

convalescent home, the abdominal circumference being at that time 18½ inches (a reduction of three and a half inches since operation), and the weight 2 st. 4 lb., the temperature having been normal for six weeks. He has stayed at the convalescent home for four weeks, has grown rapidly in health and weight, and a marked improvement has taken place in his mental condition. He walks without difficulty or pain and is not unduly fatigued on exertion. No medicinal treatment was employed.

**CASE 2.**—A healthy-looking male child, aged 14 months, was admitted into the hospital on May 14th, under the care of the late Mr. Steele, for radical treatment of double congenital hernia. A double truss had given good support to the right side but failed to properly retain the hernia on the left side. No other illness of importance had occurred since birth and no family history of tuberculosis was ascertainable. On the following day radical cure was performed on the left side. The usual incision having been made the dissection was carried down to the sac, which was only freed with great difficulty owing to close adhesions probably caused by the ill-fitting truss. The sac, which was large and contained a considerable amount of serous fluid, was opened at its lower extremity, and the child coughing at that moment a coil of intestine protruded. A granular appearance of the surface of the bowel being noticed, the loop was drawn out still farther and on closer investigation was seen to be studded with tubercles chiefly on its free border; tuberculous patches were also observed on the mesentery. The sac was slit up and was affected in a similar manner from the neck downwards for about three-quarters of an inch. It was removed after ligation of the neck, the size of the inguinal canal was reduced by sutures and the operation was concluded in the usual manner. The sac and a few of the tubercles which had been snipped away with fine scissors were given to Dr. Eyre, who kindly made an examination, identifying the bacillus tuberculosis by primary microscopical examination and reproducing the disease in a rabbit by inoculation. The circumference of the abdomen at the umbilicus on the day after the operation was 17 inches. Nine days later the stitches were removed, the union of the skin edges being perfect. On June 5th, three weeks after the operation, the abdominal measurement had increased to 18½ inches with some distension but no signs of fluid. On June 12th, nearly three weeks after removal of the stitches, the scar, which up to this day had appeared perfectly sound, broke down in the same manner that, after removal of tuberculous glands, an apparently healed wound in the neck breaks down some weeks later if at the time of the operation the tissues were infected by the escape of caseous matter. The wound healed in a week but the scar was now broader and of a less healthy appearance than formerly. The temperature for some time had risen each morning to 102° or 103° F. The patient remained in the same condition until the beginning of July when diarrhoea set in, the appetite failed, and weight was lost rapidly. On July 4th the scar again broke down. On the 7th two slight convulsions occurred, followed by the symptoms of tuberculous meningitis, from which the child died on the 9th.

**Necropsy.**—At the post-mortem examination a state of general tuberculosis was found. Both the visceral and parietal layers of the peritoneum were studded throughout with tubercles, which in many places were aggregated together so as to form masses as large as sixpences; there was a moderate excess of serous fluid. The lungs showed evidence of extensive tuberculous invasion. The pia-arachnoid covering the base of the brain and in the Sylvian fissures was opalescent and opaque, containing deposits of small greyish-white tuberculous nodules. There was no hydrocephalus and the dura mater was apparently unaffected.

**Remarks by Mr. SELLORS.**—Case 2 shows how a well-marked tuberculosis of the peritoneum may exist in an infant and its presence be unsuspected, for the patient from all accounts had enjoyed apparently perfect health up to the time of admission; and it also shows how rapid may be the development of a general tuberculosis starting from the peritoneum, for I am convinced that the disease must have commenced in that membrane, as no physical signs of pulmonary disease were observed till within a week and no nervous phenomena occurred till within two days of death. If the exposure of the abdominal cavity which occurs in the radical treatment of inguinal hernia may be considered as equivalent in value to a median laparotomy, the rapid course of the disease after the operation would be a strong argument

against early surgical interference. The benefit resulting from the operative treatment of the disease in an advanced stage is well shown by Case 1.

## HOSPITAL FOR WOMEN AND CHILDREN, LEEDS.

### A CASE OF OSTEOMALACIA SHOWING THE EFFECT OF OÖPHORECTOMY IN CHECKING THE ELIMINATION OF PHOSPHATES BY THE URINE.

(Under the care of Dr. E. O. CROFT.)

OUR knowledge of the etiology of osteomalacia is so very slight that it is practically impossible to give any satisfactory explanation of the action of removal of the ovaries in improving the condition of these patients. Curato and Tarulli<sup>1</sup> suggest that the internal secretion of the ovaries has the power of oxidising compounds of phosphorus, such as those which exist in bones, so that after the removal of the ovaries there is an increased deposit of calcium and magnesium phosphate in the bones, which thus become stronger. Rossner<sup>2</sup> claims to have found hypertrophy of the vessel walls with extensive hyaline degeneration in the ovaries which had been removed in three cases of osteomalacia. Phosphorus and also bone-marrow<sup>3</sup> have been said to produce great improvement in several cases of the disease, and it is advisable that their action should be further studied.

The patient was a married woman, aged 35 years, who had had one pregnancy, the child having been born about two and a half years ago. She had always lived in Leeds and there was no history of rickets, syphilis, or other general disease. Menstruation commenced at the age of 17 years and was irregular, painful, and scanty, recurring three or four times a year until after the confinement. Since then the periods had been regular every four weeks, lasting about five days and being free from pain. The present illness dated from about the sixth month of her only pregnancy. She then experienced great difficulty in walking and severe pain in the back and thighs, especially on the right side. The difficulty and pain increased so that although she could stand alone she could not walk without assistance. The pregnancy advanced to full term. She was attended by Dr. Fergusson of Leeds who delivered her by means of forceps of a healthy living child. The labour, though tedious and troublesome, presented no very special difficulty, so that it is probable that no great amount of deformity could have existed at the time. The secretion of milk ceased spontaneously at the end of about a week after the labour. The child lived some few months and died from small-pox. After labour the pain in the back increased, although walking became somewhat easier and the pain in the thigh diminished. She became able to walk from 200 to 300 yards without help, but was much exhausted after doing so.

The patient came under the care of Dr. Croft in the Hospital for Women and Children, Leeds, in April, 1899. At that time she appeared to be fairly well nourished and healthy, but was very lame and had much pain. There was tenderness over the spinal column and on the ribs, sacrum, and pelvis, but not over the long bones of the limbs. The abdomen was prominent and pendulous, but otherwise revealed nothing abnormal. The symphysis pubis was very prominent, the pubic rami receding from it to such an extent that the beak-like projection of the pubes could be grasped between the fingers. By vaginal examination the pubic arch was much narrowed and the ischial tuberosities were brought much nearer together than usual. Owing to this last fact it was difficult to examine the upper parts of the pelvis and the exact position of the sacral promontory could not be defined. The external measurements were: widest part of the iliac crests, 11½ inches; between the anterior superior spines, 9½ inches; and external conjugate diameter, 7½ inches. The patient was treated with rest, tonics, and various drugs to relieve pain and returned home in about a month somewhat relieved.

Dr. Croft saw the patient again in March, 1900. The symptoms had become much worse and the day on which he saw her was the last occasion on which she was able to walk

<sup>1</sup> Centralblatt für Gynäkologie, 1895, No. 21.

<sup>2</sup> Archiv für Gynäkologie, vol. xlviii., 1895, part 3.

<sup>3</sup> Edinburgh Medical Journal, May, 1896.

or stand alone. She was re-admitted to the hospital on April 23rd. Her condition then was such that not only was getting out of bed impossible, but movements of turning and reaching in bed caused severe pain in various parts of the back, pelvis, thighs, and lower ribs. Sleep was much disturbed by the pain and it was necessary to relieve it frequently by suppositories of morphia and hyoscyamus. The deformity of the pelvis had much increased. Externally the iliac crests were felt to present a much more acute curve so that the anterior superior spines approximated. The pubes was very prominent and its rami receded sharply. The external measurements were: between the iliac crests,  $10\frac{1}{2}$  inches; between the anterior superior spines,  $8\frac{1}{2}$  inches; external conjugate diameter,  $8\frac{1}{2}$  inches; and inter-trochanteric width,  $10\frac{1}{4}$  inches. The width of the pelvis had markedly diminished, the distance between the spines specially so, and the inter-trochanteric width was much less than normal owing to the inward and upward displacement of the acetabula. The sacrum presented an excessive curve. On vaginal examination the finger could only be passed behind the ischial tuberosities. The pubic arch was so narrow that, together with the tuberosities, it formed a slit-like space scarcely more than a quarter of an inch apart. It was impossible to reach the sacral promontory or upper part of the pelvis. Messrs. Reynolds and Branson kindly undertook to attempt to obtain a skiagram of the pelvis for Dr. Croft. The result was extremely indistinct. Whether this was due to the usual difficulties of obtaining a good result in the case of the pelvis or whether the failure was actually associated with the diminution of earthy matter in the bones it would be interesting to know.

The condition and amount of the urine were carefully noted. On May 23rd, a month after admission, and the patient being presumed to be in an average condition with regard to diet and so on, the urine was reported upon by the Clinical Research Association with the following result as far as regards the amount of phosphates present: phosphoric acid ( $P_2O_5$ ), 0.170 per cent., or 0.74375 grain per ounce; there was no albumose present; quantity of urine in 24 hours, 40 ounces; total phosphoric acid per diem, 29.74375 grains. The good effect said to be produced by oöphorectomy in osteomalacia is stated to be brought about by its causing in some manner a reduction in the elimination of phosphates by the kidneys. Curatulo and Tarulli (Rome, 1896) experimented on this subject by removing the ovaries of bitches while under average conditions of diet and excretion, the urine being carefully examined at intervals. After oöphorectomy the amount of phosphates (as  $P_2O_5$ ) in the urine was greatly and permanently diminished.<sup>4</sup> The result of observation in the present case, although only imperfectly carried out, is in accordance, so far, with these experiments.

On May 28th Dr. Croft performed double oöphorectomy. The operation was simple. At the time the condition of the pelvis could be thoroughly examined. In addition to the rostration of the pubes and the approximation of the ileopectineal eminences the depression of the sacral promontory and its inclination towards the left side were observed. Recovery was aseptic and normal, the wound being dressed and sutures removed on the tenth day, healing being perfect. During the four weeks after the operation the patient gradually improved. The pain became less so that no opiates were required and she became able to move about more easily and with much less pain. Standing was difficult and painful. On June 27th, one month after the operation, and the patient having resumed conditions of diet as before, an average sample of the urine was examined with the following result: phosphoric acid ( $P_2O_5$ ), 0.08 per cent., or 0.35 grain per ounce; quantity of urine passed in the 24 hours, 55 ounces; total phosphoric acid per diem, 19.25 grains. Comparing this with the amount passed before the operation a diminution is shown in round numbers of from 30 to 20 grains of phosphoric acid per diem.

*Remarks by Dr. CROFT.*—Osteomalacia being a very rare disease in this country the above case is, I think, worthy of record, especially as a somewhat rough observation has been made on the effect of oöphorectomy in checking the progress of the disease by causing a diminution in the amount of phosphates eliminated by the kidneys. This observation is, of course, very imperfect and would be of greater value if more repeated analyses could have been made, but it is of

interest as far as it goes, and I shall endeavour to trace the further progress of the case with a view to ascertain the ultimate effect of the treatment on the progress of the disease.

## Reviews and Notices of Books.

*A Handbook of the Gnats or Mosquitoes, giving the Anatomy and Life History of the Culicidæ.* By Major G. M. GILES, I.M.S., M.B. Lond., &c. London: John Bale, Sons, and Danielson, Limited. 1900. Pp. 8 + 374. Price 15s.

To the general reader, who is accustomed to speak of the mosquito, this work will be a revelation. Any smallish fly that bites is commonly labeled "mosquito," but if we restrict ourselves to the gnat tribe only, to which a large quantity of these belong, we are confronted with a swollen list of no less than 242 different species. Even in this country a man may, by judicious selection of the places which he visits, get himself bitten by some 24 different kinds of gnats. Naturally the vast majority of these forms have been discovered and described during the present century; in the year 1817, the author informs us, there were only 15 species known. It is probable, however, that there were quite as many bites then as now.

The reason for the aggressive attitude of these culicidæ, as the family name of the mosquito tribe runs, is not without mystery. It would seem that normally they feed upon the juices of plants. Mr. W. H. Hudson in one of his instructive and delightfully written contributions to natural history has pointed out how small a percentage of mosquitoes can ever get the chance of a good bite at a human being. This particular variety of food can therefore be hardly necessary to them or nature would either have abolished the mosquito or made better commissariat arrangements in their behalf. In such countries as Lapland, to which the author refers and which his present reviewer has visited, there is no doubt whatever about the attitude of the local gnat or gnats. Their mind is thoroughly made up from the first in favour of an animal diet. Instead of hovering in a tentative fashion round the victim they fly straight and with unerring precision to the most vulnerable spots upon the body of the pedestrian whom they desire to bleed. A few hundreds of their sharp lances is an experience which it is not easy to forget. In this more favoured country the common gnat (*Culex pipiens*) and allied species do not, as a rule, gratify their appetites by a fill of human blood. When they are stirred up to do so it would seem, according to the author, that the weather is responsible. "It is noticeable," he observes, "that whenever there occurs a spell of unusually hot weather we find in the press notices of the occurrence of mosquitoes, which, however, always turn out to be common indigenous species when submitted to a competent expert." In the glare of sunshine, we may imagine, they see men as trees walking and desert their vegetarian for a carnivorous diet. Next to the intermittence in the ferocity of British gnats the most remarkable fact about their biting propensities is that the females alone, save in one ascertained case, are the culprits. It is, perhaps, natural to expect this, since that sex, being the egg-producing sex, has need of more abundant nutrition than have the males. These tiny anthropophagi, moreover, are not content with merely taking their fill of our vital fluid: they leave behind them an unpleasant memento of their visit in the form of an irritant liquid which causes the tender tissues of many of us to swell up. This habit is not due to a sheer wish to produce as much torture as possible: it appears that the liquid which the insects secrete is useful as a means of keeping the substances upon which they feed in a proper condition for

<sup>4</sup> See Kelly: *Operative Gynaecology*, vol. ii., p. 167.