specimens appeared normal in colour. Cortisone, 100 mg., was again given intramuscularly. This was followed by a dose of 50 mg. on August 28 and 29. On the 30th he was sitting up; the conjunctivae were icteric, and there was slight oedema of the feet and face. No further cortisone was given.

The urinary output on August 28, 29, and 30 was about 20 oz. (570 ml.) a day, and some urine was voided into the bed; it contained no methaemoglobin. The anaemia was treated with iron, and the malaria from the outset with mepacrine. The child made an uneventful recovery and was discharged.

COMMENT

It is suspected that blackwater fever is a haemolytic disease occurring in those infected with *P. falciparum* and whose cells have been sensitized by quinine. As cortisone lowers the sensitivity of body tissues in certain allergic states (Carey *et al.*, 1950), it was given in the hope that it might reduce the sensitivity of the cells to the circulating haemolysin and relieve the renal cortical ischaemia responsible for the anuria.

Although the clinical state of cases of blackwater fever is known to alter rapidly, it was felt that the condition of this child on the second day was such that a fatal outcome was inevitable. Cortisone seemed to have had an effect in this case.

J. C. LINLEY-ADAMS, M.R.C.P.

From the London School of Hygiene and Tropical Medicine,
and University College, Ibadan, Nigeria.

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Advantages of a Perineal Curve Applied to Midwifery Forceps

The first patterns of midwifery forceps—those of Chamberlen in the seventeenth century and of Edmund Chapman (1733) and William Giffard (1734)—were short and straight. William Smellie (1752) recommended the short straight forceps for general use, and he it was who discovered, to his great delight, how this instrument could be used for rotating the head in occipito-posterior presentations. Nevertheless, it was Smellie, too, who lengthened the forceps and added the pelvic curve in order to reach the head higher up in the pelvis—an invention also claimed for André Levret (1751) and Benjamin Pugh (1754). The pelvic curve was also an outstanding feature of the *mains de fer* designed by Palfyn in 1720. In the course of time the long curved forceps has supplanted the straight forceps for general use.

It was soon discovered that there were several disadvantages in the pelvic curve, notably the fact that traction on the handles is inefficient, as the direction of force is not in the axis of the birth canal. Many attempts to overcome this difficulty were made, and it was finally solved by Tarnier in 1877 with the axis-traction forceps. By the time axis traction became definitely established the necessity for the high forceps operation had vanished with the introduction of the relatively safe forms of caesarean operation in use to-day. The principle of axis traction still holds, but the patterns of forceps in general use are unnecessarily heavy and powerful for the low forceps operation, and many obstetricians have abandoned their use. Furthermore, with the long forceps with the pelvic curve, whether with axis-traction rods or without, it is not possible to obtain a good cephalic application when the head, in mid-pelvis or higher, lies in the transverse position. Severe lacerations of the birth canal have followed attempts to use the long curved forceps to rotate the head in this position, and most obstetricians in this country condemn the practice.

As long ago as 1769 R. Wallace Johnson, realizing some of the disadvantages of the long curved forceps, endeavoured

to overcome them by bending back the shanks in a perineal curve, thus bringing the handles more into line with the axis of the blades. This was the first of many attempts to obtain axis traction without the use of additional apparatus. The well-known forceps designed by Kielland (1916) also has a perineal curve for the same purpose, and solves most of the problems of applying forceps to cases of deep transverse arrest, but it has not yet become very popular, probably because of certain other features which require a special technique to be practised if this instrument is to be used as Kielland intended.

During the winter of 1949–50 I had an old forceps of the Ramsbottom type replated, and took the opportunity of getting the shanks bent back at an angle of about 30 degrees, close to the lock (see Diagram). I have used this instrument now for nearly three years, and have found that the alteration exceeded my expectations in making the forceps more efficient and handy. A line drawn through the ends of the handles and passing through the centre of the fenestrae almost exactly corresponds in direction with a line drawn in the same way but passing through the traction crossbar of the Barnes–Neville axis-traction forceps I used formerly. The curve of the instrument as seen from the side very closely corresponds with the curve of the Kielland forceps.

I claim that the addition of a perineal curve in this way gives the following advantages over the ordinary long forceps: (1) It provides axis traction for all low forceps deliveries without the addition of any traction rods, and nearly as efficiently as that provided by the Barnes–Neville forceps. (2) It can be more easily applied to the foetal head in transverse positions, giving a proper cephalic grip. It could be used for rotating the head in much the same way as the Kielland forceps is used, though I have not yet tried it. (3) It is more convenient than the normal type for use on the aftercoming head in breech presentations, as the handles are bent away from the body of the child in the same way as those of Piper's forceps (Piper and Bachman, 1929). (4) It is an ideal instrument for the general practitioner, as it is more versatile and more convenient to carry.

I claim no originality in this instrument, the idea being nearly two centuries old. Peterson (1952) has described a very similar forceps, which he has used for over 100 deliveries with complete satisfaction, and claims much the same advantages for it. It is my view that a special instrument is not necessary, and that it will suffice to give a perineal curve to any standard instrument, such as Simpson's or Anderson's.

WALTER RADCLIFFE, M.B.

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