and intense prostration. On May 13th the sputum became tinged with blood, and several small recent clots were expectorated. The patient died next day.

Autopsy Findings.

The two layers of the pericardium were found to be closely adherent, and numerous firm adhesions united the pericardial surface to the pleura on each side. The pleural cavities were in great part occupied by dense adhesions in the neighbourhood of the pericardium, but on separating these on the right side the cavity was found to contain a large amount of recent blood clot.

The heart was considerably enlarged; the aortic valve was incompetent; the cusps of the aortic valve, more especially the anterior and right posterior, were thickened, retracted, and distorted; there were no obvious vegetations; the wall of the aorta showed extensive atheromatous changes, the macroscopical appearances indicating an advanced degree of the process. Immediately above the aortic valve, at the junction of the anterior and right posterior cusps, a large saccular aneurysm measuring $4\frac{1}{2}$ inches by $4\frac{1}{2}$ inches arose; it was completely covered by the adherent layers of the pericardium, and it was about two-thirds full of laminated clot; its upper aspect was adherent to the right pleura and lung, which had suffered much dislocation, and here it was that the aneurysm had ruptured into the adjoining pleural cavity and pulmonary tissue.

THE PRESENT VALUE OF THE WIDAL REACTION IN THE INOCULATED SUBJECT.

BY

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An acutely febrile case was recently admitted to the Princess Alice Hospital, Eastbourne, on which I was asked to perform a Widal reaction. The technique used was Dreyer's macroscopical method with the Oxford standard cultures. The result read as follows:

CASE I.

	Serum Dilutions.			
	1 in 25.	1 in 50.	1 in 125.	1 in 250.
Typhoid cultures ...	+	+	+	+
Paratyphoid A ...	Trace	—	—	—
Paratyphoid B ...	—	—	—	—

The reading was "strongly positive for typhoid."

The patient was an ex-soldier, inoculated for enterica during the war, the last time most likely in 1917. The clinical signs were those of continuous fever with some physical signs in the chest, and a provisional diagnosis of pneumonia had been made. The case was subsequently regarded, on the strength of the Widal reaction, as typhoid fever, probably pneumonic in type, it being assumed that the war-time inoculins had died away by this time.

The day after the test the patient was removed to the Borough sanatorium as an infectious febrile case. He died some days later. Clinically the symptoms were not typical of enteric, and a *post-mortem* examination was performed. Miliary tubercle was found to be the cause of death. It was then suggested by Dr. W. G. Willoughby (M.O.H. for Eastbourne), under whose care the case had been, that the positive Widal reaction might have been due to residual effects of war-time inoculation. I reported the case to two leading authorities for their opinions. One of them held that miliary tubercle may accentuate any existing agglutinins. He also pointed out that miliary tubercle and enteric may coexist, and that he had had a case of this kind where Peyer's patches showed no signs of inflammation yet where culturally 50 per cent. of the colonies in the mucous membrane of the lower part of the small intestine agglutinated with paratyphoid B serum in high dilutions, the blood of the same case also giving a highly positive Widal reaction to paratyphoid B, on which alone a diagnosis was made. The second authority offered the opinion that it was quite possible that "residual"

agglutination could account for my results, but that one would expect, if this were so, a lower titre of agglutination than 1 in 250 after four or five years unless the man had given a very high response to his inoculations.

In order to prove what degree of residual agglutinins occur normally I estimated the agglutinin reactions to typhoid, paratyphoid A, and paratyphoid B of five healthy ex-soldiers, with the following very instructive results:

CASE II.

	Serum Dilutions:			
	1 in 25.	1 in 50.	1 in 125.	1 in 250.
Typhoid cultures ...	+	+	+	+
Paratyphoid A ...	—	—	—	—
Paratyphoid B ...	—	—	—	—

This case had had Flexner dysentery in 1916, and agglutinated Flexner's bacillus up to 1 in 250.

CASE III.

	Serum Dilutions:			
	1 in 25.	1 in 50.	1 in 125.	1 in 250.
Typhoid cultures ...	+	+	+	Trace
Paratyphoid A ...	+	Trace	—	—
Paratyphoid B ...	—	—	—	—

CASE IV.

	Serum Dilutions:			
	1 in 25.	1 in 50.	1 in 125.	1 in 250.
Typhoid cultures ...	+	+	+	Trace
Paratyphoid A ...	—	—	—	—
Paratyphoid B ...	Trace	—	—	—

CASE V.

	Serum Dilutions:			
	1 in 25.	1 in 50.	1 in 125.	1 in 250.
Typhoid cultures ...	+	+	—	—
Paratyphoid A ...	—	—	—	—
Paratyphoid B ...	—	—	—	—

CASE VI.

	Serum Dilutions:			
	1 in 25.	1 in 50.	1 in 125.	1 in 250.
Typhoid cultures ...	+	+	—	—
Paratyphoid A ...	—	—	—	—
Paratyphoid B ...	—	—	—	—

We thus have a fairly complete answer to our queries. Fifty per cent. of the cases agglutinate typhoid up to 1 in 250, so that such a high response is no uncommon thing in the inoculated after four or five years. Paratyphoid agglutinins are very slight in all cases as compared with typhoid residua. The explanation of this no doubt lies in the greater strength of the typhoid vaccine given and possibly also because this was used alone at first during the war.

I cannot agree that the existence of miliary tubercle accentuated any potential agglutination titre, otherwise the paratyphoid titres in Case I should have been higher, but of course one cannot generalize too much from these few cases.

The essential point of the matter is that a positive Widal reaction in the inoculated subject, even some four or five

years after inoculation, is of no diagnostic value whatever in typhoid fever and is of very doubtful value in paratyphoid fevers unless of markedly high titre. But this in no way detracts from the superlative value of the reaction in the non-inoculated.

A repetition of the reaction after several days' interval is, as a rule, not sufficiently decisive in everyday work to recommend itself to those of us who must, if possible, supply a rapid and unequivocal answer to our colleagues in the wards, but where this can be done it is sometimes helpful as an aid to diagnosis, but no more. Finally, this note illustrates very clearly the need for close co-operation between the pathologist and the physician in all obscure cases of this nature.

I am indebted to Dr. A. Deane, Surgeon to the Princess Alice Hospital, and also to Dr. W. G. Willoughby, Medical Officer of Health for Eastbourne, for their helpful suggestions and for their permission to report the original case; likewise to Dr. Dennis Embleton and Dr. A. D. Gardner for giving me the benefit of their wide experience in these matters.

LAPAROTOMY FOR INTESTINAL OBSTRUCTION ON BOARD SHIP.

BY

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LAPAROTOMIES on board ships of the mercantile marine are perhaps sufficiently uncommon to be worthy of record, and the case related below presents certain points of interest:

During the voyage of the R.M.S.P. *Desna* from Liverpool to Buenos Aires, on the day after leaving Lisbon (August 20th), a Portuguese lad, aged 17, went down with abdominal pain and vomiting. He was seen by Dr. Sero de Carvalho, the Portuguese surgeon, and the condition was provisionally diagnosed as intestinal colic. Next day he was no better, and Dr. Carvalho concluded that the case was one of intestinal obstruction and asked me to see him.

Dr. David de Sarmiento, professor in the faculty of medicine, Lisbon, who was a passenger on board, also very kindly joined us. We found all the classical signs of intestinal obstruction present, and the question was whether the causation was volvulus, intussusception, or strangulation of the internal hernial type. As the patient seemed to be relatively well—that is, not so severely ill at the moment as one would have expected—the possibility that it might be one of those uncommon cases of pseudo-strangulation such as is described by Lejars (*Medicina de Urgencia*, Oddo, p. 375) crossed one's mind. Perhaps the wish was rather father to the thought, as operation under the conditions was not particularly attractive. Anyhow, valuable time was wasted with no results. By the evening of August 23rd it was clear that intervention was imperative, but, his state being still fair, it was left until the morning of the 24th.

He was taken to the ship's operating theatre; Dr. Carvalho gave chloroform, and Dr. Sarmiento was good enough to assist me. On opening the abdomen, by an incision four inches long a little to the left of the umbilicus, the enormously distended and congested small intestine protruded in a troublesome fashion. A considerable quantity of sero-sanguinolent peritoneal fluid escaped, and patches of lymph were to be seen on the visceral peritoneum. It was not difficult to bring the seat of the trouble into view—a knuckle of ileum, about two feet from the caecum, was incarcerated in a mesenteric pocket; this was withdrawn. The condition of the compressed portion, about three inches long, was not encouraging, and one now regretted not having operated earlier. Had the loop been a longer one it would surely have been gangrenous, whereas this one was small and comfortably supported all over its surface, and had avoided the deadly venous congestion of the ordinary hernia. It looked just possible to avoid resection, and I decided to chance it, as excision of a piece of intestine, with the central end in the condition it was, would probably have been disastrous anyhow. Further, a temporary anus seemed almost as risky. The protruded intestines were replaced, no flushing of the peritoneal cavity was employed, and the abdominal wall was sewn up in the usual three layers. This latter, owing to the vagaries of Father Neptune, was the most tiresome part of the whole procedure. Still, the weather was very good; we were about the latitude of Cape Verde, and there was only a moderate swell on. Simple dressings, sterilized on board, were applied and kept in place with a many-tailed bandage.

During the ensuing night the patient passed flatus, and next day a large motion. He then started eating well and with a good appetite. There is nothing further to relate of any moment, save that an abscess of the abdominal wall had to be evacuated a few days later, by loosening the two lowest stitches. Foul faecal-smelling pus escaped, evidently due to infection of the wound by the peritoneal contents. On September 7th he was landed in Buenos Aires in good condition, the abdominal incision almost healed.

Surgery at sea raises many interesting questions, which it is not possible to discuss here. But the ship's surgeon must be prepared, above all, to open an abdomen if necessary, as

this is obviously the most likely form of urgency to be met with. It therefore behoves him to have ready in his mind the requisite plan of campaign, the best place to operate, likely assistants, the anaesthetic, the simplest ways of dealing with the conditions found, simple dressings, and arrangements for after-treatment.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

"HAEMORRHAGIC" CHICKEN-POX.

The following personal history may interest Dr. Wanklyn (November 18th, p. 977). When within three months of my final examination I saw in the Sick Children's Hospital a case of chicken-pox. The child was isolated in a side room awaiting transfer to the fever hospital, and the physician showed the case to a few students and asked for a diagnosis. I was in the room for about one minute and did not touch the patient. Exactly fourteen days later I began to feel rather seedy and the idea occurred to me that I had got chicken-pox. I stayed in bed and looked anxiously for the rash next day, but nothing was to be seen. On the second day, however, a few characteristic spots were present. Not more than a dozen appeared in all, but haemorrhages took place into several of the larger vesicles. I do not think there was any surrounding ecchymosis. There is still a faint scar from one on my wrist. Slight fever and malaise for a couple of days constituted the whole illness. I was much too annoyed to let a real doctor see me, but I think Dr. Wanklyn may take it that the diagnosis was correct.

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ACUTE MENINGITIS FOLLOWING INFLUENZA MASTOIDITIS.

As acute meningitis, following aural suppuration, is always looked on, and unhappily rightly so, as a fatal complication we venture to publish the following report. We regret that the exigencies of the case did not allow of a bacterial examination of the cerebro-spinal fluid.

G. E., aged 7, developed influenza during the March epidemic of this year. Pain in the right ear was complained of on the third day, with gradual increase, until discharge was noticed on the sixth day. Except for the aural discharge no other sign or symptom was noted though carefully looked for, and the child rapidly convalesced, when measles developed on the thirteenth day.

The measles took a normal course, and on the nineteenth day the child was apparently well, sitting up and playing with toys. The aural discharge continued, but there were no mastoid symptoms whatever, when suddenly on the twenty-first day the child complained of deep pain behind the ear, and two hours later typical cerebral vomiting commenced. Five hours later we found the child collapsed with clammy skin, roused with difficulty and then very irritable. There was marked photophobia with right external squint. There were no external mastoid symptoms and no tenderness; the discharge was profuse and ropy, the drum red, and the posterior inner meatal wall red and swollen. Marked head retraction was present, Kernig's sign positive, and vomiting frequent.

An immediate operation was advised and carried out under light anaesthesia given by Dr. J. F. Walker. The mastoid was of the pneumatic type and bathed with pus throughout; the intercellular bone being largely necrosed and easily removed; the lateral sinus was inflamed and granulated. On removing the tegmen antri a bulging dull red dura was exposed, and on making an opening into this much very turbid fluid escaped under pressure. The posterior cranial cavity was similarly drained in front of and below the sinus, a small wick drain being left in each fossa. The whole operation occupied nine minutes, as speed was in our opinion most necessary.

Next day the child was given 12½ c.cm. of polyvalent anti-streptococcal serum, a similar dose being injected on the five following days. The dressing was changed daily, also the wick drains. For two days the condition was extremely serious; all the meningeal symptoms remained, but the vomiting was even more persistent. Slight improvement was noticed on the third day, and it continued till the eighth day, when all meningeal symptoms had disappeared and a complete recovery eventuated.

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IN a recent visit to Guatemala and other countries of Central America Professor Fülleborn, of the Hamburg Tropical Institute, found that 90 per cent. of the Indian labourers in the coffee plantations were suffering from ankylostomiasis.