aliment, after being masticated and mixed with saliva, is conducted to the stomach, where it is exposed to the influence of the gastric juice, which has the remarkable property of dissolving alimentary matters. These alimentary matters thus acted upon are converted into a substance called *chyme*; they then pass from the stomach into the intestinal canal, where they are mixed with bile from the liver, and pancreatic juice from the pancreas. Shortly after this change has taken place the chyme is separated into two parts; one of which being useless is discharged as excrementitious; and the other, the nutritious part of the food, which appears in the form of a white fluid called *chyle*, is taken up from the intestines by vessels resembling a net-work, and which, from the office they perform, are termed *chyliferous* vessels, or *lacteal* vessels, as they are sometimes denominated, from their white contents resembling milk. These chyliferous vessels, after receiving the chyle from the intestines, conduct it into one great trunk called the *thoracic* duct, which derives its name from passing up to the thorax; and at last it enters into a vein about the neck, and delivers there its contents, which, being mixed with the blood, and conducted to the right side of the heart, gradually assume, by the process of sanguification, the true character of blood.

But if new matters were added to the system *ad libitum*, it would grow to an indefinite size, and there must be some provision for their removal. Such parts as are useless are eliminated from the system, because they are redundant, and therefore not serviceable to the economy. This process of *elimination*, or getting rid of the waste, is a very singular one. In order to accomplish it, those solids which become useless must again be converted into a liquid state; they must be brought back to the blood, and then eliminated from it. Hence the blood is not only the means of conducting new matters to the solids, but also of removing the old. They are conducted to the blood partly by entering the veins, and partly by another class of vessels similar to the lacteals. The waste parts, after being dissolved, are conducted along the lymphatic and absorbent vessels, of which a great number terminate in the thoracic duct along with the thoracic vessels, and the remainder empty themselves into the veins. The dissolved parts are separated from the blood by the process of secretion and exhalation. In passing through the fine vessels with the arterial blood they approach the various surfaces, and a great many of these matters escape. A great deal is carried away with the breath, a great deal is discharged by perspiration, and some is conducted out of the body by means of the secreting organs, such as the kidneys.

The last set of functions, the reproductive, I have not time, nor is it necessary, further to illustrate.

CASE OF REMARKABLE INJURY TO THE FETAL HEAD,

PRODUCED BY

DEFORMITY OF THE BRIM OF THE PELVIS.

[From a Lecture on Deformities of the Pelvis, delivered at the School of Anatomy and Medicine adjoining St. George's Hospital, Oct. 9, 1840.]

By WILLIAM BLOXAM, Esq., Surgeon to Queen Adelaide's Lying-in Hospital.

I CONSIDER myself particularly fortunate, Gentlemen, on the present occasion, in being able to lay before you the particulars of a most interesting case to which I was called yesterday morning; a case involving some principles of high importance, both in relation to obstetric practice and to medico-legal inquiries respecting the probability of infanticide. Every fact, the truth of which is thoroughly ascertained, is invaluable to us in the practice of midwifery, when, even at the present day, as I shall hereafter point out to you, the most distinguished writers vary greatly in their statement of the space necessary at the brim of the pelvis to permit the passage of the foetus, both in its entire and the mutilated state.

I have already told you that in all questions, the examination of the facts for yourselves is by far the most eligible mode of proceeding; yet, as the opportunities you can have of obstetric practice must necessarily be limited, you are compelled by force to rely to a great degree on the statements of those who teach or have written on the subject. I would not, however, have you admit the positions of authors on the subject of deformed pelvis without the most complete examination; for if you imbibe erroneous notions on this important subject, your future practice will be fatally mischievous.

I shall now read to you the particulars of the case to which I have alluded, which have been kindly furnished to me by Mr. Samuel Williams, one of the house-surgeons to Queen Adelaide's Hospital:—"Case of Mary Anne Fitch, aged 25, married, residing in Rupert-street; had one confinement about two years ago: she was then delivered of twins, females, before the arrival of her medical attendant. They survived only a few days. Oct. 7, 1840, 7 P.M. States that she has had slight irregular pains for the last week, disturbing her at night particularly. These having increased in violence and frequency about 4, A.M., and continued through the day, in the evening she applied for assistance. On examination, the os uteri was dilated to the size of a crown-piece, soft and yielding, the membranes very tense during the pains, although they were carried into the uterus by the fingers

during the interval; the presenting part of the child could not be ascertained." I may here observe, Gentlemen, that whenever the os uteri is tolerably well dilated, and you cannot, on careful examination, feel the presenting part, you will do well to be on your guard, as it is very probable that some other part than the head of the child is nearest the os uteri. To resume, "the pains continuing inefficient, and the patient having had no sleep for several previous nights, half a drachm of tincture of opium was administered, and the patient desired to send again on the recurrence of stronger pains. This she did shortly before five the next morning, Oct. 8, and it was ascertained that the opiate had procured her some sleep; the os uteri was now fully dilated, but still the presentation could not be distinctly ascertained; the membranes gave way shortly after, a large quantity of liquor amnii was discharged, and the breech was felt descending. Its expulsion took place soon after six o'clock. As considerable difficulty was now experienced in attempts to extract the head, and the expulsive efforts of the mother became gradually weaker, Mr. Bloxam was summoned soon after seven. The pulsation in the cord had for some time entirely ceased." This, Gentlemen, is the account furnished me by Mr. Williams.

On my arrival, at half-past seven, I found the arms of the child placed on each side of the head. The head was tolerably firmly fixed in the brim of the pelvis; the face of the child directed towards the right acetabulum of the mother; and the ramus of the jaw might be felt immediately behind the horizontal ramus of the pubis. The pelvis at its outlet, and in as much of its cavity as could be reached, in consequence of its being occupied by the child, appeared of natural capacity. The pains had entirely ceased. I requested Mr. Williams to rub the abdomen quickly, which, after some time, had the effect of rousing the uterine action, but, to a very slight degree. During this time I brought down the arms of the child successively, and endeavoured, by pressing on the left cheek of the child, to give the forehead a direction to the right sacro-iliac synchondrosis, assisting that operation by rotating the shoulders in the same direction. In this I partially succeeded; but still the pains were totally insufficient for its expulsion, being remarkably feeble.

Friction was kept up for a considerable time without satisfactory results; and I determined to endeavour to excite the uterus to action by the use of the *secale cornutum*, knowing that, as the child was dead, I could at any moment extract it by evacuating the contents of the head. My chief object was to arouse the dormant energies of the uterus. A dose of fifteen grains was given in a little brandy and water, without the slightest effect. This was repeated in

twenty minutes, and the friction continued. Shortly after an expulsive effort took place, and by assisting, by steady, but gentle traction of the body in the axis of the brim, the head descended with a distinctly audible snap, giving the idea that its convexity had suddenly overcome some obstruction.

Its expulsion through the cavity and outlet of the pelvis was completed shortly afterwards by the natural efforts. The placenta was expelled in a few minutes. On examining the pelvis after its expulsion, the forefinger placed under the pubic arch, and carried backwards, easily reached the promontory of the sacrum, as was also verified by the examination of Mr. Williams. The patient is now doing well.*

The child, a male, is now before you; it does not exceed the average size; the head is natural in its dimensions. When expelled, blood was seen to flow from its ears, nostrils, and mouth, indicating the degree of compression it had sustained. On the right side of the head is an irregularly circular indentation, situated immediately above and a little anterior to the ear, measuring in its diameter about one inch and three-quarters. The depth of the depression at its centre is about half an inch. It appears to implicate the lower part of the parietal as well as the adjacent part of the temporal bone. This is exceedingly well seen in the wax model which I pass round the theatre, which has been beautifully executed by my friend and former pupil, Mr. James Harrison, and which you can compare, after lecture, with the body on the table. The head in its transverse diameter, that is, from the centre of the indentation to the parietal protuberance of the opposite side, measures exactly three inches, and affords an exact mould of the dimensions of the antero-posterior diameter of the brim of the pelvis through which it passed. I have already said to you, in a preceding part of this lecture, that to allow a living child to pass, it is necessary that the antero-posterior diameter of the brim should be three inches in length, though some authors have ventured to state that a space of two inches and three-quarters is not incompatible with the life of the child. For my own part I doubt it, unless the head be less than the average size. I shall now point out to you a statement made by Dr. F. H. Ramsbotham, in his "*Atlas of Midwifery*," page 46, where he says, in speaking of ascertaining the antero-posterior diameter of the pelvis, "three methods are practised; one is by the introduction of the first finger of the right hand within the vagina, so that the point should be carried up to and touch the sacral promontory, while the root of the

* Oct. 12, and is still doing well.—*REP. LANCET.*

finger is applied directly under the symphysis pubis at the upper part of the arch. It must be evident that this mode of inquiry will be of no avail, unless the pelvis be greatly distorted, *considerably under three inches, indeed, in the conjugate diameter.* For the ordinary length of the index finger along its inner edge is less than three inches; and as the oblique line, from the promontory to the apex of the pubic arch, exceeds the direct line across, so if there be more than the space just mentioned, the finger would not be able to reach the projection, and we should consequently be in utter ignorance what amount of room existed."

Now, Gentlemen, in this case you have an instance of a deduction from an isolated fact, a theory finely drawn from "the ordinary length" of an index finger. You will do well, under all circumstances, to watch assertions like these, to take them to pieces as it were, and compare them with the facts as they exist in nature. In the case before you, the transverse diameter of the head, from the centre of the indentation to the opposite parietal protuberance, measures exactly three inches; this indentation was produced by the promontory of the sacrum, and affords an exact mould of the antero-posterior or conjugate diameter of the brim, and is "*considerably under three inches.*" I must not, however, leave the subject, without calling to your notice the fearful consequences which would result if this doctrine were received as fact. As you have been told that the smallest space in the antero-posterior direction through which a living child can possibly pass is three inches, and as you are informed by Dr. Ramsbotham that you cannot touch the promontory of the sacrum unless that diameter be "*considerably under three inches,*" it follows of necessity that you would consider yourselves justified in opening the head in all cases when this point could be reached; a doctrine most mischievous, nay, murderous, in its tendency.

It is by comparing facts with the assertions of authors that you are enabled to appreciate their truth or fallacy. Be not, therefore, misled by the dogmata of any man, however high his reputation, compare, weigh for yourselves; it is your high privilege that the book of nature is open to you, and so patent that "he who runs may read." Reflect, then, for as you reflect, in like ratio, shall you practise your profession with success. I may, perhaps, be considered as encroaching on the province of my respected colleagues, the lecturers on medical jurisprudence, in calling your attention to this case in a medico-legal point.

Severe injuries, as you see, may be inflicted on the foetal head by the act of parturition, which you might be disposed to regard as the consequence of violence ap-

plied after death. The circumstances of this case will teach you to be cautious in your evidence, and you will anxiously look for some corroborating facts before you determine to implicate the character or the life of an individual by a charge of infanticide.

EXCITEMENT OF PREMATURE PARTURITION.

To the Editor of THE LANCET.

SIR:—If you think the following cases of artificial induction of premature labour worthy of introduction into the scientific columns of THE LANCET, you will, by their insertion, oblige your most-obedient servant,

EDWARD AUGUSTUS CORY, M.D., M.R.C.S.
Cannon-street-road, Sept. 29, 1840.

Mrs. H., of short stature, and about 35 years of age, had twice undergone the operation of embryotomy. I attended her for the first time about six years since, when the same operation was again considered necessary, and was performed in the presence of a most respectable practitioner. The pelvic deformity was of the reniform character, the space between the sacro-vertebral angle and the symphysis pubis (conjugate diameter) being about two inches and three-fourths. It was consequently determined, should the recurrence of pregnancy render it necessary, that the premature induction of parturition at the seventh month of utero-gestation should be had recourse to, as affording the only means of saving the infant from the murderous application of the perforator. In September, 1837, she had arrived at the seventh month of another pregnancy. From some remarks and cases which had been published by a high obstetric authority (Dr. Francis Ramsbotham), it appeared that he had completely succeeded in effecting the induction of premature labour "*solum ope secalis cornuti.*" I was therefore led to employ that substance according to the formula suggested, viz.—

Ergot of rye, ʒiij;

Boiling water, ʒviij; infuse for half an hour, and add

Dilute sulphuric acid, ʒij;

Simple syrup, ʒij;

Compound tincture of cardamoms, ʒiij;

Let two tablespoonfuls be taken every four hours.

The first dose of this mixture was ordered at 2, P.M., on the 14th of September, 1837. At 6, P.M., soon after the administration of the second dose, the uterine energy became slightly excited; and it was interesting as well as satisfactory to observe its gradual