March 6th, 10 A.M. The bowels acted. At 10 A.M. and 3 P.M., the urine passed with the motions. The child looked wonderfully better; the eyes were bright, and the pupils of medium size. There was a little more tympanites than yesterday, but no tenderness of the abdomen.

March 8th. The bowels acted regularly. Beef-tea and custard-pudding were ordered.

March 12th. The bowels had acted each day since last report; and the urine, for the first time since his admission into hospital, was collected. It was so pale that it could scarcely be distinguished from water; it was of specific gravity 1004, non-albuminous. He now left the hospital.

REMARKS.—Two questions suggest themselves for consideration.

1. What was the nature of the lesion which existed in this case and produced obstruction of the bowels? In many instances of obstinate constipation, the cause is obscure. The first thought that occurred to me was that perhaps the child might have swallowed a piece of fish-bone when he ate a sole on the evening before the commencement of the symptoms. If so, this might have set up irritation in the intestinal canal and caused constriction from reflex spasm of its fibres. The symptoms rather resembled intussusception in the suddenness of the pain, quickly succeeded by vomiting, then constipation, and later on a semi-purulent discharge from the rectum, having a reddish tinge. It is evident that, whatever might have been the cause of obstruction, the symptoms were not acute; for no elevation of temperature was observed, nor peritonitis, nor abdominal distension. So far, then, there was great reason to hope that rest and sedative medicines might overcome the evil; but the prostration of strength, which had been increasing from the commencement of the attack, and the incessant vomiting, high pulse, and drowsiness, indicated some condition more serious than what might be called purely functional constipation. Obscure as the case may be in some respects, we cannot dismiss the possibility of a partial invagination of the bowel, giving rise to symptoms of obstruction, aggravated so long as aperients were employed. Then, too, it is not improbable that a mere atony of the intestinal fibre might have been set up as a consequence of some defective innervation: a phenomenon not rare in hysterical women. This view is in some measure borne out by the suppressed urinary secretion, which was a prominent feature of the illness. Mere general atony might be complicated by some profound local impression acting through the sympathetic system on the involuntary muscular fibre at one point; and the arrest of renal secretion lends some support to this opinion.

2. The importance of rest and atropia in cases of intestinal obstruction is not sufficiently estimated. These are the remedies to employ so long as the symptoms are not of such a character as to indicate a lesion which only an operation could remedy; and more especially should this treatment of rest have a fair trial when the intestines have been irritated by purgative medicines. When urgent symptoms are present, the delay is dangerous; but, in the absence of any external tumour, as a hernia, or any prominent swelling beneath the abdominal walls, without either distension or peritonitis, then we ought to wait and try the effect of rest and atropia. Perhaps the action of belladonna in these cases has barely obtained its due credit in overcoming muscular spasm and allowing irritated parts sufficient rest to resume their normal functions. The intestinal torpor after ovariectomy, the chronic peritonitis which results from impacted fecal matter in the intestine in subjects habitually constipated or suffering from hepatic disorder, go to prove that the evil is frequently overcome by rest and belladonna.

It has been shown by various experimenters that atropia produces relaxation of non-striated muscular fibre; that it is capable of paralysing the muscular fibres of the intestines. In fact, its chief utility is in removing spasm; and its action is acknowledged to be more efficacious in relaxing the spasm of involuntary than of voluntary muscles.

Regarding the question of the action of belladonna on the secretions, the case favours the view that those of the alimentary canal are increased under the administration.

I venture to submit the question whether a continuous stream of warm water, poured into the rectum through a funnel and India-rubber tubing in the manner just alluded to, might not be practised more frequently with advantage, before resorting to more active measures, when there is no certainty of a lesion which an operation only could remove. It is recorded that enemata of warm water have passed the ileo-cæcal valve and traversed the large and even the small intestines. In this way, the fluid has unfolded the invaginated gut in cases of intestinal obstruction; so that we have a remedy of great value when carefully employed. I would add *gently* rather than *forcibly*, and repeated cautiously from time to time till the symptoms yield, or become too severe to justify the postponement of an operation.

CASE OF INTESTINAL OBSTRUCTION: ABDOMINAL SECTION.

By JOHN J. PICKLES, M.R.C.S.Eng., Leeds.

A. R., A fine healthy lad, aged 8, had, for some time before I was consulted, complained of pain in his belly. He was in his usual state of health until Sunday, January 19th, 1879, when, after partaking of some hare-soup, he began to feel poorly. A dose of opening medicine was given, and he showed no further symptoms which were considered urgent until Wednesday in the same week, when his parents again gave him both aperient medicine by the mouth and an enema, but reported to me, on my visit next day, that only a small scybalum had passed; his bowels not having been opened properly since the previous Sunday. When I first saw him, on Thursday, the 23rd, he was complaining of pain in the body about the navel, furred tongue, temperature slightly elevated, and constipation. He was ordered a calomel powder, and a saline aperient mixture.

January 24th. At 10 A.M., there was no relief to the bowels, and the pain was worse. I ordered him an enema with castor-oil, and repeated the powder and mixture. He then had a loose calomel stool, and was somewhat relieved on my evening visit.

January 25th. The bowels had not acted since the previous day, and the enemata had been rejected. I then gave him an enema myself, but with the same result; it was returned as quickly as I injected. I introduced my finger into the rectum, but could detect no obstruction within reach. The pain continuing, at 5 P.M. I injected subcutaneously one-eighth of a grain of morphia, which relieved him, and he had a comfortable night until the effect had passed off.

January 26th. The symptoms continuing the same, he was ordered to have ice, and very little food by the mouth, and to be kept under morphia subcutaneously. Vomiting commenced in the evening.

January 27th. I met Mr. Jessop in consultation at 2.30 P.M. We found the bowels very much distended; the individual coils could be mapped out; the countenance was placid, the pulse good, and the symptoms not extreme. There had not been any passing of blood or mucus. We decided to wait a couple of days, still keeping the patient under morphia, giving nutrient enemata of beef-tea and milk with brandy and a few drops of laudanum every four hours, and only ice by mouth.

January 28th. The symptoms were about the same until evening, when there was a return of vomiting, which was relieved by morphia.

January 29th. I met Mr. Jessop again, and he strongly recommended abdominal section. The symptoms were not improved; the pulse was weaker; the tongue was becoming dry; the abdomen was tighter.

At 2.15 P.M. the same day, the operation of abdominal section was performed as follows. The patient was anaesthetised by means of Ormsby's inhaler and ether. A spray of carbolic acid was generated in the room by means of Lister's steam-apparatus, and was directed on the patient's abdomen for some minutes before commencing to operate. The instruments, sponges, and the hands of operator and his assistants were carbolised by being immersed in an aqueous solution of carbolic acid (1 in 40). Mr. Jessop then made an incision in the median line for about three inches above and the same below the umbilicus. As soon as the abdominal cavity was reached, there protruded through the wound several coils of red congested and very much distended intestine. They were carefully examined, and, at a point somewhere near the termination of the ileum, a collapsed portion of gut was found; and, on further examination, two well-defined extensive patches of peritoneum (covering the portion of small intestine near the collapsed intestine) were discovered, intensely inflamed, and covered with greyish lymph glueing one coil to the other. On displacing the intestines out of the cavity of the pelvis for further examination, a sudden gush of fecal fluid came from somewhere evidently deep in the pelvis, which was afterwards found to be at the cæcum, and along with this fluid were three small concretions, which were found on section to consist of concentric layers of fecal matter, and were each about the size of a large pea. The pelvis was carefully sponged out dry with carbolised sponges, and it was found that, at the spot from which the escape of fluid had come, the vermiform appendix was lying against the cæcum, intensely inflamed, soft, and almost gangrenous; and it was decided to remove it. The small opening into the cæcum which was left was closed by a circular ligature. No bands of lymph or intussusception were found. Further patches of inflamed and gangrenous peritoneum were found in the pelvis and on the intestines contained therein. The intestines were then returned into the abdomen, being previously reduced in size by means of a small No. 1 trocar to let out flatus. The abdominal walls were brought together by several deep interrupted sutures, and pads and bandage were applied.

After the operation was completed, our patient was very much col-

lapsed, and it was only by means of hot bottles, blankets, enemata of beef-tea and brandy, and very assiduous attention that he could be rallied.

He was then kept under the influence of opium, in pills containing one-third of a grain, when he could swallow, and hypodermic injections when he could not.

January 30th. He had passed a good night. The bowels were moved at 9.30 A.M. There was some vomiting. The temperature had gone up to 103°. There was still coldness of the extremities and some degree of collapse, from which the patient never rallied, but died at 9 P.M. the same evening.

No *post mortem* examination was allowed.

TWO CASES OF COLOTOMY: WITH REMARKS.*

By JOHN WALTERS, M.B.

CASE I.—Mrs. S., aged 61, was admitted into the Reigate and Redhill Cottage Hospital on November 25th, 1878, with cancer of the lower end of the rectum, commencing about an inch above the anus, and involving the whole circumference of the gut and the posterior wall of the vagina. The consequent stricture only admitted the point of the little finger. She suffered a good deal of pain, but her chief trouble was from constipation and pain during and after action of the bowels. As removal of the disease was out of the question, and the only prospect of relief was that offered by colotomy, this operation was performed in the left loin a few days after admission. By following Allingham's directions, no difficulty was experienced in finding and securing the gut; there was free oozing from the wound, but no arterial bleeding; a pad was placed over each end of the wound, and an elastic bandage round the body. She had little or no constitutional disturbance after the operation, and was much relieved by it. The oozing still continuing, it was kept in check by injections of a weak solution of perchloride of iron and by pressure; means were also taken to improve her general health by tonics and good diet. Turpentine could not be borne. The hæmorrhage at last ceased, and the wound closed up. She was discharged on February 7th, 1879, in a fairly satisfactory condition, though, of course, still suffering from her original disease. After the operation, it was ascertained that she was a bleeder, and was subject to considerable bleedings from slight causes. I have lately heard that she remains free from any great discomfort, but that the cancer is making rapid progress.

CASE II.—E. F., a single woman aged 62, was admitted into the hospital on November 9th, 1878, under the care of Dr. Flood and myself, suffering from constipation, abdominal pains, and occasional vomiting. The abdomen was distended, and everywhere tympanitic. No tumour could be anywhere discovered; there was no particular tenderness on pressure, and no pyrexia. The distension chiefly followed the course of the colon. The history was that of gradually increasing abdominal discomfort and constipation, only relieved by strong aperients. She was fairly nourished, and not cachectic. Soothing treatment was first adopted, poultices to the abdomen, belladonna administered freely and applied externally; afterwards she was kept under the influence of opium, the lower bowel being kept empty by enemata administered with the long tube. Temporary relief only was obtained by these means and by the adoption of a light nourishing diet of milk, eggs, and beef-tea, etc.; after the bowels were relieved, she would remain tolerably well for a few days; then the abdominal swelling, pain, and sickness would return. She was never sick, unless there had been constipation for some time. At no time could she retain much fluid in the bowel, even when the injections were carefully given with the long tube. On two or three occasions, a small quantity of blood was noticed in the stools, but only after the use of the long enema-tube. Sometimes, the evacuations were not larger than the little finger; at others, large bulky motions would be passed. On two occasions, consultations were held with other medical men attending the hospital, to discuss the question of performing colotomy. The patient was on each occasion placed fully under the influence of ether, and attempts were made to introduce the hand into the rectum. These were only partially successful, owing to the rigidity of the parts; and no positive evidence of obstruction being obtained, it was determined to delay operative interference. She was then put on strychnia and mild aloetic aperients administered, galvanism being also applied to the abdomen externally, it being suggested that the constipation was due to weakness of the muscles of the intestinal walls. These measures failed to give relief, and the patient's health and general condition gradually deteriorated. Subsequently, most relief was obtained from a pill containing extract of

aloes and belladonna, and the occasional use of enemata. On January 31st, 1879, the patient's condition had become very critical; the abdomen was much distended and tympanitic; she was frequently sick; and no relief could be obtained from the bowels; there was no fecal vomiting. On this day, I performed left lumbar colotomy. As in the former case, no difficulty was experienced in finding the bowel, which was exposed at its posterior part, opened, and stitched to the edges of the wound; it was found to be very much hypertrophied. While this was being done, the patient retched violently, causing the peritoneum to give way and a coil of intestine to protrude from the anterior part of the wound. This was immediately covered with warm sponges by my friend and partner, Mr. Berridge, who was assisting, cleansed from the feculent matter it had acquired by contact with the open colon, and returned. The wound was then closed with silver-wire sutures, a pad applied to each end of it, and an elastic bandage fastened round the body. After the operation, she was kept moderately under the influence of opium, and the urine was regularly drawn off. She had no more sickness, and expressed herself much relieved. There was no free discharge of feces from the artificial anus. The temperature rose once only to 100°, and the pulse to 120. A week after the operation, cystitis came on. This was treated by washing out the bladder with diluted Condy's fluid, and subsequently with a solution of quinine and diluted nitric acid. Benzoate of ammonia, with buchu, was given internally, and her strength was well supported. In spite of this, the symptoms increased; she became more and more exhausted, and died on February 7th, five weeks after the operation, the wound having quite healed. A *post mortem* examination revealed an annular scirrhus stricture at the junction of the sigmoid flexure and rectum. There was no trace of peritonitis to be found. The interior of the bladder was intensely inflamed, almost gangrenous.

These two cases illustrate the most common forms of intestinal obstruction for the relief of which colotomy is available. In the second case, I expressed from the first my opinion that there was an obstruction, probably cancerous, at or about the sigmoid flexure, basing my opinion on the age and sex of the patient; the gradual increase of intestinal obstruction; the uniform abdominal distension, especially following the course of the colon; the late occurrence of vomiting, and the small amount of fluid the patient was able to retain injected *per rectum*. In stricture in this region, no positive reliance can be placed on the size of the stools; fecal matter may dribble through a stricture situated high up in the rectum as this was, accumulate in the lower part of the bowel, and be discharged in a large mass. Colotomy is not in itself a dangerous operation; it may be readily performed by any surgeon acquainted with the anatomy of the parts and accustomed to perform surgical operations. The danger is in delaying its performance too long, as I fear was done in my second case. In any case where the diagnosis is sufficiently clear, I would earnestly advise its performance before dangerous symptoms appear, or the patient has become too exhausted to permit of recovery. In some obscure cases, it may be desirable to perform laparotomy in preference; but it is not my object now to discuss this operation.

In both these cases, the operation was commenced under ether, and finished under chloroform, the former anæsthetic causing so much cough that it had to be discontinued. I have found the same trouble when ether has been administered for the performance of herniotomy. I may add that I have now had occasion to perform colotomy five times for malignant disease of the sigmoid flexure or rectum, and in no case has its performance hastened the patient's end; in one, the patient was almost moribund before it was performed, death ensuing on the following day; in the other four, the patients' sufferings were markedly relieved, and their lives undoubtedly prolonged. My only regret has been that in some of them I delayed its performance too long.

QUEEN'S COLLEGE, BELFAST.—The following obtained prizes during the past winter session in the Faculty of Medicine, the names being arranged according to merit. *Medicine*: First Year—James Simpson, S. H. Shaw, John Dodd, J. C. Bodkin; Second Year—John Acheson. *Surgery*: J. P. McGeagh, John Vint, R. T. McGeagh, S. H. Shaw, J. C. Bodkin, J. A. Cunningham. *Materia Medica*: Thomas Sinclair, William Nelson, James Gillespie, James Pinkerton, Samuel Connor. *Chemistry*: James Chambers, J. J. Austin, R. H. Mathews, J. W. Beatty, and C. Bell (equal). *Anatomy and Physiology*: First Year—John Kennedy, J. G. Bell, H. C. Cooke, J. J. Austin, C. B. St. George; Second Year—Thomas Sinclair, James Pinkerton, William Nelson, Samuel Connor, W. R. Hamilton; Third Year—J. C. Bodkin, R. T. McGeagh. *Practical Anatomy*: First Year—C. B. St. George, J. J. Austin, R. H. Mathews, Thomas Cromie, S. S. Swan; Second Year—Thomas Sinclair, K. J. McCormick, M. McMurray, John Logan, W. R. Hamilton, William Nelson; Third Year—J. C. Bodkin, J. S. Collins, R. T. McGeagh, D. Forsyth.

* Read before the West Surrey District of the South-Eastern Branch.