effective in considerable dilution. For mucous membranes, on the other hand, we agree with Popper³ that percaïne is a most promising addition to the surgeon's pharmacopœia, and may well pave the way to the abandonment of cocaine.

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THE MECHANISM OF CEPHALIC PRESENTATIONS

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The main features of the mechanism which the head goes through, when in the pelvis, in cephalic presentations are easily understood; but the rotations which occur after the head is born are usually ill described. This is probably because these rotations are not very important in practice. A clear conception of them is nevertheless

mechanical conception of the movements is of assistance, since it tends to a clear understanding of the whole mechanism of cephalic presentations, provided that the limitations of such mathematical conceptions are realized.

The following generalizations are helpful in a consideration of the exact nature of the movements of the head after disengagement.

1. Restitution is equal in degree but opposite in direction to internal rotation.
2. Restitution plus external rotation together make a right angle.

When rotation of the head occurs in the pelvis, the shoulders as a rule do not undergo much rotation, and for the present purpose we shall consider that, apart from descending, they remain fixed and do not rotate. As soon as the head is born the twist on the neck is undone, and the head slips back to the position it occupied when engagement occurred. This movement is called restitution, since the head is restored to its normal position in relation to the shoulders. In anterior positions restitution is slight, occurs through one-eighth of a circle, and is difficult to observe. In posterior positions internal rotation of the occiput occupies three-eighths of a circle; according to our rules restitution ought to be a movement of corresponding extent, though of opposite direction; and external rotation, a small movement through one-eighth of a circle in the reverse direction to restitution, so as to bring the bisacromial diameter and the sagittal suture at right angles.

MECHANISM OF L.O.A. (Face Looks to Right).

The circle represents the pelvis seen from above. The dotted line is the bisacromial diameter. The arrow is the sagittal suture, and the dot at its tail the occiput.

MECHANISM OF R.O.P. (Face Looks to Left).

desirable, especially for the student. Two phases of mechanism of the head may be considered:

1. In the pelvis—consisting of engagement, descent with internal rotation,* and extension at the outlet, causing disengagement or birth of the head.
2. Outside the pelvis—consisting of restitution and external rotation.

These two movements of the head after it is born are commonly ascribed to untwisting of the neck and rotation of the shoulders respectively. Their exact extent is not usually described, and is, in fact, hard to determine. Observation is difficult, since the movements may occur rapidly. The exact extent of these rotations is not of great importance in practical midwifery, since the head is already born when they occur, and subsequent difficulty is relatively uncommon. Nevertheless, an accurate

Internal and external rotations are sometimes described as being in opposite directions in all cases. While it is true that the rotations of the head occurring in the pelvis and outside the pelvis are in opposite directions, it will be seen from the diagrams that in posterior positions it is the part of rotation outside the pelvis called restitution which is opposite in direction to internal rotation; and that the true external rotation—that is, that due to rotation of the shoulders—is actually in the same direction as internal rotation of the head, though only of small degree. The foetal neck is capable of considerable torsion, but the head and shoulders cannot, in posterior positions, be considered as independent of each other. Internal rotation of the head takes place when the foetus is low in the pelvis, by which time some rotation of the shoulders will also have begun. For the sake of clearness this need not upset our mechanical conception, and for teaching purposes it is simpler to

* The term "internal rotation" means rotation in the pelvis, and does not refer to the direction of rotation.

remember the above rules and to modify them in any given case as necessary. The fundamental idea of this mechanical conception is based on the fact that the bis-acromial diameter and the sagittal suture are at right angles, both at engagement and after delivery of the head. Any rotations of the head and shoulders, whether considered together or separately, must result in these two diameters being at right angles again; and the rotation of the head which occurs after it has undergone restitution is really due to the rotation of the shoulders still in the pelvis. These two rules are illustrated in the diagrams. In posterior positions of the occiput rotation of the shoulders and head may occur together, though it is simpler to consider them as occurring separately. In face presentations the submento-bregmatic diameter should be considered instead of the sagittal suture.

In conclusion, it should be remembered that in this description the foetal head and pelvis have been regarded as fitting each other accurately. Careful observation in cases in which the head is small shows that the movement called restitution may not occur, and sometimes the occiput, when the head is born, turns in a direction opposite to that which purely theoretical considerations would lead one to expect.

Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

MÉNIÈRE'S DISEASE WITH MYELOGENOUS LEUKAEMIA

The following case would seem worthy of record as an example of Ménière's disease associated with myelogenous leukaemia, and in view of the remarkable response to x-ray treatment.

CASE HISTORY

The patient, a married woman aged 37, first attended the out-patient department of King's College Hospital on May 14th, 1930, complaining of an attack of giddiness three weeks previously, accompanied by deafness and tinnitus on the left side, which had persisted. She also complained of headaches for about six months, and of menorrhagia and epistaxis.

On examination the spleen was found to be enlarged and firm, extending one inch beyond the mid-line and below the left iliac crest. The liver was enlarged two inches below the right costal margin.

The blood picture on May 29th, 1930, showed: red blood corpuscles, 2,125,000 per c.mm.; haemoglobin, 42 per cent.; colour index, 1.0; leucocytes, 655,000 per c.mm.—polymorphonuclears 37.2 per cent., eosinophils 5.2 per cent., basophils 0.8 per cent., lymphocytes 2.8 per cent., large mononuclears 0.4 per cent., myelocytes 53.6 per cent.

The retinae showed a typical leukaemic retinitis, the disk margins being very indefinite and the whole fundus pale and oedematous. The veins were much increased in calibre and were extremely tortuous. There were a few haemorrhages in both fundi. Aural examination revealed: Bárány box to right ear—shout not heard in left. Weber: fork → right. Rinne: right—air conduction greater than bone conduction; left—no air conduction, bone conduction just heard in right ear; very slight loss of air and bone conduction in right ear. Caloric test: left, negative.

Treatment by means of arsenic by mouth and x rays to the spleen and long bones was commenced on June 4th, 1930, and the blood picture rapidly improved. After three months' treatment the patient was very much better, the spleen considerably smaller and softer, and the retinae greatly improved.

Blood count, September 2nd, 1930: red blood corpuscles, 4,860,000 per c.mm.; haemoglobin, 66 per cent.; colour index, 0.67; leucocytes, 11,200 per c.mm.—polymorphonuclears 72.4

per cent., eosinophils 4.4 per cent., basophils, 1.6 per cent., lymphocytes 14.8 per cent., large mononuclears 1.6 per cent., myelocytes 5.2 per cent.

Shortly after this the patient went away for some six months, and had no x-ray treatment. When seen again in April, 1931, she was still fairly well, but the leucocyte count had increased to 96,800. Throughout the year that this patient has been under observation the condition of the left ear has remained unchanged.

I beg to acknowledge my thanks to Dr. A. C. D. Firth for his permission to publish this case.

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"IDIOPATHIC" SPONTANEOUS PNEUMOTHORAX

Examples of the above condition are still frequently described as great rarities and of obscure pathogeny. I have seen, and have collected records of, a number of such cases, and should like to have an opportunity of repeating concisely my view of their probable pathogeny. Nearly all of them get better rapidly without any special treatment; exceptionally, two or more attacks may occur in the same individual. The cause is, I believe, mostly the rupture of a minute superficial emphysema-bulla (just below the visceral pleura) adherent to the parietal pleura—resulting from a healed miliary tubercle. On the other hand, the tuberculous process may be still more or less active (still containing living tubercle bacilli); and naturally, therefore, there are exceptional cases intermediate between "idiopathic" spontaneous pneumothorax and tuberculous spontaneous pneumothorax. The only difference (according to my view) between the tuberculous and the "idiopathic" cases is that the former are connected with still more or less virulent tuberculous foci (containing living bacilli), whereas the latter are connected with healed (non-virulent, sterile) lesions; but lesions of both kinds may exist side by side in the same individual. I have given a bibliographical appendix on the subject at the end of the first Mitchell Lecture before the Royal College of Physicians (that is to say, as it was published by Lewis and Co., 1921). It is clear that, if my view be correct, any apparently (and, in fact, really) healthy individual may, for all one can tell, develop suddenly an "idiopathic" spontaneous pneumothorax, because any one may have an adherent emphysema-bulla (resulting from a healed miliary tubercle) ready to rupture on any unusually sudden respiratory movement.

The same explanation applies to extremely rare cases of "idiopathic" spontaneous haemopneumothorax.

London, W.1.

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SURVIVAL AFTER PROSTATECTOMY

In the *Journal* of October 17th Mr. W. S. Dickie reported the case of a patient who lived twenty-three years after the operation of prostatectomy and died at the age of 93.

The expectation of life after this operation is a point of considerable importance. Prostatectomy as applied to simple enlargements of the gland has only been in use in this country for some thirty years, and, so far as I know, no figures have been published recently to show what effect it has on the normal duration of life. It may therefore be of interest to recall some of the operative results obtained by Sir Peter Freyer, whose first cases were performed in 1901, and whose successes really established it as a sound surgical procedure.

The data have been obtained from the careful notes made by Freyer on 129 of his cases, preserved along with his collection of prostatic tumours in the pathological museum of St. Peter's Hospital for Stone. Of these 129 cases there are "follow-up" histories in 82 instances.