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THE  
OBLIQUITY OF THE FŒTAL HEAD  
IN THE  
MECHANISM OF PARTURITION.

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THE object of this paper is to show that the obliquity, or lateral obliquity, of the fœtal head when passing through the brim of the pelvis, described by Nægele, by some of his predecessors, and by his followers down to the latest authors, does not exist in natural parturition; and that obliquity, or lateral obliquity, of the fœtal head when passing through the outlet of the pelvis, not described by Nægele and his followers, does occur in natural parturition.

This word, obliquity, and the alternative expression, lateral obliquity, are terms requiring, for most readers, some explanation; their meaning certainly not lying on the surface. The words ordinarily used to express the state, considered as a fœtal attitude, seem to me far more appropriate, and scarcely susceptible of being misunderstood—viz., lateral flexion.

I have for several years ceased to teach in my class-room the doctrine of Nægele on this subject, and it has long been my intention to publicly claim attention to my opinions, and thus to secure for them a wider scope, as well as careful criticism. And although it is now three years since Dr Tyler Smith's *Manual of Obstetrics* was published, it is the stimulus from a first perusal of that excellent compendium that has led to my taking up the pen. I need scarcely assure my professional brethren that it is with the greatest diffidence that I venture to adduce views opposed to those of Nægele, of Dubois, and of subsequent authors too numerous to mention. It is for the profession to decide whether truth lies with them or with me.

But I am not alone and unsupported in the views I entertain. Many authors, indeed, enter at length into descriptions of, and argu-



ments for, Nægele's opinions; but I know of none who has taken up the opposite side with any fulness. At the same time, I have, since writing this paper, found, on reference to the works of Velpeau,<sup>1</sup> Cazeaux,<sup>2</sup> and of Dr R. U. West,<sup>3</sup> that these gentlemen have reached conclusions similar to my own regarding the direct entrance of the foetal head into the pelvis.

Nægele's teaching is to be found in his original paper, *über den Mechanismus der Geburt*, published in 1819 in *Meckel's Archiv für die Physiologie*. I shall quote from Dr Rigby's translation of it, published in London ten years afterwards. Before doing so, I must premise that the quotations refer to the first or commonest position of the head in labour, and that in the whole of this paper I shall suppose this position to be understood. The doctrines apply to the other positions as well as to the first, and if proved or disproved for the one, stand or fall for the others.

"At the entrance of the pelvis (says Nægele), the head does not take a perpendicular, but a perfectly oblique direction, so that the part which lies lowest or deepest, is neither the vertex nor the sagittal suture, but the right parietal bone. The sagittal suture is much nearer to the promontorium of the sacrum than to the os pubis, and divides the os uteri, which projects backwards and generally somewhat to the left, across into two very unequal segments."—(P. 13.)

"The higher the head is . . . the more oblique is its direction; from which reason the right ear can generally be felt behind the pubis without difficulty, which would not be the case if the head had a perpendicular direction."—(P. 16.)

"On account of the oblique position of the head, the greatest width of the cranium (from one tuber parietale to the other), as well as that of its basis, can never, during its passage, coincide with the diameters of the pelvic entrance."—(P. 19.)

In further illustration of this doctrine, I shall quote the account of it in Tyler Smith's *Manual*, the latest British systematic work on midwifery:—

"The right side of the cranium is considerably lower than the left, so that the most depending part of the cranial surface is the protuberance of the right parietal bone. This lateral depression is called the obliquity of the head."—(P. 268.)

"The movement of the foetal head upon its occipito-frontal axis. . . . This movement causes one side of the foetal head to become lower than the other during the whole progress of labour, after the head has entered the brim, constituting the obliquity of the head."—(P. 274.)

If it be recollected that the axis of the child's body, the axis of the uterus, and the axis of the brim of the pelvis, are represented by the same line in the normal or standard condition, or very nearly so,

<sup>1</sup> *Traité Complet de l'art des Acc.* Bruxelles, 1835. P. 250.

<sup>2</sup> *Traité de l'art des Accouch.* 1858. P. 423.

<sup>3</sup> *Glasgow Medical Journal.* 1857. P. 304.



then it is easy to see that this obliquity implies lateral flexion of the child's head, or the approximation of its left ear to its left shoulder. In respect of this lateral flexion, the child's attitude is thus represented as being changed from that maintained in utero before labour. The position of the child's head, as described in this changed attitude, is oblique; that is, the vertical axis of its head is said not to impinge upon the plane of the brim at right angles to it, but obliquely, forming an acute angle looking forwards.

I do not believe that, in normal or standard conditions, any such lateral flexion or obliquity exists, but that Nægele and his followers are in error in this particular, and that the head enters the brim without any lateral flexion, and directly—that is, with its vertical axis at right angles to the plane of the brim.

## I.

The first and chief reason for denying the existence of obliquity of the foetal head at the brim of the pelvis, is, that it is not observed. I have been in the habit of carefully making out the position of the foetal head in the brim of the pelvis at the beginning of labour; and, although I have observed that it varies to a slight extent in different cases, I have satisfied myself that it enters the brim, very generally, directly and not obliquely.

The obliquity which is described has never been seen. It is only a supposed result of the observation of many particulars in many cases; and the observations are of a kind demanding great information and carefulness. The liability to be misled by preconceived theories is very great; and I cannot help thinking that the obliquity under discussion is the fruit of a mind powerfully impressed with the important part that obliquity undoubtedly plays in other departments of the mechanism of parturition.

I have not found the sagittal suture nearer the promontory of the sacrum than to the symphysis pubis. I have not found more of the right parietal bone approachable by the examining finger than would be so if the head entered the brim without obliquity. I have not found the parietal protuberance lying near the centre of the brim of the pelvis, nor approaching to it. I have not found the right ear of the child easily reached, while the vertex of the child was at or near the brim of the pelvis.

It is needless to pursue a career of assertions opposed to the statements of the believers in the obliquity. I shall proceed to evidence corroborative of the position I maintain. But before doing so, I shall simply mention that in cases in which, for various reasons, I have introduced my hand, and felt the whole head as it lies in the brim, I have not found the obliquity under discussion. This is valuable evidence, especially in cases where there is no deformity of the head or structures in the neighbourhood.



## II.

The descriptions of the oblique position of the head given by Nægele and others are more truly applicable to its direct than to its supposed oblique position. This will be best shown by an examination of Nægele's remarks bearing on this matter.

*"The finger (says he) which is introduced in the direction of the central or middle line of the pelvic cavity, and brought in contact with the head, will touch the right parietal bone in the vicinity of its tuber."* It is to be remarked, *firstly*, that the finger is not introduced in the central line of the pelvic cavity, but only in the direction of it; *secondly*, that it is not made evident that the head is to be touched or approached in the direction of the axis of that part of the pelvis where the head is lying—that is, in the axis of the brim. The finger may approach the head in the direction of the axis of the brim, but it is scarcely long enough to do so in the axis of the brim, or as nearly in it as, in the circumstances, can be guessed. The consideration of these points shows Nægele's statement to be so vague as to be without much value in this discussion. But it will be evident to all that the quotation cited is perfectly true, on the supposition that the head enters the brim directly, not obliquely.

To bear satisfactorily upon this question, Nægele's statement should have been to the effect, that the finger approaching the child's head in the axis of the brim, or where the imaginary axis of the brim passes through the surface of the vertex, touches the tuber of the parietal bone or its vicinity. Now, while I admit that the finger introduced in the direction of the axis of the brim, as may be done in vaginal examinations, touches the cranium near the tuber parietale, I assert that, on the other hand, the finger carefully introduced in the axis of the brim touches the cranium in or near the sagittal suture, and at a point in its length varying according to the degree of flexion of the head.

*"At the entrance of the pelvis (says Nægele) the head does not take a perpendicular, but a perfectly oblique direction, so that the part which lies lowest or deepest, is neither the vertex nor the sagittal suture, but the right parietal bone."* Now, it is evident that, at the entrance of the pelvis, the head does not take a perpendicular, but a perfectly oblique direction. It does so because the whole child is lying obliquely; and to enter the brim of the pelvis directly—that is, in the direction of the axis of the brim—it must take a perfectly oblique direction. If it took a perpendicular direction—that is, a direction at right angles to the horizon—it would necessarily enter the pelvis with obliquity; but it takes an oblique direction in order to enter the opposed oblique brim of the pelvis directly, that is, in the direction of its own axis and of the axis of the brim.

Further, as Nægele says, the part which lies lowest or deepest is neither the vertex nor the sagittal suture, but the right parietal bone. All this is a necessary consequence of the direct entrance of



the head. No doubt it may also be a consequence of the oblique descent of the head, but its occurrence is no proof of the obliquity. The direction of the head entering the brim is nearly that of a line striking the horizon at an angle of 30 degrees. This is a very considerable obliquity to the horizon, but is perpendicular to the brim of the pelvis, which is inclined to the horizon at an angle of 60 degrees. To enter the brim of the pelvis obliquely, the child's head must advance horizontally, or in a line of direction striking the horizon at an angle less than 30 degrees. Nægele does not say that the part which lies lowest or deepest in the brim is the right parietal bone. If he intended to say that, I am at issue with him; and appeal to observation in support of my assertion, that both parietal bones enter and pass the brim simultaneously, both being in the plane of the brim at the same time.

*"The sagittal suture (says Nægele) is much nearer to the promontorium of the sacrum than to the os pubis, and divides the os uteri, which projects backwards, and generally somewhat to the left, across into two very unequal segments."* The position of the sagittal suture in regard to the promontory of the sacrum cannot be discovered by an examining finger, the parts being too distant to be reached in that way. When the hand is introduced into the vagina to feel the whole relations of the parts before the foetal head has passed the brim, the sagittal suture is not found nearer the promontorium than to the pubic symphysis. I am thus, at this point, quite at variance with Nægele, and I may venture to point out the cause of his error. It is my opinion that it has arisen from not making the observations relied upon, while the foetal head was at the brim of the pelvis, and then only; for, after the head has passed the brim and entered the pelvic cavity, the sagittal suture is generally found nearer to the sacrum than to the pubis; and this is not very unfrequently observed even before the os uteri is much dilated, or the labour has been long continued. This approximation of the sagittal suture to the sacrum arises from the descent of the head in the axis of the brim, which coincides with the axis of nearly the whole upper half of the bony pelvis. This axis, when prolonged, strikes the sacrum at or near its point. The foetal head has a tendency to advance in this axis, and does so till it is arrested by the posterior wall of the pelvis. While it is passing between the symphysis pubis and the two upper bones of the sacrum, it has the sagittal suture equidistant between them; but afterwards, and until the head begins to advance more or less forwards, the sagittal suture approaches to the sacrum, as it descends in an axis which leads it in that direction.

The last part of the quotation just given from Nægele has very little value, for two reasons,—viz., because the situation of the os uteri is far from being fixed or invariable, and because no observations have been made even as to what is its most ordinary position with minute exactness. Nægele himself mentions a frequent deviation to the left, which has not received much notice from subsequent



authors. While the head is at the brim of the pelvis, it is difficult to examine satisfactorily the relations of the sagittal suture to the moderately dilated os uteri; and the greater facility of reaching and examining the right and anterior than the left and posterior parts of the head naturally leads, and I believe has led, to exaggeration of the extent of the anterior half over the posterior half of the part corresponding to the circle of the os uteri. But it is out of place to pursue this particular point further, because its settlement would prove nothing, and lead only to the further question of the exact position of the os uteri in early labour, for the ascertainment of which we have no satisfactory data.

*"The higher the head is (says Nægele) the nearer its long diameter corresponds to the lateral diameter of the pelvis, and the more oblique is its direction; from which reason the right ear can generally be felt behind the pubis without difficulty, which would not be the case if the head had a perpendicular direction."* In regard to the increase of obliquity according to the height of the head, I have not one word to say, except that it is a mere statement on Nægele's part, unaccompanied by any corroborative evidence. As I do not believe in the obliquity at all, I can find no place for this refinement.

Nægele's assertion regarding the right ear is quite as much in accordance with the theory of the direct entrance, or entrance in a perpendicular to the brim, as with his own theory of obliquity. I must confess myself completely at a loss, however, as to the full bearings of his argument; for I know well that under no circumstances is the right ear felt behind the pubis without difficulty, and that its position when felt, and the forcing of the finger between the pubis and the head in order to reach it, indicate the direct, not the oblique, entrance of the foetal head into the brim of the pelvis.

### III.

The third reason for rejecting the theory of obliquity at the brim of the pelvis is based upon a careful study of the production of the caput succedaneum, and of the relations of this swelling to the presentation,—a subject in regard to which much has been assumed without evidence, or in defiance of it.

*"Under certain circumstances (says Nægele), a swelling of the integuments of the head frequently forms soon after the os uteri has begun to dilate. . . . This swelling is situated upon the right parietal bone, close to its upper edge, and equally distant from both angles: a small piece sometimes extends over the sagittal suture unto the other parietal bone; its circumference depends upon the degree of dilatation which the os uteri had attained."* This statement of facts by Nægele may be added to, but cannot, I believe, be controverted. The caput succedaneum of the first stage of labour can be felt and seen to be as described in the passage. The statements in the quotation immediately preceding this last, and in others, is in quite a different posi-



tion, involving points not of easy observation, and in regard to which there are manifest inducements to error. But, while I agree entirely with Nægele's statements in this last passage, I would make two additions thereto, of which only the second has an important bearing on the subject of this memoir.

*First*, It is a condition, necessary for the formation of a true caput succedaneum, that the liquor amnii be evacuated, or that it be in such minute quantity as to have no hydrodynamical properties. *Secondly*, While the extent of the caput succedaneum of the first stage may be limited to the right parietal bone, it is generally so limited only when it is not well developed. When it is well developed, it is found to extend over the upper part of the left as well as of the right parietal bone; but its greatest thickness is, as a rule, always in the portion overlying the right parietal bone. Nægele himself mentions the extension of the swelling over the left parietal bone as an occasional occurrence of which he gives no explanation.

Before further advancing, it is necessary to inquire what evidence is derivable from the caput succedaneum. In answer, it is certain that it only indicates what was the unsupported part of the head,—in the present instance, what part lay over the os uteri. And as the position of the os uteri is uncertain, and denotes nothing exact topographically, so the position of the caput succedaneum will denote nothing exact topographically, or relative to the position of the foetal head in the brim of the pelvis. For a fuller development of this subject I beg to refer the reader to my paper on this topic in the *Edinburgh Medical Journal* for July 1860.

But, before leaving this point, I think it advisable to show that, supposing, as Nægele seems to do, that the os uteri occupies exactly the centre of the brim (except deviation to the left), and that the caput succedaneum formed on the part of the head lying over it marks the part lying in the centre or axis of the brim, the indications afforded by this swelling are not truly read off; and that, if truly read off, they indicate direct, not oblique, entrance of the head into the brim.

The caput succedaneum of the first stage of labour is often formed after the head has passed the brim of the pelvis, and is lodged in the upper half of the cavity of the bony pelvis. Were we to be cautious and exact in reasoning, all such swellings should be excluded from the argument, for evident reasons. It is only those formed at the plane of the brim, or very near it, that can, under any circumstances, afford assistance in settling this question. Under the actual deficiency of exact data, we must be content with stating principles. Now, it is evident that the direction of the caput succedaneum of the first stage will be that of least resistance—that is, the direction of the axis of the undilated vagina; in other words, the caput will be thickest where the head is least supported, and may, in other parts within the circle of the os uteri, be so inconsiderable as not to attract notice. Further, and for the same reason, the centre of the



caput succedaneum, or the centre of the os uteri, will not correspond with the thickest portion of the swelling, but in this case be behind it, or nearer the left parietal bone. The oblique direction downwards and forwards of the vagina will lead the caput in that direction; and the support given by the posterior wall of the vagina to the posterior half of the space enclosed in the circle of the os uteri will cause thickness of the swelling over the right, and comparative thinness over the left parietal bone, and displacement of the thickest portion of it forwards in the pelvis, that is, in the direction of the right parietal and away from the left parietal bone.

#### IV.

A very cogent argument against the existence of this lateral flexion of the child's head, or obliquity to the plane of the brim, at the commencement of labour, is derived from the impossibility of finding a mechanism to account for it.

If the membranes are still entire, and there is present any considerable quantity of liquor amnii, and if the axis of the child and uterus are parallel to or identical with the axis of the brim, all which conditions are usually found, it is impossible to conceive any cause of the obliquity but a spontaneous lateral flexion of the child's head; and I daresay no obstetrician will support so extraordinary a doctrine as that the child should, without any discoverable cause, and I may add without any desirable object, bend its head towards its left shoulder as it begins to pass the brim.

If the liquor amnii has been evacuated before the foetal head has entered the brim, or if the liquor amnii be very scanty in amount, then forces produced by the pains, or the lower parts of the womb and adjacent structures, may be imagined to act directly upon the child, and cause the obliquity. But although they may be imagined, they do not, I believe, exist. If the uterus, for example, became, during pains, more nearly horizontal than it ordinarily is, or quite horizontal, then this grave anterior obliquity of the uterus would probably cause the head to present indirectly or obliquely at the brim. But the opposite of this is observed in nature. The uterus, during a pain, becomes, as it were, erect, and to a certain extent corrects any obliquity it may have during relaxation, becoming, when in contraction, perpendicular to the brim of the pelvis,—that is, occupying its axis. It is certain, then, that no anterior uterine obliquity is observed, which might account for the obliquity of the head at the brim. And it is necessary to remark that the obliquity at the brim, if supposed to be produced by anterior obliquity of the uterus, would not be accompanied by lateral flexion of the head as a change in the foetal attitude. The flexion of the foetal head which is so often observed in the early part of labour is easily accounted for by the circumstance that the fulcrum of the head—the spinal column—is nearer the occiput



than the sinciput; and all forces acting equally on the various portions of the vertex, act with advantage on the sinciput, as it is at the end of a longer lever than the occiput. But in the case of the sides of the head, the right against the left tuber parietale, no such inequality is observed.

In short, no mechanism has been devised to account for the phenomenon, and it is a vain pursuit to seek it, at least on my part, as I deny the existence of what is to be accounted for.

## V.

Assuming that the foetal head enters the pelvic brim obliquely, Nægele claims for this condition a mechanical advantage over the direct entrance. "*On account*," says he, "*of the oblique position of the head, the greatest width of the cranium (from one tuber parietale to the other), as well as that of its basis, can never during its passage coincide with the diameters of the pelvic entrance.*" P. 19.

It is necessary, *in limine*, to state that discussion on this point, and conclusions in regard to it, can lend no aid to the settlement of the question under consideration in this paper. It is, indeed, quite a work of supererogation to consider at all the advantages presented by an oblique or direct entrance of the head into the pelvic brim, until the previous question be settled, whether the entrance is direct or oblique.

The position apparently offering the greatest mechanical advantages is not always adopted by nature. Mechanical difficulties seem in various points to be sought, instead of mechanical advantages. The whole process of labour is, indeed, beset with difficulties, one of whose objects is, without doubt, to prevent its too easy and rapid accomplishment. One example, germane to the subject of this article, I may adduce from the entrance of the foetal head into the pelvic brim. It is well known that its entrance considerably flexed has a great mechanical advantage over its entrance slightly flexed or not flexed at all; yet, in spite of this mechanical advantage on the side of the greater flexion of the head, we find that it generally passes the brim slightly flexed or not flexed at all.

Nægele places the mechanical advantages of the supposed obliquity entirely in the dimensions presented to the plane of brim by the transverse diameters of the cranium and of its basis. In including the basis in his statements, he is decidedly wrong. He would, indeed, appear to forget that the foetus has a neck, the addition of which to the basis, even when the head is laterally flexed, makes the direct entrance of the basis mechanically the most advantageous, and that so evidently that it is really needless to do more than assert it.

There is no doubt that if the foetal head passes the brim directly, the greatest biparietal diameter (from one tuber parietale to the other) passes it, and that, if the head enters the brim with obliquity,



a smaller biparietal diameter supplants the greatest,—that is, in the first position, a diameter measured from below the right tuber to above the left. But Nægele seems, for the moment, to have forgotten that the long diameter of the foetal head is not in the transverse diameter of the brim, but in an oblique diameter of this part, and that consequently (as well as for other reasons), the diameters of the foetal head which he wishes to be compared are not the diameters it is necessary to compare, for they do not pass the smallest diameter of the brim. If mechanical advantage in the way of dimensions is to be of service in the mechanism, it must meet the difficulty,—that is, the gain in diminution of dimension must be in the part traversing the conjugate, or small diameter of the brim; and this is not true of the gain spoken of by Nægele. But, in truth, no gain is desiderated in any natural case, and when the comparison of the oblique and direct diameters of the part of the head traversing the conjugate diameter, as suggested by Nægele, is made so as to be true to the mechanical conditions, it is found that no appreciable gain is got from obliquity. This comparison is too difficult to give in words so as to be useful to a reader. It is necessary to institute it with the foetal head and callipers in the hands in order to verify it.

There are, however, mechanical conditions of the laterally flexed head, or of the head presenting one parietal bone to the brim, which, if such a position were assumed, would lead to great and perhaps insurmountable difficulties in a labour. For, if the vertex was by any arrangement displaced from its position at the brim, as Nægele describes, it would tend always to be more and more displaced, till an ear, or even a shoulder, descended. And if the canal of the uterus were rigid and contracted enough to resist such unnatural dislocation, the uterine efforts would be directed along the body of the child to its head, at a great disadvantage. Other mechanical evils might be suggested; but it is in vain to raise difficulties, which, if the object of my memoir is gained, are all chimeras.

While I hold it proved that the child's head passes through the pelvic brim directly, I have, before leaving the subject, to point out that, after it has passed through the brim and upper half of the ligamentous pelvis, it does advance obliquely in its subsequent progress,—that is, the head of the child impinges on the planes of the parts of the pelvis through which it is passing, or on planes at right angles to the axis of the lower parts of the pelvis, not directly, but indirectly or obliquely. A mesial part of the foetus does not first touch these planes, but a lateral point.

In the first half of the head's course through the ligamentous pelvis, a point in or near the sagittal suture is the presenting point. There the caput succedaneum is formed. During this part of its course the head advances in the axis of the brim, which almost exactly corresponds with the axis of the upper half of the ligamentous pelvis.



During all this time, if the head is not covered by the cervix uteri, the right parietal bone is the part first and easiest felt; and the further it advances, the more is this the case. As it advances, and passes the first bone of the sacrum, the sagittal suture approaches nearer to the sacrum, or rather to its lower portions, and becomes more distant from the symphysis pubis. When the biparietal diameter of the head has reached the lower boundary of the upper half of the pelvis, it is arrested in its direct progress. The vertex impinges on the posterior wall of the pelvis, and, in its further advance, the head, as a whole, must change the direction of its course. This change of course is too abrupt for the parts of the head to follow it perfectly. Moreover, there is no room in the pelvis for such a degree of lateral flexion as this would imply,—that is, as would be necessary to maintain the head presenting directly to the plane of the pelvis through which it is passing. While advancing at this point of its progress, the presenting part, therefore, is changed. It soon becomes the upper and posterior part of the right parietal bone, instead of, as before, a point in the mesial line of the head. With this point advancing in the axis of the pelvis, it is evident that the sagittal suture or mesial parts are far removed from it, and consequently that the head is passing through the lower half of the pelvis, the outlet, over the perineum, and through the vulva, more or less obliquely, and not directly. In accordance with this obliquity, the child's head is flexed laterally, or, to be more exact, flexed obliquely,—that is, bent not directly over the right shoulder, but in a direction midway between extension and direct lateral flexion. As it approaches the orifice of the vulva, and rotates so as to bring the occiput nearer to the pubes than it was in the earlier parts of its progress, this flexion gradually approaches nearer to extension; but it does not become direct extension, almost always maintaining an obliquity,—that is, a direction between extension and flexion.

Under two sets of circumstances, not observed in ordinary labours, the presentation of the foetal head may be direct from the beginning to the end of the process. In the rare cases where the head enters the brim and passes through the whole pelvis with its long axis in the antero-posterior diameter of the passage, the head will offer itself not obliquely, but directly, in its whole course. The presentation, indeed, will only shift backwards upon the child's head as it descends, maintaining always a position in the mesial line. Again, it is possible that the foetal head may descend directly with its long axis in the transverse diameter of the pelvis, till it makes a complete quarter of a circle rotation, bringing it into a direct antero-posterior position. Such cases are not subjected to the ordinary laws of the mechanism of parturition.

It is to be remarked, then, that in the second half of its progress the head does not present directly, but obliquely, and that it is born with this obliquity. But this last obliquity is unlike the former, in being quite in accordance with Nægele's statement of the pheno-



mena, though he omits to mention this special point, the obliquity which he describes in this portion of labour being the position of the long axis of the head in the right oblique diameter of the pelvis, not the oblique presentation of the head to the plane of the outlet, or other portions of the pelvis through which it passes in the latter parts of its course. Further, not only is there observed this obliquity to the planes of the pelvis, but there is a change in the attitude of the foetus simultaneously produced. The head is at first, in this second part of its course, laterally flexed to the right with a backward obliquity; and when passing the vulva this is slightly changed, the condition being one of extension, with a lateral obliquity to the right shoulder.

This obliquity of the child's head to the planes of the lower parts of the pelvic passages is not only observed, but is easily explained. In its descent, the head, if of its ordinary size, must follow the direction of the curved axis of the pelvis. It is possible to imagine the presentation continuing direct while the other parts of the mechanism remain unchanged; but there is no room in the pelvis for the great right lateral flexion of the head that would be necessary to maintain the presentation direct, and the mechanism does not demand it. A certain amount of lateral flexion is made, and this diminishes the obliquity. This moderate lateral flexion is not produced by spontaneous foetal motion, but by the powers of labour urging the child through a canal which at this part is rigid and contracted enough to force the soft foetus to adapt itself to its graduated curvature.







