revealed large numbers of staphylococci, streptococci, and pneumococci. Cough was painful and frequent, and expectoration was brought up with considerable difficulty.

Physical signs varied very little till about the twenty-first day, when the temperature fell rather rapidly to the normal level and remained normal. Breathing then became slower, respirations deeper and fuller and less loaded with mucous rales, while expectoration became less frothy and less purulent, until at last it ceased.

Treatment.—Hourly feeding, with milk and thickened soups alternately; a mixture containing iodide of potassium and creosote; a hypodermic injection twice daily of 20 minims of sterile almond oil holding in solution four per cent each of iodoform and guaiacol. Stimulants were given freely, strychnine hypodermically as required, and oxygen inhalation when the lividity was most marked. One dose containing 200 millions of an autogenous vaccine prepared from the patient's expectoration, containing staphylococci, streptococci and pneumococci was injected subcutaneously. On February 6, 1918, this man was well enough to be sent to another auxiliary hospital on the Firth of Clyde.

Remarks.—This man passed through a most serious illness, and for many days seemed to be on the brink of death. The points in the treatment on which I place most stress, apart from feeding and stimulants, are the use of the creosote and iodide mixture and of the hypodermic injection of iodoform and guaiacol. The oily solution above mentioned holds while hot four per cent of iodoform quite easily, but a little of the drug is thrown down on cooling. The percentage of guaiacol could be increased to at least eight or ten per cent, but I have found the four per cent satisfactory in use. As both of these drugs, but more particularly the guaiacol, are eliminated from the system mainly by way of the pulmonary mucous membrane, and practically unchanged, it is reasonable to assume that they exercise an antiseptic influence in the process of elimination.

I may add that I have under my care at the present moment a civilian in the wards of the Victoria Infirmary, Glasgow, passing through an exactly similar attack, and under the same line of treatment.

NOTE ON AN EPIDEMIC OF JAUNDICE IN THE WAZIRISTAN FIELD FORCE.

By Lieutenant-Colonel C. H. L. Meyer, I.M.S.

Consulting Physician, Waziristan Field Force.

Cases of jaundice began to appear in the Waziristan Field Force early in June and became increasingly numerous up to the middle of September, the percentage of attacks in the Force rising rapidly. Altogether about 300 cases have been noted, but the number was probably somewhat greater than this. The condition affected both the North and South Waziristan Field Forces and attacked British and Indian officers and privates in about equal ratios.

Clinically the cases in many instances resembled ordinary catarrhal jaundice. In some there was disturbance of the alimentary organs in the form of anorexia, vomiting, diarrhoea, or constipation. The majority of the cases were associated
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with fever which sometimes preceded, sometimes ushered in the attack, and in other instances again only appeared after the establishment of the jaundice. These febrile attacks were not severe and usually were of short duration.

The liver was enlarged in about fifty per cent of the cases and in a few was also tender on pressure. No enlargement of the gall-bladder could ever be made out. There was tenderness on pressure in the epigastric fossa in some instances.

The spleen was enlarged in about twenty-five per cent of the cases and when this was so the enlargement resembled in all respects the malarial spleen.

The duration of the jaundice attacks varied from one to four weeks and the depth of the conjunctival and cutaneous discoloration from the slightest icteric tint to the deepest staining ever seen in cases of obstructive jaundice.

Three cases to my knowledge, one British and two Indian (and there may have been others), terminated fatally with much the same symptoms, viz., with the sudden onset, during the jaundice, of vomiting, great restlessness, passing into delirium stupor and finally death in deep coma after two or three days. In the first of these cases seen in No. 14 Indian General Hospital, as the result of a careful examination, I came to the conclusion that the patient's death was due to acute (yellow) atrophy of the liver. In the second Indian case, also in No. 14 Indian General Hospital, I suspected death to be due to the same cause, but the evidence here was not so strong as in the first patient. In neither of the above was a post-mortem obtainable. On the British soldier who died in No. 18 British General Hospital with much the same symptoms, a necropsy was performed, and the liver was found to be small, soft, and wrinkled, and to weigh only forty ounces. Sections of the organ were prepared for me by my friend, Major Glen Liston, I.M.S., of the Government Laboratory, Parel, Bombay, and he reported that they show the typical appearances microscopically of acute yellow atrophy of the liver.

Ætiology.—Inquiries into the causation of the jaundice were carried out by Captain Rutherford, R.A.M.C., and myself by the usual methods; viz., blood-film and blood culture, the inoculation of the blood of patients into guineas-pigs and rabbits and culture of the faces and bile containing urine. Two attempts were made to obtain bile from the gall-bladder directly, by needling, but were unsuccessful as the gall-bladder was not enlarged. As previously noted, distension of this viscus was never found in any of the cases. The object aimed at here was to try and obtain cultures from the bile itself. Blood was drawn from the liver in two cases for culture, but further attempts were held to be unjustifiable owing to the known ready tendency to hæmorrhage in jaundice. It is known that picric acid, taken even by small doses over a period, will produce jaundice, and therefore the rations and the lime-juice of the troops were examined by us for the presence of this substance. The tests, however, were negative. It was thought that, possibly, picric acid might have been added as a preservative or colouring agent.

Conclusion.—From the positive and negative evidence obtained, I am of opinion that the jaundice which affected the Waziristan Field Force is what is known as "toxic," "infective," or "camp jaundice," identical with the condition which was common in the American Civil War and the South African campaign, and which is thought by some to be brought about by insanitary camp conditions. It is, I believe, undoubtedly due to a definite bacterial infection and some of the
investigations made by Captain Rutherford and myself seem to point to the possibility that an organism of the enteric group, probably closely allied to the paratyphoids, might be the causative agent. There was no evidence that malarial or spirochetal infection were causes of the condition. Lastly, I consider that there is some justification in hinting that the coli-infected surface waters consumed by the Waziristan Field Force may have played some part in the production of the epidemic.

A CASE OF LIGATION OF THE FIRST PART OF THE LEFT SUBCLAVIAN ARTERY.

By Colonel Sir Charles Ballance, K.C.M.G.

Army Medical Service.

PRIVATE K., Dublin Fusiliers, aged 31, was admitted to Cottonara Hospital, Malta, under the care of Lieutenant-Colonel Dundon, R.A.M.C., on January 13, 1918, from Salonika.

History.—Before joining the Army he had been in the Navy, from which he was discharged; reason unknown. No history of syphilis. In July, 1916, he was wounded by a shrapnel bullet in the left supra-clavicular region. The wound was just above the middle of the clavicle and had healed. He had recently had an attack of tertian malaria.

On Admission.—Patient complains of numbness and shooting pains in the left arm and hand with muscular weakness. A well-marked pulsating tumour can be seen and felt above the left clavicle; an area of dullness continuous with this swelling extends for two inches below the inner half of the clavicle. The radial pulse can only just be felt at the wrist but the arm is quite warm. X-ray examination shows the presence of a tumour, part of which is in the chest cavity, and the rest, curving over the first rib, extends into the root of the neck (figs. 1 and 2). It seems more dense in the lower part, probably on account of organized blood-clot in the aneurysmal sac (fig. 3). A shrapnel bullet is lodged in the right side of the chest at the level of the seventh rib. It has not been definitely localized as there is no likelihood of its being removed. A diagnosis of aneurysm of the second and third portions of the left subclavian artery was made and it was decided to ligate the subclavian on the proximal side of the aneurysm. Antisyphilitic remedies had no effect.

Operation, February 4, 1918.—A general anaesthetic was given by Lieutenant-Colonel Shirley with the Vernon-Harcourt apparatus. An incision was made along the anterior border of the lower half of the sterno-mastoid down to the manubrium and another horizontally along the inner half of the clavicle. The common carotid artery, internal jugular vein, and vagus nerve were exposed in the middle of the neck and the dissection was continued downwards, keeping well towards the middle line of the neck, as the wall of the aneurysm extended in this direction and was very thin. The fingers of the left hand protected the wall of the aneurysm from injury. More room was required, so the inner third of the clavicle was resected, by division with a Gigli saw and disarticulation at the sterno-clavicular joint. The dissection became increasingly difficult, the aneurysm