

ON THE SIMULTANEOUS ENTRANCE OF BOTH HEADS OF
TWINs INTO THE PELVIS.

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(With two woodcuts.)

NONE of the older text-books on obstetrics mention the fact that both heads in twin labors may occasionally enter into and occupy the pelvis at the same time, and only a few of the more recent writers on the subject, such as Braun, Hohl, Chailly-Honoré, Meigs, and Joulin, refer to the possibility of such an occurrence. Nevertheless, such cases are not at all rare, for forty-one instances have already been published, and I myself am able to add two more to that number.

Properly speaking, the heads of twins never actually enter the pelvis together, where there would not be room for them, but the neck of one head, which is already in the pelvis, is compressed by the other head as the latter is forced through the superior strait; in that position the unborn part of the first twin is retained above the pelvic brim, and itself prevents the second head from receding from the cavity of the pelvis. The first child may occupy a vertex or a breech presentation, but the second child is always in a vertex presentation, at least no instance of a similar difficulty has yet occurred in which the inferior extremity of the second child presented, and as the

volume of the buttocks is inconsiderable, such a case is not likely to happen.¹

Of the forty-three cases reported, in thirty-five the first child was in a breech presentation, and only in eight cases did the head of the first child present together with the head of the other child. It is worthy of note, that in none of the first thirty-five cases was the difficulty in question brought about by the artificial extraction of the body of the first child; the head of the second child ordinarily entered the pelvis together with the neck of the first child, and the further expulsion of the latter was interfered with as soon as its shoulders appeared outside of the vulva. Only in three cases (Ferguson, Klingelhöfer, Rintel) was the first child born almost to the umbilicus, when the head of the second child entered the pelvis.

The further course of the labor differed in the majority of the cases; in a few only did the exertions of nature alone suffice to expel the children.

In the case of Clough² the midwife discovered twins, one presenting with the feet, the other with the head. On account of the slow progress of the labor, Clough was summoned. Finding the legs and body of one child born, and both arms delivered, he proceeded to extract the shoulders. Meeting with some obstruction, he examined again, and ascertained that another head had entered the pelvis. Ultimately the unaided uterine contractions expelled both heads, that of the second child first; both children had been dead for some time. The mother recovered.

Ferguson³ reports the case of a woman with a well-formed pelvis, in her second labor. One child was born as far as the umbilicus, where it suddenly became fixed, and its expulsion could not be effected by traction on its body. Finding another head in the pelvis, Ferguson tried to push it up, but without

¹ Three cases of difficult labor are published by Bartscher (*Monatsschr. für Geburtsk. u. Frauenkr.*, Bd. XIV., 1859), Duval (*Révue thérap. du Midi* XII, Juin, 1858), and Bernhard Schultze (*Monatsschr. f. Geburtsk. u. Frauenkr.*, XI, 1858), in which the breeches of the twins presented together; but in all these cases an insignificant degree of manual assistance terminated the labor, and all the children were born alive.

² Clough, *Med. and Physical Journal*, Vol. XXV.

³ Ferguson, *Med. Chir. Trans. London*, Vol. XII.

success; indeed, it descended still more. As the first child was living, he did not wish to perforate the head, and concluded to wait. Finally the second child was born spontaneously alive, the first child somewhat later, but with life extinct.

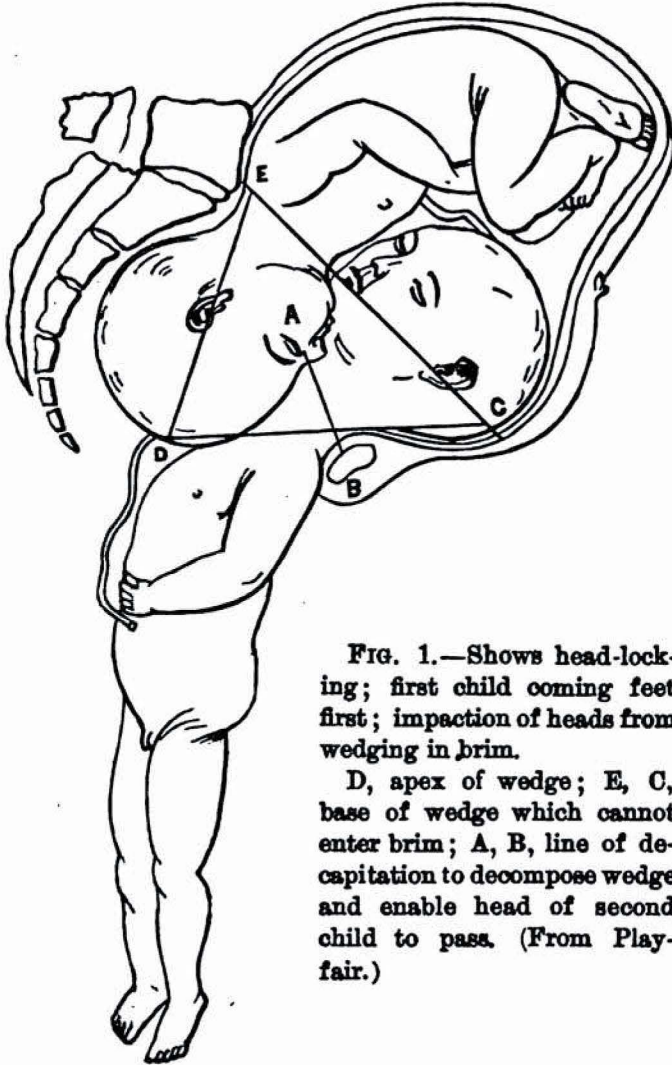


FIG. 1.—Shows head-locking; first child coming feet first; impaction of heads from wedging in brim.

D, apex of wedge; E, C, base of wedge which cannot enter brim; A, B, line of decapitation to decompose wedge and enable head of second child to pass. (From Playfair.)

The labors in the cases of Merriman¹ and Allan² took a similar course; the second child was born first. But in Allan case the first child lost its life; in Merriman's both children were born alive.

The birth terminated in the same manner also in the cases of

¹ Merriman, *Med. and Phys. Jour.*, Vol. XXV.

² Allan, *Med. Chir. Trans.*, Vol. XII.

Fryer,¹ Colhoun,² Simpson,³ Moschner,⁴ and Dugès,⁵ the last of whom made vain efforts to push up the head of the child. In the case of Moschner the spontaneous birth of the twins was facilitated by their small size, they having only advanced to the eighth month of utero-gestation. Kleinwächter⁶ mentions the cases of Raynes⁷ and Woakes,⁸ but without giving particulars, which I have not been able to obtain.

In the remaining cases nature alone proved unequal to the task of completing the labor. Pollock⁹ extracted the two children, whose jaws were locked together, by making strong traction on the presenting buttocks, as is ordinarily done; both children were still-born. Calise¹⁰ succeeded in what Dugès had failed; he pushed the second head above the brim of the pelvis, whereupon the first child was born spontaneously; the second child he turned and extracted.

Sidney¹¹ also pushed up the second head, and extracted the first head with the hand; the second child was born without aid, and both children were alive.

Holderich,¹² having applied the forceps to the first head, but finding it impossible to extract it, drew down the second head with his hand and then the body belonging to it, and finally delivered the head of the first child. The second child was born alive, the first dead.

Many practitioners made use of the forceps. Both children were born alive by those means only in the case of Balfour, and then only in all probability because they were of small size. Their jaws were locked as usual; Balfour applied the forceps to the second child's head, and both children were delivered alive. One child only was born alive by that operation

¹ Fryer, Dublin Med. Trans., Vol. I.

² Colhoun, Med. Record of Original Papers and Intelligence in Medicine and Surgery. Phila., Vol. VIII., April.

³ Simpson, Monatschr. f. Geburtak. u. Frauenkrankh. 1862, Bd. XIX.

⁴ Moschner, Conspectus partium, &c., Pragens.

⁵ Dugès, Révue Méd. Française et Etrangère, 1826.

⁶ Kleinwächter, Lehre von den Zwillingen, Prag. 1871.

⁷ Raynes, Obst. Trans., Vol. V.

⁸ Woakes, British Med. Jour., June, 1868.

⁹ Pollock, Obst. Trans., Vol. III., Monatschr. f. Geb. u. Frauenk., 1862.

¹⁰ Calise, Journal de Médecine, 1771.

¹¹ Sidney, Edinb. Med. Jour., Aug., 1855.

¹² Holderich, Jour. de Malgaigne, 1845, Neue Zeitsch. f. Geburtak. Bd. IV

in the cases of Rintel, Genth, Carrière, Tellkampf, Walther, and Broers.

Rintel¹ found the child, born as far as the umbilicus and the cord, already pulseless. Before his arrival efforts were made to extract the child, but the presence of the other head in the pelvic cavity prevented their succeeding; Rintel himself, not immediately recognizing the children's position, tried to complete the labor by extracting the body. Finding his endeavors fruitless, he extracted the second head with the forceps, whereupon the body readily followed; the first child was still-born.

In the case of Genth² the mother was a primipara; one child was born all but the head, when the accoucheur arrived; the other head was situated in the hollow of the sacrum, the face turned upwards. Putting two fingers into the first child's mouth, he pushed the head up, then applied the forceps to the second child's head, and extracted it alive.

Carrière³ was called to a woman 20 years of age, a primipara; he found the child, in the morning, in a vertex presentation; in the evening of the same day, however, it was born feet foremost as far as the shoulders. Then the labor ceased, and all efforts at manual delivery proved unavailing. The umbilical cord was pulseless; in the pelvic cavity the head of another child was discovered with face downwards towards the first child's face. The anterior fontanelle was felt in the middle of the pelvic cavity; the posterior fontanelle could not be detected at all. He extracted the second child alive by means of the forceps, and afterwards removed the head of the first child, which was dead.

Walther⁴ made ineffectual efforts to deliver the head of the first child, when the latter had been born as far as the neck, by employing first the so-called Prague method (traction on the neck with one hand over the shoulders and the other holding the feet, forcible traction being first made down, and then upwards, until the face slips over the perineum), next by putting his finger into the child's mouth (Smellie's method), and then by

¹ Rintel, *Monatsschr. f. Geb. u. Frauenkr.*, 1869, Feb.

² Genth, *Neue Zeitschr. f. Geb.* 1848, p. 75.

³ Carrière, *Jour. de Malgaigne*, 1848.

⁴ Walther, *Neue Zeitschr. für. Geb.*, Bd. XVI.

endeavoring to push up the second child's head; finally he applied the forceps, and extracted the second child alive. The first was then easily delivered, but still-born.

In a similar manner, and with similar results, did Tellkamp¹ operate in a case of premature delivery, and Broers² in a labor at term.

Both children were born dead in the cases of Hohl, Braun, Klingelhöfer, and Eichhorn.

Hohl's³ assistant, some hours after the commencement of labor, found a head with the face presenting and a foot. After the rupture of the membranes, the buttocks and one foot presented, but the head could no longer be felt. The body of the child advanced slowly, the arms were delivered, but the head did not follow, and it was found impossible to apply the forceps. Hereupon Hohl himself was called in. He found the umbilical cord pulseless and the child's neck very much elongated by traction. The head stood high in the first oblique (L. O. A.) diameter of the pelvis. He applied the forceps to the second child's head, the first child's body being raised, and delivered it easily. The first head was delivered by the hand. The children were of different sex.

Braun⁴ has given a very accurate description of a case which occurred in his practice. He was called to a seamstress, 19 years of age, immediately after the rupture of the membranes, and found the fundus uteri a hand's breadth lower than the epigastrium, the uterus having a spherical shape. The sounds of the child's heart were distinctly audible high up on the left side. The os uteri was fully dilated, the feet presented and were already in the vagina. From these symptoms Braun concluded that there were twins, and after half-an-hour a child was born as far as the neck; the umbilical cord, however, had ceased pulsating. The shoulders were easily delivered, but the head could not be extracted by Smellie's method. On examination, another head was detected on the left and behind the head of the partially delivered child, the occiput of which second head was turned towards the left side. As the sounds of the foetal

¹ Tellkamp, *New York Med. Jour.*, May, 1867.

² Broers, *Nederl. Tijdschrift voor Heel und Verloosk. Nieuwe Serie*, 1856.

³ Hohl, *Neue Zeitschr. f. Geb.*, XXXII.

⁴ Braun, *Allg. Wiener Med. Zeitg.*, 1861.

heart were growing faint, Braun ruptured the membranes,¹ and extracted the second child with the forceps. The first head was then expelled by the uterine contractions. The first child was, of course, still-born, and had died during the labor, as was proved by the autopsy; the second child was born asphyxiated, and was resuscitated, but died five hours afterwards. There were two amnia, but only one chorion; several vessels passed from one placenta to the other.

The mother in the case of Klingelhöfer² was a primipara. The child's feet presented, extraction was accomplished as far as the umbilicus, when an obstacle presented itself. Consequently, K. waited until the second head had descended somewhat lower, and then applied the forceps, first to the second head, and then to the first. Both children were dead, the sternum of the first being pressed into the thorax.

Eichhorn,³ not being able to extract the first head in the ordinary manner, applied the forceps to the second head; the first head was expelled spontaneously, together with the second body. Both children were still-born.

Enneaux⁴ as a last resort made use of the forceps; but nothing is known of his case, except that the instrument was applied to the first child's head.

More forcible measures were employed by Irwin, Thurston, Hoffmann, Eton, Perry, Duncan, and Meigs, viz.: the first two operators resorted to craniotomy, the other five separated the child's head from its body.

In the case reported by Irwin⁵ the child was born as far as the umbilicus, when the labor ceased. Irwin found in the pelvis a head with the neck turned to the right sacro-iliac synchondrosis, the face to the left acetabulum. He gave one drachm of ergot without benefit, and then delivered the arms with great difficulty and with the assistance of two other physicians. He was not, however, able to extract the child's body completely, and at last concluded to perforate the second head

¹ This is the only case in which such a difficulty arose before the rupture of the membranes.

² Klingelhöfer, Berlin. kl. Wochenschr., 1873, No. 2.

³ Eichhorn, Med. Corresp. bayer. Aerzte., 1844.

⁴ Enneaux, Jour. de Médecine, 1771.

⁵ Irwin, The Medical Record of Original Papers, Phila., VIII., April. Meissner, Forschungen, &c., Bd. IV.

in order to clear the way. This having been done, and the first head extracted, the second child followed voluntarily. The first child was born alive (?).

Thurston¹ found a similar difficulty, although the foetus was but seven months old. Having tried without success to push up the second head, he perforated; notwithstanding, the extraction was still exceedingly difficult.

Hoffmann² found the first child born to the neck, but already dead. The neck was so firmly impacted by the other head that motion was impossible. In order to save the second child, he divided the first child's neck, and extracted the other child alive, with forceps. A violent hemorrhage compelled him to extract the detached head at once, which he did by inserting his fingers into the mouth.

In Perry's³ case the child was born as far as the arms when he arrived. He delivered the arms, but tried in vain to extract the head. Nor was he more successful in his attempt to push up the second head, which presented lower than the first. Finally he detached the first child's body from its neck; the second child was born spontaneously, the separated head being expelled at the same moment as the thorax of the second child. The twins were girls, and weighed only $4\frac{1}{2}$ pounds each.

Very similar was the course of the labor in the cases of Eton⁴ and Meigs,⁵ who also decapitated the first child.

In Duncan's⁶ case both children were still-born. Although he also decapitated the child, he was nevertheless obliged to extract the two heads artificially, the first by the crotchet, the second by the forceps. The mother made a good recovery.

Still more unfortunate, than in the cases where the first child's nates presented, was the issue in the cases of *double vertex presentation*.

Properly speaking, the cases of Hohl⁷ and Derlitz⁸ likewise

¹ Thurston, British Med. Jour., 1867, 12.

² Hoffmann, Casper's Wochenschr., 1844.

³ Perry, Brit. Med. Jour., 1869, p. 588.

⁴ Eton, London Med. Gaz., 1846.

⁵ Meigs, The Science and Art of Obstetrics, Phila., 1849.

⁶ Edinb. Med. Jour., Aug. 1855. Monatschr. f. Geb. u. Frauenkr., Bd. VII, 1856.

⁷ Hohl, l. c.

⁸ Derlitz, Sanitätsbericht für die Provinz Brandenburg, 1835.

belong in this category. They found two heads presenting simultaneously at the superior strait, one of which, however, voluntarily made room for the other during the progress of the labor.

Of those cases in which an actual difficulty occurred, Lespinasse's¹ case was the only one in which the efforts of nature alone sufficed to complete the labor. The second head was firmly pressed against the neck of the first-born head; but notwithstanding this serious obstacle, after a delay of three hours, the partly delivered child was born first, and then the other.

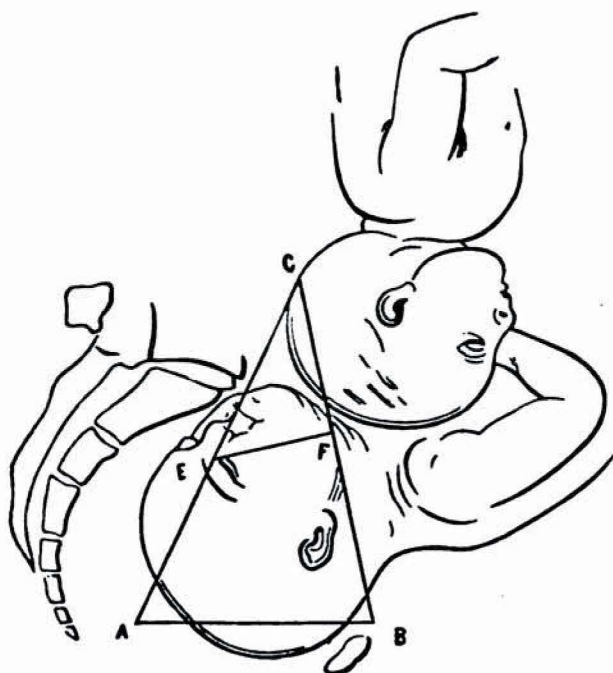


FIG. 2.—Shows head-locking, both children presenting head first.
(From Playfair.)

Very interesting is a case of triplets related by Chailly-Honoré.² One of the small heads entered the pelvis in a second (R O A) vertex presentation, the other was stopped at the superior strait between the head and the shoulders of the first child. Delivery ceased, but was completed by pushing up the second head and administering ergot. These first two children had one chorion together; the third child possessed

¹ Lespinasse, *Nederland. Tijdschr. voor Heel und Verloosk. Nieuwe Serie*, 1856.

² Chailly-Honoré, *Bulletin de Thérapie*. Août, 1842.

ts own separate membranes, and was born independently after the other two.

In a similar manner, but with less good fortune, terminated the labor in the case of Duhamel.¹ The mother was in her third confinement; although the pains exerted but little influence on the presenting part, the head was delivered; but the labor then ceased. Examining again, Duhamel detected a second head in the pelvis. He pushed up this second head notwithstanding the increasing pains, put a crotchet into the axilla of the first child, and extracted it. It was still-born and had a fractured humerus. The other twin, much smaller than the first, was delivered without artificial aid ten minutes later, in an asphyxiated state and with a flattened head.

The forceps were applied in two cases by Franqué and by myself. The particulars of the latter case are as follows:

A Jewess, 16 years of age, of strong constitution, a primipara, was attacked with convulsions when the os uteri was already completely dilated and the liquor amnii had been discharged. The accoucheur, who had been called in, applied the forceps to the presenting head and extracted it; but he was not able to proceed further with the delivery of the child, and on examination found another head in the pelvis. Being called in, I found my colleague preparing to divide the neck of the child, which was already dead, the pulsation of the heart of the other child having likewise ceased to be audible. The neck of the head already born was turned slightly towards the left side of the symphysis pubis and forcibly elongated; the occiput of the other head was turned upwards towards the right. The mother was in a high state of excitement and very much prostrated. I applied the forceps to the second head, and delivered it with great ease. Then both the bodies were extracted, that of the first child being born first. Both children were males and of medium size, and both still-born; they had separate membranes. The mother died on the fifth day, of peritonitis.

Franqué² followed the same course. One head was delivered, but the other head, being tightly squeezed against the neck of the first child, impeded the further delivery. Franqué applied the forceps to the second head. Both children were still-born.

Craniotomy was employed by Alexander,³ who could effectuate delivery only after having perforated both heads.

¹ Duhamel, *Gazette des Hôpitaux*, 51, 1858.

² Franqué, *Monatsschr. f. Geb. u. Fr.*, Bd. XX., 1862.

³ Alexander, *Edinb. Med. and Surg. Jour.*, 1822.

Jarnatowsky,¹ in Posen, had recourse to the separation of the first child's head. He was called to a hamlet, six miles from town, at four o'clock in the afternoon, and found an unmarried woman, 22 years of age, of not very strong physique, in her first confinement. The pains had begun in the night, were strong in the beginning but irregular, and had diminished afterwards; the labor had not advanced during the last four hours. Between the thighs of the mother there was found a child's head quite immovable, which the accoucheur vainly endeavored to push back or to draw out. The finger, passed up to the child's neck, met a second head pressed firmly against the first child's neck; the physician was no more able to push back the second head than the first. Seeing that the first child had already ceased to live, the accoucheur determined to detach its head in order to gain more room for the extraction of the other child. Not having the proper instrument with him, he divided the neck with a simple scalpel, and, observing that the corpse became somewhat more movable, he pushed it back into the uterus as far as possible, applied the forceps to the second head, and with a few strong tractions delivered a dead child. He then introduced his hand, passed one finger into the axilla of the remaining child, drew its body down into the vagina, and delivered it with the assistance of the uterine contractions. The children were well formed and fully developed. The placenta was single, but the membranes were double. The mother recovered, with the exception of a vesico-vaginal fistula of the size of a shilling, and died a year later of some other disease.

Finally, Hohl² mentions a case of double vertex presentation, which came to the notice of Lewin, but does not state where the particulars may be found.

The foregoing review shows that the form of dystocia under discussion is one of the most dangerous accidents as regards the life of the child, which can be met with in the course of twin births. Indeed, the proportion of dead children to those born alive, in the cases above mentioned, is as follows:

I. *Both children in vertex presentations.* 8 cases—16 children. (The third child in the case of Chailly-Honoré is not

¹ Communicated by letter.

² Hohl, loco citato.

counted.) Of 4 children the fate is unknown. Remain, 12 children; of these

6 children, first born,	5 were still-born,	1 living=16% living.
6 " last "	4 " "	2 " =33% "
12 children.	9 still-born,	3 living=25% living.

II. *One child in vertex, the other in breech presentation.* 35 cases—70 children. Of 15 children the fate is unknown. Remain, 55 children; of these

26 children, first born,	23 were still-born,	3 living=11% living.
29 " last "	10 " "	19 " =65% "
55 children.	33 still-born,	22 living=40% living.

III. *Total.*

32 children, first born,	28 still-born,	4 living=12% living.
35 " last "	14 " "	21 " =60% "
67 children.	42 still-born,	25 living=37% living.

But, if we consider, first, that, properly speaking, the case of Chailly-Honoré ought to be excluded; second, that in the case of Balfour the twins were of small size; third, that the history of Irwin's case appears rather doubtful, because it is very improbable that the first child did not lose its life during all the foregoing manipulations; fourth, that in the cases of Colhoun, Fryer, Dugès, Allan, in which mention is made only of the fate of the second twin, probably the first child was still-born—the proportion of living children becomes still smaller, and ought really not to be estimated higher than 30%, and the proportion of first-born living children 5%.¹

Besides, many children probably die soon after birth, in consequence of the injuries sustained during labor.

This large proportion of still-born children is not surprising. Even when both children are in vertex presentations, the child whose head first enters the pelvis is in great danger, because not only is its neck squeezed by the head of the second child, thereby producing cerebral hyperæmia, but its umbilical cord is exceedingly liable to be compressed by the body of the second child. Indeed, all the first children were still-born in the cases

¹ Braun collected 13 cases, in which the first child presented by the breech; of these 26 children, only 3=11% were born alive.

above mentioned, with the only exception of the peculiar case reported by Chailly-Honoré. Even of the second children, two-thirds lost their lives.

No more fortunate is the first child, when it presents with the breech, for, in consequence of compression of the cord, the child usually succumbs before its delivery can be accomplished.

Frequently (in more than one-third of the cases reported) the second child also loses its life, either through compression of its neck by the first head, or in consequence of the necessary operations. As a rule, the mother does not run any risks, unless under peculiar circumstances, as in my case.

Therefore, when a portion of the child is already born and the progress of the labor is suddenly arrested, without any apparent reason, we should always bear in mind the accident known as the locking of the heads of twins, especially as only in the cases reported by Braun and Clough was the existence of twins suspected. An examination, if necessary with the whole hand, will always explain the situation.

The reason why such a difficulty happens more frequently in breech presentation of the first child (in our cases four times as often) is to be found in the difference in size of the head and trunk. In breech presentations the first child's head prevents the head of the second child, when once it has advanced into the pelvis, from retreating; but in vertex presentations the smaller trunk more readily permits the retreat of the second head from the pelvic cavity. Besides, when the twins turn their faces towards each other, as happened in the majority of the cases reported, the chin of one child easily becomes locked with the chin of the other, and consequently during extraction the first child draws the other after it and forcibly retains it in that position.

Only two conditions are recognized as exerting a favorable influence on the production of this accident, viz., in vertex presentations a large pelvis which permits the head of the second child to enter its cavity together with the neck of the first child, and in breech presentation of the first child the position of the heads with the faces turned towards each other, whereby the interlocking of the chins is facilitated. The artificial extraction of the first foetus does not occasion the difficulty referred to, for only in one of the cases reported was that operation per-

formed. Worthy of mention is the proportion of primiparæ and multiparæ, there having been twice as many of the former as of the latter.

This accident can neither be foreseen nor prevented, with the single exception of the case in which the twins are alternately felt at the pelvic brim, the one in a vertex, the other in a breech presentation, as happened in the case reported by Clough. Under such circumstances it is advisable to rupture the membranes of the child presenting with the vertex, in order to prevent the child in breech presentation from entering the pelvis first, for in that case the locking of the chins would be likely to occur.

If, however, an examination reveals the fact that the twins have already effected a simultaneous entrance into the pelvis, the most efficacious measures should be resorted to without delay, and it would be injudicious to rely upon the assistance of nature alone, which ordinarily proves insufficient, as has already been shown.

Of all the measures used for the purpose of precipitating labor, the least useful for these cases is ergot—indeed all remedies which increase uterine contractions. They cannot remove the mechanical impediment, and may readily increase the danger to the mother, by inducing forcible irregular contractions of the uterus. Thus Walther and Irwin employed ergot with no benefit whatever. A mechanical difficulty of such a character can be removed only by mechanical means, and the only safe and rational measure is to *deliver the second child before the first*. This was the course of labor in the cases terminated by nature's efforts alone, and in the same manner twins joined together are spontaneously delivered; the labors in which latter class of cases in many respects resemble those described in this paper.¹

Indeed, when the first twin presents by the breech, he forms, so to speak, a cone with the base above; the other child, on the contrary, represents a cone with the base below; therefore it is evident that it is easier to extract first the last mentioned cone, the second child. Even when both twins are in a vertex presentation, the same rule is to be followed.

¹ Hohl, Von der Geburt todter, missgestalteter, u. s. w., Kinder, Halle.

The forceps should, therefore, be applied without delay to the second head; every other measure is unsuitable and useless.

The first head can be delivered neither by the forceps¹ nor by traction on the body already born, because it is retained by the second head. It is true that Enneaux succeeded by applying the forceps to the first head, and Pollock by drawing on the body already born; but those were merely lucky chances, and the result of Pollock's proceeding is not likely to encourage imitation. Ordinarily such attempts proved not only unsuccessful, as for instance in the cases of Eichhorn, Rintel, Irwin, Perry, and others, but also served to increase the difficulties of the succeeding operation and to aggravate the already unfavorable prognosis.

To push up the second head in order to effect the delivery of the first is not more practicable, because the first head (or body) blocks up the way. Such an attempt did not succeed in the cases of Dugès, Walther, Thurston, Perry, and others; the reasons why Calise, Sidney, and Duhamel were more fortunate are probably to be sought for in specially favorable circumstances. The issue of the labor in Duhamel's case, at all events, will scarcely induce accoucheurs to follow his example, notwithstanding the advice of Dionis.² Besides, such an attempt to push up the second head is likely to occasion rupture of the uterus.

The perforation of the first head is very difficult, in consequence of its high situation, and because the other head takes up so much space; besides, it does not remove the obstacle, for even the diminished head cannot pass by the other head. Therefore, if it is found impossible to extract the second head by forceps, it is better to perforate the same head (the second), and extract it with the cephalotribe, if the child be already dead, of course. By operating in this manner, Irwin and Thurston met with success.

In conclusion, some accoucheurs, such as Hoffmann, Eton, Perry, Meigs, Duncan, Jarnatowsky, decapitated the first

¹ The advice of Joulin (*Traité complet des accouchements*, Paris), to apply the forceps to the head most easily attainable, is entirely wrong; and still more so that of Kleinwächter (*Lehre von den Zwillingen*, Prag, 1871), to act differently, according to circumstances.

² Dionis, *Traité général des accouchements*, Liège, 1724.

child; but that proceeding is also unsuitable, because the part of the child already expelled does not hinder the progress of the labor, and the part remaining in the uterus will be in the way of the other child, in spite of the decapitation. Of what use would decapitation have been, for instance, in my case? And how difficult was it for Jarnatowsky to finish the delivery after he had separated the head of the first child from its body! Moreover, to divide the neck is no easy task under such circumstances, and a mutilation of the child's body should always be looked upon as a barbarous proceeding, and avoided accordingly, if possible. Finally, the mother has still to endure the extraction of the separated head (or body) afterwards, sometimes a very difficult operation, and in any case prejudicial to the health of the mother, already weakened by the tedious labor and the attempts at delivery. Only in case the application of the forceps to the second head proved unsuccessful, and there were distinct signs of the second child's life, would I decide to decapitate the first child. If in such a case, notwithstanding the decapitation of the first child, it is found impossible to finish the labor, and the condition of the mother grows dangerous, I should not hesitate to perforate the head of the second child without waiting for its death, in order to save the life of the mother.

KREW, May, 1876.