found protruding about one inch, this was secured on a broken thermometer and the treatment continued as before. Something over an inch a day came out till the 30th, when about eight inches came away, and in the evening a tapering bent end was found outside the puncture; this second portion measured eighteen inches; making a total length of thirty-three inches, and the whole took eighteen days to come out. For two days prior to the worm being found broken a distinctly fetid odour was noticed from the foot.

Patient was discharged to duty on September 2nd.

Patient throughout had no constitutional disturbance of any kind, and the inflammation subsided almost immediately after the worm first made its appearance, but sanguineous fluid escaped each day as a fresh piece of worm came out.

This case, I think, is worthy of note for the following reasons:
(1) Its rarity amongst British troops.
(2) Patient had only served in Ferozapore and Attock, and never in an endemic area.
(3) The fact of the worm having broken when less than half way out not being attended by any serious consequences.

----

AMBULATORY ENTERIC WITH PERFORATION; OPERATION AND RECOVERY.

By Captain J. W. West.
Royal Army Medical Corps.

G. H., a private in the 2nd Battalion Worcestershire Regiment, was admitted to the Military Hospital, Bloemfontein, on July 13th, 1904.

July 13th. Family History.—Unimportant.

Personal History.—He states he has not had any serious illness before. He is 19 years of age.

History of Present Affection.—The patient states that in the middle of the previous night he was seized with a violent pain in the stomach and vomited. The pain was very severe and the vomiting almost continuous. He describes the pain as being in the upper part of the abdomen, and points high up in the epigastrium as the seat of most tenderness. Patient was engaged in Field Training the day before his admission to hospital and at first stated that he was quite well until the onset of the pain, but on close questioning it was ascertained that ten or twelve days previously he had suffered from diarrhea and a medical officer had given him some medicine which stopped it; on that occasion his temperature was also taken and found to be normal. He gives no history of previous gastric trouble.

State on Admission.—Patient very pale with an anxious expression,
Clinical Notes

and lay in bed with his legs drawn up. Temperature 100° F. Pulse 100. On inspection the abdomen was seen to be much distended and breathing entirely thoracic. He was very tender all over the abdomen, but particularly in the epigastric region. Abdomen tympanitic all over and liver dulness entirely absent. The vomit was dark in colour and had a fecal smell. He complained of great thirst.

Perforation of a hollow viscus was diagnosed and immediate operation urged on the patient, at first he refused, but later decided to have the operation performed.

Operation.—At 2 p.m., being about thirteen hours after the occurrence of the perforation, the patient was anesthetised with chloroform and, assisted by Captain Humphry, R.A.M.C., I opened the abdomen in the middle line above the umbilicus by an incision 3½ inches in length. On opening the peritoneum gas escaped under high pressure followed by turbid serum with flocculi of lymph, the peritoneum covering the stomach and exposed intestines was found to be acutely inflamed, but careful search revealed no perforation. This incision was sutured up by interrupted silkworm gut sutures, the whole of the abdominal parietes being included in the stitch.

A second incision 3½ inches in length was now made below the umbilicus in the middle line; here the intestinal peritoneum was found to be intensely inflamed. A short search revealed a large perforation in the middle of a greatly thickened and indurated ulcer. The perforation would easily have admitted an ordinary lead pencil, and the thickening and induration extended for an inch all round. Other ulcers could be seen and felt above and below the perforation.

It was found that to close the perforation by sutures in the transverse axis of the gut would have almost obliterated the lumen, and as I did not consider the patient would stand excision and end-to-end suture of the gut, it was folded longitudinally over the ulcer and six silk Lembert's sutures inserted; the gut now appeared to be water tight. The abdomen was washed out with sterile normal saline solution, about two gallons being used. When all seemed clear, on moving the coils of intestine, another gush of turbid serum took place from amongst them, so I decided to drain the abdomen. The wound was closed up with silkworm gut sutures with the exception of the lower inch, and here a gauze drain was inserted among the coils of intestine down to the region of the perforated ulcer. The operation lasted sixty minutes and the patient stood it well.

In the evening his temperature was 101°. Pulse 104, and respirations 36. He has been very sick since the operation but has not complained of much pain. Thirst still intense. Passed urine voluntarily without trouble. He is being fed by nutrient enemata 4-hourly.

July 14th.—Patient had a fairly good night, he had no sedative with the exception of ½-grain morphia given before the operation. Temperature 98.9°. Pulse 100. The vomiting still continues and thirst is intense.
One pint of plain water was given per rectum and retained, and this greatly relieved the thirst. He complains of some pain in the epigastric region.

At 1 p.m. patient was very restless, so ½-grain morphia was given hypodermically and he slept for the remainder of the afternoon. In the evening his temperature was 100·6°, pulse 96, and respirations 28. Vomiting still continues. During the day he was allowed to wash his mouth out frequently with water, and was given one teaspoonful of tepid water to swallow every hour. Passed urine normally.

July 15th.—Patient had a fair night and slept at intervals. Bowels acted twice and were typical enteric stools. Temperature normal. Pulse 92. Vomiting continues, and thirst still severe, but tongue is more moist. Still complains of the pain in the epigastric region. One pint of plain water given per rectum and retained.

Evening.—He had a fairly good day with the exception of the vomiting which still continues. Evening temperature 99·4°, pulse 96, respirations 26. His bowels acted six times during the day, and as all the nutrient enemata were rejected, it was decided to try and feed by the mouth in spite of the vomiting. Fresh chicken jelly was given a teaspoonful at a time, and was partly retained and did not seem to aggravate the vomiting.

July 16th.—Temperature this morning was normal, pulse 84, respirations 24. Patient complains that the pain in the epigastric region is very severe, so it was decided to dress the wounds and remove the gauze drain.

The dressing over the lower wound was seen to be slightly stained with serum. The gauze drain was carefully extracted and was immediately followed by a gush of faeces. The stitches in the abdominal wound seemed tight and the stitch holes inflamed. The wound was dressed with copious antiseptic dressing. On removing the dressing from the upper wound it was found that the lowest stitch had yielded and a portion of omentum about the size of a golf ball was protruding. Patient was anaesthetised, and I removed two more stitches, and, after careful washing with normal saline solution, I replaced the omentum in the abdomen and re-sutured the abdominal wound.

When the patient recovered from the anaesthetic, he expressed himself as much relieved and the vomiting ceased. In the evening his temperature was 100·2°, pulse 92. Tongue clean. He was allowed half an ounce of peptonised milk with an equal quantity of barley water by the mouth, and retained it, so feeding was ordered to be continued at frequent intervals during the night. Copious discharge of faeces through the lower wound necessitated frequent dressings.

July 17th.—Patient had a fair night; temperature in the morning 99·2, pulse 94. No further vomiting. Complains of some epigastric pain, so the upper wound was dressed and the stitches were found to be tense and the stitch holes and line of incision inflamed. He was very restless
during the day, so at 3 p.m. he was given \( \frac{1}{4} \)-grain morphia hypodermically, and slept afterwards. Bowels acted once per rectum, and the dressings were frequently changed over the fistula. Broad adhesive plaster was applied round the abdomen as a support.

July 18th.—Temperature normal, pulse 92. He complained greatly of pain in the upper wound. This was dressed and found much inflamed, with points of pus at all the stitches; these were removed and the wound gaped at one place and some pus escaped. Abdomen well supported by strapping and binder. Has no sickness and takes nourishment well. The faces coming from the fistula appear to be well digested.

July 19th.—Temperature normal, pulse 98. No pain. The wounds were dressed, and the upper wound was found to be gapping nearly two inches, and some pus escaping from the stitch holes. It was decided not to attempt to bring the wound together at present, as it is septic and would not be likely to heal, and also as there is adhesive peritonitis and no danger of general peritonitis. The lower wound had to be dressed twice during the day and not much faces coming through the fistula. Bowels acted four times per rectum.

July 20th.—Temperature 99, pulse 80. His bowels acted three times per rectum, and as he had some pain a small starch and opium enema was given.

He is now taking 3 pints of peptonised milk and \( \frac{1}{4} \) pint chicken jelly in twenty-four hours.

July 21st.—From this date the progress was uneventful; the discharge of faces from the fistula gradually ceased, and at the end of August both wounds were entirely healed. On September 10th patient was up out of bed on full diet. Now, on September 20th, patient can walk about and feels quite well. He is putting on flesh rapidly. The lower wound is strongly healed; the upper wound has contracted to a great extent and it is unlikely that a hernia will occur through it. Patient has absolutely no abdominal pain, and his bowels act regularly.

General Remarks.—The case is one of great interest for several reasons.
(1) Undoubtedly cases of enteric fever of this mild nature may go through the whole course of the disease without reporting sick, and act as a dangerous source of infection in camps and cantonments.
(2) The case illustrates the marvellous recuperative powers of the peritoneum, which entirely recovered itself although exposed to the same infection which caused suppuration in the abdominal parietes.
(3) The use of a gauze drain in cases where there is doubt about the intestinal stitches holding, is also shown. The drain formed a channel amongst the coils of intestines, and undoubtedly prevented a fatal general peritonitis.
(4) The position of the pain and tenderness are of great importance. In this case it was entirely in the epigastric region, and in default of an accurate diagnosis before operation, this determined the site of the first incision.