

R. S. Christophers, I.M.S., also remarks on the rarity of these forms in ordinary spleen puncture films. Yet in my specimens from the culture tubes it is quite common to see a number of dividing forms in varying stages in a single field of the microscope and I have met with fields showing nearly complete series of these forms. In such specimens it is easy to make out two methods of multiplication of the parasites. In one form the typical oval organism with a large and a small nucleus enlarges to beyond the usual size, then each nucleus divides once, so that two large and two small nuclei are present in a single cell, after which the cell itself divides into two, the point of division being at one end so that just before the final separation the other ends alone remain united. A second mode of division, which evidently accounts for the very numerous new small forms of the organisms which are very rarely seen in fresh films, commences very much as I described in my former paper by the nuclei undergoing multiple division until a number of them are seen in a single cell. Next, in the culture a kind of slimy zooglea mass is formed, the outline of the original parasite having disappeared, and the minute multiple nuclei appear to sort themselves out in pairs of a large and a small nucleus which gradually increase in size but have as yet no capsule. When they reach a certain dimension, which is smaller than the usual form found in spleen puncture blood, a capsule appears around each, forming a characteristic group of complete young parasites such as occurs in fresh spleen blood. It is worthy of note that in these specimens the blood corpuscles have nearly or entirely been dissolved and have therefore disappeared, so it is quite certain that the forms of subdivision just briefly described take place outside the red corpuscles and in no stages have they been observed within them. It is clear, then, that the parasites are not piroplasma.

As I found the organisms died out within a few days at 27°C. I next tried a temperature of 22°C. and soon found that it was more suitable for their growth, as even when very few in the freshly drawn blood they were found in much larger numbers within a day or two. Further, a number of larger forms than I had seen in the fresh blood appeared in the citrated blood at this temperature, which led me to look out carefully for flagellated bodies, as the two nuclei of different sizes suggested to me a resemblance to trypanosomes, just as it did to Leishman before. This search was soon rewarded by my finding fully developed trypanosoma in two cases in the cultures. They were best developed in a spleen blood after one day's incubation, although only the usual oval forms were found in the freshly drawn blood and showed many forms undergoing longitudinal splitting, with double flagellæ, macro- and micro-nucleus complete, together with pear-shaped flagellated forms exactly similar to those described by Plimmer in trypanosoma of tsetse-fly disease. The other case, fortunately, was one of kala-azar from Assam, for the spleen blood of which taken by puncture I am indebted to my assistant, Assistant-Surgeon G. C. Chatterjee. In cultures of this many intermediate forms and a few complete trypanosoma were found. Thus this new human trypanosoma has been obtained by culture of the bodies found in the spleen by Leishman, so that the latter must be one stage in the life-history of the organism and not degenerated forms as he at first thought them to be. Further, they have already been obtained from both the endemic form of cachexial fever seen in Lower Bengal and also in the Assam epidemic form known as kala-azar. It is worthy of note that Assistant-Surgeon Chatterjee found a living trypanosome in an anopheles mosquito some time ago, while I am also indebted to him for help in the microscopical examination of my cultures. I hope to be able to publish illustrations of the different stages of the development of the trypanosome at an early date.

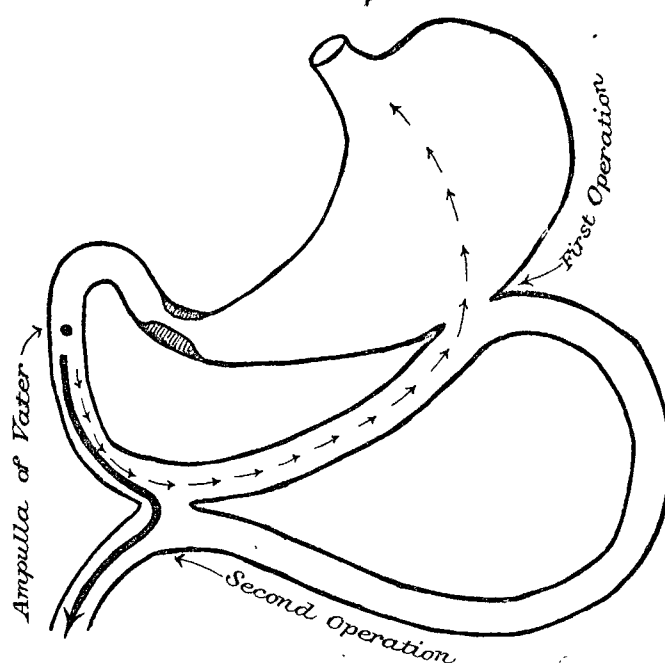
Calcutta.

ON OPERATION FOR THE RELIEF OF BILIOUS VOMITING FOLLOWING GASTRO-ENTEROSTOMY.

BY WALTER H. BROWN, F.R.C.S. IREL., M.R.C.S. ENG.,
SURGEON TO THE LEEDS GENERAL INFIRMARY.

THE patient was a woman, aged 36 years, who had undergone a gastro-enterostomy for pyloric stenosis due to old ulcer four months prior to the onset of bilious vomiting. In other

respects the operation had been satisfactory. She had gained weight, had no pain, and enjoyed her food, but each morning she vomited about 12 ounces of green bile. This over, she went through the day in comfort and took ordinary food. Her condition was very distressing and after trying lavage and various medicines I reopened the abdomen and performed the operation in the manner indicated in the diagram. (The sketch shows the stomach, anatomical, not pathological.) The result has been good, the vomiting has ceased, and she is quite well.



The dotted line shows the bile tract before, and the thick line after, the second operation of entero-enterostomy.

Regurgitant bilious vomiting has only occurred twice after gastro-enterostomy in my experience of the operation during the last 11 years—namely, the case just mentioned and one other that is waiting for similar treatment. I do not suggest that this procedure is original; probably the same idea has occurred to others who are dealing with the problem of intestinal anastomosis, but I have not seen any case recorded in any English journal.

Leeds.

A CASE OF RUPTURE OF THE BOWEL CAUSED BY COMPRESSED AIR.

BY GERALD W. STONE, M.R.C.S. ENG., L.R.C.P. LOND.,
HOUSE SURGEON TO THE STAMFORD AND RUTLAND INFIRMARY.

By permission of Mr. T. P. Greenwood, senior surgeon to the Stamford and Rutland Infirmary, I send an account of the following case which is of interest if only on account of its rarity.

A youth, aged 17 years, was admitted into the infirmary on April 22nd, 1904, at 1.45 P.M., with the following history. One and a half hours previously he had "got blown up with an air force-pump" per rectum. He had been driven about eight miles to the hospital. On admission he was in a state of collapse, the pulse was imperceptible, the face was slightly cyanosed, his breathing was short and difficult, and he spoke with great difficulty, but he was suffering more from discomfort than actual pain and complained chiefly of great thirst.

On examination the abdomen was tightly distended with gas; liver dulness was absent. The anus was dilated to about one and a half inches and the lower part of the rectum was prolapsed into it. The finger passed three inches into the rectum and the gut was felt bulging down like a presenting intussusception. An œsophageal tube was passed four inches and was then obstructed, no gas being expelled. A stomach-tube was obstructed at the lower end of the œsophagus. The abdomen was then punctured in the right iliac fossa with an aspirator trocar and cannula and a quantity of gas was expelled with intestinal odour. The abdomen went down to its natural size and the patient was relieved for half an hour, his pulse and general condition improving. He then complained of pain in the lower abdomen which rapidly spread and he died three hours