only has to approach such cases with the above considerations in mind to discover some evidence of appendix irritation in a large proportion. Finally, even in the absence of such evidence, the chances of failure to cure a case of threadworms, without removal of the appendix, should receive consideration, for it seems probable that the really obstinate cases may all be explained by the fact that there is a nursery beyond the reach of drugs passing through the intestine. Another case is doubtless an illustration of what is possibly a fairly common type. Twelve years ago a lady aged 26 complained that no one had been able to cure her of threadworms, from which she had suffered since childhood. At that time I had never met with an incurable case, and felt pretty confident of finally relieving her. But I failed, and the affection continued intermittently until four years ago, when, visiting relations, she developed an attack of appendicitis, and was operated on; and now she is free from the pest which troubled her both physically and mentally for so many years. Though proof is wanting, the explanation is fairly obvious.

REFERENCES.

- ¹ BRITISH MEDICAL JOURNAL, 1912, vol. i, p. 485. ² *Ibid.*, p. 415.
³ *Common Disorders and Diseases of Childhood*, 1909, pp. 267, 271.

FOREIGN BODIES IN THE INTESTINE.

BY

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THE following case is of interest as an illustration of the manner in which Nature is sometimes capable of dealing with foreign bodies in the intestines. The patient was a male lunatic aged 33, who complained of pain in the abdomen, and whom I was asked to see late at night.

I found him lying on his back with his legs flexed upon the abdomen. His pupils were dilated, he had a temperature of 100°, a pulse of 112, his tongue was clean, and his bowels were said to have acted that day. He had not been sick. I was informed that he had on previous occasions passed stones (not gall stones). The abdomen was slightly distended and tender all over; it moved fairly well on respiration, was tympanitic, and nothing definite could be made out. Nothing was detected per rectum, and having excluded as far as possible all forms of external strangulated hernia, and finding no physical signs in his chest, he was ordered an enema and restricted to fluids.

The next morning (January 20th, 1911) he was much the same. He had slept well, there had been no result from the enema, he had not been sick, his temperature was 100.6°, pulse 112, and his tongue clean. He was ordered another enema. In the evening at six his temperature was 100°, his pulse 120, and although there was still no result from the enema he seemed somewhat better. He was ordered ol. ricini, 3 jss.

The next morning (January 21st) his temperature was 101°, pulse 120, and his tongue was still moist and clean; urine normal. The abdomen was now well distended and tender, no peristalsis was visible, but there was resistance over the sigmoid flexure, which was dull to percussion, but still nothing definite could be made out. There was no vomiting, and as the bowels had not acted he was again ordered a large enema, but still with no result. Some flatus came away, and he was ordered calomel gr. viii & belladonna.

On the 22nd the patient seemed better, the temperature was 98.4°, pulse 116, his tongue was furred and he had not been sick. The bowels had moved, and very offensive dark liquid material mixed with mucus came away. There was less abdominal distension, but there was still dullness over the sigmoid flexure. He was ordered ol. ricini 3j.

On the 23rd he was no worse, his temperature was 100°, pulse 120, there was no sickness, and the bowels had acted, but only the same offensive material coming away. There was still some abdominal distension, and by now a mass could be made out in the sigmoid flexure, which was dull to percussion and painful.

In the evening his temperature had risen to 101.6°, his pulse was 120 and soft, he had not been sick, and the bowels had acted again, the same offensive material coming away. He was quite comfortable.

On the 24th there was a hard substance now easily detected in the sigmoid flexure, which was irregular in outline and painful and dull to percussion. His temperature was 100.6°, pulse 120, and tongue furred. He was not sick, and he was still passing the offensive material. In the evening he continued much the same, and one felt fairly certain that he was dealing with a case of a foreign body causing obstruction.

On the 25th he did not seem so well, his temperature was 99°, and his pulse was 120, and he had not been sick. There was now marked abdominal distension and especially on the right side. The abdomen was tender on palpation, and not only the sigmoid flexure, but the whole of the descending

colon also was found to be quite dull to percussion and entirely filled with some hard material forming one long continuous dullness, whilst the other parts were tympanitic and much distended. An examination of the rectum revealed nothing except liquid faeces, so he was ordered another enema and visited soon after. After the enema had been given and with little result, the bowels acted themselves in the course of an hour or so, and he passed a very hard substance which was very offensive and which on subsequent examination proved to be a piece of wood measuring 3½ in. long by ¾ in. thick, and pointed at one end, the whole enveloped in a piece of blanket 13 in. long by 1½ in. wide, and covered with hard faecal material. After this had come away the abdomen was again examined, and the hard irregular substance which was so obvious in the sigmoid flexure was missing. He slept in the afternoon, and early in the evening he again passed another mass, which proved to be a similar piece of blanket 9½ by 1½ in. firmly wound round smaller pieces of wood, the largest of which was 2½ by ¾ in. After this had come away he felt considerably better, his temperature was 101.6° and his pulse 120. The abdominal distension was now much less, and one could still make out something hard in the sigmoid flexure and descending colon, which was considered to be more foreign material of some kind.

On the 26th he seemed much better. The temperature was 99°, his pulse 120, regular, tongue still furred. The bowels had been open two or three times during the night, and more foreign material had come away, including wood, blanket, pieces of stone, coal, buttons. The abdomen was now much less distended, and although painful, more foreign material could be made out in the sigmoid flexure and descending colon. No further treatment was employed, and in the course of the day his bowels had acted many times, the patient still passing pieces of blanket, shirt, jacket, stones, buttons, etc.

After this date the patient passed no more foreign bodies, rapidly improved in condition, and within about ten days his convalescence was complete.

The time occupied in the passage of the various articles was 24 hours, during which period the following things came away:

- 14 pieces of wood, ranging in size between 3½ in. by ¾ in. and 1 in. by ½ in.
- 12 pieces of stone, ranging in size between 2 in. by 1 in. and ¾ in. by ½ in.
- 20 pieces of cloth, ranging in size between 12 in. by 1 in. and 1 in. by 1 in.
- 10 pieces of cotton neckties, ranging in size between 13 in. by 1½ in. and 4½ in. by 1½ in.
- 40 pieces of blanket, ranging in size between 13 in. by 1½ in. and 2 in. by 1 in.
- 19 pieces of fustian and corduroy, ranging in size from 12 in. by 1 in. to 2½ in. by ½ in.

To complete the list the following must be added to the foregoing: 8 linen buttons, 4 brass buttons, 5 match stalks, 1 overcoat button, 1 piece of tape 3 in. long, 5 boot-laces 6 in. long, 2 pieces of linen shirt 6 and 9 in. long respectively by 2½ in. wide, the bottom piece of a match-box, a sharp piece of the bowl of a clay pipe (¾ in. square), besides several large pieces of coal, rolled-up paper, wool, and 7 long pieces of knotted handkerchiefs, etc.

The case is of interest, not only from the number of articles that came away, but also from the fact that no complete obstruction was caused in any part of the alimentary canal from the oesophagus downwards, that the ileo-caecal valve formed no obstacle to their passage, and moreover that there was no perforation. That inflammation (if not ulceration) of some part of the gut occurred there is no doubt, from the physical signs and from the offensive material which came away.

The sequela of this case is probably even of greater interest than the original condition of the patient, inasmuch as in my opinion and also in the opinion of my colleague, who took the case over during my temporary absence, there were absolutely no physical signs to indicate the presence of any further foreign bodies, indeed the physical signs and symptoms were those of a healthy individual. The patient was ordered, both by myself and my colleague, to be kept under constant observation, and therefore practically speaking could have had little opportunity of swallowing further foreign material, yet, as the sequela will show, the patient had numerous foreign bodies in his intestines at the autopsy which was held on February 24th. The case is as follows: On February 6th, namely, six days after the patient had been declared to be convalescent and was up and about taking ordinary food and apparently in a normal state of health, he was sent to bed with diarrhoea. He had no temperature, but the abdomen was slightly distended and tender all over.

The next morning (February 7th) the diarrhoea was better. There was no temperature, but the abdomen was much the

same. At 6 p.m. his temperature had gone up to 101°; the abdomen was more distended and tender, and rigid over the lower part. Turpentine stupes were ordered, and at 8 p.m. he seemed much relieved.

The next morning (February 8th) the temperature was 99°, and the abdominal symptoms less marked, but by now a hard substance could be felt in the left iliac fossa, and also a similar mass but not so large in the right iliac fossa. The stools were nothing unusual, tongue slightly furred. At 6 p.m. his temperature was 100°, pulse 132, respirations 20, and the abdomen was again distended, and rigid over the lower part and very tender. Turpentine stupes were ordered every four hours.

February 9th. The patient's temperature this morning is normal, but his pulse is 120, the abdomen is much less distended but still rigid over the lower part, bowels open twice during the night, but nothing unusual detected. A hard mass can still be felt on the left side of the lower part of the abdomen.

February 10th. The patient is much the same, bowels open, a hard mass can still be felt in the left iliac fossa. Calomel gr. vi ordered.

February 13th. The patient is much the same, no change.

February 15th. The patient still remains about the same. The stools are now offensive, liquid, and of a dirty brownish colour, and very acid in reaction. The abdomen is a little distended and rigid, and somewhat tender. Mass still felt on left side.

February 18th. The patient is worse, very weak. He has now incontinence of urine and faeces.

February 21st. The patient is sinking, pulse is extremely weak. Incontinence, very emaciated. Sordes on lips and teeth. He has a peculiar brownish mottling of the abdomen, and a very curious but not unpleasant odour emanates from the surface of the body. The hard mass (? foreign body) can still be felt in the right iliac fossa.

February 22nd. The patient is rapidly sinking; the temperature is subnormal. He passed a shirt-button with a small piece of shirt attached late last night. The button was quite black, and had evidently been in the intestines some time. Still has incontinence, and the mottling is now general over the body and limbs. He died at 2.30 p.m.

At the *post-mortem* examination (February 24th) there was marked chronic pelvic peritonitis. The lower portions of the intestines were absolutely matted together. There was marked congestion of the jejunum and ileum, and also of the large intestines; but there was no ulceration and, moreover, no perforation.

On opening the intestines, the following is a list of some of the articles removed:

20 pieces of linen, ranging in size from 11 in. by 3½ in. to 1 in. by 1½ in.

14 pieces of blanket, ranging in size from 4½ in. by 2½ in. to 2 in. by 1 in.

6 pieces of wood, ranging in size from 3½ in. by 1½ in. to 1½ in. by ½ in.

6 pieces of neckties, ranging in size from 5 in. by 4 in. to 3 in. by 3½ in.

To the above must be added 50 shirt and trouser buttons, 7 match stalks, 3 large pieces of cinder, 1 long boot-lace, 1 overcoat button, and 1 piece of handkerchief 4 in. square, besides a quantity of rolled-up paper.

The majority of the articles were found in the jejunum and ileum, and several of the pieces of blanket were firmly wound round pieces of wood and covered with faecal accumulation. From the first to the last there was never complete obstruction; there was no vomiting and no haemorrhage.

A laparotomy was discussed, but for many reasons was not considered advisable. The cause of death was toxæmia following upon acute enteritis, and also from peritonitis due to the invasion of the *Bacillus coli* through the weakened intestinal wall.

THE report of the Board of Management of the Perth Public Hospital, Western Australia, for the year ending June 30th, 1911, shows that 2,247 casualties and accidents, 2,418 in-patients, and 3,781 out-patients were treated at the hospital, while at the infectious diseases branch at Subean there were 463 in-patients, making a total of 8,909, compared with 8,869 in the previous year. The deaths numbered 248, being 8.6 per cent. of the in-patients treated. The principal causes of death were: Typhoid fever, 26 out of 163 treated; diphtheria, 5 out of 155 treated; and 60 from consumption, out of 117 treated. In the electrical and x-ray departments a large number of cases were treated. The weekly cost for each in-patient, after making allowance for out-patients, was £1 15s. in the general hospital, and in the infectious diseases branch £1 6s. 7d.; the cost per bed occupied in hospital £91 4s. 10d., and in the fever wards £60 3s. 6d.

OBSERVATIONS ON AN INFANT FED WITH BARLEY WATER AND COW'S MILK.

BY

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THE notes of this case are short, but in no way biased or unconfirmed, as the infant was at the time staying in my house.

A healthy infant, 9½ lb. at birth in the autumn in excellent hygienic surroundings, and breast-fed, showed signs of intestinal derangement one week after birth, crying, chiefly at night; loose motions, sometimes greenish. It was in evident pain. Treatment with castor oil, hydrarg. c. cret., pulv. ipecac. co., sodium bicarb., alone and in combinations, gave only temporary relief. The mother was a highly strung individual, easily excited, and worried a great deal, but otherwise healthy, and apparently had a sufficiency of milk, for the infant gained 1 lb. in weight in three weeks.

As no treatment of mother or child seemed to make much difference, it was decided to stop the mother's milk, and the infant was weaned on barley water and cow's milk, 3 oz. of the former to 1 oz. of the latter being given every two hours.

There was some slight improvement at first, but within a few days the condition was as before, with the addition of the passing of much flatus, both eructations and by the anus. The abdomen was always soft and not painful to pressure. There was no vomiting and no rise of temperature. The motions varied in frequency from four to eight in twenty-four hours. There was no appreciable straining. Undigested curds showed only occasionally, and mucus was marked only when the stools were more numerous. Drugs were again tried with no better effect than before.

The milk was the best procurable in sealed bottles and carefully sterilized before each feed by heating in a water-jacket saucepan. The barley water was made daily from Robinson's patent barley according to directions on the tin. The proportion of milk was increased, and the addition of sodium citrate, 1 grain to the ounce, and also dill water, but still the infant cried and suffered from pain and flatus. The time between the feeds was lengthened to two and a half hours, but had no effect.

After about ten days of this, plain water was substituted for the barley water, when it was noted that the flatus rapidly diminished and the loose motions equally rapidly became constipated. The crying also diminished, or rather changed its character from one of pain to one of fretfulness. To try to correct the constipation, a small proportion of barley water was added to the mixture of milk and water. This immediately again produced flatulence and painful crying, although it corrected the constipation. A teaspoonful of sugar was used in each feed from the beginning, sometimes cane sugar, and at another time milk sugar. The sugar appeared to make no difference to the flatulence, nor to the constipation.

The addition of fat to the milk and water was now tried in the shape of an emulsion of pure linseed oil. It seemed to answer its purpose very well, as I have often found, particularly in older children. Still the infant was restless and cried too much.

The food was now changed to pure sterilized cow's milk, the time between the feeds increased to every three hours, and 4 oz. to 5 oz. taken at each feed. The result has been perfectly satisfactory.

Of course it is not my intention to draw any general conclusions from observations on one case, particularly as infants are proverbial for their "trickiness" in feeding. I have, however, noticed other cases that appear similar, and by drawing the attention of others to the subject we may yet hope to narrow down the difficulties attendant on infant feeding.

The points I would emphasize in the above case are:

1. Barley water caused "wind" and a tendency to diarrhoea. It probably underwent a fermentative action.

2. Whole ordinary cow's milk may suit an infant where diluted cow's milk fails.

I understand that physiologists say there is no starch-converting ferment in the stomach of an infant under 5 months, hence physiologically barley water should be contraindicated. It is also well known how easily barley water will ferment and become acid under cleanly conditions outside the body. Is it not more likely to do so in the stomach and intestines?

Finkelstein's "albumen-milk" for infants, particularly those infants suffering from diarrhoea, is well known, and has been highly successful on the Continent though not much used in this country. It is, therefore, interesting to note that he founds the treatment on the idea that these cases are due to fermentation as distinguished from putrescence. Hence his food contains a maximum of putrescible substance in the shape of albumen, and