clamp was removed on January 29th. The highest temperature recorded was a little over 100° F., and the recovery was uneventful. In cutting away the uterus some thick, dark blood escaped; when emptied from the uterus there was 4 ounces; the tube with its ovary weighed 6 ounces (Fig. 2).

Fig. 2.—Right Fallopian tube and ovary, uterus cut away.

In the record of the first operation it was noted that the patient first menstruated three years previously, not again for eighteen months and then only slightly, never since. There was an indistinct recollection of some injury at the age of 11, but about four months before her first admission she was knocked down and sustained some injury to the abdomen, which confined her to bed for several days. When admitted the vagina was examined; there was a small aperture in a transverse septum at the upper part, which no doubt became quite occluded, for it could not be found afterwards, nor could the cervix be defined through the obstruction; the occlusion was, therefore, practically complete. The patient has remained in good health since the time of the operation.

REMARKS ON A CASE OF CONGENITAL RICKETS.

By T. C. RAILTON, M.D. LOND., M.R.C.P.,
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CASES of rickets in the full tide of evolution at the time of birth are rare, though the milder forms of development are not very infrequent. I have seen well-marked beads upon the ribs of infants two months old, which served to show, I think, that the disease had originated during foetation. But of actually advanced rickets at birth, published cases are few in number, at all events so far as my knowledge extends. Amongst other observers, Jules Guérin, writing in 1837, mentioned having met with three cases of congenital rickets out of a total of 346 cases of rickets at all ages. Léon Tripier, in his article in the *Dictionnaire Encyclopédique*, written in 1874, stated his belief that the disease could commence as early as the third month of intrauterine life. Bode in 1884 showed an infant stillborn at seven months with symptoms said to be confirmed by a microscopical examination of the bones. Dr. Thomas Barlow exhibited a case at the Clinical Society of London in 1838, the features of which bore a striking resemblance to the case I am about to describe.

A. W., aged 7 months, was brought to the Clinical Hospital on April 21st, 1893, on account of certain deformities of the limbs, which are shown in the accompanying photograph.

Personal History.—Her mother stated that these deformities were in existence at the time of her birth and that the peculiar softness of the back of the head, to be presently mentioned, was remarked about the same time. The child had always sweated a great deal, and her limbs had been noticed to be tender when they were handled, especially the left arm. These points were, of course, carefully inquired into, and, apart from the evidence of the bones themselves, which one could hardly imagine to have become so completely and universally deformed had the rickets commenced after birth, there remained no reasonable doubt that

the child had come into the world with the disease fully developed. She had been brought up at the breast until she was 2 months old, and subsequently she had been fed upon condensed milk. She had not cut any teeth.

Family History.—There was no family history pointing to syphilis; the mother certainly had miscarried once (after the birth of her second living child), but none of her children had shown any symptoms either of snuffles or rash. She herself had suffered from rickets in childhood, and as a consequence had bow legs and a somewhat contracted pelvis. Of the four other children of the family, I had the opportunity of examining one, aged 2½ years, and found beading of the ribs, enlarged epiphyses of the radii, slightly bowed tibiae, but no signs of syphilis. The mother had not been in ill-health during the time she was carrying the patient.

Condition on Admission.—On her admission the following notes of the child's condition were taken. She has an intelligent face, with good though very thin features, the sucking pads showing distinctly. Her height is 18 inches instead of 24, her weight 6 lbs. instead of 19 lbs. Her limbs and body, except the abdomen, are emaciated. There are no blood extravasations and no indications of cachexia. The forehead is rather bossy, but the vertex of the skull is not flattened. The anterior and posterior fontanelles and the sagittal suture are widely open, and there are small lateral fontanelles at the inferior angles of the parietal bones. The membranous part of the occipital bone is quite unossified, so that it feels soft and yielding wherever pressure is applied. The neck is thin but not short, and there are no fatty swellings. The thyroid gland can be felt. The chest has the sternum thrown forwards, and there are well-marked beads at the junction of the ribs with their cartilages, and also smaller beads behind in the region of the angles. In front a deep transverse groove passes outwards and downwards from the ensiform cartilage. The abdomen is globular, and shows no enlargement of either liver or spleen. The patient moves both upper and lower extremities perfectly well. The arms are shortened by the extreme distortion of

the humeri, so that the tips of the fingers barely reach the junction of the upper and middle third of the thighs. At the upper end of each humerus there is an abrupt bend, with the convexity turned towards the axilla, and the corresponding receding angle is visible on the outer side of the arm below the acromion process. There is no thickening of the shafts of the humeri or of any other bone. In each forearm there is a curvature of the radius and ulna, with the concavity forwards, especially marked on the left side. There is little or no enlargement of any epiphysis in the upper extremities. The hands are small, and have long, delicate, tapering fingers. The lower extremities are greatly shortened by their various curvatures, and are habitually folded in tailor fashion, much the same, I imagine, as they were in the womb. The lower epiphyses of the femora are enlarged. The femora themselves are much curved, with the convexity outwards. In the middle of the left femur there is a green-stick fracture, bending the lower half forwards and causing a projection behind and externally. The tibiae are the most deformed bones in the body, the upper two-thirds in each leg being much curved, with the convexity forwards, while at the junction of the lower with the middle third, there is an abrupt bend backwards, leaving a strongly projecting angle in front. The lower third on each side has two curves, so that there is a convexity both forwards and outwards. On the left side this double curvature is exceedingly abrupt. The feet are small and well formed.

After-history and Treatment.—After admission it was observed that the child perspired profusely during sleep, so that the sweat stood in beads upon her forehead. She showed great tenderness in the

limbs when they were handled. Five days after admission she suffered from a rather severe attack of bronchitis, but recovered in the course of another week. She was kept under treatment in the hospital nearly five months, and was then sent home very much improved, and having gained one pound and three-quarters in weight. The treatment adopted was as follows: Cod-liver oil and iodide of iron were given by way of medicine, and on May 28th the right leg was forcibly straightened by my colleague, Mr. Southam, and put up in splints. On June 2nd the left leg was treated in the same way. A month later the splints were removed, and extension was applied to both legs. On July 19th the following note was taken: "The limbs are straighter, the legs being firm, and can be handled without any pain." With the view of straightening the femora, splints and plaster-of-paris bandages were applied on August 18th, but without much improvement being effected. After her discharge from the hospital, the child was brought once to the out-patient room, and looked very well, but I heard a few weeks later that she had died from broncho-pneumonia, after a very brief illness.

These cases of intrauterine rickets help to show that we are still far from an adequate explanation as to the causation of the disease, that is, if it be accepted, as I think it should, that the two forms, postnatal and antenatal rickets, are identical. Improper diet, damp, and want of sunlight, often apparently potent factors in the production of the disease, cannot be assigned as exclusive causes. It would appear that some underlying influence affecting nutrition, of the bones especially, and perhaps acting through the nervous system, may be set in motion by a variety of causes.

The fact of the mother in the above case having suffered from rickets in childhood, and of the patient's brother also showing signs of the disease, appears to me to be worthy of consideration as supporting the view long since suggested by Trousseau and others, that heredity plays a part in the etiology of the disease, though to what extent it does so we have no evidence at present to show.

MEMBRANOUS VAGINITIS AND ENTERITIS.

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HISTORY OF CASE.

E. M. C., aged 39 years, a single woman of frail *physique*, medium height, and dark complexion, was first treated for membranous discharges from the vagina in 1883. Menstruation began at 14. She was regular every month until the "shreds" appeared. The catamenia were accompanied by severe pain. The shreds began to appear when she was 26 years of age; since then the catamenia have been very irregular. The passage of the shreds took place during and in the intervals between the menstrual periods; it was more abundant with the menses, and was accompanied with "stinging, smarting, and heavy shooting pain." On two occasions I had an opportunity of seeing the patches upon the vaginal wall. They were about the size of a shilling, and resembled closely patches of diphtherial membrane without surrounding signs of inflammation. When detached they left a slightly reddened but unbroken surface.

Urinary troubles had been severe. She said that in the beginning of her illness she passed "very heavy gravel" and some blood. Occasionally there were periods of total suppression of urine, at the close of which, with "slenting, tearing pains," the shreds would pass accompanied by urine and sometimes blood. Incontinence of urine was for a long time a prominent symptom. The urine was generally alkaline, and it rapidly became foetid on standing; it contained no albumen, and presented no special microscopic characters.

For some years tumefaction and great tenderness of the bowels had been experienced. Shreds were passed in comparatively small number from the rectum. These had been overlooked by the patient till her attention had been directed specially by me to the *fæces* in 1887. She was always very constipated. The appetite was very capricious; the tongue generally coated with white fur. At irregular intervals the patient suffered from attacks of retching and vomiting, lasting for about twenty-four or forty-eight hours, accompanied by marked prostration, the temperature going up to 101° F. She complained at this time of acute pain in the epigastrium. No increase in the number of shreds was observed during these attacks. She attributed them to the separation of flakes in the bowels.

From 1883 till 1889 a pustular rash and deep ulcers appeared

in the left arm and forearm and the left side of the face and head. The rash was apparently worse during the menstrual periods, and the recently-healed ulcers would often burst open at these times. The hair of the head was almost completely shed at this time. Between 1885 and 1887 the rash only appeared at the menstrual periods. The patient is very intelligent. There is a marked emotional tendency. Tooth-ache and neuralgia have occasioned considerable suffering. She has always slept badly.

Recovery was very slow. In June, 1892, she returned from Bournemouth, very much better in all respects. The shreds had gradually diminished in number and in size and then finally disappeared, and she was able for the first time in ten years to walk about without much fatigue. Since 1892 there has been occasional irritability of stomach and intolerance of food, and she has on two occasions suffered from gastric ulcer.

Treatment was directed chiefly to improving the general health. For the relief of pain hot applications were applied to the abdomen, and an occasional blister, with morphine internally. Of many remedies tried, the only one which seemed to exert any good general effect was arsenic. This was pushed to its full physiological limit for considerable periods, the membranes diminishing in size and number during its administration.

DESCRIPTION OF FALSE MEMBRANES.

The membranes, when I first saw the patient, were some of them from 3 to 4 inches long and 1 to 2 inches wide. Those in my possession now are about the size of a florin, irregular in shape, some opaque, others translucent. The outer surface is smooth, the inner rougher and thrown into folds. Under the microscope they are seen to consist of a structureless matrix in which epithelial cells and granular *débris* are embedded. The cells here and there exist in layers. This is especially marked in the vaginal shreds, where the epithelium is distinctly stratified. In the intestinal shreds the epithelium is spherical and cylindrical.

My friend, Dr. Sidney Martin, has very kindly furnished me with a report upon one specimen. Chemically (1) it gives the xanthoprotein reaction for proteids; (2) it is insoluble in acids or alkalies; or (3) it is undigested by pepsin. His microscopical examination confirms my own. Dr. Sidney Martin further states that there are no bacteria, and that the cast is made up of hypertrophied epithelium and contains no mucus or other element.

PATHOLOGY.

The general opinion is that the pathogenesis of this very rare condition must be looked for in the nervous system. The wide distribution of the disease, the well-marked neurotic indications, the appearance of a pustular rash concurrent with increase in the discharge of membranes at the menstrual periods point to a nervous origin. The shreds *in situ* suggested a bacterial origin, but this was negated after examination. In the absence of pathological data in regard to the nerves and nervous system, the cause of this disease is as yet only a matter of speculation. For the inflammatory theory of Trousseau and some American writers there is no evidence, either in the condition of the organs upon which the membranes are found or the general symptoms, or the membranes themselves. The casts have been attributed to the "exhalents," to the administration of mercury, to the growth of sporules, to a papular eruption of the mucous membranes, and to a variety of other causes.

This disease would appear to be more common in America, where it is generally known as mucous colitis, than in this country. Membranous enteritis is met more frequently in women than in men. The disease is usually of long duration—sometimes nineteen and twenty years—but the termination is almost invariably favourable. The subjoined references to the literature of the subject may be of interest.

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