the 14th day, when the patient was discharged from hospital. When last seen, 12 days after the cessation of treatment, the scar appeared to be soundly healed.

CASE 7.—Native man, aged 30. Guinea-worm of the outer side of the left foot. The worm, which had first shown itself nine days earlier, was pulled out on the day the patient was seen, and about 3 in. of it broken off, the remainder being left in the leg. Intravenous injections of tartar emetic, 1 gr. each, were given on the 1st, 3rd, 5th, 7th, 9th, and 11th days—a total dose of 6 gr. The case was complicated by an abscess near the heel of the foot, which had to be opened on the 5th day. On the 7th day a guinea-worm (not the same one as had pointed on the outer side of the foot) appeared in the incision made into the abscess cavity; this worm was wound out. The original guinea-worm sore was almost closed on the 9th day, but on the 14th day about 5 in. of the worm came away, and the sore was not completely healed over until the 19th day. Six days later—that is, 14 days after the cessation of treatment—the sore appeared to be soundly healed.

CASE 8.—Native boy, aged 18. Guinea-worm of the outer side of the left foot. The worm had first appeared four days earlier; none of it had come away. The discharge from the sore contained living embryos. Intravenous injections of tartar emetic, 1 gr. each, were given on the 1st, 3rd, 5th, and 7th days—a total dose of 4 gr. After the fourth injection the boy ceased to attend for treatment, and it was found that he had left Accra and could not be traced. The ultimate effect of the treatment is therefore unknown, though he appeared to be doing well.

CASE 9.—Native man, aged 30. Guinea-worm of the inner side of the right foot. The foot was swollen and appeared to be forming an abscess; the sore was not open. A month earlier about 1 in. of the worm had been pulled out and broken off, and two weeks ago about 8 in. of it had been similarly removed. Intravenous injections of tartar emetic, 1 gr. each, were given on the 1st, 3rd, and 5th days, and on the 9th day, owing to a mistake, $\frac{1}{2}$ gr.—a total dose of only $3\frac{1}{2}$ gr. Almost immediately after the treatment was started the foot began to improve, and by the 10th day it appeared to be cured. When last seen, on the 13th day after cessation of treatment, the foot appeared to be sound.

CASE 10.—Native woman, aged 22. Guinea-worm of the inner aspect of the right foot, close to the ball of the great toe. The foot was much swollen and very painful. The worm had first appeared a week earlier, and 2 in. of it had been pulled out and broken off. The sore was discharging purulent matter. Intravenous injections of tartar emetic, 1 gr. each, were given on the 1st, 3rd, 6th, and 8th days—a total dose of 4 gr. Further treatment could not be given because the patient went away on the 9th day and was not seen again. At the time of the last injection the condition of the foot had improved considerably and the guinea-worm sore was almost closed.

Remarks.

In five of the ten cases the whole guinea-worm was still in the body at the time when treatment was begun. In two (Cases 2 and 4) the sore healed under treatment, and the worm did not come away; one of these cases was seen a month and one a week after the cessation of treatment, and appeared to be cured. In one (Case 5) part of the worm was pulled out and broken off during treatment; this case, nevertheless, did well and was apparently cured. In one (Case 3) the sore closed temporarily, but reopened, and the worm was eventually wound out. One (Case 8) was lost sight of at an early stage.

In five of the cases part of the guinea-worm had been pulled out and broken off before treatment was begun; all these cases showed signs of acute inflammation of the affected limb. The inflammation subsided and the guinea-worm sore healed in three of these cases—1, 6, and 9—the portions of

the worm which had not been pulled out remaining in the body but causing no inconvenience. One (Case 7) was complicated by the presence of a suppurating wound, so that the effect of treatment was not clear. And one (Case 10) was lost sight of at an early stage.

In all but one (Case 3) of the cases treated intravenous injections of tartar emetic, even in the small doses given ($3\frac{1}{2}$ to 9 gr.), appeared to have a beneficial action. They appeared to relieve the inflammation caused by the breaking of the worm, to effect the healing of the sore without the previous removal of the worm, and to shorten the duration of the affection. In most of the cases it was impossible to continue the injections as long as had been intended, either because the patients had left Accra or because they themselves had concluded, perhaps prematurely, that they were cured and in no need of further treatment. In the cases which were longest under observation it appeared as if the antimony had killed the guinea-worm in the body and allowed it to be absorbed. If this was actually the case the treatment would also, it may be hoped, kill guinea-worms which had not yet reached the surface. This would be an important property, as patients often develop a succession of worms.

Conclusion.

The observations recorded here fall very far short of a thorough test of the treatment. The total number of cases is exceedingly small, the appropriate dose of antimony has not yet been determined, and in the important matter of after-treatment observation they are conspicuously defective.

Accra is provided with an excellent pipe-borne water-supply, and guinea-worms are fortunately rare. The ten cases dealt with were collected one by one, only with the greatest difficulty. The occasional cases that are met with at Accra are, for the most part, in strangers and visitors to the town. Such patients are unsuitable subjects for the trial of a new treatment, because their attendance is irregular, and they can seldom be kept under observation after they are apparently cured. There are many more suitable places for the study of guinea-worm infections, and I can only hope that the observations recorded in this paper may lead to a full investigation in them of the therapeutic value of antimony.

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A CASE OF ABNORMAL DESCENT OF THE TESTICLE.

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THE following case, in which the testicle descended through the crural canal into the scrotum, the inguinal canal being absent and a bubonocoele complicating the picture, is interesting in that I have not been able to find reference to a similar one in the literature at my disposal.

The patient, a well-developed boy of 2, was admitted to Mr. T. Kay's wards in the Royal Infirmary suffering from threatened strangulation of a right bubonocoele. The bowel slipped back without manipulation after admission, and I operated on Dec. 13th with a view to performing an ordinary radical cure of an inguinal hernia. Mr. Kay, who kindly gives me permission to report the case, had been operating on another patient,

but saw the condition, and Dr. J. Dunbar, who was assisting me, confirmed the various points.

On exposing the external oblique the external ring could not be made out, and the cord was therefore picked up and isolated, when it was found to run into the abdomen through an aperture which did not admit the little finger. This aperture was situated below Poupart's ligament, and to the outer side of the spine of the pubes. The tip of the little finger, inserted with difficulty at a later stage, made out what appeared to be Gimbernat's ligament to the inner side, but it did not present the usual sharp margin. Below was the bone, covered with fascia, while on the outer side was a firm structure which was probably a misplaced reflexion from Poupart to the pubes, described in some books as separating the muscular from the vascular compartment—the ilio-pectineal band.

On applying gentle traction on the cord the scrotum became invaginated and the testicle came into view. The testicle was normal, and its attachment to the base of the scrotum undoubted. The hernial sac lay among the structures of the cord, and the vas was adherent to but separable from it. As the sac terminated about half an inch above the testicle the hernia was not of a congenital or infantile type. On opening the sac a soft yellow mass was found projecting into its interior, and springing from the outer and posterior wall of the sac. As its surface was glossy it was apparently covered with peritoneum, and it appeared to be embedded in the sac wall. Traction failed to bring this structure down to any appreciable extent, and hence its nature and connexions could not be determined. As it was not adherent to the tissues outside the sac, and presented no obstacle to introduction of the sac as a pad on the deep surface of Poupart, further examination was deemed inadmissible. I have seen a similar structure in the sac of a sliding hernia, and it is probable that the termination of the appendix or cæcum was close at hand, but this is surmise, as these parts were looked for but not found. If it was a portion of the plica vascularis it was separated entirely from the testicle, and terminated about one and a half inches above it.

The conjoined tendon was closely applied to the posterior surface of the external oblique and came down to, and appeared to fuse with, Poupart's ligament. There was no arching of the fibres of the conjoined, such as is normally present, and hence the transversalis fascia was not exposed to view.

The operation as such presented no points of special interest, and the patient is doing well. The testicle on the left side was very small, and was situated about the upper end of the scrotum. It was difficult to determine the route taken by the cord, but the femoral ring was certainly unduly large.

The condition here reported is apparently a very rare one, as Eccles, in his "Imperfect Descent of the Testicle," 1903, says: "Recent dissections during a radical operation upon the accompanying hernia have not shown the cord lying in the femoral ring, but always in the superficial abdominal ring."

SYPHILITIC SPONDYLITIS:

NEGATIVE WASSERMANN REACTION.

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SYPHILITIC spondylitis is a rare condition. Verneuil¹ appears to have been the first to draw attention to it in 1879, and Fournier² the first to describe a case in detail about the same time. Previous cases were probably regarded as tuberculous. In Fournier's case the lumbar vertebræ

were affected, the patient died of cachexia and general dropsy, and the lesions found at the autopsy were as follows: Sclerosing osteitis with purulent and caseous infiltration, almost complete destruction of one of the intervertebral cartilages, a large cavity in the lumbar spine, double psoas abscess, a gumma in the fourth left lumbar nerve, and atrophy of the gluteal muscles. The patient also had multiple gummas in the subcutaneous tissue and muscles, syphilitic orchitis, and cirrhosis of the liver and kidneys.

The case we report resembles Fournier's in affecting the same vertebræ, but differs in the absence of cavitation of the vertebræ, abscess formation, and muscular atrophy. In our case the process of new bone formation predominated over bony destruction. This is characteristic of most cases of syphilitic spondylitis and distinguishes them from tuberculous disease.

The patient, a man now aged 38, contracted syphilis in 1905. Treatment by oral administration of mercury was commenced during the primary period and continued for two years. Secondary symptoms were absent except for mild sore-throat. In 1911 he went through a six months' course of treatment, consisting of weekly injections of mercurial cream and iodide of potassium in doses of 15 up to 60 gr. daily as a precautionary measure previous to marriage, although no symptoms had occurred since 1905. In 1914 he began to suffer from pain and stiffness in the back, which was diagnosed as lumbago. As this did not improve with ordinary treatment, a Wassermann test was made, and this was negative. In 1916 the lumbar pain became worse, especially on rising from a sitting position, and he complained of pain down the left thigh. At this time nodes developed on the inner end of the right clavicle and on the inner malleolus of the right ankle, and he suffered from severe headaches, mental irritability, and insomnia. Except for the node on the clavicle, which persisted, all these symptoms yielded to treatment with large doses of iodide of potassium and mercurial inunction.

The Wassermann reaction in 1917 was again negative. He then had a course of six intravenous injections of salvarsan at monthly intervals, after which his general health improved and the lumbar pain disappeared.

However, after the fourth salvarsan injection he had sudden acute pain in the right loin resembling renal colic. A radiogram taken at this time was negative for renal calculus, but revealed lesions of the lumbar spine consisting of pronounced bulging of the outline at the level of the second and third lumbar vertebræ on the right side and at the level of the third and fourth vertebræ on the left side. These swellings were due to new bone formation on each side of the intervertebral cartilages, the contiguous vertebræ being thereby united by bony deposit bridging over the cartilages, thus accounting for the rigidity of the lumbar spine.

The present condition is as follows: General health good, although there is some thickening of the radial arteries. The lumbar spine is quite rigid, but painless. Remains of node on clavicle still present. Reflexes normal. No paresis or atrophy of muscles. Wassermann reaction negative.

Remarks.

Noteworthy features of this case are the rarity of the lesion, its occurrence in spite of treatment, and the persistently negative Wassermann reaction, the first test being made when the vertebral lesions were in active development. All tests were made at reliable institutions, the first and second in Government laboratories in India and the third in a well-known London hospital. This case would therefore appear to serve as a warning against placing too much reliance on the Wassermann reaction, both as regards diagnosis and prognosis.

¹ Gazette des Hôpitaux, 1879.

² Annales de Derm. et de Syph., 1881.