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Researches in Operative Midwifery. No. 2. *Version or Turning.* By FLEETWOOD CHURCHILL, M.D., Physician to the Western Lying-in Hospital and Dispensary, and Lecturer on Midwifery, &c. at the Richmond School of Medicine.

Neque temerè neque timidè.

THE term *version* or *turning* is applied by midwifery teachers, generally, to that manual operation by which one presentation is substituted for another, less favourable; and in a more limited sense, to the rectification of certain malpositions.

For the furthering of one or other of these purposes, it has been known to the profession for a considerable period, but the full benefit of the operation and the class of cases in which it is useful is of much later discovery. A slight sketch of the history of the operation may perhaps be not uninteresting. Among the ancients, we find Hippocrates referring to bringing down the head. Celsus[a] advises us to seize the feet when the head is not within our reach, but this is only to be done when the child is dead. Ætius and Paulus Æginetus are the first ancient writers who recommend this manœuvre to be attempted with a living child. Rhodion,[b] Franco, and Ambrose Parè[c] mention the operation as a usual one, but without much detail. Guillemeau, however, who was a pupil of Ambrose Parè's and who may have been indebted to him for his knowledge on

[a] Lib. 7, cap. 29. [b] Des divers Accouch. fautt. 25, 27.

[c] Livre 24, ch. 38, p. 700. Dated 1573.

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this point, enters into minute details, and displays perfect familiarity with it.

It will, I think, be more distinct and intelligible, if we trace the history among our own writers first, and subsequently among those of France, &c. The first midwifery book ever printed in English, is Raynald's "Byrth of Mankinde, or the Woman's Boke," dated 1634. It professes to be a translation from the Latin, with additions. The author seems to have had some notion of rectifying the erroneous circumstances (or what he thought to be such) of head presentations, but he makes no reference whatever to bringing down the feet. For instance he says, "when the childe cometh headlong, one of the hands coming out and appearing before, then let the byrth proceed no farther, but let the midwife put in her hand and tenderly by the shoulders thrust in the byrth again, so that the hand may be resettled in his place, and the byrth to come forth ordinarily and naturally."[a] Similar directions are given for the management of footling cases.

In 1635, Guillemeau's work was translated into English;[b] and thus we owe to the French our earliest knowledge of this operation. He does not, however, seem to have regarded it as peculiarly suitable in arm presentations, for his rules in such cases are the same as Raynald's;[c] but he gives full directions for extracting by the feet, when they are discovered to be near the os uteri,[d] impressing upon the reader most strongly the necessity of seeing both feet; "for it were enough to teare the child asunder, and so kill both him and his mother, to draw him forth by one foot." When speaking of presentations of the "belly and breast," after recommending cephalic version, he proceeds: "But if the head cannot be easily brought downwards, or that

[a] Book 2nd, chap. 3, p. 105.

[b] Child-byrth, or the Happy Delivery of Women, &c.; written in French by James Guillemeau, the French King's Chirurgion.

[c] Lib. ii. p. 148. [d] Page 154.

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the belly and top of the thigh be nearer unto the passage, then the chirurgion shall put his right hand along the child's thigh, to finde one of his feet, which being found he shall cast about it a riband with a sliding knot, and then shall he seek for the other and bring them both gently to the passage, and so draw him forth by the feet."[a]

In some cases of powerless labour he practised it as a very efficient remedy,—of which I extract the following example:[b] "Being at Moret with Count Charles, I was called, together with the late Mons. de la Corde, one of the king's physitians, to deliver a poor woman which had been in travail two days and two nights; the waters being broken and the child left dry, the necke of her matrice was closed, she being no more urged with pains or throwes, which I observed by slipping my hand up into the said necke, and getting two of my fingers therein, where feeling one of the child's feet, I persuaded myself that I should deliver her well, which I did in this sort: first, when I had placed her well, I anointed my hands with butter and hog's grease melted together, and with store thereof I anointed the inward neck of the matrice, as well as possibly I could; and when I had somewhat dilated the said necke, with three of my fingers, I cast a riband with a sliding knot upon the child's foot, fastening it gently; and then again dilating the said necke, I found out the other foot, upon which I slipped another riband, as I had done upon the former; then did I draw both the ribands and brought the two feet together, which, when I had drawne out unto the buttocks, I beganne againe to anoint as before; and then taking a napkin lest it should slip, I bad the woman force herself as much as shee could possibly, especially when shee felt her pains and throwes coming; and then drawing sometimes directly and sometimes to the one side, so as to enlarge the passage,

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[a] Page 168. [b] Page 157.

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I drew in the child gently, turning the belly thereof downward, that the chin might not catch in the *os pubis*, as I have noted before."

In the "Childbearer's Cabinet," published in London, in 1653, no notice whatever is taken of turning either by external or internal manipulation.

In the "Compleat Midwife's Practice enlarged, by Dr. John Pechey," 1698, reference is made to version in footling cases,[a] and in arm presentations, both by external and internal manipulation. "If it happen that the child hasten to the birth, with the legs and arms distorted, the midwife ought not to hasten the woman, but immediately cast her on her bed, where she may direct the woman to roul herself to and fro, or else she may gently stroke the womb of the woman as she lies, till she have reduced the infant to a better posture; if this profit not, the midwife must take the legs and close them together, then if she can she must get her hand about the arms of the child, and in the safest way she can, direct it to its coming forth; *though it be the safest way to turn the infant* in the womb, and by that means compose it to the natural birth."[b]

Portal's "Compleat Practice of Men and Women Midwives," was translated in 1705, and was a very valuable acquisition. I shall not enter into details here, as I shall notice the original.

Daventer's work[c] was translated "by an eminent physician" in 1716, and in it allusion is made to turning by the foot, as a matter of course, and it is stated that in arm presentations it is not absolutely necessary to return the arm: "and though the arm hanging down in the passage may be less commodiously put back or retained, yet they are to penetrate and seek for the feet; very often the time is lost in putting back an arm or in retaining it, for experience teaches us that sometimes a hand

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[a] Page 142. [b] Page 143.

[c] Operationum Chirurgicarum novum Lumen exhibentium obstetricantibus, &c. Lugduni Batavorum, apud J. et H. Verbeck, 1733. (2nd Edit.)

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can more easily penetrate when the arm hangs down than when the same is thrust back again."[a]

Dionis' work on Midwifery[b] was translated in 1719, and was a further addition to the knowledge of the time. He seems to have lost all fear of footling cases, for he objects to their being put back,[c] and gives the preference to bringing down the feet rather than the head in some cross births. He says—"Of all labours, that in which the child presents with one arm only gives the sufferer the greatest trouble; for lying crossways in the womb, it is impossible for him to bring it away without turning it." "Some would have us fetch away the child by the head; but it is impracticable." "Whenever I attempted to do it by the head, I had a great deal of trouble, and was sure to be disappointed; wherefore I advise all men-midwives and others who practise the art, to turn the child and fetch it away by the feet."[d] In shoulder presentations, however, he recommends cephalic version, when possible, and likewise when the belly or back present.[e]

I have noticed particularly these works, because, though they are but translations, yet it was by them that the science of midwifery was improved in this country, and they illustrate its history as well as its original.

A "Mrs. Jane Sharp, Practitioner in the Art of Midwifery above forty Years," published the result of her experience in 1725; but she mentions neither cross-births nor version. Her work is far inferior to those of the French midwives of a still earlier period.

Mr. Chapman,[f] who is next on my list of authors, seems to have been so impressed with the value of this operation, that he somewhat overrates its applicability. Thus he remarks, "if

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[a] The Art of Midwifery Improved, translated from Daventer, p. 194.

[b] A General Treatise on Midwifery, &c. 1719.

[c] Page 210. [d] Page 228. [e] Page 230.

[f] A Treatise on the Improvement of Midwifery by Edward Chapman, 2nd edit. is dated 1735.

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he (the operator) finds the face of the child turned towards the os pubis, it is much better to turn the infant and bring it out by the feet, than to put the labour upon nature. And again, "thus I say, a child presenting with its head is often to be turned and delivered with the feet first: in all other postures whatever, always with the feet first, and always turned, except when it presents with the feet, and nature has saved the artist that labour and the mother that pain."[a]

Mr. Giffard published his cases in 1734.[b] He turned and delivered footling in funis, arm, and placenta presentations, in the second of twin children, and in convulsions.[c]

Mr. Dawkes, in 1736, published a curious catechism of midwifery, in which he follows the rules laid down by Chapman as to turning.[d]

In 1742, Sir Fielding Ould, of this city, published his valuable work.[e] He advises turning with the second of twin children,[f] in deformity of the pelvis,[g] and in arm presentations. "If the hand be not far advanced it must be instantly put back into the womb," &c. &c. "If the hand be so far advanced that it cannot be put back, the operator must dilate the orifice so as to thrust up his hand by the side of that of the infant, taking hold of the feet as above, *and in proportion as the feet advance forward the hand will retire into the womb.*"[h]

Dr. Brudenell Exton[i] (1751) advises the operation in arm, back, funis, and placenta presentations, and in the second of twin children. "But it may sometimes happen if the second child present right, (which it very seldom does,) and the pains strong; so that the waters form themselves immediately, and the head is perceived to follow fast; then, indeed, as nature will in all probability soon accomplish her own work, I think it

[a] Pages 32, 33.

[b] Cases in Midwifery, by M. W. Giffard; revised by Dr. Hody, 1734.

[c] pp. 40, 44, 46, 54, 118, 114.

[d] The Midwife rightly instructed, &c., by T. Dawkes, Surgeon, 1736.

[e] A Treatise on Midwifery, in three parts, by Fielding Ould, Man-midwife.

[f] p. 55. [g] p. 86. [h] Treatise, p. 108.

[i] A new and general System of Midwifery, 1757.

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may be very safe to leave it to her."[a] He also speaks of rectifying malpositions of head by external and internal manipulation.[b]

Mr. Pugh (1754) follows Chapman, and recommends turning in all presentations but the head and feet, and also in the second of twin children; "and so likewise, even in a natural posture, when, for certain causes, the delivery is not promoted, but is rather to be dreaded, and threatens death either to the mother or child, or both, as in violent hemorrhages of the womb, excessive weakness or convulsions, that may happen to the patient during labour, or the pelvis too narrow for the head to pass by the force of the pains, it may be necessary to turn and bring away the child by the feet; for as in all these cases, both mother and child run a great hazard of being destroyed, we must use all possible dexterity and expedition, whilst mother and child have a sufficient degree of strength to go through the operation."[c]

Prior to the date of the last work Dr. Smellie published his "Treatise on the Theory and Practice of Midwifery." I cannot exactly say in what year it appeared; the sixth edition which I possess is dated 1765. He mentions three classes of preternatural labours, in which turning is requisite and may be accomplished.[d]

Dr. Cooper[e] (1766) has given very distinct directions for the operation, and pointed out very accurately the cases in which it is admissable.

Dr. Burton,[f] (3rd ed. dated 1769,) Dr. Memis, of Aberdeen,[g] (1765,) and Dr. Foster, of this city,[h] (1781), each advise turning in all cross births, and the second named author in the second of twin children, and in floodings.

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[a] pp. 84, 73, 81, 83. [b] Page 67.

[c] Treatise on Midwifery, by Benjamin Pugh, Surgeon, 1754, pp. 34, 37, 39, 35.

[d] Vol. i. p. 207.

[e] A Compendium of Midwifery, by Thomas Cooper, M. D., London.

[f] An Essay towards a new System of Midwifery. 3rd Edit. 1769, pp. 198, 203.

[g] The Midwife's Pocket Companion, 1765, pp. 158, 174, 176.

[h] Principles and Practice of Midwifery, corrected by Dr. Sims, 1781, p. 190.

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From this period version was admitted amongst midwifery operations in all systematic works, and the opinions of practitioners became gradually more definite concerning the cases for which it is suited, and the mode of performing it. As the information contained in these writings will be found arranged in the subsequent portion of this essay, I shall merely (for the purpose of completing this part of the history of the operation) refer to the Works of Johnson,[a] Perfect,[b] Dease,[c] Spence,[d] Aitken,[e] Hamilton, sen.,[f] Edinburgh Practice of Midwifery,[g] Haighton,[h] Denman,[i] Dewees,[j] James Hamilton, jun.,[k] Merriman,[l] Gooch,[m] Conquest,[n] J. Clarke,[o] Ryan,[p] Ramsbotham,[q] Campbell,[r] Ashwell,[s] Burns,[t] F. Ramsbotham,[u] Maunsell,[v] Blundell,[w] Collins,[x] &c., besides a number of detached essays.

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[a] New System of Midwifery, 1769, p. 219.

[b] Cases in Midwifery, vol. i. pp. 31, 171, 222, 224, 263, &c. &c. vol. ii. pp. 110, 264, 271, 281, &c. &c.

[c] Observations on Midwifery, by William Dease, Esq., 1783, p. 54.

[d] System of Midwifery, 1784, pp. 246, 249, 274.

[e] Principles of Midwifery, 1784, p. 93.

[f] Outlines of the Theory and Practice of Midwifery, by Alexander Hamilton, M. D., 1784, p. 264.

[g] Anonymous, published in 1803, p. 279, *et seq.*

[h] Syllabus, 1814, p. 57.

[i] Introduction to Midwifery, (1st Edit. 1784 or 5; 7th Edit. 1832.) p. 344.

[j] Compendious System of Midwifery, 1825, p. 283.

[k] Outlines of Midwifery, 1826, p. 66.

[l] Synopsis of difficult Parturition, (4th Edit. 1826,) p. 68.

[m] Lectures on Midwifery, edited by Skinner, 1831, p. 232.

[n] Outlines of Midwifery, (5th Edit. 1831,) p. 143.

[o] London Practice of Midwifery, (1st Edit. 1808, said to be by Dr. John Clarke,) 6th Edit. 1833, p. 238.

[p] Manual of Midwifery, 1831, p. 535.

[q] Practical Observations and Cases, 2 vols. 1832, vol. ii. p. 47.

[r] Introduction to the Study and Practice of Midwifery, 1833, p. 283.

[s] Practical Treatise on Parturition, 1834, p. 353.

[t] Principles of Midwifery, (I do not know the date of 1st Ed.) 9th Ed. 1837, p. 416.

[u] Lectures on Midwifery, &c. in Medical Gazette for 1834, p. 548.

[v] Dublin Practice of Midwifery, 1834, p. 142.

[w] Principles and Practice of Obstetricy, 1834, p. 380.

[x] Practical Treatise on Midwifery, 1835, p. 64.

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I shall now proceed to sketch the opinions of the earlier French authors in midwifery, so far as I have access to their works.

The earliest of these works is by Louise, Bourgeois, dite Boursier, Sage-femme de la Royne,[a] published in 1617, and she appears to have deserved her name as regards this operation. She speaks of turning in shoulder, side, arm, and funis presentation.[b] Touching the latter she observes:

"Il faut remettre le nombril, (the funis) scituer la femme au travers du lict, la teste et les reins fort bas, afin de faire rentrer ce qui se presente de l'enfant, puis s'estant frotter les mains de beurre frais, *chercher moyen de trouver les pieds* et les conduire à bord, puis faire coucher la femme sur la costè ou vous avez amenez les pieds: puis la remettre sur les reins et si elle a douleur, pendant qu'elle dure, tirer doucement l'enfant, si elle n'en a point, la faire efforcer et pendant l'effort, l'attirer peu à peu et lui donner des relasches pour reprender ses forces," &c. &c.

We have already seen that Guillemeau (before 1635) had taught the propriety of bringing down the feet, which method it is said he learned from Ambrose Parè, upon whose instructions, however, he appears to have improved considerably.

M. Viardel[c] (1674) speaks of this operation as customary: in arm presentations he tells us "aller saisir les pieds comme on a coutûme de le faire." He mentions his turning the head in a face presentation, and his turning by the feet in malpresentations, and in the second of twin children.[d]

In speaking of knee presentations he says: "Entre une infinitè de postures auqueles l'enfant se presente venant an monde, une des moins difficiles à redresser, c'est lors qu'il presente

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[a] Observations sur la Sterilitè, perte de Fruict, feconditè, accouchemens, &c. Paris, 1617.

[b] Pages 77, 78, 79, 80.

[c] Observ. sur les Accouchemens, 1674.

[d] pp. 106, 112, 142.

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par les genoux à laquelle on peut remedier dans fort peu de temps, pour le peu qu'on soit versè dans la practique des accouchemens, par ce que *dans toutes les mauvaise presentations de l'enfant telles qu'elles soient, nous sommes obligez d'aller chercher les pieds,* lesquels sont bien plus faciles a trouver lorsqu'il se presente par les genoux comme en estant plus pres qu'en toutes autres postures,"[a] &c.

Marguerite du Tertre, (1677) seems perfectly familiar with the operation, and describes it with great clearness in cases of twins or malpresentations. Her book is in form of question and answer, one of which I here extract:—

"Quand il presente un bras ou une epaule, que faut il faire? Si c'est un bras que l'enfant presente, et que la teste soit proche du passage, il faut reduire le bras derriere la teste, la mettre droitte, en cas qu'elle fust de costè. Mais s'il presente l'épaule avec le bras, if faut aller chercher les pieds, et les tirer à l'ordinaire."[b]

Velpeau states that this operation was known to St. Germain, (1650,) Fournier, (1676,) and Amand, (1713,) but I have not access to their works.[c]

Paul Portal (1685) is very clear in his directions upon the point; he recommends putting back the arm, and turning by the feet in arm presentations.

"Mais si on ne le peut remettre dans la matrice quoiqu' assez dilatée, celuy qui opere, doit glisser sa main à la faveur des bras de l'enfant, jusques à son corps, puis suivre de la cuisse à la jambe et aux pieds, faisant ce qu'il pourra pour les amener tous deux dehors; ce qui seroit d'un grand secours pour la femme et pour celüy qui opere: mais ne les pouvant pas avoir tous deux, il faut s'attacher à celuy qu'on trouvera, et le tirer,

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[a] Page 149.

[b] Instruction familiere et tres facile, faite par Questions et Reponses touchant les choses principales q'une sage-femme doit scavoir, &c. 1677, pp. 96, 106, 113.

[c] De l'Art de l'Accouchemens, p. 335.

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sans se mettre en peine d'aller chercher l'autre, qui se trouve quelquefois fort engagè.[a]

M. Peu[b] speaks of both species of version, bringing down the head in shoulder presentations,[c] and the feet in arm cases.

If the arm cannot be returned he observes "Nous nous contentons de le repousser et de le faire rentrer, pour chercher les pieds de l'enfant, les amener et le tirer selon la metode dont j'ai parlè en divers endroits de ce livre."[d]

Mauriceau[e] (1715) advises "que toutes les fois que l'enfant se presente en mauvaise posture, il est plus sur et c'est plutôt fait, de le tirer par les pieds." He indicates a point of importance as to the time of operating in some cases.

After relating a case of arm presentation, in which he turned the child, he proceeds: "Il faut donc remarquer que lorsqu'on s'apperçoit qu'un enfant se presente en mauvaise posture, devant que les membranes des eaux soient rompuës, il ne faut pas toujours attendre que ces membranes, se rompent d'elles mèmes; car il faut quelquefois les rompre, lorsque la matrice est suffisamment dialatèe à y pouvoir introduire aisement la main, quoy faisant, on retourne l'enfant avec une bien plus grande facilitè, sans faire violence à la matrice, quand il est encore dans toutes ses eaux, qui n'etant pas ecoulèes, et faisant une espece de vuide, joint a leur humiditè, rendent l'operation beaucoup moins laborieuse pour la mere et pour l'enfant, que lorsque les eaux etant entierement evacuèes, la matrice vient à embrasser immediatement de toutes parts le corps de l'enfant, que l'on ne peut retourner pour lors, sans faire une violence à la mere."

We have heretofore quoted the opinions of Dionis, whose work was published in French in 1718, and in English in 1719.

In 1726 the valuable work of De la Motte[f] appeared, he

[a] La pratique des Accouchemens, p. 33.

[b] La pratique des Accouchemens, 1694.

[c] Page 395. [d] Page 401.

[e] Mal. des Femmes grosses, &c. p. 266, Obs. 321. 1715.

[f] Traite des Accouchemens, 1726.

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he treats clearly both of cephalic and podalic version,[a] and objects to the old plan of putting back the presenting part.[b]

Jaques Mesnard[c] (1753) recommends turning in malpresentation.

Puzos (1759) advises the same in "accouchemens contre-nature," and in funis presentations.[d]

Subsequent to the date of Puzos' work, we find more or less information on the subject, in the writings of Astruc,[e] Raulin,[f] Deleurye,[g] Maygrier,[h] Lachapelle,[i] Baudelocque,[j] Boivin,[k] Capuron,[l] Gardien,[m] Velpeau.[n]

Upon comparing the knowledge of the early English and French writers, it must be admitted (frankly, though reluctantly) not only that the former are far inferior to the latter, but that, on this point at least, the English were indebted to the French for a knowledge of the operation.

I regret that I cannot give much of the early history of this operation amongst the Germans; nor is much to be found in those who profess to notice its history. Kilian[o] refers us to the works of Rueff (1600,) Justin Siegmundin, I. Van Hoorn, Stein,[p] Chernel,[q] &c., and Froriep[r] gives a list of authors among whom

[a] Pages 173, 369. [b] Page 383.

[c] Le Guide des Accoucheurs, &c. 1753, pp. 245, 293.

[d] Traité des Accouchemens, pp. 174, 177.

[e] L'Art d'Accoucher, &c. &c. 1766, p. 132.

[f] Instructions succinctes sur les Accouchemens. Paris, 1770, p. 216.

[g] Traite des Accouchemens, 1770, p. 232.

[h] Nouveaux Elemens de la Science et de l'Art des Accouchemens, 1814, p. 320.

[i] Pratique des Accouchemens, 1821, pp. 85, 90, 140, &c.

[j] L'Art des Accouchemens, 6th Edit. 1821, pp. 625, 660, &c.

[k] Memorial de l'Art des Accouchemens, 1817, p. 213.

[l] Cours des Accouchemens, 1828, p. 330.

[m] Traité des Accouchemens, 1824, p. 364.

[n] De l'Art des Accouchemens, 1835, p. 385, Brussels Ed.

[o] Die Operative Geburtshülfe, vol. i. p. 339.

[p] De Versionis Negotio pro genio partus, &c. 1763.

[q] Diss. de necessario Fœtus in omni Partu præternaturali qui a situ Fœtus vitiato, dependet, versione cum suis cautelis, 1756.

[r] Handbuch der Geburtshülfe, p. 410.

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the earliest names are those of Kienman,[a] Metzger,[b] Dethabring,[c] Boessel,[d] Bausch,[e] Weiss,[f] &c.

Amongst the later writers, I possess the works of Henckel,[g] Deventer (1733,) Plenck,[h] Wigand,[i] Carus,[j] Osiander[k] sen., Siebold,[l] Froriep,[m] Osiander[n] jun., Jöerg,[o] Busch,[p] Rosshirt,[q] Kilian.[r]

All these writers treat more or less systematically of version; but, as they are subsequent to the period of its adoption generally, I have not deemed it necessary, in this place, to give extracts from them.

The operation is mentioned as a customary one in the writings of Asdrubali[s] and Bongioanni,[t] the only Italian midwifery authors I have at hand.

Having concluded this investigation into the history of version, I shall next give all the statistics I have been able to obtain as to its frequency and success. In my researches, I have often had to regret the want of attention to minute details, so manifest in many reports of hospitals, dispensaries, &c. I have also, for greater accuracy, quoted the source of my information.

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[a] De Versione, &c. 1757.

[b] De Versionis in Partus negotio periculis, &c. 1788.

[c] De determinandis Finibus, &c. 1788.

[d] Von der Wendung, 1795.

[e] Indicationes pro Conversione Fœtus in partu, &c. 1794.

[f] Neues Regulativ zur Wendung, 1824.

[g] Abhandlung von der Geburtshülfe, 1770, p. 545, et seq.

[h] Elementa Artis Obstetriciæ, 1781, p. 159.

[i] Geburt des Menschen, 1820, vol. ii. p. 174.

[j] Lehrbuch der Gynæcologie, 1820, vol. ii. p. 292.

[k] Handbuch der Entbindungskunst, 1830, vol. ii. p. 320.

[l] Lehrbuch der Gebustshülfe, 1831, p. 268.

[m] Handbuch der Geburtshülfe, 1832, p. 404.

[n] Die Ursachen und Hulfsanzeigen der unregelmässigen und schweren Geburten 1833, p. 320.

[o] Handbuch der Geburtshülfe, 1833, p. 436.

[p] Lehrbuch der Geburtskunde, 1833, p. 544.

[q] Die Anzeigen zu dem Gebutshülflicher Operationen, 1835, p. 69.

[r] Die Operative Geburtshülfe, vol. i. p. 339.

[s] Trattato Generale di Ostetricia, 1812, vol. ii. p. 123.

[t] Lezioni Elementari di Ostetricia, 1834, p. 294.

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DATE.	AUTHOR.	HOSPITAL, &c.	CASES OF VERSION	TOTAL NO. OF CASES.	QUOTED FROM.
1781	Dr. Bland,	Westminster Dispensy.	9	1,897	Merriman's Synopsis.
	Dr. Jos. Clarke,*	Dublin Lying-in Hosp.	48	10,387	Trans. of Assoc. vol. I.
	Dr. Merriman,	London, Private Pract.	14	2,947	Synopsis, 4 ed. p. 335.
1818	Dr. Granville,	Westm. Dispensary,	5	640	Report of, p. 25.
1826 to 1833	Dr. Collins,	Dublin Lying-in Hosp.	33	16,654	Prac. Tr. on Mid. p. 73.
1828	Dr. Cusack,	Wellesley Dispensary,	5	313	Dublin Hosp. Reports, vol. v. p. 495.
1832	Dr. Maunsell,	Do.	2	442	Edin. Journal, No. 117.
1833	Do.	Do.	0	416	Dub. Jour. vol. v. p. 367.
1828	Mr. Gregory,	Coombe Hospital,	3	691	Dub. Hosp. Rep. vol. v.
1834 to 1837	Dr. T. Beatty,	Cumberland-st. Hosp.	6	1,182	Dublin Jour. vol. viii. p. 66, vol. xii. p. 273.
1836 1837 1838	Dr. Churchill,	Western Lying-in Hos.	8	990	See Reports.
			135	36,569	

* This is somewhat uncertain. Dr. Clarke gives 48 *cross births*, which were treated in the usual manner—I suppose by version.

DATE.	AUTHOR.	HOSPITAL, &c.	CASES OF VERSION	TOTAL NO. OF CASES.	QUOTED FROM.
	Mad. La Chapelle,*	Maison d'Accouch.	155	15,654	Pratique des Accouch. p. 198.
Dec. 1799 to July, 1806	M. Baudelocque,*	Maison d'Accouch.	132	12,751	L'Art des Accouchm. vol. ii. p. 554.
	Mad. Boivin,*	Maternité, . . .	218	20,357	Memorial de l'Art, &c. p. 354.
1806 to 1808	M. Ramboux,	Clin. de Colmar,	0	275	Bul. de la Faculté, &c. vol. ii. p. 73.
1808	Do.	Clin. de Leige, . .	1	216	Do. do.
1825 1826	Dr. Merrem,	Cologne, . . .	3	157	Bull. de la Faculté, &c. vol. xvii. p. 283.
1828	M. Papavoine,	St. Louis, Paris,	1	240	Jour. de la Progrés de Med. vol. xiv.
1829	. . . . . .	Hotel Dieu, Paris,	2	250	Velpeau, l'Art d'Acc. p. 50.
1830 1831	M. Cinisalli,	Clin. de Pavia, . .	2	94	Gaz. Med. de Paris, 1835.
			514	50,024	

* Merriman has given a different total amount of cases, for which I cannot account. I have thought it best to take the numbers from the original works.

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DATE.	AUTHORS.	HOSPITAL, &c.	CASES OF VERSION	TOTAL NO. OF CASES.	QUOTED FROM.
1789 to 1792 and 1801 to 1806	M. Böer,*	Vienna, ...	51	6,666	Die Natürliche Geburtshülfe, &c. vol. i. pp. 72, 148, 237, vol. iii. pp. 62, 130, 245.
	M. Naegelé,	Heidelberg, . . .	22	1,411	Velpeau's Tab. View.
1801 to 1807	G. M. Richter,	Moscow, ...	25	2,571	Synos. Prac. Med. Obstetric. p. 416.
	Do.	Private practice, .	27	624	
1812 and 1813	E. Von Siebold,	Wurzburgh Hospital.	6	310	Siebold's Journal, fur dieGeburtshülfe,&c. vol. i. pp. 114, 576.
from 1818 to 1829	Do.	Berlin Hospital, .	60	2055	Do. vol. iii. to x.
1819 1820	M. Ritgen,	Giessen, ...	1	180	Do. vol. vi. pp. 34, 262.
1814 to 1824	M. C. G. Carus,	Dresden, . . .	29	2133	Do. vol. vi.
	M. Kilian,	Clin. de Prague, .	63	2250	Bull. de la Faculte, &c. vol. xxv. p. 352.
1824 to 1827	M. Kluge,	La Charité, Berlin,	19	1254	Siebold's Journal, vols. vi. vii.
1825	Prof. Andrée,	Breslau, ...	5	181	Do. vol. vi. p. 154.
1825 to 1828	Dr. Brunatti,	Dantzic	3	380	Do. vols. vii. ix.
1825 1826	Dr. Theys,	Trier, ...	1	49	Do. vols. vii. viii.
1826	Dr. Henne,	Konigsberg, . . .	2	136	Do. vol. viii. p. 121.
1826	Dr. Voigtel,	Magdeburg , . . .	1	29	Do. vol. viii. p. 831.
1827	Dr. Küstner,	Breslau, ...	6	176	Do. vol. ix. p. 92.
1829 to 1832	Dr. Adelman,	Fulda, ...	1	166	Do. vols. xi. xiv.
1830 to 1832	Dr. Siebold,	Marburg, . . .	8	321	Do. vols. xi. xii. xiii.
1833 1835 and 1836	Do.	Gottingen, . . .	7	504	Do. vols. xv. xvi.
			347	21,415	

* I have taken these numbers from M. Boer's work, and am unable to reconcile them with those generally quoted.

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Thus we see that the records of English practice yield 36,569 cases and 135 cases of version, or 1 in 267½. French practice 50,024 cases and 514 cases of version, or 1 in 97¼. And German practice 21,415 cases and 347 cases of version, or 1 in 61¾. The whole number of cases is 107,978, and of version 996, or 1 in 111[illegible].

It is not so easy to make out a satisfactory table shewing the danger of the operation to the mother and child, from the want of details. Many writers do not mention whether any of the mothers died, and some omit the result as regards the child. I cannot forbear expressing my estimation of the minuteness and accuracy of Dr. Collins's statements, and the excellence of the tabular views he has given.

In the following table I have taken all the numbers upon which I could depend, and though the list is not extensive, I suspect that the average mortality will be found pretty correct.

AUTHORS.	NO. OF VERSION CASES.	MOTHERS LOST.	CHILDREN LOST.
Mad. LaChapelle,	155	0	45
Mad. Boivin,	218	0	48
Dr. Clarke,	45	6	35
Dr. Collins,	33	3	13
Dr. Cusack,	5	0	2
Mr. Gregory,	3	0	0
Dr. Beatty,	6	1	6
Dr. Churchill,	8	0	7
Professor Andrée,	5	0	3
Dr. Kluge,	7	1	3
Dr. Küstner,	6	0	2
Dr. Adelmann,	1	0	0
Dr. Böer,	26	0	10

Thus, in 148 cases, where the result to the mothers is specially mentioned, eleven mothers died, or rather more than one in thirteen.

In 518 cases, where the result to the child is detailed, 174 children were lost, or rather more than one in three.

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From the quotations and references I have made in the former part of this paper, it will be easily gathered that the *object* of the operation is threefold.

1. To place the head in a more favourable relation to the pelvis, or to substitute the head for some other presentation.

2. To substitute the inferior extremities for some other, less favorable presentation.

3. To hasten the termination of labour, in consequence of complications, as *convulsions,*[a] *flooding, prolapse of the funis,*[b] &c.

It has been proposed[c] to turn and deliver instantly in case of the sudden death of the mother, instead of having recourse to the Cæsarean section; but the mortality amongst children so delivered (1 in 3) would preclude this application of it.

As it regards the complications in which this operation has been recommended, this is not the place to enter upon the consideration of them; I merely repeat what others have said or done, without at present questioning or affirming the propriety of such practice.

There is so much difference in the means by which the first and second objects are attained, that it is necessary to say a few words upon each.

1. *Version by the head* or *cephalic version* as it is termed, (*Velpeau,* &c.,) consists (*a*) in clearing the upper outlet of any part which may hinder the descent of the head; (*b*) in seizing the head and bringing it down to the brim of the pelvis; (*c*) or in rectifying the malpositions of the head.

As the majority of children enter the world head foremost, this mode was decided to be the standard of natural presentation at a very early period, and attempts were made to correct any deviations. Rhodion, Raynalde, &c., endeavour to change footling into head presentations, but not by internal manœuvre.

[a] Gaffird's Cases, p. 114. Ramsbotham's Observations, vol. ii. p. 264.

[b] Merriman's Synopsis, p. 100. Gooch's Lectures, p. 239. Conquest, Outlines, p. 143, &c. &c.

[c] Siebold's Journal, fur die Geburtshülfe, &c. vol. vi. p. 506.

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After the discovery by Amb. Parè, Guillemeau, and others, of the ease with which labour could be terminated by bringing down the feet, cephalic version went very much out of fashion. By the great bulk of recent writers (especially in our own country) it is either not mentioned at all or with reprobation. Still there are cases in which its suitability could not be overlooked, and in consequence we find an admission here and there of its utility. Smellie recommends it in certain malpositions of the head, Mauriceau[a] advises it if the neck present, and De la Motte[b] and Roux[c] speak of succeeding in this manner. Le Roi preferred it generally to version by the feet.[d]

These, however, were only exceptions to the rule, it remained for Flamant,[e] Professor at Strasburgh, to recal the attention of the profession to the operation in such a way as to procure its readmission (at least on the Continent) into the number of valuable obstetric operations. His example has been followed by several German and French writers. Labbe,[f] Eckhardt, and Wigand[g] published successful cases in 1803; Schnaubert in 1815; D'Outrepont and Regnaud in 1825. Busch[h] gave an account in 1826 of fifteen cases, in which fourteen infants were born living. In 1827 Ritgen collected forty-five successful cases.[i] Riecke has had sixteen cases.[j] It has been eulogized by MM. Vallèe, de Roche, Ubersaal, (1823), Stolz,[k] and Toussaint.[l] Jöerg and some others advise the head to be seized and placed in position when nearest the neck, and Gardien[m] seems inclined to recommend it strongly, "if only practitioners were

[a] Traitè des Accouchemens, p. 262.

[b] Traitè Compl. des Accouchemens, p. 435.

[c] Obs. sur les Portes, p. 232.

[d] Pratique des Accouchemens, 1777, p. 9.

[e] Journal Complement, 1799, vol. xxvii. p. 263; vol. xxviii. p. 193; vol. xxx. p. 3, &c.

[f] Journal Complement, 1803.

[g] Ib. vol. xxx. p. 3.

[h] Ibid.

[i] Ib. vol. xxx.

[j] Archiv. Gen. de Med. vol. xxii.

[k] Journal Hebdom., 1831, vol. i. p. 5.

[l] Annal. de la Med. Phys. vol. vii. p. 470.

[m] Traitè d'Accouchemens, vol. ii. p. 436.

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as well versed in the use of the forceps as the Professor of Strasburgh." One of the few British writers who speak well of it is the distinguished Professor of Glasgow, Dr. Burns, who says:

"For instance, if the patient be known usually to have a short labour, if the pains be brisk, the os uteri dilated or in a relaxed and easily dilatable state, the liquor amnii retained and the head moveable, then the head may, without any difficulty or much irritation, be placed in the proper position, with a fair and reasonable chance of success."[a]

I may also cite the testimony of Dr. Dewees, who acknowledges that "should nothing but the position of the head, with a slightly diminished capacity in the antero-posterior diameter, affect the labour, we may sometimes enable the woman to deliver herself, provided the waters have discharged themselves, by the aid of two or three fingers within the vagina and applied to the side of the head, so as to carry the vertex towards one of the acetabula;"—"when thus placed we may commit the termination to the natural efforts, provided no other circumstance complicates the labour."[b]

It is stated as *objections* to the employment of this kind of manipulation, that it is more difficult to catch firm hold of the head and to bring it to the upper outlet; that if we succeed in bringing it to the brim we can do no more, but must then leave it to nature or use the forceps. To these and similar objections Velpeau[c] has returned the following answer: "1st. It is not always very difficult to seize the head and to exert considerable force upon it. 2ndly. If the waters have not been long discharged, one may often without difficulty seize the vertex and bring it to the centre of the brim, however far it may have been distant. 3rdly. That in general it is better to force the head to descend by pushing up the presenting part, than by bringing

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[a] Midwifery, p. 418. [b] System of Midwifery, p. 293.

[c] L'Art des Accouchemens, p. 390, Brussells Edit. I take this opportunity of acknowledging the aid I have derived in the composition of this Essay, from the researches of M. Velpeau.

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down the head. 4thly. That delivering by the breech is far from being a simple and safe operation; as regards the child it is less so than cephalic version, even if the forceps should afterwards be applied."

No one can for a moment deny that there is considerable weight in the objections I have named, but a more detailed investigation will shew that they are valid only against an indiscriminate employment of the operation, and not against its use in the cases to which it ought to be confined. These cases may be divided into two classes: 1, where the pelvis is of sufficient size, and nothing but the *malposition* of the child's head calls for interference; 2, in certain *malpresentations*, such as the neck or shoulder, and perhaps in a few arm cases, if the uterus be not strongly contracted, and especially if the waters have not escaped.

It is evidently not calculated for any case where immediate delivery is necessary.

Its *advantages* are found to be, 1st, a greater facility in reaching the head, for it is not proposed to be used in cases where the feet are near the os uteri; and 2ndly, a vast saving of infantile life. This operation will be no more fatal to the child than natural labour, if performed early, whereas it is said that one-fourth of all footling cases die,[a] and we have seen that in version by the feet one in three die.[b]

2. *Turning by the feet* or *podalic version*. (*Velpeau*.)—This was known to the ancients,[c] but confined by most of them to the case of dead children. To Ambrose Parè we are indebted for demonstrating its facility and comparative safety

[a] See Boer, Stein, Osiander, Carus, Collins, &c. &c.

[b] See page 379.

[c] "We learn from *Œtius*, who lived probably about the fifth century, that *Philomenes*, whose writings (except those preserved by Œtius) are now lost, discovered a method of turning and delivering children by the feet in all unnatural presentations." Denman's Introduction, p. 345.

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and for inculcating it in practice. His distinguished pupil, Guillemeau, followed in his footsteps, to be himself succeeded by others of brilliant talent and profound research, who cleared up the difficulties and settled the limits and laid down the rules for the operation. I have already referred specifically to most of them, and have quoted from so many of the earlier writers, that I shall now merely refer back the reader to the first part of this paper.

The peculiar *advantages* of version by the feet are—

1. That it gives to the operator the entire control over the whole process of the labour, that he can regulate its duration, either acting with, or independent of, the pains.

2. That though inferior in its results to labour with head presentation, it is about equal to any other and superior to some.

3. That in some cases it is the only chance of saving the child's life or of avoiding evisceration.

4. That in some cases it affords a probability of saving the mother's life when other means are hopeless, (*flooding, &c.*)

On the other hand its *disadvantages* are not to be overlooked, for—

1. From the distance the hand has to traverse,—the difficulty of seizing the feet and of turning the child in utero, there must ever be a fearful chance of injury to the mother.

2. The mortality amongst the infants thus brought into the world is very great; as far as our statistics extend, they yield 174 out of 518 delivered or about 1 in 3.

From all we have said it will not be difficult to specify the *cases to which the operation is applicable.*

1. It may be used in all cases of *malpresentation,* whether of the superior extremities or trunk.

2. If upon the introduction of the hand, it be found impossible to rectify the *malposition* of the head, we are advised to seek for the feet and bring them down.

3. In all cases of placenta prævia, many cases of ruptured

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uterus, convulsions, prolapsed funis, &c. the operation is available and has been used with great success.

It is right to mention that Denman and some other writers recommend turning when the pelvis is slightly too narrow for the child's head, but I must confess that this practice appears to me more than questionable.

The next point for our investigation is the *period most suitable* for making the attempt, so as not to interfere rashly on the one hand, nor to delay too long on the other, "*neque temerè nec timidè*——." Of the two errors it is hardly too much to say, that excessive delay is the most serious.

1. If the case be one requiring *cephalic* version for the rectification of a *malposition*, it is clear that the operation can only be safely, if at all, performed before the uterine efforts have wedged the head into the upper strait; the attempt should be made so soon as it is evident that the natural powers will not rectify the malposition. It will be an additional motive for *prompt* assistance, if we find the pains violent, and that the patient have had many children, lest the head, not being able to enter the brim, should be turned aside, and forced through the uterine or vaginal parietes.

2. (*a*) If we are called to an arm presentation or any demanding *podalic* version, before the escape of the liquor amnii, and we find the *os uteri* hard and undilatable, it will be advisable to wait until some change takes place, before we introduce the hand: neither is there any risk worth mentioning, provided we remain with the patient to operate if the waters break.—(Baudelocque, Hunter, &c.)

(*b*) If we see the patient before the rupture of the membranes, and find the os uteri soft and dilated or dilatable, there is no reason for deferring the attempt, if the case require this kind of interference, and great advantage in operating whilst the uterus is distended. "If we take it when the os uteri will admit the finger and knuckles, it is the better time, because we then turn the child as if in a bucket of water; and this gives us

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so clear an advantage that it needs no explanation."—(Clarke,[a] Foster,[b] Gooch,[c] Ashwell,[d] Ramsbotham.[e])

(*c*) If the os uteri be dilatable, the sooner the attempt is made after the escape of the waters the better. Gardien[f] says that the most favourable moment is just when the waters break.

(*d*) After the escape of the waters, we sometimes find the os uteri neither rigid nor much dilated, and the pains moderate. In such cases, no time should be lost: the hand should be introduced into the vagina, and gentle yet firm and persevering efforts made, to pass the hand into the uterus. Dr. Blundell says[g]—"In ordinary cases, if the mouth of the womb be as broad as a crown piece, and if the softer parts be relaxed thoroughly, the introduction of the hand is not exposed to greater risk than usual; there seems to be no circumstances preclusive of the operation, and the sooner you commence the better."

(*e*) So far, although the cases I have noticed have increased in difficulty, yet in none of them has any very great difficulty, either of decision or of execution, been experienced. We are, however, often called to a class of cases where our utmost judgment, patience, and skill will be needed. I refer to those cases of arm presentation, where, in the language of Foster, "the membranes have been a long time ruptured, the waters totally evacuated, and the womb closely contracted around the fœtus, which is then thrust considerably into the pelvis, the parts of the woman being dry, hot, tender, and often in a state of inflammation and tumefaction, especially when unskilful endeavours have been used either to extract or turn the fœtus, or to dilate the parts."[h]

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[a] London Practice of Midwifery, p. 245.

[b] Principles and Practice of Midwifery, p. 196.

[c] Lectures, p. 233.

[d] On Parturition, p. 355.

[e] Observations, vol. ii. p. 48.

[f] Traité d'Accouchemens, vol. ii. p. 439.

[g] Principles and Practice of Obstetricy, p. 391.

[h] Principles and Practice of Midwifery, p. 196.

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In such a case, to force the hand through the os uteri would be to rupture that organ, and cause the death of the woman. It is admitted by all authors, I believe, that the operation must be postponed for a time, and means tried to soften the uterus and suspend its contractions. For this purpose, all are agreed in the propriety of taking away sixteen or eighteen ounces of blood from the arm, and following up this with a large dose (gtt. lxxx. to gtt. c.) of laudanum.—(Denman, Merriman,[a] Hamilton, jun., Ashwell,[b] Burns,[c] Blundell.[d]) Dr. Collins[e] has proposed another remedy of great value. He says—"In such a situation, where the individual is strong and plethoric, twelve or fourteen ounces of blood should be taken from the arm, and a table-spoonful of the following mixture given every half hour, which I have found exceedingly useful both in quieting uterine action and inducing relaxation:

℞. Aquæ Fontis, ℥vi.
Antim. Tartar. gr. iv.
Aceti opii, gtt. xxx. M."

By these means, after the lapse of a short time, we shall find the uterus relaxed, and the os uteri soften, so that with a little patience, and gentleness, and time, we may attain our object.

3. When the case is one of placenta prævia, or even of accidental hæmorrhage, (if it demand delivery,) it is a general rule to operate as soon as possible. The os uteri seldom offers any resistance, owing to the loss of blood, and as this loss is necessarily increased by the natural efforts in unavoidable flooding, it is evident that the earlier we deliver the better for the patient.

If we decide upon trying this operation in convulsions, prolapsed funis, or ruptured uterus, it will be wise to attempt it as soon as the state of the os uteri will permit.

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[a] Synopsis, p. 89.
[b] On Parturition, p. 356.
[c] Midwifery, p. 420.
[d] Obstetricy, p. 397.
[e] Practical Treatise, p. 67.

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Method of operating.—This operation is usually divided into three stages; the introduction, the turning, and the extraction. I shall shortly describe these in each kind of version.

1. *Cephalic version.*—The rectum and bladder having been previously emptied, the patient is to be placed in the posture most convenient to the operator; some recommend that she should lie on her back, (Chapman, Deakes, Smellie, Dewees,) others that she should kneel (F. Ould) or lie on her left side, as in ordinary labour. The latter position is generally adopted in this country. Whichever hand we choose to operate with, is to be well oiled or soaped, and then insinuated through the os externum edgeways. Great gentleness will be necessary, and contrary to the advice of some, it would seem better to do this during an interval of pain. When the hand is nearly all in the vagina, it will be necessary to change its direction, from that of the axis of the lower outlet to that of the upper outlet. This will avoid all injury to the vagina, and will bring the points of the fingers to about the situation of the os uteri. Through the os uteri (and membranes if entire) the hand is to be insinuated very gradually, in a conical form and during the interval of the pains, holding still but not losing ground when the pain comes on. When the hand is in the womb, if our object be to rectify the position of the head, it should be seized, and placed in one of the oblique diameters of the brim, with the posterior fontanelle corresponding to one of the acetabula, i. e. in the first or second position. If our object be to change the presentation, for example, to substitute the head for a shoulder, we must gently push up the shoulder, and then seizing the head bring it down to the brim and place it in the most favourable relation to the pelvis.

Having now done all that we can by the hand alone, it may be withdrawn, and the further progress of the labour left to the efforts of nature; should these be found inadequate, recourse must be had to the forceps.

This is the ordinary method of placing the head in position

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for descending, but Wigand has stated that it is possible, before the waters have escaped, to change the position of the head, or even the presentation, by external abdominal manipulations. Velpeau confirms this from his own experience, and something similar is stated by Sennert[a] and Martins.[b] Riecke has also related several such cases. Dr. Burns,[c] in a note to his ninth edition, states, that "Mr. Buchanan, of Hull, informs me that he succeeded, in one instance lately, 'where the left side of the breast of the fœtus lay diagonally over the pelvis with the head forward,' in bringing the head right, by making the patient kneel and raise the breech, whilst the shoulders were brought as low as possible. The water had not been discharged. The situation of the head, when it came down, was made more favourable by the finger. The child was alive."

2. *Podalic version.*—I shall not repeat what I have said as to the mode of introducing the hand through the os externum and os uteri. The hand and arm will be our guide, for it is better not to attempt to put it back, much less to separate it "after the manner of the ancients." "In no case is it necessary or in any wise serviceable to separate the arm of the child previous to the introduction of the hand of the operator. In some cases to which I have been called, in which the arm had been separated at the shoulder, I have found greater inconvenience, there being much difficulty in distinguishing between the lacerated skin of the child and the parts appertaining to the mother. The presenting arm is never an impediment of any consequence in the operation, and therefore, in my opinion, ought not to be regarded, or on any account removed."[d] Arrived at this point, an examination should be made as to the position of the child's body; having ascertained all about this, the hand is to be passed over the *front* (chest and belly) of the child, as it is generally in front that we meet with the

[a] Deventer, p. 272.
[b] Arch. Gen. de Med. vol. xxii. p. 385.
[c] Midwifery, p. 417.
[d] Denman's Introduction to Midwifery, p. 352.

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feet. It is often a matter of difficulty to reach them, as well from the distance to be traversed, as from the contraction of the uterus. The caution of Velpeau is of great value:

"Je dois aussi prevenir les jeunes practiciens, que, pour arriver au fond de l'uterus, il faut porter l'avant bras beaucoup plus profondement qu'on ne le croirait au premier abord, et que, pour se mettre en rapport avec l'axe du detroit superieur, la main a besoin d'etre bien plus fortement inclinèe en avant, qu'on ne pourrait se l'imaginer d'après l'examen d'un bassin sec."[a]

This part of the operation should be slowly and gently performed resting occasionally, and keeping the hand quite still and flat upon the body of the child during a pain, so as to avoid both injury to the mother and great pain to ourselves from the violence of the uterine contractions.

Having found one or both inferior extremities, "before we begin to extract we must examine the limbs we hold, and be assured that we do not mistake a hand for a foot. The feet being held firmly in the hand, must then be brought with a waving motion slowly into the pelvis. While we are withdrawing the hand, the waters of the ovum flow away, and the uterus being emptied by the evacuation of these, and the extraction of the inferior extremities, we must wait till it has contracted, and on the accession of a pain the feet must be brought lower till they are at length cleared through the os externum."[b]

The *turning* of the child is accomplished during a interval of pain, the feet being brought over the front of the child, and not over the back, which would risk dislocation of the spine (Dewees,[c] Conquest[d], Gooch,[e]) as the feet are drawn down the hand will ascend.

The extraction of the child is to be accomplished gradually during a pain, and in drawing downwards we should be careful not to place the fœtus in a wrong position as to the pelvis (Vel-

[a] L'Art des Accouchemens, p. 395., Ed. de Bruxelles.

[b] Denman's Midwifery, p. 347.

[c] Compendious System, p. 286.

[d] Midwifery, p. 146.

[e] Lectures, p. 235.

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peau.)[a] Some advise us to leave the labour to nature after turning the child, but to this Dewees objects. He says: "The whole act of turning should be considered as one of necessity rather than of choice; therefore where it is proper to commence with it, it is we believe always proper to finish with it, and not trust the delivery to the powers of nature, after having brought the feet into the vagina, as recommended by some."[b]

As the case is now to be managed precisely as a footling case, I shall not detain the reader upon the particulars which may be found in all the systems of midwifery. I shall merely supply an omission by adding, that in cases of placenta prævia, when the hand arrives at the os uteri, we have the choice of penetrating directly through the placenta, or passing the hand on one side between it and the cervix uteri.

Throughout the operation I have spoken of bringing down *the feet,* it is now right that I should mention some modifications of this plan.

Peu, Burton, and Wm. Hunter recommended that the hips should be seized and brought to the brim of the pelvis. The latter says, in his MS. lectures, speaking of arm presentations: "In this case you are to introduce the hand into the uterus, and gently put up the arm, and turn the child to a breech presentation. Reduce it if possible to a *perfect breech case,* that it may come more gradually on account of the head and the naval string, lest you strangle the child. If, however, you find this impracticable, let it come footling, but sustain the child at the hips as long as you can, they being, next the head, the largest and most unyielding part."[c] In Germany it has been advocated by Schweighaeuser, Schmidt, and Betschler.—(Kilian.) This plan, however, is seldom or never tried. The breech would be more difficult to hold and bring down than the head, and we should (as in cephalic version) lose all control over it after placing it in position.—(Kilian.)

[a] De l'Art d'Accouchemens, p. 396. [b] Compendious System, p. 286.

[c] Merriman's Synopsis, p. 83, note. Kilian die Operative Geburtshülfe, v. i. p. 442.

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Again, it has been strongly advised to hook down the knees, instead of seizing the feet, by Burton, Delpech,[a] and Dr. Breen (of this city.) In this recommendation, Dr. Burns seems to coincide. I shall quote Dr. Breen's own statement of its advantages:

"By this proceeding (hooking the finger in the flexure of the knee) the child would be made to revolve on the lesser axis of the trunk, and the foot would be brought into the vagina within the reach of a noose. By adopting a different procedure, and endeavouring to lay hold of a foot according to the usual directions, it is obvious that the hand of the operator must traverse a greater space of the uterus, a matter of very considerable difficulty, either when the action of that viscus is strong, or when it is closely contracted on the body of the child. This difficulty being surmounted, when the foot is laid hold on, it is very apt to slip and recede from the grasp, as well from the violence of uterine action as from the hand being cramped and nearly powerless by reason of the previous exertion. By adhering to the direction of hooking the knee, the hand of the operator is in a great measure protected during the pains, and he is enabled deliberately to proportion the force requisite to change the position to the resistance he encounters. Besides, as the knees must have been nearly in contact with the superior part of the abdomen from the earliest development of the superior extremities of the embryo, should, what may be called accidental circumstances have removed them from this natural and usual position, but little force will be requisite to restore them to it."[b]

Of course, should a foot be nearer the os uteri than a knee, Dr. Breen would advise its being seized.

These reasons certainly appear of sufficient weight to justify the admission of Dr. Breen's suggestion as an improvement upon the previous mode of turning.

Lastly. As it is not always easy to seize both feet, we are

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[a] Mal. Rep. Chirurg. vol. ii. p. 345, 341.

[b] Edinburgh Med. and Surg. Journal, vol. xiv. p. 29.

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told by many writers not to be solicitous about the second, but to extract by one alone.—(Portal,[a] Puzos,[b] Giffard, Delavrye,[c] Wigand, Carus, Siebold, Kilian.[d]) The reason given is simply to avoid pain to the mother, and to save the difficulty and trouble of seeking for a second. A similar recommendation has been given by my intelligent friend Mr. Radford, of Manchester,[e] but for very different, and as far as my experience goes, for very valid reasons:

"The results of practice," he says, "prove, what might be inferred by reasoning, that the *child's life is much more frequently preserved in those cases in which it presents the breech, than where the feet come down first.*" "Is there then no practice which would enable us to bring down a part, approximating in its measurements to those of the breech presentation, which we have already stated to be so safe to the child, but which cannot be effected in turning operations? There is,—and this practice consists in NEVER *bringing down more than* ONE FOOT in the manual operation of turning a child." The following measurements were obtained from children born at the full period of utero-gestation:

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

[a] Pratique des Accouchemens, p. 31.

[b] Traité des Accouchemens, pp. 169, 170. [c] Ibid. p. 224.

[d] Die Operative Geburtshülfe, vol. i. pp. 401-2.

[e] Edinburgh Med. and Surg. Journal, April, 1832, p. 260, or Essays, pp. 14, 15, 16.

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It is evident from these measurements, that it will be safer for the child to bring down only one foot, for inasmuch as the breech with the thigh turned up is more bulky than the hip with the legs extended, by so much will the passage be better prepared to admit the quick transit of the child's head, upon which the safety of the infant depends.

From what has been stated, it will appear that the *difficulties* of the operation are almost entirely owing to the uterus being in action. When it is quiescent, or nearly so, the operation is easy; but when the contractions are violent, it is often tedious, difficult, and very painful, both for the patient and operator. These contractions equally impede the introduction of the hand, the finding of the feet, and the turning of the child. Once so much is accomplished, they become of valuable assistance in completing the delivery.

The *danger* to the mother may arise—1. From the operator not changing the direction of his hand, in accordance with the pelvic axes, and consequently pushing his fingers through the vagina.

2. The hand may be forced through the walls of the uterus, if too much force be used in searching for the feet.

3. The uterus may bruise itself against the hand or the limbs of the fœtus when making the turn.—(Velpeau.)[a]

4. Without any evident injury, the irritation of the operation may give rise to subsequent inflammation.[b]

5. The shock may be serious or even fatal.

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[a] De l'Art Accouchemens, p. 394.

[b] Lest I should be supposed to have overdrawn this melancholy picture, I will quote the testimony of Dr. Blundell:

"The grand error to which you are obnoxious, is the one of too much force, *arte non vi*. Contusions, inflammations, lacerations, fractures, decapitations; these are the tremendous consequences resulting from this error; consequences at once fatal to the mother and child. Laceration of the womb, laceration of the vagina, extensive laceration of the perineum, one or other of these will certainly occur, if you operate rudely, and now and then perhaps when turning is performed with the nicest care. Those make a mock of turning, who have never seen its dangers; it is, at best, a fearful operation."—Blundell, Principles and Practice of Obstetricy, p. 398.

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The simple enumeration of these dangers ought, one would think, to go far towards obviating most of them.

The dangers to the child consist—1. *In compression of the funis*, which commences about the time the buttocks appear at the os externum.—(Ould,[a] Dewees,[b] Michaelis,[c] Ritgen.[d])—After this time, if there be much delay, the child will perish from the interrupted circulation, unless by chance the cord should have lodged in the angle at the junction of the sacrum and ileum. To obviate this danger, it was proposed by Pugh[e] to introduce a pipe into the child's mouth, and excite respiration, whilst the head was as yet in the vagina. Bigelow[f] and Baudelocque[g] are said to have tried this in practice.

2. If much extracting force be used, the spine may be dislocated; the hips also; and the leg has been pulled off.

3. Compression of the head is enumerated by Dewees[h] as one of the dangers to which the fœtus is exposed.

It only remains now for me to say a word as to the after treatment. The patient will probably need an anodyne after the operation, and it is good practice to join a few grains of calomel with the opium or Dover's powder. It will be necessary to exert great watchfulness to detect the first inroads of inflammatory action, which must be met by antiphlogistics, according to the strength of the patient and the violence of the attack.

Careful inquiry should be made as to the character of the lochial discharge each day, and if necessary the vagina may be syringed with warm water.

The most absolute quiet and rest is desirable. If the infant be alive, the mother should not be teased with it for some hours.

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[a] System of Midwifery, p. 104. [b] Compendious System, &c. p. 290.

[c] See his Treatise on Version.

[d] Anzeigen der Mechanischen Hülfen, 1820.

[e] Treatise of Midwifery, 1754.

[f] Journal de Progres, &c. 2nd Series, vol. i. 1829.

[g] Revue Medicale, 1831, vol. iv. p. 505.

[h] Compendious System, &c. p. 290.

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