rhages, Professor Malcolm suggested that the circulation of the toxin in the blood damaged the endothelium of the vessels, thus producing greater permeability in the walls of the vessels, and a greater liability of the capillaries to rupture.

It is also possible that the contractile power of the elastic and muscular walls is diminished; this would account for the *post-partum* haemorrhages.

A PERSISTENT OCCIPITO-TRANSVERSE PRESENTATION: LABOUR OBSTRUCTED AT THE PELVIC OUTLET.

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In the conduct of a case of difficult labour it is generally the practice to attach so much importance to the determination of the lengths of the diameters of the pelvic brim that the consideration extended to the pelvic outlet is apt to be rather meagre.

A moment's reflection on the normal mechanism of labour will show this to be irrational, as it is clear that any marked diminution in the size of the pelvic outlet will provide a most definite barrier to the passage of the child. For scientific delivery as accurate a knowledge of the pelvic brim as it is possible to obtain is, of course, essential. But our estimate of the size and shape of the pelvic outlet is of equal importance.

As a result of a number of observations that I have made on patients who had previously suffered from somewhat extensive perineal lacerations, I am convinced that a diminished pelvic outlet is a much commoner condition than is apparently generally supposed, and that the omission to recognize its presence has been responsible for a very large proportion of the difficulties experienced in delivery when once the fetal head has passed the pelvic brim.

In the estimation of the size of the pelvic outlet it is necessary to measure the distance between the ischial tuberosities, this being its narrowest diameter. This is of great value as far as it goes, but if we consider the process of extension by which the head is delivered it is obvious that it is not enough. The distance between the tuberosities is dependent on two factors—namely, the length of the pubic rami and the angle included by them—the subpubic angle. The ease with which the fetal head will escape from the vaginal outlet will depend very largely on that angle. Of two pelvis with an equal distance between the tuberosities, the one with the wider subpubic angle and shorter pubic rami will clearly offer the less obstruction to the passage of the head during its delivery by extension. To work at the best advantage the suboccipital region of the fetal head should lie in contact with the under border of the symphysis pubis during this process and form, as it were, the fixed point of a lever, the length of which is determined at any instant by the particular diameter of the fetal head escaping at the moment, and which consequently varies continually during the extension. If the subpubic angle be so small that contact between these parts is rendered impossible, it follows that the length of the lever must be increased by the distance between the suboccipital region and the under border of the symphysis. This increase must of necessity put an additional strain on the perineal tissues, and so increase the difficulty of delivery and render a laceration more likely. This condition consequently calls for additional care in extending the head over the perineum.

As the shoulders escape the same thing is true. Their escape is a much more fruitful source of perineal laceration than one is often led to believe, and, in my opinion, they are in the majority of cases the determining factor. The process of their delivery is frequently apt to be more hurried than scientific.

The case on which this note is based forms an excellent instance of a presentation at the pelvic outlet, which I have here described as an occipito-transverse. By this I mean that in these cases the sagittal suture lies deep on the

pelvic floor and in the transverse diameter of the pelvis, the posterior fontanelle being in the right and the anterior fontanelle in the left lateral aspect of the pelvis, or vice versa.

I am unable to find any description of this condition in the standard English textbooks, though it is dealt with by the German authorities, the condition being known as a *Tiefer Querstand*. It is not very rare, and the case under consideration is one in point. It is not necessarily dependent on obstruction of any kind, but is probably a variation of the mechanism of an occipito-posterior presentation. Its recognition is very important from a point of view of treatment, as delivery is greatly facilitated by the knowledge of a suitable method of applying forceps should the occiput not rotate forward under the symphysis. The general rule that their application should be made in the transverse diameter of the pelvis obviously does not hold good in these cases, as the result would be to apply them with one blade over the face and the other over the occiput of the child, and an attempt at delivery would end in disaster. Under these circumstances the forceps therefore should be applied in one or other oblique diameter of the pelvic outlet with their pelvic curve towards the occiput of the child. Then during traction the forceps are rotated gradually into the opposite oblique, with the result that the occiput is swung round under the symphysis, and delivery is then effected in the usual way. To any one with a knowledge of the application of forceps this method of delivery is quite simple, and in the case under consideration was attended with an excellent result.

M. B., a primipara, aged 20, came into labour on August 14th; she had had slight pains throughout the day. The membranes were said to have ruptured earlier in the day, but strong labour pains did not commence until 6 p.m. She was examined at 7 p.m., and the os was stated to admit three fingers. It was fully dilated by 10 p.m., and before 11 p.m. the head was well down on the pelvic floor, and could be seen just inside the vulva. The pains now became more frequent, and although they were occurring every four minutes and were very strong, the head did not advance. At 12 midnight meconium began to issue from the vagina and the pains became still more severe, and the pulse-rate rose steadily. She was admitted into Guy's at 2.30 a.m., and when I saw her she was beginning to become very distressed, the pains were frequent and severe. The pulse-rate was now 110, and the interval between the pains was short. The back of the child was made out to be to the right. Meconium was issuing from the vagina, and the fetal head was visible on separating the labia. The fetal heart was counted at 152.

The patient was anaesthetized, and on examination there was a large caput extending over both parietal bones, and the sagittal suture was found to be lying in the transverse diameter, with the posterior fontanelle to the right and the anterior fontanelle to the left. The distance between the ischial tuberosities was 2½ in., and the subpubic angle was noticed to be small. Obviously the further progress of the head was completely obstructed by the narrowness of the outlet. By applying forceps in the left oblique diameter, and by rotating them into the right oblique during traction, I was able to swing the occiput under the symphysis. Realizing the smallness of the subpubic angle, great care was used in extending the head and the living child delivered with a small amount of laceration. This was immediately closed with sutures, and primary union has taken place.

The child was not large, and weighed 6 lb. 12 oz. Its head was 14 in. in circumference, its biparietal diameter was 3½ in., bitemporal 3½ in., mento-vertical 5½ in., occipito-frontal 4½ in., and suboccipito-bregmatic 3½ in. The obstruction was, therefore, not due to any fetal abnormality. Under the anaesthetic the diagonal conjugate was measured and found to be 5 in., and an estimate of the pelvic brim showed that no source of obstruction was present. This agreed with the clinical history of the labour.

This case, then, serves to illustrate the following points:

1. The necessity of always determining in a case of labour the size and shape of the pelvic outlet.
2. In forming an estimate of the amount of obstruction likely to occur at the pelvic outlet we should be guided both by the distance between the ischial tuberosities and by the subpubic angle.
3. The existence at the pelvic outlet of a presentation, here described as an occipito-transverse.
4. The rational treatment of such a presentation, should it persist, consists in an application of forceps in an oblique diameter of the outlet, and while traction is being made they should be rotated into the opposite oblique, with the result that the occiput is swung under the symphysis and delivery effected in the usual way.