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.

By P. RHYS GRIFFITHS, M.B., B.S. (LOND.),
Medical Officer to Out-patients, the Infirmary, Cardiff.

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.

REFERENCES.

- Broca, *Bulletin de la Soc. Anat. de Paris*, 1854. Da Costa, *Amer. Jour. Med. Sci.*, October, 1871. Edwards, *Amer. Jour. Med. Sci.*, April, 1888. Goodhart, *Trans. Path. Soc.*, vol. xxiii, 1871-72. Harley, *Trans. Path. Soc.*, xi, 1859-60. Hutchinson, *Trans. Path. Soc.*, vol. ix, 1857-58. Light, *Practitioner*, March, 1893. Lambron, *Bulletin de la Soc. Anat. de Paris*, 1841. Woodward, *Med. Hist. War of the Rebellion*, pp. 365, 366. Whitehead, *Ranking's Abstracts*, ii, 1871.