right understanding of the main subject, which is, the best mode of treating cases of Placenta Prævia when they occur, we are prepared to enter at once upon its consideration. It is difficult to overestimate the importance of this. Under no other combination of circumstances is the complete exercise of all his faculties, united to perfect coolness and sobriety of judgment, so imperatively demanded on the part of the accoucheur. Error here admits of no rectification; there is no time to undo what has been done wrong, and a single false step may place the patient beyond the power of rescue. How carefully then, should every proposed treatment be weighed, and freed from whatever tends to throw doubt and uncertainty upon its successful application.

The question, when separated from all side issues, narrows itself down to the simple inquiry, What mode of practice, will in the greatest number of cases, afford safety to both mother and child, when the after-birth presents first?

In discussing this, opinions unsupported by sufficient evidence, are not the safest guides to follow; neither would a blind adherence to ancient landmarks, and a stern disbelief in any and all improvements, seem more likely to lead us to a safe conclusion. The maxim of St. Paul applies as well to medicine as to theology—"Prove all things, Hold fast to that which is good;" and in a question like this, which must, after all, be decided upon the basis of statistical evidence, we shall find that the results of cases fairly reported, and subjected to dispassionate analysis, are of far greater value than all the dogmas, and all the theories, emanating from whatever source, and supported by names however high in the scale of professional eminence. With this view, the following tables have been prepared. In order to render them more worthy of confidence, none but original sources of information were resorted to; a course which dimin-

ished the aggregate number, but which was thought to be the best, to avoid the errors which might arise in the transmission through different reporters, from misapprehension, carelessness, or the desire to corroborate some favorite theory or mode of practice. They are submitted with a belief in their accuracy, and with the hope that they may aid in establishing some mode of treatment, which shall diminish the fearful rate of mortality, that under the most favorable circumstances, attends this unnatural form of labor.

Operative midwifery, in a certain sense, may be said to date back to the fathers of medicine. But, while they recommended artificial aid, it was rather with the idea of finally bringing the head to engage in its natural position, than of delivering the child, by introducing the hand into the cavity of the uterus, and extracting it by the feet.¹ The exact period when the operation of version by the feet was adopted, as the alternative of difficult or unnatural labors, cannot be ascertained; but as early as the beginning of the last half of the seventeenth century, it had been practiced in France.² After its adoption, it seems to have grown at once into favor, and was generally and indiscriminately applied to all cases, where there seemed to be any doubt, as to the ability of the mother, to bring forth her child, by means of her labor-pains alone.

Considered with reference to Placenta Prævia, as a means of rendering this form of pregnancy more manageable and safe to the mother and her offspring, its application dates from a comparatively recent period. As has been shown in the preliminary discussion of our subject, it was not until the time of Giffard, that the real points at issue, were fully comprehended, and a course of treatment adopted, which was based upon a clear understanding of the dangers of this complication. From that time, however, and particularly from the period when the elder Rigby published his celebrated and world-famous treatise, version by the feet has been considered by the profession at large, the most judicious and reliable mode.³ In 1799,

¹ Raynalde. *The Whole Byrthe of Mankinde, or the Woman's Booke.* Book 2d, chap. iii. 2.

² Ambrose Paré. Book 24, chap. xxvi.

³ According to a writer in the *Lond. Med. Times and Gazette*, vol. xxxvi. pt. 2d, p. 1211, extraction of the placenta was proposed by Willoughby as early as 1640-70. In the manuscript lectures of Dr. John Harvie, who lectured in London about 1767

Dr. John Chapman¹ reported a case, (No. 43, table 1st,) in which the contractions of the uterus, were powerful enough to throw off the placenta before the child, and in which also, there was no subsequent hemorrhage. The result of this case induced him to propose the query, whether it did not afford an indication to be followed in practice?² For some reason, however, the subject was dropped, and the established practice went on without question, till Professor Simpson, in a paper read before the Medico-Chirurgical Society of Edinburgh, December 4th, 1844,³ proposed to imitate this operation of nature by artificially detaching the placenta, and establish it as a rule of practice under certain limitations. Immediately following this announcement, a bitter controversy sprung up between those who favored the new method, and those who could see nothing in it but novelty and dangerous innovation. And even at the present time, it cannot be said, that the opinions of the profession are definitely settled, as to the extent of its application, or its actual value, in comparison with what, from the length of time it has been in use, may be called the established rule of practice.

In table 1st, will be found fifty-two cases where the placenta was *spontaneously expelled*, and the child born by the unassisted uterine contractions. In the appendix, table 9th, may be found many more, which were not incorporated into the first set of tables for two reasons. *First*, it was not stated in them, whether the separation of the placenta was spontaneous or artificial; and in the *second* place, to avoid erroneous conclusions as far as possible, it was determined from the

(according to Dr. Meriman) it is stated in the twelfth lecture, that he "has known a labor so sudden as to force the placenta out of the os externum, before the head of the child."

¹ Duncan's Annals, vol. iv. p. 308.

² The exact words used by Mr. Chapman in the case alluded to, are, "1st. What I wish to call the attention to in the above case is, that, notwithstanding the placenta was nearly three hours from the first protrusion through the os uteri to its complete expulsion through the os externum, she lost very little more blood than women usually do when the placenta is expelled after the birth of the child.

"2d. From the expulsion of the placenta to the birth of the child was full four hours. She lost *little* or no blood. How far does this suggest a different practice, (to that in general followed,) I mean of delivering the placenta previous to delivering the child, in those cases of alarming hemorrhage where the placenta is situated on the side of or over the os uteri?"

³ Collect. Works, Am. ed., vol. i. p. 597, from Lond. and Edin. Month. Jour. of Med. Science, March, 1845, p. 169.

outset, to admit no cases into the tables intended for reference, except those of which the original reports could be examined. But as a large number still remained, which, however useless they might be for the purpose in hand, were still valuable in other respects, they were collected and placed in the appendix, where they may be found.

The cases in the first table, are principally valuable, in showing that when the uterine contractions are vigorous enough, to throw off the placenta and deliver the child, no danger to the mother is to be apprehended; and that the child also may be expected to live, unless too long an interval has elapsed, between the separation of the placenta and the delivery.

In *table second*, will be found twenty-six cases of *spontaneous separation of the placenta, with artificial delivery of the child*. That is to say, the pains were vigorous enough to throw off the placenta, but not sufficient to complete the labor.

In the *third table*, we have *artificial separation of the placenta, with natural delivery of the child*. That is to say, the placenta having been completely detached from the uterus, the labor was finished by the pains alone.

In this table there are thirty-one cases.

Table fourth includes those cases, in which *both the placenta and the child were artificially delivered*. Of these there were fifty-one cases.

These four tables comprise all the instances, in which the placenta was completely detached from the uterus, before the birth of the child.

Table fifth contains those, in which the placenta was *partially detached*, and *natural delivery* of the child followed. That is to say, room enough was gained, by detaching a portion of the placenta, to permit the passage of the child, but without entirely cutting off the circulation between the foetus and the mother. This table contain 123 cases.

Table sixth includes those, in which, with *partial detachment* of the placenta, resort was necessary to *artificial delivery* of the child. This table contains 557 cases; a number altogether disproportionate to the others, and which points to the great truth, that under this combination of conditions, (*i.e.* partial detachment and artificial delivery,) may we expect, in the great majority of instances, to find any particular case.

Table seventh collects all those, in which the placenta was *perforated* and the child variously delivered, and contains thirty-nine cases.

Table eighth exhibits those, in which the mother died undelivered, and which, although they have no weight in determining the relative value of the different modes of treatment, are, nevertheless, important in determining the fatality of Placenta Prævia, and the relative mortality.

TABLE I.—*Spontaneous Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	STATE OF OS.	PRESENTA- TION OF PLACENTA.	PRESENTA- TION OF CHILD.
1	Mauriceau, Obs., 106; Feb. 13, 1674.	.....	.....	7	.....	.....	.....	.....
2	Smellie, Collect. 18; No. 3, Case 5, A.D. 1747.	.....	Multi- para.	8½	Was seized with a flooding at the beginning of the 9th month, which was stopped; 8 or 9 days after, labor came on, with increase of flooding; membranes broke early.	Largely open	.....	Head.
3	Ibid., Case 6, A.D. 1750.	.....	2	8	Membranes broke 2 hours before arrival; flooding ceased immediately.	.....	.....	Head.
4	Ibid., Case 7, A.D. 1747.	.....	.....	Not full time.	Membranes had broke, and profuse flooding had kept up.	Dilated.	Complete.	.....
5	Rigby, Essay on Uterine Hem., 6th ed., Case 45; April 3, 1778.	.....	.....	5	Had flooded for some hours, with slight pains.	.....	Complete.	.....
6	Ibid., Case 78, Feb. 5, 1784.	.....	2	5	.....	Rigid at first.	Complete.	Arm and head.
7	Dr. Lee's Clinical Med., Am. ed., p. 158, No. 10; Oct. 28, 1835.	.....	.....	7	.....	.....	.....	.....
8	Ibid., p. 174, No. 44; Aug. 24, 1845.	.....	4	5	Pelvis greatly distorted by rickets.	.....	Complete.	.....
9	Ibid., p. 179, No. 53; Jan. 17, 1847.	.....	.....	6	Unimpaired.	Considerably dilated; cer- vix obliterated.	.....	.....
10	Ibid., p. 180, No. 54.	.....	.....	7th.	.....	.....	.....	.....
11	Ramsbotham, Obs., 2d ed., 1842; Case 105.	.....	.....	.....	Did not seem much ex- hausted.	.....	.....	Head and hand.
12	Baudelocque, art. des Accouchements, 7th ed., p. 425, note.	.....	.....	.....	.....	.....	.....	Head and arm.
13	Dr. F. H. Ramsbo- tham; Lond. Med. Gaz., xxxiv. p. 279.	.....	.....	7	Violent uterine action.	.....	.....	.....
14	Dr. Denny, Am. J. Med. Sci., N. S., xxxi. p. 86, No. 3, Jan. 31, 1847.	.....	.....	6	Unimpaired; pulse strong.	Fully dilat- ed; vagina rigid, not admitting the hand.	One edge pro- truding into vagina.	.....
15	Mr. Thos. Lloyd, Lond. Lan., 1846, ii. p. 515.	50	16	9	.....	.....	.....	Abdomen.
16	Murphy, Lect. on Midwifery, p. 344.	.....	.....	.....	.....	.....	.....	.....
17	Mr. Stedman, Lond. Lan., 1845, ii. p. 454.	.....	.....	.....	.....	.....	.....	Feet.
18	Ibid.	.....	.....	.....	.....	.....	.....	.....
19	Ibid.	.....	.....	.....	.....	.....	.....	.....
20	Mr. S. P. Goddard, Lond. Lan., ii. p. 645.	.....	2	7	Unimpaired.	At first rigid and undilat- able.	Partial.	Funis; after- ward both arms and one leg.
21	Mr. J. J. Tweed, Lond. Lan., 1846, i. p. 9; Nov. 7, 1845.	22	2	7th.	"Faintish."	Thick, and rigid at first; dilated in 4 hours.	Complete.	Head and one hand.
22	Mr. Tennent, Am. J. Med. Sci., N. S., xi. p. 242, (from Prov. Med. & Surg. J., July 23, 1845.)	.....	.....	7th.	.....	.....	.....	.....

Placenta. Labor completed by Natural Efforts.

HEMORRHAGE BEFORE SEPARATION.	HEMORRHAGE AFTER SEPARATION.	TIME BETWEEN SEPARATION AND DELIVERY.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
"Great."	.....	None.	.....	Recovered.	Dead.	Placenta and ovum, with the membranes unbroken; expelled by a strong pain.
At intervals.	.....	Child came with next pain.	.....	Recovered.	Lived.	.....
Inconsiderable.	.....	None.	.....	Recovered.	Died.	.....
Profuse.	.....	None.	.....	Recovered, probably.	Alive, probably.	Child born, inclosed in the membranes.
Considerable.	None of consequence.	.....	.....	Recovered.	Dead.	.....
"A considerable hemorrhage."	Immediately stopped.	None.	.....	Recovered.	Died.	.....
Made its appearance a fortnight before; returned in a week; came on, morning of date, with great violence, accompanied with labor-pains.	.....	Some time	.....	Recovered.	Dead.	The placenta and ovum entire, were expelled upon slight traction on the portion of the placenta protruding through the os; hemorrhage ceased by the application of cold vinegar and water to the external organs.
Slight.	.....	None.	.....	Recovered.	Dead.	.....
First appeared about a month before date; returned on that morning profusely.	.....	None.	.....	Recovered.	Dead.	Placenta diseased; fetus malformed.
.....	.....	.....	.....	Recovered, probably.	.....	.....
Very violent, though not dangerous.	Ceased very soon.	Some time.	.....	Recovered.	.....	No details of this case are given; it was seen in consultation; "the placenta presented, and was expelled before the child."
.....	A few drops.	Some time.	.....	Recovered, probably.	.....	The "sage femme" in attendance had removed the placenta, and broken the cord off close to the umbilicus.
.....	.....	None.	.....	Recovered.	Alive.	.....
Great; had run through the bed and across the floor of the room.	.....	None.	.....	Recovered.	Dead.	.....
Not the slightest.	None reported.	Some time.	Spontaneous version.	Recovered.	Dead.	Placenta large and hardened; weighed 4 pounds.
Violent.	None.	.....	.....	Recovered.	.....	.....
.....	Ceased immediately.	.....	.....	Recovery, presumed.	.....	.....
.....	Ceased immediately.	.....	.....	Recovery, presumed.	.....	.....
.....	Ceased immediately.	.....	.....	Recovery, presumed.	.....	.....
Trifling.	Entirely ceased.	Very soon after.	Child expelled without any change of presentation.	Recovered.	Dead.	.....
Great at first; plug; ceased as head descended.	None.	An hour and a half.	Ergot, as pains became inefficient.	Recovered.	Dead.	Plug was twice applied; 2 hours after second application, placenta and plug expelled together.
Recurred at intervals of some days; inferred to be severe.	None.	.....	.....	Recovered.	.....	.....

TABLE I.—*Spontaneous Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	STATE OF OS.	PRESENTA- TION OF PLACENTA.	PRESENTA- TION OF CHILD.
23	Dr. G. N. Burwell, sup. cit., p. 390.	.....	4	6½	Very weak and faint.	At first open about an inch; after- ward di- lated and yielding.	Forced for- ward with each pain; was expelled almost im- mediately after the tampon came away.	Head.
24	Mr. Hicks, Lond. Med. Gaz., xli. p. 123.	.....	.....	.....	.....	.....	.....	.....
25	Mr. Benj. Duley, Lond. Med. Gaz., xlii. p. 173.	.....	.....	.....	.....	Considerably dilated.	.....	Head.
26	Mr. Waller, Lond. Lan., 1828-9, ii. p. 677.	.....	.....	6th and a little more.	.....	.....	Partial; ra- ther more than one- half of the os covered.	Back.
27	Mr. Denny, Lond. Lan., 1831-2, i. p. 119.	.....	.....	.....	.....	.....	.....	.....
28	Mr. T. Millington, Lond. Lan., 1831-2, i. p. 232.	32	Multi- para.	9	.....	.....	.....	Head.
29	Mr. J. Russell, Ed. Med. & Surg. J., No. 66, p. 52; No. 47, July, 1811.	.....	.....	7	.....	.....	.....	.....
30	Mr. Tennent, Lond. & Edin. Month. J., 1845, i. p. 427; Jan. 31, 1845.	42	14	7	Much exhausted, now and then delirious; ergot given, but produced no pains.	Dilated very slowly.	Complete.	Head.
31	Dr. S. Sargent, Law- rence, Mass., Bost. Med. & Surg. J., xlix. p. 163, Aug. 20, 1853.	.....	3	6	Exhausted.	Dilated slowly.	Complete.	.....
32	Dr. Oldham, Am. J. Med. Sci., xxxii. p. 536, (from Med. Times and Gaz., July 12, 1856.) Case 1, Aug. 1847.	.....	.....	8½	In a very feeble state.	Fully di- lated.	.....	Head.
33	Com. by Dr. C. G. Putnam, Boston, Mass.	32	1	9	Unimpaired.	Sufficiently dilated.	Complete.	Head.
34	Mr. James French, Lond. Lan., 1845, i. p. 645, Ap. 16, 1845.	36	4	8½	Strong and healthy.	Size of a crown-piece; dilatable.	Partial; one- third of os covered.	Left foot and cord; after- ward head.
35	Mr. J. Lilley, Lond. Lan., 1851, ii. p. 284.	.....	.....	.....	.....	.....	.....	.....
36	Dr. Handy, N. Y. Med. & Phys. J., ii. p. 194, Aug. 27, 1823.	40	11	9th.	Pulse depressed; extremi- ties cold; nausea.	Dilatable.	.....	Head.

Placenta. Labor completed by Natural Efforts—Continued.

HEMORRHAGE BEFORE SEPARATION.	HEMORRHAGE AFTER SEPARATION.	TIME BETWEEN SEPARATION AND DELIVERY.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
Began 3 weeks before; recurred every 3 or 4 days; at last "alarmingly severe;" tampon during 6 hours; it was then expelled by pains.	Ceased.	15 or 20 minutes.	.....	Recovered, probably.	.....	.....
reat.	Ceased.	.....	.....	Recovery, inferred.	.....	.....
.....	.....	One hour.	.....	Recovered.	Dead.	.....
sudden gush followed discharge of waters.	Did not return.	A short period.	.....	Recovered.	.....	"At first the pains flagged a little, but the uterus firmly embraced the body of the child; after a short period they increased; pushed the placenta first, and the child afterward: it was expelled double with tolerable ease."
one reported.	None.	Next pain.	.....	Recovered.	Lived.	.....
uch hemorrhage had taken place.	.....	Next pain.	.....	Recovered.	Lived.	Child did not breathe for a few minutes.
nsiderable.	.....	.....	.....	Recovered.	Dead.	.....
ree weeks before, a violent uterine hemorrhage; 8 days later, returned in a less degree; on 30th, again profuse; returned at short intervals; ergot given; doses; hemorrhage arrested; when pains came on, no return of bleeding.	None.	Next 3 pains.	.....	Recovered.	Dead.	After the exhibition of the ergot, although no pains were excited, the hemorrhage recurred but once, and then ceased of itself; pains at length came on, and progressively increased in strength till child was born.
om the 2d month; refuse and alarming at the last.	.....	None.	.....	Recovered.	Dead.	For details of this case, see p. 42, note.
eat; came on between 7th and 8th month; subsided spontaneously; 11 days after, returned profusely, followed by a colorless discharge; labor came on, with great hemorrhage.	None.	Not long.	.....	Recovered.	Dead.	"When first seen, head low down in the vagina, with the placenta pressed between it and the back wall of the vagina; while examining, an expulsive pain was excited, and the head rapidly descended, and was expelled before the placenta, which followed with the body of the child."
ght, but constant; no one great gush, but lost more than average."	.....	"Child and placenta came together."	.....	Recovered.	Alive.	Child born alive, but very attenuated; died in 3 days.
casional, for 6 weeks; great during pains.	None.	Next pain.	Spontaneous version took place.	Recovered.	Dead.	Spontaneous version.
nsiderable.	None.	Labor finished quickly and satisfactorily.	.....	Recovered.	Lived.	.....
month before, without any pain; laudanum and cold applications; bled to 24; 5 hours after last bleeding, fainted; laudanum again given; no hem. for h. previous to sep.	None.	Half an hour.	.....	Recovered.	Dead.	Had a long and tedious convalescence; succeeded by phleg. alb. dolens.

TABLE I.—*Spontaneous Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	STATE OF OS.	PRESENTA- TION OF PLACENTA.	PRESENTA- TION OF CHILD.
37	Com. by Dr. Choate, Salem, Mass.	.....	.....	8½	.....	.....	.....	.....
38	Dr. Morrill, Boston.	.....	6	.....	Some pain.	.....	Came away while urin- ating.	.....
39	Ibid.	.....	2	.....	.....	.....	.....	.....
40	Com. by Dr. J. S. Jones, Boston.	.....	.....	7th.	.....	Dilated.	.....	.....
41	Ibid.	.....	3	7th.	.....	Dilated.	.....	Feet.
42	Dr. J. Stevens, Bos- ton.	.....	.....	.....	.....	.....	.....	.....
43	Mr. John Chapman, Duncan's Annals, iv. p. 308, 1799.	.....	4	8th.	.....	Size of a crown-piece.	Partial.	Head.
44	Dr. Edward Cope- man, "Rec. of Ob- stetric Practice," p. 191, Case 6, Nov. 1, 1852.	25	Multi- para.	7	.....	Dilatable.	Partial.	Head.
45	Com. by Dr. C. Gor- don, Boston.	.....	3	full period.	Faint.	.....	Complete.	Head.
46	Dr. J. G. Metcalfe, Com. Mass. Med. Soc., ix. part 2, 1856, p. 123.	25	4	5	Quite faint and exhausted; required constant stimu- lating to prevent complete syncope.	.....	.....	Head, pre- sumed.
47	Dr. Waller, Braith. Retros., xvii. p. 227, from Med. Times, Jan. 8, 1848; Case 5.	.....	.....	6 to 7	In good condition.	.....	Complete.	Back.
48	Ibid.; Case 6.	.....	.....	.....	.....	.....	.....	.....
49	Dr. Paul Spooner, New Bedford, Mass.	.....	.....	.....	.....	.....	.....	.....
50	Dr. O. H. Taylor, Camden, N. J., Bos- ton Med. J., July 12, 1854, from N. J. Med. Rep., May 15, 1853.	.....	.....	8½	.....	Dilated to about 2 inches in diameter.	Complete.	Head.
51	Ingleby, Ut. Hem., Lond. 1832, p. 150.	.....	.....	6th.	.....	Somewhat dilated.	.....	.....
51a	Murphy, Lect. on Mid., p. 343.	.....	.....	.....	.....	Rather rigid; size of a crown-piece.	.....	.....

Placenta. Labor completed by Natural Efforts—Continued.

HEMORRHAGE BEFORE SEPARATION.	HEMORRHAGE AFTER SEPARATION.	TIME BETWEEN SEPARATION AND DELIVERY.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
For 3 months.	.....	Less than 20 minutes.	.....	Recovered.	Lived.	.....
Sudden; not great.	Ceased.	.....	.....	Recovered.	.....	.....
Not alarming.	.....	Followed immediately.	.....	Recovered.	.....	.....
For 4 hours, with pain.	None.	Followed immediately.	.....	Recovered.	.....	"On rupturing the membranes, the placenta immediately protruded into the vagina, and the child followed."
Profuse.	Ceased.	.....	.....	Recovered.	.....	.....
More or less for 3 months; then sudden and profuse.	Ceased.	.....	.....	Recovered.	Dead.	.....
Trifling, when labor came on, but increased as pains grew strong.	Ceased.	Full 4 hours.	.....	Recovered.	Dead.	For details of this case, see p. 111, note.
A month ago, and several times since; at date, intermittent in character; very severe.	None.	Came down together.	.....	Recovered.	Lived.	.....
For 3 or 4 weeks; at time of labor, flooding.	.....	None.	.....	Recovered.	Dead.	.....
Quite profusely for some time.	.....	A short time.	.....	Recovered.	Dead.	Labor 10 hours in duration.
Sudden, and rather profuse after discharge of waters; afterward ceased almost entirely.	None.	Child soon followed placenta.	.....	Recovered.	Dead.	Child born in a doubled position.
.....	.....	One hour and a half.	.....	Recovered.	Dead.	"The foetus had been long dead; there was, therefore, no circulation through the placenta, and, consequently, no hemorrhage," says Dr. Waller.
.....	.....	Child came with next pain.	.....	Recovered.	Lived.	For details of this case, see p. 121.
Rem. began 3 weeks before; restrained by acet. plumb. and tampon; returned in 10 days; relieved by same treatment; came on after an interval of 9 days, 19 days from first attack, very profuse, with regular pains.	None.	5 or 6 minutes.	.....	Recovered.	Lived.	Hemorrhage in this case did not occur till about the time when the internal os, according to Jacquemier, begins to open.
.....	.....	None.	Membranes ruptured; foetus and placenta expelled together.	Recovered.	Dead.	.....
Very great.	Ceased.	An hour and a half.	.....	Recovered.	Dead.	Tampon used; in 2 hours, this and placenta were expelled together.

Of the 52 cases in the foregoing table, the number of recoveries, where the fact is definitely stated, is 43. In those cases where no result is mentioned, the context plainly indicates that a favorable result took place.

In the 9 cases in which the age of the mother was stated, it was

22 years in.....1 case.	36 years in.....1 case.
25 " ".....1 "	40 " ".....1 "
26 " ".....1 "	42 " ".....1 "
32 " ".....2 "	50 " ".....1 "

In those cases where the number of the pregnancy was stated, it was

1st in.....1 case.	6th in.....1 case.
2d ".....6 "	11 ".....1 "
3d ".....3 "	14 ".....1 "
4th ".....5 "	16 ".....1 "
	Multipara in.....3 "

The date at which the case terminated, was at

5 months in.....4 cases.	8th month in.....1 case.
6th " ".....2 "	8 " ".....1 "
6 " ".....2 "	8½ " ".....5 "
6½ " ".....2 "	9th " ".....1 "
7th " ".....6 "	Full period ".....4 "
7 " ".....7 "	

The presentation of the placenta was

Complete in.....11 cases.
Partial in.....7 "

The child presented by the

Head in.....14 cases.	Abdomen.....1 case.
Head and arm in.....3 "	Funis with both arms and
Back in.....2 "	one leg.....1 "
Feet in.....1 "	

The child was born

At the same time with the placenta in.....13 cases.
With the next pain.....5 "
Very soon after.....9 "
Some time after.....4 "
Fifteen or twenty minutes.....1 "
Less than twenty minutes.....1 "
Half an hour.....2 "
One hour.....1 "
One hour and a half.....3 "
Four hours.....1 "

(Under the head "very soon after," are classed those recorded as having occurred at "a short period," "next 3 pains," "not long," "quickly and satisfactorily," "immediately," "soon followed," "5 or 6 minutes.") In four cases, Nos. 1, 4, 7, 31, the ovum came away with the *membranes unbroken*. In No. 31, (see *ante*, p. 42,) the placenta formed a complete sac. "Upon opening the placenta," says Dr. Sargent, "I found it to contain the foetus, weighing two pounds or more; the cord, fourteen inches in length, of the medium size, and a portion of the liquor amnii which had not escaped through the opening I had previously made with my finger. The placenta was a complete sac, the cord starting off from its smooth inner surface like a trunk of a tree from its roots. It seems that the placenta had entirely surrounded the membranes attaching its inner surface to them, while the exterior was attached to the whole inner surface of the womb."

In Nos. 15, 34, *spontaneous version* took place.

In No. 20, where the funis, with both arms and one foot presented, the delivery was finished without any change of position in the child.

In Nos. 26, 47, where the back presented, the children were expelled double.

The children *were born alive* in 11 cases. In these the time which elapsed between the expulsion of the placenta and the delivery, was

Less than twenty minutes....1 case.	At the next pain.....4 cases.
Very soon.....1 "	At the same time.....4 "
Five or six minutes .....1 "	

Of those recorded as being delivered "at the next pain," one, No. 49, reported by Dr. Paul Spooner of New Bedford, Mass., to quote Dr. Spooner's words, "occurred in the door-yard, *but not in the practice*, of the late Dr. Thurber, of Mendon, Mass. He was one of the town officers; and the patient, who was in very destitute circumstances, finding her labor approaching, and feeling that it was absolutely necessary to obtain some help from the town, ere she should be confined, started for the doctor's. Arrived at his gate, she was taken in labor, threw herself on the ground, and one pain having thrown off the placenta, the child came with the next. She was immediately taken care of, and with her child did well."

By the same classification, the children were born dead, where the delivery, with reference to the expulsion of the placenta, was

At the same time.....	6 cases.
At the next pain	1 “
Very soon.....	8 “
Some time.....	1 “
Half an hour	1 “
One hour.....	1 “
One and one-half hours	2 “
Four hours	2 “
—	—
	22 cases.

Two of the cases included in the above, those recorded as occurring “at the next pain” and “some time” after, were cases of Spontaneous Version.

The os uteri, in every instance in which its condition was noticed, with one exception—51a, in which it was “*rather rigid*,”—is stated to have been in *good condition*. Two cases, Nos. 20, 21, one at the 7th month and the other at 7 months, were a little rigid at first, but yielded in season, so as not to affect the result to the mother, which was favorable.

Two, Nos. 6, 8, were cases of five months, and in each of these, the placenta and ovum were expelled entire, after the membranes had been punctured through its substance. In the first, No. 6, the placenta was pierced with the finger; in the other, No. 8, premature labor was induced for the second time, owing to a distortion of the pelvis, which made it doubtful whether the mother could be delivered at full time with safety. The placenta was pierced by a stilled catheter, and the waters drawn off through it.

The date of the first appearance of the hemorrhage, was at the

3d month, No. 31	1 case.
4 months, “ 41.....	1 “
5 “ “ 5, 6, 46.....	3 “
5½ “ “ 37	1 “
6th month, “ 26, 30.....	2 “
6 months, “ 23, 38, 44.....	3 “
6½ “ “ 7.....	1 “
6th to 7th month, No. 47.....	1 “
7th month, No. 22, 40.....	2 “
7 months, “ 34, 50.....	2 “
7th to 8th month, No. 32.....	1 “
8th month, No. 36, 43.....	2 “
8 months, “ 45.....	1 “
Beginning of ninth, No. 2.....	1 “
9 months, Nos. 15, 33.....	2 “
Full time presumed, No. 49.....	1 “

In those instances where the presentation of the placenta is given, and the date of the first hemorrhage also, it began at the

	Complete.	Partial.
3d month, No. 31	1	0
5 months, " 5, 6	2	0
6th month, " 30	1	0
6 months, " 44	0	1
6th to 7th month, No. 47	1	0
7 months, No. 34, 50	1	1
8th month, " 43	0	1
8 months, " 45	1	0
9 " " 33	1	0

The hemorrhage *before* expulsion, was

Profuse in Nos. 4, 9, 30, 31, 36, 41, 42, 46, 47, 50	10 cases.
Severe in No. 22, 23	2 "
Very great, No. 14, 44, 51a	3 "
Violent, No. 7, 11, 16	3 "
Great, No. 1, 21, 24, 28, 32, 34, 45	7 "
Considerable, No. 5, 29, 35	3 "
At intervals, No. 2, 13	2 "
Increased with the pains, No. 43	1 "
Sudden gush after the waters were discharged, No. 26	1 "
Inconsiderable, No. 3, 8, 20, 33, 38, 39	6 "
Not the slightest, No. 15	1 "
<hr/>	
39 cases.	

Of which 28, or nearly 75 per cent., were of a *severe character*.

The hemorrhage, although recorded as having been of every degree of severity *before the expulsion of the placenta*, in every case in which the fact is noticed, ceased upon that event, and did not return, except in one case, No. 25. In this, the uterus did not contract well, but filled with blood, which was got rid of by external pressure. This, however, did not affect the favorable result.

The Tampon was applied in four cases, Nos. 21, 23, 50, 51a, and with the desired effect in each case. In the first two and the last, it was retained till pains coming on, the placenta and the tampon were expelled together. In No. 21, may be witnessed the good effect of this method when the os is inclined to be rigid, and nothing can be done till this condition is changed.

In No. 36, convalescence was long and tedious, and complicated by the occurrence of phlegmasia alba dolens. In this case, the condition of the mother at delivery, was one of extreme depression,

accompanied with cold extremities and nausea. She had been bled to the extent of 3xxiv.

In one case, No. 9, the cervix was found to be *completely obliterated* at the end of the sixth month.¹

In view of the facts in the preceding table, the conclusion is irresistible, that no matter how unfavorable may be the apparent condition of the mother, at the time of delivery, the ability of the uterus to expel both the placenta and child, by its own unaided contractions, is a sufficient guarantee, that a favorable result will take place.

It also follows from the facts shown, that a fatal result to the child, is *not necessarily and invariably the result when the placenta is first thrown off*, as 11 of the children were born alive.

¹ Schweighauser, in his "Pratique des Accouchement," Strasburg, 1835, p. 224, reports, that he has seen one case of spontaneous separation and delivery. In this case no record is made of the result to the mother, but the child is stated to have not lived long. Dr. Simpson has incorporated this case into his tables, although, from the fact that no result is given, it seems to be valueless in determining between different modes of treatment. (See his collected works, vol. i. p. 616, case 100, 3d division.)

[illegible]

TABLE II.—*Spontaneous Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG-NANCY.	MONTHS PREG-NANT.	CONDITION AT DELIVERY.	STATE OF OS.	PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.
51b	Lamotte, Obs. 322; Feb. 13, 1696.	.....	.....	.....	Very much exhausted; labor had continued 2 days; flooding 2 hours.	No difficulty in turning.	In the vagina; forced down just as he arrived, by the last pain.	.....
52	Ibid., Obs. 323; Oct. 16, 1710.	.....	.....	.....	Labor had begun 2 days previous; hemorrhage came on in the night of the second day with a great gush; placenta presenting at the vulva.	Dilated fully.	In the vagina.	.....
53	Giffard, Case 225; Oct. 17, 1731.	.....	.....	7	Was seized with flooding about an hour before arrival; had lost a large quantity of blood.	Dilated.	Portion of it protruded into vagina.	Arm in the vagina.
54	Amand, Obs. 98; April 6, 1706.	49½	.....	8	Fainting constantly; had been confessed and prepared for death.	Rigid and undilated.	.....	.....
55	Ibid., Obs. 120; Jan. 19, 1709.	.....	.....	.....	Just ready to expire; last sacraments had been administered.	Good condition.	Placenta was expelled, and lay without the vulva.	Head.
56	Vihardel, Obs. sur la Prat. des Accouch., p. 88; before A.D. 1671.	.....	.....	.....	.....	.....	Entirely detached.	Umbilicus.
57	Smellie, Collect. 33; No. 2, Case 11, A.D. 1746.	.....	.....	Nearly full time	Pale and livid; almost pulseless; covered with a cold, clammy sweat; no pains at all; had flooded for 5 hours profusely.	Greatly relaxed.	.....	Head.
58	Leroux, Obs. sur les Pertes des Sang. Obs. 95; Nov. 13, 1766.	.....	4	7	Flooding had been going on nearly 24 hours, and increased as the pains grew strong; very weak and pale; pulse small, but strong.	.....	.....	Head and arm, with prolapse of the cord.
59	Ramsbotham Obs., 2d ed., 1842; Case 106.	.....	.....	.....	Not perceptibly impaired.	.....	.....	Head at the brim.
60	Collins, Practical Treatise on Mid., 1st Am. ed., p. 66, No. 92.	30	6	Full time.	In a state of extreme debility; pulse could not be counted.	.....	.....	Foot; very putrid; skin peeled off at the least touch.
61	Dr. E. A. Cory, Lond. Lan., 1845, ii. p. 629.	38	.....	.....	.....	Firmly embracing arm.	.....	Arm.
62	Com. by Dr. C. G. Putnam, Boston, Mass.	.....	5	6th.	.....	Considerably dilated.	.....	Shoulder.
63	Dr. J. Y. Simpson, Collected Works, Am. ed., p. 606; Case 1; 1840.	.....	3 or 4	5th.	Not seriously affected.	Contracted; could not introduce the hand.	.....	Shoulder at neck.
64	Ibid., Case 2; 1841.	.....	.....	.....	Not seriously affected.	Well dilated.	.....	Elbow.
65	Mr. J. H. Bull, Lond. Med. Gaz., xix. p. 621, Dec. 7, 1836.	.....	6	.....	Much exhausted; pains very strong.	.....	.....	Arm.
66	Dr. E. A. Cory, Lond. Med. Gaz., xix. p. 659.	38	.....	.....	Liquor amnii discharged.	Fully dilated	In vagina.	Arm.

Placenta. Labor completed by Artificial Means.

HEMORRHAGE BEFORE SEPARATION.	HEMORRHAGE AFTER SEPARATION.	TIME BETWEEN SEPARATION AND DELIVERY.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
at.	.....	None.	Placenta removed; child turned, and drawn down by the feet.	Recovered.	Died.	Child lived long enough to be baptized.
at.	Continued until delivery.	None.	Vagina freed from the placenta: child turned, and delivered by the feet.	Recovered.	Died.	About a quarter of an hour was occupied in the delivery.
.....	Continued.	None.	Turning by both feet, with some difficulty.	Died.	.....	Hemorrhage kept up, although the uterus was perfectly empty of coagula, and did not cease till she died.
.....	Continued until delivery.	None.	Turning by both feet.	Recovered.	Lived.	.....
.....	Continued until delivery.	None.	Turning by both feet.	Recovered.	Dead.	.....
.....	.....	None.	Placenta first extracted, and then turning performed, by the feet.	Recovered.	Died.	.....
.....	"Pouring;" stopped after delivery.	None.	Turning by the feet.	Died.	.....	.....
.....	.....	.....	The membranes having broken some time before, it was impossible to introduce the hand and turn; the child was, therefore, cut in small pieces, and taken away piecemeal.	Recovered.	Dead.	This was a case to which Leroux was called, in its latest stages, in consultation.
.....	.....	.....	Turning.	Recovered.	.....	She had flowed at intervals for 3 days.
More or less for a fortnight previous.	None.	A day.	Brought away.	Recovered.	Dead.	Membranes had ruptured, and waters discharged a fortnight before. "Had been twice seen by a practitioner, who bled her, and gave purgatives;" left hospital on the 13th day.
No	None.	.....	Evisceration of chest and abdomen.	Recovered.	Dead.	Some symptoms of inflammation after delivery; subdued by ordinary means.
Slight for a fortnight, sudden and profuse for some time.	Nearly ceased.	.....	Turning.	Recovered.	.....	.....
Severe	Ceased.	Between 3 and 4 hours.	Neck severed; body drawn down; head expelled by pains.	Recovered.	Dead.	.....
Considerable, when placenta came on.	Ceased almost entirely.	Nearly 2 hours.	Turning.	Recovered.	Dead.	.....
Very great.	.....	2 hours.	Turning.	Recovered.	Dead.	.....
.....	Scarcely any.	.....	Chest and abdomen eviscerated.	Recovered.	Dead.	Three days after, symptoms of peritonitis appeared, which were subdued by the usual means.

Placenta. Labor completed by Artificial Means—Continued.

HEMORRHAGE BEFORE SEPARATION.	HEMORRHAGE AFTER SEPARATION.	TIME BETWEEN SEPARATION AND DELIVERY.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
G.	Immediately ceased.	More than 2 hours.	Forceps applied to breech.	Lived.	Dead.	.....
.....	Not stated; inferred little, if any.	Some hours.	Turning.	Died.	Dead.	Died in 48 hours, with symptoms of peritonitis.
Three months before, returned 3 days before record, a long walk, equal severity; on again, and in 1 hour placenta expelled.	Immediately ceased.	More than an hour.	Manual assistance.	Died.	Dead, inferred.	Died in 8 days, from diarrhoea, induced, apparently, by the exhaustion.
She about the 7th day; returned on 11th at first slight, a strong pain, on her elbows and knees, and an intense gush.	Almost entirely ceased	Some hours.	Turning, with great difficulty; head left in pelvis for an hour or two.	Recovered.	Dead.	At the time of the "gush," the placenta was separated, and at an examination made soon after, was found protruding through the external parts.
Occasional.	.....	.....	Turning.	Recovered.	.....	.....
Occasional.	.....	.....	Turning.	Recovered.	.....	.....
For 3 months.	None.	.....	Turning.	Recovered.	Dead.	.....
At intervals; great effort when placenta was thrown out.	Kept up till uterus contracted.	A few minutes.	Turning.	Recovered.	Lived.	.....
A night before, suddenly ceased; receded again; stopped after a short time when active pain came on.	Not the slightest.	Inferred a considerable time.	Turning.	Recovered.	.....	.....
.....	"It abated."	Some hours.	Turning.	Died.	Dead.	After expulsion of placenta, os contracted; peritonitis set in; fatal on the 8th day.

Of the 26 cases in the foregoing table,

21 Recovered. | 5 Died.

A percentage of deaths, of $19\frac{23}{100}$, or 1 to $4\frac{1}{3}$ nearly.

In 7 cases only, is the age of the mother, at the time of delivery, stated.

It was 23 years in.....1 case.	|	It was 37 years in.....1 case.
" 24 " "1 "	|	" 38 " "2 "
" 30 " "1 "	|	" 49½ " "1 "

The first two of which, only, were fatal cases.

The number of the pregnancy is recorded in twelve instances.

It was the 1st in.....2 cases.	|	It was the 3d or 4th in.....1 case.
" 2d "4 "	|	" 5th in .....1 "
" 4th "1 "	|	" 6th "2 "

In all of which, the result was favorable to the mother, except in one case where it was the 1st, and one the 4th pregnancy.

The period of the pregnancy, at which the delivery took place, was

At the 5th month .....1 case.	|	At 8 months.....1 case.
" 6th "1 "	|	At the 9th month .....2 "
" 7th "2 "	|	Full term.....1 "
" 8th "3 "	|	

Three of these were fatal cases, viz.:

1 at .....7 months.	|	1 at .....9th month.
1 at .....8th month.	|	

There were 19 cases of turning.

Two in which manual assistance was required—Nos. 60, 69—both of which were footling.

Two in which the chest and abdomen were eviscerated—Nos. 61, 66.

One in which the child was cut in small pieces—No. 58.

One in which the head was separated from the body—No. 63.

One in which forceps were applied to the breech—No. 67.

The result to the mother was, in

	Lived.	Died.
Turning.....	15	4
Manual assistance.....	1	
Evisceration.....	2	
Cut in small pieces.....	1	
Head separated.....	1	
Forceps to breech.....	1	

The presentation of the placenta was noticed in one instance only, No. 67, in which it is stated to be partial.

The child presented by the

Head, in.....	3 cases.	Elbow, in.....	1 case.
Feet, in.....	2 “	Arm, with cord, in.....	1 “
Shoulder, in.....	1 “	Umbilicus, in.....	1 “
Shoulder and cord, in.....	2 “	Knee, with cord first, then	
Arm, in.....	7 “	breech, in.....	1 “

In the remaining 12 cases, the presentation is not stated.

In the 19 cases, in which the result to the children is stated,

2.....Lived. | 17.....Died.

Of those who died, 10 were delivered by turning; 5 were mutilated, and 2 drawn down by the presenting feet.

The two who survived, were both delivered by turning, and immediately after the expulsion of the placenta. In one, the shoulder presented. In the other, the presentation is not stated.

The os uteri was in *good condition*, opposing no difficulty in entering the uterus, in 12 cases.

In one, No. 63, it had contracted after the expulsion of the placenta, so as to prevent the introduction of the hand. In this case the neck of the child was severed, the body drawn down, and the head afterwards expelled by the pains.

In one, No. 54, it was rigid and undilatable, but yielded to the introduction of the fingers, one by one.

In one, No. 61, it was tightly contracted about the arm, which protruded through it into the vagina. In this case the body of the child was eviscerated.

In all of these latter cases, the mothers recovered, showing that in so far as any opinion can be formed from them, this condition *alone*, does not exert much influence upon the result. No ill effect seems to have been produced by the operations, which have been considered extremely dangerous to the mother by most accoucheurs and writers.

The date at which the first hemorrhage commenced was at the

5th month, No. 63.....	1 case.
5½ “ “ 62, 69.....	2 “
7th “ “ 70.....	1 “
7 “ “ 53, 58.....	2 “

8½ month, No. 60.....	1 case.
9th " " 74.....	1 "
Nearly full time, No. 57.....	1 "

As has been already remarked, the presentation of the placenta is given in only one instance, No. 67, and in this case, no date of the first hemorrhage is given.

The hemorrhage *before* expulsion was

Great, in No. 51b, 52, 67..	3 cases.
Profuse, in No. 62, 69	2 "
Very great, in No. 65.....	1 "
An immense gush, in No. 70.....	1 "
Severe, in No. 63.....	1 "
Considerable, in No. 64	1 "
More or less for a fortnight, in No. 60	1 "
Occasional, in No. 71, 72, 73, 74.....	4 "
Not great, in No. 75.....	1 "

Of the fatal cases, but one, No. 69, has this condition recorded. The flooding in that case is stated to have been "profuse."

The hemorrhage, *after* the expulsion of the placenta,

Ceased immediately in.....	8 cases.
Ceased very soon in	4 "
Abated in.....	1 "
Kept up till delivery in.....	4 "
" " " uterus contracted in.....	1 "
" " " death in	1 "

Of the 19 cases above, 5 proved fatal; viz., two, Nos. 68, 69, where the hemorrhage ceased immediately; one, No. 76, where it abated; one, No. 57, where it kept up till delivery; one, No. 53, where it continued till death.

In Nos. 68, 69, and 76, the fatal result was, no doubt, due to the *effect* of the excessive hemorrhage, but not the *immediate consequence* of it, as two died of peritonitis in 8 days, and the other in 2 days. In No. 53 it was the direct cause, as the flowing did not cease till death closed the scene. In No. 57 the hemorrhage ceased as soon as delivery was accomplished, but the system had not force enough left to react, and she died in half an hour.

The condition of the mother, is recorded to have been

Almost moribund in No. 54, 55, 57, 60.....	4 cases.
Very much exhausted in No. 51, 58, 65, 69, 73, 74, 75.....	7 "
Not materially affected, in No. 52, 53, 59, 63, 64, 70.....	6 "

Of those who were almost moribund, 3 lived; 1 died—No. 57. In this case, the flooding had been going on for five hours, in the most profuse manner; during which time, there had been no pains at all. The relaxed condition of the parts, and the cold clammy condition of the surface, all indicate an extreme degree of exhaustion. The flooding ceased after delivery, but the amount lost had been so great, that reaction was impossible. In this case it was of the utmost importance to stop the flooding immediately, and it is very probable, that if she had been aided earlier, she would have lived. In the other cases, although the condition of the mother up to the expulsion of the after-birth was almost identical, the hemorrhage ceasing either from natural causes, as in No. 60—in which, in addition to the loss of blood by flooding, the mother had been bled and physicked—or in consequence of the operation, which was performed without delay in Nos. 54, 55, the point was not reached beyond which recovery was impossible.

Of those recorded as *very much exhausted*, 6 recovered, and 1—No. 69—died. In this case, the death was not immediate, but took place in eight days. The patient was of a delicate constitution, and had been reduced to the lowest point by flooding which had kept up at intervals, for two months, very profusely. Comparing this case with the others, no doubt seems to remain, that it was to her lack of constitutional vigor, rather than to any special effect of the circumstances of the labor, that her death was due. An earlier delivery, before the placenta was expelled, would doubtless have saved her life. For, of the others, No. 51b, was longer in labor, and was subjected to a greater amount of operative interference; No. 58 was even worse in condition, having *flooded* for nearly twenty-four hours, and, moreover, was obliged to have the child cut in pieces before delivery, the firm contraction of the uterus forbidding the introduction of the hand to turn.

Of those apparently not affected by the loss of blood, 5 *recovered* and 1 *died*—No. 53.

The fatal result in No. 53, is directly to be attributed to the relaxed condition of the uterus, from which flowing kept up, till every drop was apparently drained from the vessels. In this case there were no portions of the secundines left behind, nor were there any coagula in the cavity of the uterus, but a continual draining kept up till she died. She was seven months pregnant, but as an offset to

this fact, in case 58, apparently under more dangerous circumstances, the mother recovered, so that on this point a comparison of dates avails nothing.

The interval between the separation of the placenta and the delivery, in the eighteen cases in which it is stated, was—

	Mothers Recovered.	Mothers Died.
None, in 7 cases.....	5	2 (53, 57)
A few minutes, in 1 case.....	1	0
More than an hour, in 1 case.....	0	1 (69)
Nearly two hours, in 1 case.....	1	0
Two hours, in 1 case.....	1	0
More than two hours, in 1 case.....	1	0
Between three and four hours, in 1 case.....	1	0
Some hours, (this includes a case in which the interval is recorded as "a considerable time,") in 4 cases.....	2	2 (68, 76)
A day, in 1 case.....	1	0

Of the five fatal cases, the result in No. 53, as before stated, was due to the continuance of the flooding after delivery. In No. 57, there was no uterine action. In No. 69, the patient had not the requisite vigor to withstand such a shock. In No. 76, the os contracted after the expulsion of the placenta, showing a good degree of vigor in the uterus; but Peritonitis set in, and death resulted on the eighth day. In No. 68, death took place on the second day, with similar symptoms. So that, as far as these cases go to determine the question, the length of time which elapses, between the expulsion of the placenta and the completion of the delivery, of itself, has no tendency to increase the fatality to the mother.

The *Tampon* was not used at all, in any of the cases.

Ergot was given in one—No. 67. It had the apparent effect to increase the pains, expel the placenta, and put an end to the hemorrhage.

Although conclusions drawn from so small a number of cases, are generally of but little value, they are of more weight in the present instance, from the fact that the cases in the foregoing table, are alike in all their characteristics. Inferences drawn from them therefore, are stronger in proportion as this similarity has been preserved.

Having now introduced a new term into the problem, viz., the artificial delivery of the child, we are prepared to begin a comparative estimate of the effect of different modes of procedure.

In summing up the results, derived from the facts in the foregoing

table, the first conclusion we arrive at, is, that although artificial delivery adds much to the danger of the mother, the danger does not appear to be increased, or diminished, by the particular mode of accomplishing it.

That the result depends rather upon the degree of exhaustion, than upon the amount of blood lost, in any particular case.

That an ability to endure the loss of blood, sustains many mothers; while others lacking this constitutional element, with less flooding, sink from exhaustion, or the consequences of excessive depletion.

That the proper course to pursue, is, to watch for those symptoms, which indicate the approach of this condition, taking into consideration the constitutional peculiarities of the patient's system, and upon their access, terminate the labor at once by the speediest method.

TABLE III.—*Artificial Separation of*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	STATE OF OS.	PRESENTA- TION OF PLACENTA.	PRESENT- TION OF CHILD.
77	Smellie, Collect. 18; No. 3, Case 3, A.D. 1750.	.....	.....	.....	Pulse hardly perceptible; extremities cold; little or no pains.	.....	Partial on the side of the sacrum.	Head, with prolapse the cord
78	Dr. Lee's Clinical Med., Am. ed., p. 154, Case 4; Feb. 8, 1830.	.....	.....	7	.....	.....	A portion protruding through the orifice of the vagina.	.....
79	Mr. G. F. Stickings, Lond. Med. Gaz., xxxvi. part 2, p. 943.	.....	6	.....	Insensible, and completely blanched; pulse almost imperceptible; extremi- ties cold.	.....	A large por- tion in the vagina.	Head.
80	Mr. R. Martin, 31 Lond. Lan., 1848, i. p. 120; Nov. 19, 1848.	31	4	9th.	In a fearful state of ex- haustion; no pulse; re- peated attacks of syn- cope.	Dilated and readily di- latable.	Complete; extensively separated.	Head.
81	Dr. Radford, Am. J. Med., xxxii. p. 533, Case 24, (from Ass. Med. J., Feb. 2 and 16, 1856;) Nov. 29, 1819.	.....	6	.....	Pale; pulse frequent and feeble; in an exhausted condition.	Soft and di- latable.	Complete and cen- trical.	Head.
82	Ibid., Case 25.	.....	.....	.....	Very low and faint.	.....	.....	Head.
83	Ibid., Case 33; Sept. 1853.	.....	.....	.....	Somewhat exhausted.	Soft and di- latable.	Complete.	Head.
84	Ibid., Case 27; 1824.	.....	.....	.....	Good.	Partly di- lated.	Complete, presumed.	Head.
85	Ibid., Case 28, 1825.	.....	.....	.....	Very low.	Nearly di- lated.	Complete, presumed.	Head.
86	Dr. J. Y. Simpson, Collected Works, Am. ed., p. 663, Case 24; Oct. 1, 1844.	.....	.....	7th or 8th.	Much sunk; pulse very small.	Dilated very slowly.	Partial.	Head.
87	Dr. J. Maclean, Am. J. Med. Sci., N. S., xi. p. 243.	37	8	.....	In a state of faintness and collapse.	Dilatable; open to size of a half- crown, but showed no disposition to dilate with the pains.	Protruding through os.	Head.
88	Mr. G. F. Stickings, Lond. Med. Gaz., xxxvii. p. 815; Ap. 20, 1846.	40	12	.....	.....	Considerably dilated.	Complete.	Head.
89	Mr. W. G. Cory, Lond. Lan., i. 1847, p. 25; Dec. 11, 1846.	29	4	9	Much exhausted; no time to be lost.	Size of a crown; thin and yield- ing.	Complete.	Head.
90	Dr. Protheroe Smith, Lond. Lan., ii. 1847, p. 122.	32	9	8½	Very much affected by loss of blood; usually pale and delicate; has had 8 children, of whom only the first lived.	Sufficiently dilated.	Complete.	Feet.
91	Dr. Oldham, Am. J. Med. Sci., xxxii. p. 539, (from Med. Times & Gaz., July 12, 1856,) Case 10; March 9, 1850.	43	.....	.....	Feeble constitution and delicate health; weak, low state; rapid pulse; feeble labor-pains.	Admitting 2 fingers; firm; dense; undi- latable for 10 hours.	Complete.	Head and cord.
92	Mr. W. B. Chavasse, Braith. Retros., xxviii. p. 260, (from Dub. Quart., Aug. 1853;) Mar. 21, 1853.	.....	6	8th.	"Almost in articulo mor- tis;" no pains.	Dilated very slowly; rig- idity at first prevented any attempt at version.	Complete.	Head.

Placenta. Labor completed by Natural Efforts.

HEMORRHAGE BEFORE SEPARATION.	HEMORRHAGE AFTER SEPARATION.	TIME BETWEEN SEPARATION AND DELIVERY.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
Excessive till membranes ruptured, then ceased.	None.	Considerable period; patient was "gradually delivered."	.....	Recovered.	Died.	.....
None began at the end of a month.	Great.	None.	.....	Recovered.	Dead.	Remained for some time insensible; no pulse at the wrists.
Excessive; increasing with the pains; just then ceased.	.....	20 minutes.	.....	Recovered.	Dead.	.....
Began on the 4th slight; increased with severity on 5th, and continued, more or less, till date of delivery.	Instantly ceased.	7 hours.	.....	.....	.....	Excessively debilitated; recovery very uncertain.
Small for some hours; very profuse at last.	None.	An hour and a half.	.....	Recovered.	Dead.	After the separation of the placenta the membranes were ruptured.
Great.	Scarcely any.	2 hours.	.....	Recovered.	Dead.	The midwife, finding "a very large portion of the placenta hanging down into the vagina, drew it away."
For several days; increased in the pains; ergot.	Entirely ceased, and did not recur.	An hour.	.....	Recovered.	Dead.	.....
Great.	Ceased.	4 hours.	.....	Recovered.	Died.	.....
Great.	Ceased.	2 to 3 hours.	.....	Died.	Died.	.....
Considerable for a fortnight without pains; every day.	Not checked by ergot, or rupturing membranes.	Nearly 2 hours.	.....	Recovered.	Dead.	.....
Great.	Ceased.	Quarter of an hour.	.....	Recovered.	Dead.	After placenta was removed, a dose of ergot was given; patient was out of bed in a few days.
For many hours; had lost blood; bedding very saturated.	Ceased immediately.	Very little.	.....	Recovered.	Lived.	.....
"Rarely profuse" 4 days subdued by dilph. acid and tr. opii with rest; at intervals when labor set in.	Almost entirely ceased.	Little or none.	.....	Recovered.	Lived.	A drachm of ergot was given just before the extraction of the placenta; child apparently still-born, but resuscitated by the usual expedients.
About every 15 minutes for 4 hours; slight, then a gush; plug; on delivery, became very profuse.	Instantly ceased.	Three-quarters of an hour; 8 minutes after first exhibition of ether.	.....	Recovered.	Dead.	.....
Violent; after a fit of coughing; placenta detached.	None.	Shortly after.	.....	Recovered.	Dead.	Plug allowed to remain till pains forced it almost entirely away.
Began four months before; placenta separated; ergot; stimulants; membranes punctured.	None.	Many hours; more than five.	.....	Recovered.	Dead.	Galvanism used. For details of this case, see Index, sub "Galvanism."

TABLE III.—*Artificial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	STATE OF OS.	PRESENTA- TION OF PLACENTA.	PRESENTA- TION OF CHILD.
93	Dr. Edward Cope- man, "Rec. of Ob- stetric Practice," p. 193, Case 8; Oct. 16, 1854.	36	1	6	.....	.....	Partial.	Head.
94	Mr Maclean, Braith. Retros., No. 12, p. 265, from North. J. Med., Aug. 14, 1845, p. 132.	37	8	.....	"So much faintness and collapse, that a fatal termination seemed in- evitable."	Dilatable; size of half a crown.	Complete.	Head, pre- sumed.
95	Mr. T. M. Greenhow, Braith. Retros., No. 12, p. 267, from Prov. Med. & Surg. J., Sept. 10, 1845, p. 567.	44	14	7	Much exhausted.	Dilatable.	Complete.	Breech.
96	Mr. T. M. Greenhow, loc. sup. cit.; also Am. J. Med. Sci., N. S., xi. p. 241.	45	15	7	Dangerous.	Dilatable.	Complete.	Head and hand.
97	Dr. Waller, Braith. Retros., No. 17, p. 228, Case 28, from Med. Times, Jan. 15, 1848.	.....	.....	9th just begun.	Had fainted away; in a state of syncope.	Dilated very slowly, in- deed, more than 12 hours.	Complete.	Feet.
98	Mr. Everitt, Braith. Retros., No. 14, p. 283, from Prov. Med. & Surg. J., Sep. 30, 1846, p. 465.	17	.....	3	Exsanguine; syncope; vomiting; fluttering pulse.	.....	.....	Head and arm.
99	Mr. Wales, Braith. Retros., No. 14, p. 283, from Prov. Med. & Surg. J., Ap. 8, 1846, p. 158.	25	4	7	In a state of syncope.	Thick; not dilatable; size of a crown-piece.	.....	Head.
100	Com. by Dr. C. G. Putnam, Boston, Mass.	38	7	8th.	As if in the last stage of anæmia; evidently fail- ing.	Dilated in a natural manner.	Partial; al- most com- plete.	Head.
101	Com. by Dr. J. Odin, Boston.	.....	3	.....	Much prostrated.	.....	.....	.....
102	Com. by Dr. H. Dupee, Boston.	30	1	6th.	Not impaired.	.....	Partial.	Head.
103	Com. by Dr. John Flint, Boston.	25	3	Full term.	Not impaired.	Dilated to 2 inches in diameter; dilatable.	Partial.	Head, wit "a hand" of the cor
104	Com. by Dr. O. H. Taylor, Camden, N. J.; Dec. 29, 1856.	36	7	8	In a critical condition; pains strong and fre- quent.	Dilatable.	Complete.	Head, pre- sumed.
105	Mr. G. F. Meadows, Lond. Lan., 1848, i. p. 27.	38	3	.....	.....	Dilated en- tirely.	Complete.	Head.
106	Mr. T. O'Connor, Am. J. Med. Sci., Jan. 1857, p. 261, from Assoc. Med. J., May 16, 1856.	35	7	8½	Faint; gasping for breath.	Open; dilata- ble.	Partial.	Head.
106a	Legroux, Observ. d'Hémorrhage, etc. Archiv. Générales, Dec. 1855, p. 665.	.....	.....	At term.	In danger of her life.	Size of a five- franc piece.	Complete.	.....

Placenta. Labor completed by Natural Efforts—Continued.

HEMORRHAGE BEFORE SEPARATION.	HEMORRHAGE AFTER SEPARATION.	TIME BETWEEN SEPARATION AND DELIVERY.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
during a month; at first, sudden; recurred at intervals to a considerable extent; plug.	None.	Several hours.	.....	Recovered.	.....	.....
on 2d day of labor; increased with each pain; checked by usual means.	Ceased.	"A quarter of an hour."	.....	Recovered.	Dead.	Patient usually had lingering labors; her condition "rendered forced delivery by turning exceedingly dangerous."
large excessive, till delirium.	No further hem. took place.	Rapidly completed.	.....	Recovered.	.....	Patient had an attack of phlegmasia dolens.
6th month hem. to so extent, with shivering and sickness; recurred at uncertain intervals till labor set in; profuse on one or two occasions.	Entirely ceased.	About an hour; ovum came away entire.	.....	Recovered.	Dead.	Same patient as preceding case; remarkable for the placenta having presented in every one of her labors; married at 18; all but the first child born at 7 months.
and profuse.	None.	More than 12 hours.	.....	Recovery, presumed.	Dead.	.....
the day before; at first, at last one gush.	None after application of cold water to umbilicus. Ceased immediately.	About an hour.	.....	Recovered.	Dead.	Ammonia and brandy given; 1½ drs. of ergot, in 3 doses, at intervals of 10 minutes.
a fortnight previously and continued almost constantly; when pain came on, increased; cold applications; and ergot.	Immediately ceased.	About 3 hours.	.....	Died.	Died.	A good case to show the necessity of assistance. See p. 142.
more than an hour; not at, nor for a long time.	Ceased.	.....	.....	Recovered.	.....	.....
copious.	Ceased.	Child born at once. About an hour.	.....	Recovered.	Dead.	.....
.....	Ceased.	.....	.....	Recovered.	Dead.	Labor-pains were natural and regular.
previously, promontory; lead and ceased; came on alarming.	.....	Less than 10 minutes.	.....	Recovered.	Lived.	The placenta was detached, and extracted entire; child followed in less than 10 minutes; feeble at first, but in less than half an hour it began to cry.
discharges for 2 days.	Immediately ceased.	One hour and a half.	.....	Recovered.	Dead.	Ergot given; stimulants administered freely.
ight before, very profuse; brought on syncope; at labor, "flood" to an alarming extent; ergot.	.....	2 hours.	.....	Recovered.	Dead.	Child gasped 2 or 3 times.
mon had been in pain; membranes ruptured; hem. continued, but still remained dangerous; ergot given, effect, to check it.	None.	Between 4 and 5 hours; ergot given, which started up the pains.	.....	Recovered.	Dead.	.....

Of the cases included in the foregoing table, in which the result is stated,

28.....	Lived.
2.....	Died—Nos. 85, 100.
1.....	Recovery very uncertain.

The percentage of deaths, discarding No. 80, in which no result is given, although the report is that the recovery is “very uncertain,” is $6\frac{1}{2}$ nearly.

The ages, in the cases where it was noted, were as follows, viz.:—

17 years old.....	1 case.	36 years old.....	2 cases
25 “ “	2 “	37 “ “	2 “
29 “ “	1 “	38 “ “	2 “
30 “ “	2 “	40 “ “	1 “
31 “ “	1 “	43 “ “	1 “
32 “ “	1 “	44 “ “	1 “
35 “ “	1 “	45 “ “	1 “

of which one, at thirty-eight years, proved fatal.

The number of the pregnancy, was

The 1st in.....	2 cases.	The 8th in.....	2 cases.
“ 3d “	3 “	“ 9th “	1 “
“ 4th “	3 “	“ 12th “	1 “
“ 6th “	3 “	“ 14th “	1 “
“ 7th “	3 “	“ 15th “	1 “

In case No. 96, in which the pregnancy was the 15th, may be seen the very remarkable occurrence of Placenta Prævia, in fifteen successive labors. All but the first child were born at the seventh month. The mother was married at the age of eighteen, which gives an average of a year and a little over nine and a half months, between each pregnancy; her age being forty-five at the time of her last confinement.

The period in the pregnancy, at which the case terminated, was,

At 3 months in.....	1 case.	At 8 months in.....	1 case.
“ 6th month in	1 “	“ $8\frac{1}{2}$ “	2 “
“ 6 months in.....	1 “	“ 9th month	2 “
“ 7 “	4 “	“ 9 months	1 “
“ 7th or 8th month in.....	1 “	Full term.....	1 “
“ 8th month in.....	2 “		

of which one, at the eighth month, proved fatal.

The presentation of the placenta, was

Complete in.....	16 cases.	Partial in.....	7 cases.
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The child presented by the

Head, in.....	20 cases.	Head and hand, in.....	1 case.
Head and cord, in.....	3 “	Breech, in.....	1 “
“ arm, in.....	1 “	Feet, in.....	2 “

The children were born living, in three instances, all of which, were presentations of the head alone. In all the other cases, where the fact is stated, the children were *dead*.

The condition of the Os Uteri, where it was mentioned, is stated to have been

In good condition, in No. 80, 81, 83, 84, 85, 87, 88, 89, 90, 94, 95, 96, 100, 103, 104, 105, 106.....	17 cases.
Undilatable, in No. 91, 99	2 “
Rigid for a long time, and preventing turning, in No. 86, 92, 97.....	3 “

In No. 87, although the os was dilatable, it showed no disposition to dilate with the pains, and remained in this condition, through an attack of syncope and collapse. In No. 99, it remained thick and firm through an attack of syncope, brought on by an immense gush of blood, showing that depletion does not *invariably* relax the os uteri. In Nos. 86, 91, 92, 97, the slowness of the dilatation was very marked. In No. 97, it was protracted more than twelve hours. In No. 91, it remained firm and undilatable for ten hours, just admitting two fingers. In this case, the mother was of a delicate constitution, and in feeble health. She had been reduced to a very exhausted condition by the flooding, and the pains were very feeble. These all resulted favorably, however. In both the fatal cases (No. 85, 100,) the os uteri was in *good condition*. These results corroborate the remark already made, that the condition of the os *alone*, does not seem to influence the mortality to the mother.

The hemorrhage made its first appearance

At 3 months in No. 98.....	1 case.	At 7th or 8th month in No. 86.....	1 case.
“ 5 “ “ 93.....	1 “	“ 8 months in No. 104, 106..	2 “
“ 6th month “ 96, 102.....	2 “	“ 8½ “ “ 90.....	1 “
“ 7th “ “ 92.....	1 “	“ 9th month “ 80, 97....	2 “
“ 7 months “ 78, 95, 99...3	“	“ 9 months “ 89	1 “
“ 7½ “ “ 100.....	1 “	Full term.....	“ 103.....1 “

The hemorrhage with reference to the presentation, came on at the

	No.	Complete.	Partial.
5th month.....	93	0	1
6th “	96, 102	1	1
7th “	92	1	0

	No.	Complete.	Partial.
7 months.....	95	1	0
7½ ".....	100	0	1
7th or 8th month.....	86	0	1
8 months.....	104, 106	1	1
8½ ".....	90	1	0
9th month.....	80, 97	2	0
9 months.....	89	1	0
Full term.....	103	0	1

The hemorrhage *before* separation, was

Considerable in.....	1 case.	Continued for days in.....	4 cases.
Not great in.....	2 "	Profuse in.....	7 "
Repeated in.....	1 "	Violent in.....	1 "
Great in.....	7 "	Excessive in.....	6 "

of which twenty-five, or more than 86½ per cent., were of a dangerous character.

The hemorrhage *after* separation,

Ceased in.....	23 instances.	Kept up in great quantity in..	1 instance.
Ceased almost entirely in...	2 "		

In the last, No. 78, the flowing kept up after delivery, till the mother became insensible and pulseless. In No. 100, where the hemorrhage had ceased for three hours after the expulsion of the placenta, the pains increased and she rallied a little, but shortly after the delivery of the child it came on again, and although not great in quantity, was enough in her exhausted condition, to bring on the fatal issue. In the other fatal case, there was no hemorrhage after the placenta was separated.

The condition of the mother, is recorded as having been

Not impaired in.....	2 cases.	Dangerous in.....	1 case.
Good in.....	1 "	Very low in.....	1 "
Somewhat exhausted in.....	1 "	Very low and faint in.....	1 "
Exhausted in.....	1 "	Very much exhausted in.....	15 "
Much prostrated in.....	1 "	Almost moribund in.....	2 "

Of the two fatal cases, No. 85, 100, the record is, that they were reduced to the lowest point. In the last of these cases, the obstinacy of the patient in refusing assistance, seems to have induced the unfavorable result. In this case—No. 100—

Dr. Putnam reports, that "in about an hour" after the separation of the placenta, "she rallied considerably. Pains returned. The head advanced a little, but not low enough to press upon the os uteri. As the child was dead, it was proposed to perforate and finish the

labor, but she refused all instrumental aid. Ergot with brandy, and other stimulants, were employed, the pains increased, and in about three hours, the child was born, by the natural efforts. For a few minutes, she appeared to be doing well, but hemorrhage recurred that it was impossible to check, and though the amount of blood lost was not great, she died in about two hours after the child was born."

It is well to bear this case in mind when discussing the value of "detachment of the placenta," as an element of practice; for, although this was done, and the usual effect—cessation of hemorrhage—followed, it apparently needed the resort to artificial delivery, for the purpose of shortening the time during which exhaustion was increasing, and a condition of things coming on, from which the mother would not be able to rally. This last consideration, from whatever point of view we look at it, seems to be the all-important item. Preserve the vital forces of the system, and you are successful; suffer them to be impaired, or seriously diminished, and no matter how skillfully the operations required are performed, a fatal result is almost sure to follow.

The time between separation and delivery was

None, in	2 cases.	1½ hour in	2 cases.
Little or none.....	1 "	2	2 "
Very little.....	2 "	Nearly 2.....	1 "
Less than 10 minutes.....	1 "	2 to 3	1 "
Rapidly completed	1 "	3	1 "
¼ of an hour	2 "	4	1 "
20 minutes.....	1 "	More than 5	1 "
Considerable period.....	1 "	Several	1 "
¾ of an hour.....	1 "	7	1 "
1 hour	4 "	More than 12	1 "

The result to the child, with reference to the above, was fatal in every instance except three. In these, the delivery is recorded as having taken place, at little or no interval after the separation of the placenta in two instances, and in less than ten minutes in the third.

The *Tampon* was used in 6 cases. In Nos. 90, 91, it was used alone. In both these, the mothers are reported as being of delicate constitutions generally, and at the time of delivery in a very much exhausted condition. In both it controlled the hemorrhage. In one, the hemorrhage became very profuse on its removal, and in the other, it was forced away by the pains. Both cases terminated favorably.

In Nos. 104, 106, other remedies were administered at the same time. The flooding was controlled, and the cases went on without any return, till labor came on, and was successfully completed. In the other two, Nos. 93, 100, the effect of the application is not stated.

Ergot was given in 9 cases. Its influence in restraining hemorrhage, is not stated with exactness enough to warrant any conclusions.

Lead and Opium, in combination with the tampon, was administered in one case,—No 104,—already alluded to.

Galvanism was employed in one case,—No. 92. (For full report of this case, see Index, sub “Galvanism.”)

Ether was given in one case,—No. 90.

Dilute Sulphuric Acid was used in one case,—No. 89,—in combination with laudanum, with the effect to subdue the hemorrhage.

If we compare the mortality of this table, with that of table 2d, it is much less; less than one-half. This shows, that the influence of forced delivery, is to increase the danger to the mother, inversely in this proportion.

The proportion of cases, in which the hemorrhage kept up, or recurred after the separation of the placenta, is $15\frac{1}{2}$ per cent. nearly.

Were it possible, it would be interesting to compare the frequency of its occurrence under the conditions of this table, with that which obtains under spontaneous separation; but the data are not enough to warrant any fair or just conclusions, and consequently, we can only conjecture, that there seems to be but little difference. It is much to be regretted, that observers do not record more facts, and fewer opinions.

Table 17 - Agricultural Production

Year	Wheat	Barley	Oats	Hay	Stocking	Other
1911	1,234,567	567,890	345,678	12,345,678	123,456,789	9,876,543
1912	1,345,678	678,901	456,789	13,456,789	134,567,890	10,987,654
1913	1,456,789	789,012	567,890	14,567,890	145,678,901	12,098,765
1914	1,567,890	890,123	678,901	15,678,901	156,789,012	13,209,876
1915	1,678,901	901,234	789,012	16,789,012	167,890,123	14,320,987
1916	1,789,012	1,012,345	890,123	17,890,123	178,901,234	15,432,098
1917	1,890,123	1,123,456	901,234	18,901,234	189,012,345	16,543,209
1918	1,901,234	1,234,567	1,012,345	19,012,345	190,123,456	17,654,320
1919	2,012,345	1,345,678	1,123,456	20,123,456	201,234,567	18,765,432
1920	2,123,456	1,456,789	1,234,567	21,234,567	212,345,678	19,876,543
1921	2,234,567	1,567,890	1,345,678	22,345,678	223,456,789	20,987,654
1922	2,345,678	1,678,901	1,456,789	23,456,789	234,567,890	22,098,765
1923	2,456,789	1,789,012	1,567,890	24,567,890	245,678,901	23,209,876
1924	2,567,890	1,890,123	1,678,901	25,678,901	256,789,012	24,320,987
1925	2,678,901	1,901,234	1,789,012	26,789,012	267,890,123	25,432,098
1926	2,789,012	2,012,345	1,890,123	27,890,123	278,901,234	26,543,209
1927	2,890,123	2,123,456	1,901,234	28,901,234	289,012,345	27,654,320
1928	2,901,234	2,234,567	2,012,345	29,012,345	290,123,456	28,765,432
1929	3,012,345	2,345,678	2,123,456	30,123,456	301,234,567	29,876,543
1930	3,123,456	2,456,789	2,234,567	31,234,567	312,345,678	30,987,654
1931	3,234,567	2,567,890	2,345,678	32,345,678	323,456,789	32,098,765
1932	3,345,678	2,678,901	2,456,789	33,456,789	334,567,890	33,209,876
1933	3,456,789	2,789,012	2,567,890	34,567,890	345,678,901	34,320,987
1934	3,567,890	2,890,123	2,678,901	35,678,901	356,789,012	35,432,098
1935	3,678,901	2,901,234	2,789,012	36,789,012	367,890,123	36,543,209
1936	3,789,012	3,012,345	2,890,123	37,890,123	378,901,234	37,654,320
1937	3,890,123	3,123,456	2,901,234	38,901,234	389,012,345	38,765,432
1938	3,901,234	3,234,567	3,012,345	39,012,345	390,123,456	39,876,543
1939	4,012,345	3,345,678	3,123,456	40,123,456	401,234,567	40,987,654
1940	4,123,456	3,456,789	3,234,567	41,234,567	412,345,678	42,098,765
1941	4,234,567	3,567,890	3,345,678	42,345,678	423,456,789	43,209,876
1942	4,345,678	3,678,901	3,456,789	43,456,789	434,567,890	44,320,987
1943	4,456,789	3,789,012	3,567,890	44,567,890	445,678,901	45,432,098
1944	4,567,890	3,890,123	3,678,901	45,678,901	456,789,012	46,543,209
1945	4,678,901	3,901,234	3,789,012	46,789,012	467,890,123	47,654,320
1946	4,789,012	4,012,345	3,890,123	47,890,123	478,901,234	48,765,432
1947	4,890,123	4,123,456	3,901,234	48,901,234	489,012,345	49,876,543
1948	4,901,234	4,234,567	4,012,345	49,012,345	490,123,456	50,987,654
1949	5,012,345	4,345,678	4,123,456	50,123,456	501,234,567	52,098,765
1950	5,123,456	4,456,789	4,234,567	51,234,567	512,345,678	53,209,876
1951	5,234,567	4,567,890	4,345,678	52,345,678	523,456,789	54,320,987
1952	5,345,678	4,678,901	4,456,789	53,456,789	534,567,890	55,432,098
1953	5,456,789	4,789,012	4,567,890	54,567,890	545,678,901	56,543,209
1954	5,567,890	4,890,123	4,678,901	55,678,901	556,789,012	57,654,320
1955	5,678,901	4,901,234	4,789,012	56,789,012	567,890,123	58,765,432
1956	5,789,012	5,012,345	4,890,123	57,890,123	578,901,234	59,876,543
1957	5,890,123	5,123,456	4,901,234	58,901,234	589,012,345	60,987,654
1958	5,901,234	5,234,567	5,012,345	59,012,345	590,123,456	62,098,765
1959	6,012,345	5,345,678	5,123,456	60,123,456	601,234,567	63,209,876
1960	6,123,456	5,456,789	5,234,567	61,234,567	612,345,678	64,320,987
1961	6,234,567	5,567,890	5,345,678	62,345,678	623,456,789	65,432,098
1962	6,345,678	5,678,901	5,456,789	63,456,789	634,567,890	66,543,209
1963	6,456,789	5,789,012	5,567,890	64,567,890	645,678,901	67,654,320
1964	6,567,890	5,890,123	5,678,901	65,678,901	656,789,012	68,765,432
1965	6,678,901	5,901,234	5,789,012	66,789,012	667,890,123	69,876,543
1966	6,789,012	6,012,345	5,890,123	67,890,123	678,901,234	70,987,654
1967	6,890,123	6,123,456	5,901,234	68,901,234	689,012,345	72,098,765
1968	6,901,234	6,234,567	6,012,345	69,012,345	690,123,456	73,209,876
1969	7,012,345	6,345,678	6,123,456	70,123,456	701,234,567	74,320,987
1970	7,123,456	6,456,789	6,234,567	71,234,567	712,345,678	75,432,098
1971	7,234,567	6,567,890	6,345,678	72,345,678	723,456,789	76,543,209
1972	7,345,678	6,678,901	6,456,789	73,456,789	734,567,890	77,654,320
1973	7,456,789	6,789,012	6,567,890	74,567,890	745,678,901	78,765,432
1974	7,567,890	6,890,123	6,678,901	75,678,901	756,789,012	79,876,543
1975	7,678,901	6,901,234	6,789,012	76,789,012	767,890,123	80,987,654
1976	7,789,012	7,012,345	6,890,123	77,890,123	778,901,234	82,098,765
1977	7,890,123	7,123,456	6,901,234	78,901,234	789,012,345	83,209,876
1978	7,901,234	7,234,567	7,012,345	79,012,345	790,123,456	84,320,987
1979	8,012,345	7,345,678	7,123,456	80,123,456	801,234,567	85,432,098
1980	8,123,456	7,456,789	7,234,567	81,234,567	812,345,678	86,543,209
1981	8,234,567	7,567,890	7,345,678	82,345,678	823,456,789	87,654,320
1982	8,345,678	7,678,901	7,456,789	83,456,789	834,567,890	88,765,432
1983	8,456,789	7,789,012	7,567,890	84,567,890	845,678,901	89,876,543
1984	8,567,890	7,890,123	7,678,901	85,678,901	856,789,012	90,987,654
1985	8,678,901	7,901,234	7,789,012	86,789,012	867,890,123	92,098,765
1986	8,789,012	8,012,345	7,890,123	87,890,123	878,901,234	93,209,876
1987	8,890,123	8,123,456	7,901,234	88,901,234	889,012,345	94,320,987
1988	8,901,234	8,234,567	8,012,345	89,012,345	890,123,456	95,432,098
1989	9,012,345	8,345,678	8,123,456	90,123,456	901,234,567	96,543,209
1990	9,123,456	8,456,789	8,234,567	91,234,567	912,345,678	97,654,320
1991	9,234,567	8,567,890	8,345,678	92,345,678	923,456,789	98,765,432
1992	9,345,678	8,678,901	8,456,789	93,456,789	934,567,890	99,876,543
1993	9,456,789	8,789,012	8,567,890	94,567,890	945,678,901	100,987,654
1994	9,567,890	8,890,123	8,678,901	95,678,901	956,789,012	102,098,765
1995	9,678,901	8,901,234	8,789,012	96,789,012	967,890,123	103,209,876
1996	9,789,012	9,012,345	8,890,123	97,890,123	978,901,234	104,320,987
1997	9,890,123	9,123,456	8,901,234	98,901,234	989,012,345	105,432,098
1998	9,901,234	9,234,567	9,012,345	99,012,345	990,123,456	106,543,209
1999	10,012,345	9,345,678	9,123,456	100,123,456	1,001,234,567	107,654,320
2000	10,123,456	9,456,789	9,234,567	101,234,567	1,012,345,678	108,765,432
2001	10,234,567	9,567,890	9,345,678	102,345,678	1,023,456,789	109,876,543
2002	10,345,678	9,678,901	9,456,789	103,456,789	1,034,567,890	110,987,654
2003	10,456,789	9,789,012	9,567,890	104,567,890	1,045,678,901	112,098,765
2004	10,567,890	9,890,123	9,678,901	105,678,901	1,056,789,012	113,209,876
2005	10,678,901	9,901,234	9,789,012	106,789,012	1,067,890,123	114,320,987
2006	10,789,012	10,012,345	9,890,123	107,890,123	1,078,901,234	115,432,098
2007	10,890,123	10,123,456	9,901,234	108,901,234	1,089,012,345	116,543,209
2008	10,901,234	10,234,567	10,012,345	109,012,345	1,090,123,456	117,654,320
2009	11,012,345	10,345,678	10,123,456	110,123,456	1,101,234,567	118,765,432
2010	11,123,456	10,456,789	10,234,567	111,234,567	1,112,345,678	119,876,543
2011	11,234,567	10,567,890	10,345,678	112,345,678	1,123,456,789	120,987,654
2012	11,345,678	10,678,901	10,456,789	113,456,789	1,134,567,890	122,098,765
2013	11,456,789	10,789,012	10,567,890	114,567,890	1,145,678,901	123,209,876
2014	11,567,890	10,890,123	10,678,901	115,678,901	1,156,789,012	124,320,987
2015	11,678,901	10,901,234	10,789,012	116,789,012	1,167,890,123	125,432,098
2016	11,789,012	11,012,345	10,890,123	117,890,123	1,178,901,234	126,543,209
2017	11,890,123	11,123,456	10,901,234	118,901,234	1,189,012,345	127,654,320
2018	11,901,234	11,234,567	11,012,345	119,012,345	1,190,123,456	128,765,432
2019	12,012,345	11,345,678	11,123,456	120,123,456	1,201,234,567	129,876,543
2020	12,123,456	11,456,789	11,234,567	121,234,567	1,212,345,678	130,987,654
2021	12,234,567	11,567,890	11,345,678	122,345,678	1,223,456,789	132,098,765
2022	12,345,678	11,678,901	11,456,789	123,456,789	1,234,567,890	133,209,876
2023	12,456,789	11,789,012	11,567,890	124,567,890	1,245,678,901	134,320,987
2024	12,567,890	11,890,123	11,678,901	125,678,901	1,256,789,012	135,432,098
2025	12,678,901	11,901,234	11,789,012	126,789,012	1,267,890,123	136,543,209
2026	12,789,012	12,012,345	11,890,123	127,890,123	1,278,901,234	137,654,320
2027	12,890,123	12,123,456	11,901,234	128,901,234	1,289,012,345	138,765,432
2028	12,901,234	12,234,567	12,012,345	129,012,345	1,290,123,456	139,876,543
2029	13,012,345	12,345,678	12,123,456	130,123,456	1,301,234,567	140,987,654
2030	13,123,456	12,				

TABLE IV.—*Artificial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	STATE OF OS.	PRESENTA- TION OF PLACENTA.	PRESENTA- TION OF CHILD.
107	Portal, Case 43; April 7, 1872.	.....	.....	6	Much exhausted.	Offered no opposition.	Complete.	.....
108	Ibid., Case 69; Jan. 11, 1879.	.....	.....	8	Reduced to a miserable condition.	Completely dilated.	Complete.	.....
109	Amand, Obs. 9; Dec. 19, 1891.	.....	.....	5	Had fainted many times.	.....	.....	.....
110	Baudelocque, "Art. des Accouchemens," 7th ed., i. p. 425.	.....	.....	.....	.....	.....	.....	Head and arm.
111	I. B. Brown, Esq., British Record of Obstet. Surgery, i. p. 349.	26	1	Full time.	Had distortion of the spine; the sacrum also projected forwards so much as to very much diminish the diameter of the outlet; strength not impaired.	Good.	Partial; over one-half of circumference of os.	Head.
112	Perfect's Cases, ii. p. 288, No. 109; June, 1766.	.....	.....	.....	Not impaired.	.....	.....	Breech.
113	Dr. J. C. W. Lever, Lond. Med. Gaz., xxxvi. part 2, p. 1422, No. 34.	35	7	8	.....	.....	.....	.....
114	Mr. Cripps, Lond. Med. Gaz., xxxvi. part 2, p. 1011.	.....	3	Early part of last month.	Pains very severe.	.....	.....	Arm.
115	Sir Fielding Oulde, (1742,) (quoted by Mr. Waddy,) Lond. Lan., 1846, ii. p. 38.	.....	.....	.....	Two days in labor. "Ready to expire."	Fully dilated	.....	Head "far advanced."
116	Mr. B. Tallan, Lond. Lan., 1846, ii. p. 527; Oct. 22, 1846.	.....	6	.....	A desperate case; no pains.	Size of a crown-piece.	Partial.	.....
117	Mr. T. Stokes, Lond. Lan., 1848, i. p. 366; March 11, 1848.	.....	1	.....	Deathly cold; pale; no pulse.	Dilated but little.	Complete.	.....
118	Mr. Ray, Braith. Retros., No. 17, p. 231, (from Prov. Med. & Surg. J., March 8, 1848, p. 124.)	.....	.....	9th.	.....	Fairly open and dilatable.	Complete.	Head.
119	Mr. Howell, Lond. Lan., 1846, i. p. 304.	.....	.....	.....	.....	Somewhat rigid; slightly dilated.	Complete.	Head.
120	Mr. T. O'Connor, Am. J. Med. Sci., Jan. 1857, p. 262, (from Ass. Med. J., May 16, 1856.)	28	3	.....	In a syncope; passed "from one faint to another."	Easily dilatable.	Complete.	.....
121	Dr. Radford, Am. J. Med. Sci., xxxii. p. 533, Case 26, (from Ass. Med. J., Feb. 2 and 16, 1856.)	.....	3	9th.	Considerably reduced; pains entirely subsided.	Dilated.	.....	Head.
122	Ibid., Case 32; Dec. 11, 1851.	.....	.....	9	"Faintish;" no pains.	Dilated after plugging.	Complete; centrally situated.	.....
123	Ibid., Case 29; 1823.	.....	.....	.....	Very faint and feeble.	Fully dilated	Complete, presumed.	Arm.

TABLE IV.—*Artificial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	STATE OF OS.	PRESENTA- TION OF PLACENTA.	PRESENTA- TION OF CHILD.
124	Dr. Edward Cope- man, "Rec. of Ob- stetric Practice," p. 189, Case 4; Aug. 15, 1851.	.....	Multi- para.	6	Much exhausted; faint; pulse scarcely percepti- ble; very pale.	Not very di- latable.	Complete.	Head.
125	Ibid., Case 7; June 17, 1853.	27	4	Nearly 7	Much exhausted; delicate constitution.	Easily dilat- able.	Complete.	Head.
126	Ibid., p. 194, Case 9; June 16, 1855.	40	1	.....	Pale; death-like aspect; pulse distinct.	Vagina rigid; os dilatable.	.....	Feet.
127	Dr. Legroux, Arch. Gén., Dec. 1855, p. 647.	.....	.....	.....	Much reduced.	Largely di- lated.	Complete.	.....
128	Dr. J. G. Metcalfe, Com. Mass. Med. Soc., ix. part 2, p. 124.	27	2	9	Pains strong and fre- quent; not materially affected.	Readily di- latable.	Partial; ante- rior edge.	.....
129	Ibid., p. 125.	21	1	9	Pains strong and regular; not materially affected.	Dilatable.	Complete.	Head.
130	Ibid., p. 100.	24	3	9	Membranes ruptured early; pains at first mod- erate, and at long inter- vals; not materially affected.	Dilated.	Partial.	Shoulder.
131	Dr. Waller, Braith. Retros., xvii. p. 227, Case 23, from Med. Times, Jan. 15, 1848.	.....	.....	.....	.....	.....	.....	Arm.
132	Ibid., Case 24.	.....	.....	.....	Not in immediate danger, though pale and rather faltering; was seen early in labor.	Considerably dilated; ra- ther firm.	Complete.	Funis.
133	Ibid., Case 27.	.....	.....	.....	.....	Very little open; rigid; slowly di- lated.	Partial.	Arm.
134	Dr. D. H. Storer, Bost. Med. & Surg. Journ., liii. p. 286.	.....	3	.....	Much exhausted.	When first seen, rigid, and but lit- tle dilated.	Complete.	.....
135	Mr. W. C. Wilkin- son, Am. J. Med. Sci., N. S., xi. p. 241, (from Prov. Med. & Surg. J., July 23, 1845.)	.....	.....	6 or 7	Greatly exhausted; pulse scarcely perceptible; pains feeble.	Less than a five-shilling piece; dilat- able.	Complete; re- moved after being de- tached.	Head.
136	Mr. H. E. Walker, loc. sup. cit.	30	7	.....	In a most alarming state of exhaustion.	Fully dilated	.....	Arm.
137	Dr. W. Channing, Am. J. Med. Sci., N. S., xvii. p. 348; Jan. 13, 1849.	30	4	8th.	Very pale; no pulse; sigh- ing; no pains.	Well dilated.	.....	.....
138	Dr. D. H. Storer, Am. J. Med. Sci., N. S., xxiv. p. 345.	.....	.....	.....	Much enfeebled; pains died away.	Showed no disposition to dilate for a long time; then yield- ed.	Complete.	Head.

Penta. Labor completed by Artificial Means—Continued.

HEMORRHAGE BEFORE SEPARATION.	HEMORRHAGE AFTER SEPARATION.	TIME BETWEEN SEPARATION AND DELIVERY.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
Intervals, for 2 or 3 days; at date, severe plug; ergot.	None.	Some time.	Turning; great difficulty in performing it.	Died.	Dead.	Died with symptoms of peritonitis six days after labor.
At night before; at first, but became severe; plug; water; ergot and laudanum; recurred at night, severe, with no effect.	None.	A few minutes.	Turning.	Recovered.	Lived.	Child died in a fit 10 days afterwards. For details, see Index, sub "Copeman."
At intervals severe, since 13th; on morning date, increased to great extent; taken twice applied with little apparent effect; at time of separation, no hemorrhage.	None.	As soon as a little nourishment could be given.	Turning.	Died.	Dead.	Died while delivery was being performed.
For many days; had been drained of blood.	None.	None.	Turning.	Died.	.....	In a few hours; did not rally.
A large gush during expiration; continuing profuse.	.....	Not great.	Turning by one foot.	Recovered.	Lived.	Labor 36 hours in duration.
Soon became profuse; increased with each pain.	Much abated.	.....	Turning by one foot.	Recovered.	Dead.	Labor 12 hours in duration.
At first; increased with the progress of labor, till separation of placenta.	Ceased.	More than 2 hours.	CHLOROFORM given, and version attempted; child at last delivered by traction on the axilla and neck.	Recovered.	Dead.	Patient was in labor 15 hours; chloroform did not diminish the frequency or strength of the pains.
.....	None.	.....	Embryotomy.	Died.	Dead.	Child firmly impacted in the pelvis; no satisfactory rally; died at the end of a week of fever of low type.
For several hours; considerable, but not excessive.	None.	None.	Turning.	Recovered.	Lived.	Child in a state of asphyxia, but was easily resuscitated.
Consistent.	None.	About 12 hours.	Turning, after dilatation had taken place.	Died.	Dead.	Death in less than a week, from "muco-enteritis;" "probably induced by the loss of blood."
Great.	None.	20 minutes.	Ether given; turning with some difficulty.	Recovered.	.....	.....
More or less for 3 weeks at time of excessive.	Ceased "almost at once."	An hour and a half.	Turning; extraction performed very slowly.	Recovered.	.....	Remained for 2 or 3 days in a most exhausted state, from which, however, she gradually recovered.
Began with pains, and increased as they grew longer.	Entirely ceased.	None; delivery completed as soon as possible.	Turning.	Recovered.	Dead.	"In a few days she was perfectly recovered."
Attended for 3 months; last loss.	There was no further hemorrhage.	Delivery as soon as it could be done.	Turning; knee seized, and foot brought down.	Recovered.	.....	.....
A few hours before delivery, suddenly, used with partial success.	Ceased.	10 hours.	Forceps.	Died.	.....	Died on the 8th day after delivery, from exhaustion.

TABLE IV.—*Artificial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	STATE OF OS.	PRESENTA- TION OF PLACENTA.	PRESENTA- TION OF CHILD.
139	Dr. B. Brown, Am. Jour. Med. Sci., N.S., xxvii. p. 94.	30	3	7th.	Excessively nervous; symptoms of cerebral trouble.	Dilated slowly.	Complete.	Right arm.
140	Dr. Reid, Am. Jour. Med. Sci., (from Assoc. Med. Jour., Feb. 9, 1855.)	.....	12	9	Completely prostrated; no uterine pains.	Partially dilated.	Complete.	Head.
141	Mr. Ed. Ray, Lond. Med. Gaz., xli. p. 120; Oct. 14, 1847.	.....	.....	.....	Unconscious; cold; almost pulseless.	Fairly open; dilatable.	Complete.	Head.
142	Mr. Thos. Bourne, Lond. Med. Gaz., xlii. p. 326; Feb. 6, 1850.	42	9	8	In a critical state.	Soft, but not much dilated.	Partial.	Foot.
143	Lond. Lan., 1841. i. p. 157; Oct. 5, 1844.	.....	.....	.....	Not impaired.	.....	.....	Arm.
144	Lond. Lan., i. 1847, p. 546.	.....	.....	.....	.....	Offering no resistance to hand.	.....	.....
145	Mr. T. Bourne, Lond. Lan., 1853, i. p. 537; May 11, 1853.	33	7	.....	Much exhausted; finally sinking into collapse.	Soft; thin; not much dilated.	Complete.	Left shoulder.
146	Com. by Dr. M. S. Perry, Boston.	.....	3	.....	Exceedingly reduced.	.....	.....	.....
147	Ibid.	.....	.....	8th.	Much prostrated.	.....	Complete.	.....
148	Com. by Dr. J. H. Lane, Boston.	.....	.....	.....	Exceedingly prostrated; nearly pulseless.	.....	.....	.....
149	Com. by Dr. J. F. W. Lane, Boston.	.....	2	8	Bloodless; not very faint; little or no pain.	Dilated gradually.	.....	.....
150	Com. by Dr. Hana- ford, Boston.	.....	6	.....	.....	.....	.....	.....
151	Dr. B. F. Heywood, Worcester, Mass.; Nov. 27, 1836.	.....	2	8	Apparently not impaired.	Dilated very slowly.	Complete.	.....
152	Sarah Stone, Compleat Practise of Mid., p. 92.	.....	.....	7	Very low and weak.	.....	.....	.....

Placenta. Labor completed by Artificial Means—Continued.

HEMORRHAGE BEFORE SEPARATION.	HEMORRHAGE AFTER SEPARATION.	TIME BETWEEN SEPARATION AND DELIVERY.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
about a month; 10 days in; very considerable at time of delivery, not	None, (inferred;) detachment "attended with favorable result."	Some little time.	Chloroform given to relax uterus, which was contracting strongly; turning.	Recovered.	Dead.	.....
months before, intervals, in considerable quantity; time of attendance sudden, profuse discharge; plug; 5 pints in vessel; went to bed; on rising state, flooded to	None.	3 hours.	Craniotomy.	Recovered.	Dead.	This operation resorted to, from the absence of all action in uterus.
months before, sudden, profuse discharge; plug; 5 pints in vessel; went to bed; on rising state, flooded to	None.	5 hours and 20 minutes.	Craniotomy; child expelled by uterine efforts.	Recovered.	Dead.	During the progress of the case, stimulants were freely given and ergot administered.
months before, sudden, profuse discharge; plug; 5 pints in vessel; went to bed; on rising state, flooded to	Soon subsided.	Half an hour.	Finding it impossible to bring the child away by any allowable traction by the foot, which had been brought down, the placenta was detached, and ergot given.	Recovered.	Dead.	.....
months before, sudden, profuse discharge; plug; 5 pints in vessel; went to bed; on rising state, flooded to	"Not a particle of flooding."	10 hours.	Turning.	Recovered.	.....	.....
months before, sudden, profuse discharge; plug; 5 pints in vessel; went to bed; on rising state, flooded to	None.	.....	Turning.	Died.	.....	Patient died before head of child was extracted; she must have been reduced to the last extremity before the operation.
months before, sudden, profuse discharge; plug; 5 pints in vessel; went to bed; on rising state, flooded to	Quite ceased.	All night.	After the system had rallied, and pains had returned, turning was performed; no subsequent flooding.	Recovered.	Dead.	.....
months before, sudden, profuse discharge; plug; 5 pints in vessel; went to bed; on rising state, flooded to	None.	Little or none.	Turning.	Recovered.	Dead.	Was for several months dropsical and anæmic.
months before, sudden, profuse discharge; plug; 5 pints in vessel; went to bed; on rising state, flooded to	Ceased.	.....	Turning.	Recovered.	Dead.	Suffered for a long time from effects of hemorrhage.
months before, sudden, profuse discharge; plug; 5 pints in vessel; went to bed; on rising state, flooded to	Ceased.	.....	Turning.	Died.	.....	She did not rally; died in a few hours.
months before, sudden, profuse discharge; plug; 5 pints in vessel; went to bed; on rising state, flooded to	Continued; uterus did not contract well.	.....	Turning.	Recovered.	Dead.	Membranes ruptured at the very first; pains were light, and passive hemorrhage kept up through the labor.
months before, sudden, profuse discharge; plug; 5 pints in vessel; went to bed; on rising state, flooded to	Ceased.	.....	Turning.	Recovered.	Lived.	.....
months before, sudden, profuse discharge; plug; 5 pints in vessel; went to bed; on rising state, flooded to	"Quite moderate."	Half an hour.	Turning.	Recovered.	Dead.	After the delivery of the placenta, an examination showed that <i>hour-glass contraction existed</i> , which was overcome by moderate but persevering dilatation.
months before, sudden, profuse discharge; plug; 5 pints in vessel; went to bed; on rising state, flooded to	.....	.....	Placenta extracted, and child delivered; turning.	Recovered.	Died.	Child lived half an hour.

TABLE IV.—*Artificial Separation of th*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	STATE OF OS.	PRESENTA- TION OF PLACENTA.	PRESENTA- TION OF CHILD.
153	Dr. A. F. Carr, Goffstown, N. H.	39	4	9	Rapidly approaching exhaustion; never bore depletion well when in health.	Rigid and high up; incapable of dilatation; no entrance to uterus could be effected until 10 hours after hem. began.	Complete, nearly central.	Head.
154	Dr. T. K. Newhall, North Scituate, R. I., Jan. 28, 1854; Boston Med. Jour., March 22, 1855.	.....	6	9	Much reduced; symptoms of collapse.	Dilatable.	Complete.	Head.
155	Dr. C. Bannister, Phelps, Ontario Co., N. Y., Aug. 27, 1816; Bost. Med. J., April 19, 1855.	.....	2	.....	Pretty well bleached and exhausted; pains of the most inefficient kind.	Fully dilated	.....	.....
156	Dr. D. H. Storer, Boston Med. Jour., Nov. 1, 1855.	.....	3	.....	Much exhausted.	Slightly dilated; dilatable.	Complete.	.....
157	Mr. R. G. Jay, Lond. Med. Gaz., xxxviii. p. 344; Aug. 1, 1846.	30	6	8	.....	Dilated.	.....	One arm and cord.

Placenta. Labor completed by Artificial Means—Continued.

HEMORRHAGE BEFORE SEPARATION.	HEMORRHAGE AFTER SEPARATION.	TIME BETWEEN SEPARATION AND DELIVERY.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
at 8th month; bled 3 times; not excessive in the water.	Not materially checked.	Delivery completed very soon.	Turning.	Died.	Dead.	Mother died before child's head was delivered; there was little or no action in the uterus during the whole of the labor; the pains were hardly perceptible.
continued 6 weeks; returned in 3 weeks, unaccompanied with pain; checked by lead and opium; at date, much blood, with little draining continues going on.	None.	5 hours.	Long forceps.	Recovered.	Dead, presumed.	After delivery of placenta, ergot was given, but with no effect to increase pains; after delivery of child, pains came on, and uterus contracted; in about an hour it relaxed, and filled with blood, producing faintness, flagging of the pulse, and sighing; pressure upon uterus; stimulants relieved her, after 2 hours application.
after a week previous in great profusion and had continued more or less till death and profuse.	.....	None.	Turning.	Recovered.	.....	.....
.....	Ceased at once.	20 minutes.	Turning.	Recovered.	.....	The condition of the mother seemed to warrant that the hemorrhage should be checked, even at the risk of the child's life.
..... before, with slight; ergot and vagina plugged; tr. opii, in infus. ar; returned at profusely.	Ceased.	Some time.	Turning by feet, after an arm had been brought away.	Recovered.	Dead.	.....

Of the 51 cases in the preceding table,

40..... Recovered. | 11..... Died.

This mortality makes the percentage of deaths, $21\frac{7}{100}$ per cent.,
or 1 in $4\frac{7}{11}$

The ages, where they are recorded, are as follows, viz.:—

21 years.....	1 case.	33 years.....	1 case.
24 “.....	1 “	35 “.....	1 “
26 “.....	1 “	39 “.....	1 “
27 “.....	2 “	40 “.....	1 “
28 “.....	1 “	42 “.....	1 “
30 “.....	4 “		

The number of the pregnancy, was

1st in.....	4 cases.	7th in.....	3 cases.
2d.....	4 “	9th.....	1 “
3d.....	8 “	12th.....	1 “
4th.....	3 “	Multipara.....	1 “
6th.....	4 “		

The date at which the case terminated, was

At 5 months.....	1 case.	At 8th month.....	2 cases.
“ 6 “.....	2 “	“ 8 months.....	6 “
“ 6 or 7 months.....	1 “	“ 9th month.....	3 “
“ 7th month.....	2 “	“ 9 months.....	7 “
“ 7 months.....	1 “	“ Full term.....	1 “

The presentation of the placenta, where it was recorded, was

Complete, in..... 25 cases. | Partial, in..... 6 cases.

There were

39 cases of Turning.	4 cases of Forceps.
6 “ “ Craniotomy.	2 delivery by Hand.

Of the two cases under the last head, in one, No. 109, the ovum was removed entire; in the other, No. 130, version was attempted, but proving unsuccessful, the child was brought away by traction on the axilla and neck, the head emerging first.

The result to the mother, was in

Turning.....	31 recovered, 8 died.
Use of the Forceps.....	2 “ 2 “
Craniotomy.....	5 “ 1 “
Delivery by hand.....	2 “ 0 “

The child presented by the

Head in.....	14 cases.	Shoulder in.....	2 cases.
Head and arm	1 “	Breech	1 “
Arm	7 “	Feet	2 “
Arm and cord	1 “	Funis	1 “

The children, in the cases where the result is recorded,

Lived, in.....	9 cases.	Died, in.....	24 cases.
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Of those born alive, the

Head presented, in.....	3 cases.	Funis presented, in.....	1 case.
Breech, “	1 “		

In the remaining four cases, no record is made of the presentation, though the context in No. 128, warrants the belief, that one foot was at the os uteri.

Of those born alive, the interval between the separation of the placenta and delivery, is stated in 6 cases. It was

Little or none, in.....	4 cases.	Nine hours in.....	No. 111, 1 case.
Five hours.....	No. 112, 1 “		

Although it seems incredible, that a foetus in utero, should live after the connection between the placenta and the uterus had been broken up, for the space of time recorded in the two cases last mentioned, there is no room for doubting that the reporters of the cases, so intended their reports to be understood. Perfect, in the original from which No. 112 was taken, does not state this fact of his own experience, but relates it as having been communicated to him, by a medical friend.

In No. 111, Mr. I. B. Brown, the well-known surgeon, relates it as occurring in his own experience. At 11 A.M., he says, “I passed my fingers round the adherent placenta, and detached it from the uterus, without rupturing the membranes; * * * at 8 P.M., the head had made but little progress, and, seeing no chance of a speedy delivery, with a living child, I applied the forceps, first giving a full dose of chloroform, which produced complete sleep; I found the head so firmly impacted, that I was obliged to use considerable traction. I succeeded, however, in delivering her of a fine living male child.” It seems more consonant to reason, that the *whole of the placenta was not detached*, than that a child could live *nine* hours in utero, after its connection with the mother had been cut off.

There may be some doubt whether these cases actually belong in this table. The unequivocal manner however, in which the facts are

stated, leaves no doubt of the reporter's meaning, and for this reason they were admitted.

Of the children who were born alive, 8 were delivered by Turning, and 1 by the Forceps.

In one case, No. 151, the other difficulties of the situation, were complicated by the presence of hour-glass contraction of the uterus.

The condition of the os, is recorded as

Good, in Nos. 107, 108, 111, 115, 118, 120, 121, 122, 123, 125, 126, 127, 128, 129, 130, 135, 136, 137, 141, 142, 144, 145, 149, 154, 155, 156, 157.....	27 cases.
Dilated slowly, 117, 138, 139.....	3 "
Somewhat rigid, slightly dilated, 119.....	1 "
Not very dilatable, 124.....	1 "
Considerably dilated but rather firm, 132.....	1 "
Very little open, rigid and dilated slowly, 133.....	1 "
Opposed turning, 134, 153.....	2 "
Dilated partially, 140.....	1 "
Size of a crown-piece, 116.....	1 "

Of the cases, in which the condition of the os appears to have been such as to oppose no difficulty to turning, Nos. 121, 127, 144, proved fatal. Of these, No. 121 is stated to have been considerably reduced from the flowing, which increased as the pains grew strong; but the inference drawn from the record as a whole, is, that the loss of blood, might have been the ultimate, but not the immediate cause of death. The pains finally left her altogether, and she was delivered with the long forceps. Peritonitis is stated to be the cause of death. In No. 126, the patient was moribund when delivery was attempted, so that, although no blood was lost during the operation, or after the separation of the placenta, the shock was too great for her remaining strength. In No. 127 the case was similar. She was "drained of blood," and did not rally. No. 144 seems to have been another case of the same nature, for the hemorrhage had been going on for "several days," and she died before the head of the child was delivered. In the only case of the above, in which the length of the pregnancy is stated, No. 121, it was at the 9th month.

The result was fatal also, in No. 124, at 6 months, when the os is stated to have been "not very dilatable." In this case, the patient was a delicate woman, who had been much reduced by the flooding, which, however, did not produce relaxation of the os. The attempts to deliver were unsuccessful at first, though persevered in by Mr. Copeman, till he "was glad to give his hand rest." It was then

taken up by a consulting friend, and continued "till he was able to seize a foot, and deliver by turning, which, however, proved a very painful proceeding." She had rigors, and perspirations, followed by dyspnœa, and at the last, convulsions, which appeared just previous to her death. Considering the fact that the hemorrhage had ceased after the separation of the placenta, and did not return at all, would it not have been better, to have waited till the os became relaxed, meanwhile administering stimulants and nourishment, and then have proceeded to the operation, rather than to have subjected the patient to so much violence, as it appears was necessary to accomplish what they aimed at?

In No. 133, the os was but little opened, rigid, and dilated slowly; some twelve hours elapsing in the process. In this case there was no hemorrhage after separation, and turning was not performed until the os had dilated. Dr. Waller remarks, that "the result was probably induced by the loss of blood."

In No. 138, where there was also a fatal result, the "os showed no disposition to dilate," for a long time, but finally yielded. The forceps were used. There was no hemorrhage after separation, but the mother did not rally, and died from exhaustion, on the 8th day. Here also, may be noticed another instance of the os remaining firm, while the system has been largely drained of blood. No record is made in this case, of the use of stimulants, or of any attempt to excite pains by ergot, or other means. Ought it not to have been done?

In No. 153, there was a constitutional inability to bear depletion well. The hemorrhage was not materially checked by the separation, and there was little or no uterine action. In this case, the urgency of the symptoms made delivery the only alternative, although its possibility was long delayed, by the "rigid and undilatable" condition of the os.

No conclusions can be drawn, in regard to the effect of the period of pregnancy, upon the condition of the os uteri, as it is stated in only three of the nine cases, in which a fatal result ensued.

The Period of the Pregnancy, at which the hemorrhage first made its appearance, was

At the 5th month, in No. 137.....	1 case.
" 6th " " 139.....	1 "
At 6 months, " 124.....	1 "

About 6 months, in No. 135.....	1 case.
At 6½ “ “ 125, 152	2 “
“ 7 “ “ 140, 142	2 “
“ 7½ “ “ 108, 154	2 “
At the 7th to 8th month, in No. 121.....	1 “
“ 8th month, in No. 153.....	1 “
At 8 months, Nos. 151, 157	2 “
“ 9th month, in No. 114.....	1 “
“ 9 months, Nos. 122, 128, 129, 130.....	4 “
“ Full term, No. 111.....	1 “

The cases in which the date is given, are too few, however, for any useful inferences to be drawn from them.

Classifying the hemorrhage, according to the complete or partial presentation of the placenta, we find that it commenced at the

	No.	Complete.	Partial.
6th month.....	139	1	0
6 months.....	124	1	0
About 6 months.....	135	1	0
At 6½ “	125	1	0
“ 7 “	140, 142	1	1
“ 7½ “	108, 154	2	0
“ 8th month.....	153	1	0
“ 8 months.....	151	1	0
“ 9 “	122, 128, 129, 130	2	2
“ Full term.....	111	0	1

The hemorrhage *before* separation, is stated to have been

	No.	Cases.	Died.
Excessive, in.....	135, 137, 141, 145	4	0
An immense quantity, in.....	118, 120	2	0
Great and continued, in.....	107, 108, 154, 155, 156	5	0
Very great indeed, in.....	116, 127	2	2
Violent, in.....	115	1	0
Severe, in.....	117, 124, 125, 126, 138, 139, 151	7	3
Profuse, in.....	122, 128, 129, 140, 142, 148, 149, 152, 157	9	1
Great, in	123, 134, 146, 147	4	0
Attended every pain, in.....	111	1	0
Considerable, in.	119, 132, 133, 142	4	1
Occasional for a week, increased with labor-pains, in.....	114, 121, 130, 136	4	1
Lasted several days, in	144	1	1
At intervals, not excessive, in.....	153	1	1
Returned at intervals, in.....	112	1	0

of which thirty-four, or more than 75 per cent., were of a dangerous character.

The hemorrhage *after* separation,

	Cases.	Died.
Ceased entirely, in.....	36	9
Continued, but not in a dangerous degree, in.....	1	0
Was slight, in.....	1	0
Soon subsided, in.....	1	0
Much abated, in.....	1	0
Continued, in.....	1	0
Not materially checked, in.....	1	1

A proportionate success, so far as checking the hemorrhage is concerned, that agrees with the results of the previous tables. But, while they thus show this success in this direction, the number of deaths, where the hemorrhage "ceased entirely" after the separation, points plainly to the fact, that separation, *per se*, will not invariably bring about a favorable result to the mother.

The condition of the mother, is stated as having been

	No.	Cases.
Reduced to extremity in.....	108, 116, 136, 137, 140, 142, 145	7
Ready to expire.....	115	1
Deathly cold, pale and pulseless.....	117, 141	2
Rapidly approaching exhaustion.....	153	1
In a syncope.....	120	1
Much exhausted.....	107, 124, 125, 126, 127, 134, 135, 138, 146, 147, 148, 152, 154, 155	14
Very faint and feeble.....	123	1
Considerably reduced.....	121	1
Fainted many times.....	109	1
Faintish, no pains.....	122	1
Much excited, cerebral symptoms.....	139	1
Not materially impaired.....	111, 112, 128, 129, 130, 132, 143, 149, 151	9

It will be seen, that of the deaths, eight in number, viz., Nos. 116, 121, 124, 126, 127, 138, 148, 153, where the condition of the mother was recorded, one case, No. 116, occurred where the mother had been reduced to extremity; one, No. 153, where she was rapidly approaching this condition; five, Nos. 124, 126, 127, 138, 148, where they were much exhausted; and one, No. 121, where the condition is stated to have been "considerably reduced."

In No. 116, the fatal result was apparently induced, by the delay in the operation, for the record is, that she flowed thirty hours without assistance. In No. 153, the quantity of blood lost, was not great, but the os remained firm, and undilatable, till a late period of

the case, and, moreover, the hemorrhage was not materially checked, by the separation of the placenta. She never bore depletion well under any circumstances, and to this idiosyncrasy, no doubt, a great share of the fatal result is due. In No. 126, with all the concomitant symptoms of a favorable nature, the fatal result is very plainly due to the delay of the delivery. In Nos. 124, 138, the os is stated to have resisted attempts at dilatation for some time. In No. 127, the operation was delayed for days, and during that time, the mother was drained of blood. In view of these facts, it is the *amount of depletion* which is to be dreaded, and anything, which places the mother for a length of time under its influence, tends to increase the fatality. For, while it may be true, that some who have been reduced to the very extremity of life, recover, even under the most disadvantageous circumstances, it is nevertheless true, that, other things being equal, the less the forces of the system have been diminished by the flooding, the better able is the mother to undergo forced delivery.

The time which elapsed, between the Separation of the Placenta and the delivery, was

Little or none, in.....	12 cases.	Two hours and a half, in.....	1 case.
Some time, in.....	4 “	Three hours, in.....	2 “
Not great, in.....	1 “	Five hours, in.....	2 “
Very soon, in.....	1 “	More than five, in.....	1 “
Twenty minutes, in.....	2 “	Five hours and twenty minutes..	1 “
Half an hour, in.....	2 “	Ten hours, in.....	3 “
One hour and a half, in.....	1 “	Nine hours, in.....	2 “
More than two, in.....	1 “	Twelve hours, in.....	1 “
Two hours, in.....	1 “	All night.....	1 “

Of the deaths, one, No. 121, occurred where the interval was *three hours*; one, No. 124, where it was *some time*; two, Nos. 126, 127, where there was *little or no interval*; one, No. 133, where *twelve hours* elapsed; one, No. 138, where *ten hours* passed; and one, No. 153, where the delivery was completed *very soon*. It is very manifest from these facts, that no particular value is to be allowed to this part of the procedure; that in estimating the value of the circumstances attending the labor, the greater or less delay between separation and delivery, is immaterial to the issue.

The *Tampon* was used *alone*, in Nos. 126, 138, 140, 151, four cases;

In combination with *ergot*, in Nos. 120, 122, 124, 125, 149, 157, six cases;

Ergot alone, was used in Nos. 142, 150, two cases; combined with *lead and opium*, in No. 154, one case; with *stimulants* in Nos. 116, 141, 154, three cases;

Laudanum was used alone in No. 114, one case; with the *Plug and ergot* in No. 157, one case;

Stimulants were used alone in No. 145, one case;

Acid mixtures in No. 122, one case;

Ergot was given after delivery also in No. 154, one case;

Chloroform was given, in Nos. 128, 139, two cases;

Ether in No. 134, one case.

In regard to the methods adopted to control and check the flooding, the fatal cases stand as follows:—

Two, where the Tampon alone was used, viz., Nos. 126, 138. In both of these it was used with only partial success.

One, where it was used in combination with *ergot*, viz., No. 124. In this case, there was great difficulty in performing the delivery, and the peritoneal inflammation which resulted was no doubt, mainly due to this.

One, where *ergot* was combined with *stimulants*, viz., No. 116. This case was indeed a "desperate case," and the condition of the mother seems to have been the result of neglect, rather than of any other cause. In the other fatal cases, no record is made of any attempts to check the hemorrhage. Upon so small a number of cases, it is useless to make any calculations as to the effect of the different means used to accomplish the end in view.

The four preceding tables, comprise all the cases, in which the placenta was entirely separated from the uterus, before the birth of the child. They have been arranged in such a manner, as to bring together those cases which resemble each other most closely, and have been analyzed accordingly. Before entering upon the next division, it may not be amiss, to group together the results already obtained, and rearrange them for greater convenience of inspection. We accordingly find, that in the 160 cases enumerated,

141.....	Lived.
18.....	Died.
1.....	Recovery very uncertain.

This gives, after discarding the case in which no result is given, a

percentage of $11\frac{1}{4}$, or a proportion of deaths, of one to nine within a very small fraction. A mortality much greater than what Prof. Simpson derived from the 141 cases published in his collected works,¹ and which is there given as one in fourteen. As compared with the mortality stated in Dr. Trask's tables,² it is less; for in the eighty-three cases in his second and third tables, there were fifteen deaths, making the proportion of deaths to the whole number as 1 to $5\frac{1}{2}$.

If we add to the 160 cases in the four preceding tables, in which the result is stated, 107 cases with 7 deaths quoted by Prof. Simpson, and 18 cases with 4 deaths from Dr. Trask's, neither of which are included in these tables for the reasons already specified, (*ante*, p. 109,) we have a grand total of

285 cases, of which 29 were fatal.

Calculated upon this number, the percentage of deaths is $9\frac{1}{4}$ or 1 in $10\frac{4}{5}$ nearly. This ratio is much nearer to that obtained from my own tables, than either Prof. Simpson's or Dr. Trask's estimates; and, when the number of cases is taken into account, may be assumed as the probable, general average mortality to the mother under all circumstances, when the placenta is separated before the delivery of the child.

The percentage of deaths in table 2d, is $19\frac{2}{100}$. Compared with table 1st, the danger to the mother is increased in this degree. If we compare this percentage, with the percentage derived from the aggregate of all the tables quoted, and which is $9\frac{2}{100}$, it will be seen to be much larger; that is to say, the mother runs more risk of her life, under the circumstances to which this table is limited, than she incurred before the particular form of the labor, was determined by its subsequent progress. This at first sight seems a strange conclusion, but upon reflection it will be seen, that it is not merely that she runs more risk; the real inference to be drawn from it, is, that the disposition made of the child, is more important, than that of the placenta; *i.e.* the course which is pursued in relation to the delivery of the child, is more important as having an influence upon the life of the mother, than what is determined upon with reference to the placenta. In other words, whether the placenta has been spontaneously expelled, or artificially separated and

¹ Vol. i. p. 629.

² Trans. of American Med. Assoc. 1855, vol. viii. p. 656, et seq.

delivered, it matters but little, in comparison with the subsequent progress of the labor, whether it goes on naturally, or resort to artificial aid is necessary.

This view is corroborated by the results obtained from table 3d, in which the conditions of the delivery are *artificial separation of the placenta, and natural delivery of the child*. The percentage of deaths, after discarding the case in which no result is given, is $6\frac{1}{2}$. If all the cases are counted, and the one before excluded be put among the deaths, in which class, from the general aspect of the case, it belongs, the percentage will be 10 per cent., within a fraction. Adding the two together, and taking the mean between them, we obtain $8\frac{1}{2}$ per cent. By comparison with table 1st, the danger increases in just those proportions. But, compared with table 2d, taking the view of it which has just been expressed, it will be seen, that there are fewer deaths proportionately, where, after *artificial* separation of the placenta, the child is born by natural labor-pains, than where, with spontaneous separation, assistance is required to deliver the child. And this is true, whether we reject or admit the exceptional case, already referred to. So also if the results of this table, are compared with the results obtained from the grand total, the difference is still in their favor, when making use of known results only, by more than 3 per cent. It seems then to be a legitimate conclusion from these comparisons, that when it becomes a determined matter, the placenta having been artificially separated, that the rest of the labor will be completed naturally, the safety of the mother, though less probable than if the placenta had been spontaneously thrown off, is still nearly twice as certain, as if she required artificial delivery; and that her chance of life has been materially increased by the labor taking this form, as it went on.

In table 4th, which comprises those cases, where Artificial Separation of the placenta is followed by artificial delivery, the percentage of deaths is $21\frac{1}{4}$. Making the same comparisons as before, it appears, that the safety of the mother is diminished by the necessity of a resort to both these modes (when compared with the risk she incurs under the conditions laid down in table 1st,) in the proportion of the whole percentage. As compared with table 2d, it is also much larger; as $21\frac{1}{4}$ to $19\frac{1}{4}$; as compared with table 3d, the difference is still more striking, it being in this instance, as $21\frac{1}{4}$ to $6\frac{1}{2}$, more than three times as large. As compared with the results

obtained from the grand total of all, it stands as $21\frac{1}{4}$ to $9\frac{1}{4}$, more than twice as much. That is to say, when artificial delivery, both of the placenta and child, is necessary, the mother is exposed to the greatest danger, as compared to what she is subjected to, when they are both expelled naturally. That she is much more liable to a fatal result, than when, with the artificial delivery of the placenta, the child is born without aid. That she has only one-third the chance of recovery, under these circumstances, that she has when only the first, the artificial delivery of the placenta, is necessary; and that her ultimate safety, is only one-half as probable, as it was when the labor began, and before it resolved itself into this particular form.

It is also very evident, that while in the great majority of the instances reported, hemorrhage has ceased as soon as the placenta has been separated, either spontaneously, by the uterine efforts alone, or by artificial means, there are exceptions enough, to make it far from a universal rule. It seems to be proved by these cases beyond a doubt, that it is not the *separation* which puts an end to the flooding; but that when this has been done, the uterus is put in a condition for its contractile power to operate to the best advantage, and, if enough vitality remains in the system to insure condensation of its walls, the obliteration of the vessels cuts off the supply of blood, and the hemorrhage is at an end. It therefore becomes important, before deciding upon this treatment, to ascertain as well as may be, whether the condition of the mother is such, that this result is likely to follow. This must be the only rule of action in ordinary cases, but instances may occur, where the condition is such that death seems inevitable under any treatment; where the degree of exhaustion is such, that artificial delivery cannot be attempted with any hope of a favorable result to the mother, and the draining goes on continually. Under these circumstances it is manifest, that, with all the exceptions, the detachment of the placenta offers a greater chance of life than any other course, and it should at once be adopted, waiting for further developments in the case, before proceeding to deliver. It is in this class of cases, that Prof. Simpson's method is of peculiar and indisputable value, and to them, experience seems to prove, it should be limited.

TABLE V.—Painful Separation

Case	Date of Birth	Gestation at Birth	Weight of Placenta	Weight of Fetus	Remarks
1	1901	38	1.5	3.5	Placenta separated at birth.
2	1902	37	1.2	3.2	Placenta separated at birth.
3	1903	36	1.0	3.0	Placenta separated at birth.
4	1904	35	0.8	2.8	Placenta separated at birth.
5	1905	34	0.6	2.6	Placenta separated at birth.
6	1906	33	0.4	2.4	Placenta separated at birth.
7	1907	32	0.2	2.2	Placenta separated at birth.
8	1908	31	0.1	2.1	Placenta separated at birth.
9	1909	30	0.0	2.0	Placenta separated at birth.
10	1910	29	0.0	1.9	Placenta separated at birth.
11	1911	28	0.0	1.8	Placenta separated at birth.
12	1912	27	0.0	1.7	Placenta separated at birth.
13	1913	26	0.0	1.6	Placenta separated at birth.
14	1914	25	0.0	1.5	Placenta separated at birth.
15	1915	24	0.0	1.4	Placenta separated at birth.
16	1916	23	0.0	1.3	Placenta separated at birth.
17	1917	22	0.0	1.2	Placenta separated at birth.
18	1918	21	0.0	1.1	Placenta separated at birth.
19	1919	20	0.0	1.0	Placenta separated at birth.
20	1920	19	0.0	0.9	Placenta separated at birth.
21	1921	18	0.0	0.8	Placenta separated at birth.
22	1922	17	0.0	0.7	Placenta separated at birth.
23	1923	16	0.0	0.6	Placenta separated at birth.
24	1924	15	0.0	0.5	Placenta separated at birth.
25	1925	14	0.0	0.4	Placenta separated at birth.
26	1926	13	0.0	0.3	Placenta separated at birth.
27	1927	12	0.0	0.2	Placenta separated at birth.
28	1928	11	0.0	0.1	Placenta separated at birth.
29	1929	10	0.0	0.0	Placenta separated at birth.
30	1930	9	0.0	0.0	Placenta separated at birth.
31	1931	8	0.0	0.0	Placenta separated at birth.
32	1932	7	0.0	0.0	Placenta separated at birth.
33	1933	6	0.0	0.0	Placenta separated at birth.
34	1934	5	0.0	0.0	Placenta separated at birth.
35	1935	4	0.0	0.0	Placenta separated at birth.
36	1936	3	0.0	0.0	Placenta separated at birth.
37	1937	2	0.0	0.0	Placenta separated at birth.
38	1938	1	0.0	0.0	Placenta separated at birth.
39	1939	0	0.0	0.0	Placenta separated at birth.
40	1940	0	0.0	0.0	Placenta separated at birth.

TABLE V.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF O
158	Portal, Case 73; April 23, 1861.	.....	.....	8	Much reduced.	.....	Open.
159	Smellie, Collect. 18; No. 3, Case 4, 1744.	.....	.....	8	Not very weak, con- sidering the quan- tity of blood lost; pains slight, and at long intervals.	Flooding began at the 8th month, recurring at intervals upon tak- ing exercise; increased as labor progressed.	Dilated to the size of a crown- piece.
160	Ibid., Case 8, A.D. 1743.	.....	.....	8	Had lost much blood; in fainting fits; slight pains now and then.	Taken with flooding the night previous.	"A little open."
161	Rigby, Essay on Uterine Hem., 6th ed., Case 23; Dec. 27, 1774.	.....	.....	9	Much reduced.	Commenced on the 20th, very in- considerable in quantity, with- out pain; on the 25th it returned in greater degree; kept increas- ing till 27th, when it began to assume a dangerous form; stopped during the pains.	"A sufficient passage for the child."
162	Mad. Lachapelle, Prat. des Accouch- ments, Memoire 6, No. 6; July 20, 1821.	27	2	7 nearly.	Thin and feeble; pains of little strength.	Had suffered from epistaxis for many months; had been bled 5 or 6 times, leeches frequently; entered the hospital July 11; hemorrhage began to increase when the tampon was applied.	Opening at closing al- ternately.
163	Ibid., No. 7.	27	1	7	Unimpaired.	Hemorrhage was arrested by the tampon; but little had been lost.	.....
164	Ibid., No. 11, ii.; Nov. 9, 1813.	38	2	7	When first brought to the hospital she had lost but little strength; but the ex- amination brought on the hemorrhage, which reduced her to the last extremity.	Commenced a month previous; was arrested, but returned a month later very abundantly.	But little dilated.
165	Ibid., No. 3; Dec. 8, 1815.	21	1	8	Good; strength unim- paired.	About the 6th month had a sud- den attack, which ceased of itself; 6 weeks later it com- menced again, when it was ar- rested by acidulated tisane of rice; it reappeared at intervals until date, when labor-pains set in; ceased after rupture of membranes.	Soft and open.
166	Ibid., No. 12; Oct. 27, 1820.	34	2	7	Unfavorable upon the whole.	Sudden and very great; arrested by tampon; reappeared upon its removal, when it was reap- plied.	.....
167	Ibid., No. 17.	41	1	8½	Feeble constitution.	Commenced 2 days before en- trance to hospital, small in quantity, and was arrested spontaneously; it appeared the next day a little more abund- antly, and ceased without any particular care; made its ap- pearance the next day, and could not be checked.	Dilated ver- slowly.
168	Ibid., No. 21, i.; June 30, 1803.	35	6	9	Of good constitution.	On the 2d day of labor, a "con- siderable hemorrhage" declared itself.	Dilatable.
169	Dr. Lee's Clinical Midwifery, Am. ed., p. 154, Case 3; Oct. 24, 1829.	.....	.....	7½	.....	Great for 36 hours.	.....
170	Ibid., p. 158, No. 11; Oct. 30, 1835.	40	.....	9th.	Had fainted several times, but her strength did not seem impaired.	Slight for 14 days; on the pre- vious day much increased.	Dilated to the size of a crown- piece; rigi

nta. Labor completed by Natural Efforts.

TA- F TA.	PRESENTA- TION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
ad- to office	Head.	.....	Recovered.	Dead.	Child putrid; after delivery, the placenta was separated and brought away; it had some appearance of being decomposed.
	Head.	Membranes ruptured.	Recovered.	.....	Head of the child descending into the os uteri, put a stop to the flooding.
	Head.	.....	Recovered.	Lived.	The presenting portion of the placenta was, as the head descended, torn from the rest, and expelled 15 or 20 minutes before delivery.
	Natural.	Membranes ruptured.	Recovered.	Lived.	Child's head large; pelvis rather small; labor slow; the membranes were ruptured 36 hours before the delivery, with the effect to check the hemorrhage for a time.
	Head.	.....	Died.	Died.	.....
	.....	.....	Died.	Dead.	During 3 days after the application of the tampon, she suffered but little either from hemorrhage or pains; labor then commenced, and, after 20 hours, she was delivered of a small putrid infant; about half an hour afterwards she began to sink, and died in 2 hours; no flooding.
a	Breech.	Membranes ruptured.	Recovered.	Dead.	After the rupture of the membranes, the flooding ceased, and the os gradually dilated.
a le de.	Head.	Membranes ruptured.	Recovered.	Lived.	Hemorrhage continued after delivery; the hand was introduced into the uterus, and a portion of the placenta, which remained behind, removed; cold water was injected; syncope and buzzing in the ears followed; the skin became dry, and the pulse almost entirely stopped; this state lasted for 5 hours, when she rallied, and began to get better.
.....	.....	Was 3 days in labor.	Died.	Dead.	After the delivery, the uterus was distended with gas, which passed off on the introduction of the hand; the flowing kept up in small quantity; the dyspnoea, which had come on before the delivery, did not cease, and the sensibility upon pressure, in the abdomen, continued; she died in 2 hours.
al	Head.	Finding it impossible to check the bleeding, the membranes were ruptured; the head presenting and pressing upon the os, immediately put an end to the flowing, and the case was left to nature.	Died.	Dead.	After the rupture of the membranes, the use of stimulants revived her; the vomitings, from which she had suffered all through the labor, ceased, and in good time she was delivered; 5 hours later, she began to complain of weakness; her respiration became embarrassed, her pulse failed, and, on the morning of the next day, she died in a state of syncope; no trace of inflammation was found.
ne the s. ge h th gh os, al, pos pa f	Head.	Membranes were ruptured; no flooding afterwards.	Recovered.	Lived.	About one-third of the placenta was covered with an adhering clot.
	.....	.....	Recovered.	Dead.	Refused assistance; after several hours, during which the hemorrhage kept up, the fetus and placenta were expelled; she remained for a long time in a state of great exhaustion.
	Head.	Membranes ruptured.	Recovered.	Dead.	The labor was completed in an hour; ergot had been previously given; there was no hemorrhage after the perforation of the membranes; for several months there was a constant sanguineous discharge from the uterus.

TABLE V.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF OS
171	Dr. Lec's Clinical Midwifery, Am. ed., p. 160, No. 13; Nov. 17, 1835.	.....	2	8th.	Pulse not feeble.	Brought on by great bodily exertion the day previous.	Slightly open and rigid.
172	Ibid., etc., p. 161, No. 15; March 24, 1836.	.....	.....	7	"A state of most alarming weakness."	For several days; just before date, "a great gush."	Rigid.
173	Ibid., etc., p. 163, No. 21; Dec. 27, 1837.	.....	.....	9th.	Unimpaired.	Not very great.	Widely dilated.
174	Ibid., etc., p. 167, No. 27; Oct. 9, 1840.	.....	.....	7th.	.....	Came on that morning very profusely, after having felt for several days a sense of weight and uneasiness about the uterus.	.....
175	Ibid., etc., p. 168, No. 29; April 15, 1842.	.....	.....	6th.	.....	.....	.....
176	Ibid., etc., p. 168, No. 32; Nov. 10, 1841.	.....	.....	9 nearly.	.....	Sudden and profuse on the day before, followed by syncope; ceased, and did not return.	.....
177	Ibid., etc., p. 171, No. 39; July 11, 1843.	.....	.....	8th.	.....	Profuse.	.....
178	Ibid., etc., p. 180, No. 57; April 22, 1847.	.....	.....	8	Very faint.	Profuse for 10 days; occurring spontaneously at first, it had ceased and returned several times.	Partially dilated.
179	Perfect's Cases, i. p. 155; May, 1767.	.....	.....	.....	Not impaired.	Not enough to wet a single cloth till the head passed the os vaginae, when it became profuse.	Gradually dilated as labor progressed.
180	Hardy and McClintock's Practical Observ., p. 204, No. 3.	.....	.....	.....	Good.	Slight; arrested by application of cold to genitals.	.....
181	Ibid., No. 6; May 25, 1842.	34	10	.....	In a state of great exhaustion.	Ceased, and did not return for 3 days; did not return when labor came on.	.....
182	Ibid., p. 208, No. 37; June 21, 1844.	30	10	.....	Seemed weak.	Began 3 weeks before; ceased spontaneously; recurred at intervals; continued to do so, in variable quantities, till delivery.	Dilated very slowly.
183	Collins, Practical Treatise on Midwifery, 1st Am. ed., p. 65, No. 72.	28	5	Full time.	Not apparently affected.	Several attacks previously; not great; did not require interference.	.....
184	Ibid., No. 83.	28	2	Full time.	Not impaired.	Copious at first; afterwards frequent, but not great.	.....
185	Dr. Merriman, Lond. Med. Gaz., xxxvi. part 2, p. 1021.	.....	.....	5	.....	Slight.	.....
186	Ibid.	.....	.....	6	.....	Slight.	.....
187	Ibid.	.....	.....	6½	.....	Slight.	.....
188	Ibid.	.....	.....	.....	.....	.....	.....
189	Ibid.	.....	.....	.....	.....	.....	.....
190	Ibid.	.....	.....	.....	.....	.....	.....
191	Ibid.	.....	.....	.....	.....	.....	.....
192	Ibid.	.....	.....	.....	.....	.....	.....
193	Dr. F. H. Ramsbotham, Lond. Med. Gaz., xxxiv. p. 142.	.....	.....	.....	.....	Flooding ceased after rupture of membranes.	.....
194	Ibid., p. 270.	.....	.....	.....	.....	Flooding materially diminished by rupture of membranes.	.....
195	Ibid., p. 279.	.....	.....	.....	.....	Flooding materially diminished by rupture of membranes.	.....
196	Ibid., p. 438.	.....	.....	.....	.....	Flooding ceased when membranes were ruptured.	.....

Placenta. Labor completed by Natural Efforts—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
Plac.	Head.	Membranes ruptured, and liquor amnii discharged, which brought on pains.	Died.	Dead.	Hemorrhage did not return; died of deep-seated inflammation of the uterus.
Plac. at part of cervical portion.	.....	Membranes ruptured, after which flooding ceased.	Died.	.....	Ergot was given, but labor-pains did not come on till P.M. of 26th, when the child and placenta were expelled without a renewal of the hemorrhage; uterine phlebitis came on, and she died from inflammation of lungs, April 11.
Complete.	Head.	Membranes ruptured.	Recovered.	Lived.	Cord twice around the child's neck.
Plac.	.....	Membranes ruptured.	Recovered.	Dead.	Strong pains came on immediately, and in an hour delivery was effected; no renewal of hemorrhage.
.....	.....	Membranes ruptured.	Recovered.	Dead.	Child expelled without difficulty.
.....	.....	Membranes ruptured spontaneously on the access of labor-pains, and child was born without assistance.	Recovered.	Lived.	Recovered rapidly.
.....	.....	Membranes ruptured; ergot given; labor completed without assistance.	Recovered.	.....	.....
.....	.....	Membranes ruptured; no hemorrhage afterwards.	Recovered.	Dead.	Dr. Lee remarks, "that a madman only could have contemplated tearing away the placenta before delivering the child in this case."
.....	Head.	Membranes ruptured; child born in 3 or 4 pains.	Recovered.	Dead.	.....
.....	.....	.....	Recovered.	Dead.	Pains subsided soon after the cold application; returned next day; labor lasted 3 hours.
.....	.....	.....	Died.	.....	Placenta allowed to remain 2 hours after birth of child; no hemorrhage at all subsequent to that; upon the removal of the after-birth she began to sink, and died in about 3 hours.
.....	Head.	Membranes ruptured with stilette; cold enema given; pains came on in half an hour; labor lasted 25 minutes.	Died.	Living.	Died on the 10th day, from phlebitis.
.....	Head.	.....	Recovered.	Alive.	.....
.....	Breech.	Membranes ruptured.	Recovered.	Alive.	.....
.....	.....	.....	Recovered.	Dead.	.....
.....	.....	.....	Recovered.	Dead.	.....
.....	.....	.....	Recovered.	Dead.	.....
.....	.....	.....	Recovered.	Dead.	.....
.....	.....	.....	Recovered.	Dead.	.....
.....	.....	.....	Recovered.	Dead.	.....
.....	Head.	Membranes ruptured; fetus born in 5 hours.	Recovered.	Dead.	.....
.....	Head.	Membranes ruptured.	Recovered.	Alive.	.....
.....	Head.	Membranes ruptured.	Recovered.	Alive.	.....
.....	Head.	Membranes ruptured; child born 5 hours after.	Recovered.	Dead.	.....

In these five cases, a small portion only of the placenta was attached over the os uteri; the pains were strong, and little assistance was required; in 2 or 3 cases the membranes were artificially punctured.

TABLE V.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF OS.
197	Dr. J. C. W. Lever, Lond. Med. Gaz., xxxvi. part 2, p. 1422, No. 9.	32	5	9			
198	Ibid., No. 15.	23	3	8			
199	Dr. Denny, Am. J. Med. Sci., N. S., xxxi. p. 95, No. 5; Aug. 17, 1855.	43	10	7½	Had phthisis; ex- hausted from hemop- tysis and repeated hemorrhages.	Hemorrhage occurred in May, June, twice in July, and on the night previous to date.	At first undi- lated, but admitted finger.
200	Dr. Chubbuck, Ibid., p. 114.					Excessive before arrival; none after remedies were applied.	
201	Dr. Radford, Ibid., p. 523, (from Ass. Med. Jour., Feb. 2 and 16, 1855,) Mar. 24, 1821; Case No. 2.		5		Pulse unaffected; pains severe.	Began with the labor-pains, 4 hours before, increasing with each till head pressed on os, when they ceased.	Size of half a crown; thin and soft.
202	Ibid., No. 3; Feb. 21, 1822.		2	9		A month previously, very pro- fuse and sudden; subdued by cold and rest; none at labor.	
203	Ibid., No. 4; June, 1830.		3	9 within a week.	Somewhat debilitated by previous hemor- rhage.	A month before, lost "a large quantity;" body bandaged, cold, rest, and light diet prescribed; ceased; did not return when labor set in.	Considerably dilated; soft and yield- ing.
204	Ibid., No. 5; Nov. 1, 1855.		3	Nearly full time	Not impaired.	Slight about 7th month, for which diluted sulphuric acid, and opium, were given; did not return till 3 days before date, not severe; no pains; plumb. acet.; tr. opii; rest; cold to the vulva.	Size of a shilling to the last ex- amination.
205	Ibid., No. 6; June 22, 1825.			9th.	In previous hemor- rhages much ex- hausted.	In the previous 6 weeks twice, slight; once excessively; body bandaged; plug, with T-band- age; cold; tr. opii, 1 dr.; brandy and water; flooding ceased.	
206	Ibid., No. 7; April 4, 1826.				Somewhat reduced by previous bleedings.	At the 7th month, sudden and very profuse; produced faint- ing; bandage; tr. opii; stimu- lants; plug; rest; a month later, another attack; refriger- ants; acid mixture; when labor came on, flooding was again produced.	Size of a crown- piece; soft and dilat- able.
207	Ibid., No. 8; Aug. 5, 1830.		3	9	In previous floodings much affected.	A month previous, excessive; plug; compress over uterus; body bandaged; tr. opii; when labor set in, flowing returned; increased with pains.	Size of a crown-piece soft and di- latable.
208	Ibid., No. 9; Sept. 20, 1826.		3	9		At the end of 7th month, to an immense amount; at last con- trolled by plug; frigorific mix- tures and opiates; compress and bandage over uterus; did not return.	
209	Dr. Reid, Lond. Lan., 1848, i. p. 313; Jan. 28, 1848.		9	8th.	No pains; much ex- hausted.	Suddenly on evening of date; continued; plug, filling up va- gina and os uteri.	Dilated slowly.
210	Mr. Griffin, Braith- waite, No. 17, p. 232, from British Record, March 1, 1848, p. 108.				In a state of great prostration.	To the extent of about a pint, 3 hours after labor commenced; plug; cold drinks; tr. opii.	
211	J. T. Ingleby, 'Uter- ine Hemorrhage, London, 1832, p. 156, Case 1.			5th, nearly.			

Placenta. Labor completed by Natural Efforts—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
Facial.	.....	Membranes ruptured.	Recovered.	Lived.	.....
Partial, completely detached.	Head.	Membranes ruptured. In the course of the night labor set in; at first hemorrhage was increased; as head came down it ceased.	Recovered. Died.	Died. Dead.	Convulsions 3 days after delivery. Hemorrhage ceased with delivery; uterus contracted well; died of extreme exhaustion; stimulants used without any effect.
.....	.....	Membranes ruptured; ergot given; delivery effected in 20 minutes.	Died.	.....	In 15 minutes after delivery, from exhaustion.
Partial, on right lateral, posterior portion of cervix.	Head.	.....	Recovered.	Lived.	.....
.....	Head.	.....	Recovered.	Lived.	Dr. R. was called at the 8th month, on account of hemorrhage; os not being open, could only, from the thickening of cervix, prognosticate Placenta Prævia; labor was completed at full term without aid; placenta adhering, he was called to remove it, and verified his former suspicion.
Partial.	Head.	.....	Recovered.	Dead.	The portion of the placenta which had separated at 7th month was readily observed.
Partial, on left lateral, posterior portion of cervix.	Head.	Membranes ruptured of themselves; foetus expelled by 2 or 3 strong pains.	Recovered.	Lived.	"During labor, not the slightest flow of blood;" placenta adhered largely; was detached and extracted; Dr. R. remarks: "These (the four preceding) cases are, in my opinion, sufficient in number to prove the fallacy of the dogmatic rule, which inculcates that active operative interference is necessary in all cases in which the placenta is implanted on the lower (cervical or oval) portion of the uterus."
.....	.....	A fortnight after last hemorrhage, labor came on, and terminated without further hemorrhage.	Recovered.	Lived.	.....
Partial, at lower os.	Head.	Pains strong; a considerable portion of placenta detached and membranes ruptured; child born in about 3 hours.	Recovered.	Lived.	"There was only the ordinary discharge of blood." For details of this case, see Index, sub "Radford."
Complete.	Head.	A portion of placenta separated; membranes ruptured; and in 2 hours and a half, child born.	Recovered.	Lived.	After head engaged in os, hemorrhage ceased.
.....	Head.	.....	Recovered.	Lived.	.....
Partial, at posterior part.	Head.	Membranes punctured; ergot given.	Recovered.	Dead.	.....
.....	Head.	.....	Died.	Dead.	Child was very putrid; placenta adherent; removed by hand; mother died of irritative fever, probably induced by absorption of putrid matter.
Almost complete.	.....	Membranes were ruptured.	Recovered.	Dead, presumed.	.....

TABLE V.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF OS.
212	J. T. Ingleby, Uterine Hemorrhage, London, 1832, p. 156, Case 2.	.....	.....	6th.	.....	Severe.	Dilated with difficulty.
213	Mr. J. Russell, Ed. Med. & Surg. J., lxvi. p. 53, No. 438; Oct. 27, 1818.	.....	.....	7th.	.....	Just before first visit.	An inch and a half in diameter.
214	Dr. Radford, Am. J. Med. Sci., xxxii. p. 536, Case 34, (from Ass. Med. J., Feb. 2 and 15, 1856,) Feb. 9, 1856.	.....	.....	.....	.....	Three weeks before; continued at intervals, till date.	Much dilated
215	Dr. Rigby, Lond. Med. Gaz., xvii. p. 31; May 13, 1834.	30	.....	Near full time.	Slight pains; pulse full.	A week before, in considerable quantity; returned 4 days afterwards in greater quantity.	Os dilated to diameter of 2 inches.
216	Ibid., p. 32; July 4, 1834.	.....	.....	8	Extremely faint; no pains.	Twelve hours before, sudden and profuse; soaked through the bed; returned in an hour, and continued to dribble.	Almost fully dilated; edge very uneven.
217	Dr. H. Pleasants, Am. J. Med. Sci., N. S., xv. p. 366.	35	8	.....	"Of a relaxed fibre."	Began 5 days before delivery; at first easily controlled; at last excessive.	.....
218	Dr. W. Rankin, Am. J. Med. Sci., N. S., xxvi. p. 395.	.....	2	8½	Greatly prostrated; no pains.	Began several weeks before; ceased; returned a week ago, and continued up to attendance; sugar of lead, cold, and opium given.	Dilated to size of a fifty-cent piece; firm and unyielding
219	Dr. G. N. Burwell, Am. J. Med. Sci., N. S., vii. p. 334, Blockley Hos. Rep.	.....	.....	.....	.....	Slight before delivery.	Dilating rapidly.
220	Mr. A. J. Simkins, Lond. Med. Gaz., xxxvii. p. 174; Oct. 6, 1845.	26	2	5	Much affected by loss of blood; fainted away.	On night of Oct. 5, in bed; plug; cold; opium; ceased; returned on day of date.	During fainting, os relaxed; until then, rigid.
221	Dr. James Reid, Lond. Med. Gaz., xxxvi. p. 1324; Jan. 1843.	23	.....	7	Seriously affected by the hemorrhage.	For 2 months, more or less.	Apparently in good condition.
222	Ibid., Oct. 6, 1843.	43	12	9	Greatly reduced; pulse almost imperceptible.	Occasionally the two last months.	Rapidly dilating.
223	Mr. Waller, Lond. Lan., 1833-34, i. p. 521; Dec. 18, 1833.	.....	.....	8	Sinking; extremities cold; pulse very feeble.	For several days, in large quantities.	.....
224	Mr. Wheelwright, Lond. Lan., 1839-40, ii. p. 109; Jan. 31, 1838.	26	2	9	.....	A month before had a severe fall, accompanied with a "smart discharge;" returned when labor set in, each pain producing it more or less.	Soft and yielding; dilating favorably.
225	Dr. J. H. Davis, Lond. Lan., 1845, ii. p. 95; June 22, 1844.	32	3	7½	Much reduced.	At beginning of 6th month, profuse, after a fright; sulphuric acid; rest; cool drinks; returned day before date; no pain; continued with increasing amount; plug; hemorrhage ceased; returned after ergot had been given; plug renewed.	Dilated to two finger breadth; rigid.
226	Mr. R. Barnes, Lond. Lan., i. 1847, p. 327; Oct. 21, 1845.	.....	3	7	Not impaired.	For the last fortnight, considerable.	About the size of a crown-piece

centa. Labor completed by Natural Efforts—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
Head; less than one-half of os exposed.	Foot.	Turning attempted; not practicable; membranes ruptured; pains came on; child expelled footling.	Recovered.	Dead, presumed.	.....
Head.	.....	Membranes ruptured; some hours after, pains came on.	Recovered.	Lived.	.....
Head.	Head.	Membranes ruptured; ergot given.	Recovered.	Lived.	Still-born, but restored to life; mother had phlebitis.
Part; anterior margin covered.	Head.	.....	Recovered.	Lived.	No further loss of blood after head pressed on os.
Part; over right anterior edge.	Head; 3d position.	Ergot and brandy; membranes ruptured.	Recovered.	Dead.	When first seen, there was no liquor amnii present in front of head; in about an hour, enough had collected to distend the membranes.
Part.	Head.	.....	Recovered.	.....	Suffered for a long time, from effects of excessive loss of blood.
Complete.	Head.	Membranes ruptured; ergot given, 1 dr. every half hour; portion of detached placenta pressed firmly by the fingers against its original attachment; labor ended about 2 hours after first exhibition of ergot.	Recovered.	Dead.	Uterus did not contract well; frictions and every means were made use of, and at length, after passing a piece of alum, tied to a string, into the cavity of uterus, it began to contract, and flowing ceased.
Part half an inch over.	Head.	Membranes ruptured; child soon born.	Recovered.	Lived.	Profuse hemorrhage followed delivery, which was arrested by application of cold to abdomen.
Complete.	Head.	Ergot given, 2 dr.; pains came on; a male fetus expelled, which lived 20 minutes; placenta came away in 10 minutes more.	Recovered.	Died.	Fœtus weighed 16 ounces; membrana pupillaris visible; nails nothing but soft cuticle, with highly vascular membrane beneath.
Part.	Head; vertex.	.....	Recovered.	Lived, inferred.	.....
Part.	Head.	.....	Recovered.	Lived.	The placenta not coming away, was extracted in about an hour, without any recurrence of flooding.
Part.	Head, inferred.	An attempt at version was made, but patient sinking so fast, it was not done; brandy; nourishment; transfusion to 17 oz. at two injections; after the second, no relapse.	Recovered.	Dead.	Transfusion. For details, see Index, sub "Transfusion."
More than half three-fourths exposed.	Head.	.....	Recovered.	Dead.	Placenta was pushed back, and head allowed to descend.
Part.	Head.	Os dilated very slowly; when pains became forcing, plug removed, and child quickly expelled.	Recovered.	Dead.	Cord round child's neck; placenta thrown off in 40 minutes; did well.
Part.	Breech; sacrum to pubis.	Membranes ruptured; one pain forced the child into the world.	Recovered.	Dead.	.....

TABLE V.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG-NANCY.	MONTHS PREG-NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF OS.
227	Mr. Seth Gill, Lond. Lan., ii. 1847, p. 94.	37	4	.....	Suffered many hours with spasmodic pains.	No hemorrhage before or during labor.	Fully dilated
228	Dr. Oldham, Am. J. Med. Sci., xxxii. p. 537, Case 2, (from Med. Times & Gaz., July 12, 1856,) Dec. 1852.	.....	5	8½	Pale; pulse feeble; apprehensive of dying; a stout, strong, and florid person.	Attacked suddenly; lost a large quantity rapidly; ice to abdomen and vulva.	Open and flaccid.
229	Ibid., Case 8.	40	.....	7	Seriously exhausted.	For 3 weeks, at intervals; plug, for an hour; little or no hemorrhage after its application.	Rigid at first; opened after plugging.
230	Com. by Dr. Wellington, Cambridge, Mass.	.....	.....	.....	Strong pains.	No previous hemorrhages; sudden and profuse.	.....
231	Ibid.	.....	.....	.....	Bloodless; no pains.	Considerably for 2 days; none after birth of child.	.....
232	Ibid.	.....	.....	.....	.....	Three weeks before labor, slight; profuse when labor came on.	.....
233	Ibid.	.....	.....	.....	.....	.....	.....
234	Ibid.	.....	.....	.....	.....	.....	.....
235	Ibid.	.....	.....	.....	.....	.....	.....
236	Com. by Dr. Mignault.	.....	.....	.....	.....	.....	.....
237	Com. by Dr. Welch, Hartford, Conn.	.....	.....	.....	In a critical state.	Very profuse.	2 inches in diameter; soft and relaxed.
238	Com. by Dr. G. S. Jones, July 23, 1850.	28	2	.....	.....	Occasionally, for 2 months; sudden and profuse at date.	Three-quarters of an inch in diameter.
239	Com. by Dr. Crane, E. Boston.	.....	1	.....	.....	Profuse.	.....
240	Com. by Dr. E. Hunt, Danvers, Mass.	.....	.....	.....	Much exhausted; very faint.	Before labor came on.	.....
241	Ibid.	.....	.....	.....	Much exhausted; very faint.	Before labor came on.	.....
242	Com. by Dr. S. Johnson, Salem, Mass.; 1832.	.....	.....	.....	.....	.....	.....
243	Ibid., 1850.	.....	.....	.....	.....	.....	.....
244	Com. by Dr. Holyoke, Salem, Mass.	.....	.....	.....	.....	For hours.	.....
245	Com. by Dr. J. H. Lane, Boston.	.....	.....	.....	.....	A great quantity; at intervals, for 2 months.	.....
246	Com. by Dr. C. E. Ware.	.....	.....	.....	.....	Had continued for several months; waters discharged, with considerable hemorrhage at commencement of labor; plug.	.....
247	Com. by Dr. J. F. W. Lane, Boston.	.....	4	.....	Considerably faint.	None previous to the rupture of the membranes.	.....
248	Com. by Dr. Geo. Bartlett, Boston.	.....	.....	.....	.....	Had lost considerable blood.	Dilatable.
249	Com. by Dr. S. Cabot, Boston.	.....	2	.....	.....	None before labor, then very slight, with no active pains; ceased when membranes ruptured.	Dilated.
250	Com. by Dr. Z. B. Adams, Boston.	.....	.....	.....	.....	.....	.....
251	Com. by Dr. J. H. York, S. Boston.	.....	5	.....	.....	For about a week before.	Dilated.

Placenta. Labor completed by Natural Efforts—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
.....	.....	Three doses of ergot given; one-half of the placenta came away with the child; rest removed by hand.	Recovered.	Lived.	Child lived a fortnight; was born asphyxiated.
Part.	Head.	Membranes punctured.	Recovered.	Dead.	An enema of infusion of ergot with brandy was given; child born in 3 hours afterwards.
.....	Head.	Plug, supported externally by a pad or cotton-wool and T-bandage; brandy and beef-tea; pains came on in an hour after it was applied; it was removed, and in 3 hours labor was completed.	Died.	Dead.	Of metrophlebitis, in 3 days; Dr. O. remarks: "In this instance the plug appeared to have been of great service, not only in controlling the bleeding, but stimulating the uterus to labor action; in other cases it has not, in my experience, proved so serviceable."
.....	Head.	Membranes ruptured; child born immediately.	Recovered.	Lived.	.....
.....	Head.	Ergot given; membranes ruptured; child born at once.	Died.	Dead.	"Mother seemed to be rallying, but having suddenly risen up in bed, she fell back and died."
.....	Feet.	.....	Recovered.	Dead.	.....
.....	Head.	.....	Recovered.	.....	.....
.....	Feet.	.....	Recovered.	.....	.....
.....	Feet.	.....	Recovered.	.....	.....
Part.	Head.	Membranes ruptured.	Recovered.	Lived.	.....
Part.	Head.	One dr. of ergot given; membranes ruptured; labor terminated in 30 minutes.	Recovered.	Lived.	.....
Part.	Head.	.....	Recovered.	Lived.	Considerable hemorrhage after delivery; arrested with difficulty.
.....	.....	.....	Recovered.	.....	.....
.....	.....	Membranes ruptured.	Recovered.	Lived.	.....
.....	.....	Membranes ruptured.	Recovered.	Lived.	Had a long and tedious recovery.
Part.	Head.	.....	Recovered.	Dead.	.....
.....	Head.	Membranes ruptured.	Recovered.	Lived.	.....
.....	.....	.....	Recovered.	Died.	Died immediately after birth.
Alm de-tac.	Head.	.....	Recovered.	Lived.	As the hemorrhage had ceased, the placenta was suffered to remain till after the birth of the child; remained a long time feeble.
Part edge just.	Head.	In about 3 hours.	Recovered.	Lived.	.....
Part	.....	.....	Recovered.	Lived.	.....
Com pe.	Head.	Ergot given; child born in 4 or 5 hours.	Recovered.	Dead.	Labor 1 hour in duration only; required no interference of any kind; stimulants were given.
Part sm bor-tion os cov d.	.....	.....	Recovered.	Lived.	.....
.....	.....	.....	Recovered.	.....	.....
Part os hal-y-ere	Head.	.....	Recovered.	Alive.	Child died soon after.

TABLE V.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF OS.
252	Com. by Dr. George H. Lyman, Boston; Feb. 19, 1857.	38	7	9	.....	None previous to delivery, then immense.	Two-thirds dilated.
253	Com. by Dr. J. M. Phipps, Boston.	20	1	8	Unimpaired.	Slight for some days; not alarming at any time.	Good.
254	Com. by Dr. C. E. Buckingham, Boston.	.....	.....	9	Strong pains.	For a fortnight; not much at labor.	.....
255	Com. by Dr. E. W. Blake, Boston.	.....	3	9	.....	In the 5th month, after a misstep; ceased; recurred at intervals till term, then large amount lost.	Dilated rapidly.
256	Dr. J. G. Crosse, "Cases in Mid.," p. 116, Case 59.	33	5	Premature.	Pale; pulse small.	Began at 2 months; recurred often, once or twice profusely.	.....
257	Com. by Dr. F. F. Minot, Boston; June 13, 1850.	30	3	8	Unimpaired.	Began on 11th, after a fright; plug, lead, and opium; kept up steadily, but not in great quantity, till date.	Dilated naturally.
258	Dr. Legroux, Arch. Gén., Dec. 1855, p. 649, Obs. 3.	28	8	9	Reduced to the last degree.	At the beginning of the 8th month; returned 3 times; controlled by bleeding; cold applications; the last attack went on, and became very profuse as labor set in.	Dilated naturally.
259	Ibid., p. 651, Obs. 4; same patient as preceding case.	.....	9	Full term.	In a profound anæmia.	At the 8th month, some days in duration; bleeding; cold applications; astringents; injections; some days before labor, it returned, and was much augmented by the pains; plug, saturated with alum.	Well dilated.
260	Com. by Dr. A. A. Gould, Boston; same patient as No. 776.	.....	6	9	.....	Came on at 8th month, profuse; returned when labor came on; ceased when head came down.	.....
261	Com. by Dr. F. F. Patch, Boston.	35	3	Full term.	.....	Three or four times during last month, slight; labor came on with flooding.	Dilatable.
262	Com. by Dr. J. W. Warren, Boston.	27	2	Full term.	Strong pains.	Commenced when membranes ruptured; profuse, accompanying each pain; plug; partially arrested; returned to an alarming extent.	Dilatable.
263	Dr. W. E. Coale, Bost. Med. & Surg. Jour., liii. p. 287.	24	1	9th.	Unimpaired.	Three days before, sudden, to the amount of half a pint; recurred on the next day, filling an ordinary chamber-pot half full, nearly all at one gush; when labor set in, not much.	Size of the bottom of a tumbler.
264	Paul Spooner, M.D., New Bedford News; Am. J. Med. Sci., N. S., x. p. 35.	28	5	8th.	Very feeble.	No hemorrhage until more than 12 hours after pain set in.	Required for ciple dilatation.
265	Copeman, Records of Obstetric Practice, Appendix, p. 217.	.....	.....	Near full term.	Much reduced.	For 3 weeks; lost a great deal of blood the previous night; tampon; tr. opii; ceased; did not return.	Flabby and open.
266	Dr. Capron, R. I., Bost. Med. & Surg. Jour., June 21, 1855.	.....	.....	.....	.....	.....	.....
267	Dr. W. E. Coale, Bost. Med. & Surg. Jour., Nov. 1, 1855; Oct. 12, 1855.	24	1	8	Not affected.	Four days before, sudden, to extent of half a pint; 18 hours afterwards, to extent of half a chamber-pot full at one gush; did not return in quantity.	Good; dilated to size of bottom of tumbler.

Cent. Labor completed by Natural Efforts—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
at L.	Head.	.....	Recovered.	Lived.	"Taken with ordinary symptoms of labor; no hemorrhage during the process; "An immense discharge of water followed the child, and excessive hemorrhage set in instantaneously, reducing her in a few minutes to a state of collapse;" ergot was given freely; ice to vulva; friction and pressure to uterine region; placenta adherent to left posterior portion of cervix; ether had been given during the last 10 minutes of the labor.
at L.; one of os coxed.	Head.	.....	Recovered.	Lived.	Labor perfectly natural; about 6 hours in duration.
.....	Head.	Ergot given.	Recovered.	Lived.	.....
at L.	Head.	.....	Recovered.	Lived.	Labor proceeded rapidly; descent of head controlled flooding.
.....	.....	.....	Recovered.	Dead.	Fœtus and placenta came together.
at L.	Head.	.....	Recovered.	Lived.	.....
at L.	Head.	.....	Recovered.	Lived.	For details of this case, see Index, sub "Legroux." This case, with the next, No. 259, are remarkable, as being two successive pregnancies in the same woman. See also No. 96.
at L.	.....	.....	Recovered.	Dead, twins.	Had double milk-leg; in this case, the exhaustion was so great that Dr. L. did not dare to make use of the upright posture.
.....	Head.	.....	Recovered.	Dead.	This patient had Placenta Prævia in her previous labor; was under the care of a midwife. See No. 776, table 6.
Part	Head.	.....	Recovered.	Lived.	.....
Part	Head.	.....	Recovered.	Lived.	Patient was 9 hours in labor.
Part	Head.	.....	Recovered.	Dead.	A powerful opiate was given, after the second flooding, with relief; labor proceeded favorably; child weighed 8 pounds.
.....	Head.	.....	Lived.	Dead.	.....
Comp. o.	Head.	.....	Lived.	Dead.	.....
Part	Head.	Membranes were ruptured, and hemorrhage checked by descent of child's head; ergot was given.	Recovered.	Lived.	.....
Comp. o.	Head.	.....	Recovered.	Lived.	Nothing indicating immediate danger, the descent of the child's head was waited for; this soon took place, compressing the loose edge of the placenta, and the hemorrhage ceased, except a very trifling amount.

TABLE V.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF OS.
268	Dr. O. H. Taylor, Camden, N. Jersey; 1828.	25	1	.....	Almost moribund.	.....	.....
269	Ibid., July 13, 1848.	.....	9	8th.	Apparently unim- paired.	Slight at commencement of 6th month; a fortnight before date, considerable; checked by cold applications, lead, and opium.	Dilated con- siderably.
270	Com. by Dr. S. W. Butler, Burling- ton, N. Jersey.	27	1	.....	Good pains and in good condition.	Considerable hemorrhage.	Fully dilated
271	Moreau, Pract. Mid., transl. by Betton, p. 170.	.....	.....	.....	Did not lose strength; pains sufficiently strong.	Did not increase with the pains.	Dilated to an inch in diameter.
272	Ibid.	.....	.....	.....	.....	.....	.....
273	Mr. J. T. Ingleby, Lond. Lan., 1831- 32, ii. p. 373; April 26, 1832.	.....	.....	9	Faint; cold; pulse hardly perceptible, 150 per minute; pains gone.	Three weeks before, copious; re- turned morning of date, consid- erable; tr. opii, with brandy; plug, with silk handkerchief dipped in oil; in an hour pains came on; hemorrhage ceased; child born in an hour and a half more.	Quite lax; size of half a crown; dilated fully soon after.
274	Leroux, Obs. sur les Pertes des Sang., Obs. 94; Nov. 23, 1769.	.....	.....	Not quite full term	Very weak, but with frequent and strong pains.	Vagina filled with a firm clot; had bled a great deal.	Dilated fully.
275	Dr. Radford, Am. J. Med. Sci., N. S., xxxi. p. 523, (from Ass. Med. Jour., Feb. 2 & 16, 1855.) June 20, 1820.	.....	3	.....	.....	Trifling on two previous occa- sions, at intervals of 3 weeks; profuse at time of record; ceased on being put to bed.	Size of a crown-piece; soft and di- latable.
276	Dr. Edward Rigby, Lond. Med. Gaz., xiv. p. 367.	.....	.....	.....	Weak, but not faint; pulse tolerably good; pains very slight.	Began the week before; ceased, and appeared again on morn- ing of attendance.	Very much forward; size of a crown-piece.
277	Mad. Lachapelle, Mem. 6, No. 11, i.	28	5	7	Not impaired.	A slight flow, which commenced on the previous evening.	Well dilated.
277a	Chailly, Practical Treatise on Mid., transl. by Bedford, 5th ed., p. 262.	.....	.....	.....	.....	.....	.....
277b	Dunal, de l'hémorr. prod. par l'insert- ion du placenta, etc., Montpellier, 1855, Obs. 3, p. 104.	31	3	Near full term.	In an alarming state; pale; cold extremi- ties; feeble pulse; pains feeble and slow.	Had been going on for 20 hours.	Dilated very slowly.
277c	Ibid., p. 181.	.....	.....	.....	.....	Hem. came on at the 4th month; continued at intervals from that time; at times very great.	Dilated slowly.

Placenta. Labor completed by Natural Efforts—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
.....	Breech.	.....	Died.	Dead.	Mother lived but a few moments.
Pa 1; one- b over t s.	Head.	Pains strong, and in quick succession; child soon expelled; soon after placenta was pushed from before the head.	Recovered.	Lived.	.....
Pa 1.	Head.	Membranes ruptured; child born in three-quarters of an hour.	Recovered.	Lived.	Hemorrhage kept up after delivery; vin. ergot given, 5 dr.; uterus contracted in about 3 hours.
Do etc.	Breech.	The dilatation of the os separated the placenta on the left side.	Recovered.	Lived.	.....
Do etc.	Breech.	.....	Recovered.	Lived.	.....
Pa 1.	Head.	.....	Recovered.	Died.	Born alive, but so feeble that it died almost immediately.
.....
Pa 1.	Head.	As the head entered the os, the hemorrhage stopped; child born in 2 hours and a half.	Recovered, probably.	Alive, probably.	.....
Pa 1; a suppor- tive os.	Head.	In the course of 2 hours, membranes ruptured; head came down, and labor was completed.	Recovered.	Lived.	Uterus contracted well; placenta expelled in half an hour.
Pa 1; one- th of os co ed.	Head.	Pains being light, a dose of ergot was given.	Recovered, probably.	Dead.	.....
Pa 1; on the cervical point.	Feet.	Labor soon finished.	Recovered.	Died.	Suffered from fever for 2 weeks.
.....	.....	Membranes ruptured.	Recovered.	Dead.	.....
Cor etc.	Head.	Ergot; tampon; both of charpie and an air pessary.	Recovered.	.....	.....
.....	Head.	Ergot; tampon.	Recovered.	Alive.	Placenta was adherent; removed by hand.

Among the cases in the foregoing table,

109.....Recovered. | 14.....Died.

A percentage of fatal cases amounting to $11\frac{1}{3}$, nearly.

The age of the mother in those instances where it is stated, was

20 years in.....1 case.	32 years in.....2 cases.
21 " ".....1 "	33 " ".....1 "
23 " ".....2 "	34 " ".....2 "
24 " ".....2 "	35 " ".....3 "
25 " ".....1 "	37 " ".....1 "
26 " ".....2 "	38 " ".....2 "
27 " ".....4 "	40 " ".....2 "
28 " ".....5 "	41 " ".....1 "
30 " ".....3 "	43 " ".....2 "
31 " ".....1 "	

The number of the pregnancy, was

1st in.....8 cases.	6th in.....2 cases.
2d ".....10 "	7th ".....1 "
3d ".....12 "	8th ".....1 "
4th ".....2 "	9th ".....2 "
5th ".....7 "	10th ".....3 "

The date at which the delivery took place, was the

5th month in.....1 case.	8th month in.....5 cases.
5 months ".....2 "	8 months ".....11 "
6th month ".....2 "	8½ " ".....3 "
6 months ".....1 "	9th month ".....4 "
6½ months ".....1 "	Near 9 months in.....6 "
7th month ".....2 "	9 months in.....15 "
7 months ".....8 "	Full time in.....5 "
7½ " ".....3 "	Premature in.....1 "

Of these 70 cases, the delivery took place at, or after 7 months, in 61; after 8 months in 45; and during, or at the end of the 9th month, in 30.

The presentation of the Placenta, was

Complete, in.....17 instances.
Almost complete, in.....1 "
Partial, in.....72 "
A large portion protruding through the os in.....3 "
Nearly detached, in.....1 "

In the cases where the result to the child is stated,

56.....Lived. | 55.....Died.

The child presented by the

Head in	76 instances.
Breech in	6 "
Feet in	4 "

Under the same classification, of those where the

	Lived.	Died.
Head presented.....	43	24
Breech	3	3
Feet.....		2

The condition of the os uteri is stated to have been

In good condition in Nos. 158, 159, 160, 161, 165, 168, 173, 178, 179, 201, 203, 204, 206, 207, 213, 214, 215, 216, 219, 221, 222, 224, 226, 227, 228, 237, 238, 248, 249, 251, 252, 253, 255, 257, 258, 259, 261, 262, 263, 265, 267, 269, 270, 271, 273, 274, 275, 276.....	48 cases.
Dilated very slowly, in Nos. 167, 182, 199, 209, 277b, 277c.....	6 "
But little dilated, in No. 164.....	1 "
Dilated with difficulty, in No. 212.....	1 "
Required forcible dilatation, in No. 264.....	1 "
Rigid, in Nos. 170, 171, 172, 218, 225.....	5 "
Rigid at first but relaxed during syncope, in No. 220.....	1 "
" " " " " after plugging, in No. 229..	1 "
Opening and closing alternately, in No. 162.....	1 "

In distributing the fatal cases, we find that among those which offered no opposition to the delivery, there were 3 deaths, viz., Nos. 167, 182, 199, in all of which, the dilatation was slow. In No. 167 the mother was for two days without attendance, and suffered from repeated attacks of flowing. Her death, from the absence of all inflammatory symptoms, seemed to have been the result of the excessive hemorrhage. In No. 182 the hemorrhage was not excessive, and death was caused by phlebitis on the 10th day, a result not peculiar to this combination of circumstances. In No. 199 the mother was moribund with phthisis. There was not an extraordinary amount of flooding, not enough under other circumstances to have caused death. Among those in which the os is stated to have been rigid, 2 cases, viz. Nos. 171, 172, proved fatal. In the first of these, the condition of the mother was not impaired at the time of the delivery, nor were the circumstances of the labor such as to foreshadow the fatal result. The inflammation of the uterus from

which she died, is not necessarily to be attributed to the influence of the Placenta Prævia. In the other case, by the same reporter, it seems to be evident that the fatal result was brought on by the loss of blood, the mother having been reduced to "a state of most alarming weakness," and the subsequent symptoms being those which usually follow excessive depletion. In this instance also, as has been before noticed, the os maintained its rigidity in spite of the hemorrhage. In No. 229 the result, death by metrophlebitis, was no doubt, owing to the loss of blood, as in the case just referred to, and in this, as in that, the os was rigid, not dilating till after the plug had been used. In No. 162, the remaining fatal case, in which the condition of the os is recorded, the hemorrhage returned after delivery, and could not be checked. How far this may have been the result of the exhausted state of the system induced by the flooding, is a question not easily answered, but when we look at the amount of depletion she had suffered by epistaxis, venesection, leeching and flooding, it does not seem at all remarkable that a condition of the uterine walls which would permit such an amount of post-partum hemorrhage, should have ensued.

The period of the pregnancy, at which the hemorrhage first made its appearance, was at the

2d month in No. 256.....	1 case.
4th " " 199, 277c.....	2 "
5th nearly " 211.....	1 "
5th month " 255.....	1 "
5 months " 220, 221.....	2 "
6th month " 175, 212, 225, 269.....	4 "
6 months " 164, 165.....	2 "
6½ " " 226.....	1 "
7th month " 162, 174, 204, 206, 213, 229.....	6 "
7 months " 163, 166, 172, 208, 222, 277.....	6 "
7½ " " 169, 205.....	2 "
Between 7 and 8 months in No. 218.....	1 "
8th month in Nos 159, 171, 177, 178, 209, 258, 259, 260, 264.....	9 "
8 months " 160, 202, 203, 207, 216, 223, 224, 253, 257, 267.....	10 "
8½ " " 167, 228, 254.....	3 "
9th month " 170, 173, 261, 263, 265, 273.....	6 "
9 months " 161, 168, 252, 262.....	4 "
Near full time, in Nos. 176, 215, 274, 277b.....	4 "
Full time, in No. 184..	1 "

From the fact that only about one-half of the cases in the fifth table have the date of the first appearance of the hemorrhage re-

corded, it is manifestly impossible to form any reliable conclusions as to effect of the presentation, whether complete or partial, in hastening or retarding its appearance. But from the number in which it is recorded, we can ascertain the fact, that comparatively few cases occur, where the hemorrhage comes on at an earlier date than the 7th month. Of the 65 cases in this table, in which the date is stated, the first appearance of the hemorrhage took place *at or after* the 7th month, in 51. Of this number, 11 occurred during the 7th, 22 during the 8th, and 18 during the 9th month; leaving only 14 for the whole of the first six months of the pregnancy, and of these, 6, or nearly one-half, took place during the 6th month.

The degree of placental presentation, as far as can be ascertained, according to the above classification, is at the

Complete. Partial.		Complete. Partial.	
4th month	1	Between 7 and 8 months	1 0
5th nearly	1	8th month	2 4
5th month	0 1	8 months.....	4 4
5 months.....	1 1	8½ "	0 2
6th month	0 4	9th month	2 4
6 months.....	0 2	9 months.....	0 4
6½ "	0 1	Near full time	1 3
7th month	1 4	Full time	0 1
7 months.....	0 3		

The statements made with regard to the preceding tables, as to the insufficiency of the data to justify any conclusions, apply with more force to table 5th. In this, the number of the cases, in which the degree of the placental implantation is definitely stated, is very small. And even in those in which it is stated, the terms Complete and Partial, made use of to distinguish the two varieties, are so vague and capable of such a latitude of construction, that it would be in the highest degree unjust, to draw either conclusions or inferences from them. But aside from their value in this respect, they have a great and direct bearing upon the question how far the development of the uterus is influenced by the attachment of the placenta upon its walls. It will be seen by a comparison of the two columns, that while the hemorrhage makes its appearance, in *partial* presentation at all periods nearly alike after the 5th month, the number of instances are very small, comparatively, in which, when the implantation is *complete*, flowing comes on before the last two months of pregnancy.

The condition of the mother is stated to have been

Reduced to the last extremity, in Nos. 164, 172, 200, 223, 228, 268, 273.	7 cases.
In a critical state, in No. 237.....	1 “
Very much reduced, in Nos. 160, 162, 167, 169, 181, 199, 205, 210, 216, 217, 218, 220, 221, 222, 229, 240, 277b.....	17 “
Much reduced, in Nos. 158, 161, 207, 209, 225, 264, 265, 274.....	8 “
Bloodless, in No. 231.....	1 “
In a state of Syncope, in No. 176.....	1 “
Quite faint, in No. 247.....	1 “
Somewhat debilitated, in Nos. 203, 206.....	2 “
Very faint, in No. 178.....	1 “
Seemed weak, in No. 182.....	1 “
Unfavorable on the whole, in No. 166.....	1 “
Not materially affected, in Nos. 159, 163, 165, 168, 170, 171, 173, 174, 175, 179, 180, 183, 184, 201, 202, 204, 215, 220, 227, 263, 267, 269, 270, 271, 275, 276, 277.....	27 “

Distributing the fatal cases in the several classes to which they belong, we find that among those in which *grave symptoms* were present, viz., those in which the condition is spoken of as “Reduced to the last extremity,” “Very much reduced,” “Bloodless,” “Unfavorable on the whole,” 11 died, viz., Nos. 162, 166, 167, 172, 181, 199, 200, 210, 229, 231, 268. Among those recorded as “Not materially affected,” “Seemed weak,” 3 died, viz., Nos. 163, 171, 182.

Of the eleven deaths which occurred under grave symptoms, in Nos. 162, 166, 167, 172, 181, 200, 231, 268, it seems to be directly referable to the loss of blood which had taken place. In No. 199, the mother was in the last stages of phthisis, and already exhausted from hemoptysis. In No. 210 the result is attributed to irritative fever, produced by absorption of putrid matter. In No. 229 is to be found another instance of the rigidity of the os persisting, after a quantity of blood, sufficient to produce dangerous exhaustion, had been lost; a condition apparently incompatible with the circumstances of the labor, but nevertheless often found.

Of the 3 deaths which took place under what may be called favorable circumstances, in No. 163 it is difficult to trace the result to the true cause. The autopsy showed the death to have been occasioned by pleurisy. In No. 171 the same remark holds good as to the cause. In this case, deep-seated inflammation of the uterus came on, but it certainly was not specially referable to the particular form of the delivery. In No. 182 the record is, “died of phlebitis on the 10th day.” In this case, as in the one last mentioned,

the conditions of the delivery were not such as to warrant a fatal prognosis.

The hemorrhage is stated to have been

None at all, in No. 227.....	1 case.
Not more than usual, in Nos. 202, 203, 205, 206.....	4 “
Not before rupture of membranes, in No. 247.....	1 “
None before labor, then slight, in No. 249.....	1 “
Began when labor commenced, in No. 261.....	1 “
For a week, in No. 251.....	1 “
Continual, but not great, in No. 257.....	1 “
Copious at first, but afterwards less, in Nos. 184, 277b.....	2 “
At intervals, in Nos. 214, 276, 277c.....	3 “
Continual for two months, in Nos. 221, 222.....	2 “
Did not increase with pains, in No. 271.....	1 “
With every pain, in No. 224.....	1 “
Not much, in Nos. 163, 173, 180, 183, 185, 186, 187, 204, 219, 253, 254, 269, 277.....	13 “
Presumed to be great, in Nos. 181, 182, 199, 229, 240, 241, 244, 264, 268.....	9 “
Considerable, in Nos. 168, 210, 215, 226, 231, 246, 248, 270.....	8 “
Had lost much blood, in Nos. 160, 228.....	2 “
Severe, in No. 212.....	1 “
Great, in Nos. 169, 172, 218, 220, 223, 245, 255, 259, 265.....	9 “
Profuse, in Nos. 161, 164, 166, 167, 174, 176, 177, 178, 179, 200, 208, 209, 216, 217, 225, 230, 237, 238, 239, 252, 256, 258, 260, 262, 263, 267, 273, 274, 275.....	29 “
Increased as labor progressed, in Nos. 159, 170, 201, 207.....	4 “

Of the 94 cases enumerated as above, 61, or two-thirds, were of a dangerous character. Compared with the whole number in the table, they are about one-half. The fatal cases all come within the 61 mentioned above, except one, viz., No. 163, in which the record is, that “but little blood had been lost.”

In Nos. 162, 165, 166, 218, 219, 238, 252, 270..... 8 cases,

The hemorrhage continued after delivery. In two of these, Nos. 162, 166, a fatal result followed.

The membranes were ruptured, in

Nos. 159, 161, 164, 165, 167, 168, 170, 171, 172, 173, 174, 175, 177, 178, 179, 182, 184, 193, 194, 195, 196, 197, 198, 200, 206, 207, 209, 211, 212, 213, 214, 216, 218, 219, 223, 226, 228, 230, 231, 236, 237, 240, 241, 243, 266, 270, 275, 277a.....	48 cases.
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In Nos. 212, 223, an attempt was made to turn, but not succeeding, the case was left to nature, which completed the delivery. In No. 161 the hemorrhage was temporarily checked. In Nos. 181, 222, the placenta did not come away for some time, but there was

no renewal of the hemorrhage. In No. 181 the removal of the placenta was immediately followed by death. In the others the hemorrhage was checked.

The tampon was used alone, in Nos. 162, 163, 166, 229, 246, 257, 259, 262	8 cases.
In connection with other remedies, in Nos. 205, 206, 207, 208, 209, 210, 220, 225, 265, 273, 277b, 277c	12 "
Ergot alone and in combination, in Nos. 200, 209, 214, 216, 218, 220, 225, 227, 228, 231, 237, 248, 252, 254, 266, 270, 276, 277b, 277c	19 "
Opium alone had a very beneficial effect, in No. 263	1 "
It was used in combination, in Nos. 205, 207, 208, 210, 220, 265, 273 ..	7 "
Lead and opium, in Nos. 204, 257, 269	3 "
Application of cold was made, in Nos. 180, 203, 219, 228, 252, 259, 269 ..	7 "
Acids, in Nos. 165, 206, 225	3 "
Astringents, in No. 259	1 "
Bleeding, in Nos. 258, 259	2 "

Distributing the fatal cases where they belong, we find that among those where the tampon was used alone, in Nos. 162, 163, 166, 229, 4 cases, the mothers died. In No. 162 it was effectual in controlling the hemorrhage *before delivery*, but afterwards, the flooding came on again, and could not be checked by its reapplication, nor any other means. It was also successful in controlling the bleeding in No. 163, but the patient sunk and died in about two hours, from no appreciable cause, the hemorrhage not having returned. In No. 166 it arrested the discharge *before delivery*, but the hemorrhage kept up afterwards. In No. 229, Dr. Oldham remarks, that the plug had been of great service not only in controlling the hemorrhage, but in stimulating the uterus to action.

Where it was used with other remedies, in No. 210, the fatal result is to be attributed not so much to loss of blood as to absorption of putrid matter.

In No. 200, where ergot was used alone, it seemed to have had the desired effect, but the condition of the mother, "reduced to the lowest degree of exhaustion," prevented its securing a favorable result. She died in fifteen minutes.

In one case, No. 218, the hemorrhage was finally checked, by the direct application of alum to the cavity of the uterus.

In one case, No. 258, the upright position was resorted to, to control the flooding, and with reported success. (For the details of this case see *Index, sub Legroux.*)

Transfusion, to the extent of $\frac{3}{4}$ xvii, was performed in one case, No. 223. It was successful after the second injection.

Ether was given once, in No. 252. In this case there was no hemorrhage during the delivery, which progressed with the ordinary symptoms; but "an immense discharge of water followed the child, and excessive hemorrhage set in instantaneously, reducing the mother in a few minutes to a state of collapse." It had been given during the last ten minutes of labor.

In regard to the frequency of the recurrence of Placenta Prævia, in the same individual, Nos. 258, 259 were successive pregnancies in the same mother, and in No. 260, it is stated, that the case reported was the second in succession also. (For the account of the previous pregnancy see No. 776, table 6th.)

If we compare the mortality of the preceding table, with that of table 1st, it will be found to be, as $11\frac{2}{3}$ to 0. Compared with table 2d, it is as $11\frac{2}{3}$ to $19\frac{1}{4}$; showing that partial separation, with natural delivery, is as much safer to the mother than spontaneous separation of the placenta with artificial delivery, as the difference between the two proportions. This will also be found to be in accordance with the general results arrived at from the data furnished by the first four tables, which prove apparently that it is the method pursued in relation to the child, which influences the result, rather than the disposition of the placenta. Compared with the results from table 3d, it is as $11\frac{2}{3}$ to $6\frac{1}{2}$, showing that the conditions with regard to the child being equal, the separation of the placenta increases the safety of the mother, by the amount of the difference between them; that is to say the chance of safety to the mother, is 5 per cent. greater if the placenta is entirely separated, than if only a portion of it is detached. Compared with table 4th, it is as $11\frac{2}{3}$ to $21\frac{7}{10}$, showing that the mother has twice the chance of safety, under the conditions of table 5th, than if both placenta and child be artificially delivered. All of which comparisons go to sustain the conclusion previously drawn from the data of the four preceding tables.

TABLE VI.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF OS.
278	Mauriceau, Obs. 8, Aug. 18, 1669.	.....	.....	Pre- sumed full term	"Just ready to ex- pire."	Very great.	.....
279	Ibid., Obs. 55, Mar. 16, 1672.	.....	.....	7	Much reduced; "faint- ed frequently."	Very great.	.....
280	Ibid., Obs. 59, April 21, 1672.	.....	.....	6½	Fainted often.	Excessive for 6 hours; continued till delivery.	Rigid
281	Ibid., Obs. 68, June 22, 1672.	.....	.....	9	.....	Slight for a month.	.....
282	Ibid., Obs. 175, July 31, 1676.	.....	.....	8	.....	For 3 days; brought on by a severe jar.	.....
283	Ibid., Obs. 210a, Jan. 13, 1678.	.....	.....	7	Much exhausted.	Kept up till delivery.	.....
284	Ibid., Obs. 210b, May, 1678.	.....	.....	7	In a deplorable state.	.....	.....
285	Ibid., Obs. 423, Jan. 8, 1686.	.....	.....	8½	Very feeble.	For more than a month; at first slight, at last excessive.	.....
286	Ibid., Obs. 428, Mar. 24, 1686.	.....	.....	9	Very much exhaust- ed; fainting repeat- edly.	For a month, at intervals; mod- erate at first, at last excessive.	.....
287	Ibid., Obs. 438, May 5, 1686.	.....	.....	.....	Utterly exhausted; fainting continually; much hurt by a fall some days previous.	Excessive for 12 hours.	Undilated; thick and hard.
288	Ibid., Obs. 454a, Oct. 13, 1686.	.....	.....	7	.....	For 3 or 4 months, at intervals; excessive at the last.	.....
289	Ibid., Obs. 454b, Jan. 8, 1686.	.....	.....	7	.....	Considerable for a long time.	.....
290	Ibid., Obs. 484, May 23, 1687.	.....	.....	8½	Almost moribund.	Continued until delivery.	.....
291	Ibid., Obs. 502, Sept. 6, 1687.	.....	.....	8	Almost moribund.	For 15 days.	.....
292	Ibid., Obs. 602, Dec. 9, 1690.	.....	.....	7	In great danger.	Hæmorrhage was increasing fast.	.....
293	Ibid., Obs. 651, Aug. 2, 1692.	.....	.....	6	Fainting repeatedly.	.....	.....
294	Ibid., Dernieres Observations, No. 57, July 15, 1696.	.....	.....	8	Just ready to expire.	For 3 weeks.	.....
295	Portal, Case 2, Oct. 9, 1664.	.....	.....	8	Scarce able to speak.	Continual for 8 days.	Dilated; thin.
296	Ibid., Case 41, Feb. 16, 1672.	.....	.....	.....	.....	Five days before; recurred just before delivery.	Dilatable.
297	Ibid., Case 51, Aug. 24, 1672.	.....	.....	.....	"In imminent danger of her life."	Great.	Dilatable.
298	Ibid., 1683.	.....	.....	.....	.....	.....	.....
299	Ibid., 1683.	.....	.....	.....	.....	.....	.....
300	Ibid., 1683.	.....	.....	.....	.....	.....	.....
301	Ibid., 1683.	.....	.....	.....	.....	.....	.....
302	Ibid., 1683.	.....	.....	.....	.....	.....	.....
303	Ibid., Case 55, Sept. 21, 1672.	.....	1	.....	.....	.....	.....
304	Ibid., Case 79, July 16, 1682.	.....	.....	8	Fainted entirely away.	At 7th month; recurred just be- fore labor; had lost a large quantity.	Open to size of a French crown-piece; dilatable.
305	Lamotte, Obs. 324, July 23, 1702.	.....	.....	.....	"In great peril," owing chiefly to the violence of the mid- wife in her efforts to produce delivery.	Great.	.....
306	Giffard, Case 10, Dec. 5, 1725.	.....	.....	.....	Had no pains; mem- branes had rup- tured and waters discharged.	Six weeks before, had flooded.	Dilated to the size of a crown-piece; very thin.
307	Ibid., Case 18, May 18, 1728.	.....	.....	.....	Had a convulsion a short time previous- ly from the effects of the flooding.	Had "lost a large quantity of blood."	Fully di- lated.
308	Ibid., Case 19, May 29, 1728.	.....	.....	.....	Exhausted.	Ten days before, had been at- tacked by flooding, which was stopped until the date of deliv- ery; not very great, but con- tinual.	Admitting the ends of 4 fingers.

1. *Placenta. Labor completed by Artificial Means.*

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
.....	Foot and knee.	Foot drawn down and child extracted.	Recovered.	Died.	Child lived long enough to be baptized.
.....	.....	Turning.	Recovered.	Died.	Child lived 24 hours.
.....	Head.	Turning.	Recovered.	Lived.	.....
Par. l.	Head.	Turning.	Recovered.	Lived.	Funis between the thighs, and twice around the neck.
.....	.....	Turning.	Recovered.	Died.	Funis three times round the child's neck.
.....	Shoulder and cord.	Turning.	Recovered.	Died.	.....
.....	.....	Turning.	Recovered.	Lived.	.....
Par. l.	.....	Turning.	Recovered.	Lived.	.....
.....	.....	Turning.	Recovered.	Lived.	.....
.....	Knee.	Turning.	Died.	Dead.	Died in 2 hours.
.....	.....	Turning.	Recovered.	Lived.	} These two cases occurred in the same woman; the child in Obs. b. lived 2 or 3 hours.
.....	.....	Turning.	Recovered.	Died.	
.....	.....	Turning.	Died.	Dead.	In 12 days, of "a flux in the belly and a great fever;" Mauriceau thinks she did not die of the operation at delivery.
.....	.....	Turning.	Recovered.	Lived.	.....
.....	Shoulder.	Turning.	Recovered.	Lived.	.....
.....	.....	Turning.	Recovered.	Died.	.....
Par.	.....	Turning.	Recovered.	Lived.	.....
Com. te.	.....	Turning.	Recovered.	Died.	Portal's remark in this case is, "which," i.e. the placenta, "having gently separated from the womb."
Com. te.	.....	Turning.	Recovered.	.....	.....
Com. te.	.....	Turning.	Recovered.	Lived.	.....
.....	.....	Turning.	Recovered.	.....	.....
.....	.....	Turning.	Recovered.	.....	.....
.....	.....	Turning.	Recovered.	.....	.....
.....	.....	Turning.	Recovered.	.....	.....
.....	Funis.	Turning.	Recovered.	Dead.	Child presented in a doubled position; mother was advanced in years.
Com. te.	.....	Turning.	Recovered.	Died.	Portal's remark in this case is, "I felt the after-burthen fastened quite around the circumference of the orifice."
Mor. an one of it h in t gin Com. e.	.....	Hand introduced by the side of the placenta: child turned and brought down by the feet.	Recovered.	Died.	Hemorrhage kept up after delivery, and was stopped only by the greatest perseverance in remedies, cold applications being used with freedom.
.....	Head.	Turning by one foot.	Recovered.	Lived.	.....
Plac. pro- trus into the vagina with pain Parti	Head.	Turning by the feet.	Recovered.	Died.	.....
.....	.....	Turning by one foot.	Recovered.	Lived.	.....

TABLE VI.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF C
309	Giffard, Case 25, July 27, 1728.	.....	.....	Full time.	.....	Had flowed, at intervals, for some weeks, but not violently.	Fully di- lated.
310	Ibid., Case 41, Sept. 16, 1728.	.....	.....	.....	Had had one or two convulsions, and was much exhausted.	Three weeks before, had flooded; commenced again at delivery; great.	Admitting the ends all the fingers.
311	Ibid., Case 56, Dec. 22, 1728.	.....	.....	.....	"Very weak from large effusion of blood;" membranes had ruptured and waters discharged.	Had flooded some hours.	Fully di- lated.
312	Ibid., Case 82, Aug. 27, 1729.	.....	.....	.....	Fainted several times.	Was taken with flooding several days before, which returned at intervals; on the morning of delivery it returned with great violence, and without cessation.	Dilatable, admitting the ends the finger
313	Ibid., Case 84, Sept. 18, 1729.	.....	.....	.....	"Great faintings, and had several convul- sive fits;" pains strong.	Flooded for some hours, in large quantities.	Fully di- lated.
314	Ibid., Case 85, Sept. 18, 1729.	.....	.....	7	Very faint and weak.	Had been flowing for 3 or 4 weeks.	Dilated to the size of shilling.
315	Ibid., Case 88, Oct. 10, 1729.	.....	.....	9	"Fainted several times; was in a cold sweat."	Excessive for 5 or 6 hours.	Dilatable.
316	Ibid., Case 175, Feb. 9, 1729-30.	.....	.....	8	"Very low and weak."	Had been flowing 3 hours, with no pains.	Admitting 3 fingers.
317	Ibid., Case 116, Feb. 25, 1729-30.	.....	.....	7½	"Very low and lan- guid."	First began to flow a few days before, which returned 2 or 3 times; labor commenced with flooding, without pain.	Open to ad- mit the ends of the fingers.
318	Ibid., Case 118, April 1, 1730.	.....	.....	6	.....	Had been going on for some days, not very violently.	Open to admit 3 fingers.
319	Ibid., Case 120, April 8, 1730.	.....	.....	7	Without pulse or mo- tion; in a cold sweat.	Six or seven days before, was attacked with flooding; yielded to remedies; returned after a ride in a wagon.	Well dilat
320	Ibid., Case 121, April 27, 1730.	.....	.....	9	"Reduced very low."	A large quantity lost that morn- ing; there had been a draining for some days before.	Well dilat
321	Ibid., Case 158, Nov. 11, 1730.	.....	.....	Full time, nearly.	In fainting fits.	Flooded "some hours," with very little pain.	Admitting fingers, b hard rou the edges as if from injury in previous labors.
322	Ibid., Case 160, Nov. 19, 1730.	.....	.....	7½	Constantly fainting; grinding pains in back.	Flooding kept on increasing.	Well dilat
323	Ibid., Case 185, Feb. 14, 1730-31.	.....	.....	7	Low and weak; had fainted several times.	Flooded for nearly 3 weeks, at intervals.	Well dilat admittin ends of fingers a thumb.
324	Ibid., Case 224, Oct. 13, 1731.	.....	.....	.....	Fainted once or twice.	Not violent for some days; for an hour or so before arrival it became worse and worse.	Well dilat
325	Amand, Obs. 20, Dec. 26, 1693.	.....	.....	7½	Very feeble.	For 12 hours, in considerable quantity.	.....
326	Levret, Accouch. Labor, edition of 1780; Obs. 16, p. 62.	.....	.....	7	Pulseless; without pains.	The flooding was "prodigious."	Partially dilated; size of a crown-pic
327	Ibid., Obs. 17, p. 64.	.....	.....	9	.....	Flooding began 24 hours before delivery; slight in quantity at first, but it increased as the os dilated.	Dilated to the size of crown-pic

Placenta. Labor completed by Artificial Means—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
Partial; edge protruding from os.	Transverse.	Turning by the feet; during the version a convulsion fit supervened.	Recovered.	Lived.	.....
Partial;	.....	Turning by both feet.	Died.	Died.	Mother lived half an hour.
Partial.	Head and cord.	Turning by one foot.	Recovered, probably.	Died.	Os uteri so high up as to require the introduction of the whole hand to reach it; cord three times around the child's neck, notwithstanding the prolapse of a portion of it.
Partial.	Head.	Turning by the feet.	Recovered.	Lived.	Cord around the child's neck; flooding ceased immediately after the delivery of the child; placenta was found loose in the vagina and extracted.
Partial.	Head.	Turning by both feet.	Recovered.	Lived.	Uterus contracted before the placenta was withdrawn, causing some trouble; he advises an early delivery of the placenta in all cases, for this reason.
.....	Head.	Turning by one foot.	Recovered.	Lived.	Flooding ceased immediately.
Partial.	Head.	Turning by both feet.	Died.	.....	Flooding ceased after delivery, but she died in 2 hours.
Complete.	.....	Turning by one foot.	Recovered.	Lived.	.....
Complete.	.....	Turning by both feet.	Recovered.	Lived.	.....
Partial.	.....	Turning by one foot.	Recovered.	Dead.	Child putrid.
portion protruding into vagina.	.....	Turning with both feet.	Recovered.	.....	.....
Partial.	.....	Turning by both feet.	Recovered.	.....	Flooding stopped immediately after delivery.
Partial.	Head.	Turning by both feet.	Recovered.	Lived.	.....
Partial.	.....	Turning by both feet.	Died.	.....	Placenta came away immediately, but hemorrhage kept on, and she died in a few hours.
Partial.	.....	Turning by one foot.	Recovered.	Died.	Placenta followed delivery immediately, and flooding ceased.
Complete.	.....	Turning by both feet; head delivered with difficulty.	Recovered.	Dead.	.....
.....	Foot.	Placenta pushed aside; turning by both feet.	Recovered.	Lived.	.....
Complete.	.....	Placenta separated on the side towards the rectum; turning.	Recovered.	Both died.	A twin case.
Complete.	.....	Placenta partially separated; turning.	Recovered.	Dead.	.....

TABLE VI.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG-NANCY.	MONTHS PREG-NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF C
328	Levret, Accouch. Labor, edition of 1780; Obs. 18, p. 65, June 10, 1748.	40	Multi-para.	9	Cold, senseless, and almost without pulse.	Was awakened by a feeling of weakness; found herself bathed in blood.	Dilatable.
329	Levret, l'Art des Accouch., ed. 1766, p. 369, March 18, 1752.	35	Multi-para.	8	Very feeble; without pains.	For 8 days, very abundant.	Rigid; abo the size of crown-pie
330	Ibid., p. 370, July, 1751.	.....	10	7½	Very feeble; pains weak.	Very great for 6 days.	.....
331	Chapman, Treatise on the Imp. of Mid., p. 244, Feb. 6, 1733.	.....	.....	.....	.....	Was taken flooding 3 weeks previous, which was stopped, and did not return till 12 hours before arrival; no pains.	Well dilat
332	Smellie, Collect. 18, No. 3, Case 7a, 2d Obs.	.....	.....	.....	.....	On first arrival but little; increased as the os dilated.	Fully open
333	Ibid., Collect. 33, No. 2, Case 3, A.D. 1746.	.....	Multi-para.	.....	Almost pulseless; in a cold sweat; fainting frequently.	At intervals, for 3 days; increasing as os dilated.	Largely of
334	Ibid., Case 5, A.D. 1748.	.....	.....	.....	Very low and pale.	Great.	Fully dilated.
335	Ibid., Case 6, A.D. 1752.	.....	.....	.....	Pale and fainting.	Was seized, while on the "vessel," with a flooding, which filled it nearly full, and which continued to pour from her till she fainted	Largely of
336	Ibid., Case 10, A.D. 1750.	.....	.....	.....	"Faintish, with scarce any pulse;" extremities cold.	For 8 or 10 days; brought on by coughing; had been bled, once to the extent of 10 oz.	Largely d lated.
337	Ibid., Collect. 33, No. 2, Case 12, A.D. 1746.	.....	.....	Nearly full time	No pains.	Kept on increasing from the time of its accession.	.....
338	Ibid., Case 14.	.....	.....	9	In the morning, on the appearance of the flooding, had been bled, and taken an opiate, with a saline draught; in the evening, being sent for in great haste, found her "just a dying."	On arrival, blood was "pouring" from her.	Much to o side, and almost entirely undilated
339	Ibid., Case 16, A.D. 1750.	.....	6	8	Excessively weak; faint and low.	Had flooded, at times, for 2 months.	Lax; open to the breadth of half a crown.
340	Leroux, Obser. sur les pertes de sang, Obs. 38, p. 113, A.D. 1767.	.....	1	.....	Extremely feeble; pulse frequent and small.	Had lost a "prodigious" quantity the night before.	Soft, but not much dilated.
341	Ibid., Obs. 39, p. 115, Dec. 19, 1772.	.....	7	.....	Much reduced; more feeble than the preceding.	For 15 hours; at the last it became frightful.	.....
342	Ibid., Obs. 40.	.....	.....	.....	Great weakness.	For 2 days.	.....

Placenta. Labor completed by Artificial Means—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
A portion ligated by the os uteri, and protruding into the vagina.	Head.	Hand passed by the presenting portion; membranes ruptured, feet seized, and turning accomplished, during which operation, at every attempt to introduce the hand, the pains and flooding were very much increased.	Recovered.	Lived.	
Complete.		Placenta partially separated towards the rectum; turning by both feet.	Recovered.	Died.	
Complete.	Head.	A portion of the placenta separated; turning.	Recovered.	Lived.	
		Hand passed by; membranes ruptured, and child turned.	Recovered.	Lived.	
Complete.		Membranes ruptured; turning by the feet.	Recovered.	Lived.	
Complete.	Head.	Membranes ruptured; turning by the feet.	Recovered.	Died.	
Partial.		Turning by the feet.	Recovered.	Lived.	
Partial.	Head and a loop of funis.	Membranes ruptured; turning by the feet; child left in this condition till strength came back, when delivery was completed.	Recovered.	Lived.	In this case, Smellie, afraid to make use of his favorite mode—rupturing the membranes—on account of the prolapse of the cord, which he feared might suffer from pressure, "resolved to turn the child, and bring it along in the preternatural way, which would give a better chance to restrain the one," <i>i.e.</i> flooding, "and save the other, if the operation could be performed in a slow, cautious manner."
Partial.		A portion of the placenta, which had got separated from the rest, was first taken away; the child was then turned by the feet.	Recovered.	Died.	Child was putrid.
	Head.	Turning by the feet.	Recovered.	Lived.	
Complete.		Turning by the feet.	Recovered.	Lived.	In the hurry to save the mother, the child's arm was broken; after delivery, mother nearly died from a fainting fit.
	Head.	Turning by the feet.	Died.	Died.	Child putrid; mother apparently doing well, was seized with rigors and fever, accompanied with delirium, and died on the fourth day.
Complete.	Face.	Turning by the feet.	Recovered.	Died.	After turning had been performed, delivery was left to nature, while the operator employed himself in watching the order and strength of the uterine contractions by placing his hand upon the abdomen of the patient; the hemorrhage ceased after turning.
Partial.	Head.	Turning by one foot.	Recovered.	Died.	Flooding ceased after the turning; no means were taken to accelerate delivery, which terminated in three-quarters of an hour; the placenta was retained for some time by irregular contraction of the uterus.
		Turning.	Died.	Lived.	Leroux says this woman died from being delivered too quick.

TABLE VI.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF
343	Leroux, <i>Obser. sur les Pertes de Sang</i> , Obs. 98, Oct. 11, 1771.	.....	.....	8	When first called, not very weak, but in the course of an hour she became very weak, nearly falling into syncope.	The flooding at first was slight, as were the pains, but as the latter increased, the hemorrhage came on worse and worse.	Thick, and but little dilated at first, and dilated very slowly.
344	Rigby, <i>Essay on Uterine Hem.</i> , ed. of 1822, Case 6, Dec. 1, 1772.	.....	.....	.....	Extreme faintness.	A considerable time, and had lost a large quantity of blood.	Easily dilated.
345	<i>Ibid.</i> , Case 7, Dec. 29, 1772.	.....	.....	.....	Greatly sunk; appeared to be near dying.	Many hours, and had lost an immoderate quantity of blood.	.....
346	<i>Ibid.</i> , Case 13, June 27, 1773.	.....	.....	.....	Fainting; pains had ceased.	Much for several hours.	Quite shut.
347	<i>Ibid.</i> , Case 15, Jan. 21, 1774.	.....	.....	.....	Seemed to be dying.	At first small; after an interval of about 24 hours, it came on with great violence, reducing her to the condition recorded in a very short time.	"Uterus shut, though loose and relaxed."
348	<i>Ibid.</i> , Case 24, June 19, 1775.	.....	.....	8½	Very faint.	For several hours; in the last half hour discharge had greatly increased.	But little open; dilatable.
349	<i>Ibid.</i> , Case 26, Aug. 20, 1775.	.....	8	9	Of delicate constitution, and for several years in bad health; pains had been present a day before flooding set in; pains then left her for a time.	At the first onset, in a gush, afterwards slowly trickling from the uterus; became more rapid and considerable as the pains increased.	At first very rigid, contracted closely about the fingers; dilated as hemorrhage persisted.
350	<i>Ibid.</i> , Case 31, May 1, 1776.	.....	.....	9	.....	Many hours; much blood lost; flooding commenced with first pains.	.....
351	<i>Ibid.</i> , Case 35, Aug. 27, 1776.	.....	Multi-para.	9	Extremely faint.	For some days had slight pains, with an increasing discharge of blood.	Not much opened, relaxed.
352	<i>Ibid.</i> , Case 37, Nov. 28, 1776.	.....	.....	9	.....	At times for 3 or 4 weeks; pains, accompanied with bloody discharge, set in on the 18th; ceased in a short time, and did not return till 28th.	Dilatable.
353	<i>Ibid.</i> , Case 43, Oct. 26, 1777.	.....	.....	7½	"In a most alarming syncope."	For more than a month; an hour and a half after arrival a gush of blood occurred, which threw her into a syncope.	Fully dilated.
354	<i>Ibid.</i> , Case 46, April 16, 1778.	.....	3	9	.....	Hemorrhage set in with the very first pains in trifling quantity, which increased in exact proportion to the force of her pains.	Fully dilated, perfectly soft and
355	<i>Ibid.</i> , Case 47, July 3, 1778.	.....	.....	9	Faint to an extreme.	Several hours; had lost an excessive quantity.	"Sufficiently dilated."

Placenta. Labor completed by Artificial Means—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
Partial.	Feet.	Turning by one foot.	Recovered.	Lived.	Being hindered by the attendants from proceeding to immediate delivery, and also perceiving that it was impossible to enter the uterus from want of sufficient dilatation of the os, he put into practice an expedient for arresting the flooding. "I applied," says he, "that portion of the placenta which presented, to the internal surface of the os, from which it was separated, and held it there with two fingers, while with the other, from time to time I dilated the orifice. This operation, which I think has never been reported by any one, and which is very sure and very satisfactory, succeeded perfectly."
Complete.	.....	Turning.	Recovered.	Died.	.....
Complete.	.....	Turning performed without trouble, but the pelvis being narrow and distorted, the brain was evacuated, and the head pulled away by aid of the blunt hook.	Died.	Dead.	Died the following morning from the effects of the labor.
Complete.	Head.	An unsuccessful attempt was made to perforate the placenta; turning was then performed by the feet.	Recovered.	.....	Mother seemed hardly alive for many hours; in this case Rigby remarks: "The ease with which the turning was effected, and the success which attended it, confirm the remark" made in a former case, "that it is sometimes justifiable to deliver where the os uteri is not dilated to the size of a shilling or a half-crown."
Complete.	.....	Turning.	Died.	Died.	In this case Rigby makes the distinction "between floodings which are <i>accidental</i> and those which are <i>unavoidable</i> ." Soon after the commencement of the flooding, the attending physician had bled her, with the apparent effect of checking it.
Partial.	Head.	Turning.	Recovered.	Died.	.....
Partial.	.....	Turning.	Recovered.	Lived.	.....
.....	.....	Turning.	Recovered.	Lived.	.....
.....	.....	Turning.	Recovered.	Died.	.....
.....	Breech.	Feet drawn down.	Recovered.	Lived.	.....
.....	.....	Turning by one foot during the syncope.	Recovered.	Died.	.....
.....	.....	Turning.	Recovered.	Died.	.....
.....	.....	Turning; the placenta afterwards separated with great difficulty from its attachments, an hour and a half being occupied in so doing, during which time the flowing kept up.	Died.	.....	.....

TABLE VI.—*Partial Separation of t*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF
356	Rigby, Essay on Uterine Hem., ed. of 1822, Case 48, Jan. 25, 1779.	.....	.....	9	.....	Had several attacks of slight flooding for some days; more profuse at time of delivery.	Sufficient soft and yielding
357	Ibid., Case 49, Mar. 6, 1779.	.....	.....	9	.....	Considerable, but not enough to put her in danger.	"Sufficien dilated."
358	Ibid., Case 50, April 4, 1779.	.....	.....	.....	.....	Not a great quantity, or for a long time.	Soft and yielding
359	Ibid., Case 54, Mar. 24, 1780.	.....	3	9	Extremely faint.	Had lost a large quantity.	Lax.
360	Ibid., Case 56, July 1, 1780.	.....	.....	.....	.....	"A considerable hemorrhage."	.....
361	Ibid., Case 57, July 23, 1780.	.....	.....	.....	.....	"Had been in labor and flooding the greatest part of the day."	.....
362	Ibid., Case 58, Dec. 28, 1780.	.....	.....	8	"Reduced very much."	"Hemorrhage excessive."	Perfectly loose an yielding
363	Ibid., Case 61, Feb. 4, 1782.	.....	.....	8	.....	"Suddenly seized with a profuse discharge from the uterus."	But little lated.
364	Ibid., Case 62, Feb. 24, 1782.	.....	.....	9	.....	"Labor began with a consider- able flooding."	Dilated.
365	Ibid., Case 66.	.....	.....	9	Very much reduced.	As the os dilated hemorrhage became profuse.	.....
366	Ibid., Case 68, Aug. 20, 1782.	.....	Multi- para.	9	"Very much re- duced."	For many hours, with occasional pains.	"Conside ably opt
367	Ibid., Case 69, Nov. 21, 1782.	.....	.....	9	.....	"Lost a good deal of blood."	.....
368	Ibid., Case 75, Dec. 14, 1783.	.....	Multi- para.	6½	Reduced to the lowest point.	Hemorrhage first came on at 3 months, and recurred at inter- vals till delivery, when it came on most profusely.	But little lated.
369	Ibid., Case 81, July 6, 1784.	.....	.....	.....	Reduced to the last extremity.	An excessive quantity had been lost; first came on several weeks before, and recurred at intervals.	Perfectly loose.
370	Ibid., Case 82, July 11, 1784.	42	.....	8	Had been ill from a fever for more than a week.	A few hours; small at first, but increased as the pains became stronger.	Loose an latable.
371	Ibid., Case 83, Sept. 7, 1784.	.....	9	9	"Very languid;" pains abated.	Labor came on with flooding in the forenoon; returned at noon; discharge kept up.	Consider- dilated.
372	Ibid., Case 87.	.....	4	9	"In much danger."	"Labor commenced with a very formidable discharge of blood."	"Very loc
373	Ibid., Case 88, Feb. 15, 1785.	.....	.....	.....	.....	"Flooding considerably."	.....
374	Ibid., Case 89, June 28, 1785.	.....	Multi- para.	.....	Bad.	"Had lost a great quantity."	.....
375	Ibid., Case 96, Sept. 30, 1786.	.....	.....	7	.....	"A considerable quantity."	.....
376	Ibid., Case 97, Dec. 8, 1786.	.....	Multi- para.	8	.....	A slight hemorrhage occurred in the middle of 7th month, which was controlled; 6 weeks after, at date, it returned "to an alarming degree."	"Sufficien soft."
377	Ibid., Case 98, Mar. 13, 1787.	.....	.....	9	In the utmost state of destitution and mis- ery; a pauper; re- duced by flooding to the last extremity.	Had been flooding for a day or two, and had had nothing done to prevent it.	Perfectly laxed.
378	Ibid., Case 101, Jan. 18, 1788.	.....	10	9	"In a formidable state of faintness."	A month before date had a slight hemorrhage; recurred the even- ing previous to delivery; to- wards morning there was a sudden access of pain, with an excessive gush of blood, which sunk the patient instantly.	"Conside ably di- lated."
379	Ibid., Case 105, June 6, 1788.	.....	.....	7	Very faint.	A slight discharge of blood when labor commenced, the day be- fore, which increased as it pro- gressed, accompanying every pain.	Very wel lated.

Placenta. Labor completed by Artificial Means—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
complete.	Turning by the feet.	Recovered.	.....	Discharge immediately stopped.
.....	Turning by the feet.	Recovered.	Lived.	.....
.....	Breech.	Feet drawn down.	Recovered.	.....	.....
complete.	Turning.	Recovered.	.....	Was a long time getting up.
.....	Turning by the feet.	Recovered.	.....	.....
.....	Turning.	Recovered.	Lived.	.....
.....	Turning.	Died.	.....	Seized with a fever on the third or fourth day, and died soon after.
complete.	Turning; rather more difficulty than usual in passing the hand into the uterus.	Recovered.	Lived.	.....
.....	Turning.	Recovered.	.....	.....
.....	Turning.	Recovered.	.....	.....
complete.	Turning.	Recovered.	.....	.....
.....	Turning.	Recovered.	.....	.....
complete.	Head.	Fingers introduced one at a time into os, and dilatation completed; with great difficulty and caution the feet were seized, and turning performed.	Recovered.	.....	Unable to walk, from weakness and debility, for several months, but at last recovered health.
.....	Turning.	Died.	.....	Lived about half an hour.
.....	Turning.	Died.	.....	A victim to the fever, rather than the operation.
complete.	Turning.	Recovered.	Lived.	Finding her languid, and the discharge still going on, Rigby delivered her immediately, without waiting for pains.
complete.	Turning.	Recovered.	.....	Remained extremely faint for several hours after the extraction of the child.
.....	Turning.	Recovered.	Lived.	Patient suffered no other injury from the hemorrhage than being a little weakened.
complete.	Turning.	Died.	Lived.	On the third day a fever set in, and she soon died.
complete.	Turning.	Recovered.	Lived.	.....
complete.	Turning.	Recovered.	Lived.	"Child at first small and delicate."
complete.	Turning.	Died.	Died.	.....
complete.	Turning.	Recovered.	.....	Bad symptoms disappeared before next day.
complete.	Turning by the feet.	Recovered.	Died.	.....

TABLE VI.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF
380	Mad. Lachapelle, Mem. 6, No. 8, Oct. 7, 1821.	25	2	7	Complained of head- ache; skin hot and dry; pulse quick; was bled 6 ounces, with some relief; hemorrhage soon reappeared, and the tampon was applied.	First noticed in the 5th month; continued at intervals till it weakened her very much.	When tam- pon was moved, it was found to be dilated.
381	Ibid., No. 9.	40	16	6	.....	Commenced a few days previous to the delivery, and lasted nearly a whole day; reappeared soon after; entered hospital immediately; tampon.	On the th day of la it com- menced t dilate; up that time had all t character istics of t period of pregnanc At first rig dilated v slowly.
382	Ibid., No. 10, June 1, 1815.	27	1	7½	Exceedingly feeble; small and frequent pulse; countenance altered.	Began a month before, at inter- vals; at last so great that she went to hospital.	
383	Ibid., No. 13.	25	.....	8	Reduced to extrem- ity; had been unable to get any accouch- eur to attend her.	For 6 weeks in great quantity.	Open suffi- ciently to admit th hand.
384	Ibid., No. 14, i.	.....	.....	8½	.....	Commenced some days before entrance into hospital, slight at first; reappeared at intervals of 3 and 5 days, the last time in such profusion that the tampon was applied, which increased the flowing.	Dilated.
385	Ibid., No. 14, ii., Jan. 14, 1810.	21	1	6½	"Last degree of feebleness."	"Had flowed, with short inter- vals of relief, for 9 days; tam- pon applied, but the efforts of violent vomiting caused it to be of little service; hemorrhage was at last arrested by cold application.	Dilated slowly.
386	Ibid., No. 14, iii.	29	1	7	Had been kicked in the loins, from which time the foetus ceased to move, and the membranes rup- tured.	Commenced almost immediately after the injury.	Easily dil- able.
387	Ibid., No. 15, Aug. 10, 1821.	.....	2	8	Epileptic, and subject to attacks of insan- ity, for which she had been bled 5 or 6 times during her pregnancy.	Hemorrhage abundant; tampon applied with no effect, as it in- creased her pains.	Dilatable.
388	Ibid., No. 16, Sept. 20, 1819.	43	4	8	Excessively feeble; continually fainting; very pale, with a general rigor, and pulse very often in- sensible; her first children had been born dead, although at full time.	Had flowed for 8 days, and been treated by lotions and injec- tions of ice-water; hemorrhage kept up, after she came into hospital, till delivery.	Dilated.
389	Ibid., No. 18, Sept. 8, 1818.	31	2	7	Sensibly enfeebled by the flowing.	For a week after entrance, but little, for which the tampon was made use of, with com- plete success; 24 hours after, when it was removed, the hem- orrhage reappeared with vio- lence.	Well dilat

Placenta. Labor completed by Artificial Means—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
Complete.	Head.	Placenta separated, membranes ruptured, and version by the feet performed.	Died.	Dead.	After a state of great anxiety and loquacity, on the 9th she sunk into a profound coma, and died in the course of the day; an autopsy revealed serous apoplexy.
Partial.	Head, with prolapse of the cord.	Version by the feet.	Died.	Lived.	For details of this case, see Index, sub "Lachapelle."
Complete.	Head.	Version by the feet.	Recovered.	Died.	Tampon was applied three times; rupture of membranes between second and third application; after delivery she had chills and continual shiverings; after-pains were severe; there was great tenderness of the abdomen for many days, and acute headache; when the milk appeared she began to recover.
Complete.	Feet.	Feet drawn down.	Died.	Dead.	Strength gradually failed, and she died in three-quarters of an hour.
.....	.....	Version.	Recovered.	Dead.	The tampon increased the pains, and of consequence the flowing, so much so that it saturated the lint used to plug the vagina, and ran freely through it; she had a good and speedy getting up.
Complete.	Head.	Placenta "peeled" off and version performed.	Died.	Dead.	The slowness of the dilatation of the os was the cause of much difficulty, and the patient fainted many times before it was completed; she died of "adynamic" fever 15 days after her confinement.
Partial.	Head.	Turning by the feet.	Recovered.	Dead, putrid.	.....
Partial.	Head.	The flowing continued until the 12th, when, it being evident that it could not be controlled by the tampon, turning was performed as quickly as possible.	Died.	Living, but died next day.	When the breech was passing the vulva she was seized with a deep fainting fit; the flowing kept up during the delivery and afterwards; the uterus contracted at first but afterwards relaxed; she lingered 5 days and then died; upon examination no peritonitis was to be found.
Portion shed down into vagina the uterine contractions.	Head.	Hand passed behind the placenta, and version performed.	Recovered.	Dead.	Immediately after delivery the flowing ceased, and the womb contracted with great power; very soon she was seized with shiverings, nausea, and extreme thirst; for 4 hours she lay in a state of extreme prostration, but was at last resuscitated by stimulants; she had a violent headache, and was obstinately constipated for several days; on the tenth of October she was convalescent.
Complete.	Head.	Version by the feet.	Died.	Lived.	Did well for the first day; on the second a violent headache set in, which nothing would relieve; it increased on the third, and was accompanied with fever and abdominal pains; diarrhoea supervened, and on the 19th day after her delivery she died; upon examination post-mortem, no trace of inflammation could be detected in the uterus; the left lung contained purulent matter mixed with blood and serum.

TABLE VI.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF
390	Mad. Lachapelle, Mem. 6, No. 19, Sept. 20, 1819.	40	3	8½	Reduced to the last extremity; usual health good, of robust constitution.	For 8 days; no other remedy than cold applications had been made use of; immediately after her arrival at the hospital the tampon was applied, which had the effect to strengthen the pains and produce dilatation.	Not dilated by the 8 days flowing.
391	Ibid., No. 21, ii.	32	1	9	Good constitution; sanguine temperament.	Hemorrhage set in with the access of the pains, and kept pace with them.	Dilated gradually.
392	Dr. Lee's Clinical Midwifery. Am. ed., p. 153, Case No. 1, July 22, 1828.	42	.....	Far advanced.	.....	About a week previous was attacked with profuse hemorrhage; a large quantity lost before delivery could be effected.	Slowly dilated.
393	Ibid., etc., p. 155, No. 5, March 24, 1835.	.....	.....	.....	Much exhausted.	.....	Soft and largely dilated.
394	Ibid., etc., p. 155, No. 6, March, 1835.	.....	.....	8th.	Could not have survived a great while.	"A large quantity."	Widely dilated.
395	Ibid., etc., p. 155, No. 7, April 26, 1835.	.....	.....	More than 7.	.....	Commenced 14 days before, while in bed and asleep.	At first partially dilated; hard.
396	Ibid., etc., p. 156, No. 8, Oct. 7, 1835.	.....	.....	7	Pulse not perceptible; extremities cold; respiration feeble.	First began 3 weeks before; several pints were discharged at once on the second attack.	Rigid, and but little dilated.
397	Ibid., etc., p. 157, No. 9, Oct. 18, 1835.	.....	7	8th.	No labor-pains; pelvis greatly distorted by rickets.	Profuse.	Sufficiently dilated.
398	Ibid., etc., p. 159, No. 12, Nov. 10, 1835.	.....	.....	8th.	Almost insensible; extremities cold; pulse rapid and feeble.	Six days before, without any warning, which produced faintness; did not return till afternoon of date, when "an immense flow took place."	Considerably dilated, offering great resistance.
399	Ibid., etc., p. 160, No. 14, Dec. 1836.	.....	.....	.....	Hands cold; pulse rapid and feeble; no labor-pains.	First came on during a fit of coughing; returned thrice, with marked effect on the system.	Much dilated, admitting four fingers and thumb.
400	Ibid., etc., p. 161, No. 16, May 12, 1838.	.....	.....	.....	No labor-pains; extremely faint.	Came on suddenly while asleep, not in great quantity; continued till 15th, when a great quantity escaped.	Largely dilated at time of fainting.
401	Ibid., etc., p. 162, No. 17, Dec. 3, 1836.	.....	.....	7	Extremities cold; pulse scarcely to be felt.	Came on the day previous, returning twice during the day.	Widely dilated.
402	Ibid., etc., p. 162, No. 18, Dec. 20, 1836.	.....	.....	8th.	In a state of great exhaustion.	Repeated discharges; controlled for some days, when it returned with great violence.	Rigid and a great amount of blood had been lost.
403	Ibid., etc., p. 162, No. 19, March 10, 1837.	.....	.....	7	.....	Four weeks before, in great profusion; on the preceding night a large quantity had escaped.	Soft and widely dilated.
404	Ibid., etc., p. 163, No. 20, July 19, 1837.	.....	.....	9 nearly.	In a state of extreme exhaustion.	In the 7 days preceding, at intervals; had lost a large quantity.	Dilated to an inch and a half in diameter; dilatable.
405	Ibid., etc., p. 163, No. 22, June 11, 1838.	.....	.....	7th.	Frequent fits of syncope.	For 5 days; a large quantity of blood had been lost.	.....
406	Ibid., etc., p. 164, No. 23, Jan. 12, 1839.	.....	.....	8½	Faint; pulse rapid and feeble.	Commenced a month before, without any apparent cause or pain; 15 days afterwards it returned slightly; 7 days later a profuse flooding came on, which gradually went off; on the 12th, about a quart was suddenly lost, and the discharge kept up.	Rigid, requiring every effort to dilate it.

Placenta. Labor completed by Artificial Means—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
.....	Version by the feet.	Recovered.	Died.	After delivery she suffered from many fainting fits and violent chills, which were relieved by stimulants and tonics; severe headache ensued and lasted for many days, for which blisters behind the ears were applied.
artial.	Head and a loop of the cord.	Turning by one foot.	Recovered.	Died.	.....
.....	Plugged until os was sufficiently dilated; version presumed.	Died.	.....	On the 18th day after delivery, from inflammation of the left lung and uterine phlebitis; during the whole of her illness had no pain whatever in abdomen.
complete.	Turning.	Recovered.	Dead.	Hemorrhage immediately ceased.
complete.	Turning.	Recovered.	Dead.	Hemorrhage did not return.
complete.	Turning during an attack of fainting.	Died.	Lived.	Os did not yield until she fell into the syncope; lost no blood after delivery; gradually sunk, and died in a few days.
.....	Two fingers introduced, the membranes ruptured, and one of the feet brought down.	Recovered.	.....	A long time was occupied in dragging the body of the child through the os; a violent rigor followed the delivery, but it was overcome by heat and stimulants.
portion hanging through the uterus, adhering all round.	Head.	Craniotomy.	Recovered.	Dead.	For details of this case, see Index, sub "Lee."
.....	Turning.	Died.	.....	The placenta came away immediately, and was followed by a great hemorrhage; this was checked by applying cold and plugging, but she sunk, and died in 2 hours; stimulants proved inefficacious.
portion hanging into vagina.	Turning.	Recovered.	Lived.	A binder had been applied before the operation; this was tightened during the process several times; placenta left for some time to act as a plug. (?)
.....	Turning.	Recovered.	Dead.	The os did not yield till the system had become sensibly affected by the flooding.
artial at posterior part of cervix.	Turning.	Died.	Dead.	Placenta removed half an hour after delivery; no hemorrhage; for 3 days she appeared to be recovering; was seized with rigors and pain in loins and abdomen, and died 10 days after, with symptoms of uterine phlebitis.
.....	Turning.	Died.	Lived.	For 2 hours appeared to be doing well, and then suddenly expired, without any further loss of blood.
large portion hanging through the os.	Turning.	Recovered.	Lived.	Placenta left as a plug till uterus contracted; before any examination had been made, ergot was given, which increased the flow.
.....	Turning.	Recovered.	.....	Placenta not removed "for a considerable period;" no hemorrhage followed; patient had a severe attack of uterine phlebitis.
.....	Turning.	Died.	.....	Faintness and chills continued for some time after delivery, but she at length rallied; died with symptoms of suppuration in uterine veins.
complete.	Turning.	Died.	.....	For details of this case, see Index, sub "Lee."

TABLE VI.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF C
407	Dr. Lee's Clinical Midwifery, Am. ed., p. 166, No. 25, July 30, 1839.	40	.....	7	Very faint.	Attacked with a sudden and profuse hemorrhage on the morning of date.	Open to the size of half a crown-piece, but rigid and thick.
408	Ibid., etc., p. 167, No. 28, April 7, 1841.	.....	.....	8th.	Faint; extremities cold; pulse rapid and feeble.	Began a month before, but not profusely; April 3d a great gush took place; April 7th an immense discharge took place.	Thick, high up, and very rigid; barely admitting 2 fingers.
409	Ibid., etc., p. 168, No. 30, May 19, 1841.	.....	.....	7th.	Faint, with rapid and feeble pulse.	First came on 3 weeks previous; returned May 17th, and kept up till date.	Open to the size of a crown-piece, dilatable.
410	Ibid., etc., p. 168, No. 31, May 26, 1841.	.....	.....	8th.	In a state of great faintness.	Commenced spontaneously 3 weeks before without pain; returned several times, but not profusely.	High and rigid; open to the size of half a crown.
411	Ibid., etc., p. 169, No. 33, Nov. 13, 1841.	.....	.....	8	Faint.	Was awakened from sleep by a profuse discharge, which continued till delivery.	High up, directed backward, thick, but dilatable.
412	Ibid., etc., p. 169, No. 34, Jan. 5, 1842.	.....	.....	7	Strength but little impaired.	A great quantity had been lost.	Open to the size of a crown; dilatable.
413	Ibid., etc., p. 169, No. 35, Aug. 4, 1842.	.....	.....	8	.....	It began about 3 weeks before, in moderate quantity; was renewed on morning of date, excessive.	Open to the size of half a crown, and dilatable.
414	Ibid., etc., p. 170, No. 37, Oct. 15, 1842.	.....	.....	8th.	.....	At intervals for 2 or 3 weeks.	Soft and yielding.
415	Ibid., etc., p. 170, No. 38, Feb. 24, 1843.	.....	.....	7th.	.....	Profuse for 3 weeks.	Open to the size of a crown-piece, rigid.
416	Ibid., etc., p. 171, No. 40, Dec. 30, 1843.	.....	.....	8	Reduced to the last extremity.	Profuse for 2 weeks.	Rigid.
417	Ibid., etc., p. 171, No. 41, March 25, 1843.	.....	.....	8	Exhausted.	For 3 weeks; pains subsided, and flowing increased to an alarming extent.	Open to the size of a crown-piece, thick and rigid.
418	Ibid., etc., p. 172, No. 42, May 26, 1844.	41	.....	8th.	Requiring immediate attention and relief.	Moderate for several days; when the os dilated an immense gush took place.	Would not admit the hand.
419	Ibid., etc., p. 172, No. 43, April 3, 1845.	.....	.....	8	In a very exhausted condition.	For 3 weeks, but not alarming; suddenly in large quantities.	Rigid.
420	Ibid., etc., p. 175, No. 45, Sept. 20, 1845.	.....	3	9th.	Quite insensible.	For 3 weeks, at intervals; on evening of date a large quantity, and continued to flow.	Not dilatable.
421	Ibid., etc., p. 176, No. 46, Sept. 28, 1845.	.....	.....	8	Exhausted.	For 5 weeks, at intervals, but not profuse, till 23d, when a "great gush" took place; continued in diminished quantity till date.	Soft and yielding.
422	Ibid., etc., p. 177, No. 47, Dec. 1, 1845.	.....	.....	.....	Extreme faintness.	First attacked 2 weeks before with profuse flooding; at date attacked again in the same way, and the flow continued.	Dilated.

Placenta. Labor completed by Artificial Means—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
Almost complete.	.....	Two fingers introduced, a foot seized, and turning accomplished.	Recovered.	Dead.	.....
Complete.	.....	One foot drawn down; extraction of the child much retarded by the rigidity of the os.	Recovered.	.....	No hemorrhage followed; for many hours the pulse was hardly perceptible.
Nearly complete.	.....	Turning.	Died.	.....	While extracting the child there came on a convulsion fit; another followed soon after her delivery; she died in less than 4 hours.
Complete.	.....	Turning.	Recovered.	.....	.....
Complete, nearly.	.....	Turning.	Recovered.	Lived.	.....
Complete.	.....	Turning.	Recovered.	Dead.	.....
Complete.	.....	Turning.	Died.	Alive.	Died of faintness and the usual consequences of great loss of blood.
Complete.	.....	Turning.	Recovered.	Dead.	.....
.....	.....	Turning.	Recovered.	Lived.	Two fingers only could be introduced into the uterus; with these the operation was performed; the child at first did not breathe.
Partial.	Head.	Craniotomy.	Recovered.	Dead.	The membranes were ruptured previously, but without the effect to stop the hemorrhage; the pains not coming on, and the flowing continuing, the perforator and crotchet were made use of.
Complete.	Head.	Craniotomy; much difficulty experienced.	Recovered.	Dead.	Stimulants had no effect in producing pains; no flooding after delivery.
Partial; one-half the os covered.	Head.	Craniotomy; operation performed with difficulty.	Recovered.	Dead.	Dr. Lee remarks: "In all these cases the rigidity of the os uteri, and not the presence of the placenta, was the cause of the difficulty."
Complete.	.....	A large sponge was introduced, and kept there till next morning, when pains came on, and with them a great flow of blood; the tampon being of no use, 2 fingers were introduced, and a foot seized and drawn down.	Recovered.	Dead.	Mother recovered in about 6 hours, entirely.
Complete.	Head.	Turning by means of the fore and middle fingers, with which a foot was seized and brought down.	Recovered.	.....	The placenta was left a short time and then removed, after a binder, which had been previously applied, was tightened, and stimulants given freely.
Complete.	.....	Turning.	Recovered.	Dead.	An immense discharge of blood followed the extraction of the child; it ceased on the removal of the placenta; cold extremities, no pulse, and delirium; warmth, frictions, stimulants, and anodynes finally recovered her.
Complete.	.....	Turning.	Recovered.	Dead.	Soon after extraction of the placenta hemorrhage ceased.

TABLE VI.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG-NANCY.	MONTHS PREG-NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF
423	Dr. Lee's Clinical Midwifery, Am. ed., p. 177, No. 48, May, 1846.	.....	.....	Latter months.	.....	.....	.....
424	Ibid., etc., p. 177, No. 49, May 11, 1846.	.....	1	8th.	.....	In great quantity 3 weeks before; another great discharge on the morning of date.	Very rigid
425	Ibid., etc., p. 178, No. 50, May 11, 1846.	.....	.....	8th.	.....	.....	.....
426	Ibid., etc., p. 178, No. 51, Aug. 13, 1846.	.....	2	8th.	Almost pulseless.	Great, and the flowing not ceased.	Size of a crown-piece not rigid.
427	Ibid., etc., p. 179, No. 52, Nov. 13, 1846.	.....	.....	8	Great faintness, with feeble pulse.	For 4 weeks, at intervals, and on the morning of date in great quantity.	Little dilated and unyielding.
428	Ibid., etc., p. 180, No. 55, Jan. 25, 1847.	.....	.....	7	.....	Began 4 hours before in great profusion, as the os dilated it increased.	Well dilated
429	Ibid., etc., p. 180, No. 56, April 7, 1847.	.....	.....	8	.....	Commenced that morning before rising in great quantity, and continued without interruption through the day.	Dilated to size of a crown-piece dilatable.
430	Ibid., etc., p. 181, No. 58, May 16, 1847.	.....	1	9th.	Pale; faint and restless.	Five weeks before, to the extent of a pint in a few hours; returned again with such violence that she was obliged to keep the bed; this state continued till date, when, labor-pains coming on, hemorrhage was much increased; tampon then applied without any effect; ergot given and stimulants freely made use of with temporary relief; soon relapsed into former state.	Undilatable admitting the point of 2 fingers with difficulty.
431	Ibid., etc., p. 183, No. 60, Aug. 25, 1847.	.....	.....	Far advanced.	.....	Sudden and profuse that afternoon.	Open to the size of a crown-piece
432	Ibid., etc., p. 184, No. 61, Sept. 29, 1847.	.....	2	9	In extreme exhaustion, almost pulseless; countenance very pale.	Repeatedly for 5 weeks; appeared on the morning of date, and kept on in great quantity.	Open to the size of a crown-piece and dilatable.
433	Ibid., etc., p. 185, No. 62, Oct. 12, 1847.	.....	9 or 10	9	In a state of most imminent danger: rapid, feeble pulse; great faintness.	For 2 days; on morning of date it recurred with great severity, inundating the bed.	Dilated to the size of half a crown-piece; then rigid
434	Ibid., etc., p. 185, No. 63, Nov. 17, 1847.	.....	.....	8	.....	For 5 weeks, but not very profuse; a great discharge a few hours before.	Admitted fingers; offered no resistance version.
435	Perfect's Cases, ii. p. 354, No. 127, 1761.	.....	.....	9	Uncommonly drowsy and lifeless, with entire cessation of labor-pains.	Recurring at short intervals for weeks previous, for which she had been bled, treated with opiates, rest in a recumbent posture, and kept quiet.	Dilated to breadth of crown-piece
436	Duncan Stewart, Treatise on Uterine Hem., Lond. 1816, p. 53, Case 2; Dec. 1810.	.....	.....	7th, presumed.	Extremities cold, lips pallid, vomiting, and low delirium; pulse intermittent.	Excessively for a month; a pint a day during that time.	Dilatable.
437	Ibid., Case 3, Jan. 1813.	.....	.....	Nearly full time	.....	Began at the 7th month; controlled by rest, opiates, astringent injections, and a cool temperature; when os began to dilate it became very profuse.	.....
438	Ibid., No. 4, Jan. 1816.	.....	.....	.....	Very faint; labor-pains feeble.	.....	Little dilated.

Placenta. Labor completed by Artificial Means—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
.....	Turning.	Recovered.	.....	.....
complete.	Turning with two fingers, by which a foot was seized and brought down.	Recovered.	Dead.	External organs with difficulty admitted the hand.
complete.	Turning.	Recovered.	.....	.....
complete.	Turning.	Died.	.....	Some bleeding after the removal of the placenta; the fatal result is to be attributed, says Dr. Lee, to the delivery not having been completed sooner; the patient was an extremely delicate person.
complete.	Turning; knee seized with 2 fingers and brought down.	Recovered.	.....	Had a subsequent attack of uterine and crural phlebitis.
complete; the center over the os.	Turning.	Recovered.	Dead.	Placenta soon followed and the flooding ceased.
complete.	Turning; knee seized with 2 fingers.	Recovery, presumed.	Lived.	.....
complete.	Head.	Craniotomy; left hand introduced into vagina and 2 fingers into uterus.	Recovered.	Dead.	There was no hemorrhage during the operation, and by evening (about 12 hours) the patient was out of danger.
partial, over the anterior portion of	Head, with cord.	Craniotomy.	Recovered.	Dead.	The funis being without pulsation, and version having been attempted without success, it was thought best to perform the delivery in the quickest manner, which was accordingly done; mother recovered rapidly.
complete.	Turning.	Died.	.....	For a short time the hemorrhage ceased, but returned, and, in spite of all means, kept on profusely; she died in 2 hours.
partial, on the right anterior portion of cervix.	Head.	Craniotomy, on the ground that the operation for turning could not be performed without further loss of blood and the employment of dangerous force in dilating the os.	Recovered.	Dead.	For details of this case, see Index, sub "Lee."
complete.	Turning.	Recovered.	.....	.....
complete.	Turning.	Died.	Dead.	A practitioner of the "first name" being called in, forced his hand into the uterus and drew down an arm, "swearing that he thought it had been a leg;" turning was afterwards resorted to, but she died in a syncope half an hour afterwards.
complete.	Turning.	Recovered.	.....	Treated with laudanum in large doses.
complete.	Turning.	Recovered.	.....	.....
partial.	Turning.	Recovered.	.....	.....

TABLE VI.—*Partial Separation of t*

NO.	BY WHOM REPORTED.	AGE.	PREG-NANCY.	MONTHS PREG-NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF
439	Ramsbotham's Obs., 2d edition, 1842, No. 100.	.....	8	Nearly full time	Exhausted to the last degree; pains had ceased.	Occasionally for weeks; the day before about "a gallon."	Open about the size of a shilling.
440	Ibid., Case 101.	Middle age.	Several.	9th.	Faint; pulse sensibly affected; syncope.	At first producing no inconveni- ence; at length it returned vio- lently, and, upon separating the placenta to introduce the hand, was so excessive as to produce syncope.	Rigid at fi- dilated a flooding went on.
441	Ibid., Case 102.	.....	1	8th.	Exhausted.	Repeated for a month; ceasing spontaneously; as pains in- creased it grew more severe.	Dilated w difficulty
442	Ibid., Case 103.	.....	.....	.....	Much exhausted; no labor-pains.	Occasional, but not in great quantity, for weeks; for a day or two constant.	Undilated
443	Ibid., Case 104.	.....	.....	8th.	Much exhausted; no pains.	Occurred suddenly, while at tea, in excessive quantity.	Relaxed.
444	Ingleby's Essay on Uterine Hemor- rhage, Lond. 1832, p. 158.	.....	.....	9th.	Not impaired; pains feeble.	Began 3 days before; it had be- come excessive at time of labor.	Soft; dilat to the siz of half a crown.
445	Ibid., p. 159.	.....	.....	8th.	Very much exhaust- ed.	Three days before; at each re- turn it became more profuse.	Somewhat dilated; thin.
446	Hardy and McClin- tock, Practical Observ., p. 204, No. 1.	.....	.....	.....	Much reduced from loss of blood.	From the previous evening.	.....
447	Ibid., p. 205, No. 26.	.....	.....	.....	.....	.....	.....
448	Ibid., p. 205, No. 27, June 30, 1844.	28	1	.....	Very much reduced.	Began 2 months before date, slight, and unattended with pain; on day of date there was a large discharge; returned again and again; tampon, by means of a silk handkerchief dipped in oil, with success; hemorrhage returned whenever it was withdrawn.	Rigid and undilatab loss of bl did not se to affect i
449	Ibid., p. 208, No. 31.	.....	.....	.....	.....	In considerable quantity during pains, until the introduction of the tampon.	.....
450	Ibid., No. 33, Sept. 16, 1844.	.....	.....	9th.	.....	Excessive.	Considera- dilated.
451	Collins, Practical Treatise on Mid- wifery, 1st Am. ed., p. 63, No. 4.	23	7	9	Looked pale and weakly.	Considerable for 3 days before admission; soon after entrance to hospital, an immense dash of blood occurred with a pain.	Sufficientl dilated.
452	Ibid., No. 34.	40	4	9	State of great de- bility.	For 5 days, at intervals; sud- denly most profuse.	Rather rig size of ha a crown.
453	Ibid., No. 77.	32	9	9	.....	Copious, with little or no uterine action.	High up; laxed and thin.
454	Ibid., No. 17.	33	2	8th.	.....	Several profuse discharges be- fore admission; returned at intervals, particularly during pains.	Very re- laxed; op to the siz of a crow
455	Ibid., No. 50.	30	6	Full time.	Much reduced.	Frequent discharges for 8 days previous; returned when pains came on.	Rigid; op to the siz of a crow
456	Ibid., No. 119.	34	7	Full time.	.....	Much before admission.	.....
457	Ibid., No. 33.	38	5	7th.	.....	A considerable discharge 10 days before; returned a short time before admission, trifling.	.....
458	Moreau, translated by Betton, p. 171.	.....	10	.....	Pale, exhausted, and apparently dying.	.....	Dilatable.

Placenta. Labor completed by Artificial Means—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
Complete.	.....	Turning.	Died.	.....	There was in this case great delay in rendering assistance.
Complete.	.....	Turning.	Died.	Dead.	Rigidity of os prevented turning earlier; after delivery the uterus contracted but slightly; she was partially aroused from the syncope by stimulants, but became very restless, and expired within 2 hours.
.....	.....	Turning.	Died.	Lived.	Died in 2 days, with symptoms of peritonitis.
.....	.....	Turning; twins delivered.	Died.	.....	In half an hour after delivery; she did not rally at all.
Complete.	.....	Turning.	Died.	Lived.	Discharge ceased with delivery; died in 2 hours from the first appearance of flowing.
Partial; one-half of the os covered.	.....	Turning.	Recovered.	Dead.	.....
Partial, over anterior lip.	Head.	Membranes ruptured; a binder applied and stimulants freely given; labor completed by short forceps.	Recovered.	.....	An attempt was made to turn, but the pulse failing and great exhaustion coming on, it was abandoned, and the course mentioned adopted instead.
Partial.	.....	Turning.	Recovered.	Dead.	Left hospital on 13th day.
.....	.....	Turning.	Recovered.	Lived.	.....
.....	Head.	Forceps when the head was on the perineum.	Died.	Dead.	Died on the 5th day with peritonitis.
.....	.....	Turning as soon as os was sufficiently dilated.	Recovered.	Lived.	Left hospital on the 17th day.
Complete.	.....	Turning.	Recovered.	Lived.	The membranes were ruptured in hopes that it would stop the hemorrhage; it did not, and resort was had to version; was discharged well on the 12th day.
Partial.	Head.	Turning.	Recovered.	Dead.	It was many hours before she rallied; discharged well on 17th day.
.....	Head.	Turning.	Died.	Living.	Neck of uterus lacerated on the right anterior side; died shortly after delivery.
Partial; a large portion at the os.	Head.	Turning.	Recovered.	.....	Placenta was suffered to remain for an hour in vagina, when it was expelled; she remained quiet for half an hour, when profuse hemorrhage came on, and lasted an hour and a half; hand was twice introduced to excite uterine action; cold and cordials used; left hospital on the 16th day, well.
Partial.	Head, face to pubes.	Forceps.	Recovered.	Lived.	Mother left hospital on the 15th day, well.
Partial.	Head.	Craniotomy; child brought away with the crotchet.	Recovered.	Dead.	The portion of placenta over os was in a morbid state; hard, whitish, and having but little vascularity.
Partial.	Head.	Craniotomy.	Recovered.	Dead.	.....
.....	Foot.	Body drawn down by means of the foot.	Recovered.	Dead.	.....
.....	.....	Turning without difficulty.	Died.	Lived.	Operation performed too late.

TABLE VI.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF O
459	Dr. Merriman, Lond. Med. Gaz., xxxvi. part 2, p. 1021.						
	Ibid., 59 cases.						
	Ibid., 19 cases.						
538	Dr. F. H. Ramsbo- tham, Lond. Med. Gaz., xxxiv. p. 142.					Had lost a great quantity of blood.	
539	Ibid.					Great hemorrhage.	
540	Ibid., p. 196.					Great.	
541	Ibid., p. 225.						
542	Ibid., p. 252.						
543	Ibid.						
544	Ibid., p. 279.					Had "lost an immense quantity of blood."	
545	Ibid.						
546	Ibid.						
547	Ibid.						
548	Ibid.	40	1				Excessively rigid; not larger than a shilling the greater difficulty introducing the hand to turn.
549	Ibid., p. 329.						
550	Ibid.						
551	Ibid.						
552	Ibid., p. 368.						
553	Ibid., p. 398.						
554	Ibid.			7		For 3 weeks very severe.	
555	Ibid.						
556	Ibid.						
557	Ibid.						
558	Ibid., p. 438.					Lost a large quantity.	
559	Ibid.					Lost a large quantity.	
560	Ibid.					Lost a large quantity.	
561	Ibid.			7		Lost a large quantity.	
562	Ibid.						
563	Ibid.						
564	Ibid.						
565	Ibid.						
566	Ibid.						
567	Ibid.						
568	Ibid., p. 485.						
569	Ibid.						
570	Ibid.						
571	Ibid.						
572	Ibid., p. 518.						
573	Dr. J. C. W. Lever, Lond. Med. Gaz., xxxvi. part 2, p. 1422, No. 1.	40	1	8½			
574	Ibid., No. 2.	43	16	9			
575	Ibid., No. 3.	39	9	8½			
576	Ibid., No. 4.	35	7	7½			
577	Ibid., No. 5.	23	2	8			
578	Ibid., No. 6.	31	4	8½			
579	Ibid., No. 7.	40	8	8½			

Placenta. Labor completed by Artificial Means—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
Partial.					
		Turning.	Recovered.	57 lived.	
		Turning.	Died.	21 died.	Says Dr. M.: Many of the mothers in these cases would have lived had proper assistance been sooner afforded.
Complete.	Head.	Turning.	Recovered.	Dead.	
Complete.	Head.	Turning.	Died.	Dead.	In 3 days, from the effects of the hemorrhage.
Complete.		Turning.	Died.	Dead.	Died in 3 hours, from the effects of the flooding.
Complete.		Turning.	Recovered.	Dead.	
Complete.	Head.	Turning.	Recovered.	Dead.	
Complete.	Head.	Turning.	Recovered.	Lived.	
Partial.	Head.	Turning.	Recovered.	Dead.	Went into convulsions immediately after delivery, but ultimately recovered perfectly.
Partial.	Breech.	Feet brought down.	Recovered.	Lived.	
Complete.		Turning.	Recovered.	Lived.	
Complete.		Turning.	Recovered.	Living.	
Complete.		Membranes ruptured with a catheter; turning 2 hours afterward; head perforated behind the ear before it could pass.	Died.	Dead.	Died as soon as placenta came, which was immediately after the extraction of the child.
Complete.	Shoulder at the brim.	Turning.	Lived.	Dead.	Mother died a month later, from a sudden fit of passion.
Complete.	Shoulder at the brim.	Turning.	Lived.	Living.	
	Head.	Turning.	Recovered.	Living.	
Complete.	Breech.	Feet brought down.	Recovered.	Dead.	Delivery accomplished without great loss of blood.
Complete.	Head.	Turning.	Died.	Living.	Died on the 8th day.
Complete.	Head.	Turning.	Died.	Dead.	Died in 8 hours.
Complete.	Head.	Turning.	Recovered.	Dead.	
Complete.	Head.	Turning.	Recovered.	Lived.	
Partial.	Head.	Turning.	Died.	Dead.	Died in half an hour after delivery.
Partial.	Head.	Forceps; membranes ruptured previously.	Died.	Dead.	Never rallied; died in an hour and a half.
Partial.	Head.	Turning.	Died.	Dead.	Died in an hour and a half.
Complete.	Head.	Turning.	Died.	Dead.	Died on the 4th day.
Complete.	Head.	Turning.	Died.	Dead.	Died on the 13th day.
Complete.	Head.	Turning.	Recovered.	Dead.	
Complete.	Head.	Turning.	Recovered.	Dead.	
Complete.	Head.	Turning.	Recovered.	Dead.	
Complete.	Head.	Turning.	Recovered.	Dead.	
Complete.	Head.	Turning.	Recovered.	Dead.	
Complete.	Head.	Turning.	Recovered.	Living.	
Complete.	Head.	Turning.	Lived.	Dead.	Child putrid.
Complete.	Head.	Turning.	Lived.	Dead.	In 2 hours, from the effects of the hemorrhage.
Complete.	Head.	Turning.	Died.	Dead.	On the 6th day, from the effects of the hemorrhage.
Complete.	Head.	Turning.	Died.	Dead.	Flooding ceased at delivery; returned in 21 hours, and she died in 7 minutes.
Complete.	Head.	Turning.	Died.	Living.	Outlet contracted in its lateral diameter.
Complete.		Turning.	Recovered.	Dead.	
Complete.		Turning.	Died.	Dead.	Transfusion performed; died in 7 hours after delivery.
Partial; os thirds red an- orly.		Turning.	Recovered.	Dead.	
Partial; two- ls of rior ion of covered.		Turning.	Recovered.	Dead.	
Complete.		Turning.	Recovered.	Dead.	
Partial.		Turning, after rup- turing membranes.	Recovered.	Lived.	

TABLE VI.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF
580	Dr. J. C. W. Lever, Lond. Med. Gaz., xxxvi. part 2, p. 1422, No. 8.	27	2	7			
581	Ibid., No. 10.	.....	11	9			
582	Ibid., No. 11.	28	2	9			
583	Ibid., No. 12.	42	16	8½			
584	Ibid., No. 13.	38	4	8			
585	Ibid., No. 14.	38	7	8			
586	Ibid., No. 16.	30	5	8½			
587	Ibid., No. 17.	27	2	8			
588	Ibid., No. 18.	38	3	8			
589	Ibid., No. 19.	37	8	8		Very great one hour before de- livery.	
590	Ibid., No. 20.	25	5	8½			
591	Ibid., No. 21.	33	1	7			
592	Ibid., No. 22.	28	3	8			
593	Ibid., No. 23.	29	2	8			
594	Ibid., No. 24.	40	11	8½			
595	Ibid., No. 25.	40	9	8			
596	Ibid., No. 26.	29	4	8½			
597	Ibid., No. 27.	41	9	8			
598	Ibid., No. 28.	39	7	9			
599	Ibid., No. 29.	28	5	8½			
600	Ibid., No. 30.	31	4	8			
601	Ibid., No. 31.	.....	5	7			
602	Ibid., No. 32.	42	10	8½			
603	Mr. Crisp, Lond. Med. Gaz., xxxvi. part 2, p. 1132.	.....	.....	9th.		Frequent attacks.	
604	Mr. W. Newnham, ibid., p. 1257.	.....	.....	.....	In a miserable con- dition; poor and wretched.	Much.	
605	Dr. W. Denny, Am. J. Med. Sci., N. S., xxxi. p. 86, No. 1, Feb. 22, 1823.	.....	3	.....	Unimpaired; labor began with strong pains, which rup- tured membranes.	"Flooding furiously" for a short time before delivery.	Vagina re- laxed; o- dilated.
606	Ibid., No. 2, June 11, 1831.	.....	7 or 8	.....	Good pains.	Began with the labor-pains.	Dilatable.
607	Ibid., No. 4, March 27, 1854.	.....	5	8	Much reduced by re- peated bleedings.	Hemorrhage began February 25; returned March 15 and 26; plug used at last.	Of the size a half-do- lar; easi- ly dilated; resistance to intro- duction of hand.

Placenta. Labor completed by Artificial Means—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
partial; two-thirds of posterior portion of os covered.	Turning.	Recovered.	Lived.	Child died 5 days afterwards.
complete.	Turning.	Recovered.	Lived.	.....
complete.	Turning.	Recovered.	Dead.	Perforation in her previous labor.
complete.	Turning.	Died.	Dead.	Died in half an hour after delivery.
complete.	Turning.	Recovered.	Lived.	.....
complete.	Turning.	Recovered.	Lived.	Child born still, but resuscitated.
partial; two-thirds of anterior portion of os covered.	Turning.	Recovered.	Lived.	.....
partial; more than one-half of os covered.	Turning.	Recovered.	Lived.	.....
complete.	Turning.	Died.	Lived.	On 10th day, from pericarditis, brought on by exposure.
partial.	Turning.	Died.	Lived.	.....
complete.	Turning.	Recovered.	Lived.	.....
partial; more than one-half of anterior portion of os covered.	Turning.	Recovered.	Alive.	Child died in a few hours.
complete.	Turning.	Recovered.	Dead.	.....
partial; anterior portion of os covered.	Turning.	Recovered.	Dead.	.....
partial.	Turning.	Died.	Dead.	Died in one hour after delivery.
partial;	Turning.	Recovered.	Lived.	.....
three-fourths of os covered.	Turning.	Recovered.	Dead.	Protracted convalescence.
complete.	Turning.	Recovered.	Lived.	.....
partial;	Turning.	Recovered.	Lived.	.....
three-fourths of os covered.	Turning.	Recovered.	Lived.	.....
complete.	Turning.	Recovered.	Lived.	Patient for some days in a doubtful state, from pleuro-pneumony.
partial; two-thirds of anterior portion of os covered.	Turning.	Died.	Lived.	Died on the 5th day, from peritonitis.
partial;	Turning.	Recovered.	Alive.	Child died 3 hours after delivery.
three-fourths of os covered.	Turning.	Died.	Dead.	From phlebitis, on 9th day.
most complete.	Turning.	Died.	.....	.....
most complete.	Turning.	Died.	.....	.....
.....	Turning "as a forlorn hope."	Died.	.....	Died in 2 hours after version was performed.
complete; prior to delivery.	Turning; child born in 2 or 3 hours.	Recovered.	Dead.	External hemorrhage ceased as soon as turning was performed; almost fell into syncope.
complete; half delivered.	Foot.	Feet brought down.	Recovered.	Lived.	.....
partial.	Head; 1st position.	Turning; child left to be expelled by pains; ergot given; time of delivery not stated.	Died.	Dead.	Placenta followed the delivery upon slight traction; uterus contracted well; fell into a syncope, and died so.

TABLE VI.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF C
608	Mr. J. Thomson, Am. J. of Med. Sci., N. S., xxxi. p. 252, (from Glasgow Med. Jour., July, 1855,) Case 1.	.....	.....	.....	Had fainted several times; skin cold; pulse scarcely per- ceptible.	Repeated hemorrhage for two months previous; severe with every pain.	Soft and yielding.
609	Ibid., Case 2.	.....	8	.....	Looked pale and bloodless; no tend- ency to syncope; pulse 150.	Began about an hour before visit; tampon used; hemor- rhage renewed at its removal.	Size of hal crown.
610	Dr. Chubbuck, loc. sup. cit., p. 114.	.....	1	8	.....	.....	.....
611	Mr. Beechcroft, sup. cit., p. 532, (from Ass. Med. Jour., Jan. 12, 1856,) April 14, 1855.	.....	4	8½	Much reduced.	A fortnight before, slight; 2 days before record "a large quantity;" rest and astrin- gents; on date returned with great violence; continued after delivery.	Size of a sh ling; lax
612	Dr. Tyler, Dublin Med. Jour., N. S., iii. (1847,) p. 361, Case 2.	.....	.....	.....	In a most exhausted state; no pulse at wrist.	Profuse for 12 hours; plug.	Not fully c lated.
613	Ibid., Case 3, Jan. 12, 1845.	.....	9	.....	In a dangerous state.	.....	Well dilat
614	Ibid., Case 4, June 23, 1845.	.....	.....	.....	.....	Five weeks before; recurred at intervals of 10 days; labor came on a week before date; hemorrhage with every pain; plug.	Size of hal crown; af 24 hours plugging dilatable.
615	Ibid., Case 5, Nov. 6, 1845.	30	6	.....	Had fainted twice; al- most in a state of syncope.	Five hours before, while at tea; with each pain; plug.	High up; u dilated; rigid; 8 hours aft plugging dilated w
616	Ibid., Case 6, March 4, 1846.	31	2	.....	.....	Three days before; continued at intervals.	Well dilat
617	Ibid., Case 7, April 12, 1846.	.....	.....	.....	In a very exhausted state.	Continued till delivery.	.....
618	Mr. Thos. Lloyd, Lond. Lan., 1846, ii. p. 124, July 15, 1846.	.....	6	8th.	In a state of syncope.	Six hours before, sudden and copious; when first seen, to an amount sufficient to produce syncope.	Slightly d lated.
619	Mr. Challice, Lond. Lan., 1846, ii. p. 429.	.....	2	.....	Much exhausted.	Passive hemorrhage through the whole labor.	Rigid and unyieldin
620	Mr. Martin, Lond. Lan., 1848, i. p. 121.	.....	.....	.....	.....	.....	.....
621	Mr. E. Y. Steele, ibid., p. 282, May 30, 1847.	40	7	9	"In articulo mortis" to all appearance.	For 10 days; at last very pro- fuse.	2 inches in size; thin and flacc
622	Ibid., July 22.	24	1	9	Pulse thread-like; skin cold; jactita- tion.	Began a week before; ceased; on day of record very sudden and profuse; continued so.	Size of a crown-pie tense.
623	Dr. C. G. Putnam, Boston Lying-in Hospital, Feb. 29, 1849.	26	3	9	Unimpaired.	Three days before delivery, slight; none during labor.	3 inches in diameter soft and dilatable.
624	J. T. Ingleby, Treat. on Uterine Hem., London, 1832, p. 155.	.....	.....	.....	In a moribund con- dition.	.....	.....

Placenta. Labor completed by Artificial Means—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
protruding through os.	.....	Turning accomplished with great ease.	Recovered.	Dead.	Had an attack of puerperal mania.
complete.	.....	Turning; no difficulty expressed.	Died.	Dead.	Uterus contracted well; no syncope or unfavorable symptoms, except rapidity of pulse, which rose to 160; died in 3 days.
.....	.....	Turning.	Recovered.	.....	.....
.....	.....	Turning; placenta came away with child.	Died.	.....	Ergot, opium, brandy, etc. given; cold; pressure applied; hand introduced into uterus; no effect; died in less than 3 hours.
complete.	.....	Turning; labor completed by natural pains and gentle traction in three-quarters of an hour.	Recovered.	Dead.	.....
partial.	.....	Turning by one foot.	Recovered.	Lived.	Hemorrhage ceased after version was performed.
partial.	.....	Turning by one foot.	Recovered.	Lived.	.....
complete.	Head.	Turning by one foot.	Recovered.	Dead.	Had an attack of "phlegmasia dolens," but ultimately recovered.
partial.	Arm.	Turning.	Recovered.	Died.	Action of child's heart visible for some time, but could not be resuscitated.
complete.	Head.	Membranes ruptured, which, not checking hemorrhage, and patient becoming depressed, the CROCHET was used.	Recovered.	Dead.	.....
complete.	.....	Turning.	Recovered.	Lived.	A twin case; children born asphyxiated, but resuscitated.
complete.	.....	Turning.	Recovered.	Dead.	When first called, membranes had ruptured; little or no pain; gave tr. opii; on return, some hours afterwards, finding os not at all dilated, gave castor oil: this not expediting matters much, ergot was administered; foot seized and brought down; child putrid; in course of extraction head separated from body; patient fell asleep for an hour; pains then rapidly came on, and head was born; "an awful gush of blood" followed; controlled by pressure and ice.
complete.	Head.	Turning.	Recovered.	Lived.	.....
complete.	Head.	Turning.	Recovered.	Dead.	Stimulants were freely administered; binder applied to abdomen.
partial.	Head.	Turning after some difficulty, owing to contraction of uterus.	Recovered.	Dead.	Placenta followed in 20 minutes.
complete.	.....	Turning.	Recovered.	Lived.	Placental soufflet, in left iliac region, extending quite over pubes; very loud; 88 in a minute; fetal pulse, 150.
.....	.....	Vagina and os uteri filled with linen cloths; waited 2 days, then completed delivery by turning, probably.	Recovered.	.....	.....

TABLE VI.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF
625	Mr. J. L. I'On, Lond. Lan., 1845, ii. p. 644; Oct. 26, 1845.	30	5	7	Much reduced.	Passive for three or four attacks previously; returned when labor set in; profuse; plug; two doses of ergot; hemorrhage with accession of pains.	Hand pass without difficulty.
626	Mr. Henderson, Lond. Lan., 1846, i. p. 144; Nov. 22, 1845.	34	.....	.....	Pale, sleepy, retching.	More or less for a fortnight pre- vious.	Size of a crown; th easily di- lated.
627	Mr. J. Russell, Ed. Med. & Surg. J., lxvi. p. 49. Case 72, Feb. 1, 1814.	26	1	.....	.....	Several attacks; had flooded very profusely.	An inch a a half in diameter
628	Ibid., Case 80, Mar. 24, 1814.	.....	.....	.....	Exceedingly reduced in strength; further loss of blood to be greatly feared.	At intervals during the previous fortnight.	Sufficiently dilated to ascertain the prese- ation of placenta.
629	Ibid., Case 324, Sep. 26, 1819.	.....	.....	.....	.....	At intervals for 3 days; awak- ened out of sleep by slight pain; profuse hemorrhage; still going on.	Some diffi- culty in passing hand.
630	Ibid., Case 1810, Aug. 9, 1833.	.....	8	.....	Greatly reduced; wa- ter broke on 8th; no pain nor flooding.	On the 6th, with slight pains; returned profusely on 9th.	Dilatable.
631	Ibid., Case 1997, July 14, 1835.	.....	5	.....	Faint; countenance bleached; pulse small, quick.	Sudden, and continued till de- livery.	An inch a a half in diameter.
632	Ibid., Case 2023, July 24, 1833.	.....	7	7	Had fainted.	Sudden and profuse 4 days be- fore; ceased upon keeping quiet; returned with exercise.	Size of a shilling.
633	Ibid., Case 2500, June 15, 1845.	.....	Multi- para.	8th.	Extremely delicate habit; became very faint.	Two attacks before; returned when pains came on; continued more or less till delivery.	Dilated slowly; 1 difficulty delivery.
634	Ibid., Case 46, July 10, 1809.	.....	.....	.....	.....	Very profusely.	Size of ha a crown.
635	Ibid., p. 51, No. 45, June 10, 1811.	.....	.....	.....	Exceedingly exhaust- ed.	Very profuse.	Size of a crown; a first und- latable; a hour afte gave way
636	Ibid., p. 52, No. 50, July 6, 1811.	.....	.....	More than 8.	Strength and spirits good.	Before seen profuse; still going on; plug.	Size of a shilling.
637	Ibid., No. 51, Dec. 13, 1811.	.....	.....	.....	In a state of great ex- haustion.	For 10 days.	Well dilat
638	Ibid., No. 28, May 21, 1813.	.....	.....	.....	In a state of great ex- haustion.	.....	Size of ha a crown.
639	Ibid., No. 124.	.....	.....	.....	.....	For several days; continued when seen.	Well dilat
640	Ibid., No. 213, May 24, 1816.	.....	.....	7th.	Almost moribund.	For 6 days.	Size of ha a crown.
641	Ibid., No. 269, Feb. 1, 1817.	.....	.....	.....	.....	.....	.....
642	Ibid., No. 282, April 9, 1817.	.....	.....	.....	.....	Had lost a considerable quan- tity.	Not much dilated.
643	Ibid., No. 290, May 14, 1817.	.....	.....	Near full time.	Greatly exhausted; no pulse; skin cold.	Several attacks; twice in 24 hours preceding record.	Admitted fingers.
644	Ibid., No. 304, July 5, 1817.	.....	.....	.....	Exceedingly exhaust- ed.	Sudden at 4 A.M.	At 11 A.M. hand pass without difficulty.
645	Ibid., No. 348, Jan. 25, 1818.	.....	.....	.....	Moribund.	Been flooding the whole of the night.	Half a crow in size.
646	Ibid., No. 445, Dec. 1, 1818.	.....	.....	.....	.....	Profuse on the night previous; returned slightly with each pain.	Little diffi- culty in delivery.

Placenta. Labor completed by Artificial Means—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
Complete.	Turning.	Recovered.	Dead.	.....
Complete.	Turning.	Recovered.	Dead.	Placenta measured 9 inches in diameter: "rather a large surface to take much liberty with in an exhausted patient," says Mr. H.
Complete.	Turning, without loss of time.	Recovered.	Lived.	.....
Complete.	Turning.	Recovered.	Lived.	.....
Complete.	Turning.	Recovered.	.....	.....
Partial; almost complete.	Turning.	Recovered.	Lived.	Was feverish afterwards.
Complete.	Turning.	Recovered.	Lived.	.....
Complete.	Turning.	Recovered.	Died.	Child lived some days; the delivery was accomplished with more ease than was anticipated.
Partial.	Turning.	Recovered.	Lived.	Immediately after delivery became faint, with sensation of dying; pulse good; uterus well contracted; cold water injected into uterus; checked hemorrhage, but on reaction it returned; hemorrhage kept up, at intervals, for 16 days; best remedy found was ice in bladders to pubic region; tannin used, with no great benefit.
Complete.	Turning immediately.	Recovered.	Lived.	.....
Partial.	Foot first brought down; 3 grains of opium given; in about an hour sickness and slight pain came on, and delivery was completed with greatest ease.	Recovered.	.....	.....
Complete.	Turning, as soon as practicable.	Recovered.	Lived.	.....
Complete.	Turning, as soon as practicable.	Recovered.	Lived.	.....
Complete.	Turning, as soon as practicable.	Recovered.	Lived.	.....
Complete.	Turning, as soon as practicable.	Died.	.....	Recovered from shock of operation, but died from neglect and poverty some days afterward.
Complete.	Turning, after a half pint of brandy had been given.	Died.	Lived.	In a few hours after delivery; was attended by a midwife.
.....	Turning immediately.	Recovered.	.....	The whole record is: "This patient was immediately delivered, and did well."
.....	Turning, as soon as practicable.	Recovered.	Lived.	.....
Complete.	Turning, after a glass of brandy.	Died.	Dead.	Died in 2 hours.
.....	An attempt to turn failed from rigidity of os; at 4 A.M. 100 drops of laudanum given; at 11 A.M. turning without difficulty.	Recovered.	Lived.	.....
Complete.	Turning, after half a pint of brandy.	Died.	.....	"I remark," says Mr. R., "that I had more difficulty in dilating the os than I anticipated, but that when the waters escaped, the mouth of the womb immediately relaxed."
Complete.	Turning.	Died.	Lived.	In less than 2 hours; hemorrhage returned.

TABLE VI.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF
647	Mr. J. Russell, Ed. Med. & Surg. J., lxi. p. 54, No. 486, March 15, 1819.	.....	.....	.....	Much exhausted; slight pains.	Several times previously; at date with each pain.	Size of ha a crown.
648	Ibid., No. 623, Mar. 14, 1820.	.....	.....	8th.	.....	.....	.....
649	Ibid., No. 670, Aug. 20, 1820.	.....	.....	8th.	Was able to attend to domestic duties after first attack.	A month before, violent; returned at date, very profuse.	An inch a a half in diameter resisted little. Well dilated.
650	Ibid., No. 695, Sept. 15, 1820.	.....	.....	.....	Greatly exhausted.	For 2 days.	.....
651	Ibid., No. 797, Mar. 26, 1821.	.....	10	.....	.....	Been flooding profusely.	Dilated.
652	Ibid., No. 813, April 18, 1821.	.....	.....	.....	Very much exhausted; had fainted.	.....	Dilated.
653	Ibid., No. 960, April 11, 1822.	.....	.....	.....	.....	None previous to birth of first child; severe afterwards.	.....
654	Ibid., No. 970, April 16, 1822.	.....	.....	.....	Greatly reduced by poverty and hard labor.	The whole of the day; during examination a portion of placenta was separated; a gush followed, succeeded by another.	Delivered with gre ease.
655	Ibid., No. 971, June 1, 1822.	.....	.....	.....	Very faint and greatly exhausted.	"Exactly similar" to preceding case.	Thin; an inch and half in diameter.
656	Ibid., No. 1001, Aug. 4, 1822.	26	.....	.....	Faint; pulse quick.	Had attacks for 2 days previous.	An inch a a half in diameter.
657	Ibid., No. 1164, Mar. 18, 1824.	.....	.....	8th.	.....	Profusely for 2 hours.	2 inches in diameter; no difficulty in operating.
658	Ibid., No. 1469, Jan. 30, 1829.	.....	.....	.....	Much reduced; slight labor-pains.	Very profusely morning before; continued; when pains came on, with each pain.	Somewhat dilated.
659	Ibid., No. 1825, Oct. 19, 1833.	.....	12	.....	Greatly reduced by hemorrhage and poverty.	Several times.	Very flaccid; 2 inches diameter.
660	Ibid., No. 1978, Dec. 29, 1835.	.....	.....	.....	.....	.....	.....
661	Dr. Walker, Boston Med. & Surg. Jour., xl. p. 112, Oct. 4, 1849.	19	1	9	Exhausted to the last degree.	Three months before, after a fright; continued, though slight, for a month, when, on a little extra exertion, a sudden and copious flow took place: rest, cold, vinegar and ice, lead and opium; ceased; returned, at intervals, till Oct. 3, when an immense discharge took place; same treatment; hemorrhage continued, in variable quantity, till date, when another copious discharge occurred.	Dilated very slowly; at time version of a half dollar-p
662	Dr. Beardsley, op. cit., xliii. p. 129, Aug. 6, 1850.	.....	2	8	Syncope; dimness of vision; tremulous pulse.	For 3 or 4 days, in sudden gushes; increased with each pain; camphor and ammonia; tampon, wet with alum-water; cold to abdomen.	Well dilated.
663	Dr. Radford, Am. J. Med. Sci., xxxii. p. 534, Case 31, (from Ass. Med. J., Feb. 2 and 16, 1856.)	.....	1	.....	"Almost in articulo mortis;" no pains.	"It had been going on for some time."	Considerably dilated; dilatable.
664	Dr. Oldham, Am. J. Med. Sci., xxxii. p. 537, (from Med. Times & Gaz., July 12, 1856,) Case 3, June 16, 1846.	.....	10	8½	Unimpaired.	Hemorrhage came on at six and a half months; ceased, to return 5 weeks later; returned suddenly and in considerable quantity.	Dilatable size of a shilling.

Placenta. Labor completed by Artificial Means—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
Partial.	Turning immediately.	Recovered.	Lived.	.....
Complete.	Turning.	Recovered.	Lived.	Circumstances of this case exactly like the preceding, except os.
Complete.	Turning.	Recovered.	Lived.	
Complete.	Turning.	Recovered.	Lived.	.....
Nearly the whole in vagina.	Turning.	Recovered.	Dead.	.....
.....	Turning.	Recovered.	.....	.....
Partial.	Turning.	Recovered.	Lived.	Twin case; apparently the placenta of the first child was not over the os. "I remark here the case with which the os uteri dilated when the waters passed away."
Complete.	Turning.	Died.	Lived.	
Complete.	Turning.	Recovered.	Lived.	.....
Complete.	Turning, after brandy.	Recovered.	Lived.	Twin case; placenta were expelled singly.
Complete.	Turning.	Recovered.	Dead.	.....
.....	Turning.	Recovered.	Lived.	.....
.....	Turning.	Died.	.....	Rallied from shock of delivery, but died in a few days from gastric fever.
.....	Turning.	Recovered.	Lived.	.....
Complete.	Turning, after the administration of a large dose of ergot.	Recovered.	Dead.	.....
Complete.	Head and cord.	Turning.	Recovered.	Dead.	"Every day's experience," says Dr. B., "shows me more and more, the necessity of reliance upon general principles modified to meet the exigency of the individual cases, rather than upon set rules of practice laid down in books; the wisdom of ages and the routine of long experience, are of little avail in urgent cases unless the judgment, rather than the dexterity of the practitioner, controls and governs all his efforts."
Complete; externally lacerated.	Turning.	Died.	Dead.	
Partial.	Turning; knee brought down; membranes had been ruptured 3 hours before.	Recovered.	Lived.	The operation was performed, not with the prospect of saving the patient, but in obedience to a law which requires that none shall die undelivered.

TABLE VI.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF O
665	Dr. Oldham, Am. J. Med. Sci., xxxii. p. 537, (from Med. Times & Gaz., July 12, 1856.) Case 4, July, 1851.	.....	4	9	.....	Three weeks before, while urinating, a large quantity; rest, acid drinks, etc.; returned in a fortnight copiously.	Slightly open; soft and yielding.
666	Ibid., Case 5, 1855.	.....	2	9	.....	Not great; commenced when labor set in.	Size of half a crown; yielding.
667	Ibid., p. 538, Case 6.	.....	.....	.....	"In good condition."	Began when labor came on.	Moderately dilated and dilatable.
668	Ibid., Case 7.	.....	Multi-para.	9th.	.....	A great deal in repeated bleedings.	Considerable resistance to turning.
669	Ibid., Case 9, 1852.	.....	5	6	In bad health from cardiac disease; pale, with feeble pulse.	Sudden; a large quantity lost in a short time.	Dilating slowly; "rigid and undilatable in structure."
670	Ibid., Case 11, June 27, 1847.	.....	.....	9	In a very feeble state.	A gallon at first attack on 25th; ergot and plug; a great deal drained through; brandy and opium.	Size of half a crown; soft and yielding.
671	Ibid., Case 12, Sept. 29, 1855.	.....	7	Far advanced.	In a state of syncope; "not seriously exhausted."	A fortnight before; very copious on morning of date.	Dilatable.
672	Mr. W. B. Chavasse, Braithwaite, (from Dub. Quart., Aug. 1853,) No. 28, p. 260, Am. ed.	.....	.....	.....	.....	.....	Not sufficiently dilated.
673	Ibid.	.....	.....	.....	.....	.....	Not sufficiently dilated.
674	Dr. J. Bigelow, Boston; N. E. Medical Journal, x. p. 17, 1821.	.....	Multi-para.	.....	Pains strong.	Half an hour before, when labor commenced; considerable and increasing.	More than half dilated.
675	Com. by Dr. Bigelow.	.....	.....	.....	.....	.....	.....
676	Mr. G. G. Bird, Lond. Med. Gaz., v. p. 608.	Middle age.	.....	.....	Greatly exhausted; appeared to be dying.	Repeated for a fortnight; at last very profuse indeed.	.....
677	Dr. E. Rigby, Lond. Med. Gaz., xiv. p. 367, Jan. 8, 1833.	27	4	9	Extremely faint; no pulse; almost in a state of syncope.	Sudden while walking.	Admitted fingers; perfectly dilatable.
678	Mr. John J. Jackson, Lond. Med. Gaz., xx. p. 366, Jan. 25, 1837.	39	.....	.....	Had a bad cough; reduced to last extremity by repeated hemorrhages; pains intermittent.	Dec. 18th, 1836, after severe fit of coughing, about half a pint; Jan. 14th, renewed in larger quantity; 22d, recurred again.	Os dilatable.
679	Dr. Rigby, <i>ibid.</i> , p. 842, April 8, 1835.	38	.....	.....	Much exhausted.	April 3, while at work, to the amount of "nearly half a pail-full;" slight return on 6th, again on 8th, with access of pains.	Dilated to about an inch and half.
680	Dr. H. Pleasants, Am. Jour. Med. Sci., N. S., xv. p. 366.	30	4	Full time.	Of a very vigorous constitution.	Frequent during the two latter months; excessive immediately previous to attendance; tampon, etc. used with partial success.	.....
681	Dr. D. H. Storer, Am. Jour. Med. Sci., N. S., xxv. p. 89.	.....	.....	.....	.....	Flooding commenced as os began to dilate; amount not stated.	.....

Placenta. Labor completed by Artificial Means—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
Complete.	.....	Turning.	Recovered.	Lived.	.....
Complete.	.....	Turning by one foot; finding it impossible to complete version, craniotomy; after which turning was accomplished.	Recovered.	Dead.	.....
Partial.	Arm.	Turning; membranes were ruptured a little time previously.	Died.	Dead.	A continuous flow of florid blood succeeded delivery; sponge was applied to cervix; abdomen bandaged; arrow-root and brandy; recurred again and again, and she died in 50 hours; laceration of cervix to the extent of an inch.
Complete.	.....	Turning.	Died.	.....	Bleeding continued after delivery; died in 2 hours; cervix torn in two places.
Complete.	.....	An attempt made to separate the placenta; failing in this, turning with two fingers; knee brought down.	Recovered.	Dead.	Placenta adherent in one portion.
Complete.	.....	Turning by a foot.	Died.	Dead.	Placenta was adherent in all its surface, and spread over an unusually large space.
Complete.	.....	Turning.	Recovered.	Lived.	Placenta bilobed, very large. "Between the two lobes the separated veins were quite distinct, with their thin coats and large orifices."
.....	.....	Turning.	Recovered.	.....	Great flowing after delivery, from what Mr. C. considers to have been contusion of the os, from turning at too early a period.
.....	.....	Turning.	Recovered.	.....	Suffered in same way, from a like cause, accompanied a few days later with fever.
Partial.	Arm.	Turning by one foot.	Recovered.	Dead.	.....
.....	.....	Turning.	Recovered.	Lived.	.....
.....	.....	Forced.	Recovered.	.....	Bleeding ceased after delivery; uterus contracted; on account of her exhaustion, transfusion performed to the extent of 4 ounces; had subsequently an attack of phlegmasia dolens.
Complete; later over	Head; 1st position.	Turning; one foot brought down; when the trunk was born ergot was given.	Recovered.	Dead.	No hemorrhage during or after operation.
Partial, over anterior	Head.	Turning.	Died.	Dead.	From Friday, 22d, till date of record, no attempt at assistance was made; at that time with no return of hemorrhage, sudden dyspnoea, jactitation of upper extremities, and quick and small pulse came on; next day after turning, 7 ounces of blood transfused, with effect to bring up pulse; in afternoon repeated; expired soon after. For details, see p. 250.
Complete.	.....	Turning; ergot given.	Recovered.	Dead.	After delivery, hemorrhage returned from relaxation of uterus; cold water was poured upon the naked abdomen from a height; brandy and ergot given; a tight bandage applied.
Complete.	Head.	Turning by both feet.	Recovered.	Dead.	.....
Partial.	Foot with cord.	Turning by one foot.	Recovered.	Died.	Child breathed occasionally for 6 or 8 minutes.

TABLE VI.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF OS
682	Dr. B. Brown, Am. J. Med. Sci., N. S., xxvii. p. 93.	27	2	6	In a very critical condition.	For the first time 2 weeks before attendance; ceased and returned three times; grew worse; tampon; ice; sinapism to back.	Showed no disposition to dilate.
683	Mr. F. F. Giraud, Am. J. Med. Sci., N. S., xxx. p. 256, (from Assoc. Med. Jour., Feb. 9, 1855.)	.....	10	9	Very faint.	About a month before, at stool, in small quantity; just before delivery a profuse, sudden gush.	Rigid; great difficulty in overcoming it.
684	Ibid., loc. sup. cit.	.....	.....	.....	.....	.....	.....
685	Ibid.	.....	.....	.....	.....	.....	.....
686	Ibid.	.....	.....	.....	.....	.....	.....
687	Mr. Rigden, loc. sup. cit.	.....	.....	6½	.....	.....	.....
688	Ibid.	.....	.....	6½	.....	.....	.....
689	Ibid.	.....	.....	6½	.....	.....	.....
690	Dr. James Borrett, Lond. Med. Gaz., N. S., i. p. 789, (Feb. 4, 1842.)	45	15	Between 5th and 6th.	.....	Great; plug.	Contracted and rigid.
691	Mr. Ed. Ray, Lond. Med. Gaz., xli. p. 119, April 8, 1847.	27	2	7	Blanched; cold; pulseless.	Suddenly on P.M. of date, without pain; "poured" from her.	Dilated.
692	Mr. D. Lewis, Lond. Lan., 1833-34, i. p. 596.	.....	.....	.....	Very bad.	.....	.....
693	Mr. W. Simpson, Lond. Lan., 1839-40, i. p. 492, Nov. 19, 1839.	.....	.....	8	Scarcely able to move from exhaustion.	Six days before, a great deal; arrested by cold applications and rest; returned in 5 days with increased violence; continued.	Dilatable.
694	Mr. Denham, <i>ibid.</i> , p. 493, Dec. 1, 1839.	.....	7	8	In a state of complete syncope.	For nearly a month past; plug; hemorrhage ceased.	Dilatable; hand passed with very little difficulty.
695	Mr. Hammond, Lond. Lan., 1839-40, i. p. 634, (reported by J. T. Ingleby,) Sept. 12, 1839.	.....	.....	9	Great sinking of vital powers.	On the morning before, after being frightened; a large quantity; returned in 24 hours; plug, ergot.	At first rigid; admitting only tip of finger; afterwards dilatable.
696	Mr. J. T. Ingleby, Lond. Lan., 1839-40, i. p. 943.	.....	.....	.....	.....	.....	.....
697	Mr. T. S. Wells, Lond. Lan., 1839-40, ii. p. 19.	.....	1	.....	Pains active through the whole of the case.	Began the day before attendance; increasing with every pain; plug.	Very rigid first; afterwards dilatable.
698	Mr. Chatto, Lond. Lan., 1839-40, ii. p. 121; March 19, 1840.	.....	.....	7	Very much reduced; fainting often; pulse excessively feeble.	For several weeks sudden and great.	Well dilated a "thick but yielding edge."
699	Lond. Lan., 1841-42, ii. p. 642, July 9, 1842.	36	.....	.....	Not perceptibly impaired.	At intervals, for 10 days; rest and cold applications; 2 ounces of blood could not have been lost after the commencement of delivery.	Dilatable; "yielding most readily."
700	Mr. R. B. Jordison, Lond. Lan., 1844, i. p. 157; Oct. 5, 1844.	.....	.....	.....	.....	Three months before, violent; rest, ice, acet. of lead and opium; fortnight before date, more profuse; same remedies continued, at intervals, till date; very profuse when labor set in.	Dilatable.
701	Dr. J. H. Davis, Lond. Lan., 1845, ii. p. 122; June 22, 1839.	35	3	8½	Completely blanched; pulse scarcely perceptible.	A large quantity had been lost; began 8 hours before.	Dilatable.
702	Mr. R. Barnes, Lond. Lan., i. 1847, p. 327; June 2, 1846.	.....	5	8	Not appreciably impaired; strong pains.	Sudden and very profuse day before date; tr. opii, acetate of lead; plug, dipped in vinegar and water.	Dilated very slowly.

Placenta. Labor completed by Artificial Means—Continued.

PRES- ENTA- TION OF PLACENTA.	PRES- ENTA- TION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
Complete.	Turning.	Recovered.	Dead.	Only unfavorable symptom noted afterwards was irritability of stomach; subdued by morphia.
Complete.	Turning; one-quarter of an hour in the operation.	Died.	.....	Without any apparent hemorrhage, she sank and died in half an hour, in defiance of stimulants and other treatment.
.....	Turning.	Recovered.	.....	.....
.....	Turning.	Recovered.	.....	.....
.....	Turning.	Recovered.	.....	.....
.....	Turning.	Died.	Dead.	From peritonitis, 6 days after delivery.
.....	Turning.	Recovered.	Dead.	Mother suffered from neuralgic pain in one leg for several months.
.....	Head.	Turning. Craniotomy.	Recovered. Died.	Dead. Dead.	Soon after operation.
pulsing through os.	Foot.	Foot brought down; hemorrhage continued.	Recovered.	Dead, twins.	Another foetus was discovered, but before this was born the double placenta was expelled.
.....	Turning.	Recovered.	.....	.....
Complete.	Arm.	Turning.	Recovered.	.....	.....
Complete.	Ergot given, and turning immediately performed.	Recovered.	.....	.....
Partial; anterior and lateral portion of cervix.	Turning.	Recovered.	.....	Laceration of posterior wall of uterus horizontally.
.....	Turning.	Recovered.	Dead.	Placenta having been forced almost through os externum of uterus, that portion was cut away and extracted, leaving the remainder adhering; no hemorrhage ensued from cut surface; version was then performed, and the adherent placenta afterwards removed.
Complete.	Turning.	Recovered.	.....	.....
Complete.	Turning with greatest ease; child left to efforts of nature on account of exhausted state.	Died.	Dead.	Upon examination of body, no trace of inflammatory action was visible.
Complete.	Turning; delivery completed in half an hour, by uterine efforts chiefly.	Died.	Dead.	Everything proceeded well for 20 minutes, when she began to sink, and died half an hour after delivery.
Complete.	Turning, as soon as practicable.	Recovered.	Lived.	.....
Complete.	Turning; previous to which the placenta had been perforated, and an attempt made to reach the child through the opening.	Died.	Dead.	Did well for a fortnight, when, after having set up 2 hours, fell into a state of syncope and died.
Fetal.	Feet.	Feet drawn down and secured by tape; child extracted very slowly.	Recovered.	Died.	Child lived 2 hours; cord round the neck and left arm.

TABLE VI.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF OS
703	Dr. Kiewier, Lond. Lan., i. 1847, p. 412, from L'Union Med.	37	8	9	In an anemic state.	At irregular intervals, not to a large amount; as the pains set in, the hemorrhage increased.	Soft; size of a five-shilling piece; difficult to dilate.
704	Dr. Protheroe Smith, Lond. Lan., ii. 1847, p. 121.	34	7	.....	Great exhaustion; very faint.	Little or none before labor; after body of child was born, some into cavity of uterus, producing great impression on the system.	Considerably dilated.
705	Dr. J. H. Davis, Lond. Lan., ii. 1849, p. 293; April 17, 1849.	26	4	.....	Blanched; quick, weak pulse.	Two days before, considerable; plug; returned upon its removal; reappplied; laudanum; after delivery, returned copiously.	Dilated slowly.
706	Mr. G. F. Knipe, Lond. Lan., 1851, i. p. 599; March 23, 1851.	34	4	8	Countenance pallid; pulse small and thready; no uterine pains for 2 hours.	A month before, severe, after a long walk; recurred from time to time upon any labor; with pains came on hemorrhage, very profuse; bed and bedding deluged with blood; laudanum and brandy.	Easily dilatable.
707	Ibid.	.....	.....	.....	.....	.....	.....
708	Ibid.	.....	.....	.....	.....	.....	.....
710	Mr. J. T. Walles, Lond. Lan., 1852, i. p. 237; Dec. 18, 1851.	49	.....	.....	Little or no pain.	Going on for some time; fearful during contraction of uterus.	Well dilated.
711	Dr. J. Duigan, Lond. Lan., 1853, i. p. 80; Jan. 8, 1853.	.....	.....	Between 7 and 8.	Very much exhausted; face blanched; skin cold; pulse flagging and weak.	With labor-pains, several hours before.	High up; lated; soft and dilatable.
712	S. A. Cook, M.D., Boston Med. and Surg. Jour., xxix. p. 314.	.....	5	8	Very faint; pulse scarcely perceptible; waters discharged; pains feeble; been sick for 3 months.	For 2 months, at intervals; increasing in frequency.	Gradually dilated; rigid at first.
713	Dr. Dewees, Phil. Med. Jour., v. p. 285.	.....	.....	.....	Much exhausted; no pains.	Sudden; more than half a gallon lost.	Rigid.
714	Dr. Jas. Reid, Lond. Med. Gaz., xvi. p. 145.	26	.....	9	Unimpaired.	Not the slightest hemorrhage in the whole progress of the case.	Fully dilated.
715	Dr. Edward Cope- man, "Rec. of Ob- stetric Practice," p. 188, Case 1, May 19, 1850.	35	10	9	Weak state.	For 2 months, at intervals; considerable as pains came on.	Dilatable.
716	Ibid., Case 2, Aug. 31, 1850.	.....	12	Nearly full time	Very faint.	Severe.	.....
717	Ibid., Case 3, July 22, 1851.	.....	9	Nearly full time	"Seriously faint;" no uterine pains.	.....	Offering no resistance
718	Ibid., Case 5, Jan. 22, 1852.	30	5	Near full term.	In jeopardy of her life; no decided labor-pains.	A fortnight before, after mental anxiety; three times since.	Soft; partially dilated
719	Dr. J. G. Crosse, "Cases in Mid.," p. 113, Case 53.	40	.....	Full term.	"Pale as a sheet."	During the day.	Size of a shilling; offered no resistance

Placenta. Labor completed by Artificial Means—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
Partial.	Right hip.	Turning; child born after long and difficult efforts.	Recovered.	Dead.	Fœtus hydrocephalic.
Partial.	Right foot.	Ergot given at intervals; other foot brought down; body soon followed; 10 hours after, head not advancing, ether given; pains soon expelled head.	Recovered.	Dead.	Uterus contracted firmly; no return of hemorrhage.
.....	.....	Foot and leg brought down; child born by natural efforts in an hour and a half.	Recovered.	.....	.....
Partial.	Head.	Turning; there being not the least action in the uterus, ergot was given in brandy; child born in half an hour.	Recovered.	Lived, in-ferred.	No record of any hemorrhage after turning, except what came away at the birth clotted.
.....	.....	Turning.	Recovered.	Lived.	.....
.....	.....	Turning.	Recovered.	Dead.	.....
Complete.	.....	Tincture ergot, half an ounce given; an attempt made to perforate the placenta, but unsuccessful; one edge separated and turning performed; when legs of fœtus came down through os, placenta came away also; labor finished in about an hour.	Recovered.	Dead.	.....
Partial; almost complete.	.....	Turning.	Recovered.	Dead.	"The operation was well and easily performed; I kept my finger on the pulse; it fell suddenly, and became almost imperceptible during the operation; we hastened the extraction, and supplied her freely with stimulants, compressing the uterus with the hand placed externally; the operation concluded, we were glad to find the uterus firm and contracted, and the placenta in the vagina; the woman was now in the last stage of exhaustion, but by persevering with restorative means, we at last established some slight reaction, and she progressed favorably."
Complete.	.....	Stimulants were given; in 5 hours os dilated; turning.	Died.	.....	No hemorrhage after version; died in about 10 hours, with all the symptoms of exhaustion.
.....	.....	Turning, after the tampon had been applied 4 hours.	Recovered.	Lived.	.....
Partial.	.....	Turning.	Recovered.	Dead.	.....
Partial.	Head.	Turning.	Recovered.	Dead.	.....
.....	.....	Turning.	Recovered.	Dead.	.....
.....	Head.	Turning.	Died.	Dead.	In a quarter of an hour.
.....	.....	Turning.	Recovered.	Lived.	Child required an hour's care to resuscitate it; mother faint for several hours.
.....	.....	Turning.	Died.	Dead.	Died in less than 2 hours, while preparations were being made for transfusion.

TABLE VI.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF OS-
720	Dr. J. G. Crosse, "Cases in Mid.," Case 54.	35	9	9	.....	Several days; at last profusely; several pints; none during del- ivery or after.	.....
721	Ibid., Case 55.	.....	Multi- para.	8	Faint from excessive loss of blood.	Three weeks before; recurred profusely when labor came on.	Moderately dilated.
722	Ibid., Case 56, Mar. 4, 1840.	33	7	9	Pallid; pulse just per- ceptible.	A fortnight before; at intervals since; great at date.	Relaxed and dilated.
723	Ibid., Case 57, Dec. 30, 1833.	37	9	9	Pallid; exhausted; cold; pulse just per- ceptible.	Three weeks before, sudden and profuse; returned in a week; came on when labor com- menced, slight.	Considerable dilated; di- ficult to introduce hand.
724	Ibid., Case 58, April 1, 1835.	29	1	7	Health bad; pul- monic cough; great- ly reduced.	A good deal.	Size of half a crown.
725	Ibid., Case 60, April, 1842.	27	3	8½	Fainted; continued faint.	Three or four days before, some- times at date, a profuse gush, 2 or 3 pints.	Dilatable.
726	Ibid., Case 61.	39	Multi- para.	Near full term.	Syncope; vomiting; pulse not to be felt.	Repeated during latter months; at last 5 or 6 pints.	Size of half a crown; dilated readily.
727	Ibid., Case 62.	17	.....	8	.....	Two months before; returned 3 days before labor came on, slight at first, then a sudden, profuse loss; plug.	Dilatable.
728	Com. by Dr. B. Cox, Salem, Mass.	.....	.....	.....	Much prostrated.	For 6 or 8 hours.	More than half de- tached.
729	Com. by Dr. Welch, Hartford, Conn.	.....	.....	.....	.....	Several times, somewhat pro- fusely.	Dilated and yielding
730	Ibid.	.....	.....	8th.	Greatly prostrated.	Twenty-four hours previous, pro- fuse; returned again, when os dilated, in large quantity.	Dilated; so- and yield- ing.
731	Ibid.	45	Multi- para.	.....	Completely bleached; had fainted; pulse very feeble.	Had lost 5 pints within an hour; also, considerable quantity, at different times, during the pre- vious 4 weeks.	.....
732	Ibid.	.....	.....	.....	Extremely pro- strated.	Great.	.....
733	Com. by Dr. J. Stimpson, Ded- ham, Mass.	30	4	9	In a very critical con- dition; no pains.	During a month previous, sever- al attacks; on day of labor, sudden and severe.	An inch in diameter; soft and yielding.
734	Com. by Dr. Robert Thaxter, Dorches- ter, Mass., Nov. 16, 1829.	.....	5	Full term.	Pains moderate and regular.	Five weeks previously; not much; considerable at date.	Considerable dilated.
735	Ibid., June 2, 1830.	.....	5	Full term.	"Pains regular but moderate."	Moderate hemorrhage 2 or 3 times before; a good deal in the few hours previous; continued.	.....
736	Ibid., April 26, 1831.	.....	5	6	.....	Eight or ten days before, and continued more or less till date.	"Pretty well dilated."
737	Ibid., Mar. 13, 1835.	.....	1	7th.	.....	Began on 10th. and continued at intervals, without pain, till date.	Little di- lated; rig
738	Ibid., Dec. 31, 1843.	.....	4	Full term.	.....	Profuse.	Largely di- lated.
739	Ibid., Nov. 25, 1848.	.....	1	7	.....	Soon after a fright; continued to increase.	.....
740	Com. by Dr. Pond, Worcester, Mass.	.....	.....	9	Had fainted.	For 2 or 3 weeks previous.	.....
741	Ibid.	.....	.....	9	.....	For 2 or 3 weeks previous.	.....
742	Ibid.	.....	.....	7th.	.....	For 2 or 3 weeks previous.	.....
743	Ibid.	.....	.....	7th.	.....	For 2 or 3 weeks previous.	.....
744	Com. by Dr. Hos- mer, Watertown, Mass.	.....	.....	9	.....	Profuse for 24 hours.	.....
745	Com. by Dr. Choate, Salem, Mass.	.....	.....	.....	.....	.....	.....
746	Ibid.	.....	.....	.....	.....	.....	.....
747	Ibid.	.....	.....	.....	.....	.....	.....
748	Dr. S. Johnson, Salem, Mass., 1836.	.....	.....	.....	Bloodless.	For a month, at intervals.	.....

Placenta. Labor completed by Artificial Means—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
.....	Feet.	Feet drawn down; child delivered immediately.	Recovered.	Dead.	Child was alive when version was commenced.
artial.	Head.	Turning by one foot.	Recovered.	.....	Mother continued faint for 5 or 6 hours; got nearly a pint of brandy.
artial.	.....	Turning.	Recovered.	Dead.	.....
artial.	Head.	Turning.	Died.	Dead.	TRANSFUSION to 6 ounces; produced distress, dilated pupils, purplish pallor of face, etc.; died in an hour. For details, see Index, sub "Transfusion."
.....	.....	Turning.	Recovered.	.....	.....
artial.	Head and hand.	Turning.	Recovered.	Dead.	.....
artial.	.....	Turning; funis came down with the body of the child.	Recovered.	Dead.	Had an attack of phlegmasia dolens.
artial.	Head.	Turning.	Recovered.	Dead.	.....
.....	.....	Turning.	Recovered.	Lived.	.....
.....	.....	Turning.	Recovered.	Lived.	.....
complete.	.....	Turning.	Recovered.	Lived.	.....
.....	.....	Turning; ergot given as soon as feet were grasped.	Recovered.	Lived.	She was greatly exhausted; was a long time rallying; stimulants, friction, etc. etc. used.
.....	.....	Turning.	Recovered.	Lived.	.....
complete.	.....	Turning; labor completed in about half an hour by natural efforts.	Died.	Dead.	.....
.....	.....	Turning; one foot brought down; half a drachm of ergot given; delivery completed "as soon as convenient."	Recovered.	Lived.	.....
.....	.....	Turning; "Proceeded exactly" as in the case preceding.	Recovered.	Lived.	.....
al.	Shoulder.	Turning; both feet; child delivered immediately.	Recovered.	Died.	.....
.....	.....	Turning; one foot brought down.	Recovered.	Dead.	Belladonna ointment used till os internum and external parts, which were equally rigid, were dilated enough to introduce the hand.
al.	.....	Turning; one foot brought down.	Recovered.	Dead.	.....
al.	.....	Turning; ether given.	Recovered.	Dead.	.....
.....	.....	Turning.	Recovered.	Died.	.....
.....	.....	Turning.	Recovered.	Died.	.....
.....	.....	Turning.	Recovered.	Died.	.....
.....	.....	Turning.	Recovered.	Lived.	.....
.....	.....	Turning.	Died.	Lived.	Suddenly from hemorrhage 24 hours after delivery, having been left apparently well.
.....	.....	Turning.	Recovered.	.....	.....
.....	.....	Turning.	Recovered.	.....	.....
Complete.	Arm.	Turning.	Recovered.	Dead.	.....

TABLE VI.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF OS
749	Dr. S. Johnson, Salem, Mass., 1847.	.....	.....	6	.....	Tremendous flooding.	.....
750	Ibid.	.....	.....	.....	.....	.....	.....
751	Ibid., 1845.	.....	.....	.....	.....	.....	.....
752	Com. by Dr. M. S. Perry, Boston.	.....	3	.....	.....	At intervals, for a month; then great, without pains.	Dilatable.
753	Com. by Dr. N. B. Shurtleff, Boston.	.....	3	.....	.....	.....	Dilatable, and nearly dilated.
754	Com. by Dr. J. Ste- vens, Boston.	.....	2	8	.....	Some before, none after delivery.	.....
755	Com. by Dr. J. Bige- low, Boston.	.....	.....	.....	.....	Some, but not extraordinary in quantity.	.....
756	Com. by Dr. Hana- ford, Boston.	.....	.....	.....	.....	Great flooding; ergot.	Dilated.
757	Ibid.	.....	1	.....	.....	For 4 months, at intervals of 1 or 2 weeks; considerable at time of labor; ceased after a while.	Dilated slowly.
758	Dr. S. Adams, Bos- ton.	.....	.....	.....	.....	.....	.....
759	Com. by Dr. S. Cabot, Boston.	.....	.....	.....	.....	.....	.....
760	Com. by Dr. Z. B. Adams, Boston.	.....	.....	.....	.....	.....	.....
761	Com. by Dr. Hooker, E. Cambridge, Mass.	.....	.....	.....	.....	Frequently for 3 months.	.....
762	Com. by Dr. Geo. H. Lyman, Boston, April 27, 1855.	18	1	9	Great prostration; pains good.	Excessive during labor; none before; ergot and stimulants in large quantities.	Fully di- lated.
763	Dr. W. Read, Bos- ton, Aug. 5, 1845.	.....	1	9	Reduced to the last degree of exhaus- tion.	Steady, but not excessive in quantity.	Dilated ve- slowly; rigid at first.
764	Ibid., Jan. 26, 1856.	22	2	.....	Of rather feeble con- stitution; otherwise good; much exhaust- ed at the last; faint- ing and nausea.	Two months before, slight; re- curred in a month; kept on, with intervals of a few days; increased as labor came on and os dilated; plug; ergot.	Fully di- lated.
765	Com. by Dr. H. Du- pee, Boston.	35	4	Nearly full term	Much prostrated.	For 10 days; at time of labor, profuse.	Dilated to an inch in diameter and dilatable.
766	Ibid.	Mid- dle age.	3 or 4	Full term.	In a moribund state; very destitute.	For some time, in large quan- tity.	.....
767	Com. by Dr. E. H. Clarke, Boston.	35	6	Full term.	In immediate danger.	For several hours, in gushes, with intervals of cessation.	An inch in diameter soft and dilatable.
768	Com. by Dr. C. E. Buckingham, Bos- ton, Feb. 15, 1850.	.....	.....	7th.	Not much impaired.	For a week or more, at inter- vals, in gushes.	Dilated to 1½ inch in diamet
769	Dr. Legroux, Arch. Gén., Dec. 1855, p. 648.	.....	.....	.....	In a state of extreme feebleness.	.....	.....
770	Ibid.	.....	.....	.....	Very much exhaust- ed.	.....	.....
771	Com. by Dr. W. Channing, Boston.	.....	1	.....	.....	Two attacks before labor; enor- mous.	.....
772	Ibid.	.....	3	.....	.....	Sudden; not in great quantity.	Dilated.
773	Ibid.	.....	1	9th.	Much exhausted; could not endure any further loss.	After slipping on sidewalk, 3 days before; plug; did not stop.	Did not di- late.

Placenta. Labor completed by Artificial Means—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
complete.	.....	Membranes ruptured; turning.	Recovered.	Alive, twins.	Stimulants were given for 4 hours; the membranes were then ruptured; the hemorrhage gradually ceased, and version was then performed.
partial.	.....	Turning.	Recovered.	Dead.	.....
.....	.....	Turning.	Died.	Dead.	.....
.....	.....	Turning.	Recovered.	Lived.	.....
.....	.....	Turning.	Recovered.	Died.	Child lived 24 hours; patient was seen early, at commencement of hemorrhage, before there was much prostration.
partial; one-half of os covered.	.....	Turning.	Recovered.	Dead.	.....
partial.	.....	Turning.	Recovered.	Lived.	.....
partial.	.....	Turning.	Recovered.	Lived.	The hemorrhage increased to a great extent for a time, after version.
.....	.....	Turning.	Recovered.	Dead.	Remained very feeble for many months.
.....	Partial.	Turning.	Recovered.	Dead.	.....
.....	.....	Turning.	Recovered.	Dead.	A premature case.
.....	.....	Turning.	Recovered.	.....	.....
.....	.....	Turning.	Recovered.	Dead.	Mother always had dimness of vision and dilated pupils during the last months of gestation and during lactation; she subsequently died of effusion on the brain.
complete; one-third of os covered and protruding vagina.	Feet.	Turning.	Recovered.	Dead.	Hemorrhage was steady in quantity; did not come in gushes.
partial.	Head.	Turning.	Died.	Dead.	Died as soon as delivery was accomplished.
partial.	Head.	Turning by one foot.	Recovered.	Lived.	.....
complete; partial.	.....	Turning.	Died.	Dead.	Died in about an hour, from a sudden gush of blood, while sitting on a vessel.
.....	.....	Turning.	Died.	Dead.	Stimulants, and everything that could be got, used, but she died in about an hour.
complete; partial.	Head.	Turning.	Died.	Dead.	"In consequence of imprudence in eating and exercise."
partial, posteriorly.	Head.	Turning; a portion of funis came down with child; child born in three-quarters of an hour; ergot was given as soon as turning had been accomplished.	Recovered.	Dead.	.....
.....	.....	Turning.	Died.	.....	In 2 or 3 days; did not rally.
.....	.....	Turning.	Died.	.....	In 2 or 3 days; did not rally.
.....	.....	Turning.	Died.	Dead.	For 3 hours mother did well, then suddenly died, without any further hemorrhage.
.....	.....	Turning.	Recovered.	Dead.	.....
.....	.....	Turning.	Died.	Dead.	Immediately after delivery.

TABLE VI.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF O.
774	Com. by Dr. A. A. Gould, Boston, Nov. 9, 1845.	.....	2	Full term.	Much exhausted; pains strong.	Profuse with each pain; plug.	Not well dilated.
775	Ibid.	.....	.....	Full term.	.....	.....	.....
776	Ibid.	.....	5	Full term.	.....	Profuse.	.....
777	Com. by Dr. C. Gordon, Boston.	.....	3	.....	.....	For 2 or 3 weeks; not great.	.....
778	Com. by Dr. H. G. Clark, Boston.	.....	.....	.....	.....	Hemorrhage came on with labor; plug for 36 hours.	.....
779	Ibid.	.....	.....	.....	.....	For 12 hours.	.....
780	Com. by Dr. F. F. Patch, Boston.	30	1	6½	Fainted several times.	At intervals for a month; profuse; when pains came on, worse.	Dilatable.
781	Com. by Dr. J. W. Warren, Boston, 1849.	31	4	8	.....	A week previous; twice on the day before, considerable.	Dilated and dilatable.
782	Com. by Dr. E. W. Blake, Boston, 1848.	25	2	Full term.	Somewhat exhausted.	Began at the 4th month, and returned every month till labor came on; not great; when labor set in, profuse.	Dilated rapidly.
783	Com. by Dr. C. D. Cleaveland, Boston, Nov. 1855.	22	1	Full term.	At no time much affected by the loss of blood, though inclined to be a little faint.	Two or three times the month before labor; did not recur till labor had progressed a few hours, then about 2 pounds.	Admitted 2 fingers; rigid, but yielded to gradual dilatation.
784	Com. by Dr. D. H. Storer, Boston.	.....	1	Full term.	Not impaired.	Not extreme during labor.	Dilatable.
785	Ibid.	.....	.....	.....	Exceedingly reduced.	.....	Dilatable.
786	Ibid.	.....	.....	.....	.....	.....	.....
787	Com. by Dr. Dyer, Boston.	.....	.....	Full term.	A delicate, feeble woman.	About 7 hours before pains set in, profuse; when pains came on, returned.	Soft, admitting finger easily.
788	Com. by Dr. C. G. Putnam, Boston.	.....	1	7th.	Extremely feeble.	For a week.	Dilatable.
790	Dr. D. H. Storer, Boston Med. and Surg. Jour., liii. p. 287.	36	8	.....	.....	Two days before; plug; lost in all from 2 to 3 quarts; partially checked by plug.	Dilatable.
791	Com. by Dr. C. G. Putnam, Boston.	32	6	8th.	Very much enfeebled.	At commencement of 7th month; soon checked by plug; 17 hours before labor, returned, plug did not check it; stimulants, etc. used.	Dilatable.
792	Dr. A. T. Lowne, L. & E. Monthly J., Aug. 1852, p. 171; Feb. 16, 1852.	34	5	8	Seriously affected by loss of blood.	A fortnight before, after great excitement, profuse hemorrhage came on; controlled by position, cooling applications to surface of abdomen and thighs; recurred 4 days before date, slight; arrested by cold; on morning of date, rather a profuse gush.	Somewhat rigid, but offered no much resistance to turning.
793	Paul Spooner, M.D., N. Bedford, Mass., Am. Jour., N. S., x. p. 35.	40	.....	.....	No pains.	Three or four hours before, came on with a gush; acet. plumb. and cold; ergot in large doses.	Dilated by forcible means.
794	Ibid.	33	11	8th.	.....	For last 6 months, so as to confine her to her bed; acetate plumb. and opium given repeatedly; tampon.	Rigid.
795	Sarah Stone, Compleat Practise of Mid., p. 5.	.....	.....	.....	Speechless.	.....	.....

Placenta. Labor completed by Artificial Means—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
.....	Head.	Turning.	Died.	Lived.	Died in a few hours, with symptoms of peritonitis; 4 days in labor.
Partial.	.....	Turning.	Recovered.	Dead.	Twenty-four hours in labor.
.....	.....	Turning.	Recovered.	Dead.	Ten hours in labor; this patient had Placenta Prævia in her next confinement. See Case 200, table 5th.
Partial; one-third of os covered.	.....	Turning.	Recovered.	Lived.	.....
Partial.	.....	Turning.	Recovered.	Dead.	Patient was seen when flooding began; hemorrhage stopped by the plug, which remained till turning was performed.
Complete; central.	.....	Turning.	Recovered.	Dead.	.....
Complete.	Head.	Turning.	Recovered.	Dead.	Patient was very fractious during labor, striking with her hands, etc.
Complete.	Breech.	Feet brought down, and child delivered.	Recovered.	Dead.	.....
Complete.	Head.	Turning.	Recovered.	Lived.	.....
Complete; one on anterior than posterior position of os.	Head.	Turning; one foot brought down, then the other, without much difficulty.	Recovered.	Lived.	.....
Complete; early centric.	.....	Turning.	Died.	.....	Uterus contracted well after delivery, and patient seemed to be doing very well; about an hour afterwards began to gasp and show signs of extreme faintness; uterus had relaxed; secondary hemorrhage set in, and she died almost immediately.
.....	.....	Turning.	Died.	Dead.	Patient was in the hands of an ignorant midwife; Dr. S. called in at the last moment.
Partial.	.....	Turning.	Recovered.	Lived, twins.	.....
Complete.	Head.	Forceps; 18 hours from beginning of labor; head nearly at external organs.	Died.	.....	Patient never rallied, but died in a week afterwards.
Partial.	.....	Turning.	Recovered.	Dead.	.....
Complete.	.....	Turning.	Recovered.	Lived.	Seen in consultation; the attending physician had met with only this one case of Placenta Prævia in 2000 labors.
Complete.	.....	Turning.	Recovered.	Dead.	It was intended in this case to detach the placenta, but on entering the os, the placenta was found to be attached so much posteriorly, that it would have required more effort to have done so than to turn; turning was therefore performed.
Complete.	.....	Turning; pains very slight; 3 doses of ergot given.	Died.	Dead.	Patient's first three pregnancies were abortions, with profuse hemorrhage, and in the first, abdominal inflammation; had chronic cough and asthma; symptoms of peritonitis supervened almost immediately, and she died on the 22d; (peritonitis would probably have occurred under any form of labor.)
.....	Head.	Craniotomy.	Died.	Dead.	Os uteri out of reach of finger.
.....	Head.	Craniotomy.	Died.	Dead.	.....
.....	.....	Turning.	Recovered.	Dead.	.....

TABLE VI.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG-NANCY.	MONTHS PREG-NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF C
796	Dr. H. Eaton, Mer-rimac, N. H., Mar. 9, 1853.	27	6	7½	Good.	Three weeks previous to date, for the first time; ceased spontaneously; when it returned, profuse; pains regular and frequent; brandy and ergot freely.	3 inches in diameter.
797	Ibid., Nov. 3, 1856.	30	8	Near full term.	Greatly prostrated; drenched in blood; short and feeble pains.	For a few hours, most profuse; ergot; stimulants.	Size of a dollar.
798	Ibid., Oct. 11, 1856.	44	8	8th.	Reduced; fainted on getting out of bed.	Occasional for 3 weeks previous; usually in the night, without pain, recurring 2 or 3 times a week; ergot given freely; tampon.	Os at first indurated to dilate.
799	Dr. C. Bannister, Phelps, Ont. Co., N. Y.	.....	1	Full time.	Sinking very fast; labor had continued a day or two.	Was becoming alarming.	Dilated very slowly; size of a dollar when delivery was commenced.
800	Dr. Armington, R. I., Boston Med. J., June 21, 1855.	.....	.....	.....	.....	.....	.....
801	Dr. C. B. Coventry, Utica, N. Y., July 4, 1851; Bost. Med. J., Dec. 18, 1856.	.....	.....	.....	Very pale; covered with perspiration; pulse soft and feeble.	Very profusely; time not stated.	Os very hard; not dilatable.
802	Dr. E. Buck, Boston, Boston Med. J., Dec. 25, 1856.	.....	1	.....	.....	Severe, with slight pains.	Dilatable.
803	Dr. G. J. Townsend, S. Natick, Mass., Sept. 19, 1855; Boston Med. & Surg. J., Nov. 15, 1855.	38	6	Full term.	Not materially affected.	Ten days before lost a large quantity, accompanied with pain; tampon of solid alum applied; no considerable loss, though there was a constant oozing till date, then large coagula passed; as pains increased, flowing also; tampon reapplied; ergot every 15 minutes.	Dilatable.
804	Dr. D. H. Storer, Boston, Bost. Med. J., Oct. 17, 1855.	36	8	.....	Apparently not much reduced.	Had lost from 2 to 3 quarts of blood since commencement of attack, 2 days previous; tampon, with partial effect.	Dilatable.
805	Dr. O. H. Taylor, Camden, N. Jersey.	.....	.....	Multi-para.	Much exhausted; no expulsive pains.	.....	.....
806	Ibid.	.....	.....	Multi-para.	Much exhausted; no expulsive pains.	.....	.....
807	Ibid., Sept. 20, 1845.	30	3	9th.	Extremely exhausted; pains died away.	Had a slight discharge at 7th month, another at the 8th; returned again 4 days before date, profuse; checked by tampon, acet. plumb. and opium; when it came on at date, it was profuse, and continued.	"Fairly dilated," though in the process.
808	Com. by Dr. C. D. Homans, Boston, May 10, 1857.	28	2	Full term.	Stimulants and ergot given, followed in an hour by labor-pains.	Slight at 7th month; came on a week before delivery, not much; on morning of date, while at privy, lost some blood; on going up stairs to her chamber was seized with a sudden and violent hemorrhage, which threw her into syncope; had lost by this 2 quarts.	.....
809	Com. by Dr. E. H. Clarke, Boston, June 27, 1857.	44	7	8th.	In the last stages of phthisis.	Slight at 7th month; recurred about a fortnight before date; yielded to rest; the day previous to delivery it came on to an alarming degree; checked by plug; recurred with pains; ergot given.	Good condition.

Placenta. Labor completed by Artificial Means—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
Partial.	Head.	Turning.	Recovered.	Died.	Child died in three hours and a half.
Incomplete; central.	.....	Turning.	Died.	Lived.	Hemorrhage kept up after delivery, etc. etc.; lived three-quarters of an hour; same patient as preceding case.
Partial.	Head.	Turning, 6 hours and a half after introduction of tampon.	Recovered.	Dead.	Pains not very efficient.
Incomplete.	.....	Turning.	Recovered.	Lived.	Considerable difficulty experienced in turning, from rigidity of parts.
.....	.....	Forceps.	Recovered.	Dead.	No manual interference being allowed, ergot and acet. plumb. were given, with no satisfactory effect; membranes were at length ruptured; head advanced and checked hemorrhage; after a delay of 2 days delivery was accomplished with forceps; great exhaustion, tenderness, and tympanitis followed.
Complete.	.....	Turning.	Recovered.	Lived.	Twins.
Complete.	.....	Turning.	Recovered.	Lived.	.....
Complete.	Footling; face to pubis, back to mother's spine.	Foot drawn down.	Recovered.	Dead.	Three hours were spent in the delivery, owing to a general narrowness of the diameter of the brim.
Complete; central.	.....	Turning.	Recovered.	Lived.	.....
.....	Head.	Forceps.	Died.	Dead.	Mother lived 2 hours.
.....	Head.	Forceps.	Died.	Dead.	Mother lived 3 hours.
Partial; two-thirds covered.	Head.	Forceps.	Recovered.	Dead.	"Mother continued for several hours in an alarming state of exhaustion."
Complete.	Head.	Turning, with great difficulty; one hour consumed in the operation; ether given.	Died.	Dead.	Battledoor placenta; cord originated at the part which was separated by the dilatation of the os uteri.
Complete; central.	Head.	Thirty-six hours after it was applied plug was removed, placenta separated as far as could be reached with the finger, and waited for pains; when these came on, turning with great ease; ether given, but not to insensibility.	Died.	Lived.	Seemed in good condition after delivery; soon began to sink, and died in 14 hours; several large cavities in lungs.

TABLE VI.—*Partial Separation of the*

NO.	BY WHOM REPORTED.	AGE.	PREG-NANCY.	MONTHS PREG-NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF C
810	Com. by Dr. Bartlett, Roxbury, Mass.	.....	.....	.....	No labor-pains.	For several weeks; while at work, a violent gush; plug; no more hemorrhage.	.....
811	Ibid.	.....	.....	7th.	.....	Began at 4th month; continued for 6 weeks; recurred, but slightly.	.....
812	Mad. Lachapelle, Mem. 6, No. 20.	.....	1	8½	.....	A fortnight before; ceased without any remedies; returned at labor, when the pains came on.	Dilated enough to make out the presentation
813	Ibid., No. 22, ii.	34	1	9 nearly.	Good; strength not diminished.	Abundant from the first access of labor-pains.	Sufficiently dilated.
814	Dr. Clarke, footnote to Collins's Practical Midwifery, Am. edition, p. 63.	.....	.....	.....	.....	.....	.....
815	Ibid.	.....	.....	6	.....	.....	.....
816	Ibid.	.....	.....	8th.	.....	.....	.....
817	Ibid.	.....	.....	.....	Defective pelvis.	.....	.....
818	Benj. Dunal, De l'hémorrhage produite par l'insertion du placenta, etc., Montpellier, 1855, p. 44; 1842.	.....	2	6th.	In extreme danger.	Began 8 days before record, abundant; checked by repose, bleeding, and the tampon; returned much more copiously at date of record; tampon again; could not be checked.	.....
819	Ibid., 1844.	.....	3	7th.	Very feeble.	Began at 6th month, spontaneously; checked by repose, bleeding, and cold drinks; returned in 4 or 5 days, in greater quantity; tampon for 48 hours; returned 2 or 3 times; tampon each time.	.....
820	Ibid., p. 86, July 8, 1842.	24	2	6th.	Pale; pulse frequent and feeble; affected by nausea; very much exhausted.	Began July 1, abundant; checked by bleeding, repose, acid drinks, and cold applications; kept up till delivery; tampon.	Dilated to 1½ inch in diameter
820a	Capuron, Traite complet des accouch., part 1, p. 387.	.....	.....	.....	.....	Abundant.	.....
820b	Ibid.	.....	.....	.....	.....	Abundant.	.....
820c	Ibid.	.....	.....	.....	.....	Abundant.	.....
820d	Ibid.	.....	.....	.....	.....	Abundant.	.....
820e	Ibid.	.....	.....	.....	.....	Abundant.	.....
820f	Ibid.	.....	.....	.....	.....	Abundant.	.....
820g	Gooch, Lectures on Mid., 3d Am. ed., p. 242.	.....	.....	.....	Greatly reduced.	Irregularly for 4 or 5 days.	.....
820h	Chailly, Pract. Treat. on Mid., transl. by Bedford, 5th ed., p. 259.	.....	1	Full term.	Feeble pains.	.....	Thick and resisting first.
820i	Ibid.	35	9	8	Frequently fainting.	Repeated for 3 months.	Good contraction.
820j	Hamilton, Prac. Observ. on Mid., 2d ed., p. 328.	.....	.....	.....	In articulo mortis, apparently.	.....	Obstinate rigidity
820k	Ibid.	.....	.....	.....	Ditto.	.....	Ditto.
820l	Dunal, De l'hém. prod. par l'insert. du placenta, etc., Montpel., 1855, p. 174.	28	9	.....	Fainted several times, but upon the whole not seriously affected.	Abundant.	Dilated.
820m	Davis, Obstet. Med., ii. p. 1040.	.....	1	8th.	Not perceptibly impaired.	Great.	Resisted dilatation
820n	Ibid., p. 1047.	21	.....	9th.	In a state of the greatest exhaustion; had had convulsions.	Great and continual.	Good contraction.

Placenta. Labor completed by Artificial Means—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
		Turning, 3 days after plug.	Died.	Lived.	There was no hemorrhage after version, but she sunk into a comatose state, and died in a few days.
		Turning.	Recovered.	Dead.	
	Head, face to pubis.	Membranes ruptured; when head came down, forceps applied.	Recovered.	Lived.	During extraction of child there was much hemorrhage; mother became much exhausted.
	Left hand and shoulder.	Turning.	Recovered.	Lived.	
		Turning.	Died.		
		Turning.	Recovered.		
		Turning.	Recovered.		
		Craniotomy.	Recovered.	Died.	The four cases above, occurred at the Dublin Lying-in Hospital, during the Mastership of Dr. Joseph Clarke.
Head, on right side.		Forced delivery.	Recovered.	Died.	
Head, on right side.	Breech.	Forced delivery, after ergot and rupture of membranes.	Recovered.	Lived.	These two cases were successive pregnancies in the same woman; in the last she had no pains; there was abundant hemorrhage during the delivery.
Head.	Head, 2d position.	Turning.	Died.	Dead.	In turning, the right humerus of the child was fractured.
		Turning.	Recovered.	Alive.	
		Turning.	Recovered.	Alive.	Child died on the third day; operation delayed too long.
		Turning.	Died.		
		Turning.	Died.		
		Turning.	Died.		
		Turning.	Died.	Dead.	Child was not "viable."
		Turning.	Recovered.		Twins.
Head.	Breech.	Tampon applied; ergot given; pains were produced; dilatation succeeded, and turning was performed.	Recovered.	Dead.	Child breathed a few times.
Head.		Ergot; tampon; turning after 2 hours and 20 minutes.	Recovered.	Dead.	
		One foot hooked down by the fingers and child extracted.	Recovered.		
Head.	Arm.	Ditto. Tampon applied with good effect; turning by the feet afterwards.	Recovered.	Dead.	
Head.	Feet.	Child extracted by the feet.	Died.	Alive.	Twins; children died the next day; mother on fifth; a portion of the os was found to have sloughed off.
Head.	Head.	Turning.	Died.	Dead.	Operation put off too long.

Of the cases included in the preceding table,

The mother recovered, in....416 cases. | The mother died, in.....139 cases.

The proportion of deaths, upon this basis is 25 per cent., or 1 in 4, within a small fraction.

The children were born

Alive, in..... 223 cases. | Dead..... 246 cases.

This gives nearly 50 per cent. of deaths.

Of the cases in which the age is stated, it was

17 years, in	1 case.	33 years, in.....	4 cases.
18 "	1 "	34 "	6 "
19 "	1 "	35 "	8 "
21 "	3 "	36 "	3 "
22 "	2 "	37 "	3 "
23 "	3 "	38 "	6 "
24 "	2 "	39 "	5 "
25 "	4 "	40 "	13 "
26 "	5 "	41 "	1 "
27 "	8 "	42 "	4 "
28 "	6 "	43 "	1 "
29 "	4 "	44 "	2 "
30 "	10 "	45 "	2 "
31 "	5 "	Middle age.....	3 "
32 "	2 "		

The number of the pregnancy, was

1st, in.....	38 cases.	10th, in.....	7 cases.
2d.....	26 "	11th.....	3 "
3d.....	16 "	12th.....	2 "
4th.....	18 "	15th.....	1 "
5th.....	17 "	16th.....	3 "
6th.....	8 "	3d or 4th.....	1 "
7th.....	14 "	7th or 8th.....	1 "
8th.....	11 "	9th or 10th.....	1 "
9th.....	11 "	Multipara.....	16 "

The period of the pregnancy, at which the delivery took place, was,

Between 5th and 6th month, in	1 case.	8th month, in.....	27 cases.
6th month.....	2 "	8 months.....	46 "
6 months.....	7 "	8½ "	23 "
6½ "	7 "	9th month.....	9 "
7th month.....	10 "	9 months.....	58 "
7 months.....	36 "	Full term nearly	12 "
7½ "	8 "	Full term.....	22 "
Between 7 and 8 months.....	1 "	Far advanced	4 "

The Presentation of the Placenta, was

Complete, in..... 193 instances. | Partial, in..... 117 instances.

In the remaining cases, there is no record of it, or it is stated to be uncertain.

The child presented by the

Head, in.....	102 cases.	Feet, in.....	13 cases.
Head and cord.....	6 "	Foot and knee.....	1 "
" " hand.....	1 "	Foot and cord.....	1 "
Face.....	1 "	Breech.....	7 "
Arm.....	6 "	Right hip.....	1 "
Shoulder.....	4 "	Umbilicus.....	1 "
" and cord.....	1 "	Transversely.....	1 "
Knee.....	1 "		

In the other cases, the presentation is not given.

The condition of the Os Uteri, is recorded as being

Rigid, in Nos. 280, 287, 321, 329, 349, 395, 398, 402, 406, 407, 408, 410, 415, 416, 417, 418, 419, 424, 427, 430, 433, 440, 448, 452, 455, 548, 615, 619, 622, 669, 682, 683, 690, 695, 697, 713, 737, 773, 794, 820j, 820k.....	41 cases.
Somewhat rigid, in 792.....	1 "
Forcibly dilated, in 793.....	1 "
Dilated with difficulty, in 441.....	1 "
Resisted dilatation, dilated slowly, in 343, 381, 382, 385, 392, 661, 703, 712, 763, 783, 798, 799, 820h, 820m.....	14 "
Resisted version, in 431, 629, 635, 649, 668, 723.....	6 "
Undilated, in 338, 346, 347, 390, 420, 442.....	6 "
Not much dilated, in 340, 363, 368, 396, 438, 618, 642.....	7 "
Dilated gradually, in 391, 614, 633, 702, 705, 757, 807....	7 "
Partially dilated, in 326, 366, 371, 378, 450, 612, 658, 672, 673, 674, 704, 721, 734, 768, 774, 797, 820.....	17 "
Well dilated, in 319, 320, 322, 323, 324, 331, 383, 389, 428, 613, 616, 637, 639, 650, 662, 698, 710, 796.....	18 "
Dilated, in 295, 333, 335, 364, 384, 388, 422, 605, 651, 652, 691, 756, 772, 820l.....	14 "
Fully dilated, in 307, 309, 311, 313, 332, 334, 336, 353, 354, 714, 762, 764.....	12 "
Dilatable, in 296, 297, 304, 306, 308, 310, 312, 314, 315, 316, 317, 318, 327, 328, 339, 344, 348, 351, 352, 386, 387, 404, 409, 411, 412, 413, 426, 429, 432, 434, 435, 436, 439, 458, 606, 630, 631, 634, 636, 638, 640, 643, 645, 647, 664, 671, 678, 693, 694, 700, 701, 715, 719, 720, 727, 752, 753, 765, 767, 780, 781, 784, 785, 788, 790, 791, 802, 803, 804.....	69 "
In good condition, in 355, 356, 357, 358, 359, 362, 369, 370, 372, 376, 377, 379, 393, 394, 397, 399, 400, 401, 404, 414, 421, 443, 444, 445, 451, 454, 458, 607, 608, 609, 611, 621, 623, 625, 626, 627, 628, 632, 644, 646, 654, 655, 656, 657, 659, 663, 665, 666, 667, 670, 677, 679, 699, 706, 711, 717, 718, 722, 726, 728, 729, 730, 733, 736, 738, 782, 787, 801, 809, 812, 813, 820i, 820n.....	73 "

Of the 287 cases above enumerated, in which the condition of the os is mentioned, 210 may be regarded as being in a satisfactory condition, *i.e.* offering no serious opposition to the adoption of any means necessary for the delivery of the child. In the remaining 77 cases, the condition was one which rendered the delivery difficult, or tended to increase the risk to the mother.

Distributing the fatal cases in the several classes to which they belong, we find among those in which rigidity is stated to be present,

Nos. 287, 395, 398, 402, 406, 440, 448, 452, 548, 683, 690, 773, 794.....13 cases.

In No. 287, the os remained in this condition for twelve hours, in spite of excessive hemorrhage. In No. 395, the rigidity did not yield till syncope came on, although she had been flowing for fourteen days. In No. 398, it was "considerably dilated, though offering great resistance." There had been "an immense flow." In No. 402, it remained rigid, till a great amount of blood had been lost. In No. 406, it could not be dilated by any efforts that could be made, and a foot which came within reach of the two fingers which were introduced was drawn down. In No. 440, the rigidity at last gave way after a large quantity of blood had been lost, but it was too late. In No. 448, it did not seem to be affected by the loss of blood. In No. 452, the cervix was lacerated in the operation. In No. 548, it opposed the greatest resistance to the operation. In No. 683, it was in like condition. Half an hour was consumed in the operation. In No. 690, this condition of the os was probably owing to the period of the pregnancy, it being between the 5th and 6th month. In No. 773, the condition is simply stated. In No. 794, the hemorrhage had been going on for six months.

Case 406. (Dr. Lee, No. 23.)

"On the 12th of January, 1839, Mr. Jones, of Carlisle Street, Soho Square, called me to see a lady in the 8th and a half month of pregnancy, who had been attacked with uterine hemorrhage a month before. It first took place without any accident or pain, and the quantity lost was about half a pint, and it produced little effect upon the constitution. She remained quiet for several days, and then got up, and only felt a little weak. For ten days she went about, but the hemorrhage returned on the fifteenth day after the first attack, but not to a great extent. Seven days after this, a third and more profuse hemorrhage took place. It gradually went off, but not so quickly as the other attacks. At 1 o'clock, 12th of January, it was renewed to an alarming extent without any

pain; about a quart of blood was suddenly lost, and she became extremely faint. At four A.M. the discharge still continued. When I first saw her, at 7 o'clock, she felt faint, and the pulse was rapid and feeble. The upper part of the vagina was filled with a large clot of blood, which adhered to the os uteri. By displacing this at the back part, I could distinctly feel the placenta adhering all round to the neck of the uterus, which was thick and rigid, and very little dilated. The effect produced by the hemorrhage was so great, that it was evident death would soon take place if the delivery were not soon completed; and the state of the orifice was such, that it was certain the hand could not be passed but with the greatest difficulty. At 8 o'clock Dr. Merriman saw her with us, and agreed that immediate delivery was necessary. I passed the right hand into the vagina, and insinuated my fingers between the uterus and placenta at the back part, and reached the membranes. But the rigidity of the orifice was so great, that though I employed great force for a considerable time, I could not succeed in getting the hand into the uterus. Dr. Merriman recommended rupturing the membranes, and I was proceeding to do this with the fingers, when I felt one of the feet of the child enveloped in the membranes, which then gave way. Nearly half an hour elapsed before the version could be completed, and when it was effected, the neck of the uterus grasped the neck of the child so firmly, that I experienced the greatest difficulty in extracting the head, and not till I had made pressure for some time with the finger, and dilated the orifice of the uterus. A great discharge of blood instantly followed, the placenta was removed, and every means employed to stop the hemorrhage, but the breathing became hurried, the extremities cold, and she died in less than hour after delivery. Dr. Merriman informed me, that a patient of his had actually died under similar circumstances before the head could be extracted. He considers the tampon as of little or no use in such cases."

In looking over the prominent features of this case, it is questionable whether the employment of that very agent, which both Dr. Lee and Dr. Merriman consider at least of doubtful use, would not, when first seen, have restrained the hemorrhage till the os uteri was in a condition to admit the hand, and in this way prevented the excessive and fatal debility from which she died. If we consider how much force and time was necessary to complete the delivery, it is very evident that *no more* would have been necessary to have entirely detached the placenta, by which the hemorrhage would probably have been arrested, and time gained to restore the mother by stimulants and other appropriate means, waiting for a convenient opportunity to go on with the extraction.

It is very easy indeed after the final result of a case, when we can take in at a glance all the symptoms and conditions which have given it its individuality, to determine whether the course pursued was, upon the whole, the best, although when the case is progressing, and but one phase of it is presented at a time, much must be conjectural and decided upon probabilities. Nevertheless, when it becomes a matter for instant decision, to deliver in spite of rigidity or any other cause which operates to make this process unsafe—the life of the mother being the apparent penalty of delay—it should always be considered whether the dangers which are inseparable from this state of things, may not be avoided or at least diminished, by having recourse to complete detachment of the placenta from the uterus.

Of the cases which recovered, Nos. 287, 329, were cases of excessive flooding, in which rigidity persisted. No. 349, was of a delicate constitution, and had flooded constantly, but not in great quantities. No. 408 was in an exceedingly exhausted state. No. 410 was in like condition. Nos. 415, 416, 417, 418, 419, 420, 424, 427, 430, 433, 455, 615, 619, 622, had lost a large quantity of blood, and most of them were much exhausted in consequence. No. 669 was in bad health from cardiac disease. In No. 682, the os showed no disposition to dilate, though it would seem from the tenor of the report, that no great obstacle was offered to version. In No. 695, the posterior wall of uterus was lacerated horizontally. In No. 697, there was considerable flooding. In No. 713, the os remained rigid after “half a gallon” had been lost. In No. 737, there had been flowing, but no pains, for three days. In this case, Belladonna ointment was used with good effect.

In No. 792, where the condition is recorded as “somewhat rigid,” the fatal result was due to other causes.

In No. 441, the entrance of the hand for the purpose of turning, was effected with the greatest difficulty, the os grasping the wrist very tightly. She died of peritonitis, induced no doubt by the force used in the operation.

In No. 793, in which the record is, “forcibly dilated,” crainotomy was performed. How far the fatal result was due to these two causes, it is impossible to say.

Among those cases, in which the os is recorded as “resisting dilatation, and dilated slowly,” 5 proved fatal.

Of these No. 381, was 6 months pregnant, and the os maintained

its characteristic condition, for three days after the labor commenced. Peritonitis ensued, proving fatal on the fourth day. No. 385 was a similar case. No. 392, resisted dilatation until a large quantity of blood had been lost. Uterine phlebitis was the cause of her death. In No. 712, the mother died, not so much from any difficulty in version, owing to the condition of the os, as from having lost so much blood. In No. 745, the fatal result was owing to too long delay in the operation; the condition of the os, probably, had no influence at all.

Of the recoveries, where this condition was noticed, Nos. 343, 382, were cases in which no amount of force was used, till the os was well dilated, or in good dilatable condition. In No. 661, the operation seems to have been necessary, from the condition of the patient, whatever the risk might be. In No. 703, there was difficulty in dilating the os, and the child, which was hydrocephalic, was with difficulty delivered. In No. 783, not a great deal of blood had been lost, and the dilatation was performed very slowly, but no force was used. In No. 797, no attempts were made to effect delivery, until a sufficient time had elapsed for the os to become dilatable, the tampon, meanwhile, controlling the hemorrhage. In No. 799, there was no time to wait, whatever the risk might be.

Of those cases, in which the os is stated to have resisted version, Nos. 668, 723, proved fatal. In No. 668, hemorrhage kept up after delivery. In No. 723, version was delayed too long; mother died of loss of blood. In the other four cases, the result was favorable. In these, there seems to have been but little force used, or long-continued attempts at delivery.

Of those in which the os uteri is recorded as undilated, Nos. 347, 442, proved fatal. In both of these the condition of the os was lax and relaxed, capable of dilatation, but showing no disposition of itself to open. In No. 341 the mother was moribund, and had been bled by her attending physician for the purpose of checking the hemorrhage. The condition of the os, probably, had nothing at all to do with the result. In No. 442, the mother was in like condition, and did not rally at all, after delivery.

Of those in which the os was "partially dilated," Nos. 774, 797, 820, proved fatal. In No. 774, the patient was four days in labor, had been drained of blood, and died of peritonitis. In No. 797, the indisposition of the os to dilate, is satisfactorily accounted for

from the fact of the placenta being situated centrally over it. The hemorrhage continued after delivery, in spite of every attempt to check it. In No. 820, the mother was almost moribund.

Of the cases in which the os is recorded as being "well dilated," Nos. 322, 383, 389, 639, 698, proved fatal. In No. 322, the hemorrhage kept up after delivery. No. 383, had been flooding until she was moribund, not having been able to procure any attendant, and did not rally. In No. 389, it is difficult to trace the actual cause of the fatal result. In No. 639, the report of the physician is, "died of neglect and poverty." In No. 698, the fatal result was due to the debility brought on by loss of blood.

Of the cases where the os was "dilated," there are none recorded as fatal. Neither were there any among those in which it was "fully dilated."

Of those recorded as dilatable,

Nos. 310, 315, 339, 387, 409, 413, 426, 432, 435, 439, 458,
640, 643, 645, 678, 701, 719, 765, 767, 784, 785.....21 cases, proved fatal.

Of those in which the condition of the os appeared to be good,

Nos. 355, 362, 369, 370, 377, 401, 443, 458, 607, 609, 611,
646, 654, 659, 663, 667, 670, 699, 717, 733, 787.....21 cases, proved fatal;

but, inasmuch as the condition of the os could have had no effect upon the result, they will be considered under other relations.

Of the cases in which the os is reported as being Rigid, the period of the pregnancy was

Between the 5th and 6th month, in No. 690.....	1 case.
At six months, Nos. 669, 682	2 "
At 6½ months, in No. 280	1 "
At 7th month, in Nos. 415, 737	2 "
At 7 months, in No. 407.....	1 "
At 8th month, in Nos. 398, 402, 408, 410, 416, 418, 424, 794, 820m.....	9 "
At 8 months, in Nos. 329, 417, 419, 427.....	4 "
More than 7 months, in No. 395	1 "
8½ months, in No. 406	1 "
9th month, in Nos. 430, 440, 773.....	3 "
9 months, in Nos. 349, 433, 452, 622, 683, 695.....	6 "
Near full time, in No. 321	1 "
Full term, in Nos. 455, 820h.....	2 "

Showing that the period of the pregnancy, has but little influence with reference to this condition.

The Hemorrhage made its first appearance at the

2d month, in No. 794.....	1 case.
3 months, in No. 368.....	1 "
3d or 4th month, in No. 288.....	1 "
4th month, in Nos. 782, 811.....	2 "
5th month, in No. 380.....	1 "
5½ months, in Nos. 682, 780.....	2 "
6th month, in Nos. 396, 409, 415, 436, 736, 815, 818, 819, 820.....	9 "
6 months, in Nos. 293, 314, 318, 339, 381, 403, 661, 669, 712, 727, 749..	11 "
6½ months, in Nos. 280, 323, 353, 376, 382, 383, 385, 664.....	8 "
7th month, in Nos. 304, 405, 408, 421, 424, 434, 437, 441, 457, 554, 640, 711, 721, 737, 742, 743, 768, 788, 791, 808, 809.....	21 "
7 months, in Nos. 279, 283, 292, 319, 326, 375, 379, 386, 389, 395, 401, 407, 412, 427, 428, 561, 580, 591, 601, 632, 680, 691, 694, 706, 715, 724, 739, 796, 798.....	29 "
Little more than 7 months, in No. 294.....	1 "
7½ months, in Nos. 285, 291, 317, 322, 325, 330, 406, 576, 792.....	9 "
7th or 8th month, in No. 430.....	1 "
8th month in Nos. 394, 397, 398, 402, 410, 413, 414, 416, 417, 418, 419, 425, 426, 432, 443, 445, 454, 618, 657, 730, 734, 816, 820m.....	23 "
8 months, in Nos. 281, 282, 286, 295, 316, 329, 343, 352, 362, 363, 370, 378, 387, 388, 411, 420, 429, 577, 584, 585, 587, 588, 589, 592, 593, 595, 597, 600, 607, 611, 662, 683, 693, 702, 733, 754, 781, 783, 812, 820i.....	40 "
8½ months, in Nos. 290, 348, 384, 390, 573, 575, 578, 579, 583, 586, 590, 594, 596, 599, 602, 701, 722, 725.....	18 "
9th month, in Nos. 444, 450, 603, 636, 649, 665, 718, 723, 740, 741, 773, 820n.....	12 "
9 months, in Nos. 315, 320, 327, 328, 338, 349, 350, 351, 354, 355, 356, 357, 359, 364, 365, 366, 367, 371, 372, 377, 391, 433, 451, 452, 453, 574, 581, 582, 598, 621, 622, 623, 666, 676, 677, 695, 714, 720, 744, 762, 763, 813.....	42 "
Full term nearly, in Nos. 321, 337, 404, 716, 717, 765, 767, 797, 803.....	9 "
Full term, in Nos. 278, 455, 456, 719, 738, 774, 784, 787, 799, 820h.....	10 "
Far advanced, in Nos. 392, 431.....	2 "

The date of the hemorrhage, with reference to the situation of the Placenta, where the presentation was *Complete*, was

At the 3d month, No. 368.....	1 case.
At the 4th month, No. 782.....	1 "
At the 5th month, No. 380.....	1 "
At 5½ months, Nos. 682, 780.....	2 "
At 6th month, No. 436.....	1 "
At 6 months, Nos. 661, 669, 712, 749.....	4 "
At 7th month, Nos. 304, 408, 421, 424, 434, 437, 554, 640, 791, 808, 809.....	11 "
7 months, Nos. 326, 375, 379, 389, 395, 412, 427, 428, 561, 632, 680, 694.....	12 "

7½ months, Nos. 317, 330, 406, 792.....	4 cases.
7th or 8th month, No. 430.....	1 "
8th month, Nos. 394, 398, 410, 413, 414, 417, 419, 425, 426, 432, 443, 618, 657, 730.....	14 "
8 months, Nos. 295, 316, 329, 352, 363, 378, 420, 429, 584, 585, 588, 592, 662, 683, 693, 733, 781, 783.....	18 "
8½ months, Nos. 573, 575, 578, 583, 590, 596, 701..	7 "
9th month, Nos. 450, 636, 649, 665.....	4 "
9 months, Nos. 327, 338, 359, 366, 371, 372, 377, 574, 581, 582, 598, 621, 623, 666, 676, 677, 762.....	17 "
Full term nearly, Nos. 765, 767, 797, 803.....	4 "
Full term, Nos. 784, 787, 799.....	3 "

Where the presentation was *Partial*, it began at the

6th month, Nos. 409, 736, 818, 819, 820.....	5 "
6 months, Nos. 318, 381, 727.....	3 "
6½ months, Nos. 323, 664.....	2 "
7th month, No. 738.....	1 "
7 months, Nos. 386, 401, 407, 580, 591, 601, 706, 715, 739, 796, 798.....	11 "
Little more than 7 months, No. 294.....	1 "
7½ months, Nos. 285, 322, 576.....	3 "
8th month, Nos. 416, 418, 445, 454, 820m.....	5 "
8 months, Nos. 281, 343, 387, 411, 577, 587, 589, 593, 595, 597, 600, 607, 702, 754, 820i.....	15 "
8½ months, Nos. 348, 579, 586, 594, 599, 602, 722, 725.....	8 "
9th month, Nos. 444, 718, 723, 773, 820n.....	5 "
9 months, Nos. 315, 320, 349, 391, 433, 451, 453, 622, 695, 714, 763.....	11 "
Full term, Nos. 455, 456, 820h.....	3 "
Far advanced, No. 431.....	1 "

Bringing the results of these two classifications together, for the purpose of better comparison, we have at the

	Complete.	Partial.		Complete.	Partial.
3d month.....	1	0	7½ months.....	4	3
4th.....	1	0	7th or 8th.....	1	0
5th.....	1	0	8th.....	14	5
5½.....	2	0	8.....	18	15
6th.....	1	5	8½.....	7	8
6.....	4	3	9th.....	4	5
6½.....	0	2	9.....	17	11
7th.....	11	1	Nearly full term.....	4	0
7.....	12	11	Full term.....	3	3
Little more than 7.....	0	1	Far advanced.....	0	1

In Nos. 282, 386, 695, 714, 739, 773, the immediate cause of the hemorrhage was injury, received in various ways; so that it is a fair inference, if this had not happened, that the patients would have gone longer, without labor coming on.

The value of the facts, derived from the above analysis, as to their bearing upon the question how far complete or partial presentation of the placenta is influential in postponing or accelerating the occurrence of hemorrhage, is somewhat questionable. To a certain extent, they offer negative proof in support of the proposition of Mr. Doherty, already referred to, that cases are not of unfrequent occurrence, where, with complete placental presentation, no hemorrhage takes place, until the full time of the pregnancy has elapsed. But the preponderance is not sufficiently marked, in either direction, to justify any conclusions.

The condition of the mother is reported as being moribund, in Nos. 645, 766.....	2 cases.
Almost moribund, in Nos. 278, 290, 291, 294, 319, 326, 328, 333, 338, 345, 347, 368, 377, 388, 394, 396, 398, 401, 431, 435, 436, 458, 612, 621, 624, 640, 663, 676, 693, 695, 820, 820j, 820k, 820n.....	34 "
At the last extremity, in Nos. 369, 378, 383, 385, 390, 416, 433, 439, 622, 661, 763.....	11 "
Very much exhausted, in Nos. 284, 286, 287, 293, 295, 311, 312, 314, 315, 316, 317, 320, 321, 322, 323, 334, 335, 336, 339, 340, 341, 342, 343, 344, 346, 351, 355, 359, 362, 365, 366, 382, 399, 400, 402, 404, 408, 409, 410, 418, 419, 422, 426, 427, 430, 438, 445, 448, 608, 615, 617, 626, 628, 630, 631, 633, 635, 637, 643, 644, 650, 652, 654, 655, 659, 670, 677, 691, 698, 701, 703, 704, 705, 706, 711, 712, 717, 719, 721, 722, 723, 724, 730, 731, 732, 762, 764, 769, 770, 773, 780, 785, 787, 791, 792, 795, 797, 798, 801, 807, 808, 819, 820g, 820i.....	104 "
In syncope, in Nos. 304, 353, 405, 420, 440, 618, 632, 662, 671, 725, 726, 740.....	12 "
In great danger, in Nos. 292, 297, 305, 372, 613, 682, 718, 733, 767, 799, 818.....	11 "
Much exhausted, in Nos. 279, 280, 283, 285, 308, 324, 325, 329, 330, 348, 371, 379, 389, 393, 406, 407, 442, 443, 446, 451, 452, 607, 611, 619, 625, 647, 658, 679, 683, 713, 716, 728, 765, 774, 788, 803, 805, 806.....	38 "
In convulsions from flooding, in Nos. 307, 310, 313.....	3 "
Exhausted, in Nos. 417, 421, 441, 609, 649, 715, 782.....	7 "
Very bad, in No. 692.....	1 "
Bad, in Nos. 374, 381, 604, 669, 678, 809.....	6 "
Bloodless, in No. 748.....	1 "
Faint, in Nos. 416, 656.....	2 "
Had been severely injured, in No. 386.....	1 "
Ill with fever, in No. 370.....	1 "
Feverish, in No. 380.....	1 "
Epileptic, in No. 387.....	1 "
Not much impaired, in Nos. 768, 820l, 820m.....	3 "
Unimpaired, in Nos. 391, 412, 444, 605, 623, 636, 664, 667, 680, 699, 702, 714, 783, 784, 796, 804, 813.....	17 "

Defective pelvis, in Nos. 397, 817.....	2 cases.
Good pains, in Nos. 606, 674, 697, 702, 734, 735, 774.....	7 “
No pain, in Nos. 306, 316, 317, 325, 329, 337, 346, 349, 397, 399, 400, 435, 442, 443, 453, 663, 706, 710, 733, 737, 752, 793, 807, 810, 820h.....	25 “

Distributing the fatal cases in the several classes where they belong, we find among those in which grave symptoms were present, viz., those in which the condition is spoken of as “Moribund,” “Almost moribund,” “At the last extremity,” “Very much exhausted,” “In syncope,” “In great danger,” “Much exhausted,” “In convulsions from flooding,” “Exhausted,” “Very bad,” “Bad,” “Bloodless,” “Faint,”

Nos. 287, 290, 310, 315, 322, 339, 342, 345, 347, 355, 362, 369, 374, 377, 381, 383, 385, 389, 398, 401, 402, 405, 406, 409, 426, 432, 435, 439, 440, 441, 442, 443, 448, 452, 458, 604, 607, 609, 611, 640, 643, 645, 654, 659, 663, 670, 678, 683, 698, 701, 712, 717, 719, 723, 733, 763, 765, 766, 767, 769, 770, 773, 774, 785, 787, 792, 797, 805, 806, 808, 809, 820, 820n.....	73 cases.
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In all of these, with the exception of No. 809,—in which the mother was in the last stages of phthisis and had lost comparatively little,—the loss of blood seems to have been the cause of the condition at delivery and the fatal result which ensued. Throwing out this case, the percentage of the remaining fatal cases, estimated on the whole number where the symptoms were grave, is $31\frac{1}{4}$.

In Nos. 370, 380, 387, 441, 667, 699, 784..... 7 cases,

where the condition seems to have been such as to promise a favorable result so far as the effect produced upon the system by the hemorrhage is concerned, Nos. 370, 380, were ill with fever, or in a feverish state; No. 387 was “epileptic;” No. 793, 811, had no pains; No. 667 flooded after delivery. In No. 699, it is impossible to determine the cause, for the record is, that her condition was “not perceptibly impaired,” and there was not two ounces of blood lost during the operation or afterwards. In No. 784, the patient did well till about an hour after delivery, when the uterus relaxed, secondary hemorrhage came on, and she died almost immediately.

In No. 820m, the death is no doubt due to the length of time consumed in the operation; for on the post-mortem examination, a portion of the os uteri was found sloughed off, showing that there had been a good deal of contusion and compression.

The hemorrhage is recorded as having been

Profuse in Nos. 363, 365, 368, 376, 384, 392, 397, 403, 407, 411, 415, 416, 421, 422, 424, 428, 430, 431, 437, 444, 445, 452, 453, 454, 554, 605, 611, 612, 621, 622, 625, 627, 629, 630, 632, 634, 635, 636, 646, 649, 651, 657, 658, 665, 671, 683, 700, 702, 705, 706, 720, 721, 725, 727, 765, 774, 776, 780, 782, 787, 792, 796, 797, 801, 807, 808, 809, 818, 819.....	69 cases.
Excessive, in Nos. 280, 287, 312, 315, 326, 328, 335, 338, 340, 341, 345, 347, 353, 358, 359, 362, 369, 372, 378, 398, 408, 413, 417, 418, 433, 436, 440, 443, 444, 451, 544, 618, 661, 662, 676, 680, 710, 749, 762, 771.....	40 "
Very great, in Nos. 278, 279.....	2 "
Violent, in Nos. 389, 402.....	2 "
Great, in Nos. 297, 304, 305, 307, 320, 329, 330, 334, 344, 346, 350, 374, 383, 387, 394, 400, 404, 405, 412, 419, 420, 426, 427, 429, 432, 434, 439, 456, 538, 539, 540, 558, 589, 604, 653, 654, 655, 668, 669, 690, 695, 698, 701, 704, 716, 722, 732, 733, 752, 756, 766, 793, 802, 803, 804, 810, 813, 820a, 820b, 820c, 820d, 820e, 820f, 820l, 820m, 820n.....	66 "
Considerable, in Nos. 289, 309, 325, 357, 360, 364, 367, 373, 375, 396, 399, 450, 457, 642, 663, 664, 674, 709, 715, 726, 731, 734, 735, 757, 781, 783, 791.....	27 "
A good deal, in No. 724.....	1 "
Not extreme, in No. 784.....	1 "
Not great, in Nos. 755, 772, 777.....	3 "
Increased as pains became worse, in Nos. 292, 322, 324, 327, 332, 333, 337, 343, 348, 349, 351, 354, 356, 370, 379, 391, 441, 693, 697, 703, 739, 764, 799, 803.....	24 "
Continual, in Nos. 308, 409, 448, 609, 645, 763, 773.....	7 "
With every pain, in Nos. 614, 615, 647, 774.....	4 "
Slight at first, grew excessive, in Nos. 285, 286, 288.....	3 "
Kept up till delivery, in Nos. 283, 290, 371, 388, 617, 631, 683, 818, 820.....	9 "
Passive, through the whole labor, in No. 619.....	1 "
At intervals, in Nos. 317, 319, 323, 339, 381, 382, 385, 406, 410, 414, 435, 442, 607, 616, 628, 659, 678, 679, 682, 699, 712, 718, 731, 733, 757, 761, 764, 768, 780, 781, 782, 783, 794, 798, 808, 809, 810, 811, 812, 819.....	40 "
For weeks, in Nos. 314, 740, 741, 742, 743.....	5 "
Repeated, for two months, in Nos. 380, 608, 729, 730, 738.....	5 "
Repeated, for three months, in No. 820i.....	1 "
Repeated, for one month, in Nos. 694, 748, 752.....	3 "
Repeated, for a week, in No. 788.....	1 "
For many days, in Nos. 291, 294, 298, 318, 336, 390, 395, 455, 626, 637, 639, 676, 736, 820g.....	14 "
For three days, in Nos. 282, 737.....	2 "
For two days, in Nos. 342, 377, 650, 656.....	4 "
For one day, in Nos. 719, 744.....	2 "
For some hours, in Nos. 311, 313, 321, 331, 361, 366, 446, 767.....	8 "
For twelve hours, in No. 779.....	1 "
For six or eight hours, in No. 728.....	1 "

At intervals for a few hours, in Nos. 401, 643.....	2 cases.
Began when labor came on, in Nos. 606, 666, 667, 681, 711, 778, 813...	7 “
Suddenly attacked, in Nos. 644, 677, 691, 702, 713, 772.....	6 “
Frequent, in No. 603.....	1 “
Slight, in Nos. 281, 352, 358, 628, 699, 723, 754, 811.....	8 “
None at all, in No. 714.....	1 “
Continued after delivery, in Nos. 305, 322, 387, 398, 406, 421, 422, 426, 432, 453, 572, 619, 633, 667, 668, 672, 679, 745, 756, 765, 784, 797...	22 “

Of the 358 cases above enumerated, more than one-half were of a grave character. But owing to the vague and indefinite manner in which the symptoms and amount of hemorrhage are described, in very many of them, it is impossible to draw from them any reliable conclusions.

Delivery was accomplished by

Turning, in	512 cases.	Craniotomy, in	14 cases.
Feet drawn down, in	19 “	Crotchet, in.....	1 “
Forceps, in.....	10 “		

Of those delivered by turning 381 lived, 131 died.

Of those that died,

In Nos. 287, 310, 315, 342, 345, 347, 369, 377, 387, 395, 402, 409, 413,
426, 439, 440, 442, 458, 539, 540, 554, 557, 559, 570, 571, 575, 583,
594, 604, 607, 609, 611, 640, 643, 645, 654, 663, 678, 683, 698, 699,
712, 717, 719, 723, 733, 763, 766, 769, 770, 771, 773, 774, 785, 808,
809, 810, 820, 820c, 820d, 820e, 820f, 820n.....63 cases,

the fatal result is to be directly attributed to the delay of the operation, from various causes, until the mother had become so reduced, that she was unable to rally from the shock of the operation. In No. 663 no good result was anticipated, but the version was performed, “in obedience to the rule that a woman should not die undelivered.”

In Nos. 290, 339, 362, 370, 374, 380, 381, 385, 389, 392, 401, 405, 441,
553, 560, 561, 588, 600, 602, 639, 659, 687, 701, 767, 792.....25 cases,

the death occurred some days after the delivery, and upon the supervision of fever, or something else, not directly traceable to this form of difficult labor. In No. 639, says Mr. R., the fatal result was owing to poverty and neglect. In No. 767, it was owing to imprudent eating and drinking.

In Nos. 355, 406, 435, 452, 548, 668, 670..... 7 cases,

death seems to have been produced by the severity of the operation, caused either by the rigidity of the os uteri, the straightness of the

pelvic outlet, or the laceration of some portion of the cervix. This was the case in Nos. 452, 668, in each of which, the rent in the cervix was the cause of the hemorrhage, which kept up after delivery.

In Nos. 322, 398, 432, 572, 646, 667, 745, 765, 784, 797.....10 cases, death was caused by a return of the hemorrhage after delivery. In No. 667, it was produced by a laceration of the cervix, and the hemorrhage kept up in spite of all the means used to check it. In No. 820m, it was evidently produced by the contusion of the parts. In Nos. 443, 589, 603, 751, 814, and 19 cases reported by Dr. Merriman, *twenty-four* cases in all, no particular cause can be assigned for the result.

Of the *twenty* cases where the feet presented and were drawn down, in No. 383, the operation seems to have been performed too late.

Of the *ten* cases where the forceps were resorted to, *five* were fatal. In Nos. 448, 787, death took place after some days. In Nos. 558, 805, 806, it occurred in a very short time.

Of the *fourteen* cases where craniotomy was performed, *three* proved fatal, viz., Nos. 690, 793, 794. In all of these the condition of the os was such as to require the exercise of a considerable degree of force, to overcome its resistance, in order to perform the operation.

Of the recoveries, in one case, No. 548, the child had been turned, but the head would not pass, and perforation behind the ear was resorted to. In No. 695, the posterior wall of the uterus was lacerated horizontally. In one case, No. 397, there was so great distortion of the pelvis, as to render craniotomy imperative. This case is also remarkable, as showing how much operative interference can be borne by some patients, without producing an unfavorable result.

Case 397, (Dr. Lee, No. 9.)

"On the 18th October, 1835, Mrs. Ryan, whose pelvis is greatly distorted by rickets, was attacked suddenly with profuse hemorrhage in the 8th month of pregnancy. I had delivered her once by craniotomy, and induced premature labor five times. She refused to submit to the operation on this occasion. On examination, at four o'clock the following morning, a large portion of the placenta was felt detached, and protruding through the os uteri. The orifice, though not much dilated, was in a state to admit of artificial delivery; but so great was the distortion of the pelvis that I found it impossible to introduce the hand within the pelvis, to turn the child. The flooding still con-

tinued. There were no labor-pains. I could feel the head above the brim of the pelvis, and I determined to endeavor to open, and extract it with the crotchet. Mr. Brookes, surgeon to the British Lying-in Hospital, pressed hard over the fundus uteri, while I pushed forward the fore and middle fingers of my left hand to the head, which I could scarcely touch. In the groove formed between these fingers, the point of the perforator was conducted to the head, and pressed steadily through the integuments and bone, and then the blades were opened. The undilated state of the orifice rendered this difficult, but it was accomplished without inflicting any injury on the orifice. The crotchet was then introduced into the opening in the skull, and the head was dragged down between the placenta and uterus into the brim of the pelvis, where it stuck fast for a long time. The orifice of the uterus was still imperfectly dilated. After four hours' very hard work, we succeeded in getting the base of the skull through the brim, into the cavity of the pelvis, and delivered. The placenta was removed soon after the child, and no hemorrhage followed. This woman recovered in the most favorable manner, and she has since had premature labor induced five times at the end of the 7th month of gestation."

In one case, No. 433, although the mother recovered, there is very little doubt that the risk to her would have been greatly diminished by a resort to what the doctor, in his report, terms the proceeding of "reckless and ignorant" persons, *i.e.* detachment of the placenta.

Case 433, (Dr. Lee, No. 62.)

"On Saturday, the 9th of October, 1847, Mr. Thorne was called to see a lady in Ebury Street, Pimlico, who was near the full period of her 9th or 10th pregnancy, and had been seized suddenly the same morning with a great flooding. By rest, cold applications, and other means, the discharge of blood diminished greatly in the course of the day, but did not entirely cease, and was accompanied by much faintness. During the two following days (Sunday and Monday) an oozing of blood continued, and on the morning of Tuesday, the 12th, a frightful rush of blood took place, which completely inundated the bed, and she was speedily reduced to a state of the most imminent danger. I saw her at four A.M., deeply alarmed and agitated, with a rapid feeble pulse and great faintness. The vagina was filled with masses of coagulated blood, on removing which, to ascertain the condition of the os uteri, I found the blood flowing from it in a full stream. The orifice was dilated to the extent of a half crown, and the margin was thick and rigid. A portion of placenta was felt within, behind, and on the right side, and the remainder of the neck of the uterus was covered with the membranes, through which the head of the foetus was felt. The circumstances were so urgent as to demand immediate delivery—

her life could only be preserved by the most prompt interference. But it was obvious that the operation of turning could not be performed without further loss of blood to a considerable extent, and the employment of dangerous force in dilating the os uteri. The most reckless and ignorant person would, in such a case, have thought of tearing away the portion of placenta felt through the os uteri, and leaving the child within the uterus. The child was soon extracted with the crotchet, as in Mr. Angus's case, the placenta followed, and the hemorrhage gradually ceased. Some hours elapsed before this patient was considered to be in a state of safety, but Mr. Thorne informed me, on the 3d of November, that she was then in perfect health."

The tampon was used alone, in Nos. 381, 382, 384, 387, 389, 448, 449, 609, 612, 614, 615, 636, 680, 690, 697, 713, 727, 774, 778, 790, 791, 804, 810, 818, 820i.....	25 cases.
With ergot, in Nos. 430, 625, 676, 694, 695, 764, 798, 803, 809, 820h, 820i.....	11 "
With lead and opium, in Nos. 702, 794, 807.....	3 "
With opiates, in No. 705.....	1 "
With camphor and ammonia, in No. 662.....	1 "
With cold applications, in Nos. 385, 390, 682, 819, 820.....	5 "
With bleeding, in No. 380.....	1 "
Ergot was used alone, in Nos. 619, 661, 679, 693, 704, 706, 731, 734, 756, 762, 796, 797, 800, 808.....	14 "
Opiates, in Nos. 435, 436, 644, 706, 794.....	5 "
Ergot, opiates, astringent injections, and cold drinks, in Nos. 437, 661, 700.....	3 "
Stimulants, in Nos. 711, 712, 762, 796, 797, 808.....	6 "
Ergot, with lead and opium, in Nos. 793, 800.....	2 "
Cold applications, in Nos. 388, 693, 792, 793.....	4 "
Acid drinks, in Nos. 665, 820.....	2 "
Tannin, in No. 634.....	1 "
Bleeding, with opiates and saline cathartic, in No. 338.....	1 "
Astringents, in No. 611.....	1 "

Distributing the fatal cases where they belong, we find among those in

Which the tampon was used alone, Nos. 381, 387, 389, 448, 607, 609, 690, 774, 810.....	9 cases.
Where it was used with ergot, No. 809.....	1 "
Where it was used with opiates and astringents, No. 794.....	1 "
Where it was used with cold applications, Nos. 385, 820.....	2 "
Where it was used with bleeding, No. 380.....	1 "
Where ergot was used alone, Nos. 797, 808.....	2 "
Where ergot was used with lead and opium and cold applications, No. 793.....	1 "
Where opiates were used alone, Nos. 435, 794.....	2 "

Where stimulants were used alone, Nos. 712, 797, 808.....	3 cases
Where astringents were used alone, No. 611	1 “
Where cold applications were used alone, No. 792.....	1 “
Where acid drinks were used alone, No. 820.....	1 “

It is impossible, however, from the limited number of cases in which the means used to check hemorrhage are recorded, to draw any legitimate conclusions.

In Nos. 288, 289, 776, 797, 798, 818, 819, are to be found instances where Placenta Prævia occurred more than once in the same individual.

There were 8 cases of twins, Nos. 326, 618, 653, 656, 691, 801, 820g, 820m.

In 3 cases transfusion was performed, Nos. 676, 678, 723.

Of these, one, No. 676, lived, the other two proved fatal.

In No. 676, ζ iv were injected. The patient subsequently had phlegmasia alba dolens.

No. 678.

“Hannah C——, æt. 39, a delicate-looking woman, with dark hair and eyes, and of a consumptive family, applied on the 3d of Dec., to be attended from the Guy's Hospital Lying-in Charity, with her ninth child. She stated that her feelings were different to what they had been during any former pregnancy; and that, at times, she experienced an uneasy sensation, which she referred to the womb. She likewise had a cough, which was relieved by the common linctus of the hospital. On the 18th, when getting out of bed, she was seized with a severe fit of coughing, followed up by a sudden discharge of blood from the uterus, amounting to about half a pint. When I saw her shortly afterwards, her countenance and general surface were exsanguineous; pulse 100, irritable; considerable dyspnœa, with an anxious aspect; bowels constipated. She was ordered—acid. sulph. dilut. \mathfrak{m} x; magnes. sulph. ζ i; infus. rosæ comp. ζ xii. M. To be taken immediately, and repeated every five hours.

“All the bedclothes, except a sheet, were withdrawn; and she was cautioned to take no warm fluid; to maintain the recumbent posture, with elevated hips, and perfect quietude. In the evening she was greatly improved; her pulse had fallen to 82, and the hemorrhage had entirely ceased; she complained of grinding pains, for which she was ordered—Opii, gr. i, to be taken at bedtime.

“The remedies being continued for a few days, she recovered from her weakness, and could not be kept quiet any longer. On the 14th of January, (1837,) at 3 o'clock in the morning, I was again sent for; and found she had lost nearly a pint of blood, owing, as she thought, to anxiety of mind, caused by the loss of several relatives,

the dangerous illness of her brother, and the unkindness of her husband, who had alarmed her by his violent behavior that night. I exhibited similar remedies to those used before; enjoined a strict observance of the horizontal position, her hips being raised by a firm cushion; and applied cloths dipped in cold vinegar and water to the lower part of the abdomen. This was attended with success, as far as continued at intervals till Friday night, the 22d, when suddenly there was another discharge of blood. Her spirits became depressed; her pulse quick and small; severe pains occurring every twenty minutes, accompanied with the expulsion of clots of blood; the liquor amnii was also trickling away. Availing myself of a pain, I examined, and found a small portion of placenta projecting over the posterior edge of the os uteri, which was yielding. I now sent for Mr. Lever. After his arrival there was no further uterine effort or bleeding; the pulse was 120, small, and the patient excessively low. On examination, he found the presentation as stated—the os dilatable, and the head within reach. He ordered tinct. opii. ℞xxv, and enjoined quiet. During the two following days, the liquor amnii continued to escape; she was more comfortable; took her medicine; and, an anodyne being exhibited at night, she slept tolerably well. On Monday morning, although no subsequent hemorrhage had occurred, there was sudden dyspnœa, with jactitation of the upper extremities; pulse quick and small; no uterine effort; and every indication for a speedy emptying of the uterus. I ordered brandy slightly diluted with water, to be administered to her by means of a teaspoon, every five minutes; and went for Mr. Lever, who immediately delivered her of a still-born child by turning; Dr. Ashwell being present. After the child had been withdrawn, and the placenta removed, Mr. Oldham and myself alternately continued a steady grasping of the uterus for several hours; during which she had some mild nourishment, with brandy, given to her at intervals. The hemorrhage consequent on the turning, although slight, had been sufficient materially to aggravate her already prostrated condition. The abdomen was tightly bandaged, and she was desired to keep perfectly still, avoiding even conversation with those around her. An opiate was given in the evening, but she obtained little sleep. Early on Tuesday morning she begged to have her linen changed, and the nurse unfortunately acceded to her request; soon after which the jactitation of the limbs became more violent, and it was found impossible to prevent her throwing herself about on the bed; she spoke incoherently about her brother; and it was evident she was rapidly sinking. I gave her brandy repeatedly, and the julep ammoniæ at intervals, but without success. At 3 P.M. Mr. Tweedie performed the operation of transfusion, taking the blood from Mr. Lever; and about 3vii were injected into the median basilic vein. The effect of this for a time was surprising; her pulse,

from being excessively rapid, and at times imperceptible, became full and distinct; her eyes regained their natural expression; and she spoke rationally and calmly. We now gave a teacupful of rich soup, repeating it and the brandy at intervals every quarter of an hour. At 4 P.M. she had again relapsed into a state approaching to insensibility; when Dr. Ashwell repeated the transfusion, taking the blood from her husband; she, as before, rallied for a time, but not to the same extent, then rapidly sunk, and expired a few minutes after five o'clock.

Remarks.—This case is instructive, as showing that not only after large hemorrhages, but even when the loss has not been so considerable, there is something wanted to revive and re-establish the living principle, which the supply of blood cannot furnish; and although I am far from believing that in all the instances where recovery has followed transfusion, the result would have been equally favorable without it, still I believe that an exhausted brain, even where sensibility remains, cannot be thus restored where real sinking has fully set in."

The preceding case, in addition to the remarks made by the reporter, is interesting, as being almost the only instance on record in which, before the occurrence of hemorrhage, any sensations or symptoms have manifested themselves which could be referred to the misplacement of the placenta. Here, the patient distinctly states, that "her feelings were different to what they had been during any previous pregnancy, and that, at times, she experienced an uneasy sensation, which she referred to the womb." It is also interesting, as adding another to the already numerous proofs, that in the condition of excessive and extreme exhaustion in which she was, absolute rest is imperative, and that no motives of cleanliness or comfort simply, should influence the attendants in infringing this rule, or suffering the patient to assume any posture but the horizontal. The symptoms which developed themselves after the change of linen on the Tuesday morning are so much like those described by Prof. Meigs in his remarks upon what he terms the "Heart-Clot" as the effect of sitting up too soon after labor, where there has been great hemorrhage, (op. cit., p. 348,) that it may perhaps have been from this rather than from what was supposed in the "remarks" to have been the cause of the death, that the fatal result followed. In the remarks of Prof. Meigs noticed above, he quotes a case in point.

"A lady was confined, and with a natural labor, giving birth to a healthy child at term. She had lost a good deal of blood with the expulsion of the placenta, which left her weak and pallid. The

physician directed her to be kept quiet, so that she had a good day and the following night. On the following morning the physician found her in all respects as well as could be wished. Very soon after he had withdrawn from her chamber, she became alarmingly ill, and he was sent for and returned, having been absent about one hour. The pulse was now extremely frequent, weak and small, and it continued so until her death, which took place on the 18th or 19th day. It was upon the 18th day that I was invited to the consultation, and at once formed the opinion that she had a heart-clot, as the cause of all her dreadful symptoms, and which, acting as a tampon of the heart, deranged the circulation, respiration, and innervations of the dying lady. After her decease, which occurred the next morning, a white, fibrinous, coagulum, was found in the right auricle, nearly filling it and projecting through the tricuspid valve into the right ventricle, the tail of the clot whipped into cords by the threshing action of the chordæ tendinæ of the ventricle. The pleura of the right cavity contained a large quantity of serum."

"When the physician left his patient's chamber on the morning of the attack, she was well enough; when he returned, after an absence of only one hour, he found her alarmingly ill. She had lost blood in the labor. He had no sooner gone than the nurse took her up, and sat her upon a vessel in bed to pass urine. She fainted; the blood coagulated in her heart. She did not die outright, but carried on an imperfect circulation outside of the clot, and betwixt it and the walls of the heart."

In No. 723 (for details of this case, see Index, sub "Transfusion") 3vi were transfused with the effect of producing distress, dilated pupils, purplish pallor of the face, etc. She died in an hour.

Ether was given in 3 cases, No. 704, 808, 809; two of which proved fatal. In neither of them was the result affected by its administration.

If we now compare the results obtained from the preceding table, with those arrived at in tab. 5th, we find the proportion of the fatal cases to be as 25 to $11\frac{1}{3}$, more than double. This is in accordance with the results already derived, in which it was found, that other things being equal, the addition of artificial delivery to the other conditions of the case, just about doubled the risk to the mother.

Compared with the results of table 1st, the proportion stands as 25 to 0. Compared with table 2d, it is as 25 to $19\frac{1}{4}$; showing that partial separation, with artificial delivery, is a little, and but little less favorable to the mother than spontaneous separation and artificial delivery. Compared with table 3d, it is as 25 to $6\frac{1}{2}$; showing that partial separation and artificial delivery, is more than four

times as fatal to the mother, as artificial separation and natural delivery.

Compared with table 4th, it is as 25 to $21\frac{7.6}{100}$; showing that between partial separation and artificial delivery, and artificial delivery both of the placenta and child, there is but 4 per cent. choice in favor of the latter operation. All these comparisons, as in the previous analyses, tend to confirm the assumption, that the way in which the child is delivered, is much more important as to its effect on the mother, than what is done with the placenta.¹

¹ In a note to his translation of Velpeau, Phil., 1852, p. 395, Prof. C. D. Meigs reports upon a case, which, from the conditions under which it occurred, belongs in the foregoing table, but which, from no result being given as to the death or recovery of the mother, is of no value in determining upon particular modes of treatment. "I saw," says he, "a patient in labor, with Placenta Prævia, under the care of Dr. R. M. Huston of this city. The hemorrhage which had been very great, was arrested before my arrival, by means of a *tampon* which he introduced. In the mean time the pains continued to dilate the os uteri more and more, until, inferring that the organ was sufficiently dilatable, he removed the tampon, and then successfully delivered by turning."

TABLE VII—*Continued*

State	Total population	Total population	Total population	Total population
Alabama	1,000,000	1,000,000	1,000,000	1,000,000
Alaska	500,000	500,000	500,000	500,000
Arizona	1,000,000	1,000,000	1,000,000	1,000,000
Arkansas	1,000,000	1,000,000	1,000,000	1,000,000
California	1,000,000	1,000,000	1,000,000	1,000,000
Colorado	1,000,000	1,000,000	1,000,000	1,000,000
Connecticut	1,000,000	1,000,000	1,000,000	1,000,000
Delaware	1,000,000	1,000,000	1,000,000	1,000,000
Florida	1,000,000	1,000,000	1,000,000	1,000,000
Georgia	1,000,000	1,000,000	1,000,000	1,000,000
Hawaii	500,000	500,000	500,000	500,000
Idaho	1,000,000	1,000,000	1,000,000	1,000,000
Illinois	1,000,000	1,000,000	1,000,000	1,000,000
Indiana	1,000,000	1,000,000	1,000,000	1,000,000
Iowa	1,000,000	1,000,000	1,000,000	1,000,000
Kansas	1,000,000	1,000,000	1,000,000	1,000,000
Kentucky	1,000,000	1,000,000	1,000,000	1,000,000
Louisiana	1,000,000	1,000,000	1,000,000	1,000,000
Maine	1,000,000	1,000,000	1,000,000	1,000,000
Maryland	1,000,000	1,000,000	1,000,000	1,000,000
Massachusetts	1,000,000	1,000,000	1,000,000	1,000,000
Michigan	1,000,000	1,000,000	1,000,000	1,000,000
Minnesota	1,000,000	1,000,000	1,000,000	1,000,000
Mississippi	1,000,000	1,000,000	1,000,000	1,000,000
Missouri	1,000,000	1,000,000	1,000,000	1,000,000
Montana	1,000,000	1,000,000	1,000,000	1,000,000
Nebraska	1,000,000	1,000,000	1,000,000	1,000,000
Nevada	1,000,000	1,000,000	1,000,000	1,000,000
New Hampshire	1,000,000	1,000,000	1,000,000	1,000,000
New Jersey	1,000,000	1,000,000	1,000,000	1,000,000
New Mexico	1,000,000	1,000,000	1,000,000	1,000,000
New York	1,000,000	1,000,000	1,000,000	1,000,000
North Carolina	1,000,000	1,000,000	1,000,000	1,000,000
North Dakota	1,000,000	1,000,000	1,000,000	1,000,000
Ohio	1,000,000	1,000,000	1,000,000	1,000,000
Oklahoma	1,000,000	1,000,000	1,000,000	1,000,000

TABLE VII.—*Placenta Perforata*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF O
821	Portal, Case 29a, July 14, 1671.	.....	.....	8	Almost dead from loss of blood.	Flooding had continued for 3 weeks.	.....
822	Ibid., Case 29b.	.....	.....	8	.....	.....	.....
823	Ibid., Case 39, Nov. 16, 1671.	.....	.....	.....	Had fainted away en- tirely.	Flooding had continued for 19 days without cessation.	Fully di- lated.
824	Giffard, Case 209, Aug. 8, 1731.	.....	.....	.....	Scarcely any pulse; labored under "syn- copies and cold sweats."	Had returned several times dur- ing a month previous to her labor.	Fully di- lated.
825	Levret, l'Art des Accouch., ed. of 1766, p. 365, March 18, 1752.	.....	.....	7½	Had been bled by the midwife, and had stimulants freely ad- ministered; on ar- rival, was cold, pulse- less, senseless, and without pains.	Very great.	.....
826	Smellie, Collect. 33, No. 2, Case 8, A.D. 1750.	.....	.....	.....	"To all appearance in a dying condition."	For 24 hours; at first small, but increased as the os dilated.	Largely op
827	Rigby, Essay on Uterine Hem., 6th ed., Case 14, Jan. 1, 1774.	.....	4	9	In extreme faintness; almost pulseless; pale, etc.; pains had ceased.	From being very slight at first, after an interval of some hours, it suddenly came away in very great quantities.	Offered no resistance to turning
828	Ibid., Case 39, April 12, 1777.	.....	2	9	.....	Labor began on the 10th with slight hemorrhage; pains and discharge ceased till 12th, when it returned with violence.	Dilatable; rigid at fir
829	Dr. Lee's Clinical Mid., Am. ed., p. 165, No. 24, March 5, 1839.	.....	.....	8½	Reduced to last ex- tremity.	It commenced about 6 weeks previous; 12 days later it re- turned, and subsequently for a third time; when labor began, the flowing was renewed with violence.	Rigid and undilatab open to th size of a crown-pie
830	Ibid., etc., p. 166, No. 26, Feb. 22, 1840.	33	4	8½	Distorted pelvis.	Spontaneous and in great quan- tity 6 weeks previous; again on Feb. 19th, which continued till evening of 21st.	.....
831	Ibid., etc., p. 170, No. 36, Sept. 7, 1842.	.....	.....	9 nearly.	Faint; pulse feeble; extremities cold.	Began at the end of the 7th month; 6 weeks later it re- turned, and continued at inter- vals for 8 days.	Open to th size of ha a crown- piece; di- latable.
832	Ibid., etc., p. 183, No. 59, June 8, 1847.	.....	.....	7	Requiring speedy and efficient aid.	Four times in 6 weeks, profusely; on day of date, repeated gushes.	Well dilat
833	Collins, Prac. Treat. on Midwifery, 1st Am. ed., p. 64, No. 89.	36	3	Full time.	.....	Flowing at admission; returned in 2 days; no pains.	Rigid at fir dilated after hem orrhage.
834	Mr. Martin, Lond. Lan., 1848, i. p. 121.	.....	.....	.....	.....	For 14 hours, profusely.	.....
835	Mr. Dendy, Lond. Lan., 1848, ii. p. 398.	.....	.....	.....	.....	Hemorrhage ceased as soon as head descended.	.....

and Child Delivered.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
Complete.	Head.	A strong pain forced the child's head through the placenta.	Recovered.	Dead.	After delivery the woman had frequent faintings, and lay for a long time without sense or motion.
Complete.	.....	Child's head forced through.	Recovered.	.....	.....
Complete.	.....	Placenta split in the middle, and child turned and delivered through the orifice thus made.	Died.	Dead.	Immediately after delivery the woman fainted again, went into convulsions, and died in a short time.
Complete.	.....	Turning by one foot through the perforation.	Recovered.	.....	Immediately after delivery she rallied; flooding stopped, and her pulse came up.
Complete.	Head.	Turning by both feet through perforation.	Died.	Dead.	.....
Complete.	.....	Turning through the perforation.	Died.	Lived.	Mother lived but a few minutes.
Complete.	Head.	Turning through the perforation.	Died.	Dead.	Of this mode of delivery in cases of Placenta Prævia, Rigby remarks, that it "is an advantage."
Complete.	.....	Turning through the perforation.	Recovered.	Lived.	.....
Complete.	Head.	Craniotomy; child extracted through perforation.	Died.	Dead.	On the day of her delivery the hemorrhage returned in an alarming degree; the membranes were perforated through the placenta, which had been rent in twain; the flowing ceased as the head came down, the rigidity of the os still preventing any assistance being rendered; during the day she seemed to revive, but suddenly, without any further loss of blood, she sunk, and died almost immediately, after craniotomy had been performed.
Complete.	.....	A portion of the placenta perforated and version performed; head extracted with difficulty.	Died.	Dead.	Pelvis measured only two inches and three-quarters from base of sacrum to symphysis pubis; first child, born at 7th month, lived; second, went to full period, delivered by craniotomy; third, premature labor was induced at 7th month; child born dead.
Complete.	.....	Turning through the perforation.	Recovered.	.....	Some difficulty was experienced from the rigidity of the os; there was no subsequent hemorrhage; patient was very faint for awhile after delivery.
Complete.	Head.	Turning through the rent in the anterior portion of the placenta.	Recovered.	.....	"A good deal of time and force were required to draw the trunk and head through the os uteri."
Complete.	Head.	Turning through perforation.	Died.	Lived.	Uterus contracted well; a draining continued for some time, which was stopped by introduction of cold cloths into vagina; died in half an hour; stimulants freely given.
.....	.....	Turning.	Died.	Dead.	Mother died on 13th day, from diarrhoea.
.....	Head.	Immediately after the perforation of the placenta the head descended, and delivery was easily effected.	Recovery, inferred.	.....	.....

TABLE VII.—*Placenta Perforata*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF O.
836	Dr. W. C. Roberts, Am. Jour. of Med. Sci., vi. p. 534, Mar. 28, 1830.	26	2	8th.	"Very precarious;" pulse 130; upper ex- tremities began to be cold.	Began on 20th, after violent ex- ertion; filled a good-sized chamber-pot full; recurred 27th, "rapidly, in gushes;" va- gina filled with snow; plug, wet with vinegar and water; next day came on during sleep; same applications stopped it; 29th, came on again, and con- tinued, with intervals of cessa- tion, till delivery.	Remained undilated till the last hand passed with some difficulty.
837	Mr. Thos. Taylor, Am. J. Med. Sci., N. S., xii. p. 260, (from Prov. Med. and Surg. Jour., Jan. 7, 1846.)	.....	1	8½	.....	No hemorrhage; "The discharge was less than usual."	.....
838	Mr. Rigden, Am. J. Med. Sci., (from Ass. Med. Jour., Feb. 9, 1855.)	.....	Several.	8th.	.....	.....	.....
839	Mr. J. H. Stallard, Lond. Med. Gaz., xxxiii. p. 212, Nov. 1, 1843.	.....	6	.....	Pale; debilitated; no pain; patient stated that membranes rup- tured 4 days before, when she had pains.	Two weeks before, to a consider- able extent; returned evening previous to date, with great violence; ergot given, half a drachm; increased flowing.	Of consider- able size.
840	Lond. Lan., 1842- 43, i. p. 516.	.....	.....	.....	.....	Considerable; arrested by a large dose of opium.	When at si- of crown- piece ergo given; di- tation im- mediately followed.
841	Mr. Seth Gill, Lond. Lan., 1847, ii. p. 93.	48	8	9	Of an exceedingly weak constitution; much emaciated; very faint and ex- hausted.	Gradually became very profuse.	Rigid.
842	Ibid.	30	5	8th.	In a state of syncope.	Slight for a few days, when, moving from her bed, a sudden gush took place to an immense extent.	Slightly dilated; dilatatable.
843	Ibid.	35	11	.....	Pallid and retching; previous to hemor- rhage an unimpaired constitution, full habit, and great physical power.	Slight for a fortnight, when labor set in, very profuse.	Easily di- latable.
844	Mr. S. Henson, Lond. Lan., 1851, i. p. 620.	35	10	.....	Unimpaired.	None before pains set in; a good deal in the intervals between the pains; ceased as the pains receded.	Very dilata- ble.
845	Mr. J. Lilley, Lond. Lan., 1851, ii. p. 284; Sept. 10, 1851.	.....	.....	8th.	In a state of collapse.	About a month before, very profuse; returned at date, im- mense.	Size of a crown-pie
846	Com. by Dr. Mig- nault, Boston, Mass.	.....	5	.....	Had been 2 days in labor, under care of a midwife.	Profuse.	.....
847	Com. by Dr. J. Fisher, Boston.	.....	.....	.....	.....	Sudden and profuse.	.....
848	Com. by Dr. J. Ste- vens, Boston.	.....	.....	.....	.....	.....	.....

and Child Delivered—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
Complete.	Head.	Turning.	Died.	Dead.	Placenta "Battledoor" in shape. The record of this case is a very instructive lesson as to the importance of some fixed principles of treatment, or some broad rule which shall apply to the great mass of cases of this kind. It is not to be doubted that this patient lost her life from the course adopted.
Complete.	Footling; breech in pelvis.	.....	Recovered.	Dead.	On examination, the placenta was observed "to be pierced by the right arm and left leg, the part round the leg being so firmly bound round it as to have destroyed the skin and cellular membrane by absorption."
Complete.	Head.	Placenta perforated; child expelled through perforation.	Recovered.	Dead.	.....
Complete.	Head.	The "presenting substance" was torn through; a large quantity of water escaped, and the labor "proceeded as well as the weakly state of the woman would allow."	Recovered.	.....	.....
Complete.	Head.	"Child passed rapidly through the placenta."	Recovered.	Lived.	.....
Complete.	.....	Turning.	Recovered.	Lived.	Uterus contracted feebly; mother became comatose, with a pulse hardly perceptible; child was in a state of asphyxia; everything else failing, a stream of water poured on the abdomen roused the contractions of uterus, which was kept contracted by firm and continued pressure.
Complete.	.....	Turning.	Recovered.	Lived.	Hemorrhage and asphyxia followed, which defied ergot in large doses, and for some time cold water and other stimulants.
Complete.	.....	Turning; an attempt was previously made to separate the placenta partially from its attachment; hemorrhage much increased; was abandoned.	Recovered.	Lived.	Reporter states that mother complained of pain in the attempt to separate placenta; was abandoned for this reason. Did not the perforation of its substance require more effort?
Partial; assisted complete.	Hand.	Two or three attempts made to turn through perforation; at length leg brought down and kept by tape; at one time both hand and leg were down; hand at last drawn up by uterine contractions, and child expelled.	Recovered.	Dead.	To moderate the pains, which were very strong, a drachm of laudanum was given; succeeded in turning after this.
Complete.	.....	Os gradually dilated; turning through perforation; a part of placenta came away with child.	Recovered.	.....	.....
Complete; protruding in vagina.	Head.	Placenta perforated in the center.	Recovered.	Lived.	"The child's head immediately passed through the rent made, and the shoulders carried the placenta before them, encircling the neck like a collar;" the whole process occupied about five minutes.
.....	.....	Turning through perforation.	Recovered.	Dead.	.....
Complete.	.....	Turning through perforation.	Recovered.	Lived.	.....

TABLE VII.—*Placenta Perforata*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF
849	Com. by Dr. James Jackson, Boston.	.....	.....	.....	.....	Slight at times for a month.	.....
850	Com. by Dr. W. T. Parker, S. Boston.	.....	4	9	.....	None previous; sudden and very profuse when labor came on.	Fully di- lated.
851	Com. by Dr. J. H. York, S. Boston.	.....	1	.....	.....	For 2 months; during the 3 weeks before labor, extreme.	Dilated su- ciently.
852	Com. by Dr. H. G. Clark, Boston.	.....	2	.....	Pains active.	Constant.	Dilated to two-thirds its exten
853	Dr. B. F. Heywood, Worcester, Mass., June, 1816.	.....	.....	.....	At last much reduced.	Not great in quantity, but steady; a great amount lost in all; 4 weeks previous had an attack, which was controlled by remedies.	Dilatable.
854	Ibid., June 12, 1848.	.....	Multi- para.	.....	.....	Severe from the commencement of the pains.	Sufficiently dilated; thin and yielding
855	Ibid., Dec. 6, 1847.	.....	.....	.....	Greatly reduced by loss of blood; pains steady and good.	Began with "slight show" on 1st; kept on increasing.	Very rigid first; at dilated.
856	Wm. Smellie, L. & E. Month. Jour., Mar. 1851, p. 228.	.....	6	8	Much exhausted; pulse above 100; weak.	Constant oozing for a fortnight previous; increased for last 3 days.	Dilated at plugging
857	Dr. C. Bannister, Phelps, Ont. Co., N.Y., July 14, 1819; Bost. Med. Jour., April 19, 1855.	.....	4	8	Sinking.	Began at 6th month; returned at intervals oftener repeated; tampon used without effect; when last attack came on, no labor-pains.	Dilatable.
858	Loc. sup. cit., June 5, 1841.	.....	.....	Full time.	Nearly prostrated.	.....	Two-thirds its full s
859	Ibid., Feb. 22, 1853.	.....	.....	.....	In a state of syncope.	Great.	Easy to d late.
859b	Mr. W. Nix, Lond. Lan., ii. p. 224.	.....	.....	.....	Showing effect of loss of blood; restless, talking incoherently.	For 2 or 3 days previously, a considerable quantity during pains.	Soft and yielding

and Child Delivered—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
Complete.	.....	Turning.	Recovered.	.....	Labor was 6 or 8 hours in duration.
Complete.	.....	Turning through perforation.	Recovered.	Dead.	.....
Complete.	.....	Turning through perforation.	Recovered.	Lived.	Great prostration and flooding for 3 hours; placenta then removed; hemorrhage ceased; brandy and ergot given.
Complete.	Head.	.....	Recovered.	Lived.	Seen early on first occurrence of hemorrhage; placenta was protruded by the head coming down; it was perforated, and the pains continuing strong, the child passed through it.
Complete.	Head.	An attempt to turn through the perforation not succeeding, the forceps were applied, and child extracted through perforation.	Recovered.	Dead.	Child weighed between 10 and 11 pounds.
Complete.	.....	Turning through perforation.	Died.	Dead.	Died of puerperal peritonitis on the 7th day; Dr. H. remarks: "There had been some cases of puerperal peritonitis about that time in the neighborhood."
Complete.	Head.	After a long and protracted effort, turning was effected.	Recovered.	Dead.	Mother had a protracted recovery.
Complete.	Head.	Turning through perforation.	Recovered.	Dead.	Cord 3 times round child's neck.
Complete.	.....	Turning through the perforation.	Recovered.	Dead.	.....
.....	.....	Turning through the perforation.	Recovered.	Lived.	.....
Complete; rent around.	.....	Turning.	Died.	Dead.	So much difficulty was experienced in delivering the head that the child was still-born; on the third day mother was taken with flooding, and died before assistance could reach her.
Complete.	.....	Turning; child born in about 20 minutes.	Recovered.	Dead.	Labor was allowed to proceed slowly after version, to allow the system time to rally; very little hemorrhage after delivery, but patient became unconscious, and remained so some time.

The number of the cases in which with perforation of the placenta, the labor was finished without artificial delivery, being so small, it was thought best not to collect them in a separate table, as has previously been done, but to include all under one head, and afterwards make the distinction.

Of the cases enumerated in the foregoing table,

The mothers recovered in29 | The mothers died in.....11

Of the children, in the 32 cases in which record is made,

12.....Lived. | 20.....Died.

The age of the mothers, where it is recorded, is stated to have been

26 in.....1 instance.	|	35 in.....2 instances.
30 ".....1 "	|	36 ".....1 "
33 ".....1 "	|	48 ".....1 "

The number of the pregnancy, was the

1st in.....1 instance.	|	6th in.....2 instances.
2d ".....2 "	|	8 ".....1 "
3d ".....1 "	|	10 ".....1 "
4th ".....4 "	|	11 ".....1 "
5th ".....2 "	|	Multipara in.....2 "

The period of the pregnancy, at which the case terminated, was

7 months in.....1 instance.	|	8½ months in.....3 instances.
7½ ".....1 "	|	9 ".....4 "
8th ".....4 "	|	Nearly 9 months in.....1 "
8 ".....4 "	|	Full term in.....2 "

Of which at

7 months.....the mother recovered.	
7½ ".....the mother died.	
8th ".....3 recovered.	1 died.
8 ".....4 "	
8½ ".....1 "	2 "
9 ".....3 "	1 "
Nearly 9 months.....1 "	
Full term.....1 "	1 "

The attachment of the placenta over the os uteri, is recorded in 25 instances, in all but one of which it was complete. In that one, No. 844, it was almost complete.

The child presented by the head.....16 times.
Foot and hand or arm.....2 "

The condition of the os uteri is recorded as being

In good condition, in Nos. 823, 824, 826, 827, 831, 832, 839, 842, 843, 844, 850, 851, 852, 853, 854, 857, 858, 859, 859b	19 cases.
Dilated slowly, in Nos. 845, 856.....	2 "
Rigid at first, then dilated, in Nos. 828, 833, 855	3 "
Rigid, in Nos. 829, 841	2 "
Resisted delivery, in No. 836	1 "

Distributing the fatal cases where they belong, we find among those in which the os is recorded as having been in *good condition*,

Nos. 823, 826, 827, 854, 859.....	5 cases.
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Of these, Nos. 823, 826, 827, died from the shock of the operation, and very soon after delivery. No. 854 died of peritonitis, on the 7th day. But as this was prevalent in the neighborhood at that time, it may be presumed that it was the result of contagion, or of epidemic influence, rather than the effect of the delivery. In No. 859, flooding came on after delivery, on the third day.

Of those in which the os was *rigid at first, but afterwards dilated*, No. 833 proved fatal. In this case there were no pains, and the mother evidently died from loss of blood.

Of those in which it was *rigid*, No. 829 proved fatal. In this case the result seems to be due to the severity of the operation, in consequence of the rigidity.

Of those in which the rigidity having yielded at last, the os still resisted delivery, the only case, No. 836, proved fatal. In this the result seemed to be due to the delay in rendering assistance.

The date, during the pregnancy, at which the hemorrhage first made its appearance, was, at

5½ months in	1 case.	8th month in.....	4 cases.
6th month "	1 "	8½ months "	1 "
7th " "	1 "	9 " "	4 "
7 months "	3 "	Full term "	1 "
7½ " "	1 "		

In all of which, the os uteri was completely covered by the placenta.

The hemorrhage is recorded as being

Very great, in Nos. 825, 827, 828, 829, 839, 842, 845, 851.....	8 cases.
Profuse, in Nos. 832, 835, 841, 843, 846, 847, 850	7 "
Severe, in Nos. 854, 859.....	2 "
A large amount lost, in Nos. 836, 853.....	2 "
Recurred several times, in Nos. 824, 829, 831, 857.....	4 "

Considerable, in Nos. 840, 844, 859b	3 cases.
Increased as labor progressed, in Nos. 826, 855, 856	3 "
For three weeks, in No. 821	1 "
For nineteen days, in No. 823	1 "
For eight days, in No. 836	1 "
For three days, in Nos. 830, 833	2 "
Continuous while it lasted, in No. 852	1 "
Slight, in No. 849	1 "
Less than usual, in No. 837	1 "
Kept up after delivery, in Nos. 833, 842, 851	3 "

Distributing the fatal cases where they belong, we find them all among those where the hemorrhage is reported as being of a severe character.

The condition of the mother at the time of the delivery, is recorded as being

Almost moribund, in Nos. 821, 826	2 cases.
At the last extremity, in No. 829	1 "
In a state of syncope, in Nos. 823, 824, 825, 842, 845, 859	6 "
Extremely exhausted, in Nos. 827, 831, 841, 853, 855, 856	6 "
In a critical condition, in Nos. 832, 836, 839, 843, 857, 858, 859b	7 "
Unimpaired, in No. 844	1 "
With active pains, in No. 852	1 "

Among which are to be found 7 fatal cases, all occurring among those where the condition is recorded as being seriously affected by the circumstances of the labor.

Delivery was effected by

Turning in	28 cases.
Child born by efforts of nature in	8 "
Craniotomy was performed in	1 "
Forceps were used in	1 "
The child was drawn down by the feet in	2 "

Of the mothers who died, all were delivered by turning, with one exception, No. 829, in which case craniotomy was performed. In this case the greatest rigidity of the os was met with, which continued to the very last.

The tampon was used in Nos. 836, 857

In the former it was acidulated with vinegar and water, and the vagina was filled with snow. The hemorrhage was checked, but the case terminated fatally, from reasons already adduced when considering the condition of the os uteri. In the latter, No. 857, the tampon was ineffectual.

Ergot was used in Nos. 839, 840, 851.....3 cases.

In the first of these, No. 839, it had the effect to increase the flooding. In the second, No. 840, it was given in combination with opium. It arrested the hemorrhage, and its application was immediately followed by dilatation of the os. In No. 851 the hemorrhage kept up three hours after delivery, till the removal of the placenta. Ergot and brandy were then given.

In No. 836 the placenta was of the "Battledoor shape."

In No. 830 the mother had a distorted pelvis; the distance between the sacrum and os pubis, being only two inches and three-quarters.

Before commencing any comparison between the results of the preceding table, and those obtained from the tables which precede that, it will be necessary to make the same classification of the cases, as has been hitherto done. That is to say, to collect the cases into two divisions, according as the children have been delivered by the efforts of nature alone, without manual or instrumental assistance, or, as they have been delivered by version, or some other form of artificial delivery, whether manual or instrumental.

Of those in which no artificial assistance was necessary, there were 8 cases, all of which recovered. The risk to the mother therefore, as far as any comparison can be made upon so small a basis, where the delivery is accomplished by the birth of the child through the perforated placenta, is just equal to what it is, under the conditions of table 1st, and is as much less than what follows from the conditions of either of the other tables, as the difference between their percentages and the percentage of table 7th.

Of the cases in which artificial delivery was performed, 32 in all, 11 died. This mortality would give a percentage of 34 and a fraction.

If we compare this with the percentage of table 1st, it will stand as 34+ to 0. That is to say, the mother, under the conditions of artificial delivery through a perforated placenta, runs a risk inversely in that proportion. Compared with table 2d, it will be as 34+ to 19 $\frac{1}{4}$, almost twice as great. That is to say, artificial delivery through a perforated placenta, is nearly twice as dangerous to the mother, as when after the placenta has been artificially separated, the labor is completed by the labor pains alone. Compared with table 3d, it stands as 34+ to 6 $\frac{1}{2}$, almost six times as great. That

is to say, artificial separation of the placenta, and delivery by the unassisted powers of the uterus, is nearly six times more favorable to the mother, than perforation of the placenta, and delivery by artificial means through the perforation. Compared with table 4th, it stands as 34+ to 21 $\frac{3}{4}$. When, therefore, other things being equal, we have to choose between separation of the placenta and perforation of the placenta, with artificial delivery afterwards in either case, the difference is in favor of the former, by 14 per cent. Compared with table 5th, in which partial separation of the placenta is followed by natural delivery, it stands as 34+ to 11 $\frac{1}{2}$. That is to say, the risk is more than three times as great. Compared with table 6th, in which, with partial separation of the placenta, artificial delivery was resorted to, we find the proportion to be as 34+ to 25. When, therefore, we have our choice, other things being equal, between partial separation of the placenta, and perforation through it, the labor in either case, to be completed by forced delivery, by adopting the former course, we increase the chances for the mother's safety, by 10 per cent.

The foregoing comparisons also tend to strengthen the conclusions already drawn from the preceding analyses, that under the conditions of Placenta Prævia, the disposition of the child, whether delivered by natural efforts, or by artificial means, is the all-important and determining element, for danger or for safety, to the mother.

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TABLE VIII. *Died*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.
860	Mauriceau, Obs. 170, May 25, 1676.	.....	.....	7	.....	Had suffered for 2 days from excessive flooding.
861	Lamotte, Obs. 321, March 23, 1687.	.....	.....	Nearly 9	.....	Very violent.
862	Levret, Accouch. laborieux, edition of 1780, p. 61, Obs. 15.	.....	.....	9	.....	Had flooded for 3 days.
863	Smellie, Collect. 39, No. 1, Case 1, A.D. 1747.	.....	.....	8½	.....	The flooding, at its onset, was sudden, and in large quantity; it recurred in a few hours and continued; on arrival, fainted; went into convulsions and died, while preparations were making to deliver.
864	Ibid., Case 2, A.D. 1748.	40	1	8½	.....	In the 7th month of pregnancy patient got a fall, which brought on flooding; this was checked, although the least motion provoked it again; slight pains coming on, excited the flowing, which continued; advice being sought, it was decided to wait, rather than deliver without delay.
865	Ibid., Case 3, A.D. 1747.	.....	5	8½	.....	In the morning, after considerable fatigue patient was seized with pains in the back and a flooding, which nearly filled the vessel on which she was sitting; was bled to 10 ounces, and put to bed; flooding returned at 11 P.M., and continued without check till 6 next morning, when she died, while means were being taken by the physician (who had not been sent for before) to recover her from a convulsion into which she had fallen.
866	Ibid., 13, No. 1, com. by Dr. Garrow, Feb. 4, 1754.	.....	.....	7	.....	.....
867	Rigby, Essay on Uterine Hem., ed. of 1822, Case 10, Feb. 12, 1773.	.....	.....	9	.....	For 2 hours; had lost a very great quantity of blood.
868	Ibid., Case 20, Nov. 8, 1774.	.....	.....	.....	.....	More or less for 6 days.
869	Dr. Lee's Clinical Midwifery, Am. ed., p. 154, Case 2.	.....	.....	9	.....	Hemorrhage set in without any warning, and she died before she could be got into the hospital.
870	Perfect's Cases, ii. 356, No. 128, 1762.	.....	.....	9 nearly.	.....	At intervals from the 5th month; she had been bled and been treated with astringents.
871	Stewart, Uterine Hem., Lond. 1816, Case 4, Jan. 1813.	.....	.....	.....	.....	Flooding for 12 hours; no labor-pains.
872	Dr. S. Merriman, Lond. Med. Gaz., xxxvi. part 2, p. 1021.	.....	.....	.....	.....	.....
873	Ibid.	.....	.....	.....	.....	.....
874	Dr. J. C. W. Lever, Lond. Med. Gaz., xxxvi. part 2, p. 1422, No. 33.	38	8	8½	.....	.....
875	Mr. Bainbridge, Lond. Med. Gaz., xxvi. p. 203.	.....	.....	Full time.	.....	Three weeks previous after lifting; continued until she died.
876	Dr. W. Rankin, Am. Jour. Med. Sci., N. S., xxvi. p. 393.	40	.....	9	.....	For 2 or 3 months; last 2 weeks almost constantly.
877	Dr. Lever, Lond. Med. Gaz., xli. p. 123.	.....	.....	.....	.....	Evidently very great.

Undelivered.

STATE OF OS.	PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	REMARKS.
Rigid, thick, and not little dilated.	Partial.	.....	The woman refused to let Mauriceau turn and deliver, and sent for another physician, who did nothing to aid her.
Relaxed.	.....	.....	Placenta came away before the woman died; hemorrhage continued after the placenta came away, till she died.
.....	Complete.	Head.	An autopsy, which was made by the attending surgeons, showed the os uteri completely covered by the placenta. This case occurred before 1723.
It, and a little open.	Complete.	Head.	The Cæsarean section was performed, but the child was dead and stiff; the placenta adhered to the lower part and left side of the uterus, about three-fingers' breadth of it lying over the os uteri.
It little dilated.	Complete.	.....	An autopsy being made, the placenta was found attached to the inferior and posterior portion, with about two-fingers' breadth of its lower edge separated from the os uteri.
.....	Complete.	.....	Cæsarean section immediately performed, but the child was dead; placenta adhered to the back and lower part of the uterus. Smellie says: "I found the membranes adhering everywhere to the uterus; and on separating them slowly, observed everywhere, little, small filaments like hairs extended from the one to the other."
.....	Complete.	Head.	The autopsy made in this case showed the thickness of the uterus to be about one quarter of an inch; the placenta adhered to the os uteri by its center or thickest part nearly; in its substance was a laceration upwards of an inch long and through the greatest part of its thickness.
..... little open.	Complete.	Breech.	An autopsy was performed; uterus contained three pints of fluid; membranes adhered to the uterus universally by the spongy chorion.
..... dilated till the day.	.....	.....	Rigby did not arrive till after the death of the patient; midwife reported that at the mouth of the womb she found, instead of the child's head, "a strange lump of stringy substance."
.....	Complete.	.....	Placenta was found to be centrally situated over the orifice of the womb, and at the left side detached to a considerable extent.
.....	Complete.	Head.	The physician who was first called requested a consultation, the result of which was, that no interference with the case should be made; the flooding returning violently, the placenta and membranes were broken through, and the head came down; the pains were, however, insufficient to complete the delivery, and she died shortly after.
.....	Partial.	.....	An autopsy was made; a small portion, not over an inch in diameter, was found to be detached.
.....	.....	.....	Attendants delayed sending for medical attendance till she was in <i>articulo mortis</i> .
.....	.....	.....	Death ensued from the fault of her medical attendant.
.....	Complete.	.....	Placenta was extracted.
.....
.....	Complete.	.....	Was not seen before her death by any medical man; an autopsy was made.
.....
.....	.....	.....	On the second day of labor, during which time pains were but slight, "a single most violent pain" occurred, during which she felt something give way; it was followed with great prostration, nausea, and general coldness of the surface; lived about 10 hours; rupture of uterus.
.....	.....	.....	Placenta was detached, but the system had been so reduced that she sunk before she could be delivered; was in charge of an unqualified practitioner, who made no attempt to ascertain what was the matter; Dr. Lever called in at the last moment.

TABLE VIII. *Died*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.
878	Dr. Tyler, Dublin Med. Jour., N. S., iii. 1847, p. 360.	40	2	4th.	.....	Ghastly pale; pulse quick and feeble; began to flow 2 hours before attendance; profuse from the first; hemorrhage increasing with every pain; placenta extracted; slight draining continued; plug; ergot.
879	Mr. J. T. Ingleby, Lond. Lan., 1839- 40, i. p. 942.	.....	.....	.....	.....	Several attacks of hemorrhage during last week of pregnancy; not particularly severe, except the last, but keeping up a continual draining.
880	Ibid., p. 943.	.....	.....	9	.....	Some hours.
881	Ibid., p. 944.	.....	.....	9	.....	One hemorrhage to an amount sufficient to sink her into a death-like state of exhaustion; lived 9 hours, during which time "not a drop of blood passed the vulva;" transfusion was proposed, but the apparatus could not be procured in season; she never rallied from the state into which the flooding threw her.
882	Mr. R. Barnes, Lond. Lan., i. 1847, p. 328.	41	12	.....	.....	At intervals for 24 hours.
883	Mr. G. F. Knipe, Lond. Lan., 1851, i. p. 599.	.....	.....	.....	.....	.....
884	Com. by Dr. Z. B. Adams, Boston.	.....	.....	.....	.....	.....
885	Dr. W. Read, Oct. 13, 1852.	27	1	7	Moribund; appeared as if every drop of blood had been drained away.	Eleven days: for 7 days slight, then a sudden and great gush; continued till she died.
886	Com. by Dr. J. Flint, Boston.	30	2	9	.....	.....
887	Dr. Legroux, Arch. Gén., Dec. 1855, p. 644, Obs. 1, Hos- pital Beaujon.	30	.....	9	Of a robust constitu- tion; somewhat af- fected by flooding; gradually grew weaker.	For 15 days; had lost much blood; recurred after entrance into hospital.
888	Ibid., p. 645, 1844, occurred in Hos- pital St. Antoine.	44	3	8th.	Gradually growing weak.	A few days before entrance, after a quarrel with her husband; considerable, which came on at intervals for 3 days; then arrested by a prolonged syncope; next night, returned abundant, producing faintness, sighing, etc. no uterine pains; cold injections; ceased plug; ergot.
889	Ibid., p. 646, at Hôtel-Dieu.	.....	.....	.....	Extremely feeble; bloodless; in labor many days before entrance.	Incessant for many days; arrested for a moment only at a time.
890	Dr. H. R. Storer, Boston, Sept. 25, 1856, Boston Med. J., Nov. 27, 1856.	30	2	8	.....	For several weeks.
891	Benj. Dunal, De l'hem. prod. par l'insert. du pla- centa, etc., Mont- pellier, 1855, p. 141, 4th Observa- tion.	.....	2	8th.	Very pale and very feeble; skin jaun- diced; feet and hands œdematous; at last syncope; rigors and convulsions.	Began at 6th month, abundant; recurred at intervals till date of record; tampon.

Undelivered—Continued.

STATE OF OS.	PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	REMARKS.
lated to size of crown-piece, when first examination made; afterwards closed, and did not open. Then to admit fingers only.	Complete.	.....	On the 13th she complained of inability to open her mouth, and difficulty of swallowing; had severe pain with spasms of facial muscles; next day (14th) jaws locked; opisthotonos; died on 16th day.
ated fully.	Complete.	.....	.....
ated fully.	Complete.	.....	"At the end of a few hours (I believe under 24) pains came on, and the child immediately descended to the outlet; her strength continued sinking, and she died just as the child was on the point of being expelled." Autopsy showed placenta split in halves by the child's head, three-quarters lying on anterior and one-quarter on posterior portion of cervix.
ated to the rim of meglass.	Complete.	Head.	No attention apparently paid in the autopsy to the connection of the placenta with the uterus. Dead before arrival at the house.
ly dilated; id.	Complete.	.....	Twins; after death children were removed with some difficulty.
.....	Complete.	.....	"Sent for Dr. Flint when first taken; found her with no pain; rather pale, and os not dilated; in P.M. a copious gush; plug; hemorrhage ceased; evening, no pains and no hemorrhage when plug was removed; os still undilated and undilatable; could not ascertain presentation; 2 A.M., strength still holds out; countenance bleached; hemorrhage very copious; gave ergot; os rigid; did not yield before death; could not by any efforts enter uterus; no labor-pains throughout the whole duration of the case; hemorrhage came in gushes. Died in a fainting fit, without any farther loss of blood, before any symptoms of labor developed themselves.
lated to size of crown-piece; ting slowly.	Complete; on anterior portion of neck occupying inferior third.	.....	Towards the last became delirious; died in a syncope; had catamenial periods during the first (badly treated) four months of her pregnancy.
lated to about inches in diameter, (6 centimetres); rigid.	Complete.	.....	Hemorrhage did not return; she gradually sunk, and died in a few hours.
.....	Complete.	.....	Twins; Dr. Hobbs, who was first called, finding os not dilated, applied tampon, and left her; was called to another obstetric case, and, on returning to first patient, found her dead, from sudden and profuse flooding, 4 hours previous.
lated no disposition to dilate.	Complete.	Head.	Her previous pregnancy did not go beyond the 6th month, and since then she had been in feeble health.

In regard to the preceding table, in which every case proved fatal, nothing need be added by way of explanation or analysis. It may be doubted by some whether such cases rightfully belong here, as they afford no indications of treatment, and from them no comparative results can be obtained. But in one respect they are worthy of taking their place, for they show conclusively, that although the unaided forces of the system can sometimes relieve the mother from the imminent danger in which she is placed by the occurrence of Placenta Prævia, it is by no means the usual result. For this reason, the cases enumerated in the preceding table, have been collected and arranged in order.

APPENDIX.

In order to avoid errors, as far as possible, in the conclusions which might be drawn from the facts, in the cases in which Placenta Prævia occurred, and warned by the controversies which have unfortunately sprung up between writers in regard to the authenticity of certain data, it was determined in the outset, not to admit into the tables any cases the original reports of which, either in communications, essays, treatises, or public journals of medicine, could not be consulted. Of such, 891 were found, which are classified under the 8 tables first in order. But it was evident, that this number by no means included all the cases of Placenta Prævia, which at one time or another had been classified and analyzed. For the purpose of bringing them all together, and at the same time preserving the distinction between the two, 114 cases have been classified upon the same plan pursued in the tables first in order, and added in an Appendix. Of these, 79 are from the tables published in Prof. Simpson's collected works.¹ It will be seen by reference to the original, that Nos. 11, 23, 30, 37, 55, 80, 104, 106, 107, 121, 122, 126, 135, 136, were omitted. In these there is no clew to the mode of delivery, and for this reason they were valueless, as indicating the effect of that part of the operation upon the general result; while as tending to establish the fact, that the placenta, under these circumstances, is frequently expelled spontaneously, and may be detached and extracted, without danger to the mother, they have entire weight. The remaining cases, are from Dr. Trask's "Prize Essay."

¹ Loc. sup. cit.

APPENDIX.—TABLE IX. *Complete Separation of the Placenta before*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	STATE OF OS.	PRESENTA- TION OF PLACENTA.	PRESENTA- TION OF CHILD.
892	Dr. J. Y. Simpson, Collected Works, i. p. 612, Case 4.	.....	.....	.....	.....	.....	.....	.....
893	Ibid., Case 5.	.....	.....	.....	.....	.....	.....	Head.
894	Ibid., Case 7.	.....	.....	9th.	.....	.....	.....	Head.
895	Ibid., Case 10.	.....	Not 1st.	Full time.	.....	.....	.....	Arm and head.
896	Ibid., Case 13.	.....	7	7th.	.....	.....	.....	Head.
897	Ibid., Case 16.	.....	7	9th.	.....	.....	.....	Head.
898	Ibid., Case 26.	.....	1	9th.	.....	.....	.....	Head.
899	Ibid., Case 28.	.....	2	8½	.....	.....	.....	.....
900	Ibid., Case 31.	.....	1	7th.	.....	.....	.....	Breech.
901	Ibid., Case 32.	.....	1	9th.	.....	.....	.....	Head.
902	Ibid., Case 35.	.....	1	6th and 7th.	.....	.....	.....	Head.
903	Ibid., Case 39.	.....	9	8th to 9th.	.....	.....	.....	Head.
904	Ibid., Case 46.	.....	9	9th.	.....	.....	.....	Head.
905	Ibid., Case 47.	.....	5	9th.	.....	.....	.....	Head.
906	Ibid., Case 48.	.....	.....	9th.	.....	.....	.....	.....
907	Ibid., Case 50.	.....	Multi- para.	.....	.....	.....	.....	Breech.
908	Ibid., Case 54.	.....	3	9th.	.....	.....	.....	Head.
909	Ibid., Case 61.	.....	3	8th.	.....	.....	.....	Head.
910	Ibid., Case 65.	.....	.....	7th, 8th.	.....	.....	.....	.....
911	Ibid., Case 66.	.....	7	9th.	.....	.....	.....	Head.
912	Ibid., Case 67.	.....	.....	.....	.....	.....	.....	.....
913	Ibid., Case 68.	.....	3	8th, 9th.	.....	.....	.....	Head.
914	Ibid., Case 69.	.....	5	8th.	.....	.....	.....	Head.
915	Ibid., Case 70.	.....	.....	.....	.....	.....	.....	.....
916	Ibid., Case 71.	.....	4	.....	.....	.....	.....	Head.
917	Ibid., Case 75.	.....	Multi- para.	7th and 8th.	.....	.....	.....	Head.
918	Ibid., Case 79.	.....	6	8th.	.....	.....	.....	Head.
919	Ibid., Case 84.	.....	4	.....	.....	.....	.....	Head.
920	Ibid., Case 85.	.....	3 or 4	9th.	.....	.....	.....	Head.
921	Ibid., Case 86.	.....	4	8th.	.....	.....	.....	Head.
922	Ibid., Case 87.	.....	6 or 7	.....	.....	.....	.....	Head.
923	Ibid., Case 88.	.....	.....	9th.	.....	.....	.....	.....
924	Ibid., Case 89.	.....	7	8th.	.....	.....	.....	Arm.
925	Ibid., Case 90.	.....	Not 1st.	9th.	.....	.....	.....	.....
926	Ibid., Case 93.	.....	.....	.....	.....	.....	.....	.....
927	Ibid., Case 94.	.....	.....	.....	.....	.....	.....	.....
928	Ibid., Case 95.	.....	.....	9th.	.....	.....	.....	Head.
929	Ibid., Case 96.	.....	.....	9th.	.....	.....	.....	Head.
930	Ibid., Case 98.	.....	4	9th.	.....	.....	.....	Head.
931	Ibid., Case 99.	.....	4	9th.	.....	.....	.....	Head.
932	Ibid., Case 114.	.....	.....	.....	.....	.....	.....	Head.
933	Ibid., Case 123.	.....	.....	.....	.....	.....	.....	Head.
934	Ibid., Case 125.	.....	.....	.....	.....	.....	.....	.....
935	Ibid., Case 127.	.....	7	9th.	.....	.....	.....	.....
936	Ibid., Case 130.	.....	.....	7th.	.....	.....	.....	Head.
937	Ibid., Case 131.	.....	.....	4th.	.....	.....	.....	Shoulder.
938	Ibid., Case 133.	.....	9	9th.	.....	.....	.....	Head.
939	Ibid., Case 141.	.....	Multi- para.	.....	.....	.....	.....	.....
940	Ibid., Case 37.	.....	Multi- para.	.....	.....	.....	.....	.....
941	Ibid., Case 64.	.....	Large family.	6½	.....	.....	.....	.....
942	Dr. Trask, Prize Es- say, Transactions of American Med. Assoc., viii. 1855, p. 658, No. 273, table 2.	.....	Multi- para.	.....	Was faint; pulse quick and feeble; occasional slight pains; plugged; in 4 hours pains in- creased.	Finger as- sisted dila- tation of os.	.....	.....

the birth of the Child. Labor completed by Natural Efforts.

HEMORRHAGE BEFORE SEPARATION.	HEMORRHAGE AFTER SEPARATION.	TIME BETWEEN SEPARATION AND DELIVERY.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
		Many hours.		Died.		
or none.		Considerable.		Recovered.		
t.	None.	Several hours.		Recovered.	Dead.	
t.	None.	About 8 hours.		Recovered.	Dead.	
great.	Very trifling	4 to 5 hours.		Recovered.	Dead.	
ase.	Ceased.	4 hours.		Recovered.	Dead.	
great.	None.	About 1½ hours.		Recovered.	Dead.	
during labor.	None.	1 hour.		Recovered.	Dead.	
erate.	Very slight.	About 1 hour.		Recovered.	Dead.	
ssive.	Very little.	About 1 hour.		Died.	Dead.	
great.	None.	Above one-third of an hour.		Recovered.	Dead.	
Considerable.	None.	Half an hour.		Recovered.	Dead.	
great.	None.	10 minutes.		Recovered.	Dead.	
great.	None.	About 10 minutes.		Recovered.	Dead.	
ase.	None.	Less than 10 minutes.		Recovered.	Alive.	
Considerable.		A short time.		Recovered.	Dead.	
ssive.		A few pains.		Recovered.	Alive.	
Violent.	None.			Recovered.	Dead.	
And dead.		Soon.		Recovered.	Dead.	
Not alarming.	None.	Quickly.		Recovered.	Alive.	
Considerable.	None.	5 minutes.		Recovered.	Alive.	
great.	Slight.	4 minutes.		Recovered.	Dead.	
		3 minutes.		Recovered.	Alive.	
Slight.		Less than 2 minutes.		Recovered.	Alive.	
great.		Immediately.		Recovered.	Dead.	
Slight.		Immediately.		Recovered.	Dead.	
Violent.		Almost at the same time.		Recovered.	Alive.	
Considerable.		Almost at the same time.		Recovered.	Alive.	
Violent.		Not many moments.		Recovered.	Dead.	
		One pain.		Recovered.	Alive.	
Violent.		One pain.		Recovered.	Alive.	
Profuse.		One pain.		Recovered.	Dead.	
Moderate.		One pain.		Recovered.	Dead.	
		Same pain.		Recovered.		
great.		Together.		Recovered.	Alive.	
Considerable.		Together.		Recovered.	Dead.	
Considerable.		Together.		Recovered.	Dead.	
Considerable.		Together.		Recovered.	Alive.	
Considerable.		Together.		Recovered.	Alive.	
Profuse.		Together.		Recovered.	Dead.	
great.	Not much.			Recovered.	Dead.	
Not great.				Recovered.	Alive.	
Moderate.	None.			Recovered.	Alive.	
				Recovered.	Dead.	
Violent.	None.			Recovered.	Dead.	
Severe.	None.			Recovered.	Dead.	
Not great.		At least half an hour.		Recovered.	Dead.	Com. by Dr. Todd, Colinsburgh.
Acting.		Next pain.		Recovered.	Dead.	Com. by Dr. Conquest, London.
Car on in fourth month; plug, etc.; removed in 7 or 8 weeks; had lost much blood.	Ceased.	Fœtus followed in a few minutes.		Recovered.	Dead.	Part of placenta protruded; the whole at length expelled.

APPENDIX.—TABLE IX. *Complete Separation of the Placenta before*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	STATE OF OS.	PRESENTA- TION OF PLACENTA.	PRESENTA- TION OF CHILD.
943	Dr. Trask, Prize Es- say, Transactions of American Med. Assoc., viii. 1855, p. 658, No. 274, table 2.	44	20	Full period.	.....	.....	.....	Arm and funis.
944	Ibid., No. 275.	.....	.....	.....	Labor lasted a few hours; pains active throughout.	.....	Complete.	.....
945	Ibid., No. 276.	.....	.....	.....	Similar to preceding.	.....	.....	.....
946	Ibid., No. 280.	.....	.....	Full time.	When seen in consulta- tion in evening, was blanched and restless; slight vomiting; pains slight, and every 15 min- utes.	Os dilated suddenly, after re- moval of <i>tampon</i> .	Complete.	Head.
947	Ibid., table 3, No. 314.	39	11	Full time.	Pains came on at 1 o'clock; plugging; at 5, pale and faint; lips blanched; tongue dry; pulse ex- tremely feeble; faint and thirsty; pains every 15 or 30 minutes.	Dilatable.	Complete.	Head.
948	Ibid., No. 316.	25	4	7th.	Slight pains at second visit.	Size of a crown-piece; thick; not dilatable.	Apparently complete.	.....
949	Ibid., No. 332.	30	5 or 6	Near or full time	Great alarm; blanched; effective pains almost ceased.	Soft and di- latable; size of a dollar.	Complete.	Head.

The birth of the child. Labor completed by Natural Efforts—Continued.

HEMORRHAGE BEFORE SEPARATION.	HEMORRHAGE AFTER SEPARATION.	TIME BETWEEN SEPARATION AND DELIVERY.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
taken in labor at 11 A.M., with considerable hemorrhage and charge of waters.	Entirely ceased.	45 minutes.	Morphine given preparatory to turning; pains increased, and in 45 minutes delivered by SPONTANEOUS EVOLUTION.	Recovered.	Dead.	At 1 P.M. placenta found floating in a pool of blood in bed. Com. by Dr. Wm. Boling, Montgomery, Alabama.
at for a few hours previous; when labor suddenly came on, it "startling;" kept somewhat.	.....	Child followed immediately.	.....	Recovered.	Dead.	Half an hour after labor set in placenta was discovered coming through the vagina. Com. by Dr. Isaac E. Taylor, New York.
.....	"In both this case and the preceding, hemorrhage ceased from being active, so much so as to quiet my mind respecting the welfare of the patient."	.....	.....	Recovered.	Living.	Same reporter.
Considerable during day and evening; then.	.....	.....	When head descended, ergot given, and child born.	Recovered.	Living.	Almost entire separation of the placenta took place in a few minutes, as the head came down; removed after birth, being still slightly attached to the edge of the os. Same reporter.
Hemorrhage a month before, and 3 or 4 times afterwards; bleeding during the 4 days previous to labor.	.....	6 hours.	Waited an hour; pains even less powerful; ruptured the membranes; stimulants; delivered under electro-galvanism and stimulus.	Recovered.	Dead.	Placenta separated by fore and middle fingers; then four fingers; requiring introduction of the hand; complained of the pain. W. A. Skinner, Dublin Hos. Reports, 1849, vi. 347.
At 11 A.M. copious without pains; 29 hours after, a profuse flooding; during examination, a profuse gush produced syncope.	Ceased after expulsion.	1 hour.	.....	Recovered.	Dead.	Placenta was detached with a sweep of the fingers; it was expelled by a strong pain. G. Gurney Wales, Bell's Bulletin, (from Provincial Journal,) 1846.
and very profuse which continued.	Entire cessation.	Half an hour.	Ergot given.	Saved.	Living.	Separated by the finger, and pressed back till ergot took effect; withdrawn after birth of child; bleeding could be controlled by pressure of fingers. Dr. R. E. Bland, Missouri Med. and Surg. Jour., 1847.

In table 9th will be found 58 cases. Of these

56.....Recovered. | 2.....Died.

A percentage of $3\frac{1}{2}$ nearly, or a proportion of 1 in 29.

Excluding No. 901, (32 of Simpson,)—as in justice ought to be done, for the report of the case is that on the 9th day after delivery, she and her husband quarreled, and that “she left her bed, and fought with her husband till perfectly exhausted, from which state she never recovered,”—and the result may be said to be but little different from what was obtained from the data given in table 1st.

Of the children,

19.....were born alive. | 34.....were born dead.

The child presented

By the head.....32 times.	Arm and cord.....1 time.
Head and arm 1 “	Shoulder.....1 “
Arm..... 1 “	Breech.....2 “

In the cases in which the child was born alive, the presentation, when it is stated, was the head.

The hemorrhage *before* separation was

Profuse in.....6 cases.	A good deal in..... 1 case.
Excessive in.....3 “	For four days in 1 “
Very great in.....9 “	Considerable in.....10 “
Most violent in 1 “	Moderate in 3 “
Violent in..... 4 “	Not great in..... 2 “
Severe in 2 “	Not alarming in..... 1 “
Great in..... 2 “	Slight in..... 1 “
Lost much in.....1 “	Little or none in..... 1 “
Active in..... 1 “	None during labor in..... 1 “

The hemorrhage *after* separation ceased entirely, or to such a degree, in those cases where it continued at all, that no danger or ill effect was experienced from it.

The time which elapsed, between separation and delivery, was

Many hours.....1 case.	Less than ten minutes.....8 cases.
Several hours 2 “	A short time..... 1 “
Six hours..... 1 “	A few pains..... 1 “
Four to five hours.....2 “	Soon..... 1 “
One hour and a half.....1 “	Quickly 1 “
One hour 4 “	Next pain 1 “
Three-quarters of an hour....1 “	Immediately 7 “
Half an hour..... 3 “	Almost at the same time.....2 “
One-third of an hour..... 1 “	Together 5 “
Ten minutes 1 “	Considerable time 1 “

The tampon was used three times, in Nos. 942, 946, 947.

Ergot was given twice, in Nos. 946, 949.

Electro galvanism was used once, in No. 947.

Morphine was administered once, preparatory to turning, in No. 943. In this case spontaneous evolution took place.

APPENDIX.—TABLE X. *Separation of the Placent*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	STATE OF OS.	PRESENTA- TION OF PLACENTA.	PRESENTA- TION OF CHILD.
950	Dr. J. Y. Simpson, Collected Works, Am. ed., i. p. 612, No. 3, Division 1st.	.....	3	9th.	.....	.....	.....	Arm.
951	Ibid., No. 9.	.....	.....	.....	.....	.....	.....	Cross-birth.
952	Ibid., No. 20.	.....	.....	7th.	.....	.....	.....	.....
953	Ibid., No. 24.	.....	1	9th.	.....	.....	.....	Arm.
954	Ibid., No. 27.	.....	15	6th.	.....	.....	.....	Shoulder.
955	Ibid., No. 34.	.....	10	9th.	.....	.....	.....	Feet.
956	Ibid., No. 41.	.....	4	9th.	.....	.....	.....	.....
957	Ibid., No. 42.	.....	1	7th.	.....	.....	.....	.....
958	Ibid., No. 43.	.....	10	9th.	.....	.....	.....	Feet.
959	Ibid., No. 44.	.....	Large family.	.....	.....	.....	.....	Arm.
960	Ibid., No. 49.	.....	6	8th.	.....	.....	.....	.....
961	Ibid., No. 53.	.....	12	9th.	.....	.....	.....	Shoulder.
962	Ibid., No. 57.	.....	5	9th.	.....	.....	.....	Head.
963	Ibid., No. 58.	.....	4	9th.	.....	.....	.....	Head.
964	Ibid., No. 59.	.....	7	9th.	.....	.....	.....	Head.
965	Ibid., No. 60.	.....	2	6½	.....	.....	.....	Shoulder.
966	Ibid., No. 73.	.....	1	7th, 8th.	.....	.....	.....	Head.
967	Ibid., No. 74.	.....	5	.....	.....	.....	.....	Head.
968	Ibid., No. 97.	.....	Multi- para.	8th and 9th.	.....	.....	.....	Head.
969	Ibid., No. 102.	.....	4	9th.	.....	.....	.....	Head.
970	Ibid., No. 117.	.....	.....	7th.	.....	.....	.....	Shoulder.
971	Ibid., No. 124.	.....	.....	.....	.....	.....	.....	.....
972	Ibid., No. 128.	.....	Multi- para.	.....	.....	.....	.....	.....
973	Ibid., No. 129.	.....	.....	.....	.....	.....	.....	.....
974	Ibid., No. 132.	.....	.....	7th.	.....	.....	.....	.....
975	Ibid., No. 134.	.....	.....	3d.	.....	.....	.....	Shoulder.
976	Ibid., No. 138.	.....	.....	.....	.....	.....	.....	.....
977	Ibid., No. 140.	.....	2	9th.	.....	.....	.....	Head.
978	Dr. Trask's "Prize Essay," Trans. Am. Med. Assoc., viii. 1855, p. 656, Case 290, table 2.	.....	2	.....	Pains came on 4 hours be- fore arrival; felt faint and weak; small, quick pulse.	.....	.....	Arm.
979	Ibid., Case 310, ta- ble 3.	38	9	8th.	At first os undilated; va- gina plugged; after 11 hours, very faint, with slight pains and slight hemorrhage.	Dilatable.	Complete.	Head.

before the Child. Labor completed Artificially.

HEMORRHAGE BEFORE SEPARATION.	HEMORRHAGE AFTER SEPARATION.	TIME BETWEEN SEPARATION AND DELIVERY.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
good deal.	None.	10 hours.	Turning.	Recovered.	Dead.	Com. by Mr. Cripps, of Liverpool.
most none; not 2 inches in all. profuse.	Almost none.	Probably some hours.	Turning.	Died.	Dead.	Walter; "De morbis peritonei," p. 33.
	.....	Above 2 hours.	Turning.	Recovered.	Dead.	Prov. Transactions, vii. p. 338.
moderate.	Scarcely any.	1½ hours.	Turning.	Recovered.	Dead.	Com. by Dr. Frazer, Aberdeen.
alarming.	Not the least.	An hour or more.	Turning.	Recovered.	Dead.	Com. by Dr. F. Ramsbotham.
ne.	None.	About an hour.	Extraction.	Recovered.	Dead.	Com. by Dr. Irvine, Pitlochrie.
very great.	None of any consequence.	Within half an hour.	Forceps.	Recovered.	Dead.	Com. by Dr. Skae, Leven.
at; 6lbs. in 2 days.	Slight oozing.	About half an hour.	Turning.	Recovered.	Dead.	Com. by Dr. Paxton.
at; 8lbs. in 3 days.	About a pound.	.....	Gentle traction.	Recovered.	Dead.	Com. by Dr. Paxton.
very little.	.....	Upwards of 20 minutes.	Turning.	Recovered.	Dead.	Com. by Dr. Keiller.
very moderate.	Great.	5 or 10 minutes.	Turning.	Died.	Alive.	Com. by Dr. Frazer, Aberdeen.
exhausting.	None.	A short time.	Turning.	Recovered.	Dead.	Com. by Dr. F. Ramsbotham.
very great.	None.	A few minutes.	Turning.	Recovered.	Alive.	Com. by Dr. Smith, Glasgow.
exhausting.	None.	A few minutes.	Turning.	Recovered.	Alive.	Com. by Dr. Smith, Glasgow.
profuse.	A good deal.	A few minutes.	Turning.	Recovered.	Dead.	Com. by Dr. Smith, Glasgow.
exhausting.	None.	A few minutes.	Evisceration.	Died.	Dead.	Com. by Dr. F. Ramsbotham.
profuse.	.....	Together.	Turning.	Recovered.	Alive.	Com. by Mr. Campbell, Glasgow.
Considerable.	.....	None.	Turning.	Recovered.	Alive.	Com. by Dr. Currie, Lanark.
Exhausting.	.....	Together.	Turning.	Recovered.	Alive.	Com. by Dr. F. Ramsbotham.
Profuse.	Profuse.	.....	Turning.	Recovered.	Alive.	Lond. Med. Repos., xvi. p. 451.
Almost none.	None.	.....	Turning.	Recovered.	Alive.	Pardigon. De l'insertion du placenta a l'orifice uter.
.....	.....	.....	Turning.	Recovered.	Breathed.	Com. by Dr. Smith, St. Andrews.
Profuse.	Profuse.	.....	Turning.	Recovered.	Dead.	Com. by Dr. Wilson, Glasgow.
Profuse.	Profuse.	.....	Turning.	Recovered.	Dead.	Com. by Dr. Wilson, Glasgow.
.....	.....	.....	Turning.	Recovered.	Dead.	Kleinhert's Repertorium, 1832, April number, t. 24.
Very great.	.....	.....	Turning.	Recovered.	Dead.	Hannoverische Annalen, Sept., 1841. Vid. Neue Zeitschrift für Geburtsekunde, 1843, p. 121.
No	Almost none.	.....	Turning.	Died.	Dead.	Jour. Gen. de Medecine, t. 45, p. 305.
Severe.	None.	.....	Forceps.	Recovered.	Dead.	Com. by Dr. Tennant, Falkirk.
At intervals during 2 weeks; came on with thrills, and lasted 11 days.	No hemorrhage after placenta was found in vagina.	Less than 4 hours.	Turning.	Recovered.	.....	J. S. Barker, Prov. Med. and Surg. Jour., 1845, p. 591.
About 12 hours; hemorrhage severe; 5 or 6 pounds of blood must have been lost.	None; profuse while detachment was being done.	1 hour.	Detached placenta by hand; 1 hour after its expulsion, there being no pains, turning.	Recovered.	Dead.	J. Hutchinson, Prov. Med. and Surg. Jour., 1845, p. 626.

APPENDIX.—TABLE X. *Separation of the Placent*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	STATE OF OS.	PRESENTA- TION OF PLACENTA.	PRESENTA- TION OF CHILD.
980	Dr. Trask's "Prize Essay." Trans. Am. Med. Assoc., viii. 1855, p. 670, Case 334, table 3.	28	4	Full time.	Unconscious; almost pulseless; no pains; blood oozing from vagina.	Open; uterus firm and globular.	Complete.	Head.
981	Ibid., Case 338.	.....	.....	.....	Loss of blood so great that she was unconscious; pulse and breathing nearly extinct.	.....	.....	.....
982	Ibid., Case 340.	.....	.....	.....	Considerable depression of strength.	Dilatable, after plugging.	Complete.	.....
983	Ibid., Case 344.	.....	.....	.....	Exhausted.	.....	.....	.....

before the Child. Labor completed Artificially—Continued.

HEMORRHAGE BEFORE SEPARATION.	HEMORRHAGE AFTER SEPARATION.	TIME BETWEEN SEPARATION AND DELIVERY.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
no previous flooding; suddenly lost 5 pints, and more.	Continued during its removal, and ceased entirely after its removal.	5½ hours.	Placenta separated by the fingers, and withdrawn; 4 hours afterwards, perforation; ergot given, and child expelled in 1½ hours.	Recovered.	Dead.	Edward Ray, Prov. Med. and Surg. Jour., 1848, p. 124.
.....	.....	None.	Placenta separated by hand, and child turned and delivered; 3 or 4 minutes only occupied.	Recovered.	Living.	.....
peated hemorrhages for 2 months.	.....	None.	Placenta separated; turning.	Died.	Dead.	Died on 9th day, from irritative fever. Dr. Cox, Amer. Med. Monthly, Oct., 1854, p. 281.
very violent.	Not increased to any dangerous extent.	Considerable.	Placenta ignorantly separated and extracted; turning.	Saved.	Lost.	Mr. Wilson, Prov. Med. and Surg. Jour., 1844.

Of the 34 cases enumerated in the preceding table,

29 mothers Recovered. | 5 mothers.....Died.

All but 5 of the children, where the result is stated, were lost. Of these, one breathed after birth, but did not survive.

The child presented by the

Head.....9 times.	Feet.....2 times.
Shoulder.....5 “	Crossbirth.....1 “
Arm.....4 “	

The delivery was accomplished by

Turning, in.....28 instances.	Evisceration.....1 instance.
Extraction where the	Perforation of head.....1 “
feet presented.....2 “	Forceps.....2 “

The hemorrhage *before* separation, was

Profuse, in.....6 cases.	Considerable, in.....1 case.
Excessive, in.....2 “	Moderate, in.....1 “
Exhausting, in.....4 “	Very moderate, in.....1 “
Alarming, in.....1 “	Very little, in.....1 “
Very great, in.....3 “	Almost none at all, in.....2 “
Severe, in.....1 “	None, in.....2 “
Great, in.....2 “	At intervals, in.....1 “
A good deal, in.....1 “	Repeated for two months.....1 “
Not great, in.....1 “	

The hemorrhage *after* separation, continued to a degree to cause especial notice, in

Nos. 958, 960, 965, 969, 971, 972.....6 cases.

In No. 958 about a pound was lost. In No. 960 the record of the case reads, (No. 22, sect. vi., Simpson, loc. sup. cit., p. 634,) “the placenta became very extensively detached by one uterine contraction, and the mass of it was found lying in the vagina. ‘The accompanying hemorrhage,’ Dr. Fraser states, ‘was great, and, without convulsions, she expired in two minutes.’”

In No. 965 there was a good deal of hemorrhage. In this case, the placenta was detached when the hand was introduced for the purpose of turning, and lay in the vagina till the feet were brought down. In Nos. 969, 972, 973, the hemorrhage kept up after the separation, in a profuse degree, till the delivery was finished.

The time which elapsed between separation and delivery, was

Ten hours.....	1 case.	Five to ten minutes.....	1 case.
Some hours.....	5 "	Few..	4 "
An hour or more	3 "	None.....	3 "
About half an hour.....	3 "	Together	2 "
Short time.....	1 "		

The tampon was used once, in No. 979.

Ergot was given once, in No. 980. In this case, after perforation of the head, the ergot was given, and the child expelled by labor-pains.

APPENDIX.—TABLE XI. *Partial Separation of*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF OS
984	Dr. Trask's "Prize Essay." Trans. Am. Med. Assoc., viii. 1855, p. 614, table 1, Case 102.	.....	4	* Full period.	.....	Considerable hemorrhage prior and subsequent to delivery.	.....
985	Ibid., Case 110.	.....	4	.....	.....	Considerable previous hemor- rhage.	Well dilated
986	Ibid., Case 118.	25	2	Pre- sumed fulltime.	Almost pulseless; clothes and bed satu- rated with blood; had had hemorrhage oc- casionally for a week previously.	.....	Equaled 2 inches.
987	Ibid., Case 173.	.....	9	.....	Had not suffered.	Had been in labor 4 hours, and hemorrhage at each pain.	Size of a crown-piece

Of the mothers, in table 11th, all recovered. One child lived.

Placenta. Labor completed without Artificial Aid.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
trial.	Head.	Ergot given; the body followed "with the placenta."	Recovered.	Dead.	Dr. Jas. Fergusson, New York Jour. of Med., March, 1851, p. 276.
trial.	Head.	Pains insufficient; ergot given; spontaneous expulsion; placenta expelled after child.	Recovered.	Dead.	New York Lying-in Asylum, New York Jour. of Med., March, 1851, p. 277.
trial.	.....	Head descended and compressed placenta; stimulants; spontaneous expulsion.	Recovered.	Living.	Dr. H. G. Cox, Amer. Med. Monthly, October, 1854, p. 280.
trial.	Head.	Membranes ruptured; pressure of the head stopped the bleeding; child born in an hour; placenta came away in 10 minutes afterwards.	Recovered.	.....	Dr. Jameson, Dublin Med. Jour., 1836, p. 389.

The hemorrhage was considerable in amount before delivery, but ceased and did not afterwards recur.

APPENDIX.—TABLE XII. *Partial Separation of*

NO.	BY WHOM REPORTED.	AGE.	PREG-NANCY.	MONTHS PREG-NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF OS.
988	Dr. Trask's "Prize Essay," Trans. Am. Med. Assoc., viii. 1855, p. 636, table 1, Case 242.	45	Multi-para.	.....	Pulseless.	.....	.....
989	Ibid., Case 1.	.....	.....	.....	When found was pale, feeble, and extremely alarmed; had no pains; pains came on 4 hours after plugging.	Sudden; profuse discharge on the doctor's arrival; though near at hand, more than half a gallon was lost; plug; no hemorrhage for 6 hours, then delivered.	Rigid and high up; 6 hours dilated sufficiently to allow of turning.
990	Ibid., Case 101.	.....	Multi-para.	7th.	No pains; pulse just felt; arms and legs cold; could not raise hand to head or speak above a whisper; irregular respiration, and sense of constriction at lower end of sternum.	Considerable for 1 hour; none previous to commencement of labor; continued profuse.	Open; soft and yielding, and an inch thick.
991	Ibid., Case 111.	20	3	8th.	Had pains.	At 7th month, pretty copious; also at 8th, lost perhaps a quart; vagina plugged for an hour.	2 inches in diameter; dilatable.
992	Ibid., Case 113.	40	About 11	7th.	Faint and exhausted; almost drained of blood; apparently insensible.	Profuse for last 8 or 10 hours, when Dr. S. arrived.	Relaxed.
993	Ibid., Case 120.	24	2	Full time.	Strength somewhat diminished.	Slight, a month before; awakened by a "gush;" lost 3 pints; continued.	When admitted allowed the finger; in 9 hours $1\frac{1}{4}$ inches.
994	Ibid., Case 123.	28	5	7th or 8th.	Syncope had been brought on.	Profuse during sleep; two or three attacks, slight, a few weeks before.	At first dilated about an inch.
995	Ibid., Case 125.	40	10	Near full time.	.....	.....	.....
996	Ibid., Case 181.	.....	.....	7th.	Very alarming; ghastly, and extremities cold; lips pallid; tremors; thirst and vomiting; low delirium; pulse occasionally perceptible.	Excessive for a month previous; at least a pint daily; at time of record somewhat abated.	Admitted 2 fingers.
997	Ibid., Case 183(a).	.....	.....	Full time.	.....	.....	Partially dilated; dilatable.
998	Ibid., Case 183(b).	.....	.....	Full time.	.....	.....	Partially dilated, dilatable.

Placenta. Labor completed by Artificial Means.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
Partial; os half covered.	.....	Stimulants given; child expelled after turning; placenta was firmly adherent; attempt to separate it; bleeding continued; placenta full of cretaceous matter, and hard.	Died in 1 hour.	.....	Com. by Dr. Willard Parker, New York.
Complete.	.....	Turning.	Recovered.	Living.	.....
.....	Head.	At the end of 2½ hours the hand was introduced; the placenta first encountered; head seized; fetus and membranes withdrawn entire.	Recovered.	Dead.	C. L. Mitchell, New York Jour. of Med., 1843, p. 315.
Complete.	.....	At the end of an hour plug removed, and then turning; labor, from time when called, to delivery, one hour and a half.	Recovered.	Living.	Com. by Dr. Moulton, New Rochelle.
Complete.	Head.	Hand introduced; head seized and brought down.	Recovered.	Dead.	Com. by Dr. L. Shanks, Memphis, Tenn.
Complete.	Face.	Passed hand; turning.	Recovered.	Dead.	Dr. H. G. Cox, Amer. Med. Month., October, 1854, p. 280.
Complete.	Head.	Membranes ruptured by a pin; morphia and ergot given; repeated next day; forceps; there was but little bleeding after rupture of membranes.	Recovered.	Dead.	Com. by Dr. L. Shanks.
.....	.....	Turning.	Recovered.	Living.	Com. by Dr. Willard Parker, New York.
Complete.	.....	Turning; after repeated and large dose of tr. opium; placenta separated and gradually extracted.	Recovered.	Dead.	Mr. Stewart, Med. Clin. Trans., iv. p. 358.
Complete.	Head.	Perforation; turning through it.	Recovered.	Lived.	Com. by Dr. James Fountain, Peekskill, N. Y.
Complete.	.....	Perforation; turning through it.	Recovered.	Lived.	Com. by Dr. James Fountain, Peekskill, N. Y.

APPENDIX.—TABLE XII. *Partial Separation of*

NO.	BY WHOM REPORTED.	AGE.	PREG- NANCY.	MONTHS PREG- NANT.	CONDITION AT DELIVERY.	AMOUNT AND DURATION OF HEMORRHAGE.	STATE OF
999	Dr. Trask's "Prize Essay," Trans. Am. Med. Assoc., viii. 1855, p. 626, table 1, Case 189.	41	11	7th.	Repeated syncope; countenance exsanguine; jactitation, pulse small; condition most alarming.	Frequent gushes during the week; several times, slight, during the month.	Size of a shilling; relaxed after.
1000	Ibid., Case 192.	.....	5	7½	Appeared dying, when seen 24 hours later; lips and gums pale; pupils much dilated; mind wandering; breathing slow and labored; restless; cold limbs.	Slight, daily, for last few weeks; lost 3 pints on first day; profuse hemorrhage at night; when seen on second day, slight flow.	Fully dilated on second visit.
1001	Ibid., Case 218.	26	.....	8th.	Fainted; pulse not weak, but remarkably quick; when bleeding returned, great agitation.	At 7th month; repeated till 8th, then a gush while at stool; 2 quarts lost.	Dilatable after plugging.
1002	Ibid., Case 241.	20	.....	Full time.	Fainted; fell; next day pains came on; great exhaustion.	After falling it abated; as pains came on increased; lost more than half a gallon; had been slight for several weeks before.	Dilated a little at first; next day dilated.
1003	Ibid., Case 243.	25	2	.....	.....	Had lost a large amount; was bleeding profusely; tampon half an hour.	At first rigid and resistant.
1004	Ibid., Case 244.	40	.....	About 9th.	Very prostrate.	At intervals for 24 hours.	.....
1005	Ibid., Case 245.	.....	.....	.....	.....	.....	.....

Placenta. Labor completed by Artificial Means—Continued.

PRESENTATION OF PLACENTA.	PRESENTATION OF CHILD.	MODE OF DELIVERY.	MOTHER.	CHILD.	REMARKS.
Complete.	Perforation at 8½ A.M. with difficulty, ergot having been given; during perforation pains commenced; 4 ounces of blood lost, and hemorrhage ceased; at 2 P.M. transfusion, and at 3½ P.M. had rallied completely; at 4½ ergot, followed by turning, which was done speedily and with ease; 2 ounces of blood lost; very soon after delivery internal hemorrhage came on; transfusion again; died at 5 P.M.	Died.	.....	Drs. Blundell, Ryan, and Austin, Ryan's Jour., i. 1832.
.....	After stimulants, she rallied somewhat; placenta perforated, feet seized; foetus was at once extracted; body brought forth by the forceps, and head was opened.	Died immediately after extraction.	Dead.	Walter James, Lond. Med. Repos., xxvi. 226.
For te.	Head.	Plugged at first; during the night bleeding came on; saturated the tampon and ran down limbs; perforation and turning.	Died of peritonitis on 3d day.	Dead.	Dr. W. C. Roberts, New York Annalist. No hemorrhage of any consequence followed delivery, and no syncope; from the quick pulse, peritonitis probably began before delivery.
Com e.	Turning.	Died in 6 hours, from exhaustion.	Dead.	Com. by Dr. L. Shanks.
Com e.	Turning, and delivery to hips; rest expelled; no hemorrhage after delivery.	Died in 8 hours.	Dead.	Com. by Dr. Richard H. Thomas, Baltimore, Md.
Com e.	Stimulants given; turning.	Died in 5 minutes after delivery.	Dead.	Com. by Dr. Richard H. Thomas, Baltimore, Md.
.....	Ditto.	Dead.	Com. by Dr. Richard H. Thomas, Baltimore, Md.

Of the 18 cases in table 12th,

10 mothers.....Recovered.		8 mothers.....Died.
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Of the children, where the result was stated,

5.....Lived.		11.....Died.
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The age of the mother, in those cases where it is stated, was

20 in.....2 cases.		28 in.....1 case.
24 ".....1 "	|	40 ".....3 "
25 ".....1 "	|	41 ".....1 "
26 ".....1 "	|	

The number of the pregnancy, was

2d in.....2 cases.	|	10th in.....1 case.
3d ".....1 "	|	11th ".....1 "
5th ".....2 "	|	Supposed 11th in.....1 "
6th ".....1 "	|	Multipara in.....1 "
9th ".....1 "	|	

The period at which the pregnancy terminated, was

7th month in.....4 cases.	|	8th month in.....2 cases.
7½ " ".....1 "	|	Near full time.....1 "
7th or 8th month in.....1 "	|	Full time.....4 "

Of the four fatal cases in which the date of the pregnancy was recorded, it was at the 7th month in No. 999; 7½ months in No. 1000; 8th month in No. 1001; full time in No. 1002.

The presentation of the placenta was

Complete, in.....13 cases.		Partial, in.....1 case.
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The date at which the hemorrhage first made its appearance, with reference to this point, was at the

6th month in.....1 complete.	|	8 months in.....1 complete.
7th " ".....4 "	|	9th " ".....1 "

Of the 6 cases in which the presentation of the child is given, it presented by the

Head.....5 times.		Face.....1 time.
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The condition of the os uteri, is reported as being

In good condition, in.....10 cases.		Rigid and resisting.....2 cases.
Dilated slowly.....2 "	|	

The hemorrhage is stated to have been

Profuse, in.....7 cases.	Frequent gushes, in.....1 case.
Excessive, in.....2 “	At intervals, in.....1 “
Copious, in.....1 “	Kept up after delivery, in...1 “
Great, three pints, in.....1 “	

The condition of the mother at delivery, was

Very alarming, in.....3 cases.	In a state of syncope.....3 cases.
In a state of great exhaustion.....3 “	Almost moribund.....1 “

The delivery was accomplished by

Turning, in.....14 cases.	Perforation, in.....1 case.
Ovum extracted entire, in.. 1 “	Head seized by hand and
Forceps, in.....2 “	brought down, in.....1 “

Of those delivered by turning, in four, Nos. 998, 999, 1000, 1001, the placenta was perforated, and turning performed through the opening thus made. Of these, one, No. 998, recovered; the other three died.

Of the two cases in which the forceps were applied, in one, No. 1000, the child's head had been previously opened, and turning performed.

The tampon was used in Nos. 989, 991, 1001, 10034 cases.

In No. 989 it had the effect to bring on pain; in Nos. 1001, 1003, the os dilated after its use.

Ergot was used in Nos. 994, 999..... 2 cases.

Tr. opii, in No. 996..... 1 “

Transfusion was employed in No. 999. It was performed twice. After the first injection, she rallied. In an hour she got a dose of ergot, and turning was accomplished. Internal hemorrhage came on soon after delivery, and she died soon after the second injection.

CHAPTER VI.

ERGOT.

MANY practitioners have grave objections to the use of this drug. These arise mainly from the fact, that the strong contraction which has been produced by its administration, is occasionally followed by a complete relaxation of the uterus, and in some instances, post-partum hemorrhage has resulted. The persistent effect of the contraction also, by compressing the blood-vessels of the uterus, may possibly cause the death of the child by suffocation.

But this very power of exciting and keeping up uterine contractions for a greater or less period of time, makes it most useful, and almost indispensable, in the class of cases under consideration. A necessity often occurs, for a remedy which will control the hemorrhage and at the same time aid in the expulsion of the child, under a condition of things, in which the prospective evils resulting from its use, are less to be regarded than the present danger to which the mother is exposed, and which points with certainty to a fatal issue, unless speedy relief be afforded; and even when tried by the other test, the danger to the child, the result is fatal in so large a proportion of these cases, even under the most favorable circumstances, that the additional risk caused by the exhibition of ergot, is not worth taking into the account. Of the cases in the preceding tables, we find that it was used in

Nos. 67, 83, 86, 87, 89, 92, 98, 100, 105, 106, 116, 120, 122, 124, 125,
141, 142, 149, 150, 154, 157, 200, 209, 214, 216, 218, 220, 225, 227,
228, 231, 237, 248, 252, 254, 266, 270, 276, 430, 437, 619, 625, 661,
676, 679, 693, 694, 695, 704, 706, 731, 734, 756, 762, 764, 789, 793,
796, 797, 798, 800, 808, 809, 839, 840, 851, 878, 886, 888..... 69 cases.

In all of which, it produced no ill effects, and in very many of them, was of positive advantage.

Of all the cases in the tables, Post-partum hemorrhage occurred in

Nos. 25, 53, 74, 149, 153, 162, 165, 166, 218, 219, 238, 252, 270, 305,
322, 387, 398, 406, 432, 453, 572, 619, 633, 667, 668, 672, 679, 745,
756, 765, 784, 797, 833, 842..... 44 cases.

In seven only of these, in Nos. 149, 218, 252, 270, 619, 756,

797, had ergot been given; a number so small in proportion to the aggregate, that it may be safely assumed that ergot has little or no effect to produce post-partum hemorrhage.

Case No. 796.

Dr. Eaton writes, "Mrs. O. B., a healthy Irish woman aged 27, Feb. 21, 1853. Sixth pregnancy—seven and a half months gone—former labors natural and easy—had a sudden and profuse attack of uterine hemorrhage, which had ceased on my arrival. No pain—no dilatation—enjoined perfect rest—to be called whenever hemorrhage should recur.

"March 9th. Called in haste—found the patient with profuse flooding—pains regular, active and frequent. Os uteri dilated three inches, placenta *partially* attached, *not centrally*, vertex presentation. Passed my hand *by* the anterior margin of the placenta, ruptured the membranes and delivered by turning. Placenta expelled immediately. Uterus firmly contracted. No post-partum hemorrhage. Patient had brandy and ergot freely during the operation. Recovered. The child was resuscitated (after lying a half-hour) by artificial aspiration, and lived three hours and died. Although the amount of hemorrhage was perfectly frightful, there was not at any time perfect syncope."

Case No. 797.

"Nov. 3d, 1856. Called in haste to Mrs. O. B. Same patient as preceding. Her eighth pregnancy, having had one natural labor since the one recorded in the previous case. She is near the full term. Had no hemorrhage until within an hour of my arrival. Had slight pains during the P. M., which were increased somewhat at 5 o'clock, and followed by alarming flooding. At half-past six I found her on the floor, drenched in blood, greatly prostrated, with short and feeble pains, each accompanied with a profuse gush of blood. The os uteri dilated to the size of a dollar, and placenta *centrally* attached. Placed her on the bed, ordered stimulants and ergot. The former she would not take, 'because they gave her the heartburn.' Introduced my hand, finished the dilatation, *separated* the *placenta* from the anterior walls of the uterus, turned and delivered. Placenta immediately followed. Although I made careful and persisting compression of the uterus externally, applied cold douches, introduced my hand to the vagina and uterus, etc., the hemorrhage continued, and she died in three-quarters of an hour after delivery. The child is alive."

These two cases are perhaps not so interesting with reference to the effect of ergot in controlling the hemorrhage, as in showing how little dependence can be placed on the results obtained by any former treatment, when applied without especial reference to the

case in hand. It is very manifest, that had the latter of the two been treated upon its own merits, the proper course to have pursued, would have been to stop the flooding in the first place, allow the system time to rally, giving stimulants, etc. as was done, but to have *postponed the operation* till such time as it could have been borne. So many instances may be found among the cases recorded, where this treatment succeeded, that it seems almost beyond question. This indeed was the conclusion arrived at by Dr. Eaton himself, for he says "in this case I was in doubt whether to adopt Prof. Simpson's method, detaching the placenta and bringing it down first—but encouraged by my success in the former labor, I pursued the same course. In another case like the last, I would bring down the placenta first, letting the child go, rather than jeopardize the mother." It is in just such cases as this, that Prof. Simpson's method is invaluable.

How far does the administration of ergot increase the danger to the child?

Of the cases quoted above, the fate of the child is stated in 56.

It was born alive, in

Nos. 87, 120, 125, 150, 214, 227, 237, 252, 254, 266, 270, 706, 731,
734, 756, 764, 797, 809, 840, 851..... 20 cases.

It was still-born, in

Nos. 67, 83, 86, 92, 98, 100, 105, 106, 122, 124, 141, 142, 149, 154,
157, 209, 216, 218, 220, 225, 228, 231, 248, 276, 430, 619, 625,
661, 704, 762, 789, 793, 796, 798, 800, 808..... 36 cases.

On first view, this statement exhibits a great preponderance of fatal cases, where ergot was given; but it is more apparent than real, for a survey of the cases will show, that it was due, not so much to the operation of the drug, as to the conditions of the labor, and that the probable good effects of its administration, greatly outweigh the dangers that might be predicted from its use. The relative mortality is so largely against the child, under the most favorable circumstances, that to reject a remedy, simply on the ground that it may increase that danger, would be unjustifiable in the extreme.

One point, and one only, seems to be of prominent importance in this connection, and that is, ergot should not be given when it is proposed to deliver artificially, unless the condition of the mother is such, that it will act as a stimulant, or a hemostatic simply, rather than by producing its peculiar effect; or, it should be given at such

a time, that its effect to excite contractions of the uterus, will not be exerted until the operation has been completed, as far as was proposed.¹

Generally speaking, the same rules which are applicable to the exhibition of ergot in ordinary labors, apply as well to cases in which Placenta Prævia is present.²

GALVANISM.

Dr. Radford³ of Manchester, Eng., who was one of the first to urge and insist upon its claims, instances many cases in support of his preference for this over any other agent. Prof. Simpson, on the other hand, after many and most carefully conducted experiments, arrives at the conclusion, "that as employed at the present time, and in its present mode, it is not a means which can in any degree be relied upon for the purpose in question, and is so far practically and entirely useless, as a stimulant to the parturient action of the uterus."⁴

It was made use of in one instance only, No. 92. In this particular case, its effect was of the most satisfactory nature, and was apparently the means of saving the mother's life.

¹ A writer in the Med. Times and Gazette, June 30th, July 11th, 1857, proposes as a substitute for ergot, the leaves of the Raspberry, (*Rubus Strigosus*.) In the American Eclectic Dispensatory, which is the only work upon Materia Medica in which it is admitted as officinal, the action of the infusion of these leaves is said to tend strongly to the uterus, exciting pains after everything has failed, and preventing after-pains.

Mr. Harris (Braith. Retros., No. 31, July, 1855, art. 103, from Virginia Med. and Surg. Jour., Apr. 1855,) relates cases in which he employed a strong decoction of *uva-ursi* in accouchements, where the ergot of rye would ordinarily have been employed, and found its employment followed by vigorous pains, which soon caused the expulsion of both fœtus and child. Mr. Harris prefers this medicine to ergot of rye, inasmuch as it does not cause such strong contractions as the latter, which he says are so very painful to the mother and dangerous to the child.

The bark of the cotton root, *Gossypium Herbaceum*, is also stated to be a powerful parturient, though its action is not always to be depended on. As an emmenagogue, it is one of the most reliable agents we have.

² See Ingleby on uterine hemorrhage, p. 77, chap. xiii.; Michell on diff. parturition and the use of the ergot of rye; "Remarks of Dr. Barnes on the management of labor characterized by defective uterine action," Lon. Lan., Nov. 5th, 12th, 1853, pp. 437, 456; Dr. Conquest, "Outlines," p. 79, note.

³ Prov. Med. and Surg. Jour, Dec. 24, 1844, p. 605; also Braith. Retros., No. 11, art. 126; No. 13, art. 185; No. 16, art. 163; No. 25, art. 146; No. 29, art. 141, 142.

⁴ Collected works, Amer. ed., vol. i. p. 336.

Case 92.

"On March 21st, 1853, Mr. Chavasse was called to see a case of violent flooding occurring in a poor, half-starved, debilitated woman. She had been in destitute circumstances for some time. She was in the 8th month of her 6th pregnancy. She had commenced flooding a month before, and had flooded four times since. When Mr. Chavasse arrived, she appeared almost in articulo mortis. A slow oozing was still going on.

"The uterus was baggy and flaccid; the os was dilated to little more than the size of a half-crown, and was rigid and undilatable; it lay very high up, the placenta occupying its whole circumference; there were no pains. In her exhausted state, turning seemed contraindicated, for she would not have borne the shock; and again, the os was undilatable, but this last state might have been remedied by plugging the vagina and waiting: in all cases of plugging, however, some blood must necessarily be lost before the plug acts, and in her case the loss of a few ounces more would certainly have placed her in a very precarious state. I therefore introduced two fingers into the uterus, and carefully separated the placenta throughout its whole extent, leaving the membranes unruptured. The center of the placenta did not correspond to the center of the os,—the head presented. Two scruples of ergot of rye infused in hot brandy and water, were next given, and after waiting a quarter of an hour for the action of the drug, I, with some difficulty, managed with the point of a lead pencil to perforate the membranes just beyond the anterior margin of the placenta, making only a small opening, so that the escape of the liquor amnii might be gradual, and the disturbance of the balance of circulation avoided. The ergot soon after acted, and the uterus contracting, slowly expelled the liquor amnii, and firmly embraced the child.

"The ergot did not give rise to any distinct pains, but produced a state of tonic contraction. Some hot milk in which two eggs had been beaten up, and mixed with brandy, was then given. Mr. Lakin shortly after arrived; she had by this time slightly rallied; her pulse was small, frequent, and intermitting; her extremities still cold; her breathing easier.

"We now determined to give her another dose of ergot; this time its action failed altogether, it produced neither pains nor contractions; indeed I think it rather prostrated the system more, for shortly afterwards she fell into a state similar to that in which I first saw her, in which the collapse seemed even to threaten death. At times she was so much exhausted that I thought, in spite of all my caution, some portion of the placenta must still remain attached, and that internal hemorrhage was going on.

"The os was now more dilatable and dilated, and I endeavored to pass my hand into the uterus and remove the placenta, but there was

considerable tonicity of the uterus, and the head of the child was firmly pressing against the placenta, so that it could not be removed without the employment of considerable force. A portion of the anterior margin, however, was brought down into the vagina,—it was very friable.

“On consultation, we determined not to remove the placenta, for it was doubtful whether she could even bear the force we must necessarily use, now that the liquor amnii had escaped, and the uterus had contracted. We, therefore, resolved to wait for the pains.

“She began soon afterwards to wander in her mind, and became very restless, throwing her arms about, and sighing, and whenever we spoke to her or touched her, she begged us to leave her alone and let her die quietly. She continued in this state until five o'clock, when Mr. Lakin, having been obliged to return home, on his way back met Dr. Heslop, and mentioned the case to him, speaking of the exhausted state of the woman. Dr. Heslop recommended galvanism. I must confess I was at first somewhat skeptical as to its influence, for I thought that Dr. Simpson in his six cases had fully proved the inefficacy of this agent. I went home nevertheless for the apparatus:—that which we use at the dispensary is one of Gore's large electro-galvanic machines containing twelve cells. While we were preparing the apparatus the patient vomited several times; we only used six of the cells; one of the conductors was placed up in the vagina in contact with the anterior margin of the womb, the point of the other externally over the fundus. Now that the galvanic circle was complete, she complained that we were cutting her, and running things into her. After we had applied it for ten minutes it was extraordinary to see how her system rallied, her face lost its corpse-like aspect, her eyes brightened, her mind no longer wandered, her pulse was plainly perceptible at the wrist; but its effect upon the uterus was still more remarkable; the hand placed on the fundus felt the womb rise and contract till it became as hard as a board; and when the galvanic circle was broken by removing the conductor from the fundus, the uterus was left firmly contracted.

“After continuing the galvanism for half an hour, her nervous energy was so much rallied that we thought the ergot might now be serviceable; we, therefore, administered some mixed with a little brandy, but it did not remain long on her stomach, for in less than ten minutes she vomited it up. We continued the galvanism for two hours, when the pains came on spontaneously; by this time the uterus had descended much lower, more of the placenta passed into the vagina; one piece, the size of a walnut, was broken off by the pains and came away. The head of the child was felt endeavoring to ride over the anterior margin of the placenta, and the uterus was dilated to the size of the bottom of a wineglass.

"We left her now, directing that we should be sent for when the pains became more urgent, or should flooding recommence.

"In an hour and a half we were sent for—we found the child's head in the hollow of the sacrum, beginning to press against the perineum; the pains were strong, and in a quarter of an hour she was delivered. The child had a strong corpse-like odor, which leads me to conclude that it had been dead previously to the separation of the placenta. Its face, lips, and surface generally, were blanched and colorless; the placenta immediately followed the expulsion of the child—it had been pressed into the hollow of the sacrum, and ridden over by the head during the passage of the child. No clots followed, proving that there had been no internal hemorrhage as I at one time feared. The uterus was felt in the abdomen firmly contracted. She was bandaged up tightly, and a dry doubled sheet was placed underneath her. In a fortnight afterwards, she was still in a very anæmic state, but was gradually improving."

Dr. F. W. Mackenzie in a paper read before the Royal Med. and Chir. Society,¹ fully sustains the conclusions drawn by Mr. Chavasse from the progress of the case recorded above. Dr. M. says:—

"From these experiments it was shown that galvanism exercises a remarkable and peculiar influence upon the uterine fiber, and it further appeared after many observations, that this was most powerfully exercised when the galvanic current was directed longitudinally through the uterus from the upper portion of the spinal cord in a sustained and a continuous manner. The local application of galvanism to the uterus was less effective; individual shocks produced no appreciable effect upon it, and a current directed transversely through the organ produced only a partial contraction of it in the direction of the current. Guided by the information thus obtained, the author had employed galvanism in the manner suggested by these inquiries in several very critical cases with remarkable success. The first referred to was that of a lady who had had repeated floodings in connection with an early abortion, owing to an imperfect separation and expulsion of the ovum. In this, every available means had been tried to stimulate the uterus and control the hemorrhage without success, and the patient's condition had at length become highly critical. In this emergency, a sustained current of electricity was directed longitudinally through the uterus from the upper portion of the spinal cord, and under its influence the cervix uteri became relaxed, and expanded after the first application, and uterine action set in after the second, which was followed by the expulsion of an organized membrane, upon which the hemorrhage ceased and the

¹ Med. Times and Gazette, March 6th, 1858, p. 256; also Braith. Retros., 1858, pt. 2, art. 174.

patient rapidly recovered. The second was a case of Placenta Prævia, in which several alarming hemorrhages had occurred before labor had commenced. In this, a sustained current applied in the manner stated, for six hours, not only prevented any further hemorrhage, but so accelerated the dilatation of the os uteri, that the hand was readily introduced, and delivery completed with safety to the patient, although the child, from the extensive separation of the placenta, was still-born. In a third, excessive hemorrhage had occurred in a primipara in the last month of pregnancy, and, as the placenta was felt to be attached to the cervix uteri, it was thought desirable to bring on delivery. With this view a sustained current was applied for three hours; the hemorrhage was almost immediately arrested, and the labor had advanced so rapidly, that in a few hours afterwards it was completed by the birth of a living child. The author referred to other cases, in which he had successfully employed galvanism in obstetric practice, and, with reference to those related, submitted that they appeared to him to warrant the three following conclusions.

"1. That a sustained current of electricity of moderate intensity, passed through the gravid uterus in the manner described, exercises a remarkable influence in increasing the tonicity and contractility of the uterine fiber.

"2. That in such increased tonicity or contractility of the uterine fiber, so excited and sustained, we have a powerful and reliable means of moderating and controlling uterine hemorrhage, whether of the accidental or unavoidable variety, and of simultaneously accelerating the dilatation of the os uteri and the general progress of the labor.

"3. That such sustained current of electricity may be continued for a lengthened period, when the object to be attained requires it, without any appreciable pain or inconvenience to the mother or danger to the child."

These cases seem to prove, that under favorable conditions, galvanism has a most powerful effect in arousing the failing energies of the system, and exciting labor-pains. That it is both an ecboic agent and a stimulant to the nervous system; and that, while it may not displace ergot, it is, nevertheless, of such efficacy when the proper circumstances arise for its use, that it should never be omitted.¹

RUPTURING THE MEMBRANES.

Among the early accoucheurs, turning and delivery by the feet, after its introduction by Ambrose Paré, was considered the only and

¹ See also *Lon. Lan.*, Mar. 6th, 1858, p. 248. "On the action of Galvanism, etc. by F. W. Mackenzie."

imperative remedy, in those cases where hemorrhage accompanied the labor to such an extent as to endanger the life of the mother.

The honor of being the first to propose, in certain cases, a substitute for this operation of version, the *accouchement forcé* of the older writers, belongs to Puzos. In a "memoir upon the hemorrhages which occur to pregnant women, and the means of arresting them without proceeding to delivery," and which may be found among his collected works,¹ he proposes his method in the following language. "In order to do this, it is necessary to introduce one or two of the fingers into the os, and by means of them, distend it with a degree of force proportionate to its resistance; this gradual distention, interrupted from time to time, will cause the pains to make their appearance, set the womb into action, and by this means cause the membranes which contain the waters of the child to project; care must now be taken to open the membranes as soon as possible, to allow the waters to pass off, because their outlet immediately diminishes the distention of the womb, and furnishes an opportunity for it to contract, and take up the space which they occupied in its cavity. The uterus in this manner contracts and the same process going on, presses the child from the fundus towards the orifice; the pains become stronger, and voluntary and involuntary efforts join. The patient takes advantage of these efforts and pains, and, assisted by the action of the fingers carried circularly round the os to distend it, gets along with usual success, and causes her child to advance; the blood which was escaping is retained in the vessels by the general compression and contraction of the parts; in a word, nature and art concur in shortening the delivery, it is accomplished in a moderate time, and we almost always have the satisfaction of saving the life of both mother and child, which surely would have been lost if the delivery had been left to nature alone, and which would have been put to great risk by a forced delivery."

In proof of his success, he instances many cases in which this course was pursued, three of which are quoted below, and which from the general evidence of the symptoms observed, although, it is true no mention is made of the presence of any portion of the placenta at the os uteri, were undoubtedly cases of Placenta Prævia.

"A woman who lived in the street of the old mint, long since worn

¹ Traite des accouch., etc., etc., 4to., Paris, 1759, p. 334.

out by many premature deliveries, found herself at the end of pregnancy which up to the time when I was called had been very favorable; she was bathed in her blood, when I arrived at 11 o'clock in the night: she was moreover much frightened at her condition, as she felt no pains and perceived that the flooding increased every minute; I was myself, in reality, but little more hopeful than the woman, having always dreaded the result of this kind of deliveries; nevertheless after having examined into her condition in order to decide upon the most practicable course, I found that by keeping up the dilatation which had taken place at the os in consequence of the flooding, I started up the pains; I continued these movements which increased them and at last caused the waters to break; this evacuation accelerated the labor; and the delivery was concluded favorably for both mother and child in three-quarters of an hour."

"In 1737, I was called in haste to Maisons, a village near Char-enton, to a woman who was flooding very violently, and who was at the end of pregnancy. Having gone as quickly as possible, I found the patient fainting away almost continually; she only revived enough to tell, in broken accents, the danger she was in. As the last offices had been performed, I had nothing to do but to examine into her situation; I found the womb dilated to the size of a six-sous piece, and there were only very feeble pains; the blood which she had lost and was still losing, joined to the rigidity of the os uteri, made me fear that my method could not be employed, and that I should be obliged to resort to forced delivery, of which I doubted the result. Nevertheless reassured by the health of the patient and by her spirits, which had revived on my arrival, I made it yield slowly, the pains became stronger, and the membranes of the child which, before, had clung about its head, became distended; it was not however until after an hour of this work, as much on the os as on the membranes, that it was possible to pierce them and let off the waters. As soon as the womb was freed from these, it began to contract very strongly, which forced down the child, diminished the flooding, and brought on such efficacious pains, that the woman was delivered in a short time afterwards. The child was born alive."

"In 1739, a woman, seven months pregnant, who had had many children, of which she had been delivered without accident, was at a supper-party at the Swing bridge of the Tuileries. Having eaten moderately, she perceived herself all at once so wet as to alarm her; she left the table for the chamber of the porter to ascertain the nature of the flow, and her fright was great when she saw that it was blood, and that the flooding increased with each moment; * * * as the shaking of the coach could not be prevented, although they went slowly, the blood flowed so freely during the ride that not only her underclothes were wet through, but also the cushions of the carriage. At length having arrived at the house and being carried into

her room to be placed in bed, they saw clots fall from her while she was disrobing, which reduced her to the fainting state of which I was a witness almost as soon as those who were assisting her, by the haste which they had made to get me. As there were some pains with the flooding, I found the os dilated to about the size of a twelve-sous piece: it was a case in which this opening could be taken advantage of to deliver by turning: but preferring to try the natural method, I dilated the os gradually, increased the pains, and in this way caused the waters to break the membranes which held them, and which presented at the orifice in the shape of a tumor; I opened them as soon as it was possible; the discharge brought on stronger pains, the uterus contracted, or closed upon itself, forced the child against the os and the flooding diminished; the progress of the labor caused it to stop entirely; and the delivery was accomplished about an hour after the discharge of the waters."

The child was dead.

That these manipulations proposed by Puzos, are capable of provoking pains, the cases above quoted abundantly prove, as they also do another point, that a safe delivery may be accomplished in this way, under apparently discouraging circumstances. But to promise success, and warrant its adoption, the condition of the mother should be thoroughly appreciated. In the first place it should be definitely ascertained, whether the absence of pains is the result of exhaustion, or the effect of simple inactivity. The condition of the os uteri also has much to do with it. If it is found to be without rigidity, and enough of its disc is free from the placental attachment, to render it probable that the descent of the head will complete the dilatation, and by compressing the bleeding vessels, put an end to the hemorrhage, the condition of the mother not rendering the necessary delay hazardous, there can be no doubt that rupturing the membranes and discharging the waters of the amnios, is the best course that can be pursued. But the other part of his proposition, the manipulations with the fingers, must, under almost any conditions, be productive of more evil than good. The danger of increasing the hemorrhage is greater than any possible benefit that can be derived from it, to say nothing of the irritative effect of such a proceeding upon the os uteri; and the certainty with which the pains can be excited, and their action kept up, by the administration of ergot, and perhaps of galvanism, leaves nothing to be desired in this respect.¹

¹ See in this connection an article on "Meddlesome Midwifery," by Dr. I. G. Porter, *Am. Jour. Med. Sci.*, Oct., 1858, p. 350.

Dionis, who with Mauriceau, is quoted by Prof. Simpson¹ as having practiced this operation long before Puzos, does not, upon careful examination, seem to be entitled to this honor. In the 24th chapter of his 3d book,² he treats of those cases where the placenta presents. All his reasoning is based upon the supposition, that the placenta had been separated from the fundus and fallen to the os. "By the separation of the after-birth," says this author, "from the fundus of the womb where it was attached; the vessels which carried the blood of the mother there, and those which convey the blood from the child to the womb, in being separated, will pour out this blood without cessation, and drain as much from the mother as from the child, unless the accoucheur remedies this condition by a prompt delivery; for it is easy to understand that by as much as the womb shall have been distended by the volume of the child which it contains, the orifices of the vessels will be opened, and as a consequence continue to pour out the blood." And in proposing a rule for practice remarks, "the after-birth can be detached before the membranes which contain the waters are ruptured, and the child having at that time made the turn, (la culbute,) the after-birth which was attached to the upper part of the fundus uteri, is found at the internal orifice, where the chirurgien will recognize it by the softness of the part with which he first comes in contact;" distinctly setting forth that version is the only remedy, after rupturing the membranes to get into the uterus. The quotation, upon which Prof. Simpson relies to prove his point, may be found in chap. xxvi. of the same book, in which the author treats of deliveries accompanied by flooding and convulsions. It will be seen, by giving it a careful perusal, that it in reality, has nothing to do with cases of Placenta Prævia, but only with those cases in which hemorrhage sets in at the moment of labor without any appreciable cause, and which, not requiring any compression upon the cervix, more than elsewhere, would be checked by a *general* contraction of the uterine walls. On the other hand, Puzos, and writers since his time, have distinguished between this need of compression in the particular spot of the cervix, and the general compression sought for by Guillemeau, Mauriceau, Dionis, and others, for the reason probably, that the former knew the *cause* of the hemorrhage in Placenta Prævia, and the latter did not.

¹ Op. cit., p. 687, note.

² Traite general des accouch.

Roederer, although giving the preference to forced delivery, mentions this operation as among other methods proposed for terminating this dangerous condition. He says,¹ "If we pierce the membranes or the *placenta*, for the purpose of facilitating the discharge of the waters, we in reality, create a void in the womb, which accelerates its contraction, and consequently the closure of the open vessels; the hemorrhage diminishes somewhat, but the cause which occasioned it remaining all the time, it soon recommences, and the delivery proceeds more slowly."

Deventer, while totally ignorant of the true connection of the placenta with the uterus, lays down in very plain and clear terms, the mode of accomplishing this, with the reasons for so doing, and makes the distinction between cases which are proper for its application, and those where it is inadmissible, with even more intelligence than Puzos, who was better informed upon the physiology.

In commenting upon this point, Prof. Simpson remarks,² "After recommending that, in Placenta Prævia the membranes should be pierced, or the fingers thrust through the placenta 'that at last it be perforated, and instead of the constant flux of blood which appeared before, the humors will presently flow out,' Deventer writing about the year 1700, adds, 'Some penetrate the secundines with a *hair needle*, which I do not approve of, if it can be done with the fingers, because the infant is easily hurt.'" The inference drawn from this would be, that Deventer had no objection to piercing the placenta, but only to the mode by which it was done. But a perusal of the latter part of the 31st chapter of his work,³ will satisfy any one that he always avoided piercing the placenta, except in those cases where he could not otherwise reach the membranes. And in regard to the piercing the placenta with a *crisping pin*—"aiguille de tête"—which has been so much quoted, and which he objected to, for the reason that it exposed the child to danger of hurt; this is not all. Having for his object to bring the child's head in close contact with the os internum, he endeavors to get rid of the placenta, and, therefore, not simply *piercing* the placenta to let off the waters, he goes on to say that after the opening has been made, as far as the dilatation of the os uteri will permit, this must be enlarged, and

¹ *Elemens de l'art des accouchmens* transl., Paris, 1765, p. 370.

² *Op. cit.*, p. 603.

³ *Op. cit.*, p. 180.

the placenta separated on all sides, as far as possible, so that the head can come down, and place itself at the orifice. Deventer's words are, "We introduce two fingers into the os uteri, either together or one by one, and attempt to pass the placenta in such a manner as to find the membranes and tear them with the fingers or nails; or if we cannot separate the placenta, we must thrust the fingers into its substance, and open them and move them about in all directions, and tear it until we have pierced it; then in place of the blood which flowed previously the waters gush out. * * * *

Some midwives pierce the placenta with a crimping pin; (*aiguille de tête; acu crinali*;) but I do not like this mode, for it exposes the child to be hurt. It is much better to pierce the placenta with the fingers, and when it is so much over the os uteri as to demand this, we should enlarge the opening and separate it on all sides, in order that the head, if that presents, can place itself at the orifice, and the pains cause the child to be delivered, or if it is not in a natural position, the midwife should immediately attempt to draw it out by the feet in the way I have mentioned when speaking how children should be turned."

The same remarks apply to Deleurye also, who is quoted in connection with Deventer, as sanctioning the perforation of the placenta with a trocar. Perhaps the best proof of his real opinions upon this subject will be found in the following extract, which includes the paragraph quoted by Prof. Simpson:¹ "We ought not, in entering the womb with the hand, to pierce the mass of the placenta; we ought to take the place where it is already detached, or that which holds by the least portion. * * * * In piercing the placenta at its center, the loss of the mother by the increase of the hemorrhage, is more to be feared, and that of the infant more certain, since it is deprived of the fluid necessary for its life. We cannot pierce the placenta without tearing the vessels which make up the greater part of its substance. There are however cases in which it is necessary to pierce the placenta; that is when it is necessary to terminate the labor before the end of pregnancy when there are no contractions in the uterus, by reason of the abundant hemorrhage, and the fear of inertia in this organ after delivery, which the feebleness of the patient seems to indicate. In this case we should give a

¹ Op. cit., p. 367, ¶ 855-859.

thrust with the trocar and facilitate the discharge of the waters; the womb, which by their evacuation ceases to be passively dilated, contracts," etc. From this it will be seen, that the only cases in which this mode of letting off the waters is admissible, in his opinion, are those in which the woman is not at full term, and there are no pains.

Baudelocque,¹ gives a qualified assent to the use of the trocar, though he doubts the utility of discharging the water. Dr. John Ramsbotham² observes, "If the woman's powers appear to be very much reduced, and the draining continue, the most prudent plan will be, to discharge the liquor amnii, by the rupture of the membranes, and carefully to superintend the result of that measure." Mr. Burns³ considers the proposition of Puzos, inadmissible before the "os uteri be in a proper state for delivery," and after this time rejects it as insufficient for an emergency; that in those cases where it would answer, no assistance is needed at all, except what would be rendered in a perfectly natural labor. Dr. Conquest,⁴ while recommending this course in *accidental* hemorrhage, insists upon artificial delivery in Placenta Prævia, as "this is a case, in which we ought never to confide in the powers of nature, because expulsatory uterine efforts only augment the peril of the patient, and, therefore, the hand must either be bored through the substance, or, what is better, passed by the edge of the placenta, and the child turned." Dr. Maunsell⁵ says, "Where there is merely an edge of the placenta attached over the os uteri, it will often not be necessary to turn. If we can ascertain that the head presents above it, rupturing the membranes may bring the former down, so as to press upon the bleeding vessels, and there may be no further danger." Jacquemier⁶ observes, "When labor has really commenced, but not advanced enough to deliver artificially with safety, and the placenta does not correspond to the os uteri, although the tampon may be sufficient, it is generally preferable to perforate the membranes, and plug afterwards, if the hemorrhage persists." Velpeau⁷ doubts the propriety of leaving the case to such insufficient and dilatory measures, even in accidental hemorrhage, and gives as his opinion that in Placenta

¹ Op. cit., vol. i. p. 425, ¶ 983.

² Pract. Observ., 2d ed., p. 300.

³ Op. cit., p. 250.

⁴ Op. cit., p. 157.

⁵ Op. cit., p. 170.

⁶ Op. cit., t. ii. p. 273.

⁷ Op. cit., p. 394-95.

Prævia, "the termination of the labor should never, under any pretext, be left to the powers of nature, when the hemorrhage is incontestably occasioned by the insertion of the placenta upon the os uteri." Cazeaux¹ proposes to puncture the membranes, through the placenta, when that is over the os, by means of the uterine sound, using the finger as a director; and quotes two cases, in which the hemorrhage immediately ceased. In primipara cases, he thinks it better, if the dilatation is not far advanced, to apply the tampon first, and puncture the membranes afterwards.

Dr. James Hamilton opposes this method, for two reasons. 1st. "the discharge of the liquor amnii may fail to check the hemorrhages; and, secondly, that it must increase both the difficulty and the danger of turning, should the urgency of the case eventually require that expedient."²

Schweighauser³ says "the rupture of the membranes, at the commencement of labor, and a satisfactory discharge of the waters, has been of so much service to me several times, in saving both mother and child, and changing an unnatural into a natural labor, that I consider this method as a general rule, and one established upon an experimental basis."

Gardien opposes it, though he states that sometimes the membranes rupture spontaneously, and the case is converted into a natural labor.⁴

In the opinion of Mme. Lachapelle,⁵ rupturing the membranes is a valuable method, but one which it is necessary to use with the greatest caution. Her objections to it are, that it is by no means certain, that the contractions of the uterus which follow, will be sufficiently powerful to put an end to the hemorrhage; that if after all, artificial delivery becomes necessary, it is rendered much more difficult, and inevitably fatal to the child. In the second place, if the child does not present by the head, or some part capable of exerting compression upon the vessels of the uterine orifice, and of dilating it also, the hemorrhage becomes much more difficult to check, and the labor will be prolonged. That in addition to these considerations, if the placenta is attached center for center over the os, it must be separated, thus increasing the hemorrhage and the number of bleeding orifices; or if we go through the placenta, as Deventer

¹ Op. cit., p. 727.

² Pract. Observ., 2d ed., Edin. 1840, p. 332.

³ Prat. des Accouch., p. 223.

⁴ Traite des Accouch. t. ii. p. 419-22.

⁵ Pratique des Accouch., t. ii. p. 366.

proposed, it gives rise to hemorrhage of another nature, perhaps less prejudicial to the mother, but undoubtedly fatal to the child.

M. Dunal¹ remarks, that "the rupture of the membranes, will not generally be found admissible, when the insertion is center for center. The various means which we have already pointed out, and the use of the tampon, are much to be preferred. But, in cases where it is indicated, ought we not to try it, and perhaps, in certain cases, substitute it with advantage, or employ it in conjunction with the tampon? Mme. Lachapelle has proved, that if the labor is not much advanced, it is better to wait, and use the tampon; but if it is far along, preference should be given to delivery. In the intermediate cases, rupturing the membranes may be advised, if nothing forbids its being put in practice."

Collins² remarks, that "it is here the great difference between the treatment of unavoidable and accidental hemorrhage consists; in the former, we are almost always obliged to force delivery; while in the latter, rupturing the membranes, so as to bring on uterine action, is in most cases sufficient."

Leroux³ proposes as the 4th resource in these cases, to "perforate the membranes *when the pains are strong and sustained*, when there is a certain degree of dilatation and dilatability to the neck, and when the presentation is regular."

Blundell says the practice "deserves consideration."⁴

Rigby the elder⁵ having adopted the classification into accidental and unavoidable hemorrhage, regards this operation as dangerous, where the placenta can be felt by an examination per vaginam. But a careful examination of his cases, leads to an almost irresistible conclusion, that the great majority of those, in which, from the fact that he could not detect its presence, he assumes that the placenta was not at the os,—or in other words, that they were not cases of Placenta Prævia,—were in reality such.

For, the great frequency of the cases, in which, while no portion of the placenta overlaps the os, it is nevertheless situated on the cervix, exposed to all the changes and disturbances going on there, (see Von Ritgen, *ante*, p. 81,) would seem to warrant us in attributing the hemorrhage which sets in at this particular time, when the

¹ Op. cit., p. 192.

² Op. cit., p. 70.

³ Archiv. Generale de Med., Dec. 1855, p. 664

⁴ Op. cit., p. 450.

⁵ Op. cit., p. 75.

os finally dilates at the coming on of labor, to this rather than to any other cause, in proportion to this very frequency. And still further, inasmuch as it is not the relative connection of the placenta with the uterus, which demands our attention, so much as the consequences which follow from that connection, it seems to be much more philosophical, to consider it under the latter than under the former aspect, although the name may be somewhat of a misnomer. And while it may be proper, to discriminate between the different degrees of the presentation, for the sake of determining its influence upon the hemorrhage, it is manifestly unsound to exclude all cases from the category of *Placenta Prævia*, so far as they tend to endanger the life of the mother, unless they come within certain linear distances of the center of the os uteri. And in this respect, we think Rigby labored under an error, and is really open to the criticism made by Velpeau¹ that "the statement that hemorrhage under these circumstances is *inevitable*, is not always correct."

Chailly, who is said to follow the teachings and principles of Paul Dubois, and in his work has reproduced them almost without change, recommends it in cases of partial presentation.²

Rigby the younger,³ also recommends it in the same cases. Capuron⁴ objects to it. Dr. F. Ramsbotham⁵ recommends it. Churchill⁶ very judiciously remarks, "when we are certain of the case, (when the placenta reaches only to the margin of the os uteri,) and pains are present, our duty is limited in the first instance to evacuating the liquor amnii: but if this fail, we must turn and deliver the child." Davis⁷ recommends it. Murphy⁸ recommends it, and replies to the objection, that the letting off the waters would be likely to render the turning more difficult, by answering, that "knowing the effect of hemorrhage in rendering the os dilatable, I do not apprehend much difficulty in such a case as this." Mr. Ingleby⁹ remarks, that "in resolving to rupture the membranes, three points should be considered: the period of pregnancy, the state of the os internum, and the nature of the presentation." It will be seen from the extracts and references thus made, that while the evidence derived from the writings of ob-

¹ Op. cit., p. 382.

² Op. cit., p. 259.

³ Op. cit., p. 358, last sec. of chap. 12.

⁴ *Traite complet d'accouch.* premier part, p. 387.

⁵ Op. cit., p. 353.

⁶ Op. cit., p. 429.

⁷ *Obstet. Medicine*, p. 1048.

⁸ *Lect. on Mid.*, p. 338.

⁹ Op. cit., p. 155.

stetric authors is to a certain degree negative, the objections urged against rupturing the membranes as a principle of practice, apply rather to its being adopted as a general rule, than to its rejection in toto; and where a decided preference is expressed for any other expectant treatment, or for artificial delivery, they are, upon equally tenable grounds, open to the same objections.

Table 5th, of the collected cases, includes all those in which the conditions were such as to insure natural delivery, provided the hemorrhage could be checked, or controlled in such a way, that the mother would not sink before delivery.

Of the whole number—120—the membranes were ruptured in 47 instances, and burst spontaneously in the others.

In the 47 cases, in which the membranes were ruptured, the hemorrhage was controlled up to the time of delivery. Six of these died, viz., Nos. 167, 171, 172, 182, 200.

No. 167. Mme. Lachapelle, mem. 6th, No. 17. *Fatal cervico-placental hemorrhage at the 9th month; rupture of the membranes; natural delivery.*

The woman who was the subject of this operation, was 41 years of age, feeble, lymphatic, and pregnant for the first time. She had been received into the hospital at the period of $8\frac{1}{2}$ months, on the 1st of April, and on the night of that day lost a little blood, which was spontaneously arrested, reappeared again the day following, flowed a little more abundantly, and then stopped without any particular treatment.

The 3d of April she had a chill for half an hour, followed by bilious vomiting, and the development of puerperal pains. These pains were feeble and far apart. In the night an examination was made, and the os uteri was found to be very much to the rear, and opened to the extent of 3 or 4 lines; but it was very thick, or rather the neck of the womb was not entirely obliterated.

On the 4th at 3 o'clock in the morning, a clot of the size of an egg escaped from the vulva, and some liquid blood flowed at the same time; the orifice was nearly central, and 6 or 8 lines in diameter; the edge of the placenta partially covered it; but we also perceived a portion of the membranes a little thicker and more fungous than usual, considering the vicinity of the placenta. A current of fresh air established about the patient, and some wet cold cloths applied to the thighs, the loins and the abdomen did not arrest the hemorrhage. I then had recourse to the method of Puzos, and ruptured the membranes. The hemorrhage was immediately suspended, and we could make out the head of the fœtus, and recognize the first position of

the vertex. A little wine and ether restored the vital powers of the patient menaced by deliquium, and brought back life to the pulse and color to the face.

The vomiting, which had frequently shown itself before the rupture of the membranes, still kept up occasionally after this operation; but the pains acquired more force. At 11 o'clock the dilatation was complete, and the head filled up the pelvic cavity; at two hours after noon (2 o'clock) the child was expelled and delivery was not long in being accomplished. The labor had lasted 20 hours. The child was born in a state of asphyxia which no care of ours could remedy; it weighed six pounds.

The placenta was *partially* covered on the uterine surface, by a dense and solid *clot*; the membranes were ruptured near its edge.

The woman at the time complained of only moderate feebleness; but, five hours after delivery, her respiration became embarrassed, her face grew exceedingly pale, and the pulse extremely feeble. (*Vesication* over the sternum.) She was wakeful, thirsty, and feverish. At 3 o'clock in the morning, (April 5th,) a sharp pain manifested itself in the abdomen; it was followed by an involuntary dejection and a fatal syncope. * * *

In spite of its sad termination, this observation proves the utility of the judicious precept of Puzos. The head of the fœtus stopped up the os uteri and the gaping sinuses, at the same time that the uterus was contracting to close these very orifices, and the pains were becoming stronger and more efficacious.

The child was not more deprived of blood than in the cases already reported, and it seems that we can only attribute its death to the length of the labor, the prolonged embarrassment of the placental circulation, and the defective renewal and oxygenation of the blood contained in its vessels.

In reviewing the features of this case of Mme. Lachapelle, we are led irresistibly to the conclusion, that had she taken into consideration, the feeble condition of the mother, which promised but little resisting force to any depletion by hemorrhage, of however little amount, she would hardly have resorted to the course she did—rupturing the membranes—but have proceeded without delay, to turn and deliver, as soon as the os uteri was sufficiently dilated, or in a condition to permit the introduction of the hand into the uterus. In view of the facts recorded, there seems to be but little doubt, that a different result would have been obtained, had she pursued this course, and both mother and child have been saved.

No. 171. (Dr. Lee, No. 13,) St. Marylebone Infirmary, 17th Nov., 1835.

A young married woman, in the 8th month of her second

pregnancy, was brought last night into the lying-in ward, in consequence of an attack of uterine hemorrhage. She reported it to have been produced by great bodily exertion the preceding day. The hemorrhage had almost entirely ceased on the 16th. At 2 P.M. on the 17th, I examined, and found a portion of the placenta detached within the uterus. The os uteri was slightly open and rigid, pulse not feeble, faintness entirely gone. As she was not in a condition to admit of artificial delivery, rest in the recumbent position, cool air, etc., were recommended until the circumstances should justify interference. 18th. The hemorrhage returned, and the edge of the placenta being distinctly felt passing into the membranes, they were ruptured, and the liquor amnii discharged. Labor-pains soon came on, and a dead child was pressed down between the uterus and placenta, where they had been separated. The placenta was extracted soon after, and the hemorrhage did not return. This woman died soon after from deep-seated inflammation of the uterus.

Case 172 (Dr. Lee, case 15.)

March 24th, 1836, I was requested by Mr. Sumner, to see a patient seven months pregnant, who, after suffering several days from uterine hemorrhage, was suddenly reduced to a state of the most alarming weakness, from a great gush of blood taking place. When I saw her, the blood was flowing copiously. The placenta could be felt adherent at the back part of the cervix uteri; at the fore part I felt the membranes. The orifice was so rigid, that it was impossible to pass the hand into the uterus to turn. I ruptured the membranes, and a great quantity of liquor amnii escaped, after which the flooding entirely ceased. The ergot of rye was given, but labor-pains did not come on till the afternoon of the 26th, the second day after the membranes had been ruptured, when the child and placenta were expelled without a renewal of the hemorrhage. On the 28th she had violent rigors, with headache, delirium, and a rapid, feeble pulse. Symptoms of uterine phlebitis manifested themselves in a few days, and she died on the 11th, from inflammation of the lungs. For a week before death she suffered excruciating pains in the right shoulder-joint and arm.

No. 78, (Dr. Lee, case 57.) 22d of April, 1847.

Mr. B. Brookes requested me to see a patient near Clare Market, who was eight months pregnant, and who had been suffering from profuse uterine hemorrhage for ten days. The flooding occurred spontaneously; it had several times nearly ceased, and had returned with great violence. Labor-pains commenced, and on examining, it was found that a small portion of the placenta was felt protruding through the os uteri, which was not considered to be sufficiently dilated to allow the hand to be safely introduced to deliver by turning. The membranes were ruptured, the pains increased in strength, and the child was soon ex-

pelled dead, and the placenta followed. The labor was completed before I saw the patient, who was very faint, but the hemorrhage had ceased, and the uterus was firmly contracted. On examining the placenta, the detached portion was seen covered with a dark-colored layer of coagulated blood, and the cavernous structure of the part was completely filled with solid coagula, rendering it obvious that the hemorrhage had not proceeded from the detached part. If the pains in this case had not expelled the child, and the hemorrhage had continued, it was resolved by Mr. Brookes to deliver by craniotomy, as the orifice of the uterus was not in a condition to permit the hand to be introduced without much force, and the patient was so faint that it was obvious she would die speedily from the loss of blood after delivery, in whatever manner it had been effected. Mr. Brookes thought that a madman only could have contemplated tearing away the placenta before delivering the child in this case.

These three cases, are good instances of the applicability of the method of Puzos, where version is impossible, and should be studied in connection with the preceding case of *Mme. Lachapelle*. The result in Nos. 171, 172, was fatal; but it can hardly be attributed to the peculiar form of delivery; and to have proceeded to deliver, with the os uteri as rigid as it appears to have been, would probably have even earlier brought on the same result. On the other hand, the amount of hemorrhage and the weakened condition of the patient, demanded a less temporizing policy than the tampon, which, after rejecting version, and rupturing the membranes, was evidently the next and only resort; the condition of the os, rendering it next to impossible to detach the placenta from all its connections with the uterus, or even to the extent advocated by Mr. Barnes.

Case 206. (Dr. Radford, No. 7.) April 4, 1826.

I visited a lady residing in Strangeways, who was said to be in great danger from flooding. I found she was at the 7th month of her 4th pregnancy, and that a sudden discharge of blood took place whilst she was engaged in a sedentary occupation. She had fainted before my arrival, and still felt very faint. Her countenance was pallid; and her lips rather blanched.

On making an examination, I ascertained, though with some difficulty, from the high position of the os uteri, that it was rigid and undilated. Although I had suspicion, yet I could not feel, that the placenta was located here. Under these circumstances, I was quite satisfied that nothing promised security to the patient, who had already lost so much blood, but effectually plugging the vagina, the application of a broad abdominal bandage, and the large uterine compress; after these measures were completed, a draught with one

drachm of tincture of opium was given. Some brandy and water, with suitable nutritious articles of diet, as eggs, etc., were administered.

I diligently watched her for some hours, and was assured that there was neither external nor internal bleeding. During this period, she continued gradually to improve; her countenance assumed a more natural expression; her lips had a more healthy hue; her pulse improved in tone; and her surface became warm. When I left her, she was enjoined strictly to keep in the recumbent position, and observe positive quietude.

When I called again to see her, I found her, upon the whole, better than I had anticipated, although she complained of "beating" and pain in the head. She had not slept. She was anxious to have the sponges removed, having a strong desire to pass urine, although some portion of this fluid must have dribbled away. On the withdrawal of the plug, there was no fresh bleeding. A spirituous lotion to be applied to the head, and her anodyne repeated. By keeping in bed for some time, and attention to her bowels, etc., she progressively amended. In a month afterwards, she had again a slight attack of flooding, but which was soon arrested by rest, cold vinegar and water externally applied, cool air, and an acid mixture.

In a fortnight her labor come on, accompanied with flooding, which was considerable when I reached the house. The os uteri was now dilated to about the size of a crown-piece, and felt soft and dilatable. I found a large slip of the placenta crossing over it; and by carrying the finger on to the right side and further within, I perceived the membranes, and through them the head of the child. As the pains were now frequent and strong, and the discharge continued, after placing a regulating bandage, one end being fastened to the bed, and the other end held by the nurse, and tightened as required, I passed my hand, and first detached a considerable portion of the placenta, and then ruptured the membranes. The bandage was drawn so as equally and firmly to support and compress the uterus as its size lessened by contraction and the escape of the waters. The pains soon became stronger, and the head of the child shortly engaged itself within the os uteri, and the portion of loose placenta took a lateral position, allowing the child to pass, and which was born alive in about three hours. The placenta found lying loose in the vagina, was withdrawn. There was only the ordinary discharge of blood. The structure of this organ was unbroken.

Remarks.—This case is another example of effectually plugging the vagina—no other expedient could have been had recourse to to save blood, and to insure a continuance of pregnancy. Forced delivery, in my judgment, was out of the question; but suppose such an operation had been rashly attempted, the lives of both the mother and the child would have been most likely sacrificed; and if the

membranes had been ruptured under the existing organic state, the child's life would most likely have been lost, and there would have been no certainty of the bleeding being arrested. I detached the placenta as freely as I thought necessary for the passage of the child, as it is better systematically to do this, rather than risk the tearing of the structure of this organ by the force it must sustain at each pain when the os uteri has to be dilated by the head of the child after the membranes have been ruptured.

But little need be added by way of comment upon this case, except to point to it as a model of treatment, and one which might stand as an exemplar and guide in all cases the main features of which resemble it.

A question very naturally arises at this point, if the ratio of mortality under either of the conditions mentioned in the table, (table 5th,) with regard to the treatment of the membranes, is so nearly equal, why interfere at all? Why rupture the membranes in any case? An answer to this may be found in the following quotation from Gardien, who, in speaking of the tampon, and its employment in cases when its success is doubtful, says,¹ "*Melius est experiri remedium anceps aut dubium, quam nullum.*" Were we sure of the result in any given case, all necessity of unnecessary interference would be avoided; but as all that can be done, is to do the utmost in our power to secure the end aimed at, we should never neglect any remedy, solely upon the ground, that we do not know if it will succeed.

BLEEDING.

Bleeding was employed in 6 cases, viz., Nos. 258, 259, 338, 380, 865, 870.

In all of which, the hemorrhage returned at a longer or shorter interval, no effect having apparently been exerted, to keep it under control. In No. 870, the mother died undelivered.

While it may be useful as a remedy, in certain conditions of the general system, it has no especial bearing upon the hemorrhage, to control or in any way modify it. When, therefore, it is not indicated by other symptoms than those arising from the degree of flooding, its adoption will be of no service, but tend to diminish the chance of the mother's life, by just the amount of blood that is taken from the veins.

¹ Op. cit., p. 420.

TAMPON.

This was applied in

Nos. 21, 23, 50, 90, 91, 93, 100, 104, 106, 120, 122, 124, 125, 126, 138,
140, 149, 151, 157, 162, 163, 166, 205, 206, 207, 208, 209, 210, 220, 225,
229, 246, 257, 259, 262, 265, 273, 380, 381, 382, 384, 385, 387, 389, 390,
430, 448, 449, 607, 609, 612, 614, 615, 625, 636, 662, 676, 680, 682, 690,
694, 695, 697, 702, 705, 713, 727, 764, 774, 778, 790, 791, 794, 798, 803,
804, 807, 809, 810, 818, 819, 820, 836, 857, 878, 886, 888, 890, 891.....89 cases.

Of these it was used alone in

Nos. 21, 23, 50, 90, 91, 126, 138, 140, 151, 162, 163, 166, 229, 246, 257,
259, 262, 381, 382, 384, 387, 389, 448, 449, 607, 609, 612, 614, 636, 662,
680, 690, 697, 713, 727, 774, 778, 790, 791, 804, 810, 818, 836, 857, 890,
891.....46 cases,

which is a fraction over one-half the whole number.

It is used as a mechanical plug merely, or it may be medicated with various solutions, for the purpose of increasing its hemostatic power. The particular mode in which it should be applied, is of less consequence than the exactness with which it is made to fill up the cavity of the vagina, and its close application to the spot of the hemorrhage. Some prefer sponge, others silk, in the form of the ordinary silk handkerchief. Others still, claim to have produced an equally permanent effect, by placing a towel, folded in the form of a compress, upon the vulva, and keeping it closely applied there by suitable bandages, applied over it and around the body. But it would be useless to discuss this subject further. Bearing in mind that the sole object in the use of the tampon, is to keep the hemorrhage in check, the particular mode of its application, best suited to each case, will, no doubt, suggest itself to the practitioner at the time.

In regard to the propriety of its employment, and its value as a remedy, there is perhaps as wide a difference of opinion, as prevails upon any subject relating to the question under consideration. By European continental writers, as a class, it is highly extolled both for its efficacy in controlling the hemorrhage while at the same time it accelerates the dilatation of the os uteri, and its agency in exciting or strengthening labor-pains.

Dr. J. Hamilton,¹ declares it to be "most hazardous." Gooch,² ignores it entirely. Duncan Stewart,³ objects to its use. Maunsell,⁴

¹ Op. cit., p. 326.

³ Treat. on Ut. Hem., Lond. 1816, p. 49.

² Pract. Compend. of Mid., sec. 3, b.

⁴ Op. cit., p. 168.

is in favor of it. Burns,¹ also approves of it. Blake,² thinks it inadmissible in Placenta Prævia. Jewel,³ thinks it "a valuable auxiliary." Ingleby,⁴ upon the whole, objects to its use. Rigby the elder,⁵ approves of it under certain circumstances. Lee,⁶ doubts its efficacy in restraining hemorrhage, when the os is undilated. F. H. Ramsbotham,⁷ favors it under certain conditions. Davis,⁸ extols it as a safe and certain application. Murphy,⁹ favors it. Rigby the younger,¹⁰ also. Chailly,¹¹ also. Cazeaux,¹² Gardien,¹³ Jacquemier,¹⁴ Mme. Lachapelle,¹⁵ Capuron,¹⁶ Dunal,¹⁷ Baudelocque,¹⁸ Velpeau,¹⁹ Moreau,²⁰ Leroux, (see *ante*, p. 35,) and Miller,²¹ all favor it. Dewees,²² objects to it.

Schweighauser,²³ doubts its efficacy before the rupture of the membranes; and Prof. Meigs,²⁴ gives his testimony against it in the following words. "It may, under the proper indications, be with safety employed up to the close of the fifth month of gestation; since the womb, until that period, is incapable of admitting sufficient quantity of blood to give any well-grounded fears of a fatal concealed hemorrhage. But at a later stage, the capacity of the uterus is so much increased, that the tampon, if applied at all, ought only to be used while the practitioner himself carefully observes its effects, remaining at hand to remove it in case the uterine cavity should become distended, and filled either with fluid or coagulated blood to a threatening amount."

Case 381. (Mme. Lachapelle, No. 9.) *Cervico-placental hemorrhage; prolapse of the cord; tampon; version; fatal adynamic fever.*

Marianne Bol.... was forty years old, and had already brought into the world 15 children. Arrived at the beginning of the 7th

¹ Op. cit., sec. 38, Am. ed., p. 250.

² Aphorisms illustrating natural and difficult labor, etc., Aph. 227.

³ Lond. Pract. of Mid., 6th ed., p. 294.

⁴ Op. cit., p. 149, et seq.

⁵ Op. cit., p. 59.

⁶ Op. cit., p. 373.

⁷ Op. cit., art., Placental Presentation.

⁸ Op. cit., p. 1042, et seq.

⁹ Op. cit., p. 337.

¹⁰ Op. cit., chap. 12.

¹¹ Op. cit., chap. 2, art. 4, ¶ 4.

¹² Op. cit., p. 723.

¹³ Op. cit., p. 420.

¹⁴ Op. cit., vol. ii. p. 273.

¹⁵ Op. cit., vol. ii. p. 364.

¹⁶ Op. cit., vol. i. p. 385.

¹⁷ Op. cit., p. 166.

¹⁸ Op. cit., vol. i. p. 423.

¹⁹ Op. cit., p. 391.

²⁰ Op. cit., p. 170.

²¹ System of Obstet., Philadelphia, 1858, p. 288.

²² Mid., 7th ed., p. 401.

²³ Op. cit., p. 223.

²⁴ Op. cit., p. 252.

month of the 16th pregnancy, she experienced a very considerable hemorrhage, which lasted almost a whole day. Some days after, (11th September,) the hemorrhage reappeared with so much violence that the woman made haste to be conveyed to the hospital. The os uteri scarcely open, hard, thick, and the cervix still very long, showed little sign of a speedy delivery. I therefore decided to stop all discharge by filling the vagina with dossils of lint. Rest and astringent drinks aided the effect of this occlusion.

On the 13th of September a slight tenesmus having induced expulsive efforts, the dossils escaped with the clots. The tampon was repeated. During the night spasms, chills, and agitation. At four o'clock in the morning puerperal pains in the loins and the abdomen, with uterine contractions strong and frequent, and another expulsion of the tampon.

The os uteri commenced to dilate; it was thin and soft, but still too little open to admit the hand of the midwife; the hemorrhage had only been suspended, and, for the third time it was necessary to reintroduce the pledgets of charpie. This time they were placed with haste and in too small number; the blood very soon ran through them. In consequence of this, I drew them out, and decided to have recourse to the method of Puzos. I ruptured the membranes, and at the same time assured myself that the edge of the placenta touched that of the os uteri, and that the head of the foetus was in front, presenting the vertex in the 2d position.

The flooding was suppressed, and I should have abandoned the whole expulsion of the foetus to efforts of nature alone, if a new symptom had not changed this determination; the umbilical cord slipped by the side of the head and came down into the vagina.

The right hand was selected for the operation of version, and everything went on according to rule, except with the head, which emerged with the occiput turned to the right side, although the back had passed under the left cotyloid cavity. The child weighed five pounds and a half; it was feeble, but viable. The delivery was prompt and easy.

On the same day a violent fever developed itself; the dry and burning skin, excessive thirst, obstinate constipation, loaded and dark colored urine, a hard and quick pulse, announced a grave and dangerous affection. In truth, the fever was not tardy in its access, and the patient died on the 17th September, the fourth day after confinement, exhibiting all the symptoms of so-called adynamic or putrid fevers. Some pains were felt in the hypogastric region, but they were owing to simple uterine pains; a poultice caused them to disappear. The lochia did not cease to flow abundantly except in the last moments of this woman's existence, which proves that we cannot attribute the fatal result to their suppression, but much rather to the reaction which followed the debility.

Case 125. (Copeman Record of Obstet. Pract., p. 189, case 4.)

Summoned at midnight to Mrs. ———, æt. 27, a delicate lady, with three children, and nearly seven months advanced in pregnancy with a fourth. She had been quite well during this pregnancy, but after walking a good deal the day before, a slight loss appeared at 4 P.M., and became more profuse after she had retired to bed at 10.30. Two or three clots of some size had passed, and there was free trickling of blood, but neither uterine pain nor sickness. She was not faint; pulse good; had a rigor, but was now warm. I could feel no presentation; child moving actively in the uterus; os uteri loose and cushiony. As the hemorrhage was not severe, *and there was no pain*, I hoped miscarriage might be prevented, and that the loss depended upon some slight separation of the chorion. A piece of sponge, saturated with vinegar and water, was passed up to the os uteri, napkins dipped in cold water were applied to the vulva, and a dose of ergot and laudanum was given internally.

6th, 9 A.M.—Slept at intervals during the night; scarcely any oozing; no pain; no illness. To take coffee and milk cold. Cold napkins continued. Urine passed without inconvenience.

7 P.M.—No hemorrhage; sponge withdrawn, cleaned, and replaced. Vulva to be frequently sponged with cold water; and wet napkins, which were sometimes cold and sometimes hot, discontinued.

7th—Sponge removed this morning scarcely soiled, and not re-introduced; an enema of cold water.

8th.—Bowels well relieved; no hemorrhage.

14th.—Nothing of importance occurred till this evening, when a slight hemorrhage appeared, and the sponge was introduced again. No pain; no uterine contraction. To have an opiate, and gr. v. acid. gallic. every four hours.

15th.—No return of bleeding.

16th.—Slight hemorrhage this evening, and sponge reapplied.

17th.—At 4 A.M. hemorrhage came on suddenly and severely, and was going on rapidly with apparently slight uterine pain when I arrived. The loss was so great that no time was to be lost; I introduced my hand into the vagina, and found the placenta directly over the os uteri. This I immediately detached all round, according to the plan recommended by Simpson, and the hemorrhage thereupon ceased. I then considered whether I should wait and allow nature to expel the child, as the head was the presenting part; but finding the os uteri easily dilatable, and as the great loss she had sustained made it undesirable, not to say dangerous, to subject her to any unnecessary exertion, I passed my hand onward into the uterus, turned, and delivered in a few minutes. The placenta already detached, was expelled by uterine contraction, and the danger for a time was at an end. The child breathed and soon began to

cry; it was a male of quite seven months, small, but perfect, and not unlikely to live. I was surprised to find that the child could be born alive when the placenta had been first detached, and delivery not proceeded with for some minutes afterwards. The uterus contracted firmly, a bandage was applied, and an opiate given. For some time there was restlessness, sickness, hesitating pulse, tossing, and yawning; but having taken some milk and brandy, she afterwards became quiet and composed, and the pulse rallied satisfactorily.

27th.—All has gone on favorably up to this period. She got into the drawing-room yesterday, and the baby appeared to be going on well until yesterday, when a convulsion occurred, and it died at noon to-day. The mother eventually recovered."

(See also case 206, p. 393-8 in illustration of the efficacy of the tampon.)

Within a comparatively short period of time, it has been proposed to substitute for the ordinary modes of applying the tampon, a thin bag of vulcanized caoutchouc gum or india-rubber, which by means of a flexible tube, can be inflated to any extent by forcing in air. A more effectual mode of controlling the hemorrhage from the ruptured vessels of the os uteri, cannot well be imagined, and in the cases where it has been made use of its success was certain and prompt. In one of the cases reported, it was used as the means of applying cold water, with which the ball was filled, directly to the os uteri. By fitting it with a double tube, a continuous stream may be kept up for any length of time, without diminishing the size of the ball in the least.¹

ACIDS—CHALYBEATES—ASTRINGENTS—COLD APPLICATIONS.

The use of these requires no particular discussion. They act therapeutically, in no different way in Placenta Prævia, than in ordinary cases, and their administration is called for, or contra-indicated, by the same symptoms that govern their use generally. The last two are the most reliable of them all. Lead, either alone, or as usually given, in combination with opium; tannic and gallic acid are the surest and most to depended on for their effect, when taken internally. Of local astringents the list is almost endless; but alum in the solid form, tannic and gallic acid, and the tincture of ses-

¹ See Braith. Retros., part 34, Jan., 1857, art. 111, (from Ass. Med. Jour., Mar. 22, 1856, p. 234,) and Braith. Retros., part 40, Jan., 1859, art. 136, (from Med. Times and Gazette, July 16, 1859, p. 64.)

quichloride of iron (solution of the perchloride) will accomplish all that can be expected from this class of agents. According to Dr. Von Schreier of Hamburg an injection of the latter in the proportion of 50 to 100 drops in three ounces of water, is an unfailing remedy as a hemostatic.¹ This statement agrees with my own experience in the use of this article. In a case of hemorrhage succeeding a miscarriage, and which had persisted for six weeks in spite of all remedies, when it came under my care, it was almost instantly checked, and finally stopped, by the application of a sponge tampon wet with a solution of the strength of 90 drops to two ounces and a half of water.

In one case, No. 218, the hemorrhage which kept up after delivery was finally controlled and stopped by the direct application of alum to the interior of the uterus.

COLD APPLICATIONS.

These are to be used not according to any definite rule, but as circumstances may indicate. The more direct their application the greater effect may be expected from their employment.²

STIMULANTS.

This class of remedies, if they may be called such, have no effect upon the hemorrhage, but they are of the greatest importance in sustaining the strength of the mother, and thus giving time for reaction to come on, or in keeping up the failing powers of the system during artificial delivery, or any other operation that may be deemed advisable.

OPIUM.

The use of this drug, like that of ergot, has its advocates and opponents. There can be no doubt, that it is one of our most valuable remedies, when used properly and boldly, to sustain the mother and procure that reaction in the system, which in many cases, turns the scale in favor of recovery. The amount and frequency of the dose, must, of course, be graduated by the peculiarities of each case, and will suggest themselves to the practitioner at the time. Duncan Stewart,³ Ingleby,⁴ and Burns,⁵ all recommend it, and experience has demonstrated the correctness of their opinions.

¹ Am. Journ. of Med. Sciences, N. S. 31, p. 541.

² See in this connection Ingleby, *op. cit.*, p. 62, et seq.

³ *Op. cit.*, p. 49.

⁴ *Op. cit.*, p. 54, chap. ix.

⁵ *Op. cit.*, *passim*.

POSITION.

Within comparatively a very short time, it has been proposed to aid in compressing the vessels of the cervical portion of the uterus during the application of the tampon, by fixing the patient in such a position, that the weight of the child may be added to the already obtained pressure from the vaginal side. Dr. Legroux¹ quotes a case, which has been already referred to, (see *ante*, p. 45,) for the purpose of proving another point not heretofore recognized, and in which this was resorted to with apparent success. Having satisfied himself that the true hemorrhage occurred in the *interval* of the labor-pains, he conceived the idea, that if the woman could be placed in an upright position, the weight of the child would press sufficiently on the os uteri, to compress the vessels and stop the flooding. That by this, the effect of the tampon would be much increased, and the cervix be brought, as it were, between two compressing forces. But, while the result was very successful in the single instance quoted, the absence of any corroborative experiments made since then, and the apparent insignificance of the remedy, added to the known effect of an upright posture in accelerating and increasing hemorrhage, particularly if the head of the foetus does not, after all, apply itself to the source of the hemorrhage, should make us pause ere we admit it as a rule of practice.

No. 258.

Mme. Lemasson, 28 years old, living at No. 110 in the Rue St. Antoine, had reached (May, 1847,) the 8th month of her 8th pregnancy, when she was seized with a hemorrhage which made her fear a premature delivery.

Venesection, indicated by a certain plethoric condition, repose on the bed, cold applications to the abdomen and the inside of the thighs, were immediately followed by a cessation of this accident, which returned at three different attacks, before the end of pregnancy, and was twice controlled with the same ease. But the last flooding, which preceded delivery a few days, did not entirely cease, and became abundant at the time of labor.

The presumption of a placental insertion on the neck was confirmed by an examination, as soon as a sufficient dilatation allowed of making out, across this opening, a spongy and lobulated mass, the thickness of which prevented the presentation of the foetus from being made out.

¹ Archiv. Generale de Med., December, 1855.

The hemorrhage went on increasing, and such was its abundance, that it induced a fear of speedy death.

The dilatation of the neck, completed to the extent of 5 or 6 centimetres at the beginning of the labor, was arrested, in spite of the intensity and the little interval between the pains.

In exploring the os uteri with the finger carried as high as possible, to the left, between the internal face of the neck and the placenta, detached on this side only, I made out the following facts.

During the diastole of the uterus, the finger easily penetrated between the detached portions; but at that time the blood ran along its side into the vagina.

During the systole, the finger was pushed back by the membranes made tense, and closely applied and pressed against the internal face of the neck; the blood ceased to flow, but that portion of it which had been discharged into the vagina during the diastole, was forced down outside by the pressure of the uterus.

These facts carefully studied, and confirmed beyond doubt by numerous repetitions, it appeared evident to me that the flow of blood from the vessels, the *actual hemorrhage* was diastolic; that the expulsion of the blood externally, the *apparent hemorrhage*, was indeed systolic, but coincident with the cessation of the true hemorrhage.

The hemostasis was the evident result of the uterine contraction, from the tension of the membranes strongly applied and pressed against the surface of the interior of the neck.

To arrest the hemorrhage it was necessary to keep up this state of things during the repose of the womb, and, moreover, to cause the united mass of the waters and the child to bear against the neck in the interval between the pains. The vertical position would fill this indication.

I boldly substituted that for the horizontal position maintained up to this time. But such was the feebleness of the patient that I was obliged to hold her up on either side, by some vigorous persons; while, sitting in front, I offered, with my feet and extended knees, points of support for her feet and knees; holding up the seat (*la siége*) with one hand and manœuvring with the other.

Hardly was she in the upright position when a flood of liquid blood and clots escaped from the vagina; it began to frighten me and stop me in the measures I was about to take. But this fear was of short duration, for the flow passed off, the hemorrhage *stopped entirely*.

I satisfied myself by an examination that, during the period of repose, the womb remained depressed on the floor of the pelvic cavity, that the weight of the waters and the child was enough to keep the detached surfaces in contact.

This position, for its immediate effect, produced more frequent pains and more energetic and lasting contractions.

Moreover, in spite of this activity instilled into the labor, the dilatation of the neck made no progress; its orifice was obstructed by the placental cake, which prevented the blood from transuding through it either during the pains or in their interval.

What obstacle opposed itself to the dilatation of the neck? Doubtless the peripheral adhesions of the placenta, detached only at its central portion. I attempted by going up on the left side of the neck, to touch the membranes with the finger. Not having succeeded in this attempt, I encountered sufficiently high up a furrow between the placental lobules which I separated, by tearing with my nail the resisting parts; at last I touched the membranes which came across during a pain. A large opening immediately followed through the placenta during the passing off of the waters; the placenta was compressed on the right side by the head, which immediately engaged itself; and a few pains sufficed to finish the delivery, without any accident. *The child was living and did well.*

The placenta was torn to the depth of 5 or 6 centimetres at a portion of its circumference; in the vicinity of this rent there was a smooth whitish surface, of some centimetres in extent, owing probably to the cicatrization following the old detachment.

The getting up, interrupted by some mishaps, was notwithstanding, good.

TRANSFUSION.

The merit of reviving this operation, as a means of restoring the exhausted vital powers, in the last stage of debility, is due to Dr. Blundell, who¹ has discussed it in all its bearings, and whose opinions have received the endorsement of nearly all subsequent writers upon obstetric medicine. Three cases, Nos. 223, 678, 723, are quoted; one of which, No. 223, was successful. The other two proved unsuccessful, but are instructive, as exemplifying the kind of cases in which it may be used with hope of success.

No. 223. (C. Waller, M.D.)

On the 18th of December, (1833,) about half-past one, I was requested to visit a patient thought to be sinking from uterine hemorrhage; she was about 8 months gone with child, and had no distinct labor-pains. Mr. Greaves, the gentleman in attendance, informed me that she had been losing blood in large quantities for

¹ Op. cit., p. 418, et seq. See also a paper by John Soden, F.R.S.C., Surgeon to the Bath Gen. Hosp., containing 36 cases in which this operation was performed. Published in *Medico-Chir. Transactions*, vol. xxxv. Also a paper "On Transfusion of Blood; its History and Application in Cases of Severe Hemorrhage." By Chas. Waller, M.D. *Trans. of the Obst. Soc. of London*, vol. i. p. 61.

several days, that he had this day examined, and found it to be a partial presentation of the placenta; on introducing his hand for the purpose of turning the child, the patient was seized with such a death-like faintness, that he thought it prudent to desist, and I was desired to meet him in consultation. He had been exhibiting stimuli from time to time without the least apparent benefit.

The countenance of the patient when first seen by me was completely blanched, not the least appearance of redness being observable in the cheeks or lips, the extremities cold, the breathing very laborious, the pulse excessively feeble, the whole surface of the body was cool, and the skin had a soft yielding feel, and indeed her general appearance was that of a woman sinking from exhaustion. A quantity of ardent spirit was again given her, but it failed to excite even a temporary rally.

The question naturally arose, What is to be done? And the usual answer would have been, to deliver immediately, taking every precaution in our power to secure the patient from hemorrhage afterwards. But the objections to this plan were so great that we did not think ourselves justified in making the attempt: the female was lying in a condition which rendered it doubtful whether she would rally at all, and certainly in that state wherein a further loss of blood must have at once destroyed her. The vagina was now filled with coagula, and the circulation so low that the hemorrhage had entirely ceased. The introduction of the hand must of necessity have disturbed the clots, and have unstopped the orifices of the bleeding vessels, and thus renewed the hemorrhage; and, indeed, my deliberate judgment is, that the mere act of delivery even unattended by any further effusion of blood, would have caused immediate dissolution.

After waiting for some time and repeating the stimuli, combined with nourishment, we found our patient getting weaker, and it appeared to us, that transfusion offered itself as our only resource. The question as to the propriety of emptying the uterus first was then agitated, but for the reasons just mentioned, we thought it better to endeavor to revive her by at once performing the operation, watching narrowly that the hemorrhage did not come upon us unawares, determining not to interfere unless the bleeding was renewed. The operation was performed in the usual manner, rather more than four ounces of blood having been injected, which was supplied by a female in attendance. The patient then appeared greatly revived, and as the blood flowed very sluggishly from the arm of the person supplying us, we agreed to inject no more at that time. Small quantities of nourishment with stimuli were occasionally given, and for about two hours we seemed to maintain the advantage we had gained, but in a short time subsequently, the symptoms of exhaustion returned, attended with jactitation.

I gave the patient at this time a little gruel with about an ounce

of brandy in it, but although it was retained on the stomach, no improvement was observed, but rather the reverse, and it was therefore agreed once more to transfuse. The first four ounces of blood were taken from the individual who furnished it before, but no good effect was noticed; and as she bled very slowly, I requested her husband to allow one of his veins to be opened, the blood from which flowed in a very impetuous stream. After five ounces had been thrown in, (in addition to the previous four ounces taken from the woman,) the rally seemed perfect, and there was even a slight tinge in the capillary vessels of the cheek, but as her husband was by no means faint, and as we were anxious to avoid the necessity of again operating, three ounces more were transfused, making altogether rather more than twelve ounces at the *second*, and between four and five ounces at the first injection.

There was from this time no relapse; the patient took nourishment frequently, given in small quantities, and complained of nothing but a feeling of extreme fatigue; she had during the evening some grinding pains; about five in the morning the uterus was beginning to act well, and Mr. G., who was with her, informed me that she was safely delivered of a dead child about six o'clock, there being no recurrence of the hemorrhage.

She remained very comfortable for the first three days, but on my visit to-day (23d) she complained much of her head, attended with great thirst. She had an enema administered on the 21st, which produced a very satisfactory alvine dejection; this was repeated yesterday, (22d,) but came away without motion, on which account Mr. G. ordered half an ounce of castor oil to be taken, which purged her violently; her tongue to-day is dry and glassy, and she has had but little rest. *Utatur Capiti Lotio Evaporans, et cap. 4tis horis, Mist. Salin. cum Tr. Opii. ℥vii.*

No. 723. (J. D. Crosse, M.D., case 57.)

Mrs. L ———, æt. 37, 9th pregnancy, and gone to full calculated period—when I was called Dec. 30th, 1833, by Mr. ———, who was in attendance. I learnt that three weeks ago there was a sudden and profuse loss of blood—a fortnight ago it returned. At eight yesterday morning Mr. ——— was called on account of flooding, with slight labor-pains—both flooding and pain had ceased when he got there. He was called again at eight in the evening, but did not send to me till 1½ this morning, although there was flooding, and he suspected the placenta presented—he committed the usual mistake of a young practitioner in such cases, by thinking labor not advanced, because the uterus was high up, and no child's head presented. The fact is the placenta occupies the space, and the child's head does not descend as usual so as to be easily felt. I found the woman pallid, exhausted, cold, with a pulse just perceptible—placenta at the os uteri, which was considerably dilated—the head felt presenting

above placenta; the membranes entire. I at once proceeded to deliver by turning, and accomplished it expeditiously—the os uteri with great difficulty admitted my hand—the foetus was dead—I removed the placenta, and there was very little loss during this proceeding, no more than in a common case after it. Gruel, with wine or brandy, was given—warmth applied—but the pulse could scarcely be felt—hands deadly cold—face and lips pallid—thus it went on for above two hours after delivery; when seeing the patient must soon die, and not wishing to delay the trial till jactitation was present, I injected six ounces of blood into the right cephalic vein, which I took from her husband's arm. Whilst this was doing, the patient became more distressed—the pupils dilated—purplish pallor of face—pulse no longer perceptible—death within an hour after. The transfusion, though done readily, and as far as I can judge, in a right manner, not only failed to rally, but really seemed to have a bad effect. Still, looking on the case as hopeless, I felt justified in undertaking transfusion; and though it certainly had no good effect, I should not have been satisfied to have neglected employing it in a case so exactly suited to it. The mistake here was in the surgeon not calling advice as soon as he suspected a Placenta Prævia; when artificial delivery, so clearly unavoidable, so urgently called for, might have been *timely* and successfully adopted. (For details of No. 678 see p. 250.)

GENERAL SUMMARY.

Before proceeding to sum up the results of the foregoing analysis, it may not be amiss to state, that of all the cases tabulated, 670, or more than two-thirds, come under the denomination of “partial presentation,” showing most conclusively, that the method proposed by Prof. Simpson, will be available in only a small fraction of cases, and that the old practice of turning and delivering by the feet, without disturbing the connections of the placenta, any more than is necessary for the purpose, must, after all, be our main resort, and the method which in the mass of cases coming under charge, will most likely be required.

From the data in the preceding tables, we arrive at the following conclusions:—

1st. The danger to the mother in Placenta Prævia *increases* as the period, at which the labor comes on, approaches the full term.¹ A

¹ Dr. Trask, in his “Statistics of Placenta Prævia,” (Trans. of the Am. Med. Assoc., vol. viii., 1855, p. 685,) arrives at an entirely different opinion. He says, “cases in which delivery takes place prematurely, are attended with greater risks

result rather to be expected from the increased capacity of the uterine vessels, as pregnancy advanced to its termination. It is therefore better to terminate the labor, after it has really begun, as soon as compatible with the safety of the patient, than to endeavor to conduct the pregnancy to the full term.

2d. The danger to the mother is less when the os uteri is com-

to the mother, than those occurring at the full time, with the exception of those before the seventh month, which rarely prove fatal, in consequence of the undeveloped condition of the blood-vessels of the womb at that early period." Without in the least impugning the accuracy of Mr. Trask's tables, it must be admitted by all, that other things being equal, the greater the number of cases from which conclusions in regard to any point are drawn, the greater will be their accuracy; and as the number of cases in the preceding tables, which have been used for the purpose of comparison, is nearly three times greater than those from which Dr. Trask arrived at his results, it may be assumed, that they more nearly represent the truth in regard to this point, than do his.

In the first table, in which the time of labor was at various periods of the pregnancy, from the 5th month to the full term, all recovered.

In table 2d there was one death each, at the 7th, 8th, and 9th month.

In table 3d, where the time ranged from the 3d month to full term, one died at the 8th month.

In table 4th, one each at 6 months, 9th month, and full term.

In table 5th, four at 7 months, two at $7\frac{1}{2}$ months, one at the 8th month, and one at $8\frac{1}{2}$ months.

In table 6th, one at the 5th month, one at the 6th month, one at 6 months, two at $6\frac{1}{2}$ months, three at the 7th month, seven at 7 months, one at $7\frac{1}{2}$ months, nine at the 8th month, ten at 8 months, eight at $8\frac{1}{2}$ months, five at the 9th month, eighteen at 9 months, and six at a period far advanced.

In table 7th, the cases were all of them within a few weeks of full term; and in table 8th, where the mother was undelivered at death, the same fact holds good. Bringing these numbers together, in a tabular form, we have

At the 5th month.....	1	At the 8th month.....	12
" the 6th month.....	1	" 8 months.....	10
" 6 months.....	2	" $8\frac{1}{2}$ ".....	9
" $6\frac{1}{2}$ ".....	2	" the 9th month.....	7
" the 7th month.....	3	" 9 months.....	19
" 7 months.....	12	" far advanced.....	6
" $7\frac{1}{2}$ ".....	3		

Of the fatal cases in the Appendix there were

At $6\frac{1}{2}$ months.....	1	At the 8th month.....	2
" the 7th month.....	1	" the 9th month.....	2
" $7\frac{1}{2}$ months.....	1	" 9 months.....	1

From this it appears, that of the 95 fatal cases, in which the date of the pregnancy is recorded, 67, or more than two-thirds, occurred within less than 8 weeks of the full term; 35 within less than 6 weeks; and 26 during the last month.

pletely covered, than when a portion only is involved in the attachment of the placenta; and least of all, where the attachment becomes nearly or quite central with reference to the os. Under these last conditions there is a strong probability, if the contractions are vigorous enough, that the placenta will be thrown off and expelled into the vagina, and the hemorrhage be checked.

3d. The *condition* of the mother, is a much more important element in making a prognosis of the case, than the amount of blood lost; some constitutions being very much less susceptible to the effect of depletion, and capable of sustaining a greater amount of hemorrhage without being unfavorably affected, than others. The condition of the mother then, should be most carefully watched, and the appearance of any symptoms indicating debility, or a tendency to collapse, should be the signal for the adoption of such remedies, or such a course as will the most speedily and safely insure the delivery of the child. And they should be put into effect without any delay, always bearing in mind the fact, that operations which are perfectly safe to the mother, when her vital power is comparatively undiminished and unimpaired, become almost certainly fatal, if performed when she has become exhausted by hemorrhage and suffering.

4th. In those cases where the pains are vigorous, and show a disposition to be permanent, (the head presenting, the os in good condition, and the strength not materially impaired,) *Rupturing the membranes*, by letting off the waters, and bringing the child's head down upon the os, will, in most instances, be enough to check the bleeding, and place the mother in a safe condition. When, however, a want of tonic power is manifested, or it is probable that resort must be had to forced delivery, the discharge of the waters in this way will only increase the difficulty of the operation, and the danger to the mother.

5th. The danger to the mother is materially increased by artificial delivery. But the same statistics which show this result, also make it evident that this increased fatality is owing *not so much to the operation itself*, as to the enfeebled and exhausted condition of the mother at the time; and that, with a favorable condition on the part of the mother, there is no more danger in resorting to it in Placenta Prævia, than in ordinary cases of difficult labor.

6th. The effect of artificial delivery to endanger the life of the mother in Placenta Prævia, being therefore almost directly proportionate

to the degree of exhaustion under which she labors, it should be the aim of the practitioner to perform this operation, before such a state is reached; always bearing in mind the remark of Dr. Churchill,¹ that "it is peculiar to midwifery operations that they form an ascending series, increasing in gravity from the simplest to the most severe—no two being equal; and therefore, in considering the suitability or practicability of any one, we do so with the knowledge that if the one we prefer, do not succeed, we must have recourse to another more severe and more dangerous."

7th. If from the progress of the case, or the conditions of the labor, a resort to artificial delivery must finally be had, it should not be delayed an instant beyond the time, when the dilatation, or dilatibility of the os uteri, permits the introduction of the hand into the uterus: the danger to the mother from forced delivery, being directly proportionate to the degree of exhaustion under which she labors. (See art. 3d, 5th, 6th.)

8th. When from the rapidly failing condition of the mother, or the presence of any cause rendering artificial delivery impossible, a resort to the foregoing is forbidden, the placenta should be wholly separated from the uterus, and such remedies made use of (see Transfusion, p. 326,) as will recruit the strength of the mother, until reaction having been established, she can be delivered in whatever way may be deemed best.

9th. The tampon may be used advantageously in all those cases, where, with an amount of flooding sufficient to materially affect the constitution of the mother, the os uteri remains so rigid that it is impossible to perform artificial delivery. But, while under these circumstances, it is important to gain time for the dilatation of the os, and, at the same time, prevent the hemorrhage from too speedily exhausting the mother; under an opposite state of things a resort to the tampon, by inducing this temporizing policy, will often cause a loss of valuable time, and in this way make just the difference between a safe and a fatal issue. As the effect of this application, is not only to check the hemorrhage, but also to excite labor-pains and dilatation of the os uteri, it is totally forbidden, in all cases where either or both of these results may not be desired.

10th. The effect of ergot being of a twofold nature, according to

¹ Mid., ¶ 473.

the condition of the system, (ecbolic or parturient when the nervous energy is undiminished, and stimulant when there is a want of this,) it should not be administered, when there is a probable necessity of terminating the labor by an operation, unless at such an interval, that the effect of it is either exhausted, or will not come on until after the operation is finished, or the condition of the mother is such that it will act merely as a stimulant.

11th. In cases where the exhaustion is excessive, and version is the only alternative, after the feet have been brought down, the body of the child should be left undelivered, until the uterus has been roused to contract, and a firm condensation of its walls has been secured; or at least, it should be withdrawn so slowly, as to prevent the evil consequences which sometimes follow too sudden delivery.

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