

DELIVERY BY BASILYSIS.

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IMPROVEMENTS in the construction of the forceps and a better appreciation of the conditions under which turning, Cæsarean section, and symphysiotomy can be safely carried out, have in

recent years greatly restricted the group of cases in which the obstetrician feels called upon to deliver by cephalic embryotomy. Some have even proposed to relegate the whole store of perforators, comminutors, and extractors of the head to the presses of antiquarian museums. That there is still, however, a not inconsiderable field for the employment of embryotomy procedures, may be gathered from the circumstance that at least six of the numbers of last year's *Centralblatt für Gynækologie*, Vol. XXIII.,



FIG. 1.

contain one or more papers on the subject. If the cases are rare, there is all the more need that the practitioner have in his hands the implements with which he may most simply and safely bring about the head-reduction and delivery.

In 1880 I read a communication to this Society, in which I proposed the use of the basilyst for first perforating the cranial vault, and afterwards perforating and dissolving the cranial

base. In 1882, and again in 1883, I related cases illustrative of the value of the operation, and showed a head that had been delivered by basilysis (see Fig. 1). I explained further that, to fit the instrument to act as an extractor as well as a perforator and comminutor, I had added a traction blade to be applied outside the head, like the external blade of a cranioclast. Abundant evidence had been adduced from many quarters in proof of the superiority of the cranioclast to the cephalotribe

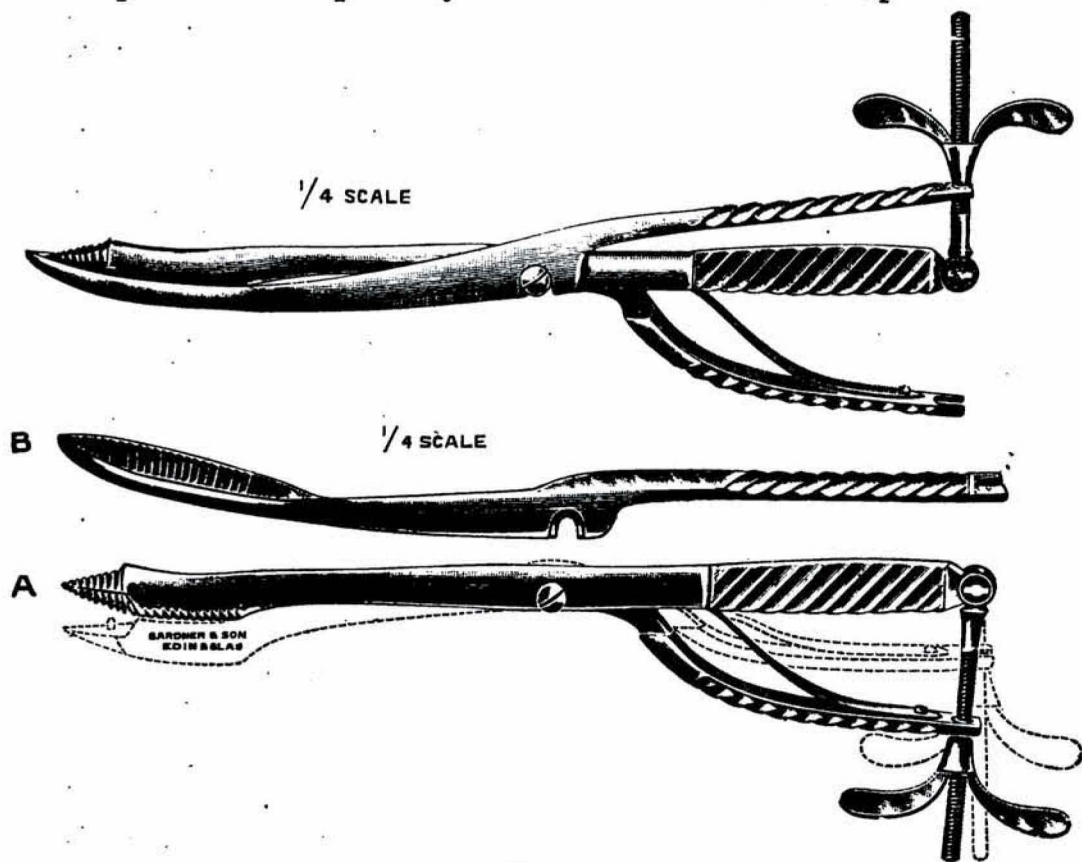


FIG. 2.

as an extractor. The chief drawback to the cranioclast is that in some cases it does not fracture enough of the base of the skull to allow of the perfectly easy extraction of the head. It was to supplement this deficiency that I proposed the basilyst, with the further idea that in many cases such dissolution of the basic structures would be produced as to allow of the expulsion of the head by the natural efforts.

Since that time various suggestions have been made for the improvement of the cranioclast, such as that of Dr Hubert

Peters (*Centralblatt für Gynækologie*, XXIII., 472, 1899), who would have the internal blade furnished with a point that should allow of its being screwed into the foramen magnum, or some part of the base, so as to get a more secure hold for traction, as well as to allow of fuller crushing of the base than can be accomplished with the ordinary cranioclast. A still greater number of three-bladed contrivances have been proposed, which should have the object of adding to the cranioclast the power of the cephalotribe for compression of the head. These are exemplified in Auvar'd's Embryotome Cephalique Combinée (*Arch. de Tocologie*, XVI., 1889), Zweifel's Kranio-Cephaloclast (*Centralblatt für Gynækologie*, XXI., 482, 1899), Fehling's Kephalo-thrypt-helktor (*Centralblatt für Gynækologie*, XXII., 1177, 1898). That which has been most approved is the basiotribe of Professor Tarnier, which he produced in 1883, and the value of which has been demonstrated in the essay of M. Bonnaire (*Sur le Broiement de la Tête Fœtale*, Paris, 1885), or more fully and with numerous illustrations in the work (*De l'Embryotomie Cephalique*, Paris, 1889) of M. Paul Bar, one of the ablest of the brilliant group who loved and looked up to the great Parisian obstetrician as their "Maître." The basiotribe consists of three parts—(1) a straight perforator that is to pass through the vault and on to the base; (2) a first blade to be applied outside the head and jointed to the perforator, so as to make of it a modified cranioclast; (3) a second blade that is to be applied when necessary to the side of the head opposed to that which was caught by the first, so as to make of the instrument a modified cephalotribe. The record of cases of basiotripsy shows that in the hands of Tarnier and his successors excellent results have been obtained by the use of his instrument. But I cannot get rid of the conviction that the first effort of the obstetrician should be to break up the base from within, and not from the outside. The application of the external blade is not always very easy. It often implies the previous introducing of the hand into the genital cavity, with danger of laceration of the uterus and access of septic germs. All this is increased when two blades have to be carried into the uterine cavity outside the foetal head. And although the basiotribe is an effective comminutor, the flatten-

ing of the head between two blades cannot admit of the elongation and adaptation of the head to the configuration of the canals, which is such a favourable feature in the extractions effected by the cranioclast.

Moreover, I am more and more convinced that in many cases the basis cranii can be so simply and safely and effectively dissolved from within the skull as to render quite unnecessary the application of even one external blade. As an illustration, let me give you the history of a patient who was recently delivered by basilysis in the Maternity Hospital. I show you the head of the infant, after it has been hardened in formaline and cut in the coronal direction from above downwards. The base has been perforated in its anterior portion, and has been so fractured and softened that between the points of the calipers in front of the ears it measured $1\frac{1}{2}$ inches in width (see Fig. 3).

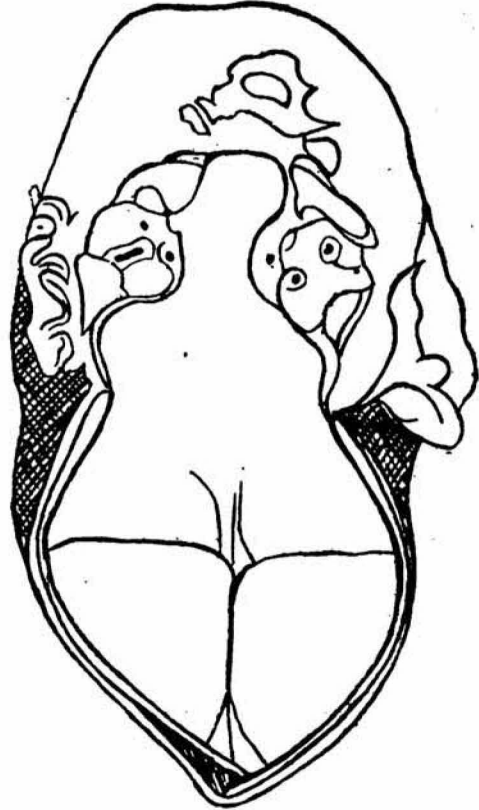


FIG. 8.

E. F., æt. 18, stunted and dwarf-like in her appearance, was admitted into the Maternity Hospital in the ninth month of her first pregnancy, on the 2nd January 1900. Patient was 4 ft. 4 in. in height, and was the subject of well-marked right dorsal scoliosis and left lumbar scoliosis. The right leg measured, from the anterior superior iliac spine to the external malleolus, $26\frac{1}{2}$ inches. The left measured, between corresponding points, $25\frac{1}{4}$ inches. The right thigh was $13\frac{1}{4}$ inches in length; the left, $11\frac{3}{4}$ inches. There was marked tilting of the pelvis, the left side being highest. There was no evidence of any previous hip-joint disease. Patient was sent into hospital because a

serious difficulty was expected at the impending labour owing to the pelvic deformity.

Her mother stated that patient was unable to walk till she was five years old, but says that up to her thirteenth year she noticed nothing definitely wrong in her configuration. At the age of thirteen she took scarlet fever, and it was after she came out of hospital that, for the first time, it was noticed that the back was "crooked." Since this illness patient had not grown in height, and the spinal deformities had gradually become more marked. Patient's general health has been good.

Physical examination.—Breasts well developed; gland tissue abundant, with plentiful secretion; nipples prominent; areolæ well marked.

Abdomen.—Protuberant; abdominal swelling corresponding in size to periods of amenorrhœa passed. (Patient had menstruated last in April 1899, and stirrage was first felt in August). The swelling lies somewhat obliquely with long axis from the right hypochondrium to the left iliac region. Abdominal walls lax, linea nigra and striæ gravidarum well marked. The uterus is directed obliquely downwards from right to left, with the fundus at the lower border of the ensiform cartilage. Fœtal head felt low down above the brim. Limbs on the right side. Uterine bruit and fœtal heart-sounds both audible.

Vaginal examination.—Sacral promontory is abnormally prominent and somewhat deviated to the right side. Cervix is high up and to left side of promontory. Fœtal head felt presenting above the pelvic brim, freely movable.

Pelvic measurements.—Intercristal diameter, $10\frac{3}{4}$ in.; interspinous diameter, 10 in.; external conjugate, $6\frac{3}{8}$ in.; diagonal conjugate, $3\frac{1}{2}$ in.; conjugata vera, 3 in. A universally and unequally contracted pelvis.

Slight and irregular pains began at 3.30 P.M. on the 19th of January. The os was fully dilated at 6.15 P.M. The liquor amnii began to escape at 6.45 P.M. The presentation was vertex, the position L.O.A. Drs Berry Hart, Freeland Barbour, and Fordyce saw her along with me. We discussed the alternative procedures that might possibly have been adopted for effecting delivery—turning, forceps, symphysiotomy, Cæsarean section. The girl was a pallid, delicate creature, who

appeared to us a bad subject for the graver forms of interference; and at 8 o'clock, the head being still loose above the brim and projecting over the symphysis pubis, I delivered by means of the basilyst, Dr Barbour having his hand applied to the head of the child in the hypogastric region.

Waiving any discussion as to the relative indication in this particular case, what is specially important to have in view is the ease and safety of the whole procedure. With the basilyst the vault was perforated and an opening made wide enough to allow of the complete breaking up of the brain and cerebellum, which were washed out with a lysol douche. The head not descending, the same instrument was screwed into the anterior part of the base and the blades separated in different directions. I was prepared further to basilyse the head, and had the traction blade at hand if it had been required. But, I confess to my own surprise, when I was about to repeat the attack at another part of the base, Dr Barbour, who had his hand on the uterus above the brim, said, "Wait, the head is going down." After a few pains, the uterus, aided by the pressure of Dr Barbour's hands, had brought the head to the pelvic floor, so that with my finger through the opening in the vault it was easily guided on its further course till it was clear of the canals. After the delivery was completed, we made careful examination of the canals, and saw that there was only a slight fissuring of the mucous membrane in the vaginal orifice at the base of the hymen. The patient had an uninterruptedly normal convalescence.

I fancy the basilyst would have found wider acceptance if in the earliest models I had not made the mistake of getting too heavy an implement. Experimenting on heads of infants that had lain some time in pickle, it was necessary to have very powerful instruments to tear up the bones. But since I found that the bones of the foetus *in utero* are more easily dilacerable, I have had the basilyst (see Fig. 2) made slighter and more manageable. Further, the instrument maker at first had the traction blade so imperfectly adapted to the internal portion that it sometimes slipped. In the newer model this defect is remedied. The internal perforating and external grasping portion fit like the two blades of a cranioclast, so that for

extraction, when that becomes necessary, the basilyst-tractor has the qualities of what is admittedly the best instrument for the delivery of the perforated head.

Dr J. W. Ballantyne thought that the Society was much indebted to Professor Simpson for bringing before their notice the new model of the basilyst-tractor, and for describing so graphically its mode of action. They all knew that on this subject in particular, Professor Simpson was well qualified to speak in magistral fashion, and he thought they were all agreed that when it was necessary to comminute the head, the basilyst was the most effective means of doing it; whether it was possible to look upon the basilyst-tractor as not only the best comminutor, but also the best tractor for the comminuted foetal head, was more likely to be questioned. At any rate there could be no doubt that the present model was a distinct advance upon the earlier one. It had also to be borne in mind that in attempting to make one instrument do the work that was usually done by two (*e.g.*, by the basilyst and the cranioclast) there was the risk of losing some degree of efficiency. He (*Dr Ballantyne*) had had the honour, some sixteen years ago, of showing Professor Simpson's basilyst-tractor to several of the leading obstetricians in Berlin and Munich.

Dr Haig Ferguson thought the Society was much indebted to Professor Simpson for his timely paper on Basilysis. It was of great importance to have the subject prominently brought forward again, especially as the basilyst had been recently considerably modified and improved upon since its first introduction, and one could not help being impressed with the many advantages of the instrument shown to-night. It was very instructive to hear that after basilysis it was seldom necessary to use the tractor blade at all in the delivery of the head, and that perforation of the vault could be accomplished with less force than with the ordinary perforator.

Dr Barbour said that he was on this occasion greatly struck with the ease with which the head was delivered. Slight supra-pubic pressure was sufficient to make the head slip through without the application of the traction blade. The risk of sepsis is thus reduced to a minimum, because