Hastings Gilford says of his case,¹ of which I show you the illustration, that he was an infant as regards his generative organs; a child of 2 or 3 as regards his physiognomy and configuration of head; a little over 3 as regards height; about 6 or 7 as regards his epiphyses; and as regards his teeth, about 11. His actual age was 12.

Our patient is also an example of primary asexual ateleiosis. Others, however, become sexually mature, and so are real dwarfs, as the well-known General Tom Thumb. Dr. Byrom Bramwell details a case due to defective pancreas, of which a second case has been noted by Dr. Rentoul of Lisburn; also one associated with anaemia and enlargement of spleen. Sporadic cretinism is a well-known cause of defective growth; and hereditary syphilis is given by Bramwell; our patient looks like a case of this last condition, but the teeth, eyes, and scarred mouth are not present, although the teeth may

FIG. 3.

Short normal femur. Long normal femur.
Skeleton of achondroplasia.

have been there. I am inclined to believe the periosteal affection of the tibiae is of this nature, and I shall treat accordingly.

As regards the skeleton, of which no living sample has as yet turned up in the wards, although I have noticed two in public, without, however, an opportunity of close examination, one in a show, and one as a newspaper "boy" (!), the essential lesion of achondroplasia is in the bone development; when they grow up in years, they are generally sexually mature, are intelligent enough, and able to work. As regards the pathology, we may quote from Professor Symington's description: "The alterations present are confined to certain groups of bones, while others are quite normal. The latter are:—

"1. Those which are formed entirely in membrane, for example, the flat bones of the vault of the skull.

"2. Those which, although formed in cartilage, remain entirely or mainly cartilaginous till an advanced period of

fetal life, so that their general growth is quite independent of endochondral ossification. As examples may be mentioned the sternum, costal cartilages, patella, and tarsal and carpal bones.

"The departures from the normal affect those parts which, formed in cartilages, largely depend for their growth during fetal life upon endochondral ossification, the cause of the departure being a premature arrest or absence of this process. The bones belonging to this group are the long bones of the extremities, the ribs, the posterior part of the base of the skull, and the innominate bones."

I am indebted to the photographic department of the hospital for Figs. 1 and 2, and to that of the college for Fig. 3.

REFERENCE.

¹ BRITISH MEDICAL JOURNAL, October 8th, 1904.

THE INDUCTION OF LABOUR: A COMPARISON OF SOME OF THE METHODS, WITH NOTES OF FIVE RECENT CASES.

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I INTEND to refer only to methods which come under the strict meaning of the title of the paper, therefore only those which are intended to stimulate normal uterine contractions before full term will be considered, to the exclusion of all those which come under the head of "accouchement forcé."

Of the 5 cases I propose to describe, the operation was performed in 3 of them for contracted pelvis, in 1 for hyperemesis, and in 1 for eclampsia.

I shall not discuss the merits or demerits of the treatment I adopted in these particular cases, but rather wish to discuss the respective values of the various methods I used. Having definitely decided to undertake the premature emptying of the uterus, one is bound to admit that there are a certain number of cases in which it is not only advisable but necessary to induce labour before term; and, while agreeing that the responsibilities of the obstetric surgeon are great in undertaking the artificial termination of pregnancy—especially as in Case No. 1 of my series, in which the child was not yet viable—it is certain that, although the life of the child must not be undervalued, yet the interests of the mother are paramount. The operation is essentially a life-saving one—as absolutely so in intractable hyperemesis as in moderate degrees of contracted pelvis through which a full-term child cannot pass, and when the mother refuses to submit to Caesarean section. In the former case, were the operation not performed, both mother and child would be lost; in the latter, the risk of the operation of induction to the mother is no greater than in embryotomy, and there is a fair chance of delivering a living and viable child.

The cases which I record below occurred in the Coombe Maternity Hospital, Dublin, this year; and my best thanks are due to the Master, Dr. Stevens, for permitting me to publish details, and to my colleague, Dr. Wessels, who kindly allowed me to include in my series Case No. 11, which was under his care, but which I also had the opportunity of observing throughout its course:

CASE I.

M. McM., primipara, aged 18, pregnant six months, admitted to hospital, on January 14th, 1905, suffering from excessive vomiting. She stated that the "vomiting of pregnancy" had persisted and had increased in intensity, resisting all medicinal treatment she underwent at a dispensary.

For some time after admission the usual drug, diet, and hygienic treatment was tried, but of no avail. Bismuth, calomel, ipecac., nuxvomica, belladonna, salol, cocaine, cerium, etc., were administered in vain; everything which entered her stomach was promptly ejected. Rectal alimentation was powerless to prevent the retching and straining, and the patient was steadily losing ground, becoming rapidly emaciated and looking extremely ill. Her tongue was hard, dry, and brown; her urine contained 0.9 per cent. of albumen.

On January 25th at 10 p.m., without an anaesthetic, I passed into her uterus between the membranes and uterine wall two No. 10 gum elastic bougies which had previously been sterilized with the greatest care. Seven hours later labour pains commenced, which increased gradually in force and frequency. The bougies were removed twenty hours after their insertion, and twenty-three hours after the commencement of induction of labour the child was born. From that time she vomited but once. Three days after delivery her tongue was moist and almost clean, and she was using the ordinary diet of the lying-in woman.

February 4th. Discharged from hospital quite well; urine free from albumen.

CASE II.

E. M., aged 37, 7-para; no living child; contracted pelvis; true conjugate 8.4 cm. Transverse at brim, also 8.4 cm. by pelvimeter. The patient fearing Caesarean section, and being anxious to bear a living child, it was decided to induce labour at seven and a half months.

On February 11th two No. 10 G. E. bougies were passed into the uterus, and remaining *in situ* for twenty-four hours without effect, they were withdrawn, and two others inserted in a different direction to that of the first two. Twenty-four hours later, the second set having induced no uterine contractions, they were removed, and this time three new ones were introduced. Quinine, in quickly-repeated doses, was administered, and four hours later labour set in, resulting in the birth of a living child, delivery being assisted by hands and instruments.

CASE III.

February 25th, 1905. M. M., aged 34, 4-para; rickety flat pelvis; true conjugate 8.1 cm.; pregnant about seven and three-quarter months. Patient's wishes similar to those of Case II.

In this case three sets of three in each set No. 10 bougies were passed at intervals of twenty-four hours, but without effect. On the evening of February 28th, the os being sufficiently large to admit of the passage of a mechanical dilator, De Seigneux's instrument was inserted, and after slight dilatation, labour pains set in and continued after the removal of the dilator. Later the child was delivered with great difficulty and survived but a short time.

CASE IV.

D. C., aged 27, 9-para; about seven and a half months pregnant; contracted pelvis; true conjugate 6.8 cm. Wishes of patient also similar to those of Cases II and III.

March 8th, 1905. Three No. 12 bougies passed, and, being left in for twenty-four hours, produced but a few feeble painful contractions. On being removed, three No. 14 bougies were with difficulty inserted, as the bougies together were a tight fit for the os. Before inserting the larger bougies the membranes were digitally separated from the lower uterine segment as far as could be reached. Some weak labour pains set in—few and far between. After six hours the bougies were removed, and Frommer's dilator inserted, and the os slowly dilated up to $\frac{3}{4}$ cm. diameter. Strong pains set in soon afterwards, and as the breech was presenting the child was delivered alive as an ordinary breech case.

CASE V.

March 15th, 1905. K. B., aged 40, primipara; five and a half months pregnant; suffering from eclampsia; seven seizures. Patient had left kidney removed three years previously for (?) abscess. On admission great oedema present; urine scanty, with much albumen. Morphine and the usual measures successfully adopted. The fetal heart not being heard after careful auscultation, and as the fits had ceased, it was decided to empty the uterus by induction of labour.

March 16th. Os dilated by Hegar's dilators up to size 16, and three No. 10 bougies passed; vagina lightly plugged with iodoform gauze. Twenty-four hours later, as no pains ensued, the No. 10 bougies were removed, and after further dilatation of the os by Hegar's dilators three No. 12 bougies were introduced. This time the vagina was tightly plugged with gauze around the protruding ends of the bougies. About six hours later some irregular pains set in, and on the evening of the 18th—that is, forty-eight hours after the commencement of induction—on removing the plug and bougies the os uteri was found to be about the size of a sixpence, and the cervix to be almost fully taken up.

Frommer's dilator was then cautiously inserted through the os, and although there had been no pains for over an hour previously, strong pains set in almost immediately after commencing dilatation, in fact, so powerful were the uterine contractions that I feared rupture of the membranes from pressure against the tips of the blades of the instrument. After dilating up to 4 cm. diameter the dilator was withdrawn. Pains now continued at five-minute intervals, and three hours and twenty minutes after the commencement of instrumental dilatation the child, which had apparently been dead for some time, was born.

The convalescence of this patient was rapid, and presented no items of interest, the oedema and albuminuria quickly disappearing.

It will be seen that in this short series of cases the various methods I used to stimulate uterine contraction were: Bougies, drugs, separation of membranes from the lower uterine segment, plugging, and instrumental dilatation.

It is obvious that of these the first four can only be used to "induce labour" in the real meaning of the term; but with regard to the fifth method—namely, instrumental dilatation, it is undoubtedly on the border line between induction line and *accouchement forcé*; but I wish it to be distinctly understood that this method was used with the sole object of stimulating the "polarity" of the uterus.

Had it been my intention to make the dilator perform the office normally performed by the intact membranes, then I should have carried the dilatation to such a degree as would permit of the birth of the child, not desisting, as I did, when the os measured but 4 cm. in diameter. But I had gained the object aimed at, and was only too glad to allow Nature in her own safe method to finish the work, knowing full well the grave risks of laceration always present when artificial dilata-

tion is practised, more especially when carried to the full degree. We are all aware of this peculiar property of the normal uterus—this "polarity," as it is sometimes called—whereby, during labour, contraction of the upper uterine segment and of the longitudinal fibres of the lower uterine segment is accompanied by a relaxation of the circular muscular fibres, thus assisting the onward progress of the presenting part, so it seems probable that, if the order be reversed, and the circular fibres were artificially dilated, we might expect, by virtue of the intimate nerve connexion between the segments, that the body of the uterus would vigorously contract, and that this has been proved to be so is shown by the last three cases of my series.

It is quite clear that the methods I thought it advisable to use in these particular cases would be unsuitable if indications were present for the rapid emptying of the uterus, excepting, perhaps, the instrumental dilatation carried to the full extent, when it would immediately come under the head of *accouchement forcé*, a proceeding which, fraught with such grave dangers, is rapidly falling into disfavour with the profession; still it has its limited—very limited—uses.

Referring to Case I: I can hardly look upon this one as typical; the comparatively quick response to stimulation. It may be that the primipara uterus is more irritable than that of the multipara—a theory supported by other evidences in obstetrics; but then Case V was also a primipara, and she responded much more slowly to more vigorous treatment. Did the fact of the fetus being dead, or of the weakened state of the woman as a result of the eclamptic seizures, account for her tardiness in getting into labour?

I believe No. 10 bougie is the size most generally used by those who catheterize the uterus. I have tried larger sizes (12 and 14) where the os would admit them, and having once got them through the cervix found they were more easily introduced and with less danger of rupturing the membranes. The larger sizes, as one would expect, appear also to irritate the uterus to a more marked degree. Whatever size is used, there is no need to injure the placenta in any way; as, if during introduction the placental site be reached, the bougie can be gently withdrawn and reinserted in another direction. Infection will not occur if proper antiseptic precautions be taken, but there is no operation in obstetrics which more severely tests the aseptic technique of the operator. The profession owe to Krause a debt of gratitude for his introduction of the bougie method of induction of labour. His method was not entirely successful in all my cases—even after repeating it a third time. We have, in digital separation of the membranes and tight plugging of the vagina, powerful and useful adjuncts. Injection of fluids into the uterine cavity is a method which seems to me to have but little to recommend it. With the sole object of stimulating uterine contraction I consider the branched dilator superior to the inelastic bag of Champetier de Ribes.

In no instance in which I have used it did the former fail to excite pains, but it has its indications and limits too. I prefer, and consider it safer, not to use it, unless the cervix is taken up largely if not entirely, gaining this end by the other means which I have spoken of.

With regard to the instruments themselves, Bozzi's, the original, has been entirely superseded by Frommer's invention—the latter with its eight blades against Bozzi's four—and therefore during dilatation the os is more nearly a true circle, consequently there is less fear of laceration. Seigneux's new instrument is a heavy, clumsy article; it also has but four blades, but they work at a considerable angle with the shaft; this angle at first sight appears to be—as the inventor claims for it—a distinct advantage, whereas in actual use I have found it most disappointing. Also in the particular Seigneux's instrument I have used—if not in others by the same maker—I have found the much greater rigidity of the antero-posterior blades as compared with the lateral blades a great drawback to its use, as the os during distension is thereby made diamond shape. Although not the newest invention, Frommer's instrument is, I believe, the best so far produced.

I have suggested and successfully used a little manoeuvre with this instrument, by which the operator can estimate and control the amount of tension he is subjecting the cervix to. It is as follows: During dilatation up to say 3 cm. diameter, use the instrument with the two anterior blades entirely removed, inserting the forefinger with the nail towards the instrument into the place lately occupied by the blades removed. This finger will act as efficiently as would the blades if left *in situ*, with the added advantage that the operator can

estimate to a nicety the tension of the cervix, and so cause dilatation to proceed quickly or slowly as the occasion demands. As dilatation progresses the replacement of one of the blades removed will still allow sufficient room for the finger, until finally all the blades may be replaced, there being still room to admit the finger between any of the blades. I know of no other 8-bladed dilator on the market which will admit of one or more blades being removed or replaced without taking the whole instrument asunder.

Working upon past experience, when a case comes under my care which for one reason or another requires induction of labour, and great haste is not essential for the safety of the patient, I shall, if the os be small, dilate up to about No. 16 or 18 Kelly's dilators, inserting then into the uterus three of the largest bougies capable of passing through the os at the same time, and tightly plugging the vagina with sterilized gauze.

If this had not the desired effect in twenty-four hours I would repeat the treatment, and as soon as the cervix was partly taken up, if uterine contractions were not strong I would use the Frommer to stimulate them, and allow Nature to complete delivery if no complication arose later. Should it happen—and so far I have been fortunate in its not occurring with me—that the membranes were accidentally ruptured during manipulation with the dilator, then, and not till then, would I be tempted to use the hydrostatic dilators to assist me in the induction of labour.

THE SPREAD OF CANCER BY THE THORACIC DUCT.

By NATHAN RAW, M.D., M.R.C.P.LOND.,
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IN the BRITISH MEDICAL JOURNAL of April 29th, 1905, is published an interesting and instructive case by Dr. Mitchell Stevens of latent carcinoma of the stomach, spreading by means of an infected thoracic duct to the left side of the neck. It is one of the very few recorded cases of definite involvement of the thoracic duct in cancer within the abdomen, and will greatly strengthen the view advocated by Toisier and others that the thoracic duct plays an important part in the spread of cancer.

I have often observed that malignant disease of the glands of the neck occurs much more frequently on the left side than on the right, and I have frequently seen cases of apparently primary cancer in these glands, in people of middle or old age, without any evident focus of infection such as cancer of tongue, mouth, oesophagus, or tonsils. Although necropsies have been frequently made in such cases, I have never carefully examined the thoracic duct, and it is possible that some latent cancer within the abdomen may account for these glandular infections through the thoracic duct.

The writer of the case referred to was able to diagnose cancer of the stomach apparently from the appearance of enlarged glands in the left supraclavicular region, and this was confirmed *post mortem*.

In the case under my care recently I was not so fortunate, although in the light of my present knowledge I had ample grounds to suspect such a condition. The following is a brief account of it:

Primary Carcinoma of the Pancreas, with Secondary Infection of the Cervical Lymphatic Glands and Orbit.

A. H., aged 46, a labourer, was admitted into Mill Road Infirmary, March 30th, 1905, complaining of general weakness and a swelling in the left side of his neck of eight weeks' duration.

History.

Has always been a healthy and temperate man, has had to work very hard all his life as a labourer at the docks, lifting very heavy weights. No history of syphilis. For the last six months he has complained of want of appetite, constipation, and increasing weakness, with a gradual and steady loss of flesh. He has never suffered from attacks of pain or jaundice. He was treated by a medical man for anaemia, but with no good result. Four months ago he noticed a great difficulty in moving his bowels. Strong purgatives were required, but the stools were always large and well-formed; no blood. Two months before admission a hard, inflamed swelling appeared on the left side of his neck, extending upwards behind the ear and downwards to the clavicle. It was very painful. At the same time he noticed loss of vision in the

left eye, with some projection of the eyeball, and considerable headache, but no vomiting. He had in the last two months lost over 2 st. in weight, but had no active gastric symptoms.

Condition on Admission.

The patient is a strong muscular man, well nourished, but somewhat anaemic. No oedema or jaundice; pulse 80, moderate tension, regular. Heart and arteries show nothing abnormal. The lungs appear healthy, and although it was thought that possibly there might be a primary mediastinal growth in the chest to account for the enlarged glands in the neck, the most careful examination failed to reveal it. There is a moderate distension of the intestines which is uniform, and on deep palpation over the splenic area there is some pain and a sense of resistance. In the left supraclavicular region there is considerable general swelling, redness and slight oedema, extending above the lobe of the ear. No pain on deep pressure and no evidence of suppuration. A diagnosis of lymphadenoma was made, and he was informed that operation was not advisable.

Progress of Case.

April 10th. The patient has become generally weaker since admission, he is losing weight, and the difficulty of evacuating the bowels continues, although no cause can be detected. Every system was carefully examined, but nothing definite could be detected to account for his condition, excepting the growth of glands in his neck.

April 20th. A curious feature has developed in the case. He complained of pain in the left orbit with inability to read with the left eye. In the course of a few days there has developed a marked proptosis with total loss of vision. The eyeball has the appearance of being forcibly pushed forwards by some intraorbital growth of very rapid development.

April 22nd. The patient is rapidly going downhill, is drowsy and partially delirious. There is some more distension of the abdomen, but the bowels are acting regularly. He died to-day after becoming comatose two hours before death.

Necropsy.

The examination was made twenty hours after death. The body was emaciated. Rigor mortis pronounced. On opening the abdomen there was found a general distension of the intestines with slight ascites. All the organs were found healthy with the exception of the pancreas, which was transformed into a large irregular cancerous mass involving chiefly the body and tail, the head remaining comparatively free from growth. Several enlarged cancerous glands were found in the locality of the pancreas, some very large and hard, and compressing the splenic flexure of the colon, thus accounting for the difficulty of evacuating the bowels. The thoracic duct in this region was not examined. There were no secondary growths in any of the viscera. On opening the chest the organs were found healthy with the exception of recent oedema of the lungs. The left side of the neck comprising all the triangles was involved in an irregular cancerous growth, evidently originating in the deep part of the subclavian region. The thoracic duct near its termination was found involved in the cancerous growth, and was greatly thickened and enlarged. Microscopically, the sections of pancreas, secondary glands in abdomen, and neck show a typical glandular (scirrhous) carcinoma.

It is possible that a more minute search in all cases of abdominal cancer would point to the more common spread to other viscera and lymphatic glands by means of the thoracic duct, and I intend in future to pursue this line of inquiry.

In this case it is easy to understand the rapid enlargement of the neck glands, but not so the secondary growth in the orbit, which was of the same nature pathologically, and was pressing forwards the eyeball without being in any way attached to it. Another point of great clinical interest was the entire absence of symptoms which would point to involvement of the abdominal viscera. The wasting without obvious cause would of course suggest malignant disease, but not until the swelling appeared in the neck was there anything definite on which to make a diagnosis. I place on record this case in association with that of Dr. Mitchell Stevens in the BRITISH MEDICAL JOURNAL of April 20th, 1905, as I feel certain that the question is of great importance in the investigation of the spread of cancer.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

DILATATION OF THE GALL BLADDER SIMULATING OVARIAN CYST.

THE interesting clinical lecture by Mr. Alban Doran under the above heading (BRITISH MEDICAL JOURNAL, June 17th, p. 1316) prompts me to add a brief record of the following case upon which I operated last year.