hensive view of each individual case. As students they learnt the science, as young practitioners the practice, but not until they had considerable experience did they attain to the art of practising midwifery. Their first examination should enable them to decide whether the general conditions were favourable for normal delivery. See that the patient's strength is properly kept up by suitable nourishment; let her change her position from time to time; let the room be kept at a proper temperature; let a binder be applied to assist and strengthen the pains; do not be too much in a hurry to give chloroform, and then only in the smallest possible quantity to secure our object; see that the anterior lip of the cervix is not impacted or held up between the head and the pubes; when the os is sufficiently dilated and the pains are feeble rupture the membranes, if everything be favourable otherwise, but be careful to differentiate lingering from obstructed labour. Compression of the uterus with friction of the fundus at the acme of the pains is often of service. Be careful to see that the rectum is empty, and the bladder also. Apply forceps if there is no progress, and see that the position of the head is normal before applying traction.

XIII.—C. S. GORDON, M.D.,

Portland, Me.; American Delegate.

DR. GORDON said he wished to ask Professor Playfair one question in connection with one of the points made in his paper, namely, that of pressure. How much value did he place upon the voluntary muscles during labour? In short, how much value was there in that old injunction to the patient: "Now, my good woman, bear down?" With the immense power that the uterus had, did the "bearing down" materially aid it?

XIV.—W. J. SMYLY, M.D., F.R.C.P.I.,

Master Rotunda Hospital, Dublin.

DR. SMYLY said that in the Rotunda Hospital students were instructed that all manipulations were dangerous, and should therefore be limited as far as possible. In the main the practice in that hospital followed the lines laid down by Dr. Playfair.

XV.—T. MORE MADDEN, M.D., M.R.C.P.I.,

Obstetric Physician Mater Misericordiarum Hospital, Dublin.

DR. MORE MADDEN said it would be impossible to discuss *in extenso* the treatment of lingering labour. He would confine himself to the management of delay in the second stage of labour, the presentation being natural. In these cases, the os being fully dilated and the membranes ruptured, their primary reliance should be on methods by which the uterine contractions might be strengthened—namely, friction over the uterus, galvanism, and, above all, the free use of ergot in full and effective doses. The second indication was to supplement the deficiency of expulsive action by the tractive use of the forceps, when used in due time judiciously—in a word, *nec temere nec timide*.

XVI.—ALFRED J. SMITH, M.B.,

Ex-Assistant Master to the Rotunda Hospital.

DR. SMITH said the indication of treatment might be divided into whether the case were in the first or the second stage. During the first stage it was really nothing more than the induction of labour; this was best done by hot vaginal douche (110° F.). Failing this, the passage of a bougie between the membranes, to be followed by douches, should be tried. If the patient were restless half a grain of morphia should be administered to give rest. During the second stage the treatment should be regulated under two chief heads: (a) the symptoms of exhaustion in the mother—as indicated by rise of temperature, elevation of pulse, heat of the vagina, or green vomit—required forceps to be used without delay; (b) the effect of lingering labour as it affected the child, producing symptoms of asphyxia, shown by irregular or lost foetal heart, required forceps.

XVII.—J. W. BYERS, M.A., M.D.,

Physician for Diseases of Women Belfast Royal Hospital.

DR. BYERS said Dr. Smyly had mentioned the very striking fact that when there was an elevation of temperature in the obstetric wards of the Rotunda Hospital, and when, as a consequence, vaginal examinations were forbidden, the fever did not spread to other cases—facts of the greatest importance. Hence he suggested the avoidance of frequent examination with which he (Dr. Byers) agreed. Dr. Byers said he thought, however, that these risks might be avoided by thorough antiseptic precautions, and for his

part, unless nurses were trained in the use of antiseptics, he would much prefer they did not examine at all. He recommended in the first stage, tinct. opii, hot baths, the avoidance of frequent examinations, and full antiseptic precautions. He was entirely against the use of ergot during labour unless as a preventive measure in a case in which one feared (from previous experience or the nature of the labour) the occurrence of *post-partum* hæmorrhage. Under these circumstances he gave it just as the head was clearing the perineum. He said the experience and practice of the Continental and English lying-in hospitals was against the use of ergot in labour. As to chloroform, he thought in certain cases it was of great use, especially in multiparæ, when there was delay and the os was fully dilated. After a few inhalations, one was often pleased to find that the labour was rapidly completed, and forceps were not required.

XVIII.—HEYWOOD SMITH, M.A., M.D.,

Late Senior Physician, Hospital for Women, Soho Square.

DR. HAYWOOD SMITH wished merely to draw attention to a usage of the Polish midwives in cases of delay in labour, owing to rigidity of the os in the first stage. They frequently smeared the cervix with a small quantity of extract of belladonna. With regard to Dr. Gordon's question about the supplementary action of the abdominal muscles, there was no doubt but that the voluntary muscles carried out the procedure that Dr. Playfair himself advocated, namely, expression of the foetus. His late father (Dr. Protheroe Smith) had a belt with straps running over rollers wherewith he was accustomed to help forward the second stage of labour by aiding the action of the abdominal muscles.

THE COMPLICATIONS OF LABOUR IN TWO THOUSAND CONSECUTIVE PREGNANCIES.

Read before the Staffordshire Branch of the British Medical Association.

By JOHN T. HARTILL, L.R.C.P. LOND., M.R.C.S. ENG.,

Willenhall, Staffs.

In the remarks I propose to make on the complications of 2,000 consecutive labours, I think it right to say that amongst them were all the complications of at least 4,500 confinements in a manufacturing town in the Black Country, largely occupied by artisans whose wives and daughters work in factories and on the spoil banks, and that many circumstances have contributed to bring severe labours to me. It must not, however, be inferred that cases amongst the well-to-do classes were not numerous.

In my experience the labours which are most dangerous to the mother and cause the most worry to the medical attendant are those in which the placenta wholly or partly presents. Of placenta presentations I have had 6 cases, and of partial placenta presentation 8 cases. Of the 6 placenta presentations 2 were consecutive confinements of the same woman at the full period of gestation, at the first of which flooding was so severe that I remained with her about twenty-four hours, during fourteen of which she was virtually unconscious from syncope, and again and again it seemed doubtful if life had not ceased, but ultimately a good recovery was made. Three of the women were delivered at the ninth month, 1 at the eighth month, and the others at an earlier period of gestation. In each case the placenta was separated by the hand, in 4 of them the child was turned and brought down, 2 of the mothers died from syncope, 1 in one hour and 1 eight hours after delivery, whilst in the other 2 cases the foot presented behind the placenta, and being seized speedy delivery was effected. All the 8 cases of partial placenta presentation made good recoveries, and in each case a portion of the placenta was separated or pushed aside as occasion required, and the membranes were immediately ruptured. In 5 a foot was brought down either by turning or because it presented behind the placenta; in 1 delivery was effected by long forceps, in 1 the head came down and delivery was natural, and in 1 the knee and funis presented behind the placenta, and delivery was also unaided. In every case, as soon as the os showed signs of dilating and the tendency to hæmorrhage was severe, the membranes were quickly ruptured and delivery effected as speedily as possible. Hæmorrhage was thus to a large extent arrested, whilst the chance that the child survived was enhanced. In several cases syncope lasted many

hours, and in most of them there were several bleedings at intervals during pregnancy.

Of breech presentations I have had 41, breech and hand 1, breech and one foot 1—in all 43; of these 38 were born without assistance, 2 with the aid of the blunt hook, the head in 1 case was delivered by long forceps after the birth of the body, 1 was born after turning, and 1 with the assistance of one blade of the forceps. Of the 2 delivered by the blunt hook, 1 child was born after labour had set in forty-eight hours, and during an attack of puerperal convulsions in a woman with her first baby who had an unnatural projection of the promontory of the sacrum, and delivery of the other was hastened because the vagina was found to have been lacerated before my arrival. All the 43 cases made good recoveries, 11 were the first or second born children of twins, 8 of the children were stillborn. One case was further complicated by adhesion of the placenta, and 1, that of a lady aged 33, with her first child, by retention of the placenta and phlegmasia dolens. The girth of one child's head was $18\frac{1}{4}$ inches, whilst the measurement across the top of the head from ear to ear was 11 inches. The head of the child to which one blade of the forceps was used was hydrocephalic, soft, and locked in the brim, and sufficient compression of the head was made to get delivery by traction at the legs. Generally speaking breech presentations somewhat retard labour, especially first labour, but a little patience is all that is required to get a happy termination to most. Although the blunt hook is occasionally a necessity, it is a cruel instrument, and one I very much dislike to use.

Of presentations of the lower extremities, I have had 13 of foot, 2 of foot and funis, 1 of right foot and left knee, 1 of knee, and 1 of knee and funis—in all 18 cases. All the mothers recovered, all the children were born without instrumental assistance; 8 were the first or second born of twins; one mother suffered from phlegmasia dolens; and in one the subject of rickets of the pelvis and spine a living child was born after induction of labour at seven months and a half of gestation. Foot presentations are easy of management, and safe to the mothers. There is a special tendency for one or both of twins to present the breech or foot.

The operation of "turning" has been performed by me 37 times, in addition to the placenta presentations already referred to; namely, in 16 cases of arm presentation, 3 of shoulder, 1 of shoulder and funis, 2 of arm and funis, 1 of elbow and funis, 1 of sternum, 1 of arm and head, 1 of foot and hand; 2 of head, foot, and hand; 1 of hand, knee, and funis; 1 of foot and head; 1 of head, funis, and hand; 1 of funis, shoulder, and thorax; 1 of head, foot, hand, and funis; 2 of head, foot, and funis; 1 of breech and 1 of partial placenta presentation. Of the 37, 36 of the mothers made good recovery, and in one—a case of funis, shoulder, and thorax presentation—in which I found the head doubled back against the spine and the feet doubled back against the head, and in which turning was accomplished with difficulty, death occurred on the twentieth day from metritis. It is noteworthy that I turned the child in four consecutive confinements of one woman; that in one case—the sixteenth child—I ascertained that 15 previous children had been born after turning, and 14 were stillborn; that in another woman the child was turned at three previous labours; that in another, 4 children had been born with the aid of forceps; in yet another the arm had presented at 4 previous labours; that in 1, the subject of rickets of the pelvis and spine, delivery of the head was effected by craniotomy after the body had been delivered by turning; that twice delivery of the head was effected by long forceps after turning; and that in 1 case, the trunk of a dead and premature syphilitic child separated from the head, which was subsequently removed from the uterus by squeezing out the brains, and being grasped by a stout pair of polypus forceps. One case was further complicated by adhesion of the placenta, and after one the catheter was required for a few days. I always turn with the left hand, leaving the right free for passing between the thighs to steady the uterus and grasp a foot in the palm of the hand, the ankle being between the third and fourth fingers, the position most favourable for an easy outlet without damaging the soft parts, and, above all, the one in which your hand is least likely to get cramped and the foot to slip. To some, certain of the presentations preceding turning may seem inexplicable. I have described them as found on my arrival. In several instances, no doubt an earlier examination would have revealed a less complex presentation; the complexity was the result of severe uterine action trying to accomplish an impossibility. In one other arm presentation at the fifth month, delivery was effected with the aid of ergot without other interference.

In most cases in which the breech presents, or the foot presents or is brought down, considerable assistance may be rendered after the birth of the lower extremities by grasping the legs in one hand and passing the forefinger of the other hand into the vagina until it reaches the outer surface of the child's upper arm, when it should be passed with a gentle pressing movement over the elbow to the forearm, thus sweeping the child's hand and forearm over its face or sternum, or both, and repeating the act to effect delivery of the other arm. Any attempt to press the arm backwards over or towards the posterior thorax with the finger on the inner side of the child's elbow is almost sure to be associated with fracture of its humerus or clavicle.

Of face presentations I have had 15, and all the mothers did well. Thirteen of these were born without help, and 2 with the aid of medium forceps. One was further complicated by adhesion of the placenta. Some affirm that most cases of face presentation need delivery by forceps. My experience is that presentation of the brow or face undoubtedly protracts labour considerably, and calls for more patience from the doctor, but it does not seem to endanger the life of the patient or to need instrumental interference in a very large percentage of the cases.

My forceps consist of a straight pair which I call short, and have blades about 7 inches long from the lock; another pair I shall call medium, which are really Ramsbotham's long forceps with blades about $8\frac{1}{2}$ inches from the lock, and another pair of similar make which I shall call long forceps because the blades are about 10 inches from the lock. These instruments I have used 164 times, namely, the short ones 62 times, the medium forceps 70 times, and the long forceps 32 times. Two of the mothers died, and 162 made a good recovery. One of the dead was delivered by long forceps, in consequence of deformity at the brim, immediately I saw her, but not until she had had a rigor and been in labour seventy-seven hours, death being due to peritonitis on the thirteenth day after confinement. The other was delivered by short forceps, and death took place on the eighth day from inflammation of the vagina and uterus at a time when erysipelas prevailed in epidemic form. The woman in attendance, I afterwards found out, had daily poulticed an erysipelatous leg, and then crossed the road and immediately washed the genitals of the lying-in woman. The only complications amongst the remaining 162 cases were one very localised case of pelvic cellulitis from pressure, and a few unimportant cases of laceration of the perineum, some of which were disregarded and healed up, whilst in a few the edges of the wound were held together by stitches with a happy result, but in no case did the laceration extend to the sphincter ani. Of the 62 women delivered by short forceps, 37 were first-born children; 16 of the 37 were delivered after being in labour for a varying number of hours—usually more than twenty-four—when the patient was showing incipient signs of exhaustion, and the pains were feeble. Eight had small or narrow bony outlets, and 10—chiefly women over 30—had very unyielding perineums. Of the remaining 25, 7 had had instruments at previous labours, 2 had rickets of the pelvis, in 3 the child was very large, and the perineum of 1 very tough.

Of the 70 women delivered by medium forceps, 27 were first-born children, and of these, forceps were required in 12 cases for deformities of the pelvis from rickets or because the bony inlet or outlet was narrow, or the pelvis as a whole small, whilst in 13 of the remainder they were used for inertia of the uterus; and of these 13, 7 were women over 30, and one a girl of 16. Of the remaining 43 cases, 18 had either small or deformed pelves, of whom 5 had been previously delivered by forceps times varying from twice to a dozen, whilst in 3 cases labour had been prematurely induced. Amongst the other 25 cases, medium forceps were applied twice for head and funis presentation, once for ear and side of head presentation, twice for face presentation, once because there was a large sessile tumour of the ovary in the pelvis, once where the head was hitched well forward over the pubic arch, and twice when the face presented towards the os pubis.

Of the 32 delivered by long forceps, no fewer than 14 had well marked deformities of the pelvis, women who had had children before—many of whom had been previously delivered three to six times by instruments, and one after induction of premature labour, whilst 9 had had no children previously, and of these 9, 6 were either small made or the subjects of rickets, 1 was 35 years old, and 1 was suffering from puerperal mania. Of the remaining 9, long forceps were applied once for ovarian tumour in pelvis, once for funis and head presentation; in 1 the child was hitched

well forward over the pubic arch, and in 2 the head was delivered after the body had been born by turning. Of the cases not specifically described I have no notes, but it may be assumed there was no deformity.

Rigid rules are laid down in textbooks as to how the forceps should be applied. My rule is always to apply the upper blade first, bearing in mind the axis of inlet and outlet in their application, as well as in the application of force to bring about delivery, the former corresponding (roughly speaking) with a line drawn from the umbilicus to the anus, and the latter being not far off the direction the stream takes when a female child passes water. I am not over particular that the blades always grip a given spot. I rather choose the place where the resistance to them from the bony or soft maternal structures is least, and always take care they do not, during delivery, come to press against the bladder or urethra. Of the tumours in the pelvis, one was as large as a good-sized orange, the other about the size of a walnut. The former patient was about 47 and did remarkably well, the latter was about 21: the baby was her first, and beyond a few days' smart feverishness there was no other bad consequence.

Arising out of failure to deliver by forceps there were four cases of craniotomy, all with excellent results to the mother. In one of these, a small made woman with contracted pelvic brim, who had had instruments used twice before, the head and funis presented. In another the promontory of the sacrum projected forward in a stout, pudgy woman whose seven previous labours had all been very protracted—four times delivery of dead children being effected by turning. In another the pelvic deformity from rickets was marked enough to render delivery at the full time an absolute impossibility without craniotomy; the head band and foot presented; I turned the child, and after the body was born, opened the head through the occiput. In the other case it was resorted to after many desperate but ineffectual attempts to deliver with forceps, probably solely in consequence of the large size of the child's head.

I next have to refer to 6 cases of induction of premature labour, the child being born alive in 5 of them and the mother doing well each time. Four of the cases were the second, fifth, sixth and seventh confinements of one woman the subject of ankylosis at the hip-joint, projection forward of the sacrum and backwards of the os pubis, who was delivered at her first labour by craniotomy during an attack of puerperal convulsions. In these 4 cases of induction the child was born without instrumental help once and three times with the aid of medium forceps, twice at the expiration of eight months of pregnancy, once at eight months and a quarter, and once at eight months and twelve days. I was also present at her third and fourth confinements in the initial stage of induction of premature labour but not at delivery.

In another case I induced labour at seven months and a half. The foot presented, and a child, now fairly well grown and 10 years old, was small enough when born to go into a quart jug. The mother of this child was the one to whom I have twice previously referred when speaking of turning and craniotomy.

In the remaining case labour was induced at eight months and three days, and delivery was effected by long forceps. This woman had a narrow inlet to the pelvis, was of strumous parentage, had twice before been delivered by instruments and once by craniotomy, the case referred to before in which the head and funis presented. In each case labour was induced by injecting tepid water between the membranes and the uterus through an ordinary enema syringe and male silver catheter, the desired result being sometimes obtained quickly and sometimes after several injections.

Another complication in 4 cases was puerperal convulsions, the head presenting thrice, the breech once. One woman was the subject of chronic Bright's disease of some years' duration, the others had albumen in the urine with swollen legs, and had not previously borne children. The treatment in each case was venesection, 14 to 22 ounces of blood being taken from the arm, delivery by forceps or blunt hook as soon as possible, calomel and chloral hydrate as drugs internally. All made good recoveries.

In 22 cases there was adhesion and in several others retention of the placenta. In many of them hæmorrhage was severe; 20 recovered; in one there was hæmorrhage to syncope almost simultaneously with the birth of the child, and death a few hours later; and in 1, the subject of phthisis, pneumonia set in on the fourth day, and death took place six weeks after. I have learned by experience how important it is to commence the separation of

the placenta from the womb at the highest possible point, as the uterine contractions then materially assist the fingers in expelling clots and placenta, whereas attempts to commence removal lower down sometimes produce hour-glass contraction of the womb and cramp in the hand. It is sometimes difficult to get the fingers through thick, slimy, unyielding membranes which form a *cul de sac*, and equally difficult to avoid having to do so. Many of the placenta seemed to be permeated with a deposit of calcareous hardness, presumably the result of some inflammatory mischief. In one or two cases there had been previous adhesions, and in several of them the child had been delivered by instruments.

The remainder of the 2,000 cases were all natural presentations, and delivery in each case was normal. Of these only 1 died, the cause being erysipelas of the womb on the eighth day—due, as I believe, to the nurse in attendance having come to her direct from the nursing of a case of erysipelas of the leg; 4 others died from disease, namely, 1 from phthisis six days after confinement; 1, the subject of epilepsy, was confined whilst unconscious; 1, who had had puerperal mania at a previous confinement, died suddenly on the ninth day, probably from embolism—after giving birth to a sexless child, devoid of anus, penis, uterus, or bladder; and 1, suffering from pneumonia, was prematurely confined, and died on the sixth day afterwards. The chief complications amongst these cases were *ante-partum* hæmorrhage, due to partial separation of the placenta from the womb, invariably relieved, if severe, by rupturing the membranes, and thus causing the head to descend against the neck of the uterus; retroversion of the gravid uterus causing pressure against the urethra and premature confinement; in 1 case of puerperal mania, whose breast got accidentally hurt, an abscess formed, and there was marked improvement henceforth in the mental condition of the patient; in 1 case of twins, after the birth of the first child and before the second was born, the first placenta came away; 1 girl, aged 18, I offered to deliver with forceps on three consecutive days and she would not submit, the result being severe pelvic cellulitis, with discharge of pus through the vaginal wall, and recovery; in 1 woman who had both ovaries removed for disease in the early weeks of pregnancy, gestation was completed, labour easy, and the milk secretion normal; 1 who had had several children previously gave birth to a monster child, which lacerated the perineum through the sphincter ani—the only misfortune of the kind I have had; 1 woman, aged 48, the subject of uterine myoma, gave birth to a stillborn child and had very little hæmorrhage; and 1 who was found to have an ovarian tumour at the sixth month of gestation completed the term, was afterwards operated on for removal of the tumour on old-fashioned lines, subsequently had a child, years later was found to have another ovarian tumour, was operated on again according to more modern notions, was then found to be pregnant also, recovered from the operation, completed gestation, subsequently had twins, did well, and is now in good health.

One more case within the period these 2,000 happened and I shall have done. A woman eight and a half months pregnant, in good health, was seized about 7 A.M. with sickness and looseness of the bowels. On my arrival at 8.30 she was already dead, without having led her friends to believe she was in labour. Examination *per vaginam* revealed a closed os uteri. An inquest and *post-mortem* examination were held, and a child, with the placenta and perhaps a pint of blood, was found in the peritoneum. The child had escaped through a rent in the posterior wall of the uterus from the fundus to a point close to the vaginal wall.

It follows that in 2,001 cases there were 13 deaths from all causes, of which only 8, or at most 9, were the direct result of parturition. In thinking over the facts in conjunction with Dr. Matthews Duncan's statement that the death-rate in primiparae is 1 in 74 and multiparae 1 in 123, bearing in mind the overwhelming preponderance of difficult cases and the class of town in which they chiefly occurred, reflecting that in 2 cases death might have been averted had I been on the spot earlier, that in 2 other cases the same happy result might have followed but for the stupidity of the nurses in attendance, and admitting that possibly one of the deaths from placenta presentation might not have happened if I had waited a little longer for partial recovery from syncope before attempting to deliver, I hope I may still claim that it has often fallen to my lot to, as Pope puts it,

With lenient arts extend a mother's breath,
Make languor smile, and smooth the bed of death,
Explore the thought, explain the asking eye,
And keep awhile one parent from the sky.