(A) Nomenclature De Jure

Fever	If Only One Genus of Parasites	If Two Genera of Parasites
Benign tertian	<i>Oscillaria</i> * <i>vivax</i> (Gr. & Fel., 1890)	<i>Plasmodium</i> <i>vivax</i> (Gr. & Fel., 1890)
Quartan	<i>Oscillaria</i> * <i>quartana</i> (Celli & Sanfelice, 1891)	<i>Plasmodium</i> <i>quartanum</i> (Celli & Sanfelice, 1891)
Malignant tertian	<i>Oscillaria</i> * <i>malariae</i> Laveran, 1881	<i>Oscillaria</i> † <i>malariae</i> Laveran, 1881*

(B) Nomenclature De Facto

Fever	If Only One Genus of Parasites	If Two Genera of Parasites
Benign tertian	<i>Plasmodium</i> <i>vivax</i> (Gr. & Fel., 1890)	<i>Plasmodium</i> <i>vivax</i> (Gr. & Fel., 1890)
Quartan	<i>Plasmodium</i> <i>malariae</i> (Gr. & Fel., 1890)†	<i>Plasmodium</i> <i>malariae</i> (Gr. & Fel., 1890)†
Malignant tertian	<i>Plasmodium</i> <i>falciparum</i> (Welch, 1897)	<i>Laverania</i> <i>falcipara</i> (Welch, 1897)

* Unless the Recommendation to Article No. 1 of the Rules of Zoological Nomenclature, that it is undesirable to have two genera of the same name in the zoological and botanical kingdoms, is to be regarded as a strict rule, which status it does not appear to possess. In that case the generic name here would be *Plasmodium*.

† Similarly, if the Recommendation to Article No. 1 is to be regarded as a strict rule the generic name here would be *Laverania*.

‡ In Ruling No. 104 of the International Commission on Zoological Nomenclature (1928) no author's name is given for the specific name of this parasite. As discussed in the text, we consider that this entitles us to use *P. malariae* (Gr. & Fel., 1890), not *P. malariae* (Laveran, 1881) as so commonly employed in recent years.

In short, Laveran gave the name *malariae*, not to all species of malaria parasite "in general," but to the malignant tertian parasite, which name this parasite should have rightly retained. Grassi and Feletti did not ascribe Laveran's name *malariae* to the quartan parasite, but gave their own name *malariae* (in the genus *Haemamoeba*), which name, however, sinks when one genus only is accepted to include both forms. The names *praecox*, *immaculatum*, and *falciparum* are all synonyms in so far as they are applied to malaria parasites of man. Acceptance of Opinion 104 of the International Commission on Zoological Nomenclature offers, however, a means, based on authority, of establishing the present most commonly used names of the parasites and so avoiding the confusion which would undoubtedly arise from any attempt now to allocate correct names *de jure* to these parasites. Hence the most desirable names for general adoption are *P. falciparum* (the malignant tertian parasite), *P. malariae* (the quartan parasite), and *P. vivax* (the benign tertian parasite).

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MANAGEMENT OF TRIAL LABOUR AND
SELECTION OF CASES

BY

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The Justification for Trial Labour

"Any measure which will reduce interference in labour, including induction and Caesarean section, and will increase the number of spontaneous labours, will contribute largely to the reduction of maternal mortality." These words of Bourne (1934), separated from their context, express concisely the prime reason for the introduction of the procedure known as trial labour. It is to be regretted that this test has lately fallen somewhat into disrepute in certain areas, chiefly, in my opinion, owing to improper selection of cases and to incorrect management of labour.

It is primarily intended for those cases complicated by a moderate degree of disproportion in which it is considered that, if the patient will co-operate, the normal mechanism of labour is not disordered, and the uterine action is satisfactory, vaginal delivery will take place without serious damage to mother or child. It should never be regarded as a test of endurance of the mother in the hope "that the skull will collapse before the uterus gives out" (Walker, 1936). It has been pointed out by Brown (1935) that, in spite of an enormous increase in the number of patients treated by Caesarean section and by the induction of premature labour during the last twenty or thirty years, the percentage of cases of difficult labour has not diminished. The simple fact that it is impossible to foretell how the uterus will act during labour introduces that element of doubt which justifies the employment of trial labour in carefully selected cases in preference to operative procedures.

Cook (1934) states the case for trial labour in the following terms: "Let us take ten cases of potential disproportion, in any of which obstructed labour may result. Before labour has been in progress we are unable in doubtful cases to determine those in which spontaneous delivery will eventuate. And it is well to admit this. Let us say, as a matter of experience, that spontaneous delivery will occur in nine out of the ten doubtful cases

of disproportion. Beforehand, let us frankly admit that we do not know which particular nine out of the ten will be thus favoured. There are three courses open to us. We can either perform ten Caesarean sections before the onset of labour or we can induce labour in all ten cases . . . or we can 'wait and see.' If we adopt the first of these procedures we have to reflect that we have performed nine unnecessary Caesarean sections. . . . If we adopt the second procedure, that of induction, we have performed nine unnecessary inductions, with the attendant disadvantages thereof." Further, there is little to prevent us repeating this error in future pregnancies (Brown, 1935). When trial labour is adopted, spontaneous or instrumental delivery per vaginam will be possible in the majority of cases, and in the remainder delivery by lower segment Caesarean section should not seriously increase the risk to the mother in properly controlled cases. The procedure is therefore one which will reduce interference in labour and increase the number of spontaneous labours.

The Choice of Case

When a primigravida or a multigravida who has not previously had a labour at term presents herself at the thirty-sixth week of pregnancy with evidences suggestive of possible disproportion, such as skeletal deformity or non-engagement of the foetal head in the pelvic brim, she should be subjected to a thorough examination. This, although concentrated upon the abdomen and pelvis, should not overlook such factors as age, disposition, and evidences of organic disease—for example, asthma, bronchitis, and heart disorders—which might influence the decision as regards the suitability of the case for trial labour. As a rule, a history of previous confinements will prove invaluable in prejudging the case of a multigravida.

Routine abdominal examination is carried out with the bladder and rectum empty, special attention being directed towards the presentation and position of the foetus, the size and degree of flexion of the foetal head, and its relation to the pelvic brim. Only cases in which the vertex is presenting are suitable for trial labour, so external version should be performed whenever possible for breech presentation, and an occipito-anterior position, because of the simpler mechanism involved, is more favourable than an occipito-posterior one. The size of the foetal head is of importance, as this is a variable factor upon which a great deal depends, and it should be remembered that deflexion usually tends to increase its apparent size. The foetal head may be fitted into the pelvic brim in order to assess the degree of overriding of the pubes. An assistant places a hand over the foetal breech to arch the back forwards and direct the head into the pelvic brim. Excessive lateral flexion of the foetal trunk should be avoided, as this will cause exaggerated asynclitism and will falsify the findings. The head is then grasped by the examiner's left hand with a reversed Pawlik's grip and pressed down into the pelvic brim, while the fingers of the right hand decide to what extent the head has descended and to what degree it overrides the pubic bones. Sometimes helpful information may be obtained by fitting the head into the pelvic brim with the patient in a sitting position. External pelvic measurements may be taken, in order to make the record as near complete as possible, but they cannot be relied upon to give guidance in the management of the case.

The investigation should be continued by vaginal and vagino-abdominal palpation, carried out whenever necessary with the patient under general anaesthesia. The foetal head is palpated, especial attention being paid to

its size, pliability, and degree of engagement in the pelvis. The width of the accessible sutures and the size of the fontanelles are determined, and the position is confirmed. The head is then fully flexed and fitted to the pelvic brim in a manner similar to that described above, and the degree of disproportion is estimated by Müller's and Munro Kerr's methods. The degree of descent on pressure is observed, and attention is paid to the angle between the anterior parietal bone and the posterior surface of the pubes, which tends to be more acute as the head descends into the pelvis. The diagonal conjugate is measured on the fingers and the true conjugate is estimated therefrom, allowance being made, when necessary, for unusual inclination of the pubes. The accessibility of the pelvic brim to the palpating fingers and the shape and capacity of the pelvic cavity—of especial importance in the differentiation between a flat and a generally contracted pelvis—are determined. The pelvic outlet is measured by the knuckle test, the width of the subpubic angle is noted, and the elasticity of the perineum and degree of mobility of the pelvic joints, especially the sacro-coccygeal joint, are assessed. It will be appreciated that these particulars can only be satisfactorily determined in late pregnancy. In a borderline case the results of x-ray examination may confirm or contradict the clinical findings and may to some degree influence the decision as to the most suitable course to be taken.

This examination may with advantage be repeated in part or in whole about a week before term to confirm the previous findings and to note changes which have occurred after the previous examination. The information is reviewed and a final decision as to the management of labour is made. All examinations should be conducted by the accoucheur in charge of the case, who will personally conduct the labour.

When gross disproportion is present and when the disproportion is of such a degree that it is considered that vaginal delivery would not be possible without appreciable risk to the mother or child, Caesarean section at term will be necessary. When disproportion is absent or is considered to be insignificant, the case is marked as satisfactory, and normal or low forceps delivery will be anticipated. If the disproportion is of moderate degree and it is considered that, with adequate moulding of the foetal skull, spontaneous or instrumental delivery per vaginam should be possible, provided that no complication such as uterine inertia or disordered mechanism arise during labour and that the patient is a suitable subject, trial labour will be the course of choice.

Management of Trial Labour

Trial labour should always be conducted in hospital, where facilities will be available for proper nursing attention, for effective aseptic and antiseptic precautions, and for any operative procedures which may prove necessary during the course of labour. The doctor in charge of the case should be available throughout labour and should see his patient at frequent intervals.

Labour is allowed to start spontaneously and to proceed as in a normal case, every care being taken to prevent exposure to infection. The usual light diet given during the first stage of labour is supplemented by a generous supply of sweet fruit drinks, and exhaustion is avoided by the judicious use of sedatives. An aperient followed by an enema should be given at the onset of labour, and the greatest care must be taken to see that the bladder is effectively emptied at regular intervals not exceeding two hours in duration. Bearing-down efforts on the part of

the patient must be firmly discouraged, to diminish the risk of exhaustion, premature rupture of the membranes, cervical oedema, and consequent prolongation of labour. The temperature should be taken early in labour and hourly after rupture of the membranes. The maternal and foetal heart rates should be recorded hourly during early labour, half-hourly during the later first stage of labour, and quarter-hourly after the membranes have ruptured.

After reviewing the general condition of the patient the abdomen is examined at intervals during labour in a manner similar to that described for the ante-natal period, special attention being directed towards the descent of the foetal head and the force of the uterine contractions. Vaginal examination is necessary only immediately after the membranes have ruptured or when descent of the foetal head seems to have been arrested in spite of good contractions after several hours in strong labour. It is advisable to pour a quantity of 1 in 1,000 acriflavine in glycerin into the vagina before introducing the fingers, and only the accoucheur in charge of the case should be allowed to examine. In addition to the particulars observed at the ante-natal examination several further points must receive attention. The presence or absence of oedema of the hypogastrium and vulva, and the state of the vaginal wall—whether normal and moist, or hot, dry, and oedematous—are noticed. The degree of thinning and dilatation of the cervix, the presence or absence of cervical oedema, and the relation of the cervix to the presenting part—whether closely applied or drooping in a skirt-like manner into the vagina—are determined. Special attention is directed to the foetal membranes to decide whether they are intact or ruptured; if they are intact, whether they bulge to a normal or abnormal degree during pains; and if they are ruptured, whether or not a loop of umbilical cord has prolapsed into the vagina. The position and degree of engagement of the presenting part, the amount of moulding, and the size of the caput succedaneum are also defined. These seemingly elementary points can prove of considerable importance in approaching a decision as to future treatment in a difficult case. All findings at each examination should be carefully recorded in order that the progress of labour may be accurately followed.

Termination of Labour

Favourable signs observed during the course of labour are good behaviour on the part of the patient, the occurrence of regular normal uterine contractions, good head flexion, a normally dilating cervix closely applied to the presenting part, absence of cervical oedema, and persistence of the intact bag of waters until the cervix is almost fully dilated.

When the foetal head has entered the pelvic cavity labour may be allowed to proceed, and a normal delivery may be anticipated in the majority of cases. In a certain proportion of cases maternal or foetal distress may become evident, and it may be considered advisable to terminate labour forthwith by a low forceps operation. Evidences of maternal distress upon which reliance is usually placed are deterioration in physical appearance in spite of proper care during labour, with a rising pulse rate and temperature. Foetal distress is usually shown by disordered action of the foetal heart. This may be excessively rapid or abnormally slow, irregular in rhythm or variable in rate. A foetal heart rate, previously normal, rising to over 160 beats or falling below 120 beats per minute, an irregular rhythm, or a heart rate rising steadily and then

falling in a comparatively short time, even though still within normal limits, is suggestive of foetal hazard. The timing of the delivery necessitates careful judgment, as extraction may be more difficult if performed too soon and may therefore endanger the life of the child and increase the risk of damage to the mother, while delay may result in intra-uterine death of the foetus. If in doubt timely application of the forceps, in the absence of contraindications, and slow extraction are the best principles to follow. The child must be treated with great gentleness both during and after delivery (Hunter, 1937a). Rapid delivery may precipitate death in a distressed foetus. Episiotomy is performed, when necessary, by an L-shaped incision of the perineum, which must be carefully sutured in layers after delivery. Adequate time should be allowed for placental separation during the third stage.

In a minority of cases it is necessary to terminate labour by Caesarean section, the trial being considered to have demonstrated delivery per vaginam to be impracticable. Lack of advance of the foetal head in spite of satisfactory contractions an hour or more after rupture of the membranes, excessive moulding and caput formation without progress, and early evidences of obstructed labour are usual indications; and signs of maternal or foetal distress becoming evident while the greatest diameter of the foetal head remains above the pelvic brim sometimes hasten the decision to deliver by way of the abdomen. Relative indications also include increasing oedema of the cervix and lack of intelligent co-operation on the part of the patient. Lower segment Caesarean section is the procedure of choice, but in rare cases, if this is rendered more than usually difficult by oedema of the bladder wall, hypogastric oedema, or excessive vascularity of the lower uterine segment, it may be necessary to substitute the classical operation (Hunter, 1937b). Operations involving destruction of the foetus have no place in the management of properly conducted cases of trial labour.

While the above instructions have been expressed in a dogmatic manner for the sake of clarity, it must be appreciated that a certain amount of elasticity must be allowed in dealing with cases of this class, a great deal depending upon the personal judgment of the obstetrician concerned.

Management of Subsequent Confinements

Certain conclusions may be drawn from a completed trial labour. It may be considered that normal delivery may be anticipated in future if the labour has terminated satisfactorily, but it must be borne in mind that in multiparous patients the foetus tends to get bigger with subsequent pregnancies, and the patient should therefore be examined afresh on each occasion. If difficulty of a moderate degree has been encountered it may be decided that induction of premature labour will be necessary in any subsequent pregnancy. When greater difficulty has arisen, especially if Caesarean section has proved to be necessary, it will probably be decided that this operation should be performed before the onset of labour on future occasions.

Summary

Trial labour is a conservative procedure, the employment of which is justified by the element of doubt existing primarily as to the efficiency of the uterus before labour has begun.

The procedure is applicable to cases in which, although a moderate degree of disproportion is present, delivery per vaginam without undue damage to mother or child

is thought to be possible, provided that complications do not arise during labour.

The selection of cases for trial and the management of labour are of first importance. A suggested routine is described.

The decision as to the management of future confinements may be based upon the experience gained from a trial labour.

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ACUTE ANTERIOR POLIOMYELITIS

FOUR SIMULTANEOUS CASES IN A SCHOOL

BY

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The occurrence of four simultaneous cases of anterior poliomyelitis in a boys' boarding school has afforded an interesting opportunity for inquiry into the possible method of infection, and the evidence suggests a route which might be worthy of further experimental investigation.

History of the Outbreak

On July 15 four boys were admitted to the sanatorium from the same house for different groups of symptoms, which are given below in detail in each case history. No boy seemed really ill, and all were put to bed for observation. By the next morning it seemed evident that they bore a major resemblance to one another, each suggesting a more or less severe disturbance of the central nervous system in its earliest stage. A fifth case was admitted as suspicious, but it was soon seen that no physical signs were present. There was sufficient justification to call in expert advice, and the four boys were seen that afternoon by Sir Charles Wilson and Drs. Camps and Maclean, who confirmed a provisional diagnosis of acute anterior poliomyelitis. Lumbar puncture was done on three of the cases. On July 17 three of the boys showed definite signs of paralysis of more than one group of muscles; the fourth showed definite weakness in one muscle of the arm only, and continued alteration of the abdominal reflexes. The fifth was definitely settled as negative.

On July 22 Dr. Brinton saw the four cases after paralysis had set in, and assessed the amount of paralysis in each case. Further details of the cases are supplied in the table.

Shortly after the notification of these cases information was received that six others had occurred during the previous fortnight in villages about ten miles away, on the opposite side of Braintree. During the subsequent eight weeks cases were notified scattered throughout the district of Essex surrounding Braintree, which is the largest town in the neighbourhood. But there were many villages and small towns within the area which were without a case. The accompanying chart shows all cases on the days of their first development, and their distances from Braintree, where the largest number of cases eventually occurred.

CHART I.—Date of onset of cases occurring in Braintree and the surrounding district. (The figures in parentheses refer to the population.)

Possible Sources of Infection to the Four Schoolboys

As the four cases in the school all occurred on the same day, and none are recognized as having occurred there before or afterwards, a close analysis was made of the daily habits and lives of these four boys in order to discover any factors common to all four which would point to the source of infection. It certainly appears unlikely that the presence of a carrier in the house was the explanation, as one would then expect a series of cases at intervals rather than such an isolated batch. But it is important to note that cases did appear later in the village, and that two of them occurred in the family of one of the maids employed by and living in the house. These cases were attributed to the maid having carried the infection home. As she was in the house for the rest of the term and no further cases occurred there, and as one attempt to infect a monkey from her proved negative, there is no actual evidence in our present state of knowledge that she was in fact a carrier. Analysis shows:

1. All the four cases occurred in the same house of fifty boys. This house has separate feeding arrangements and a separate domestic staff from the rest of the school.
2. Inside the house only two of the boys slept in the same dormitory; these two were quite friendly and sat near each other in the dining-room. The other two were in different dormitories, and each was unconnected with the others in any activity.
3. In the house-room all four were in different corners, and one of them was only present occasionally as a house prefect.
4. In the school all four were well scattered, being in different classes and other categories.