

A REVIEW
OF
OBSTETRIC PRACTICE

WITH DEDUCTIONS,

BY

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and the truth of this statement is borne forcibly in upon everyone who carefully and conscientiously endeavours to follow, in its various phases, labour, either normal or abnormal.

The second reason which guided me to the choice of this subject, is the importance of the careful and skilful practice of Obstetrics to every medical practitioner. It is true that the great majority of cases go through the whole period of pregnancy, labour, and the puerperal state, without any appearance of morbidity, but at any time emergencies may arise, which will require immediate and intelligent grappling with, and this can only be done by having a thorough knowledge of knowing what to do, and then in the application of that knowledge. These sudden emergencies arise most usually during the period of labour, and a practitioner who is not conscious of a knowledge of what exactly to do, cannot have the self-confidence which will be required under the most trying and urgent circumstances. Barnes has well said-"Even more than surgery and medicine, obstetrics call for promptitude in judgment, courage under difficulties, and skill in execution". Matthews Duncan sums up the duty of practitioners as follows-(Address in Obstetric Medicine, delivered at Norwich Meeting of the British Medical Association, February 1874) "But, even though science is not at hand to offer the solution of difficulties in practice, it is the duty of every obstetrician, with a view to the advantage of confiding patients to watch the progress of science, if not to contribute to it, as well as to select more or less empirically among modes of treatment. He should at once con-

tribute to build up science, and at the same time be ready to meet in the field of practice, the great difficulties that suddenly come in his way. Like the Jews of old, he should work with one of his hands in the permanent work, while with the other he holds a weapon, wherewith to fight against Sanballat and Tobiah. He who directs his professional life after this manner will certainly be the best practitioner, the most useful to his immediate patients, and peradventure, happily useful indirectly to the patients of all instructed practitioners in all coming time".

If this view is taken, then even the most normal parturition is invested with interest. Its progress is watched, and its various phenomena are found either to confirm or negate laws laid down, and some preconceived notion will be either strengthened or weakened.

The infinite variety of nature is found here, as in all other spheres. No two labours are exactly alike in all details, and if these differences are looked for, found, and noted, a constant interest is maintained, experience is gained, and knowledge is increased.

It is my intention to embody in this discourse, points which have been noticed in Obstetric practice. For the basis of these points, I have taken three hundred consecutive labour cases attended by myself. I have excluded all cases of abortion, and have only included cases of parturition at the full term of pregnancy, and cases of premature labour at a period when the foetus was viable. Notes of the outstanding features of each case were taken soon after, and any point considered

to be of interest was written down. Every item, therefore, is first-hand.

I am afraid that I cannot lay claim to having observed anything very extraordinary, but I have, so far as lay in my power, endeavoured to cultivate the power of observation, and have applied, so far as I could, the principles laid down by the various authorities. I have endeavoured to act up to the postulate of Matthews Duncan when he states (Mechanism of Natural and Morbid Parturition 1875. Chap 1, Page 19) "All honest work contributes to progress; for if the result is not a new piece of knowledge for all obstetricians, it is probably new for some, and the time expended on it is not lost, for it has at least contributed to increase the intelligence of one obstetrician, and has added to the common stock of intelligence in the community of obstetricians".

A considerable number of abnormalities will be remarked upon, as it is on account of these abnormalities that a considerable amount of the interest in Obstetrics depends. It is very true that parturition is as much a physiological function as deglutition or defaecation, but if it was always entirely so, there would be no need for obstetricians, and the study of parturition would be only of a purely scientific interest. However, whether it is due to the artificial circumstances of life now or not, the fact remains, that in a considerable proportion of labours, the morbid takes the place of the natural, and the assistance of the obstetrician is required.

It would be well if all followed the example of Smellie,

the one who above all others rescued the practice of Obstetrics from a state of chaos, and put it upon a sound scientific basis, who gives his confession of faith in the following words (Smellies' Treatise on the Theory and Practice of Midwifery, edited with annotations by Alfred. H. McClintock. New Sydenham Society 1877. Vol 2. Page 251) "In a word, I diligently attended to the course and operations of nature which occurred in my practice, regulating and improving myself by that infallible standard, nor did I reject the hints of other writers and practitioners, from whose suggestions, I own, I have derived much useful information, ::::: On the whole, I have given this short detail of my own conduct, for the benefit of young practitioners, who will see, that far from adhering to one original method, I took all opportunities of acquiring improvement, and cheerfully renounced those errors which I had imbibed in the beginning of life".

If the facts laid down and remarked upon in this thesis, in any way conform to the high ideals laid down by Smellie and Matthews Duncan, they will not be devoid of interest, nor perchance, even of instruction. Dogmatism on any point will be absent, as I believe that a truly scientific mind is never dogmatic, but ^has a feeling regard for the opinions of others, however divergent these may be from its own, and however satisfied ~~one~~ one may be that his own opinions are right and tenable, still, he will never force them upon others, and will always be open to conviction that his conclusions may not be correct.

It is a pleasure to be confirmed in one's conclusions and

opinions, but it is also a pleasure to have ones erroneous opinions corrected. Thus only can advancement in knowledge be made.

The first point of interest connected with the three hundred cases of parturition is the relationship between single and plural births. There were two cases of twins, and one case of triplets. The proportion, therefore, of twin births to the total was 1 in 150. This is a very much lower proportion than is generally agreed upon. Fothergill (Manual of Midwifery, Page 90) gives as an average figure 1 in 80. In England the proportion seems to be less than that, and is given variously as 1 in 110 (Fothergill) and 1 in 116. (Playfair. Science and Practice of Midwifery, Vol 1, Page 185.) Matthews Duncan in his work, Fecundity, Fertility & Sterility, Part 3 Pages 67-102, 1871 edition, goes very fully into the question of the laws governing the production of twins. It is impossible to draw any conclusions from only two cases, but these two can at least be taken in support of his contentions. One of these contentions is that twins most often occur in women between the ages of twenty five and twentynine years, and then most often between the ages of thirty and thirty four years. The age of the mother, in one case, was twentyeight, and in the other thirty two. Another conclusion he laid down was that with the exception of first pregnancies, which seem to be peculiarly liable to be twin pregnancies, the likelihood of a twin pregnancy increases with the number of the pregnancies. Both my cases occurred in multiparas, one being the fifth

labour, and the other the fourth. Matthews Duncan does not mention the influence of heredity in the production of twins, but it is at least interesting to note, that in one of the twin cases, the husband was himself a twin. As regards the sex of the twin children, in one case, both were females, and in the other, both were males. This seems to be against the rule, as oftenest the children are of opposite sexes. The single case of triplets cannot be taken as proving, or disproving any law. The woman was twenty four years of age, and the children were all males. The average proportion of triplet births to all births is 1 in 5,000. (Leishman. A System of Midwifery. Vol 1. Page 214.) Playfair gives proportions varying from 1 in 1,000 in Saxony, to 1 in 8256 in France, and states the usual frequency in England to be 1 in 6,720. The age of the woman-24 years- in the case mentioned above, is interesting as Matthews Duncan (Fecundity, Fertility & Sterility Page 35) mentions that "we scarcely ever encounter the births of three or four children, except in women ranged from 27 years to 37." He gives no case where the age was so early as twenty four, and for this reason, if for no other, the case is interesting. It agrees with his remark ^{however,} that it is noteworthy that not one of the ten cases occurred in primiparas, but all in multiparas.

RELATION BETWEEN MASCULINE AND FEMININE BIRTHS.

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It is universally acknowledged that in all districts and countries where investigation has been carefully made, that there is an excess of masculine births over feminine. The only point of difference among investigators is the amount of the disproportion. Darwin, (Descent of Man, 1901 Edition, Pages 379-392) carried his enquiries still further, and found that in this respect mankind did not differ from the lower animals. In horses, dogs, sheep, different species of birds, fishes and ~~most~~ lepidoptera, males at birth seemed to be in the majority. As regards man, he says, (Page 374) "In England during the ten years (1857-1866) the average number of children born alive yearly was 707,120 in the proportion of 104.5 males, to 100 females. But in 1857 the male births throughout England were as 105.2, and in 1865 as 104 to 100. Looking to separate districts, in Buckinghamshire (where about 5,000 children are born annually) the mean proportion of male to female births was as 102.8 to 100; whilst in N. Wales, where the average annual births are 12, 873 it was as high as 106.2 to 100. Taking a smaller district, viz, Rutlandshire, (where the annual births average only 739) in 1864 the male births were as 114.6, and in 1862, as only 97.0 to 100; but even in this small district, the average of the 7385 births during the whole ten years was as 104.5 to 100, that is, in the same ratio as throughout England."

In the statistics of the Leeds General Infirmary Outdoor Maternity Department, published in the British Medical Journal

for Jan 9, 1904, in 10,000 maternity cases there were born 5,145 males, and 4,987 females, which gives a proportion of 103.2 males to 100 females. On calculating the proportions of the two sexes ^{born} among my 300 cases, I find that there were 172 males, and 132 females, which is a proportion of 130.3 males to 100 females. The excess found here is overwhelmingly great. The only figures at all approaching these are found among Russian Jews, (Havelock Ellis, Man & Woman, Page 374) where the proportion is 129 to 100. That this large excess of male births to female does not exist in Sunderland, is proved by the statistics of the whole County Borough. The returns compiled by the Medical Officer of Health for the last twenty years shows some interesting figures. On three occasions during this period have female births been in the majority; but only by a very small amount. Thus, in 1891 there were 2457 male, and 2488 female births, in 1893, 2377 male, and 2393 female, and in 1901, 2588 male, and 2691 female. In the other seventeen years the ratio was very much what is almost universal, viz, from 101 male to 100 female to 104 male to 100 female. One way in which fallacy may have crept into my figures is the fact that in a certain proportion of the cases included above, I have only seen them because of difficulty that has arisen during parturition, and there is no doubt that dystocia occurs more frequently when the foetus is male, than when it is female. It is also the case, which is quite in agreement with the above statement, that a large proportion of still born children were males. I find that there were twenty one still born children, including these born prematurely, but of

a viable age, and of these thirteen were boys, and only eight were girls. Of these still births, six were born in a decomposed state, having been dead for some time before labour set in. Four were cases where I was sent for too late to save the child, two being shoulder presentations, with prolapse of one arm, one a cranial presentation, where the head had been for hours at the perineum, so long indeed, that the vulva was ~~o-~~edematous, and one a breech presentation, with retention of the after-coming head. The eleven remaining were composed of seven males, and four females, whose death occurred during the labour. Of the seven male deaths, two were cases of placenta praevia, with labour at the seventh month of gestation, three were cranial presentations, requiring delivery with forceps, one was a shoulder presentation, and one a cranial presentation, complicated with prolapse of the umbilical cord. The female deaths were due ^{one} to antenatal separation of the placenta causing severe haemorrhage, one to premature birth, one to prolapse of the umbilical cord, with frontal presentation, and the fourth to the mother having a severe type of anaemia. In addition to there being a larger number of males still born than females, it is recognized that the proportion of deaths among males during the first twenty four hours ^{after birth} is very much larger than deaths occurring amongst females. I find that there were eight deaths amongst the children within twenty four hours of birth, and, remarkably enough, they were without exception, males. Two were hydrocephalic, and died, one after one hour, and one after twelve hours, three occurred in a triplet labour, one living only a quarter of an hour, one half

an hour, and one one hour; two were cranial presentations which required the application of forceps, both occurring in the same patient, and the eighth^l was a case of breech presentation, where the head was only delivered after very great difficulty. Thus the figures compiled from my cases, amply confirm the contention that the large majority of still born children, and those dying within twenty four hours of birth are males. Havelock Ellis is worth quoting on this topic. (Man and Woman Pages 376 & 377) "It is during the very earliest period of life, and at the latest^t, that the greater mortality of males is most clearly remarked. Bertillon showed, many years ago, that while the proportion of living children born is 100 girls to 105 boys, the proportion of all births, living and dead, is 100 girls to 106.6 boys; the proportion of still born children in Belgium during 1860-65, was 100 females to not less than 136 males; so that still born children are much more frequently males than are living children. Girls owing to their smaller size possess, at the outset, a better chance of slipping safely into the world. For some little time after birth the same factor is operative. Collins, of the Rotunda Lying-in Hospital, Dublin, showed that within half an hour after birth, only one female died to 16 males, within the first hour, only 2 females to 19 males, and within the first six hours, only 7 females to 29 males." The same author states (Page 359) "Still born children are much more frequently boys than girls, the proportion in this country being about 140 males to 100 females". Darwin quotes Prof Faye. (Descent of Man 1901 Edition Page 376) "A still greater preponderance of males would

be met with, if death struck both sexes in equal proportion in the womb, and during birth. But the fact is, that for every 100 still born females we have, in several countries, from 134.6 to 144.9 still born males!"

It is convenient here to estimate the

INFANTILE DEATHS DUE TO LABOUR ALONE

that is cases where an apparently healthy, well developed child, was born, but was either still born, or died within twenty four hours of birth. There are fourteen such, including the four cases mentioned above as being hopeless from the first, viz, one of accidental haemorrhage, six cranial presentations, in which forceps were applied, two cranial presentations, in which version was performed, two breech presentations, and three shoulder, or transverse presentations. This total of fourteen infantile deaths, death being due to the conditions of labour alone, in three hundred cases gives a percentage of 4.66. In order to make this matter, which is an important one, perfectly clear, I append two tables, one giving particulars of the cases where the child was still born, and the other giving particulars of these cases in which the child was born alive, but died within twenty four hours.

Table 1. STILL-BIRTHS.

Name of mother	Date of birth	Sex of Child	Remarks
(1) Mrs C.	31st May 1900	Female	Accidental Haemorrhage
(2) Mrs D.	4th June 1900.	Female	Frontal presentation with prolapse of cord
(3) Mrs B.	15th Nov 1900	Female	Premature birth. Macerated foetus.
(4) Mrs C.	8th Feb 1901	Male	Placenta Praevia.
(5) Mrs H.	22nd Feb 1901	Male	Placenta Praevia.
(6) Mrs H.	24th Nov 1901	Female	Shoulder, with prolapse of arm.
(7) Mrs W.	29th Jan 1902	Female	Premature. Macerated foetus.
(8) Mrs L.	26th Feb 1902	Male	Forceps case.
(9) Mrs B.	9th Aug 1902	Male	Premature. Macerated foetus.
(10) Mrs B.	4th Jan 1903	Male	Forceps case.
(11) Mrs S.	11th Jan 1903	Male	Forceps case.
(12) Mrs S.	31st Jan 1903	Male	Breech case, with retention of head.
(13) Mrs F.	10th May 1903	Male	Premature. Macerated foetus.
(14) Mrs W.	10th May 1903	Male	Forceps case.
(15) Mrs F.	26th June 1903	Female	Mother very anaemic
(16) Mrs C.	3rd Aug 1903	Male	Macerated foetus.
(17) Mrs W.	10th Dec 1903	Female	Premature birth.
(18) Mrs L.	27th Dec 1903	Male	Premature. Macerated foetus.
(19) Mrs S.	16th Mar 1904	Male	Cranial, with prolapse of cord.
(20) Mrs S.	30th Mar 1904	Male	Shoulder presentation.
(21) Mrs B.	10th April 1904	Female	Shoulder presentation.

This table shows very clearly indeed that the large majority of foetal deaths which occurred during labour itself, were males, viz, five females, and nine males. An important fact

may be noted here, which I shall call attention to later on, is that deaths occurred four times in cranial presentations, where forceps were employed, and in every case the child was a male. The second ~~case~~ ^{table} is even more remarkable than the first, as showing that all the deaths within twenty four hours of birth, were in males.

Table 2. Births were death supervened within twenty four hours.

Name of mother	Date of birth	Sex of child	Remarks
(1) Mrs W.	31st May 1901	Male	Hydrocephalus, lived 1 hour.
(2) Mrs S.	4th July 1902	Male	Hydrocephalus, lived 12 hours.
(3) Mrs F.	17th Sept 1902	Male	Premature, lived $\frac{1}{4}$ hour.
	Triplet case.	Male	Premature lived $\frac{1}{2}$ hour.
		Male	Premature, lived 1 $\frac{1}{2}$ hours
(4) Mrs M.	14th April 1903	Male	Forceps case, lived 12 hours.
(5) Mrs H.	29th Jan 1904	Male	Breech, with head retained, lived 6 hours.
(6) Mrs M.	28th Sept 1904	Male	Forceps case, lived $\frac{1}{2}$ hour.

Cases four and six occurred in the same patient. It will thus be seen that all the cases, in which forceps were employed included in the above two tables, were where the infants were males. This entirely agrees with conclusions arrived at, that the average male head, is larger than the average infant female head. It is also asserted, doubtless with a great deal of truth, that the average size of the brain in still born children at full time, is greater than the average size of the

brain in children who are born alive at full time. Hence, it is argued that many still born children would, if they had lived, have been noted for genius and ability. If this be so, then we may fairly expect that with improvement in obstetrical skill, and in obstetrical methods, that the average brain power of the nation will slowly increase. Dealing with this point, Havelock Ellis (Man & Woman Page 359) who has gone deeply into interesting this question, states, "The tendency of man to be abnormal has to contend at an early period of life with a very powerful force on the side of equality and mediocrity. This, as we have already seen, is the narrowness of the maternal pelvic outlet, which, while usually allowing girls to pass through readily, sometimes places immense obstacles in the way of boys. Still born children are much more frequently boys than girls, the proportion in this country being about 140 males, to 100 females. If it were not for this levelling influence there can be no doubt that the proportion of men remarkable for exceptional physical or mental qualities would be even larger than it actually is. Thus Boyd's tables have shown that the average brain mass in the children who are born dead at full time, is larger than in those who live; and that while the average newborn living male child at full time has a total brain mass only about $1\frac{1}{2}$ ounces heavier than the female, (and the maximum brain weight in a living child was actually found by Boyd in a female) among the still born, the maximum male brain is nearly seven ounces larger than the maximum female brain, although the minimum still born male brain is only a little over

an ounce larger than the minimum female brain. Statistics of English and Scotch infants, collected by the Anthropometric Committee of the British Association showed, that while the range of height in the male infants was 10 inches; in the female infants it was only 8 inches. Exceptional weight in new born children is most usually found among the males; in France, for weights above 5500 grammes, there are 29 boys to only 19 girls."

These facts, combined with certain others which do not enter into my province, now bring about the somewhat extraordinary condition of matters that though more males are born into the world, still over the whole population, the females are always in excess.

I consider that the facts collected by me on this point, go to confirm previous conclusions, and show that a female foetus has a much better chance of coming into a separate individual existence, than a male foetus, but the sacrifice of so many male foetuses should stimulate all obstetricians to perfect themselves in their art, so that the unborn child, already handicapped by its sex, may have its path made smooth, and its difficulties removed so that it may be born full of life, and with a sound uninjured frame, and so, at least, get a good start in its existence .

The next question I have to consider is that of

CONGENITAL MALFORMATIONS

The conditions met with amongst the three hundred parturition cases, will be best appreciated by placing them in tabular form.

Sex of child	Date of birth	Nature of malformation.
Male	2nd April 1899	Defectively developed lower jaw.
Male	14th Nov 1900	Talipes Calcaneus, Spina bifida & Cryptorchismus.
Male	31st May 1901	Hydrocephalus
Male	25th June 1901	Hypospadias.
Male	4th July 1902	Hydrocephalus.
Female	2nd July 1903	Imperforate Hymen.
Female	6th Dec 1903	Double Talipes Varus.
Female	18th Mar 1904	Union of 4th & 5th toe by web.
Female	25th April 1904	Double 5th toe.
Female	17th April 1904	Perobranchius & Cardiac disease.

A study of this table will show some remarkable peculiarities. The first to strike one is that the abnormalities are equally divided between the two sexes. It is also strange that in point of time, there were five consecutive deformities in male children, and then five consecutive in females. It is, as a rule, stated that males are much more liable to variation than females, and so congenital malformations are more usual in male children. This table does not bear out this fact. Even though the malformations of the sexual organs be eliminated, the result is the same, viz, equal proportions in each sex. The more severe types, however, of deformity have occurred in male children, and it is specially noteworthy that affections of the nervous system are monopolised by males, there being three such, viz, two cases of hydrocephalus, and one of spina

bifida, accompanied by other conditions. The only serious deformity among the female children was the case of perobranchius, associated with congenital cardiac disease. These four cases were the only ones in which death occurred as a result of the defect, and this agrees with reports which point out that there are more deaths from congenital deformities amongst males, than amongst females. Talipes varus, and supernumary digits, are said to be more frequent in males, than in females, but both these cases occurred in females, but the total number is so small, that it is perhaps scarcely fair to come to any definite conclusions on such a controversial matter. Havelock Ellis (Man & Woman Page 360) takes the reports of St Thomas's Hospital from 1881-87 as a basis for his remarks, and it may not be out of place in this connection, to quote some of his conclusions. "Harelip was found in 43 males, and 20 females. Bryant's notebook, (according to Braxton Hicks) showed 44 males, to 20 females, almost the same proportion, while Manley found 27 males to only 6 females. Double harelip is almost exclusively found in males. Harelip with cleft palate, is always more frequently found in males; according to Bryant in 17 males to only 9 females. Cleft palate alone is, however, more often found in females; in 58 females to 37 males. According to the experience at St Thomas's, Spina bifida is also usually slightly more common in females; 13 males to 17 females, according to Bryant, though the records at St Thomas's appear to show a majority of males. Nearly every other important form of malformation is found more frequently in males than in females. Talipes equino-varus, the most important form of club-foot

usually indicates an arrest of development, as it represents the normal position of the foot in the apes, and in man before birth; it is much more common in males, the proportion being (according to experience in St Thomas's Hospital) 44 males to 26 females; while if we include all forms of club-foot the proportion is 80 males, to 53 females. If we take larger figures we find, according to Duval, that 364 males exhibit congenital club-foot as against 210 females, while the acquired forms are also more common in males::::: Supernumary digits are much more frequently found in males than in females."

This statement appears to me to be scarcely convincing, except with regard to club-foot. There are only two cases of club-foot in my list, one being a case of talipes calcaneus of both feet in a male, and one of double talipes varus in a female child; so it is impossible to dogmatize from such insufficient data.

Prof Coats divided malformations into Anomalies, where the defect was slight, and Monstrosities, where the defect was serious. Adopting this classification, there would be for classification under the heading Anomaly the cases of defectively developed lower jaw, hypospadias, imperforate hymen, talipes varus, webbed toe, and supernumary digit. The remaining spina bifida, hydrocephalus, and perobranchial cases would come under the heading of Monstrosity. Four of these cases presented features of interest, and will require to be treated of in some detail. The remainder can be dismissed as being simply ordinary examples of the special kind of deformity.

The four noteworthy ones are two cases of anomaly, viz, defectively developed lower jaw, and imperforate hymen, and

two cases of monstrosity, viz, spina bifida, and perobranchius.

DEFECTIVELY DEVELOPED LOWER JAW.

On April 30th 1899 I attended Mrs A, a multipara. The labour was a normal one, and the child well developed, except as regards the lower jaw. In front, the lower alveolus could not be approximated to the upper, being rather over three quarters of an inch behind it. When the lower jaw was pushed close up to the upper, the tip of a finger could be easily passed up between the posterior surface of the upper jaw, and the anterior surface of the lower jaw. Measurements of the jaws were taken, and also measurements of the jaws of two well developed infants of the same age, and as nearly as possible of the same size. The lower border of the inferior maxillary bone in the mal-developed case from angle to angle measured $4 \frac{1}{3}$ inches. In the other two healthy children $5 \frac{1}{2}$ inches, and $4 \frac{7}{8}$ inches respectively. The alveolar edge was even more defective, being, from the anterior border of the one masseter muscle along the alveolus to the anterior border of the other masseter, only $2 \frac{2}{3}$ inches, whilst in the cases examined for comparison, the alveolar border measured, in one child, 4 inches, and in the other $3 \frac{5}{8}$ inches.

The effect of the defect was that the child was unable to grasp the nipple, as when it made an effort to suck, the lower lip was drawn between the two alveolar borders. The child had to be fed with a spoon. Unfortunately, I lost sight of the case, and so could not trace its further progress.

I can find no record of a similar case, and in any case,

if I have overlooked such record, the occurrence must be of sufficient rarity to justify giving particulars.

The second case I desire to note is that of

IMPERFORATE HYMEN

Of course, as imperforate hymen occurs in a certain number of adults, it must have been present when they were infants. It is seldom, however, that circumstances arise which would call attention to the imperforate state of this membrane. When it is discovered it is after puberty, when symptoms pointing to retention of the menstrual flow occur.

Cases have been recorded as a rare occurrence where a blood stained discharge oozed from the genital organs of female infants, giving an impression as of menstruation occurring. As therefore, imperforate hymen is rare, and this discharge in infants is rare, much rarer must be a combination of these two conditions. I have, for some time now, sought for particulars of a similar case, and have failed, until quite recently one came to my notice when however, the fluid was milky, not bloody. It is mentioned in the Epitome of Current Medical Literature,, in the British Medical Journal for December 10th, 1904. Page 87. It says:- "Commandeur (L'Obstétrique July 1904) observed this condition in a very robust female infant, which weighed over 8½ lb at birth. On the next day the midwife observed that when it cried a protrusion like a prolapse appeared at the vulva. The urethra was patent, and the anus and rectum normal. The tumour at the vulva was surrounded by a groove, and on

close inspection the hymen was seen to be imperforate and pushed forward by the mass. An incision was made from behind the urinary meatus to the posterior fourchette, and $3\frac{1}{2}$ fluid ounces of a white viscid fluid escaped. It had been secreted by the vaginal mucous membrane, but the uterus was not dilated, a complication met with in some cases of dilated vagina, with imperforate hymen, and watery contents. In haem^aocolpos the uterine complication is yet more usual. Commandeur's patient recovered". The case is headed Hydrocolpos and Imperforate Hymen in Infant.

My case resembles this case in some respects, and differs from it in others. The history is as follows:-

I attended the mother at the birth of the child, which occurred on 2nd July 1903. The presentation was breech, and labour was completed without any special difficulty. During the puerperal period nothing abnormal was observed. On 16th Sept, that is when it was about ten weeks old, the child was brought to me with the statement that "its womb was down" a localism for describing a prolapse. On examining the genitals a dark red, protruding body, was seen between the labia minora. There was a history of a gradual onset, and for the day previous to my seeing it, of violent straining and bearing down on the part of the child. On measuring the swelling, it was found to be about 1 inch from before backwards, $\frac{5}{4}$ inch from side to side, and $\frac{3}{4}$ of an inch from the lowest point to the vagina. It was fluctuating, and composed only of very thin membrane, so thin that rupture of it seemed to be imminent when the child strained. Its great elasticity seemed to prevent this.

It was seen to be fastened all round the rim of the vagina, and this attachment composed the narrowest part of the swelling, and looked like a neck to the tumour. At first sight it looked like a polypus protruding from the vagina, having a narrow attachment within, and it was only when the adhesion all round the vagina was discovered that its nature became apparent.

As the child was evidently suffering much pain, it was necessary to remedy matters as quickly as possible, and so, after sponging with iodide of mercury lotion, I made an incision about $\frac{3}{4}$ of an inch in length from before backwards. Half an ounce of watery, blood stained fluid, squirted out. I had intended to make another incision at right angles to the first but the membrane immediately, on the escape of the fluid, receded to the vagina, and could not be safely incised. The parts were then to be sponged with antiseptic lotion and antiseptic gauze applied in the intervals of sponging. I did not see the infant again until 24th Sept, when she was brought to me with a recurrence of the protrusion. This time, however, the hymen had become swollen and hypertrophied, and presented a strangulated appearance. The incision I had made previously was found to be blocked by a blood clot, and this had caused the recurrence. I removed this, and incised at right angles to the first incision, and ordered the application of *Lotio Plumbi Acetatis cum Opio* to soothe the pain, and to have an astringent effect. No improvement followed, and I considered that the only thing to do was to remove the growth, which I did on Sept 28th. I did not cut quite to the vaginal margin

but left a ring of hymen round the vagina. No pain was experienced during the removal, and little haemorrhage resulted. In a day or two the child was well, and the parts looked healthy and normal, except that the vaginal orifice was more patent than usual. Microscopically the part removed was found to have squamous epithelium on both surfaces, and a thick layer of connective tissue between.

The child died a month afterwards, on Oct 28th, under somewhat suspicious circumstances, and I was ordered to make a post-mortem examination by the Coroner for the district. I then examined the genital organs carefully, and found the uterus ^{to be} and vagina normal, and the external genitals healthy, the only noticeable deviation from the normal being that the vaginal orifice was larger than in infants normally..

The case is interesting as being a combination of two rare conditions, imperforate hymen, and bloody discharge (it can scarcely be called menstruation) from the genitals of an infant female.

Smellie mentions the importance of examining the genitals to see if any such defect is present. (Smellie's Treatise on the Theory and Practice of Midwifery, edited by Alfred H. McClintock. Vol 1, ^{Page} 421. New Sydenham Society.) and his words are worthy of note. He says:- "In female children there is a thin membrane, called the hymen, that covers the lower part of the orifice of the vagina, and is rent in the first coition. The middle of it is sometimes attached to the lower part ~~part~~

of the meatus urinarius, and on each side of the bridge is a small opening that will only admit of the end of a probe, though it is sufficient for the discharge of the menses. This obstruction is commonly unknown till marriage, and has often proved fatal to the unfortunate woman who had concealed it through the excess of modesty, and afterwards sunk into a deep melancholy which cost her her life, rather than submit to examination, and the easy cure of having the attachment snipt with a pair of scissors. On this consideration, Saviard advises all accoucheurs to inspect this part in every female child they deliver, and if there should be such a defect, to remedy it during her childhood; or if the entry is wholly covered with the membrane let a sufficient perforation be made which will prevent great pain and tension in their riper years, when the menses, being denied passage, would accumulate every month, and at last push out this and the neighbouring parts in the form of a large tumour, the cause of which is generally unknown until it be opened."

Probably Smellie had not recognized that this condition, so graphically described by him as occurring at puberty, may occur in infancy, or he would have mentioned this possibility. In Vol 2, Cases 7, 8 and 9, Pages 13-15, Smellie describes the condition of patients suffering from retention of the menses by imperforate hymen, but makes no mention of its occurrence in infants.

The case of monstrosity in which

SPINA BIFIDA.

was present is only noteworthy on account of a remarkable combination of congenital defects. There was spina bifida in the lumbar region of the myelomeningocele variety, double talipes calcaneus and double cryptorchismus. The testicles could not be felt even in the inguinal canals, and were evidently still intra-abdominal. There was no hydrocephalus. The child did not thrive, and died when three months old.

The rarer monstrous condition of

PEROBRACHIUS

is more interesting. In this condition both arms are defective. Prof Coats (Manual of Pathology, 2nd Edition Page 50) gives three chief varieties. The first is where the long bones are not developed, and the hands grow directly from the shoulder, the second where the arms are short and deformed, and the fingers defective in number, and the third where the upper arms are normal, and the fore-arms and hands only are badly developed.

The mother of this child had had previously two well developed, healthy children, both boys, and there could be discovered no history of deformity on either the father's side, or the mother's. The labour was normal, and the child, a female, was large and to all appearances correctly formed, except as regards its arms. Both arms were exactly alike, and the description of one, is the description of the other.

The length from the shoulder joint to the tip of the longest finger was four inches. The arm was distinctly divided into upper arm, fore-arm and hand, the upper arm and fore-

arm measuring $1\frac{1}{2}$ inches, and the hand 1 inch. There was slight movement at the elbow and wrist joints. The shoulder joint appeared normal. There ^{were} only three fingers, about $\frac{3}{4}$ of an inch long one of which could be apposed and probably represented the thumb. The tips of the fingers could just reach the mouth.

There was very little liquor amnii present, but what there was, was carefully examined, as was also the placenta and membranes, but no traces of loose pieces of macerated tissue could be found. The case, I think, would come under the heading of simply arrested development of the arms. There are no grounds for suspecting intra-uterine amputation of the limbs, either caused by constriction by the umbilical cord, or amniotic bands. It is scarcely conceivable that a symmetrical deformity could come on by such means. That intra-uterine amputation does occur, is proved by the finding of the missing member loose in the amniotic sac, but in the majority of cases no such loose body is to be discovered.

In this particular case a condition was discovered when the infant was two days old, which possibly throws some light on the causation of the mal-development. It was noticed about the second day, that the child was constantly of a livid colour as regards the feet, and face, and the tongue, and that this lividity was much increased when it cried. This was at once seen to be cyanosis, or what has been termed, "morbus coeruleus", and is usually found in congenital heart disease. The heart was found to beat ^every violently after any disturbance, such as feeding or washing, and on auscultation a loud

ventriculo-systolic murmur was heard all over the cardiac area, equally loudly at apex and base.

The child only lived seventeen days, the cause of death being the condition of the heart. No post-mortem examination was made, though it would have been most interesting.

My opinion is that the heart was deformed in some way which affected the supply of blood to the upper extremities, causing a deficient amount to reach them, and so the development of the arms was retarded, and could not keep pace with the growth of the rest of the body.

I have only observed one case of abnormality of particular interest in ^{the} placenta and its appendages, and that was

ABNORMAL LENGTH OF, AND KNOT IN THE UMBILICAL CORD.

The case in which this occurred was attended on Feb 3rd, 1903. The labour proceeded well, and after the head was born the cord was felt to be round the neck. A loop was drawn over the head, and then a second coil was found to be present. It was treated in the same way as the first, and the child was born easily. After the birth of the child, a knot was felt on the cord, which was now seen to be much longer than usual. After the placenta had been removed, the knot was untied, and the cord measured, and it was found to be $49\frac{1}{2}$ inches long, which, with 2 inches attached to the umbilicus of the child, would make a total length of $51\frac{1}{2}$ inches. This is not, I am aware, a record length, but it is more than double the normal length, and so is, I think, worth mentioning. Fothergill (Manual of Midwifery, Page 74) mentions 72 inches as being the longest described.

Playfair (Science and Practice of Midwifery, Vol 1, Page 115) states:- "It (the umbilical cord) varies much in length, measuring on an average from 18 to 24 inches, but in exceptional cases being found as long as 50 or 60, or as short as 5 or 6 inches."

The knot on the umbilical cord is not so rare, though not frequent. For the formation of a knot in the cord, three conditions are necessary; a long cord, a large amount of fluid, and a small foetus. Smellie gives a very succinct description of the formation of a knot, which could scarcely be surpassed for graphicness. He says:- (Midwifery, edited by McClintock. Vol 1, Page 163) "If for example, the navel-string be long, and the quantity of the surrounding waters great, the foetus while young, may in swimming, form a noose of the funis; through which, if only the head passes, a circumvolution will happen round the neck or body; but should the whole foetus pass through, or thread this noose, a knot will be formed on the navel-string, which, if tight drawn, will absolutely obstruct the circulation."

Smellie considers that death of the foetus may proceed from the occurrence of a knot on the umbilical cord, but this seems to be very exceptional. I have seen no dead foetus where the funis was knotted, and in this case where a knot occurred the child was strong and well developed. It is conceivable, however, that the knot might be drawn sufficiently tightly to occlude the blood-vessels in the cord. McClintock commenting on the above statement of Smellie, gives as his opinion and experience "I have repeatedly seen live children born with knots

on the funis, and never but once or twice seen a knot on the cord of a dead born foetus."

With regard to the labour taken as a whole, there is one condition which I should like to call attention to. That is a condition which I shall term

ANAEMIC LABOUR.

That a certain loss of blood during the course of normal parturition usually occurs, is recognized, but that, in a certain number of cases of parturition no blood at all is lost from start to finish, has not had sufficient attention paid to it. During the first and second stages of labour, little or no blood is discharged, but with the advent of the third stage, involving the separation and birth of the placenta, blood, in a varying quantity, is seen. The quantity varies from an ounce or two, up to half a pint or more, and what in one case might be called post-partum haemorrhage, in another may be looked upon as normal. Smellie recognizes no exception to the presence of the discharge of blood, and says. (Treatise on Midwifery Vol 1, Page 384.) "All women, when the placenta separates, and after it is delivered, loose more or less red blood, from the quantity of half a pound to that of one pound or more". Other authorities whom I have consulted make no mention of the occasional occurrence of labour without any haemorrhage at all. One such case occurred to me amongst the three hundred labours under consideration, and one other anterior to these.

This case referred to was attended on the ~~15~~⁸th Oct, 1904. The child was born soon after my arrival, and delivery was

normal in every particular. No blood was discharged while the placenta was being separated; and it was born a quarter of an hour after the child. In appearance, it was as if it had been washed clean, and not a trace of blood was left on my hand after lifting it and placing it in a vessel. The only blood seen during the whole course of the labour was that which came from the severed ends of the umbilical cord.

The other case that I experienced similarly to this, was in 1897, or 1898, and was, as far as I can recollect, precisely like this one, but I have no notes of it.

The loss of blood during the puerperal period was also very slight.

I had attended this same patient previously in 1903, and there was the usual loss of blood during the third stage of labour

The possibility of labour being absolutely unattended by any haemorrhage is an interesting fact, and worth noting, even though the fact is without any bearing on the practical conduction of the case; and its occurrence twice in my practice, once amongst these cases of which notes have been taken, and once previously in Scotland show, I think, that it cannot be such a rare condition, but that others must have noticed it.

The fact that I can find no reference to such a circumstance in the several treatises on midwifery which I have consulted, may be pled as a justification for its inclusion here.

I have now to consider the presentations that occurred, taking the usually accepted significance of presentation as indicating the relationship of the long axis of the child, to the long axis of the uterus.

The presentations of the single birth cases must be taken apart from those of the twin, and triplet births. A table showing the actual number of the different presentations which were present, accompanied by those numbers reduced to percentages, will be the most convenient arrangement.

Table IV. Number of cases 297.

Presentation.	Actual Number.	Percentage Number.
Cephalic Extremity	281	94.61 %
Pelvic Extremity	13	4.37 %
Shoulder, or Transverse	3	1.02 %

extremity

It is desirable that the presentations of the cephalic [^] be divided into three classes, viz, (1) the most usual cranial presentations, in which the occiput descends first, the head is flexed, and the sub-occipito-bregmatic diameter is in line or the other oblique axis of the pelvis, (2) frontal, or brow presentations, so called where the head is not flexed, and the long occipito-frontal diameter engages in the pelvis, and (3) face presentations, where the head is in extension, and the fronto-mental diameter engages in one of the oblique pelvic axes. Then for convenience sake, and accuracy's sake, the

pelvic presentations are to be divided also into three classes, (1) those where the breech alone presents, (2) those where the breech, and one or both knees present, and, (3) those where the breech, and one or both feet present.

On calculating these sub-divisions, the table is amplified as follows:-

Table 5.

Presentation.	Actual Number.	Percentage Number
Ordinary Cranial Presentation.	277	93.27 %.
Brow Presentation.	2	.67 %
Face Presentation.	2	.67 %
Breech Presentation.	10	3.35 %.
Breech and Knee Presentation.	0	0 %
Breech and Foot Presentation	3	1.01 %
Shoulder or Transverse Presentation.	3	1.01 %

There is shown here a slightly greater frequency of pelvic presentations, *than normally occurs*, which is probably due to prevalence of pelvic deformity caused by rickets, which is common in Sunderland.

The author who gives the largest percentage of head presentations is Smellie, who estimates 99.1 % of all cases are cranial presentations. Surely this is inaccurate, or else the proportion of mal-presentations has enormously increased since his day. He gives a somewhat confused account of the relative frequency of the different presentations. (Treatise on Midwifery, edited by Alfred.H.McClintock, New Sydenham Society.

Vol 1, Page 197.) "Suppose of three thousand women in one town or village, one thousand shall be delivered in the space of one year, and in nine hundred and ninety ~~nine~~ of these births the child shall be born without any other than common assistance. Fifty children of this number shall offer with the forehead turned to one side at the lower part of the pelvis, where it would stop for some time; ten shall come with the forehead towards the groin, or middle of the pubis, five shall present with the breech, two or three with the face, and one or two with the ear; yet all these shall be safely delivered.::::: Of the remaining ten that make up the thousand, six shall present with the head differently turned, and two with the breech;:::: the other two shall be ²cross, and neither head nor breech, but some other part of the body present, so that the child must be turned and delivered by the feet."

We find thus that Smellie considered that 99.1 % of foetuses presented with the head, and only .7 % with the breech, and .2 % with the shoulder, or transversely. The whole character of his estimates seems to be of an unsatisfactory nature, as though he were merely recording impressions, and not copying from actual data compiled by him. The average computation of most authors is that head presentations occur in 96 % of all cases, breech in 3 %, and shoulder in 1 %. Except for a slightly less proportion of cranial, and a slightly greater proportion of breech presentations, my table agrees with what is looked upon as a normal proportion. Playfair gives a proportion of

95 % of head presentations, 1 in 52, or 1 in 38.8 pelvic, and from 1 in 260 to 1 in 117 shoulder presentations according to different estimates. The latest figures published are those of the Leeds General Infirmary (British Medical Journal. Jan 7th 1904. Page 76.) where I find that out of 9,869 children born, that 9,562 were head presentations, 261 pelvic presentations, and 46 shoulder, or transverse presentations. Reduced to percentages this gives 96.89 % of head, 2.64 of pelvic, and .47 shoulder, or transverse. The proportion of the last class seems to be very small indeed.

The presentations in the plural births are soon disposed of.

In the twin cases, one had both children presenting by the breech, and the other, one by the head, and one by the breech. The presentation usually estimated to be the commonest variety, viz, both heads, did not occur. Fothergill gives as the proportion of possible combinations (Manual of Midwifery, Page 94) as follows.:- "Twins may lie in utero in any of the positions logically possible. The relative frequency of these is stated as follows from their presentations on delivery:- Both heads 49 per cent. Head and breech 31.7 per cent. Both breeches 8.6 per cent. Head and transverse 6.18 per cent. Breech and transverse 4.04 per cent. Both transverse .35 per cent."

The report of Leeds General Infirmary quoted above gives an analysis of the presentations of 130 cases of twins. There were, both heads 57, head and breech 49, breech and breech 8, and unclassified 16, which gives head and head 43.84 per cent, head and breech 37.69 per cent, both breeches 6.16 per cent,

and unclassified (why unclassified it is difficult to see) 12.31 per cent. This table makes the presentations of both heads, and of head and breech more nearly equal in frequency than does Fothergill, but still gives the preponderance to the two head presentation which was not represented amongst the two twin cases occurring amongst mine. The second and third commonest varieties are the ones found to be present.

In both cases the foetuses were each in a separate amniotic sac, and each had a placenta.

With regard to the triplet case, two of the foetuses presented by the head, and were easily delivered, and one lay transversely, and turning was performed. There were two placentas, one a small one with one cord inserted into it, and one larger, and double, with two cords. There were also two amniotic sacs, one containing one foetus, the one that was delivered first, and one containing two.

As the occurrence of triplets is so rare, no efficient data of the presentations occurring can be prepared. Smellie gives full descriptions of two cases of triplets, not, however, attended by him, but described to him by those who did attend them. (Treatise on Midwifery. Vol 3, Cases 418 and 419) In the first case the first child was felt with "hands and feet blended together" and was probably transverse. The second presented similarly, and the third child "presented a right hand and foot". So that here we have in all likelihood the occurrence of three transverse presentations. In the other case described to Smellie in a letter from Dr Harvie, all the foetuses pres-

ented by the head. As soon as one child was born, the head of another was felt presenting. I should conceive that ever possible combination will be liable to occur. The following nine classes would include the possibilities. viz. Three heads, two heads and one breech, one head and two breeches, three breeches, two heads and one transverse, one head and two transverse, two breeches and one transverse, one breech and two transverse, and three transverse. A compilation of triplet presentations would be interesting, but to make such a compilation, a combination of experiences would be needed, as no one practitioner^{tl} would have^a sufficient number of triplet cases to draw any conclusions of relative frequency from.

To return now to the cases in which one child only was it is necessary born;^a to analyse the various presentations and find out the relative proportions of the different positions.

POSITIONS.

The word position is used in particularizing the presentations, and describes the relation of the part which presents, with the pelvis of the mother. Accuracy in diagnosis leads naturally to accurate treatment. The position should be accurately determined in every labour. It is not sufficient to be content with diagnosing the presentation, but a point of recognizing which position the presentation is in, should always be attended to. Then additional interest is added to this accuracy, if the diagnosis before birth is confirmed by the position of the child's body after birth. For example, suppose that a first cranial presentation has been diagnosed, after the head is born, if the diagnosis has been correct, the external

rotation of the head will make the child's face turn to the right thigh of the mother, and the body will be born with the back to the bed. The same occurs in the fourth cranial positions. In the second and third cranial positions, the opposite is the case. The external rotation makes the face look to the mother's left hip, and the child is born with its ventral surface towards the bed. Attention to points such as these add interest to parturition, and it is acknowledged by all, that work is better done if the workman has an interest in it.

CRANIAL POSITIONS

the publication of
will be considered first. Previously to ^ANaegele's work on ~~the~~ cranial positions, practitioners were content to diagnose whether the occiput was anterior or posterior. Smellie gives directions how to ascertain this. (Treatise on Midwifery, edited by McClintock. Vol 1, Page 262) "The position of the head is distinguished by feeling for one of the ears, the fore, or smooth part of which is towards the face of the child; if it cannot be ascertained by this mark, the hands and fingers must be pushed further up, to feel for the face, or back part of the neck; but if the head cannot be traced, the observation must be taken from the fontanel, or that part of the cranium where the lambdoidal crosses the end of the sagittal suture". He places last in point of importance what is now placed first in the diagnosis of the cranial positions, viz, the relations of the fontanelles and cranial sutures to the maternal pelvis.

A great deal of discussion and difference of opinion existed, and still exists with regard to the relative frequency

of the four cranial positions. There is no doubt that the first cranial where the head is in the right oblique axis of the pelvis, with the occiput anterior, is by far the commonest, and the fourth, where the head of the child is in the left oblique axis of the pelvis, with the occiput posterior, is by far the rarest. It is with reference to the second and third positions that the discussions have taken place. Probably it is a point that will never be thoroughly determined, because there is always the existence of a possible fallacy in the rotation of the third cranial into the second. Hence, what may have commenced as a third cranial, with the axis of the head in the right oblique axis of the pelvis, with the occiput posterior, may, by the time the case is seen, have rotated into the second cranial position in which the axis of the head is in the left oblique axis of the pelvis, with the occiput anterior. Such a case will be noted down as a second cranial, when it really was a third. Probably, therefore, any figures that give the relative frequency of the positions, give more second cranial positions, and fewer third than there actually occurred.

From a table published in Leishman's System of Midwifery. Vol 1, Page 356, we find that Naegele allowed no occurrence of the second cranial positions, Murphy allowed equal proportions of second and third, and Swayne allowed more ^{second} cranial positions than third. Leishman sums up the probable ratio as first position 67, 2nd position 10, third position 20, fourth position 4. As an alternative estimate Fothergill (Manual of

Midwifery. Page 212) gives) first position 72, second position 5, third position 21, fourth position 2.

There were then as shown in table 5, 277 labour cases in which the normal cranial presentation was present, Of these 277 births no fewer than 195 were in the first cranial position, a percentage of 70.39. In the fourth cranial position not one occurred. I have noted thiry eight cases as being in the in the second cranial position, and forty four in the third cranial position. Of these forty four, eight remained persistently occipito-posterior, and were, with two exceptions, one in a multipara, and one in a primipara delivered with the aid of forceps.

This table gives the numbers and percentages of the cranial positions occurring.

Table 6.

	Number occurring	Percentage
1st Cranial Position.	195	70.39%
2nd Cranial Position.	38	13.73%
3rd Cranial Position.	44	15.88%
4th Cranial Position.	nil	nil

The large proportion of heads in the third cranial position, viz, 8 in 44 which did not rotate into the second, makes one suspect that some cases are included above in the second position, which ought to be classed with the third, but I am inclined to think that occip^oto-posterior cases end with the

occiput posteriorly more often than is generally considered. A fair proportion will not rotate forwards whatever may be done to assist the movement. According to Leishman, Drs Simpson and Barry held that spontaneous rotation occurred in 96 per cent, and Dr West, that out of 481 cases, only 15 refused to rotate so as to turn the occiput anteriorly. My own impressions, and impressions received from other practitioners on this point, make me think that such high proportions of rotation are unusual. This is, however, just one of the points in midwifery where one man might attain to a higher amount of dexterity in aiding rotation than another. Leishman makes some interesting statements which have a bearing on this subject. (System of Midwifery, Vol 1, Page 359) The proportion of occipito-posterior positions, which end with the face to the pubes is, for obvious reasons, very difficult to determine. It is not to be wondered at, perhaps, that great difference of opinion exists as to the proportion of cases which perform the usual rotation backwards; but it is a little astonishing that the actual number of cases ending with the face forwards should be overlooked, or misunderstood. Naegele did not believe in the fronto-anterior termination of such cases, except under peculiar circumstances,- such as a small head, or a large pelvis- but there are probably few accoucheurs of large experience, who take the trouble to observe what passes under their eyes, but have met with such cases, there being no peculiar circumstances whatever, to account for them."

It will be seen, therefore, that on the whole there is no

great discrepancy between my results, and those usually accepted, but as said before the relative frequency of the second and third cranial positions is not easy to accurately determine. To do so the cases used to gather data from, would require to be examined soon after the onset of labour, and in private practice this is not always possible. In hospital practice there would be more scope for such observations, and figures that could be absolutely relied upon, could be obtained.

FACIAL PRESENTATIONS

occurred on two occasions only, and both times the position was the fourth facial, or that where the face is in the left oblique axis of the pelvis, the forehead posterior, and the chin anterior. The frequency of this presentation was 2 in 297 cases, a percentage, as shown above of .67. Smellie estimated the frequency at 3 per 1000, equal to a percentage of .03; a much smaller number than is allowed by most now. Leishman considers 1 in 230 cases is an average frequency, and this gives a percentage of .43. Playfair quotes several authorities. (Science and Practice of Midwifery. Vol 1, Page 388) "Collins found that in the Rotunda Hospital there was only one case in 497 labours, although Churchill gives 1 in 249 as the average frequency in British practice; while in Germany this presentation is met with once in 169 labours." These figures, reduced to percentages, give .20, .33, and .59 respectively. There is thus, it will be seen, a considerable difference of opinion as to the relative frequency of facial presentations.

If there is disputation concerning the frequency of ~~the~~

cranial positions, there is even more concerning the relative frequency of the various facial positions. There is room for greater uncertainty, partly because of the infrequency of these presentations, and so resultant insufficient data. Then there is room also for the same fallacy that was mentioned in connection with the cranial positions, viz, that rotation from one position to another may have occurred before the case is examined. Playfair gives no opinion as to the relative frequency of these positions, but merely says that it is uncertain.

Leishman considers the fourth to be the most frequent, whereas Fothergill states that the fourth is the rarest, and the first is the commonest. As in the favourable and usual progress of facial presentations, the first facial rotates into the fourth, these two statements are reconcilable. In the two cases occurring in my practice, both when examined were found to be in the fourth facial position. One of them, undoubtedly, was a fourth facial from the commencement, as the head had not entered the pelvis when examined first, and then the chin was anterior. In the other case the face was near the pelvic outlet when seen, and rotation may have occurred before examination.

BROW PRESENTATIONS

are intermediate between the ordinary cranial presentation where the head is in a state of flexion, and facial presentations where the head is in a state of extension. This presentation occurred in the same number of cases as facial, viz, **two**, giving a percentage of .67. Both were in the position corresponding

with the first cranial, having the posterior surface of the head anterior in the pelvis, and the brow towards the right sacro-iliac synchondrosis. One of these cases was complicated with prolapse of the umbilical cord, which came down between the brow and the pelvis. In this case delivery was effected by version. In the other case the pelvis was large, and delivery by forceps was easily accomplished.

PELVIC PRESENTATIONS

have now to be considered. They are the commonest presentation after head presentation. There were in 297 labour cases, 13 pelvic presentations, a percentage of 4.37. This is a larger proportion than is commonly allowed. Leishman states (System of Midwifery. Vol 1, Page 373.) that pelvic presentation occurs once in forty-five parturitions at full time, and more frequently in premature labours. I find that of the thirteen cases of pelvic presentations, that three of them occurred in premature births, one an ordinary case of premature labour, one a case of placenta praevia, and one where the child was hydrocephalic. If these three are excluded so as to allow comparison with Leishman's statistics, the number is reduced to 10 in 297, or 3.36 per cent. Leishman's estimate is 1 in 45, or 2.22 per cent. So that even with this deduction my figures appear high. Playfair gives figures varying from 1 in 52, to 1 in 38.8, which give 1.92 per cent, and 2.57 per cent respectively. As, however, pelvic deformity in the mother seems to predispose to pelvic presentations in the child, an undue preponderance of such presentations would be expected in a town or district

where adult pelvic deformity was prevalent. This, I consider, is the case in this town where rickets are very common, and though extreme cases of pelvic deformity are very rare, still, slight deformity is frequent, and this will have an influence on the presentations found at labour.

Pelvic presentations are usually divided, for the purpose of classification, into three classes, breech alone, knee, and footling cases. The proportions of these three classes are shown in Table 5. Knee presentations may be dismissed first, as no case occurred. It will be conceived that such must be very rare, as in addition to the length of the foetus from head to breech, the length of the leg from hip to knee would require accommodation in the uterus. This could only occur if the uterus was very large in proportion to the foetus. It is different, however, with footling cases, because all that is necessary to convert a breech alone, into a breech with foot presentations, is the full flexion of the leg upon the thigh, with separation of the thighs from the body. Now of the thirteen breech presentations, ten were pure breech cases, and in three the feet presented in addition. This gives in 100 cases, a percentage of 76.92 breech alone, and 23.08 of breech and feet together, or rather more than three to one. Leishman gives of 80 pelvic presentations, 54 cases where the breech alone presented, and 26 where the breech and feet presented, a percentage of 67.50, and 32.50 respectively, or slightly more than 2 to 1. Playfair and Fothergill give no statistics on this point. Another point worth paying attention to, as influencing labour very

much, is the position of the legs in breech presentations pure. As a rule the legs are in a state of flexion, both as regards the hip joint, and the knee joint, so that the feet, though not felt presenting, are not far from the buttocks. Occasionally, however, the legs are extended at the knee joint, and so the feet are near the fundus of the uterus, and indeed may point over the shoulders. This latter condition, I find, only occurred once amongst the ten pure pelvic presentations.

A detail, connected with pelvic presentation, may be conveniently discussed now. It is acknowledged that there is a great risk to the foetus in such presentations, and the foetal mortality has been placed as high as 1 in $\frac{31}{5}$ by Churchill, and as low as 1 in 11 by Dubois. (Playfair, Science and Practice of Midwifery. Vol 1, Page 375.) Fothergill states that one child in five is still born. In the ten pelvic presentations which were delivered at full time, nine children were born alive, and only one was dead. This proportion of one death in 10 cases, compares very favourably with the above estimates. Of the three premature pelvic cases, two were still born, and one, the hydrocephalic child, only lived one hour.

When considering the positions of the pelvic presentations, the three varieties indicated above are classed together, as the mechanism of labour is the same.

Of the four possible positions, I find on analysing the thirteen pelvic cases, that they all presented in one of two positions, namely, the first, or position where the sacrum is anterior, and the long axis of the pelvis is in the left

oblique axis of the maternal pelvis, or the third, where the sacrum is posterior, and the long axis of the pelvis is in the left oblique axis of the maternal pelvis. These are, it is worth noting, the diameters corresponding with the first and third cranial positions. The cases were divided between these two positions as follows:- 9 or 59.23 % were in the first, and 4, or 30.77 % were in the third. This is, approximately, two dorso-anterior, to one dorso-posterior. Leishman gives an analysis of 161 pelvic cases, which shows that 121 were dorso-anterior, and 40 dorso-posterior, a proportion of 3 of the one class, to 1 of the other.

In the four dorso-posterior cases, the head rotated easily, so as to bring the occiput anteriorly. In none of them did the face remain anterior.

It is also an interesting coincidence, but one from which no conclusions can be drawn, that all the footling cases are included amongst the nine cases in which the back of the child was to the front.

TRANSVERSE, OR SHOULDER PRESENTATIONS

occurred on three occasions, a percentage of 1.01. The terms transverse and shoulder, are generally looked upon as being interchangeable. Strictly speaking, the term transverse is not correct, as the long axis of the child is never at right angles to the long axis of the uterus, but cuts it obliquely, as the breech is at a higher level than the head. In such cases, unless the foetus is dead and macerated, the shoulder is the part of the child that comes to be over the os uteri, and is felt by

the examining finger.

The percentage of 1.01 is a distinctly high proportion, 1 case in 230, or .43 per cent, being considered an average frequency, though in France, according to Playfair, 1 case in 117 occur, which gives a percentage of .85.

As regards the positions represented in these three cases, all of them were dorso-anterior, two having the child's head lying in the mother's left iliac fossa, and one, the head in the right iliac fossa.

I was peculiarly unfortunate, as far as the child was concerned, in all three cases. It is usually computed that half the children in such cases, are still born, but in all these three instances, the child was dead. Only one of the cases offered any chance of saving the child, as it was seen before rupture of the membranes, but was complicated with prolapse of the umbilical cord. Version was performed satisfactorily, and I was hopeful of saving the child, but after the birth of the body, the head became fixed, and was not born for fully ten minutes after the body; thus causing the child's death.

In both the other cases, labour had been allowed to progress without the conditions present being recognized by those in attendance, and it was only realized that something was wrong when the hand and arm appeared outside the vagina. Then happened to me, what is the lot of all medical practitioners at one time or other. People who fancy themselves wise, get into a mess, and then summon someone to get them out of the mess, and assume responsibility. With both these cases then when

first seen by me, the arm, in one case the right, in the other the left, was prolapsed and outside the vulva, and the body impacted in the pelvis. Version was performed with the greatest difficulty, but without any injury to the mothers, who both made satisfactory recoveries. In the other case also, the mother recovered, so that the maternal mortality was nil, if the infantile was great.

Smellie gives an account of ^{some} extraordinary manipulations applied in a case by a midwife, in which the arm was prolapsed, which serves to show to what extremes ignorance will drive people. (Theory and Practice of Midwifery, edited by Alfred.H.McClintock Vol 3, Case 364.) "She had tried different methods to make the child((as she ignorantly imagined) withdraw up its hand into the womb, and change itself into the natural position; dipping its hand into a basin of cold water, and also in vinegar and brandy; but finding these trials fail, she had recourse to the last remedy, before any assistance from a man practitioner was thought necessary; she directed the woman's husband to take hold of her legs over his shoulders, and lift up her body three times, with her back to his, and her head downwards; being of opinion that, although the former methods failed of success, this would answer expectation."

PROLAPSE OF THE UMBILICAL CORD

may complicate any one of the various kinds or presentation, but the likeliest to be so complicated is the transverse presentation. This is only what would be expected, as the umbilicus is closer to the os uteri in such presentation than in

head, or pelvic presentations, and there is no such large mass as the head or pelvis blocking up the os uteri, and so preventing the cord from descending. The prolapse of the cord, complicated the presentation on three occasions, viz, a cranial presentation with occiput posterior, a brow presentation, with (and a transverse presentation occiput anterior). No prolapse occurred with any of the pelvic cases. This occurrence of three cases of prolapse of the umbilical cord in two hundred and ninety seven labours, gives a percentage of 1.01, a much higher figure than is usually accepted. 1 in 240, or .42 %, is what is usually accepted as the average frequency, though Fothergill (Manual of Midwifery, Page 380) estimates the frequency at 1 in 150, or .67 %. Probably the undue frequency that has occurred in my experience is accounted for by the prevalence of slight degrees of pelvic deformity.

OTHER PRESENTATIONS

which should be mentioned, are two in which a hand occurred alongside the head. These two are included above, one amongst the cranial presentations with occiput posterior, and one amongst the cranial presentations with occiput anterior, but they merit a short description here on account of their rarity. The former was also complicated with prolapse of the umbilical cord. In this case the fingers were felt close to the parietal eminence, and so were above the ear, but in the other, the hand was laid over the ear.

Barnes considers this position to be a first stage in the production of shoulder presentations. He says (Lectures on

Obstetric Operations, Page 150.) "When this accident occurs it is apt to proceed to shoulder presentation, the hand and arm slipping down and wedging the head off the brim to one or other iliac fossa. Hence, the importance of correcting this presentation as soon as possible. Whilst the parts are still moveable, it is commonly possible to push off the presenting hand by means of your left fingers in the vagina, and at the same time, by pressing down the head by the external hand towards the brim, you make the head fill the space until the double curved forceps is applied. Then drawing the head into the brim, the hand cannot again descend." This treatment was adopted successfully in the latter case, but having taken into account the complication of matters in the other, the occiput posterior, the prolapsed cord, and the hand well over the ear, version was considered the better procedure and delivery was effected easily, though the child was still born.

PRESENTATION OF THE PLACENTA

of Placenta Praevia, occurred on three occasions. The placenta was central in one, and marginal in the other two cases. Two of the cases were attended within ^{fourteen} ~~ten~~ days of each other, a coincidence of events which is often to be noted. This frequency of 1.01 %, is far above estimates, 1 in 573, and even 1 in 1000 being quoted by Playfair & Fothergill respectively. As the case of central placenta praevia was responsible for the only maternal death which occurred in the three hundred cases, particulars may not be amiss.

I was summoned on the evening of 8th February 1901 to see Mrs C,

a multipara,
the history given being that she was seven months pregnant, and was "flooding". I found, on arrival, that haemorrhage had been proceeding more or less for three weeks previously, but had always ceased with rest in the recumbent position. The woman had that evening been out shopping, and had, on her return, ^{home} been seized with a severe haemorrhage, the severity being evident enough by the blood on the floor and bedding. There were no uterine pains. On making a vaginal examination, I found the os uteri dilated as large as a crown piece, and the margins were very soft, and would, it could be felt, be very dilatable. The os itself was completely filled by clots, and placental tissue, no membrane at all being felt. As bleeding was proceeding at an alarming rate, administration of ergot, at the best of doubtful value, and plugging, were out of the question, and I considered that getting past the placenta and bringing down a leg, was the best thing to do. I therefore, introduced my hand into the vagina, and pressed my fingers between the placenta and uterine wall until the membranes were reached, and ruptured them. When this was accomplished, it was at once felt to be a breech presentation, and a leg was easily secured, and brought down, the amniotic fluid being allowed to escape past it. Traction was then made on the leg, so as to bring the breech to press against the placenta. The haemorrhage lessened considerably, and now a full dose of ergot was given. By maintaining traction on the leg, the body soon descended, and was delivered. The placenta was removed without trouble by compression. The uterus contracted well, and the woman's cond-

ition appeared satisfactory, but as a safeguard, a hypodermic injection of strychnine and ergotine was administered, and two pints of saline solution injected into the rectum. I thought she would do well, but two hours later was sent for, and found that she was dead. There had been no further haemorrhage of any significance, and the uterus, even after death, was well contracted. She had insisted on sitting up, which act had probably brought on fatal cardiac syncope.

Considering the case in the light of later experience, I think that probably I erred in delivering the child too quickly. It would have been better, possibly, after getting the child's leg through the os uteri, to have simply maintained sufficient traction to keep the breech pressing on the placenta. Thus haemorrhage would have been restrained until the uterine contractions set in efficiently enough to expel the child.

Barnes states on this topic, (Lectures on Obstetric Operations, Page 504.) "Having seized a leg, it must be drawn down gently, so as to bring the half breech into the cervix. Traction must be so regulated as to bring the trunk through with the least amount of force necessary for the purpose. Whilst delivery is going on, the haemorrhage is generally arrested. Rapid extraction involves a certain amount of violence and shock. Gentle extraction, giving the cervix time to dilate gradually, avoids this mischief."

The other two cases of placenta praevia were both marginal, one indeed scarcely meriting the description placenta praevia, as there was only a small lobe of the placenta presenting, e.

except that there was a good deal of haemorrhage from it previous to the birth of the child. In both these cases, which were cranial presentations, the puncture of the membranes, and escape of the liquor amnii, was all that was required to arrest haemorrhage. One was premature, and the child was soon born. In the other, uterine inertia was present, and delivery was effected by forceps without any special difficulty. It is interesting, I think, to find that despite all that has been written about placenta praevia, and the many theories that have been promulgated concerning it, that, so far as treatment is concerned, Smellie, so long ago as 1744 and 1750, was treating such cases similarly to the treatment in vogue now. He was familiar with plugging, puncturing the membranes, passing the hand between the uterus and placenta to reach the membranes when ^{the} placenta praevia was complete, and, in one case, he pushed his hand through the placenta, performed version, and then delivered. So far then as placenta praevia is concerned, there is not much difference between the treatment now-a-days, and that practised by Smellie. The only new feature in the treatment since his day, which has stood the test of time, is that advocated strongly by Barnes of separating the placenta from the cervical part of the uterus, by means of the finger. This, he held, not only aids dilatation of the os, but also stops the haemorrhage. It seems to me, however, that in cases such as the one reported above, in which the symptoms are urgent, and a few minutes delay means all the difference between life and death, that time is only lost by depending upon methods which,

it is true, may succeed, but are not certain. The performance of version, and bringing the breech down to the os uteri, thus both plugging it and dilating^{it} is the only satisfactory treatment. The haemorrhage can thus be perfectly controlled, but the completion of labour must not be hurried, lest the softened cervix tear, or exhaustion follow too rapid delivery.

I desire now to describe a few manoeuvres which I have found to be useful in bringing labours to a favourable termination. The object of a practitioner attending a parturition case is, I take it, to bring that particular case to as rapid a conclusion as is consistent with safety, both to the mother and child. By so doing, much unnecessary suffering is prevented, and exhaustion is avoided.

There are one or two means by which labour, which cannot be called abnormal or morbid, may be aided. The first of these I wish to mention is

DIGITAL DILATATION OF THE OS UTERI & CERVIX.

There is never any necessity for this if there is a normal quantity of liquor amnii, and the membranes bulge through the os with every pain. In some cases, however, where the liquor amnii is so small in quantity that the membranes do not come below the level of the os, but more especially in cases where the membranes have ruptured prematurely before the os dilated, great help may be given by dilating the os with the finger. This procedure is applicable chiefly when the head has come low down into the pelvis, and the cervix is stretched tightly over it, so tightly, that the margins of the os uteri feel quite sharp.

The tip of the fore-finger should be pressed on to the presenting head, and then the finger run round and round the margins of the os. Only the greatest gentleness should be employed, and then during a pain only. If this is done, the os will often be felt to rapidly dilate, and allow the head to pass. Continued pressure on one spot should be avoided, and the gentle pressure should be distributed over the whole ring of the os uteri. The performance of this will often speedily result in the head passing through the os, and a rapid termination of labour results. It does no good if the head is high up in the pelvis. In mentioning this, Playfair, (Science and Practice of Midwifery. Vol 2, Page 25.) says:- "Under these circumstances, if the finger be pressed gently within the os during a pain, and its margin pressed upwards and over the head, as it were, while the contraction lasts, the progress of the case may be materially facilitated." This method I have not found so satisfactory as the circular sweeping movement, and I should fear that pressure on the thin, tightly drawn, partially dilated cervix, might cause a laceration.

A second practical point is the usefulness of

PUSHING UP ANTERIOR LIP OF CERVIX.

This is generally described as applicable only when the anterior lip becomes jammed between the head and the pubis, when it becomes oedematous. This is not so, however. Two conditions are necessary for its performance. Firstly the os must be well dilated, and secondly, the cervix must be dilatable. This manoeuvre is not admissible if the cervix is at all rigid.

In suitable cases the os dilates to a certain extent, and then instead of the head alone being forced down by the pains, the cervix tightly applied to the head, also descends. This seems to occur chiefly when the lower region of the uterus is very distensible, its ^{extreme} elasticity evidently preventing the head from passing the os uteri. This condition leads to a considerable delay in the descent of the head. I have found this condition most marked in occipito-anterior presentations, and indeed consider that the manoeuvre can only be satisfactorily performed in occipito-anterior cases.

If then a case occurs in which the os has dilated so far, but the dilation does not increase, what should be done is as follows:- During a pain the tip of the first finger, or tips of the first and second fingers, should be pressed on the child's head, and with the backs of the fingers the anterior part of the os uteri should be pressed gently ^{forwards} towards the pubis, and upwards, so as, if possible, to insinuate it over the descending occiput. This may not occur on first trial, but if the conditions are as described above, it certainly will happen after two or three trials. The anterior lip disappears suddenly, and the head rapidly descends. What has been before a hindering factor, now becomes an aid. The uterine contractions, it is well recognized, are peristaltic in character, and after each contraction a certain amount of retraction is left. Hence, the contraction forces the head, whose occiput is now through, ^{being} the os, rapidly entirely through, the os, at the same time retracted. It is also probably the case that the occiput now

being a free point, while the frontal region is still to an extent fixed by the posterior ^{semi} circle of the os, that flexion of the head is increased, and so descent favoured. Barnes laid great stress upon the influence of friction upon the mechanism, pointing out the influence of a greater amount of friction at one point, than at another. He states. (Lectures on Obstetric Operations. Page 74.) " Friction at one point of the head may be so much greater than elsewhere, that the head at the point of greatest resistance is retarded, whilst at the opposite point the head will advance to a greater extent; or resistance at one point may quite arrest the head at that point."

It is surprising often how a head, that has not progressed for some considerable time, after the anterior ^{semi} circle of the os has been slipped over the occiput, in a pain or two is right down on the perineum. In searching for precedents in this proceeding, I find that Smellie has described it, not in the systematic part of his work, but in his record of cases. (Smellies Midwifery. New Sydenham Society. Vol 2.) Thus he says, Case 143, Page 201. "The mouth of the womb turned more soft and yielding, and when largely dilated, I pushed it gently up with my fingers all round the head, which at last glided easily along, and was delivered." Again, Case 144, Page 203. "And by degrees, I slipt up the mouth of the womb, betwixt the pubes and the head, which afterwards made very quick advances, and was soon delivered." And also Case 145, Page 203. "But the os internum remaining still backwards, and the head press-

ing down the lower and anterior part of the uterus, I was obliged to assist, as in the former case, until the head was forced down, though it dilated with great difficulty." In his editorial comments on this procedure, McClintock says. "In pushing up the anterior segment of the os uteri, I have generally found it more convenient to use the index and middle fingers of the left hand, with their palmar surfaces next the pubis, and their extremities pressing against the free margin of the os, and, as Burns well remarks, the time to execute this manoeuvre is during the presence of a uterine contraction."

I have not tried this way, having had perfectly satisfactory results from using the fingers of the right hand and pressing with the backs of the fingers. Besides, except in labours where distinct operative interference is required, the left hand is never introduced into the vagina, but is used for manipulations externally, so as, as far as possible, avoiding using the right hand for doing work which might involve septic contamination. Cases of annular rupture of the cervix uteri have been described. In such cases the cervix is caught between the foetal head, and a partially contracted brim of the pelvis. A rupture results which involves part, or the whole of the circumference of the cervix. It is at least conceivable that the condition mentioned above might lead on to this in some cases. The expulsion of the head can often be accelerated by

PRESSURE ON THE HEAD PER RECTUM.

Like the preceding, I have only found this manoeuvre can

be advantageously employed when the occiput is anterior. Cases often occur where there is a considerable amount of delay at the perineum. The head seems to descend until the occiput emerges slightly from the vagina, and then refuses to emerge any more. Each succeeding pain pushes down the head with the dilated perineum applied to its posterior parts, but the necessary movement of extension does not occur which is required for the birth of the head. In such a case, the thumb of the right hand can be inserted past the now dilated anus into the rectum. This can be done at this stage without any unpleasantness, or, indeed, without the patient being aware of it being done. The forehead should be felt for, preferably a supraorbital ridge, and pressure forwards on the frontal eminence above this, applied; any pressure on the eyes is thus avoided. By this simple means the movements of the head can be guided to a nicety, its recession prevented, and so progress materially aided. As the head becomes born, and the frontal protuberance moves forwards, the thumb should be removed from there, and placed below the chin, the parts being felt with wonderful distinctness through the rectal wall, and the extension of the head completed, and with its completion, the birth of the head.

The only possible objections that can be made against this procedure are, first, injurious pressure on the child's face, and, second, liability to rupture of the perineum. The first objection is easily disposed of. The parts of the head and face are so distinctly felt, that with ordinary care, the soft

parts can be avoided. Indeed, anyone pressing on the eye or nose, would be guilty of the grossest carelessness. If pressure is first made on the frontal eminence, and then under the chin, no injury is possible.

The second objection requires more consideration, and is a more real objection. I have found, however, that so far from such a manoeuvre predisposing to laceration; that in many cases where laceration appears imminent, it can be prevented by its adoption. The descent of the head can be controlled with the utmost nicety, and the pressure that the distended perineum will bear, can be readily appreciated. It seems also to be the case that the forward pressure on the frontal bone, presses the protruding occiput well under the pubic arch, so that the posterior surface of the occiput, and later, the back of the neck become closely applied here and fixed, and so, tension on the perineum^{is} lessened.

If rupture is feared, however, the legs, instead of being flexed, should be extended, the upper one being elevated either by the nurse, or by a pillow being put between the legs, from the knees to the ankles. It is sometimes an advantage also, to apply this proceeding in the interval between two pains, when the head can, as it were, be gently shelled out, without any expulsive efforts on the part of the patient. Barnes refers somewhat to a similar proceeding. (Lectures on Obstetric Operations. Page 58.) "Another manoeuvre is occasionally serviceable. This is to pass a finger into the rectum, so as to get a point of pressure on the forehead. In this way, it is sometimes possible

to bring the face downwards, to start the extension movement, and thus to extricate the head delayed at the outlet." Smellie also describes a case which was aided in some such way. (Treatise on Midwifery. New Sydenham Society. Vol 2, Caes 173. Page 235.) "The head, though still retracted, advanced lower and lower, and began to dilate the os externum. But, observing that it made another stop, I introduced two fingers into the rectum when it was pushed down by a strong pain, and pressing them against the lower part of the forehead, kept it down, and prevented the head from returning until the return of the next pain. I continued this method, in consequence of which the head advanced farther and farther, and assisted the delivery of it, by raising the forehead upwards with a half round turn from the lower part of the os externum. The woman was soon delivered." McClintock comments on this. "This little piece of manipulation I have often practised with complete success."

Both Smellie and Barnes advise the use of the fingers, but I consider the thumb of the right hand to be superior. First of all the thumb is shorter than the fingers, and so one is not tempted to apply ^{this} practice too soon. The fingers could reach the frontal eminence before the thumb could, and so pressure might be prematurely applied. I find that it may be safely applied if the thumb can reach this eminence, not before. The introduction of the fingers of the right hand into the rectum, seems to be inadmissible, as they would thus become contaminated with the septic lining of the rectum, and thus sepsis might be conveyed to the vagina. Then the left hand

would be properly employed in being applied to the abdomen, following the uterus downwards as its contents were expelled. With, therefore, the right thumb in the rectum, the right palm applied to, but not pressing on the perineum, and the fore-finger following the course of the head, great assistance can be given, and what might have become a case for the application of the forceps at the outlet, runs a normal course, and delivery is easily completed. Barnes, in continuation of the remarks quoted above, says:—"This combination of pushing, of leverage, and of shelling out, may, in certain cases, enable you to deliver without resorting to the forceps, or lever."

I have found the same procedure applicable during the birth of the head in forceps cases. The forceps, to complete extension, and so birth, requires to have the handles carried well forward over the abdomen of the patient. If, however, pressure per rectum on the head is applied, the handles do not need to be carried so far forwards, and so part of the pressure on the anterior part of the vulva is avoided.

A few observations on the

MANAGEMENT OF THE THIRD STAGE

may now be offered.

The character of the uterine contractions during the second stage of labour, are usually an indication of what may be expected in the third. If they have been strong and effective, there is little risk of post-partum haemorrhage, if feeble, then the risk is rather more. The most important point in the management of the third stage is to keep the left hand applied

to the fundus uteri, after the child has been removed, until the placenta has been born. Gentle friction may be kept up if the uterus seems inclined to relax unduly. By observing this rule, no case of haemorrhage after delivery greater than normal, occurred, and indeed, no case in which there was any apprehension of this complication.

A second important factor to observe, is that unless the placenta is indubitably adherent, the finger should not be introduced into the vagina after the birth of the child. There is more risk of septic contamination during this stage, than during any other, and, if properly conducted, there is no need for internal examination during it. It is often recommended, in order to make sure whether or not the placenta is lying loose for removal, to pass the finger alongside the umbilical cord, and feel for its insertion into the placenta. If its insertion can be felt, the conclusion is that it may be removed. This is both undesirable and unnecessary. The descent of the placenta will be observed by the left hand, which is on the uterus, this being shown by the diminished size of the fundus. Another method, or rather a confirmation of the first, I have employed for some time, and found it useful.

After the child is removed, gentle traction on the cord is made until it becomes rather taut. This removes all loose coils of cord from the vagina. A ligature is then fastened round the cord close to the vulva, sufficiently tightly to prevent it (the ligature) from slipping down. When the placenta has descended, and is lying loose, and ready for removal

the ligature is sometimes no longer found close to the vulva, but is now two or three inches away from it. More often, however, it is still found close to the vulva, but on the cord being pulled very gently, two or three inches of cord come down. This length of cord indicates that the placenta has left its original site, and is ready for removal. Except for the purpose of extreme accuracy, the ligature near the vulva is not necessary in the majority of cases. If the cord is pulled down gently immediately after the child's removal, so as to bring any loose coils out of the vagina, and then after ten, fifteen, or twenty minutes, as the case may be, it is found that a few more inches descend on making traction, the extraction of the placenta may then be proceeded with in the usual way. It will, of course, be recognized that the traction exerted is not to be sufficiently great to effect the position of the placenta, but merely to ensure that the piece of cord from the vulva to the insertion, into the placenta is taut.

It has also been found very convenient to examine the perineum for the presence of laceration, during the expulsion of the placenta. When the placenta reaches the outlet of the vagina, it bulges the perineum in front of it, as does the foetal head, though in a less degree, and when it is thus distended any laceration can be easily detected. A caution must be observed here, that if a small laceration is present, and the placenta is hurriedly, or too forcibly expressed, the rupture may be extended very considerably by the passage of the

placenta. The care of the perineum, therefore, is not finished until the placenta has been delivered.

APPLICATION OF FORCEPS.

Great difference of opinion exists as to the frequency of the necessity of applying forceps. Probably there is no point in obstetric practice into which the personal factor ^{enters} ~~knows~~, more than in this. Every practitioner unconsciously becomes a law to himself, and what, for one practitioner, becomes a forceps case, with another, would not. Each case, too, must be judged on its own merits, and have taken into account, not only the local conditions bearing on the labour, but also the mental, and general physical state of the patient. No compilation of statistics will give any idea as to the number of cases in which the application of forceps was absolutely imperative for the safety of the mother, or child, or both, and those in which their employment was merely a matter of convenience, saving the patient pain, and the prolongation of labour. It is in the latter class that the opponents of a moderately frequent use of forceps gather their arguments. There is no doubt that neither the maternal, nor the infantile mortality is increased by the use of forceps; and any arguments against its use depends upon the morbidity, chiefly lacerations of the cervix, vagina or perineum, which is said to follow. In hospital practice, it is almost impossible to estimate this, as patients confined in a maternity hospital, would, if morbid conditions followed, or manifested themselves weeks or months afterwards, go elsewhere for treatment. In private practice,

it is different, as the majority of cases remain under observation, and any morbidity would be at once complained of. Also the same women are attended over and over again, and, if the conditions of previous labours are borne in mind, the search for signs of previous injury will be interesting. It may be conceded at once that the high operation, in which the forceps is applied to the head, either at the brim of the pelvis, or above it, is never performed, unless absolutely necessary, and then with a considerable amount of ~~of~~ anxiety, and never without carefully considering the conditions, such as the general state of the patient, the size of the pelvis, the amount of dilatation of the os, and such like. It is not in such cases that the majority of applications of forceps occurs, but where the head is either in the pelvis, or near the outlet, and delay is occurring. This delay is easily remedied by the use of forceps, and the question of the justifiability of its use has to be discussed. No one advocates the universal use of forceps, and if progress, however small, is being made, and the termination of each succeeding pain finds matters at a more advanced state than before its occurrence, then the labour should not be interfered with. Delay at this stage may usually be referred to one of three groups, or a combination of these three. These are, first, insufficient strength of the uterine contractions, second, disproportion between the head and pelvis, due to contraction of pelvis, large size of head, or faulty position of the head, and, third, to rigidity of the parts about the pelvic outlet. We may apply here again Barnes' dictum

that the expelling force must be greater than the force represented by the friction between the head and the passage. If these two forces are equal, no progress will be made, but if the expelling force is increased by ever so little, the head will advance. This is the case in some forceps cases, where a very slight amount of traction requires to be made. The fine boundary line between progress and non-progress was impressed upon me not long ago. I was sent for to see a woman, a primipara of 19 years of age, who had been in labour for a considerable time. I found the external genitals very much swollen, and the vagina and presenting part of the head dry, and harsh-feeling. So far as I could ascertain from the attendants, the head had been in this situation, close to the perineum, for over six hours. The uterine contractions had almost entirely ceased. Despite the swelling, and the long retention of the head, delivery was effected by forceps, with traction of only a few pounds. If the uterine contractions had been only a very little stronger, spontaneous delivery would have occurred, whereas, as it was, because of this strength was not present, the condition of affairs mentioned above, resulted. The child, as might have been expected, was stillborn.

A case, therefore, which only requires the employment of traction amounting to a few pounds, may be quite a legitimate forceps case.

There is no doubt that any delay in the second stage of labour is dangerous, both to the mother and the child, and it is our duty when this delay occurs, to remove it. If the cause

of the delay can only be removed by the use of the forceps, then the case becomes a forceps case. The laying down of a time limit seems to be practically useless, as what in one case would be fatal delay, in another would be of no significance. The only rule that ^{can} be laid down is that, as soon as delay occurs in the second stage of labour, which we judge to be detrimental to the well being of the mother, or child, or both, and which is causing useless and unnecessary pain to the mother, then the use of forceps is indicated. This necessarily means that forceps are applied more often than they used to be. A time limit of many hours was laid down, which meant exhausted mothers, and many still-born children. Barnes emphasises the advisability of the frequent use of forceps. (Lectures on Obstetric Operations. Page 62.) "Whilst we are waiting, the woman is suffering -suffering needlessly- her nervous energy is being used up, she is drifting into exhaustion..... Delay in the second stage is eminently a case for help as soon as it is clearly ascertained that the natural powers are not efficient..... In no respect has modern midwifery given more satisfactory evidence of progress than in the extending practice of applying the forceps to obviate delay in the second stage of labour."

We must be careful, however, not to go to the opposite extreme of the older practice, and apply the forceps in practically every case. Clear signs of non-progress must be present before interference is required.

As regards the objection that vaginal and perineal lacer-

ations are frequent during delivery with forceps, it is difficult to see how this can be, if a careful operator is using the instruments. The blades are so closely applied to the child's head, that the vaginal mucous membrane can scarcely be affected by them, and the descent of the head on the perineum, and the extraction can be so nicely regulated, that gradual dilat^{at}ion can be guaranteed, and the requisite extension movement so given full effect to, as to cause the minimum amount of pressure on the perineum. In persistent occipito-posterior cases, I have found in the presence of the forceps, almost a surety that the perineum would not be ruptured, though I may confess here that the worst ruptured perineum I have experienced, the only one extending into the rectum, occurred in a persistent occipito-posterior case, in which forceps was used.

Assuming then that an increased frequency in the use of the forceps is now justifiable, what may be considered a frequency of application not excessive?

McClintock gives his opinion. (Smellies Treatise on Midwifery. New Sydenham Society. Vol 1, Page 270.) "As long as the mortality diminishes pari passu with the more and more frequent use of the forceps, we are justified in going on. But surely there must be some limit to this—some line beyond which the mortality will gradually begin to rise in a certain ratio with the increasing frequency of the operation."

This limit has not yet been determined, though an approach to it can be made by comparing the results of the practice of five of the Masters of the Dublin Lying in Hospital. This Dr

Kidd has done; (Dub Med Jour January 1872) and he has given a very elaborate and instructive table, which exhibits the proportionate frequency with which the forceps was used, as well as the mortality among mothers and children, in tedious and instrumental labours occurring ~~labours occurring~~ in the Dublin Lying in Hospital, during the Masterships of Dr Joseph Clarke, Collins, Charles Johnson, Shekleton, and George Johnston. This table demonstrates that the increasing employment of the forceps was followed by a diminishing mortality, up to the Mastership of Dr Shekleton, when the forceps was resorted to in 32.67 times per cent in tedious and difficult labours, and when the mortality of this class reached its minimum, viz, 6.03 per cent, in place of 20.21 per cent, under Clarke, who only used the forceps 1.79 times in a hundred of same cases. Dr George Johnston had recourse to the forceps still more frequently, employing them 75.68 times per cent, (in tedious and difficult labours;) but his mortality, in the same description of cases, was 1.35 per cent greater than ^{that of} Dr Shekleton; it is only fair to add, however, that Dr Johnston's infantile mortality was only 9.59 per cent, against 32.68 per cent under Dr Shekleton's practice, and 53.005 per cent under Clarke, in the same class of cases, viz, those of the tedious and difficult labour.....

I can well understand that, provided this powerful agent be employed by skilful hands, under the direction of experienced heads, it may be employed in the rate of one in ten with perfect safety to mother and child, and with a great saving of pain to the former, and of time to the operator."

McClintock presumably means one case in ten, all labours, not only in labours classified as tedious and difficult, that is ten per cent. This opinion was given in 1876, but at the present day, due probably to improvement in the forceps itself, and in precautions against sepsis, a greater frequency of application seems to be the rule.

Professor Kynoch (British Medical Journal, July 23, 1904. Page 173.) recently showed by statistics from various sources, that the percentage of forceps cases in hospital practice, was much less than in private practice. The average frequency of the application of forceps, in ten maternity hospitals on the Continent, he showed to be 3.6 %; whilst in private practice 40 % was mentioned as occurring. He also quoted figures from a paper read to the Edinburgh Obstetric^{al} Society by Dr Dewar, and says:- "His conclusions may be taken as a fairly good average of careful midwifery in every day experience. He contrasted his early experiences of 700 cases, with 300 cases at a later date. In the former group he applied the forceps in 11 per cent of the cases. There were no maternal deaths. Of the children 20 died, and of these, only six were delivered with forceps; giving an infantile mortality of 2.8 per cent. Of his second series -and with a larger experience- he applied the forceps in 35 per cent of the cases. There was one maternal death, from a cause quite unconnected with the obstetric operation, and an infantile mortality of only 1.6 per cent." He says also in the same paper. "It has not yet been proved, that by a frequent application of the forceps very large saving of

* It should be noted, that as cases, in which the child was born before my arrival, are omitted, the actual percentage is somewhat less than stated.

foetal life is obtained. But the figures at our disposal show, at least, a slight saving, with equally good results for the mother. This being so, I think we are justified in maintaining that in the hands of a skilful operator, the conditions being satisfactory for the application of the forceps, a moderately frequent use of the instrument is to be recommended. By so doing, we shorten the patients suffering, without increasing any risk to the maternal, or foetal life."

I find that the forceps was employed on eighty two occasions during my three hundred labours. On only six of these occasions was it used at the brim of the pelvis, the rest of the applications being when the head was in the pelvis, or at the outlet. One of the two facial cases was delivered by the aid of forceps. The instrument was never applied to the breech, nor was it required to aid the expulsion of the aftercoming head. This number, eighty two in three hundred, works out to a percentage of $27.34\frac{2}{3}$; which cannot be considered excessive. There was no maternal death resulting from the application of the forceps, there being, as mentioned previously, only one maternal death in the whole series, due to haemorrhage and exhaustion. due to placenta praevia.

Nor was the maternal morbidity great. The only lesion that occurred was perineal lacerations, which happened on three occasions. In two, this was very slight, and easily remedied, and gave no further trouble. The third case was more serious, and involved the whole perineum and rectum. The patient was a thin, slenderly built girl of eighteen, a primipara, and the

presentation was cranial, with the occiput persistently posterior. Despite all efforts to save the perineum, this extensive laceration resulted. It was sutured, and healed well with a perfect result.

It will be anticipated that the application of forceps will be considered necessary, or advisable, in a larger percentage of primiparas than multiparas, and an analysis of my figures bears this out. The eighty two cases in which the assistance of forceps was used, were composed of forty seven multiparas, and of thirty five primiparas, and as the actual total numbers of multiparas and primiparas were two hundred and eight, and ninety two respectively, the percentage of application will be seen to be 22.59 in multiparas, and 38.04 in primiparas. The commonest indication in multiparas was weakness of the uterine contractions, due, in many cases, to the number of frequent pregnancies, and shortness of the intervals between them. In primiparas, on the other hand, the usual indication was rigidity of the parts, which was not being overcome satisfactorily. Extraction was performed slowly and carefully, and no difficulty was experienced in saving the perineum from rupture. The puerperal period in forceps cases proceeded to convalescence just as satisfactorily as those in which the labour was unaided. In no case could morbidity in the puerperium be laid to the charge of the forceps.

Reference to Tables 1 & 2. Pages 13 & 14, will show that on six occasions, children, either stillborn, or dying shortly after birth, were delivered by forceps. Four of the children

were still born, and two died soon after birth. These two last cases occurred in the same patient, a small woman with contracted pelvis, due to rickets in childhood. Of the six deaths, two were not due to the application of the forceps, as the death had taken place before the application, and so there are left four cases in which death might be attributed to the forceps, a percentage of 4.88. This percentage compares very favourably with estimates. Thus Dr Kynoch, in the lecture quoted above, says. "When we come to consider the effects of the forceps operation on the infantile mortality, we are confronted with the difficulty that in many reports upon this point no reference is made to the important factor, as to whether or not the child was alive when the forceps were applied. After deducting such a possible source of error, I find, from the following reports at my disposal, that the average infantile death rate where the forceps might be responsible for the child's death, comes out slightly over 6 per cent". This^{is} in dealing with hospital practice. Later on he shows that in different private practices the death rate, with the same reservations as above, among infants was 4.7 per cent. 3.3 per cent, 2.8 per cent, and as low as 1.6 per cent. There is, therefore, by the increased frequency_{of the application} of forceps, no increase in maternal mortality, a diminished infantile death rate, and, by care and attention, no increase in maternal morbidity, but even, we may hope, a diminution in these conditions.

The whole question may be summed up in the words of Dr R. Milne Murray. (British Medical Journal. Aug 20, 1898, Page 476.)

"Whether the forceps are to be an engine of disease and death, or a means of protection alike to mother and child, will depend on whether they are used with a seeing eye, and an understanding heart -upon whether the obstetrician is prepared to put aside all adventitious considerations, "the uneasiness of the gossips"- even the demands of the patient, most of all his own convenience, and interfere when, and only when, he has deliberately assured himself that the risk of interference is less than the danger of waiting. If this principle is unswervingly followed and carried out with reasonable skill, Baudeloque's commendation will still hold good, and the forceps will maintain their high place among the products of the ingenuity of man."

Any injury to the mother is very rare when the forceps are properly^{used}, and injury to the child is still rarer. Apart from trifling abrasions, and a few cases of haematomata which soon healed, and one case of depression of the frontal bone, no injury was observed. One interesting condition manifested itself after a forceps delivery. The pelvis was contracted, and delivery was effected only after great difficulty, the forceps being applied at the brim. The child was apparently stillborn, but was resuscitated after very great trouble. The corneae of both eyes were observed to be quite opaque, and ground-glass like in appearance. They resembled exactly the corneae, as seen after prolonged chronic interstitial keratitis. I expressed some apprehension as to the possibility of this condition disappearing. In a few days, however, the turbidity

completely disappeared, and the corneae resumed their normal bright appearance. This condition has been attributed to oedema of the cornea, produced by the pressure on the head by the forceps, or contracted pelvis, or probably both. I should consider that it is analogous to the slight sub-conjunctival haemorrhages that are observed in some infant's eyes at delivery, especially if the labour has been somewhat tedious, with the pains strong. With regard to the operations of the application of the forceps, and extraction of the child, there were no features of particular interest, except perhaps, those observed in the occipito-posterior cases. Different treatments of this condition, when instrumental interference is required, have been advised and adopted. Smellie gave very full directions for the rotation of the head by means of the forceps, a forcible rotation which would scarcely be recommended now, but McClintock points out that, at least, it was "based on correct mechanical principles". Barnes, on the other hand, considers that, as a large number of occipito-posterior cases rotate on their own accord, so as to bring the occiput anterior, we may take credit for aiding, or even causing rotation, whereas, in reality, the head is simply rotating on its own accord. He says. (Lectures on Obstetric Operations . Page 71.) "But I cannot give more than a qualified assent to the propriety of attempting to rectify the position. It is only exceptionally useful; still more rarely is it necessary, and it is not free from danger. The head can be born very well preserving the occipito-posterior position throughout. Indeed, I think

this occurs more frequently than Naegele represents. Nor does the case call for any amount of force. By aid of the forceps, the delivery is nearly as easy as when this instrument is applied to an occipito-anterior position. In the event of delay. I, therefore, advise resort to the long forceps. The blades should be applied in the sides of the pelvis; they will be guided by the head into the most suitable position. Extraction, then, simply, without troubling yourself about rotation, is all that is necessary. If nature prefer, or insist upon rotation, your business is to consent. As the head advances, the occiput may come forwards, and you will feel the handles of the forceps turn upon their axis. But in a large proportion of cases, nature will not insist upon bringing the occiput forwards, and here again your part is simply that of a minister of nature. The forehead will emerge under the pubis; the cranium will sweep the sacrum, and perineum."

The cases similar to these, that I have experienced, bear out this statement of Barnes in every particular. It has been recommended by some, that in these positions, the use of straight forceps is an advantage. Of this I have had no experience, & so, can express no opinion. I did, however, try in several cases, not included in the present series, the application of the double curved forceps in the reversed position, viz, with the pelvic curve with its concavity backwards. The idea of this was that, by so doing, traction was applied chiefly to the occiput, and its descent was favoured, and so rotation forwards encouraged. I could not perceive any advantage however, and did not persist in this line

of treatment.

Amongst the cases in which forceps were employed were eight cases in which the occiput had remained posterior, and would not rotate, even when attempted digitally. The forceps was applied in the usual way, and traction made. In two of the cases spontaneous rotation forwards occurred, and the demonstration of the rotation forwards by the movement of the forceps blades and handles, was most interesting. No assistance in the way of twisting the forceps round was made, but simply traction, and the swinging round continued until the occiput was under the pubic bones.

In the other six cases the occiput rotated back into the hollow of the sacrum, and was born over the perineum, and then extension occurred, and the brow and face were born. Great care is necessary for the preservation of the perineum, but no rupture occurred in five of the cases, a bad rupture, however, mentioned above, occurring in the sixth.

The difference in the moulding of the head in occipito-anterior, and occipito-posterior cases, is very striking. In the former, the head is much elongated, being markedly dolichocephalic, but in the latter, the head is round and spherical, being markedly brachycephalic. This moulding of the head, in occipito-posterior cases, into a spherical shape has the effect of reducing the pressure on the perineum, and hence the risk of rupture. The occiput does not project so far posteriorly to the nape of the neck as normally, and indeed, in one or two cases, the back of the neck, and back of the head,

were almost in the same plane. This spherical shape of the head was noticed in all cases that terminated face to pubis. Probably this rotundity of the head acts so as to prevent rotation forwards of the occiput.

THE OPERATION OF VERSION

was performed on four occasions, viz, in three transverse presentations, and one cranial. One of the transverse, and the cranial case did not present any features of special interest, but the other two transverse were interesting. They were not seen until the arm had prolapsed, and was projecting from the vagina. The interesting point was the confirmation of the opinion of Sir J. Simpson, and emphasised by Barnes, that the proper leg to bring down is the one on the opposite side of the body from the presenting shoulder. Leishman says, ^{on this point} (System of Midwifery, Vol 2, Page 586.) "The foot, or knee, which is lowest in the womb, or easiest of access should be at once seized; but in a transverse presentation, there is no doubt that turning will be more easily effected when we seize the leg of the side opposite to the presenting shoulder, so that in these cases, if we have a choice in the matter, we should select the limb which is more distant from our hand."

Playfair, on the other hand, quotes Dr Galabin in support of the opposite opinion. (Science and Practice of Midwifery. Vol 2, Page 184.) "Dr Galabin has carefully investigated this point in a recent paper, and contends that there is a greater mechanical advantage in seizing the leg which is nearest to, and on the same side as the presenting arm, and this, moreover,

is generally more readily done."

It may be that there is not ^{very} any great advantage in bringing down the opposite leg in cases seen early, but in such cases as are mentioned above, where the arm is prolapsed, and the shoulder is pressing down into the pelvis, it seems to me to be essential to bring down the leg on the opposite side of the body. It is in cases like these, that the accoucheur, if he possess it, is profoundly thankful for having a small hand. Given a small hand, gentleness, and patience, the leg offering temptingly soon after the hand passed into the uterus was rejected, and the hand was passed on until the other leg was seized. When traction was made on this, the rapidity with which the prolapsed arm was withdrawn back into the uterus was surprising. In fact, after this leg was reached, no difficulty occurred in either case, delivery being easily accomplished. I am sure that a similar withdrawal of the arm would not have occurred if the leg had been seized on the same side, but the leg and the arm would have become hopelessly jammed in the pelvis. This also emphasises the advantage of only bringing down one leg, not both. Barnes gives the following reasons on this important point. (Lectures on Obstetric Operations. Pages 215-219.) "If the opposite knee be drawn down, and supposing the child to be alive, or so recently dead that the resiliency of the spine is intact, the shoulder must rise, and version will be complete, or nearly so. But if both feet are seized, or the foot of the same side as the presenting arm, version can hardly be complete, and will perhaps fail altogether.

And taking as an example, a case where the right shoulder presents, he says:- "You cannot draw down the left leg without causing the whole trunk to revolve; and the right shoulder will necessarily rise. To turn effectively, the child must revolve upon its long, or spinal axis, as well as upon its transverse axis. Turning, in short, is a compound, or oblique movement between rolling over on the side, and the somersault."

OTHER OPERATIONS.

such as craniotomy, or embryotomy were not called for in any case, and so no remarks can be offered upon any of these topics.

ANTISEPTICS IN MIDWIFERY PRACTICE.

No review of obstetric practice would be complete unless some remarks were made upon this important subject.

Since the introduction of antiseptics, the maternal mortality has become very much reduced in hospital practice, but a corresponding diminution is not observed in child birth outside these establishments. Matthews Duncan, after going elaborately into statistics on the death rate from child birth from all causes, says. (Mortality of Child bed, and Maternity Hospitals. Page 24.) "No fewer than 1 in 120 women delivered at, or near the full time, die within four weeks of child bed." Later on he states. (Page 107.) "In private practice, metria (i. e. septic disease) destroys 1 in 3.6, 1 in 2.5, 1 in 1.8, of those that die in child bed. In hospital practice metria destroys from 1 in 3.4, to 1 in 1.5 of those that die in child bed." At the present day, septic infection in child bed causes a mortality of from 2 to 3 per 1000. This is much the same

proportion as calculated by Matthews Duncan in 1870. This proportion of deaths from septic infection indicates that still there is a prevalence of disease which is preventable, Besides, there is a large number of cases infected septically which recover, for every one that dies. For example, amongst the three hundred cases being considered, there was no death from septic disease, and indeed, only one case that caused much anxiety, but still a certain proportion, not large, however, developed temperatures ranging from 100^o to 103^o. These, however, proved very amenable to treatment. Still, they indicate that septic infection had occurred, It was often noted that this manifested itself in cases that had run a normal course, in some cases a rapid course, and in other cases, where a good deal of interference had been required, and where septic infection would not have been surprising, that in these cases the puerperium was free from any complication. It has been cast as a reproach that hospitals show a smaller mortality than private practice. This reproach is, perhaps, scarcely fair, as private practitioners are called in to see cases attended by midwives if any complication occurs, and yet if death occurs, the death certificate, with the cause of death, goes to the Registrar General with their signature, as if they had attended the case. Thus, during the time of attendance on the cases under consideration, on two occasions, I attended fatal cases of puerperal fever, in cases attended by midwives, and yet these deaths would be filed by the Registrar as occurring in my practice. From this cause the private practitioner may be

unjustly accused of what he is not to blame for.

In any case it is the duty of the accoucheur, in his conduction of a parturition case, to aim at preventing the patient from becoming septicallly infected. That much is clear, but how this object is to be attained, is not so clear.

It is well to realize what precautions nature takes against septic invasion during labour. We may premise that the uterus and its contents are aseptic, and that the vagina is practically so, any organisms which are there being harmless. The enemy is at the gate in the vulva, and it is from there that organisms, in a labour uninterfered with in any way, would, if at all, originate. They are, however, prevented from entering by a constant stream of fluid from within. The slight discharge during the first stage of labour, followed by the washing down of the aseptic amniotic fluid when the membranes break, prevent organisms from entering, or wash out any that may have entered. The gush of fluid after the birth of the child, and lastly, the placenta coming down like a large sponge, effectually clears out any infected material.

In a labour entirely uninterfered with, there is probably little risk of septic infection. We must, therefore, in order not to break down the precautions against sepsis, in an ideal state, have an aseptic vulva, an aseptic examining hand, and aseptic instruments, if used. If this ideal state is impossible, let us aim as near to it as possible.

Many tedious, and in some cases, acrimonious discussions have taken place as to how far it is desirable to adopt in

their entirety, the principles of modern surgery to the practice of midwifery. Into a criticism of these, it is not worth while entering, but certain methods which have commended themselves to my personal use, may not be out of place. The disinfection of the hands and forearms may be done thoroughly, without any offence to the patient. The soap I use is ethereal soap, impregnated with biniodide of mercury, and enclosed in collapsible tubes, and this is also used as a lubricant. After thorough washing with this, the hands are steeped in carbolic lotion, 1 in 40, then the finger is lubricated with the iodide of mercury soap. Carbolic acid seems not to be used so frequently as in former years, but has been abandoned for some newer antiseptics, but, it has the three advantages which make a convenient antiseptic, viz, ease of carriage, efficient antiseptic powers, and no destructive effect on instruments.

Each hand should have its separate duties, and the left hand employed for lifting bed clothes,^{etc.} so that the right hand be not contaminated by contact with them.

Any instruments used can be treated in the same way, by laying in hot carbolic lotion, and then lubricating with the iodide of mercury soap.

The treatment of the vulva is a vexed question. Probably sponging with antiseptic lotion is all that would be tolerated in private practice, though more thorough disinfection could be applied in maternity hospitals.

Ante-partum douching with antiseptic lotions has been recommended, but there seems to be more liability of carrying

in micro-organisms on the douche, than of doing any good by washing the vagina. The natural lubricant is removed, and this protection to the vaginal walls is important. In cases where there is a history of purulent discharge from the vagina, it is advisable, however, to wash out the vagina, both to prevent infection from this pus, but also to prevent the child's eyes from becoming contaminated. In fact, it is almost universally conceded, that routine ante-partum douching is not required. Some, who do not advise this, still advise douching, if the hand or forceps has to be introduced into the uterus. Now, in this connection, a most important fact seems to me to be almost always overlooked. In any manipulation within the uterus during the second stage of labour, the hand, arm or instrument never comes into contact with the uterine walls. The membranes are interposed between the operating instrument, and the uterus. The hand, or instrument cannot infect the uterus therefore, but if any organisms are carried in, they are deposited on the membranes only, and are expelled with them, leaving the uterus in an aseptic state. This is noteworthy, and explains why very complicated manipulations, under unfavourable circumstances, can be carried out without any signs of septic contamination.

If this fact is observed, and realized properly, the need for post-partum douching disappears, unless the hand, or instruments have been introduced into the uterus during the third stage, or after, when the uterine walls themselves may be infected. Any douching would tend to wash infection into the

uterus, and might produce the very condition it was used to prevent.

There seems to me to be much more risk of sepsis occurring during the third stage of labour and the early hours of the puerperal period, than at any other time. We have now the raw placental site, and abrasions, or lacerations in the cervix or vagina, all open wounds liable to become contaminated. I believe that it is of the greatest importance that no vaginal examination be made after the birth of the child. Except in cases of adherent placenta, which is very rare, (only one case occurred among the cases under notice) any introduction of finger or instrument into the vagina is quite unnecessary.

Dr Harrocks (An Adress on Puerperal Sepsis, British Medical Journal, Feb 13, 1904, Page 359.) says:- "Again after the child is born, some men always make a vaginal examination to see if there is another child, or any lacerations. It is far better not to do so. You can tell by her appearance and by the pulse whether she is loosing too much blood. You can even see the red stream flowing over the left thigh, and you know if it is only the usual quantity. You can place your hand on the abdomen, and feel by the size of the uterus whether there is another child or not..... If you adopt the method of expressing the placenta, let it be down entirely from without; and if you twist the membranes into a rope, do not pass the finger into the vagina to break this rope off at the os uteri, or within the uterus. They will come away clean without much help with a little patience, and, even if some break off, they

usually give rise to no trouble, but come away in the lochia. When uncontaminated by pathogenic germs, such bits of membrane are practically innocuous."

It is quite a mistake to make a vaginal examination to see if the placenta is separated, or as is sometimes recommended to introduce two fingers and make traction on the lower edge of the placenta. After the placenta has come away, bringing with it any blood clot or discharge which may be lying in the genital tract, all that is required is frequent changing of the diapers, and sponging the external genitals night and morning with a weak antiseptic lotion.

If these principles are acted up to, I believe that septic infections of puerperal women will be reduced to minimum. Despite all, however, that one can do, evidence that septic conditions have supervened appears in a certain number of cases. If this is so, then the routine pursued should be reviewed for the loophole whereby this infection has occurred. In some cases it probably occurs through channels over which the practitioner has no control, such as unsanitary and unhealthy houses, foul bedding, and carelessness as regard cleanliness, both on the part of the patient and the attendants. There is no doubt, also, that the presence of gonococci in the vagina may predispose to, if not actually cause sepsis, and this in all large towns is common. This condition may exist without any plain manifestations, and any history of purulent discharge often cannot be obtained. On two occasions ophthalmia neonatorum developed, and yet the presence of any vaginal discharge during

the pregnancy was denied. So long as such conditions exist it will be impossible to eliminate all sepsis from midwifery practice, but it is at least possible to aim at the ideal, and by care and attention to the principles of aseptic and antiseptic surgery, the occurrence of septic cases will be reduced to a minimum.

In order to prevent sepsis it has been proposed to substitute abdominal palpation for vaginal examination. This can be done to a certain extent, but its ^cpracticability is questionable. In any case, it is more applicable to hospital practice than to private practice, and there are points to be determined about a labour which cannot be ascertained by abdominal palpation, but require vaginal examination. One could only have an approximate idea of the progress of the case if depending on abdominal palpation alone, and the accuracy demanded by the scientific mind would be wanting. Of the importance of external palpation, there is no doubt, but vaginal examinations ^{are} ~~is~~ necessary, though such examinations should be made as infrequently as possible.

Of the cases of sepsis occurring, all except one were sepraemia only. There were the usual symptoms- the rigors with high temperature, aching pains all over, slight tenderness over the uterus, and foetid lochia.

These cases all did well under the treatment usually adopted, viz, antipryetics and antiseptic douching frequently repeated. With this the symptoms rapidly subsided, and convalescence ensued. In one case the site of the mischief was very

plain. The case was a primipara, aged 35 years, in which the presentation was breech. The parts were very rigid, and delivery only affected with very great difficulty. In the extraction of the head a slight rupture of the perineum occurred. On the third day, rigors ensued, and the temperature rose to 104°. There was no pain of the uterus, and no foetor of the lochia, but pain was complained of in the perineum. On examining the perineum, pus was seen to be present between the two edges of the rupture, which by this time had become united to an extent. This pus was liberated, and the parts touched with strong carbolic lotion. Frequent bathing with 1 in 40 carbolic acid was employed, and within twenty four hours the temperature was normal, and the puerperal period was completed without any further complications. One case only developed septicaemia. The patient was a primipara, and the child was delivered with forceps, applied when the head was low in the pelvis. The confinement took place on March 1st, 1901. The temperature remained normal for forty eight hours, but on March 3rd severe rigors occurred, and the temperature rapidly rose to 105°. There was no history of vaginal discharge, but at this stage of her illness the husband required treatment for acute epididymitis, resultant on a long standing gleet, and this revealed a possible source of infection, either in the way of actually causing the disease, or in predisposing to its onset. The temperature remained high, varying from 102°, to 105°, from this date, March 3rd, until March 20th, death indeed being anticipated at any time. At no time were the lochia offensive,

nor did any local abscesses form. No symptoms of pyaemia were present, but symptoms of very severe septicaemia. The treatment adopted was disinfection of the genital tract, as far as possible, and on account of the possible presence of gonococci, protargol, pessaries were freely used. The drugs chiefly depended on were quinine and opium, and their combination seemed to have a tonic, antiseptic, and soothing influence on the system. Cold sponging was also used freely. Extreme anxiety was felt concerning the case for about three weeks, and it was not until April 1st, 4 weeks after the labour, that convalescence could be said to have commenced. Necessarily this was slow, and she was not well till the end of May. Since then she has been well, and was confined again fifteen months ago, and the parturition and the puerperal period were perfectly normal.

This is the only septic case I had that caused much anxiety, and recovery was contrary to all expectations. I can scarcely conceive a similar case, or one slightly more severe, recovering.

Smellie describes many cases, the symptoms of which are those of puerperal sapraemia, or septicaemia, but he does not ascribe them to their proper cause, but attributes their onset to indiscretion in food or drink, or to the room being kept at too high a temperature. These opinions indeed are still prevalent among some sections of the community.

Thus, he says. (Treatise on Midwifery, New Sydenham Society, Vol 3, Case 456, Page 255.) "I was called to a woman on the fourth or fifth day after delivery of her first child. The weather was hot; by which, and too hot a regimen, she was thrown into profuse sweats. The discharges had been in the usual way for the first two days, but now were entirely stopped, and her breasts were quite flaccid; both the milk and the discharges seeming to be carried off by the excessive sweating. Her pulse was low, and her spirits much sunk..... She, at last, grew comatose about the ninth day, and expired." And, again. (Case 458, Page 459.) "They told me she had been in great fever, and had violent pains in the abdomen for two days, but that now she was much easier. I enquired particularly, and found that during labour, and ever since, her drink had been mostly warm punch; three parts water, and one part brandy. She had intense heat on the skin of the arm; her pulse was quick, low, and intermitting."

The picture of cases affected by septic infection in those above is almost complete, and Smellie brings out in their description what, indeed, is noticeable in all his work, his acute perception of symptoms. One symptom he does not mention which is striking, and, indeed, almost overpowering, viz, in serious cases the sweet smell of the breath. One case is forcibly fixed in my mind which occurred to me soon after entering into practice, not included in this list, however, in which this symptom was so marked, as to be noticeable before the bed-room was reached.

On examining the records of the puerperal periods of the cases, I find that on six occasions definite septic symptoms developed. In a few cases transient rises of temperature occurred, but in these six there was no doubt as to the septic nature of the complication. As mentioned above, five easily yielded to treatment, and one was serious and prolonged. This number gives a percentage of 2. Of the six, two only were in multiparas, and four in primiparas. This agrees with the general experience that sepsis is more common among primiparas than among multiparas, since out of 92 primiparas 4 developed septic symptoms, or 4.13 %, whereas, out of 208 multiparas only 2 became septic, or .96 %. There is a great and striking difference here. Matthews Duncan was the first to point out this fact, and shows that 1 in 23 primiparas died of puerperal fever. (Mortality of Childbed and Maternity Hospitals. Page 52.) and shows that deaths from puerperal fever are twice as common amongst primiparas ^{as} ~~than~~ amongst multiparas. Happily the death rate from puerperal fever is not now so high as stated in Matthews Duncan's tables, which were compiled in 1870, but the general statement that septic complications are more common amongst primiparas than amongst multiparas, still holds good. Nor is the reason for this far to seek. The greater liability to lacerations and abrasions, often in themselves trifling, but still causing a breach in the tissues, and the greater necessity for operative interference, all tend to cause septic affections more common among primiparas, Matthews Duncan, sums up the causes of greater mortality amongst primiparas in the

book quoted above. (Page 29) "It is well known that first pregnancies are, as a whole, attended by a much greater mortality than subsequent pregnancies, and this is a circumstance which scarcely demands explanation, for the primiparous woman has a longer and more difficult labour than others; many primiparae are delivered under the influence of depressing emotions; in primiparous women all the arrangements, mechanical and other for delivery are tested, and subsequent deliveries occur only in those who have so far successfully ^{endured} the trial as to survive."

As mortality and morbidity run in the same classes, the class with the greatest mortality will also have the greatest morbidity.

As regards the class of cases in which these manifestations occurred in the puerperal period, the two multiparous cases were absolutely normal, indeed both were very easy labours. The primiparous cases, on the other hand, were all four cases in which operative interference was employed, three being forceps cases, and one a difficult breech case.

One of the forceps cases had no appreciable lesion, one had a gonorrhoeal infection, and one was the occipito-posterior case mentioned previously, in which the perineum was badly ruptured. In the breech case, also as mentioned above, there was a slight rupture of the perineum. As the last of these cases occurred in ^{September} ~~November~~ 1903, I am hopeful that, with greater care septic cases will be almost entirely eliminated. This, at least, is what should be aimed at, so that the puerperal period

may be gone through from start to finish without any morbid manifestations, even though a considerable amount of manipulation may have been required at the time of parturition. And not the puerperal period only, but afterwards has to be taken into account. The patient has to be restored to her usual avocations in a healthy state, in physically as fit a state as she was previously to conception.

The foregoing statements and observations are the principal points which have been noticed during a few years of obstetric practice. Probably some facts that I should have noticed have not been observed, but, at any rate, they may serve to show that I have endeavoured, however imperfectly, to remain a student even though my student days, strictly so called, have ended. It is only by so doing that progress can be made, and the true student will become more and more conscious, not of what he does know, but of what he does not know.

I trust that this dissertation may come up to the standard by "giving evidence of original observations", and that it may also show that the lessons learnt in the Midwifery Lecture Room at Glasgow University, and at the Maternity Hospital, have not been in vain, but have come to a fruitful issue.

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A P P E N D I X .

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SUMMARY OF THE THREE HUNDRED CASES UNDER NOTICE.

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(Any case in which the child was born before arrival, or was not viable is omitted.)

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No of case in notes.	Date of attendance	Prim or Mult.	Sex of Child	Remarks.
1	19 Mar 1899	M	M	Cranial (1st) Normal Labour.
2	22 Mar 1899	M	M	Cranial (1st) Normal Labour.
3	25 Mar 1899	P	M	Cranial (2nd) Normal Labour.
4	28 Mar 1899	M	M	Cranial (1st) Forceps Case.
5	30 Mar 1899	M	M	Cranial (3rd) Normal Labour.
6	2 Apr 1899	M	F	Cranial (1st) Normal Labour.
7	10 Apr 1899	M	M	Cranial (1st) Forceps on account of uterine inertia.
8	12 Apr 1899	M	M	Cranial (2nd) Normal Labour.
9	13 May 1899	M	F	Cranial (1st) Forceps case.
10	19 May 1899	M	F	Cranial (2nd) Normal Labour.
11	2 June 1899	M	F	Cranial (3rd) Forceps Case. Persistent Occipito-posterior.
12	3 June 1899	M	F	Cranial (1st) Normal Labour.
13	3 June 1899	P	M	Cranial (1st) Normal Labour
14	12 June 1899	M	M	Cranial (1st) Normal Labour.

No of case in notes	Date of attendance	Prim or Mult	Sex of Child	Remarks.
15	17 June 1899	M	M	Cranial (3rd) Normal Labour.
16	17 July 1899	M	M	Cranial (3rd) Normal Labour.
17	23 July 1899	M	M	Cranial (1st) Normal Labour. Sapræmic symptoms on 3rd day easily treated.
18	24 July 1899	M	M	Cranial (1st) Normal Labour.
19	24 July 1899	M	F	Cranial (1st) Normal Labour. Almost anaemic.
20	29 July 1899	P	M	Cranial (2nd) Normal Labour.
21	2 Aug 1899	M	M	Cranial (1st) Normal Labour.
22	3 Aug 1899	M	M	Cranial (1st) Normal Labour.
23	8 Aug 1899	M	F	Cranial (2nd) Normal Labour.
24	11 Aug 1899	M	M	Cranial (1st) Normal Labour.
25	19 Aug 1899	M	M	Cranial (1st) Forceps on account of uterine inertia - 14th child.
26	30 Aug 1899	M	F	Cranial (2nd) Forceps on account of uterine inertia, - 10th child. Placenta adherent.
27	31 Aug 1899	P	F	Cranial (1st) Normal Labour.
28	19 Sep 1899	M	F	Cranial (3rd) Normal Labour.
29	12 Nov 1899	P	M	Cranial (1st) Forceps in pelvis. Slight facial paralysis.
30	18 Nov 1899	M	M	Cranial (2nd) Normal Labour.
31	22 Nov 1899	M	F	Cranial (1st) Normal Labour.
32	3 Dec 1899	M	M	Cranial (1st) Normal Labour.
33	9 Jan 1900	M	M	Cranial (1st) Normal Labour.
34	24 Jan 1900	M	M	Cranial (1st) Normal Labour.
35	14 Feb 1900	P	M	Cranial (1st) Normal Labour.

No of case in notes	Date of attendance	Prim or Mult	Sex of Child	Remarks
36	20 Feb 1900	M	M	Cranial (2nd) Normal Labour. Acute mammary abscesses occurred.
37	31 May 1900	M	F	Cranial (3rd) Accidental Haemorrhage. Child Still-born.
38	3 June 1900	P	F	Frontal (1st) Prolapse of cord. Child Still-born.
39	11 June 1900	M	F	Cranial (1st) Forceps Contracted pelvis.
40	1 July 1900	M	F	Facial (4th) slightly contracted pelvis.
41	9 Aug 1900	M	M	Cranial (1st) Normal Labour.
42	9 Aug 1900	M	M	Cranial (1st) Normal Labour.
43	27 Aug 1900	P	M	Breech (3rd) Aged primipara. Difficult. Right femur of child fractured but healed well. Sapræmic symptoms
44	30 Aug 1900	P	F	Cranial (1st) Forceps at brim of pelvis.
45	2 Sept 1900	M	M	Cranial (1st) Normal Labour.
46	8 Oct 1900	M	F	Cranial (1st) Normal Labour.
47	14 Nov 1900	M	M	Cranial (1st) Normal Labour. Spina bifida, double talipes calcaneus & cryptorchismus.
48	15 Nov 1900	P	M	Cranial (1st) Normal Labour.
49	15 Nov 1900	P	F	Cranial (1st) Normal Labour. Child still-born. 7 months.
50	4 Dec 1900	P	M	Cranial (1st) Forceps - Rigidity of parts.
51	12 Dec 1900	P	M	Cranial (1st) Forceps - Small pelvis.
52	14 Dec 1900	M	M	Cranial (1st) Normal Labour.
53	15 Dec 1900	P	F	Cranial (2nd) Forceps & Chloroform - Rigidity of parts.
54	17 Dec 1900	M	F	Cranial (3rd) Normal Labour.

No of case in notes	Date of attendance	Prim or Mult	Sex of Child	Remarks.
55	23 Dec 1900	M	M	Cranial (1st) Forceps & Chloroform- Uterine inertia.
56	24 Dec 1900	M	M	Cranial (2nd) Normal Labour.
57	27 Dec 1900	M	M	Cranial (1st) Normal Labour.
58	11 Jan 1901	P	F	Cranial (1st) Normal Labour.
59	30 Jan 1901	M	M	Cranial (1st) Rapid Labour.
60	3 Feb 1901	P	F	Cranial (1st) Forceps- Rigidity of parts.
61	8 Feb 1901	M	M	Breech (1st) - Complete Placenta praevia. Death of mother from exhaustio Child (7months) still-born.
62	17 Feb 1901	M	M	Cranial (1st) Normal Labour.
63	22 Feb 1901	M	M	Cranial (1st) Partial Placenta Praevia. Child still-born (7 months)
64	1 Mar 1901	P	F	Cranial (1st) Forceps. Gonorrhoea present. Septicaemia of severe type.
65	4 Mar 1901	M	M	Cranial (1st) Rapid Labour.
66	10 Mar 1901	P	F	Cranial (3rd) Forceps- Occiput persistently posterior.
67	23 Mar 1901	M	M	Cranial (1st) Forceps- Uterine inertia.
68	27 Mar 1901	P	M	Cranial (2nd) Normal Labour.
69	1 Apr 1901	M	M	Cranial (1st) Forceps.- Large child.
70	16 May 1901	M	F	Cranial (1st) Normal Labour.
71	31 May 1901	P	F	Cranial (3rd) Forceps- Rigid perineum.
72	31 May 1901	M	M	Breech & foot (1st) Child hydrocephalic. Lived 1 hour.
73	4 June 1901	P	M	Cranial (1st) Forceps- slightly contracted pelvis.
74	15 June 1901	P	F	Cranial (1st) Normal Labour.

No of case in notes	Date of attendance	Prim or Mult	Sex of child	Remarks.
75	26 June 1901	M	M	Cranial (1st) Normal Labour. Slight hypospadias.
76	27 June 1901	M	M	Cranial (1st) Normal Labour.
77	9 July 1901	P	M	Cranial (2nd) Normal Labour.
78	26 Aug 1901	M	M	Cranial (1st) Forceps & Chloroform. Large child.
79	6 Sept 1901	P	M	Cranial (1st) Normal Labour.
80	11 Oct 1901	M	F	Cranial (1st) Normal Labour.
81	15 Oct 1901	M	F	Cranial (1st) Normal Labour.
82	18 Oct 1901	M	M	Cranial (1st) Normal Labour.
83	22 Oct 1901	M	M	Cranial (1st) Forceps-Contracted pelvis. Depression on child's frontal bone.
84	24 Oct 1901	P	F	Cranial (1st) Normal Labour.
85	31 Oct 1901	M	F	Cranial (3rd) Normal Labour.
86	5 Nov 1901	M	M	Cranial (1st) Normal Labour.
87	10 Nov 1901	M	M	Cranial (2nd) Normal Labour.
88	12 Nov 1901	M	M	Cranial (2nd) Normal Labour.
89	20 Nov 1901	P	M	Cranial (1st) Normal Labour.
90	24 Nov 1901	M	F	Transverse (D A. Head to left) Prolapse of arm. Version. Child still-born.
91	26 Nov 1901	P	F	Cranial (1st) Normal Labour.
92	5 Dec 1901	M	F	Cranial (3rd) Normal Labour.
93	16 Dec 1901	P	F	Cranial (2nd) Normal Labour.
94	17 Dec 1901	M	F	Cranial (1st) Normal Labour.

No of case in notes	Date of attendance	Prim or Mult	Sex of child	Remarks.
95	8 Jan 1902	M	F	Cranial (1st) Normal Labour.
96	13 Jan 1902	M	F	Cranial (3rd) Uterine inertia. Forceps at outlet.
97	14 Jan 1902	M	M	Cranial (1st) Normal Labour.
98	27 Jan 1902	M	M	Cranial (1st) Normal Labour.
99	29 Jan 1902	P	F	Cranial (1st) Normal Labour. Premature.
100	9 Feb 1902	M	F	Child still-born. Cranial (1st) Normal Labour.
101	10 Feb 1902	M	M	Cranial (1st) Premature. Rupture of membranes. Forceps & Chloroform.
102	16 Feb 1902	M	M	Cranial (1st) Normal Labour.
103	24 Feb 1902	P	M	Cranial (1st) Large child.- Forceps.
104	26 Feb 1902	M	M	Cranial (1st) Uterine inertia. Forceps & chloroform.- Child still-born.
105	3 Mar 1902	M	M	Cranial (1st) Normal Labour.
106	10 Mar 1902	M	M	Cranial (1st) Normal Labour.
107	12 Mar 1902	P	M	Cranial (1st) Rigid perineum- Forceps & chloroform.
108	13 Mar 1902	M	F	Cranial (1st) Uterine inertia. Forceps.
109	15 Mar 1902	P	F	Cranial (2nd) Normal Labour.
110	16 Mar 1902	P	M	Cranial (1st) Normal Labour.
111	2 Apr 1902	M	M	Cranial (3rd) Persistent Occiput posterior. Forceps & chloroform.
112	7 May 1902	M	F	Cranial (3rd) Normal Labour.
113	10 May 1902	M	M	Cranial (1st) Uterine inertia. Forceps & chloroform.

No of case in notes	Date of attendance	Prim or Mult	Sex of child	Remarks.
114	13 May 1902	M	F	Cranial (1st) Uterine inertia- Forceps.
115	13 May 1902	M	F	Cranial (1st) Normal Labour.
116	23 May 1902	M	M	Cranial (3rd) Normal Labour.
117	27 May 1902	M	F	Cranial (1st) Normal Labour.
118	31 May 1902	M	M	Cranial (1st) Slight contraction of pelvis- Forceps.
119	1 Jun 1902	M	F	Cranial (1st) Normal Labour.
120	3 Jun 1902	M	M	Cranial (1st) Uterine inertia. Forceps & chloroform.
121	3 Jun 1902	M	M	Cranial (1st) Normal Labour.
122	4 Jun 1902	M	F F	Breech (1st & 3rd)- Twin case. One placenta.
123	6 Jun 1902	M	M	Cranial (2nd) Normal Labour.
124	9 Jun 1902	P	F	Cranial (1st) Normal Labour.
125	10 Jun 1902	M	M	Cranial (1st) Normal Labour.
126	15 Jun 1902	P	M	Cranial (1st) Large child. Forceps.
127	25 Jun 1902	M	M	Cranial (1st) Normal Labour.
128	4 JUL, 1902	P	M	Cranial (1st) Hydroc- ephalus. Forceps & chloroform. Mother had chorea.
129	14 Jul 1902	M	M	Cranial (1st) Contracted pelvis- Forceps.
130	27 Jul 1902	P	M	Cranial (1st) Normal Labour.
131	9 Aug 1902	M	M	Cranial (3rd) Macer- ated foetus.
132	24 Aug 1902	F	M	Cranial (3rd) Normal Labour.
133	26 Aug 1902	P	F	Cranial (2nd) Rigid perineum- Forceps.
134	9 Sep 1902	M	M	Breech & Foot (1st) Normal Labour.

No of case in notes	Date of attendance	Prim or Mult	Sex of child	Remarks.
135	17 Sep 1902	M	M M M	1 Cranial. 2 Transverse. 2 Placentas.
136	18 Sep 1902	M	F	Cranial (2nd) Large child.- Forceps & chloroform.
137	7 Oct 1902	M	F	Cranial (3rd) Normal Labour.
138	9 Oct 1902	M	F	Cranial (1st) Normal Labour.
139	13 Oct 1902	F	F	Cranial (1st) Normal Labour.
140	16 Oct 1902	M	F	Breech (3rd) Uterine inertia.
141	19 Oct 1902	M	M	Cranial (1st) Slightly contracted pelvis- Forceps & chloroform.
142	19 Oct 1902	M	F	Cranial (1st) Uterine inertia- Forceps and chloroform.
143	23 Oct 1902	F	F	Cranial (1st) Contract- ed pelvis.- Forceps at brim. Chloroform.
144	2 Nov 1902	M	M	Cranial (1st) Rigidity of parts.- Forceps at outlet.
145	2 Nov 1902	M	F	Cranial (1st) Normal Labour.
146	5 Nov 1902	F	M	Cranial (3rd) Persis- tent occipito-posterior. Forceps. Perineum ruptured into rectum. Septic symptoms.
147	24 Nov 1902	F	F	Cranial (3rd) Persist- ent occipito-posterior. Rotated with forceps.
148	4 Dec 1902	M	M	Cranial (1st) Normal Labour.
149	11 Dec 1902	M	F	Cranial (1st) Normal Labour.
150	14 Dec 1902	M	M	Cranial (2nd) Normal Labour.
151	21 Dec 1902	M	F	Cranial (3rd) Normal Labour.
152	4 Jan 1902	F	M	Cranial (1st) Hand by head. Forceps & chlor- oform. Child still-born.

No. of case in notes	Date of attendance	Prim or Mult	Sex of child	Remarks.
153	11 Jan 1903	P	M	Cranial (2nd) Oedema of vulva. Large child. Forceps. Child still-born.
154	12 Jan 1903	P	F	Cranial (1st) Normal Labour.
155	22 Jan 1903	M	M	Cranial (1st) Normal Labour.
156	25 Jan 1903	M	F	Cranial (1st) Normal Labour.
157	26 Jan 1903	M	M	Cranial (2nd) Normal Labour.
158	31 Jan 1903	M	M	Breech (1st) Retention of head. Child still-born.
159	3 Feb 1903	M	F	Cranial (1st) Normal Labour. Cord 51½ inches long with knot.
160	4 Feb 1903	M	F	Cranial (1st) Normal Labour.
161	5 Feb 1903	P	F	Cranial (1st) Large head. Forceps.
162	13 Feb 1903	P	M	Cranial (1st) Rigid perineum. Forceps.
163	18 Feb 1903	P	F	Cranial (1st) Normal Labour.
164	21 Feb 1903	P	M	Cranial (2nd) Normal Labour.
165	25 Feb 1903	M	M	Cranial (1st) Normal Labour.
166	28 Feb 1903	M	F	Cranial (3rd) Normal Labour.
167	5 Mar 1903	M	M	Cranial (3rd) Normal Labour.
168	7 Mar 1903	P	F	Cranial (1st) Normal Labour.
169	16 Mar 1903	M	M	Cranial (1st) Macerated foetus.
170	18 Mar 1903	M	M	Frontal. Forceps and chloroform.
171	24 Mar 1903	M	F	Cranial (1st) Normal Labour.
172	28 Mar 1903	P	F	Cranial (1st) Narrow pelvis. Chloroform & forceps.
173	14 Apr 1903	P	M	Cranial (1st) Much Contracted pelvis. Forceps at brim of pelvis.

No of case in notes	Date of attendance	Prim or Mult	Sex of child	Remarks.
174	24 Apr 1903	M	M	Cranial (1st) Normal Labour.
175	28 Apr 1903	M	F	Cranial (1st) Normal Labour.
176	1 May 1903	M	M	Cranial (1st) Large child. Forceps.
177	10 May 1903	M	M	Cranial (1st) Uterine inertia. Forceps.
178	10 May 1903	P	M	Cranial (2nd) Large child. Forceps and chloroform. Child still-born.
179	12 May 1903	M	F	Cranial (1st) Normal Labour.
180	12 May 1903	F	M	Cranial (1st) Normal Labour.
181	13 May 1903	M	F	Cranial (3rd) Normal Labour.
182	18 May 1903	M	M	Cranial (1st) Uterine inertia. Forceps.
183	20 May 1903	M	M	Cranial (2nd) Normal Labour.
184	20 May 1903	M	F	Cranial (1st) Normal Labour.
185	26 May 1903	M	F	Cranial (1st) Normal Labour.
186	31 May 1903	P	F	Cranial (1st) Normal Labour.
187	1 Jun 1903	P	M	Cranial (1st) Normal Labour.
188	3 Jun 1903	M	M	Cranial (2nd) Normal Labour.
189	3 Jun 1903	P	M	Cranial (1st) Large child. Forceps and chloroform.
190	6 Jun 1903	P	M	Breech & foot (1st) Normal Labour.
191	9 Jun 1903	M	F	Breech (1st) Legs extended. Difficult delivery.
192	25 Jun 1903	M	F	Cranial (1st) Normal. Child still-born. Mother anaemic.
193	2 Jul 1903	M	F	Breech (3rd) Delivery easy.
194	4 Jul 1903	M	M	Cranial (1st) Normal Labour.

No of case in notes	Date of attendance	Prim or Mult	Sex of child	Remarks.
195	8 Jul 1903	M	F	Cranial (3rd) Persistent occipito-posterior. Forceps.
196	18 Jul 1903	P	M	Cranial (1st) Normal Labour. 8th month.
197	26 Jul 1903	M	F	Cranial (1st) Normal Labour.
198	30 Jul 1903	P	F	Cranial (1st) Rigid perineum. Forceps.
199	31 Jul 1903	M	M	Cranial (1st) Normal Labour.
200	1 Aug 1903	M	M	Face (4th) Normal Labour.
201	1 Aug 1903	M	F	Cranial (1st) Normal Labour.
202	7 Aug 1903	M	F	Cranial (3rd) Normal Labour.
203	11 Aug 1903	P	M	Cranial (1st) Contracted pelvis. Forceps at brim & chloroform. Oedema of corneae.
204	16 Aug 1903	M	F	Cranial (2nd) Normal Labour.
205	18 Aug 1903	M.	F	Cranial (1st) Cardiac valve disease. Forceps.
206	19 Aug 1903	M	M	Cranial (1st) Normal Labour.
207	26 Aug 1903	P	F	Cranial (3rd) Slight rupture of perineum.
208	31 Aug 1903	M	M	Cranial (3rd) Normal Labour. Pneumonia on 7th day. Recovery.
209	2 Sep 1903	M	M	Cranial (1st) Normal Labour.
210	3 Sep 1903	M	M	Breech (1st) Premature. Macerated foetus.
211	5 Sep 1903	M	F	Cranial (1st) Normal Labour.
212	9 Sep 1903	P	M	Cranial (1st) Normal Labour.
213	15 Sep 1903	M	M	Cranial (1st) Rapid Labour. Sapræmia on 3rd day. Good recovery.
214	19 Sep 1903	M	F	Cranial (1st) Normal Labour.

No of case in notes	Date of attendance	Prim or Mult	Sex of child	Remarks.
215	29 Sep 1903	M	M	Cranial (3rd) Normal Labour.
216	8 Oct 1903	M	M	Cranial (1st) Rapid Labour.
217	11 Oct 1903	M	F	Cranial (1st) Normal Labour.
218	22 Oct 1903	M	M	Cranial (1st) Large child. Forceps.
219	24 Oct 1903	P	F	Cranial (2nd) Normal Labour.
220	26 Oct 1903	P	F	Cranial (1st) Normal Labour.
221	27 Oct 1903	P	F	Cranial (1st) Narrow pelvis. Forceps.
222	31 Oct 1903	M	M	Cranial (3rd) Normal Labour.
223	1 Nov 1903	M	F	Cranial (3rd) Partial placenta praevia. Forceps.
224	6 Nov 1903	M	M	Cranial (2nd) Normal Labour.
225	25 Nov 1903	P	M	Cranial (1st) Normal Labour.
226	30 Nov 1903	M	M	Cranial (1st) Uterine inertia. -Forceps.
227	6 Dec 1903	M	F	Cranial (1st) Uterine inertia. Forceps. Double talipes varus.
228	7 Dec 1903	M	F	Cranial (1st) Normal Labour.
229	8 Dec 1903	M	F	Cranial (2nd) Normal Labour.
230	10 Dec 1903	M	F	Cranial (1st) Normal Labour. Macerated foetus.
231	17 Dec 1903	M	F	Cranial (3rd) Persistent occipito-posterior. Forceps. Rotated with forceps on.
232	20 Dec 1903	P	F	Cranial (1st) Normal Labour.
233	27 Dec 1903	M	M	Cranial (1st) Macerated foetus. Forceps.
234	27 Dec 1903	P	F	Cranial (3rd) Rigidity of parts. Forceps.

No of case in notes	Date of attendance	Prim or Mult	Sex of child	Remarks.
235	29 Jan 1904	P	M	Breech & foot (1st) Chloroform. Difficult head delivery. Child lived only 6 hours.
236	6 Feb 1904	M	M	Cranial (1st) Normal Labour.
237	8 Feb 1904	M	M	Cranial (2nd) Normal Labour.
238	11 Feb 1904	M	M	Cranial (1st) Normal Labour.
239	23 Feb 1904	M	M	Cranial (1st) Normal Labour.
240	24 Feb 1904	M	F	Cranial (1st) Normal Labour.
241	2 Mar 1904	M	M	Cranial (3rd) Hand by head. Prolapse of cord. Version. Child still- born
242	3 Mar 1904	M	M	Cranial (3rd) Uterine inertia. Forceps and chloroform.
243	5 Mar 1904	M	F	Cranial (3rd) Persis- tent Occipito-posterior. Forceps.
244	8 Mar 1904	P	F	Cranial (1st) Normal Labour.
245	8 Mar 1904	P	M	Cranial (1st) Normal Labour.
246	9 Mar 1904	M	F	Cranial (2nd) Normal Labour.
247	9 Mar 1904	P	F	Cranial (1st) Normal Labour.
248	16 Mar 1904	P	F	Cranial (3rd) Rigid perineum. Forceps.
249	18 Mar 1904	P	F	Cranial (3rd) Non rot- ation. Spontaneous delivery. Webbed 4th & 5th toes.
250	19 Mar 1904	P	F	Cranial (1st) Normal Labour.
251	24 Mar 1904	P	F	Cranial (1st) Normal Labour.
252	30 Mar 1904	M	M	Transverse. (D A Head to left) Prolapse of cord. Child still-born.
253	1 Apr 1904	M	F	Cranial (1st) Normal Labour.

No of case in notes	Date of attendance	Prim or Mult	Sex of child	Remarks.
254	3 Apr 1904	M	M	Cranial (1st) Uterine inertia. Forceps.
255	4 Apr 1904	M	F	Cranial (3rd) Normal Labour.
256	5 Apr 1904	M	F	Cranial (1st) Normal Labour.
257	7 Apr 1904	M	F	Cranial (1st) Normal Labour.
258	10 Apr 1904	M	F	Transverse (D.A.) Head to right. Prolapse of arm. Version. Child still-born.
259	15 Apr 1904	M	F	Breech (1st) Normal Labour.
260	17 Apr 1904	M	F	Cranial (1st) Normal Labour. Perobrachius.
261	20 Apr 1904	M	F	Cranial (2nd) Contracted pelvis. Forceps & chloroform.
262	21 Apr 1904	M	F	Breech (3rd) Normal Labour.
263	25 Apr 1904	P	F	Cranial (1st) Narrow pelvis. Forceps. Double little toe.
264	1 May 1904	M	F	Cranial (1st) Normal Labour.
265	1 May 1904	M	M	Cranial (2nd) Normal Labour.
266	4 May 1904	M	F	Cranial (1st) Prolapse of uterus. Forceps.
267	28 May 1904	P	F	Cranial (3rd) Normal Labour.
268	31 May 1904	P	F	Cranial (1st) Contracted pelvis. Forceps at brim. Chloroform.
269	31 May 1904	P	M	Cranial (1st) Normal Labour.
270	10 Jun 1904	P	F	Cranial (1st) Contracted pelvis. Forceps.
271	11 Jun 1904	P	M	Cranial (1st) Normal Labour.
272	16 Jun 1904	P	M	Cranial (1st) Normal Labour.
273	24 Jun 1904	M	M	Cranial (1st) Uterine inertia . Forceps.

No of case in notes	Date of attendance	Prim or Mult	Sex of child	Remarks.
274	1 Jul 1904	M	F	Cranial - Normal Labour.
275	13 Jul 1904	M	M	Cranial (1st) Normal Labour.
276	15 Jul 1904	M	F	Cranial (2nd) Normal Labour.
277	19 Jul 1904	P	M	Cranial (1st) Normal Labour.
278	21 Jul 1904	M	M	Cranial (1st) Normal Labour.
279	24 Jul 1904	P	M	Cranial (2nd) Normal Labour.
280	26 Jul 1904	M	M	Cranial (1st) Normal Labour.
281	12 Aug 1904	P	M	Cranial (1st) Normal Labour. 7 months child.
282	15 Aug 1904	M	F	Cranial (1st) Normal Labour.
283	15 Aug 1904	M	M	Cranial (3rd) Normal Labour.
284	28 Aug 1904	P	M	Cranial (1st) Aged primipara. Forceps.
285	29 Aug 1904	P	M	Cranial (1st) Normal Labour.
286	5 Sep 1904	M	M	Cranial (1st) Normal Labour.
287	10 Sep 1904	M	M	Cranial (1st) Uterine inertia. Forceps.
288	10 Sep 1904	M	M	Cranial (3rd) Normal Labour.
289	13 Sep 1904	M	M	Cranial (1st) Normal Labour.
290	21 Sep 1904	M	M	Cranial (1st) Uterine inertia. Forceps.
291	21 Sep 1904	M	M	Cranial (2nd) Normal Labour.
292	26 Sep 1904	P	M	Cranial (1st) Normal Labour.
293	28 Sep 1904	M	M	Cranial (1st) Contracted pelvis. Forceps at brim.
294	4 Oct 1904	N	M	Cranial (1st) Normal Labour.
295	6 Oct 1904	M	F	Cranial (3rd) Normal Labour.
296	8 Oct 1904	M	M	Cranial (1st) Normal Labour. Anaemic.

No of case in notes	Date of attendance	Prim or Mult	Sex of child	Remarks.
297	19 Oct 1904	M	M M	1 Cranial. 1 Breech. Normal Labour.
298	11 Nov 1904	M	F	Cranial (2nd) Normal Labour.
299	13 Nov 1904	F	M	Cranial (1st) Normal Labour.
300	28 Nov 1904	M	M	Cranial (1st) Normal Labour.