THE CAUSES, SEQUELAE, AND TREATMENT OF PERICOLIC INFLAMMATION.*

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PERICOLIC inflammation is not very unusual, as I have already had four cases under my care this year, but little attention has as yet been paid to it, and it is likely, therefore, to be mistaken for other conditions. Pericolitis comes under the notice of the physician, the surgeon, and the general practitioner, so that we ought all to know something about it.

Pericolitis is an inflammation of the connective tissue in immediate relation with the colon, either ascending, transverse, or descending, which does not arise in connexion with the vermiform appendix. Like other inflammations it ends in resolution—that is to say, it gets well spontaneously—it becomes chronic or it suppurates. I will first give you a series of cases and thus illustrate each variety, and to do this I have borrowed from the notes of Dr. Rolleston and Mr. Bland-Sutton, to make my story complete, because their cases illustrate phases which I have not yet seen.

CASE I.

Dr. Rolleston gives the following case of simple pericolitis ending in resolution.¹ A man, aged 23 years, was admitted into St. George's Hospital on August 18th, 1904, with acute rheumatism. It is noteworthy that he had been in hospital with a previous attack of rheumatism also complicated by abdominal manifestations, similar to those described below, in 1902. As a result of treatment the temperature rapidly fell, but after his bowels had been obstinately confined for four days he was seized with abdominal pains in the left iliac fossa, where there was much resistance and an oval patch of hyperaesthesia measuring 3 in. by 2 in. There was no tenderness or pain in the right iliac fossa. The abdomen moved badly and the patient lay with the legs drawn up. Next day the pain was worse and vomiting occurred twice; the pulse was 92 and the temperature was 101° F., but the latter was probably due to a relapse of the rheumatic pains and not to the abdominal condition. On the following day, after the bowels had been freely open as the result of enemata, the abdominal pain diminished, and after this, the bowels being kept regularly open, the abdomen became natural.

This is as simple a case of pericolitis as could well occur. Mr. Bland-Sutton's case is an example of pericolitis having become chronic, and it is very interesting on account of its cause:

CASE II.

A man, aged 40,² was seized with acute pain in the left iliac region with tenderness and fever. The signs were such, says Mr. Bland-Sutton, that if they had occurred in connexion with the right instead of the left iliac region a diagnosis of subacute appendicitis would have been irresistible. Indeed, the signs of an appendicitis were so characteristic that a careful examination was made to eliminate the possibility of the patient's viscera being transposed. A diagnosis of abscess of the descending colon, probably depending upon perforation, was made, and on opening the abdomen an ovoid body as large as a bantam's egg was discovered lying smooth and sessile on the descending colon. The tumour proved to be an inflamed epiploic appendix, and it contained a distinctly circumscribed cavity in its centre which communicated by a narrow channel with the lumen of the intestine. The cavity was filled with inspissated faecal material in which was embedded a sharp foreign body that appeared to have made its way out of the colon. Mr. Bland-Sutton explains the sequence of events to have been as follows: A foreign body was swallowed with the food; the foreign body perforated the colon in the neighbourhood of an epiploic appendage, and thus caused a slight leakage of the contents of the bowel. The extravasation of faecal contents into the epiploic appendage infected it and afterwards set up inflammatory changes, which increased the size of the fatty fringe leading to a chronic inflammation. The chronic inflammation of the epiploic appendage reacting on the colon might have caused the intestine to become so greatly thickened as to lead to an erroneous diagnosis of cancer, or it might have suppurated and led to the formation of an abscess.

Mr. Bland-Sutton's observation is curiously confirmed by a case recorded by Mr. Archibald Cuff,³ in which the foreign body passing through the wall of the colon was found to be a piece of straw infected by actinomycosis. The infection thus communicated to the peritoneum had extended to the abdominal wall. The patient said that for eighteen months previous to the discovery of his abdominal condition he had had a very decayed molar tooth which he was accustomed to pick with a piece of straw. He was hardly ever

without a piece of straw in his mouth when at work, but three months before he had noticed the lump in his stomach the tooth broke off and he did not put a piece of straw in his mouth again.

The following cases first drew my attention to the subject of pericolitis, and I am indebted for the notes to Dr. W. A. Rees, the Registrar of the Bolingbroke Hospital, and to Mr. W. G. Loughborough, one of my house-surgeons at St. Bartholomew's Hospital.

CASE III.

A married woman, aged 38, mother of seven children, of whom the youngest was 3 years old, came to the Bolingbroke Hospital complaining of pain and a lump in her stomach. She said that she had always been a healthy woman, and that her bowels were regularly open. She was employed in a laundry, and on several occasions she had been kicked in the abdomen, the last time two months ago. The injuries received in this way had never been severe enough to make her stop work.

She was admitted to the Bolingbroke Hospital under my care on January 22nd, 1906, saying that her present illness began on January 12th. On that day she had felt well when she got up, and she had gone to work and taken her meals as usual until, at half-past 4, she was suddenly seized with three paroxysms of severe pain, each lasting about five minutes, with short intervals during which she was easier. She felt the pain near her umbilicus, and described it as being so severe that it made her run up and down the laundry. She was taken home, put to bed, and was attended by a doctor for ten days. The pain lasted all this time, and towards the end she noticed that her stomach was swollen. She had one attack of vomiting during the evening of January 13th, and her bowels were open naturally or by means of enemata during the whole of her illness. She seemed to improve a little under local treatment until January 19th, when she suddenly became worse, her temperature began to rise, and she was brought to the hospital on January 22nd. She said that she had not been jaundiced, and that she had never noticed anything wrong with her water.

The note made on her admission states that she appeared to be in pain, that her pulse was 128 and her temperature 102° F. An examination of the abdomen showed that there was some limitation of respiratory movement, more especially on the left side and above the umbilicus, but no swelling was visible. The left side and upper part of the abdomen proved to be rigid and tender on palpation, and a tumour could be felt above and to the left of the umbilicus. This swelling was circumscribed and could be moved from side to side. It seemed to move with the abdominal wall during respiration, but it was clearly intraperitoneal. The abdomen was resonant over the swelling, but no fluctuation could be detected. The patient was kept under observation for a few days, and on January 27th a blood count showed her leucocytosis to be 18,500 per cubic millimetre.

I cut down upon the most prominent part of the swelling on January 28th. Pus escaped as soon as the peritoneum was divided, and a large abscess cavity was found to extend backwards to the posterior wall of the abdomen and downwards along the inner side of the descending colon. The cavity was drained and the patient made an uninterrupted good recovery. She was discharged from the hospital on February 18th with the wound soundly healed.

CASE IV.

The next case was as interesting as the last. It had a different but no less satisfactory ending. A scene-shifter, aged 55, presented himself at St. Bartholomew's Hospital in June, 1906, saying that he had been struck in the stomach whilst he was at work in February. The blow was followed by pain in the left side of the abdomen, and as he was often sick he attended the medical side of the hospital for some time, but without obtaining any relief. When I saw him in June there was tenderness and rigidity over the left rectus abdominis, where a deeply-seated and indefinite swelling could be felt. I advised him to come into the hospital, and he did so for a single night, discharging himself next day as soon as there was any mention of an operation. Ten days later he came back and said that whilst he was sitting quietly he felt as if something was suddenly squirted through his stomach, and shortly afterwards he passed about 2 pints of foul black stuff, some of which he also coughed up. Five days later he brought up a little blood in streaks. I have seen this patient on several occasions since this abscess cured itself by discharging into his bowel. At first he had some thickening and tenderness on the left side of the abdomen, but this gradually disappeared, and he has long since resumed his work as a scene-shifter.

CASE V.

My next case ended disastrously, but it is in many respects the most interesting, and though I take shame to myself for not having recognized it, I do not think that the patient could have been prevented from dying of pyaemia by any surgical interference. A man, aged 40, a watchmaker by trade, was admitted into St. Bartholomew's Hospital under the care of my colleague, Dr. Tooth, on June 28th, 1906, saying that a month ago he was suddenly seized with pain in his right

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groin whilst he was eating. The pain was followed by a shivering fit, and from this time onwards his appetite left him, and he could not sleep on account of the pain in his right groin. He vomited after every meal, and since the onset of the attack he has taken very little more than milk and soda water. He has consequently lost flesh, but he has never had any haematemesis. He has been sweating profusely for a month, but in spite of his illness he only left off work ten days ago. On admission to the hospital the patient was found to be a sallow-looking man with a temperature of 104° F. and a pulse of 132. He had no pain so long as he lay quietly on his back, but on moving, and especially if he turned on to his right side, he complained of pain in his right groin. The abdomen moved well, but there was some increase of resistance on the right side, though no tumour could be felt in any part. The liver was somewhat enlarged, and its lower border could be felt an inch below the costal margin. A rectal examination showed marked tenderness in the right side of the pelvis, but there was no swelling to be detected. The leucocyte count was 40,000; no culture could be obtained from the blood. The patient continued to have rigors every evening between 5 and 7 o'clock, with a rise of temperature to 105° F., and an acceleration of pulse to 104-120. I saw the patient after he had been in the hospital for a few days, and thought that he was suffering from pyelophlebitis, whilst my colleague, Dr. Tooth, was more inclined to a diagnosis of appendicitis. A few days after his admission to the hospital he passed through an atypical attack of pneumonia, which seemed to be secondary to some focus of septic inflammation. I was very unwilling to operate, as I saw no indication for exploring one part of the abdomen more than another; but as the patient got worse rather than better, as his liver increased in size, and he was becoming jaundiced, I opened his abdomen on July 9th by an incision carried from the ninth right costal cartilage for 4 in. vertically downwards through the rectus abdominis. I satisfied myself that the appendix was normal, and that the liver was enlarged and congested, but I was unable to discover any tumour or other evidence of disease in the abdominal cavity. The temperature rose to 102° after the operation, but the rigors ceased. The patient lingered on in much the same condition until the 15th, when he became much worse owing to an attack of peritonitis, which did not seem to be connected with my wound, which was healthy. He died on the evening of July 17th, the abdomen becoming distended, and with much oedema of the right iliac fossa. The *post-mortem* examination showed the presence of general peritonitis. A large faecal-smelling abscess was situated in the pelvis, and there was a smaller one higher up, near the hepatic flexure. On stripping up the ascending colon an abscess was discovered behind it in the region of the quadratus lumborum. The abscess had spread downwards in the sheath of the psoas as far as Poupart's ligament and upwards behind the right kidney as far as the diaphragm, which was intensely inflamed. The abscess contained a large quantity of extremely offensive pus of a light chocolate colour. There was no evidence of any disease of the spine, ribs or ilium. The nerves near the quadratus lumborum were laid bare. The right kidney lay in a bed of pus, as the abscess had tracked up behind it. There were two small abscesses in the cortex at the upper part, and there was a good deal of perinephric inflammation. Cultures taken from the pus in the peritoneal cavity showed an organism resembling the *Bacillus coli*. The intestines were normal, except for some congestion of the peritoneal surface, and the vermiform appendix was healthy. The mesenteric glands were enlarged. Both the pleural cavities contained a small amount of purulent fluid. The right lung was much congested, and contained an abscess of the size of a hazel nut near the anterior surface of its lowest lobe. This lobe also presented the appearances of a septic bronchopneumonia. The left lung was congested and oedematous, but contained no abscess.

CASE VI.

Taking warning by the last case, we were on the alert when the next one presented itself, and we were able to conduct it to a successful issue, due in great measure to the indomitable pluck of the patient, who remained cheerful under the most adverse circumstances. He was an advertising manager, aged 22, who had been married for eighteen months. He was admitted to the hospital on July 24th, 1906, under the care of my colleague, Dr. Tooth, complaining of pain in the right side. He said that he had seemed quite well until the beginning of June, when he began to feel run down, and was sent to Margate to recruit. Whilst he was there he began to complain of pain in his right side. It came on gradually, and was localized to the region of the right kidney. The pain gradually got worse, and after staying a fortnight at Margate he came home and took to his bed. He was feverish, sweated profusely, but had no rigors. His evening temperature was usually 102° F.

On admission the patient was found to have some rigidity on the right side of the abdomen, but there was no tenderness, and no lump could be felt. The right kidney was easily felt, but it was not tender. The urine was 1030; it contained neither albumen nor sugar. The liver appeared to be healthy. The patient improved a little during his stay in the medical ward from July 24th until August 13th. A note made on the latter date states that the general condition remains the same. The

abdominal movement is slightly impaired on the right side, and there is tenderness in the right hypochondrium inside the anterior superior spine and along the crest of the ilium. A smooth, oval, slightly tender lump can be felt in the right iliac fossa. It is circumscribed and its centre is on a level with the umbilicus. The temperature of the patient was 99.2° F., and his pulse, which had hitherto been from 80 to 96, increased to 104. At 8 p.m. the temperature began to rise until it reached 102° F., whilst the pulse was 150. The blood count, which was 9,000 on July 30th, now showed a leucocytosis of 40,000. The patient did not complain of pain, he was not restless, his abdominal walls moved well, and there was no increase in the rigidity of the abdominal walls. Nothing abnormal could be felt on rectal examination. Hot fomentations were applied and his pulse fell to 96, whilst the temperature was 98.4° F., the respirations being 24 on the following morning. In spite of this apparent improvement I had no hesitation in opening the abdomen on August 15th. The ascending colon appeared congested and thickened, but I could pass my fingers into the general peritoneal cavity quite freely, and I could feel that the appendix region was free from adhesions. I therefore tore through the mesocolon on the inner side of the ascending colon and opened up a very large abscess filled with dark-coloured and odourless pus, from which *Staphylococcus pyogenes aureus* was afterwards grown. The abscess tracked backwards beneath the peritoneum and upwards beneath the liver, but also subperitoneally. It contained many ounces of pus and was about 10 in. in depth. I drained it by passing a large drainage tube from the anterior incision through the flank by a hole made between the tenth and eleventh ribs and by a second tube passed upwards beneath the liver. The patient felt the operation so little that on the morning following the operation he was reading his newspaper. He made an uninterrupted recovery and was discharged from the hospital about the middle of September.

This was an extremely misleading case, because all the symptoms pointed to an affection of the right kidney, and even in the presence of a very large abscess his general condition gave very little warning of its existence.

CAUSES OF PERICOLITIS.

Now these six cases present, I think, a very interesting series of one of the rarer forms of localized peritonitis—an inflammation of the peritoneum and subserous peritoneal tissues in the immediate neighbourhood of the colon. We are so accustomed to associate peritonitis with inflammation of the appendix that it is well to recognize other forms arising in immediate connexion with the large intestine which are not due to appendicitis.

It is obvious from the foregoing cases that the causes of pericolicitis are various. Dr. Rolleston insists, very properly, on the importance of chronic constipation as a factor in the production of pericolicitis in the neighbourhood of the sigmoid flexure, and instances the following case:

A man, aged 52, was admitted into St. George's Hospital moribund. From his condition and the history obtainable it was surmised that there was acute perforative peritonitis supervening upon chronic obstruction, probably due to carcinoma of the colon. At the necropsy there was general peritonitis due to the leakage of an abscess situated behind the junction of the sigmoid flexure and the descending colon. There were a number of stercoral ulcers in the sigmoid flexure, one of which led into the abscess cavity. There was no new growth in the abdomen, and the appendix was healthy.

The cases recorded by Mr. Bland-Sutton and Mr. Cuff show that the inflammation may be due to the passage of a foreign body from the colon into the tissues immediately surrounding the large intestine. In Case II pieces of straw were the offending substances, but Mr. Bland-Sutton very properly points out that "we are constantly ingesting a variety of foreign bodies with our food. The methods of grinding wheat furnish minute angular particles of millstone; small fragments and chips of straw are not uncommon in flour and in bread."

In two of my own cases injury appears to have been a predisposing cause of pericolicitis. The woman was repeatedly kicked in the stomach. The man was injured in his work as a scene shifter; the woman as a laundress and the man as a scene-shifter were accustomed also to subject their abdominal muscles to prolonged strain. Neither of these patients was subject to habitual constipation, and it is interesting to notice that there was an interval of some weeks between the receipt of the injury and the appearance of symptoms sufficiently severe to make them apply for relief.

Chronic constipation leakage associated with typhoid or other ulceration of the large intestine, the escape of foreign bodies from the colon, and injury do not exhaust

the causes of pericolicitis, as is evident from the cases (Cases v and vi) under the care of Dr. Tooth and myself, in which the onset began with a rigor and ran a pyaemic course without any gross lesion being discovered after death. The pericolicitis in these cases was limited to the right side, though the appendix in each instance was healthy, and the pus contained the *Bacillus coli* in one instance and *Staphylococcus aureus* in the other.

SYMPTOMS.

The symptoms of pericolicitis are not usually associated with those of inflammation of the colon. They are therefore often obscure, and as they are not very distressing they are in all probability overlooked in many cases, and remain untreated because the patient does not apply for relief, whilst in others he continues to go about his work until he is moribund. The onset of marked symptoms in every case appears to be sudden, and is characterized by acute pain with vomiting and loss of appetite. Examination of the abdomen in the earlier stages shows that the muscles are "on guard," that is to say, that they are ready to contract upon the smallest stimulation, though they take their normal share of movement during respiration. There is some hyperaesthesia of the skin, and the deep-seated tenderness is often very marked, and can be especially elicited by a rectal examination. Careful examination, though it may detect an area of thickening in the region of the colon, will fail to demonstrate any tumour or swelling in the earlier stages. The raised temperature and the quickened pulse show the inflammatory nature of the attack. The swelling is easily felt through the abdominal walls in the majority of cases when suppuration has taken place. The abscess may then be circumscribed, and, like many forms of tumour connected with the colon, it may be freely moveable within the peritoneal cavity. A large abscess, on the other hand, may be situated so deeply in the abdomen under cover of the colon as to make it difficult of recognition by physical examination and not easy to find by abdominal exploration during life. The abscess may be formed gradually with very slight signs, or, if it be acute, with rigors and other evidence of the absorption of septic products. In the two cases of chronic suppuration which I have quoted there was an interval of some weeks between the injury which was said to have caused the inflammation and the onset of the more serious symptoms.

COURSE.

The inflammation may subside with or without treatment in the simpler cases. It may become chronic, and if it does so it appears to have a curious habit of creeping along the intestine, thickening its coats and leading to an erroneous diagnosis of malignant disease. I made this mistake myself in the following case. A lady, aged 40, married, but without children, had a sharp attack of abdominal inflammation in April, 1903, which was diagnosed, and probably correctly, as perityphlitis. She improved under treatment, but does not seem to have recovered entirely, for in July and August she complained of pain in the region of her liver, which was relieved by the passage of a large quantity of urine. An examination of the abdomen was made, but no swelling or thickening could be discovered. I saw her for the first time in the autumn of 1904, when she came complaining of great loss of flesh, with pain down the right flank, and repeated attacks of vomiting. She was very sallow and depressed, but was not actually jaundiced. There was marked tenderness down the right side, and some thickening could be felt in the region of the right kidney. The region of the appendix seemed free. I thought that her symptoms were due to disease of the right kidney or of the ascending colon. I explored the kidney, therefore, through a lumbar incision, but finding it healthy I sewed up the incision and exposed the ascending colon through an abdominal wound. The colon proved to be greatly thickened in its ascending part, with nodules upon it surrounded by congested areas. It was adherent to the under surface of the liver by dense adhesions, and the liver itself appeared to be involved in the inflamed mass. I had no hesitation in saying that the patient was suffering from carcinoma of the large intestine, and that she had not long to live. My wounds healed by first intention, and the patient went home, where, contrary to my expectation, she improved instead of getting worse. She

put on flesh again, and I hear now that she is restored to her original good health.

A similar thickening of the descending colon has been observed, and there is very little doubt that many cases of chronic non-suppurating pericolicitis have been reported as instances of carcinoma cured by a nostrum or even by simple lapse of time. An attack of pericolicitis may end in several ways when suppuration has occurred. The infecting organism may not be very virulent or the surrounding tissues may be so healthy as to be capable of limiting the inflammation. The abscess may then remain circumscribed, increasing slowly in size and getting very thick walls. The symptoms in such a case are not very well marked, because there is not much septic absorption and the abscess may only cause inconvenience by its size, or may even be overlooked entirely by unobservant persons. But a time comes, sooner or later, when the abscess wall thins at some point, the patient complains of pain, his temperature begins to rise, and his pulse quickens. If the abscess be not then opened it discharges itself, often, I believe, into the intestine, as otherwise more cases of pericolicitis would have been recorded and the condition would be better known than it is; at other times the abscess opens into the general peritoneal cavity, leading to general suppurative peritonitis, which terminates either in death or recovery. It may burrow upwards, leading to inflammation of the diaphragm, to a subphrenic abscess, to an empyema, or to secondary pneumonia. Lastly, the abscess may be acute and septic from the beginning, either on account of the virulence of the infection or the general unhealthiness of the patient, as marked by the feeble resisting power of his tissues. In such cases death occurs speedily from pyaemia.

TREATMENT.

The treatment of cases of pericolicitis resolves itself into the treatment of localized peritonitis, because, as I have already said, the condition is not associated with symptoms of inflammation of the mucous membrane of the colon. When the patient is seen in the early stages of the inflammation, every effort should be made to keep the colon at rest both from within and without. The patient should therefore be kept in bed, the large intestine should be emptied by enemata, and constipation should be prevented by the administration of laxatives. Attention should be devoted to the food, which should be of such a character as to leave as little residue as possible. Fish, eggs, and peptonized foods should form the staple.

When the inflammation has become chronic and it is tolerably certain that suppuration will not occur, massage of the abdomen gives excellent results. An exploratory incision is the only treatment for suppuration, and it should be adopted as soon as there is reasonable evidence of pus. An abscess once formed does not tend to cure itself except by pointing, and the chances of its opening into the general peritoneal cavity are too great to be permitted. An attempt to localize the abscess should be made in the more obscure cases by attending to the point of maximum tenderness and tension of the abdominal muscles. The incision should be planned to explore the ascending or descending colon, as the case may be, for the abscess is situated more often in connexion with these parts than with the transverse colon. The pus, when it is found, should be freely removed by flushing, after the edges of the wound have been packed with gauze to protect the general peritoneal cavity from infection. A large drainage tube should be inserted for forty-eight hours, and the abscess cavity should then be allowed to close, which it usually does in a short time.

CONCLUSIONS.

For the sake of focussing what I have said, and to render my remarks easier for discussion, I will sum them up in the following propositions:

1. Pericolicitis is not very rare, although it is one of the less common forms of local peritonitis.
2. It occurs in connexion with the ascending as well as with the descending colon, but I have seen no case in which it arose in the neighbourhood of the transverse colon.
3. The cause of pericolicitis may be found within the colon as a result of chronic constipation, in the walls of the colon from ulceration of the mucous membrane or

from the perforation of foreign bodies, outside the colon as a result of injury.

4. Pericolicitis ends in resolution, in chronic inflammation, sometimes with extensive thickening of the colon, or in suppuration, which is usually retroperitoneal.

5. The treatment consists in an attempt to prevent the inflammation becoming chronic, and in the early opening of any abscess which may be formed.

REFERENCES.

¹ *Med. Soc. Trans.*, vol. XXVIII, 1905, p. 231. ² *Lancet*, 1903, vol. ii, p. 1148. ³ *BRITISH MEDICAL JOURNAL*, 1906, vol. ii, p. 137.

A CASE OF APPENDICITIS:

REMOVAL OF A STERCOLITH: PASSAGE OF AN ASCARIS LUMBRICOIDES FOURTEEN DAYS LATER.

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(Forwarded by the Director-General of the Navy.)

In view of the fact that recently several cases¹ of appendicitis have been reported in which the cause was attributed to ascarides, the following case is not without interest:

History.—W. T. M., gunner, Royal Marine Artillery, H.M.S. *Magnificent*, aged 22, was first seized with pain in the right inguinal region at 8 a.m. on May 23rd, 1906, and at the same time felt cold and shivered; at 10 p.m. he vomited some dark, watery fluid. The patient did not report himself sick until 7.45 a.m. next day; then he complained of pain in the right iliac region, going transversely across the abdomen. He had vomited several times during the night and early morning, and his tongue was slightly brown.

State on Examination.—There was found considerable tenderness over McBurney's spot, and some rigidity of the abdominal muscles. Temperature, normal; pulse, small and regular, 80. No ascertainable history of any similar previous attack. At 9.30 a.m. he vomited some watery mucus. He was put to bed and allowed no solids (diet consisting of Benger's food and milk and barley water in small quantities). That evening his temperature rose to 102°.

Progress.—On May 25th, the day after admission, fullness was observed in the right iliac fossa. Three days later he had retention of urine, relieved by catheterization; the urine was of specific gravity 1040 and rather high-coloured, but otherwise normal. As soon as the case was seen it was recognized as one of appendicitis and treated with enemata, small doses of calomel and opium, and intestinal antiseptics in the form of salol and guaiacol carbonate; locally glycerine and belladonna was applied in conjunction with poultices. On the evening of the 30th, seven days from the onset of the symptoms, the patient again complained of nausea, the fullness in the right iliac fossa was more pronounced, and tenderness present as before over the region of the appendix, and the temperature in the evening rose to 103°; pulse 94, soft and of fair size. It was decided to operate next morning.

Operation.—On May 31st an oblique incision 3 in. long was made, commencing 2 in. from the anterior superior spine downwards and inwards parallel to Poupart's ligament. The various muscles having been in turn divided, the peritoneum was reached and was opened on a director, when an immediate outpouring of a large quantity (more than 1 pint) of very fetid pus occurred. The pus had a distinctly faecal odour. Fleet-Surgeon Vidal G. Thorpe, of H.M.S. *Victorious*, who was assisting at the operation, very carefully inserted a finger into the abdominal cavity, taking care to avoid disturbing existing adhesions, and at once came upon a stercolith about $\frac{3}{4}$ or 1 in. in length and $\frac{1}{4}$ or $\frac{3}{8}$ in. in diameter, which he removed. The parts were irrigated with sterilized normal saline solution at a temperature of 108° F., and after a gauze drain soaked in iodoform emulsion had been introduced the wound was partially closed, the muscles being sutured with catgut and the skin with silk sutures of the blanket-stitch type.

After-Progress.—That evening the temperature was 101.3° F., pulse 88. The dressing was changed and a dry gauze drain inserted. Prior to the operation the patient had passed several restless nights, and was therefore given at 11.30 p.m. a hypodermic injection of $\frac{1}{4}$ gr. of morphine bimeconate, with the result that he was soon asleep and awoke next morning very much better. The pus escaped freely for several days, the temperature dropping to normal in the morning, and rising to 99.2° F. or 99.4° F. in the evening. The day after the operation the bowels acted spontaneously, and three small scybulous masses were passed. Boracic fomentations were applied over gauze night and morning. For the first twenty-four hours after the operation he was only given small quantities of barley water, then he was given half a teacupful of Benger's food twice a day, calvesfoot jelly and milk and barley water in small quantities between times. A morphine injection was again given on the night of June 2nd, and a morphine draught on the evening of the 3rd, after which he slept well without any hypnotic.

Gradually the diet was increased, peptonized milk-food cocoa added first, then junket, omelet, etc. On June 4th the wound was irrigated for the first time with normal saline solution, and next day he received a dose of castor oil; after this had acted he was given more solid food, such as quenelles of fish, etc.

June 6th. Pus had by now entirely lost the faecal odour so noticeable at first and was rapidly diminishing in quantity. Being troubled with slight flatulence he was given 12 gr. of salol, and in the evening an enema of turpentine and castor-oil beaten up with yolk of egg in infusion of linseed, but this he was unable to retain.

On June 8th the patient commenced to show some signs of colitis, with frequent desire to stool, and the passing of slimy mucus, and the temperature rose in the evening to 101.4°. After a dose of castor oil, which was followed by free evacuation, the temperature dropped to 99.2°. For the next two days he suffered from a frequent desire to go to stool, and passed a considerable amount of slimy mucus per anum involuntarily, which necessitated the frequent changing of cotton-wool placed to receive it. At 12.45 p.m., on June 10th, he passed a large amount of greenish pus per rectum, and pus in small amounts was passed per anum next day, after which it entirely ceased.

Result.—On June 13th, fourteen days after the operation, he passed a large motion, containing a round worm about $9\frac{1}{2}$ in. in length. On the 16th the drain, which had been gradually reduced in size, was left out, and from this time on the patient made an uninterrupted recovery. On July 11th the wound had entirely healed, and he was discharged to duty and proceeded on leave, being enjoined to wear a pad of lint and bandage over the scar.

On July 24th (three or four days after his return from leave) the scar broke down, and there was some superficial ulceration.

REMARKS.—The special points of interest in this case were the following: (a) Presence of stercolith; (b) colitis and discharge of pus and slimy mucus from rectum; (c) passage of a round worm fourteen days after the operation. My colleague, Surgeon F. Cock, R.N., has suggested that the stercolith may possibly have followed the dilatation of the orifice of the appendix by the round worm, which dilatation subsequently allowed the entrance and retention of faeces, which underwent calcification. The breaking down of the cicatrix two months after the operation was much to be regretted, and was probably due to the exceptional vigour of the patient, who from the time of commencing convalescence was always eager to do more than his condition justified, and always keenly resented being treated as an invalid and restricted as to walking, etc.

REFERENCE.

¹ Surgeon F. E. Anley, R.N., *BRITISH MEDICAL JOURNAL*, March 24th, 1906, p. 667; Captain H. L. Whale, I.M.S., *ibid.*, May 12th, 1906, p. 1100.

YELLOW FEVER IN CUBA.—The sanitary and demographic report of the island of Cuba—a most elaborate and comprehensive monthly publication which we have previously had occasion to commend—has just reached us for the month of May last. It is of interest as recording a re-appearance of yellow fever. The outbreak occurred in the Olano plantation in the Bolondron district, which adjoins Magdalena plantation where the last known case (which ended fatally) had occurred rather over three months before. Previous to this last outbreak of 1905 there had been three years (1902-4 inclusive) in which there had been no yellow fever in Cuba. The new case was diagnosed on May 17th, and died the same night, and a Commission at once took in hand the stamping out of the disease. A census was made of all the non-immunes within a circuit around the focus, mosquito-proof isolated buildings were prepared, the non-immunes were kept under surveillance, and all the dwellings within the circuit were fumigated for mosquitos. An ambulatory case was discovered the very first day and isolated, and in consequence of these precautions no further cases developed. Inquiry showed that a non-immune labourer was taken ill with "fever" on the Olano estate on March 24th; another on April 19th with fever and jaundice, and a third, who nursed him, was the fatal case of May 17th. Probably some infected *Stegomyia* was driven away from the Magdalena plantation after the death of the February case, and fed on immunes at Olano till it chanced to bite the non-immune who was attacked on March 24th, and fresh *Stegomyias* biting this case, created a new focus in the Olano plantation, which the energetic action of the sanitary authorities was fortunately sufficient to cope with.

The will of the late Mrs. Helen McEwan, of Charles Street, Berkeley Square, directs that the residue of her estate, probably amounting to some £14,000, shall be equally divided between the Gordon Boys' Home and the Royal Hospital, Chelsea.