here than in Germany. It is very difficult to judge correctly as to whether published accounts of disease really represent their actual prevalence, for there are many circumstances which determine the selection of cases for publication, and of diseases for comment, besides their actual frequency. But I think there is good ground for believing that the difference is real. The wealth and luxury of America, the conventual education, with its cultivation of the emotions, and exaltation of asceticism prevalent in France, tend in one direction; while in Germany the compulsory military training of the men, and the general opinion in favour of the good "*Hausfrau*" as the ideal woman, works in the opposite direction. What is wanted is to secure the advantages of each without its defects. A gardener seeks, by judicious crossing and manuring, to secure not only a beautiful bloom, but a large and hardy plant, for upon the size and vigour of the plant the number and size of the blooms depend. The crossing is not in our hands; but we can do much in altering for the better the influences on which growth depends, and an active mind without a healthy body is generally more a misfortune than a boon.

Over-sensitive nerves and weak muscles are partly inherited, partly the result of training—of a training which, instead of making the child into a good animal, has been, perhaps not intentionally, directed towards developing the mind, and hindering the growth of the animal: a training which develops complexity of nervous structure instead of nervous energy. It is the result of a childhood spent in learning a great deal and doing very little.

The prophylaxis of these ailments must begin in childhood. Those who have influence—and there are none who have more influence than the members of our profession—over the training of children, should bear in mind that the influence of the surroundings of town life is towards the development of the intellect and the emotions, rather than of the bones, the muscles, the digestive and the blood-making organs. This is especially the case among those who form the *clientèle* of the great majority of general practitioners—the middle classes. Among the higher classes, the attention to physical development in girls is helped by the examples of the great schools and universities in which young men are trained; and, among the lower classes, the necessity for quickly earning money impels the girl to healthy labour. It is in the middle classes that the influence of the family doctor may be most beneficial, in impressing upon parents by whom he is consulted the advantage of healthy muscular labour, of outdoor play, of plenty of food and plenty of sleep, of warm clothing, of activity of body. With an active body will often go an active mind; but the active mind, the quick perception and retentive memory, should be allowed to exercise itself on things, not on words; in doing, rather than in thinking or in reading.

We want people to recognise that the end of a good education is not to know, but to be able to do. A training which makes women tall and strong and muscular, with good appetites and the power of sleeping well, is the one best for their minds as well as for their bodies. Lawn tennis will do more for the prevention of displacements than pessaries can do for their cure.

Briefly, to recapitulate the purport of this address. I have tried to sketch the pathology of uterine displacements. Some conditions, commonly spoken of as displacements, are not morbid conditions; these are flexions of a uterus which is free to move, and has walls of natural thickness and lateral deviations of the uterus. There are other displacements which are produced by tumours, or by adhesions, and these are quite subordinate to the condition which produces them, and are irremediable.

Of cases in which displacement of the uterus is the only, or the chief, local change, some are analogous to herniæ. Their history warrants the belief that they depend upon a peculiar anatomical formation, just as a hernia does. Like a hernia their symptoms are local, and their treatment is mechanical. These are the major displacements. They begin as minor ones, and if they are not treated increase, just as a hernia is at first small, and, if not treated, gets large. They occur in the strong as well as the weak.

There are other cases in which the displacement is very slight and the symptoms very numerous. The symptoms are referred to many parts of the body, but the local symptoms are the same as in the former class. These are due to weakness and over-stretching of the muscular and ligamentous tissues which support the uterus. This is due to a condition of debility allied to that which produces lateral curvature of the spine, knock-knee, flat foot, failure of sight from hypermetropia, etc. It may be successfully

treated without mechanically supporting the uterus, although mechanical support of the uterus often gives relief. The symptoms are not due to the slight displacement itself, but to over-stretching of the sensitive tissues. The weakness and sensibility of the tissues is due to nervous exhaustion, and when this has been cured the symptoms will disappear although the displacement may be exactly the same. In all these conditions the nervous exhaustion which produces them is often due to the strain upon nervous energy connected with reproduction, although it may be due to other causes. Lastly, the medical profession can do much good in helping to prevent these diseases by urging that in education healthy physical development shall be given its proper place.

CRANIOTOMY: THE PRESENT LIMITS OF THE OPERATION.

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By craniotomy is understood any operation of cutting into the foetal skull with the object chiefly of reducing its size, and thus enabling birth to be completed without serious maternal injury. We may include under this heading, therefore, cephalotripsy, basilysis, cranioclasty, etc. The operation has of late been much abused, and surrounded by so much false sentiment and morbid reasoning, that it behoves us to consider what there is to be said on the other side, and whether it is desirable, with our present experience, to supplant this well-established procedure by others of a more severe nature, without sufficiently good reasons.

Pelvic deformity naturally is the chief condition requiring the performance of any of the above-mentioned operations. I do not intend, however, to reiterate what is already well laid down in every good textbook on the question, but to give the results of my own experience, and show the reasons for the deductions I purpose making later on.

It will be seen that the two tables appended contain an analysis of sixteen cases occurring in my own practice. Three of these were seen in consultation, the remaining thirteen occurring in the maternity of the British Lying-in Hospital during a period extending over seven years.

It will be observed that, of the sixteen cases, the pelvis was normal in three instances (V, VII, XIV), and that the pelvic outlet was narrowed in three cases: in XIII, the result of an accident; in X, owing to the incurvation of the right pubic ramus; VIII being a generally small pelvis.

The pelvic brim was narrowed in its conjugate diameter nine times, being three inches or little over in three instances (I, VI, IX), while it was under three inches in five cases (II, IV, XI, XII, XIV). The right oblique diameter was much shortened by an osseous growth in Case III. It will be seen that cephalotripsy was usually performed after perforation. I resort, as a rule, to this operation, because of the great power placed at the disposal of the operator by the cephalotribe; moreover, it is a well-known fact that the mortality is greater in operations on slightly contracted pelvis than in greatly contracted ones; this is doubtless due to the fact that in the former class of case many instruments are tried before delivery is effected, and the maternal structures much bruised in consequence. I resorted to the craniotomy forceps in three instances (VIII, XIII, XIV); the head in the first of these being so close to the outlet that no great force was required to deliver it after perforation.

Let me call attention for a few seconds to Table I, where craniotomy was performed in six cases, the foetus being certainly dead. It is, I think, a well-known axiom that if the foetus be dead, and risk be likely to accrue to the mother by delivery of it unutilized, that mutilation is right and proper: the difficulty, however, is to be certain that the foetus is dead. In Cases I, II, and IV, the funis was pulseless and flaccid, and there was negative evidence as regards the presence of twins. In IV an offensive discharge had begun before I saw her, which (if any additional proof was necessary) gave me acute septicæmia from a small finger laceration. The sequel to this patient's labour is not without interest. I terminated her ninth pregnancy at the seventh month by induction of premature labour, but the child was stillborn after a severe forceps delivery. She almost immediately became pregnant again, and I repeated induction at a little over six months and a half.

An easy labour, terminated by the forceps, resulted in the birth of a living child, which was successfully reared by means of the artificial incubator.

Case v is worthy of passing notice. The perineum was so well healed that insertion of the finger was difficult and most painful. Hæmorrhage resulted from jumping out of a cab, and a large recent clot was found attached to the placenta. The child being dead, it was necessary to deliver without again putting the patient to the serious inconvenience of a ruptured perineum. I eviscerated to give me room to crush the aftercoming head, which was done three times, and I had the satisfaction of leaving the perineum intact.

In Table II it will be seen that, in three cases out of ten, the pelvic measurements were normal, and I propose saying a word on these three. Two of them (VII, XIV) were well-marked cases of hydrocephalus, one presenting by the breech, the other by the vertex. In the former case, the very large head was discovered above the brim, and a thorough examination under chloroform revealed the true condition of affairs. I cannot impress sufficiently upon my fellow-practitioners the value of an anæsthetic in these cases; the whole pelvis can then be easily explored by the hand, and, if necessary, by the arm being passed into the vagina. Dangerous thinning of the lower uterine segment may take place with this complication, and rupture is not an uncommon sequence. The case presenting by the vertex was accompanied by no excess of amniotic fluid, as was the other; treatment and diagnosis were easy in the extreme.

In Case XVI the brow presented, and the head became impacted in mid-pelvis. Labour pains were very powerful. Her medical attendant had tried forceps delivery, but the blades slipped off at each attempt. Version was out of the question when I saw her; an attempt with Simpson's axis-traction forceps failed, and craniotomy, followed by cephalotripsy, resulted in the birth of an unusually large child.

I have recorded three cases of well-marked "pelvic-outlet" contraction (VIII, X, XIII). This complication, in addition to offering an obstacle to the child's head, cramps the obstetrician's hand in any instrumental manipulation. Case VIII requires no further notice; the girl was seduced, being but a child, and her pelvis retained its infantile type. The foetus weighed 9½ lbs., and the skull was far advanced in ossification.

Case x was one of considerable anxiety. She had a long hypertrophied cervix, and a very small outlet—so small as to preclude the passage through it of a full-sized child's head. Labour was, therefore, induced. Barnes's bags could only dilate the cervix sufficiently to put one blade of the forceps on the head; the condition at the outlet, in addition, hampering the necessary manipulations. As fast as effected dilatation of the cervix, it contracted again. Version was tried persistently, but failed. After having been under an anæsthetic three hours, I was obliged to deliver her by cephalotripsy; the only untoward after-symptom being a sloughing of a small piece of mucous membrane at the outlet and some vesical irritation, lasting a month. Her subsequent history is this: She is now five months' pregnant, and desires to go through Cæsarean section rather than lose her child again; she is unfortunately now located in Western America, many miles from help, and the outlook is (I need hardly say) gloomy both for mother and child.

I will now call attention to those cases in Tables I and II, in which there was pelvic contraction at the brim; they are eight in number. Three of these were narrowed in their conjugate diameter either to three inches or slightly over (Cases I, VI, IX). The remaining five possessed a conjugate below three inches (Cases II, IV, XI, XII, XV). It will be seen that the vertex presented only three times out of eight, a malpresentation occurring in the rest; this is in accordance with the results obtained by other observers. A pelvis with a true conjugate diameter, measuring less than four inches, constitutes a narrow pelvis; for, although the interparietal diameter of an average-sized foetal head at term measures less than four inches, the working space between the promontory of the sacrum and the symphysis pubis is lessened by double the thickness of the vesical and uterine wall. According to our best authorities, a standard head in a pelvis measuring in its conjugate three inches and three-quarters (that is, half an inch less than that of the average-sized pelvis) constitutes a difficult labour. Under such conditions, natural delivery may not be impossible; but forceps may be needed, and often craniotomy. All the cases I have detailed fall easily within the above category. Now, what operations have we to select from if craniotomy is not performed? First, induction of premature labour at the seventh or

eighth month, which, of course, is beside the question should the patient only be seen in labour. Secondly, version and forceps to the after-coming head. Lastly, we have the question of performing the improved Cæsarean section. No question of Porro's operation need arise, as sterility may be ensured by tying the Fallopian tubes.

Induction of premature labour, in pelves having from two inches and three-quarters to three inches conjugate, affords a chance of saving the child, and is attended with less risk to the mother. Reference to Case IV, to which I have already alluded, illustrates this assertion, although I should not, under the circumstances, care to repeat the experiment. Below two inches and three-quarters conjugate, there is very considerable doubt as to its value. We may, therefore, conclude that it is possible to deliver a living child through a pelvis estimated at two inches and three-quarters conjugate as late as the thirty-second week of pregnancy at the outside. If, therefore, a patient with this condition is seen at or before that period, induction should be performed in preference to craniotomy at term. On the other hand, if only seen at term, craniotomy will, short of the Cæsarean section, be the only means of treatment. Contraction, which with a normal presentation would require forceps only, requires craniotomy if we add a slight malpresentation to the already existing deformity, as in Case IX, where three inches and a half would have been ample room; but the fact of a face and partial placenta prævia presenting made cephalotripsy necessary. Comparing version with craniotomy, it must be remembered that the former is useless unless there is some hope of saving the child; its performance is otherwise only adding another danger to those already existing. In a dead child, or with a well-marked failing foetal heart, it is out of the question. Flat pelves present an ample amount of space on either side for the occupancy of the occiput, and present favourable considerations for version, while they may be a bar to the application of the forceps. On the other hand, a generally contracted pelvis does not admit of so favourable a result by version as by forceps or craniotomy.

Having given the limits of craniotomy in one direction, let me enter briefly into those in the other—namely, Cæsarean section. In other words, through what sized pelvis is it impossible to deliver even by mutilation? and, again, given the possibility of the passage of a foetus with mutilation, which operation is the safer for the mother, and where must we draw the limit?

The rule at present laid down is that, if the antero-posterior diameter be reduced to one inch and three-quarters, provided there is a good transverse diameter, a mutilated foetus can be drawn through with less risk to the mother than by performing Cæsarean section. As you will see by the tables, I have never so far met with a case less than slightly under two inches and three-quarters; but I must confess that from the great difficulty experienced in that amount of contraction even, I should be tempted to avoid craniotomy for any case with an antero-posterior diameter of less than two inches at least, and, possibly, two inches and a quarter. Until recently, there is no doubt that Cæsarean section was indeed a most fatal operation; but now that the mortality, with proper precautions, is so rapidly lessening, it is narrowing the performance of craniotomy to a very great extent. I might mention that Leopold's last published report makes his mortality for this operation slightly over 8 per cent.

Let us now compare this with statistics obtainable from large numbers of craniotomies performed in various countries. I have appended a table for this purpose, quoting the results obtained in the maternities at Halle, Leipzig, and Berlin:

Author.	Total Cases.	Cranio- tomies.	Mor- tality.	Per cent.	Proportion of craniotomies.	Per cent.
¹ Thorn (Halle), 1858-1883.	7,141	80	10	12.5	1 in 89.2	1.12
² Merkel (Leipzig), 1877-1882	5,540	100	8	8.0	1 ,, 55.4	1.77
³ Determann (Berlin), 1876-1887	22,051	239	26	10.87	1 ,, 92.3	1.08

Determann mentions in his paper that the mortality in his cases before 1882 was 12.8 per cent., while afterwards it was 9.4 per cent.

The great feature to be noticed in the above statistics is the great frequency of the operation in Germany, varying between 1 in 55.4 and 1 in 92.3. The thirteen cases occurring in my own hospital practice represent 3,580 labours, or 1 in 275.4, which, I should

¹ *Archiv für Gynäkol.*, 1884, Bd. xxiv, s. 437.

² *Archiv für Gynäkol.*, 1883, Bd. xxi, s. 461.

³ *Zeitschrift f. Geburt. und Gyn.*, 1888, Bd. xv., s. 323.

TABLE I.—*Children Dead before Operation.*

Case.	Age.	Period of Pregnancy.	Parity.	Pelvic Conditions.	History of Previous Labours.	Presentation.	Operative Interference.	Result.
I.	26	Term	vii-p.	Flattened rachitic pelvis; conjugate at brim 3 in. (+); outlet normal	i. Forceps; 7 months; alive. ii. Version; term; dead; prolapse of vagina. iii, iv, v. Premature; dead. vi. Craniotomy; term	Right arm and funis; abdomino-anterior	Version; impaction of head; forceps tried; hard palate perforated; cephalotripsy	Recovered.
II.	30	8 months	iv-p.	Contracted brim, conjugate 3 in. (-); several cervical adhesions	i, ii, iii. Craniotomy at term	Right shoulder and funis; abdomino-posterior	Barnes's bags; version; evisceration; impaction of head; perforation behind left ear; cephalotripsy	Recovered.
III.	39	7½ months	xii-p.	Large osseous growth in right oblique diameter; run over when 6 years old	i, ii, iii. Craniotomy. iv. Induction 7 months; alive. vi, vii. ix. Induction 7 months; dead; forceps. v, viii, x, xi. Induction 7 months; dead; natural	Left hand and shoulder; dorso-anterior	Cephalic version failed; podalic; head impacted; forceps; perforation through hard palate; blunt hook	Recovered.
IV.	39	Term	viii-p.	Conjugate at brim 2½ in. (+)	i. 6 months; natural; dead. ii. 6½ months; natural; dead. iii. Term; craniotomy. iv. 8 months; version; dead. v. 6½ months; lived 17 days	Funis and face jammed in mid-pelvis	Forceps after vectis; perforation left orbit and palate; cephalotripsy; usually 5 to 6 days in labour	Recovered.
V.	32	Term	ii-p.	Conjugate normal; cicatrices in perineum	i. Dead; term after 4 days' labour; perineum torn into rectum; healed after third perineorrhaphy	Breech	Severe ante-partum hæmorrhage; strong traction; cord pulseless; evisceration; cephalotripsy	Recovered.
VI.	34	Term	vii-p.	Conjugate at sixth labour 3½ in.; old cervical adhesions	i. 6 months; naturally; dead. ii. 7 months; forceps; dead. iii, iv, v, vi. Craniotomy; term	Vertex	Forceps and version failed; cephalotripsy; child peeling	Recovered.

TABLE II.—*Children probably Alive before Operation.*

Case.	Age.	Period of Pregnancy.	Parity.	Pelvic Conditions.	History of Previous Labours.	Presentation.	Operative Interference.	Result.
VII.	36	Term	v-p.	Normal; capacious; soft parts well dilated.	Normal; four children alive	Vertex; hydrocephalus	Examination under anæsthetic; perforation with trocar; labour left to natural efforts	Recovered.
VIII.	16	Term	i-p.	Pelvis justo minor; outlet much contracted.	—	Breech	Forceps to after-coming head failed; perforation of hard palate; craniotomy forceps	Recovered.
IX.	31	Term	v-p.	Conjugate at brim 3½ in.; undilatable cervix.	i, ii. Premature; forceps; dead. iii, iv. Craniotomy; term	Face; partial placenta prævia	Forceps; version attempted thrice; perforation of hard palate; cephalotripsy	Recovered.
X.	28	8 months	i-p.	Greatly contracted outlet; brim normal; conical hypertrophied cervix.	—	Vertex	Induction; Barnes's bags; forceps and version failed; perforation; cephalotripsy	Recovered.
XI.	44	Term	ii-p.	Conjugate 2½ in. (-); rheumatic ankylosis right hip.	i. Craniotomy; term	Vertex	Perforation; cephalotripsy; difficulty with leg condition	Recovered.
XII.	31	Term	iii-p.	Flattened non-rachitic pelvis; conjugate at brim 2½ in. (+)	i. 7 months; dead; 4 days' labour. ii. Craniotomy; term	Face	Version failed; perforation of orbit and hard palate; cephalotripsy	Recovered.
XIII.	18	Term	i-p.	Right pubic ramus across outlet; injury to right hip during infancy	—	Vertex	Head jammed; forceps failed; perforation; craniotomy forceps.	Recovered.
XIV.	24	Term	iii-p.	Normal	Normal; two children alive	Breech; hydramnios	Hydrocephalic head diagnosed under anæsthesia; perforation behind right ear; craniotomy forceps	Recovered.
XV.	33	Term	iv-p.	Flattened rachitic pelvis; conjugate at brim 2½ in.	i. Premature; forceps; dead. ii, iii. Premature; 7 months; alive	Vertex	Version failed; waters ruptured 26 hours; cephalotripsy	Recovered.
XVI.	24	Term	ii-p.	Normal	Normal; small child	Impacted brow mid-pelvis	Forceps failed; perforation; cephalotripsy	Recovered.

say, would be the average of "maternity" frequency, but far in excess of that met with in private practice.

In Germany, then, the operation is performed from three to five times as frequently as in England, and with a percentage of between 8 and 12.5 mortality. This is above the percentage mortality obtained from the latest statistics of Cæsarean section, and doubtless has tended to more frequent performance of the operation as a selective one. I should certainly (with the operation in its present state of advancement) not hesitate to perform it upon a patient with a conjugate of two inches and a half, and, of course, under, feeling that her chance of survival would be just as good as after a difficult cephalotripsy.

Now let me call your attention to the subject from an ethical point of view, and I will illustrate the difficulties under this heading by quoting Cases iv and x. The former, a poor hard-working woman, has lost five children out of six from her pelvic condition; three of them after operation. She does not regret this result in the least, and it was only after the greatest pressure that I pre-

vailed upon her to allow me to induce her labour twice, with the result I have already stated. Every child alive to her means so much increase of misery and starvation, and that is the only standpoint from which she looks at it; desire for living offspring is, in her, entirely obliterated. On the other hand, in Case x, we have a patient in good circumstances, to whom the blessing of a child born per *vias naturales* seems impossible to bring about. Yet she offers herself in cool moments to have Cæsarean section done to obtain her wish.

The question, then, arises: Ought an obstetrician to be in any way guided by these maternal desires? A direct answer is necessarily difficult, and would vary in different cases. My own opinion is, that provided they be consistent with the practitioner's course of procedure, they should not be passed over.

The New Training Home for Nurses at Wolverhampton, which has been founded in honour of Her Majesty's Jubilee, will be formally opened on Monday next by the Earl of Dartmouth.