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had prolapse of the rectum and showed other signs of intestinal irritation. All proved sterile on cultures being made from the peritoneum.

(4) Indol formation.—All showed a slight trace of indol, that is, about the same amount as may be obtained with the original strain of *B. entericidus* when tested in the same way, viz., by means of KNO₃ and H₂SO₄ with the assistance of heat.

(5) Action of specific serum.—A rabbit was inoculated on two occasions with a subculture of the original strain of *B. entericidus* (Gartner), but unfortunately before the animal's serum gave a sufficiently good reaction to be of value the pressure of other work prevented the observation being completed and the opportunity never recurred. Enough tests, however, had been done to establish the fact that the organisms belong to the group of para-typhoid, and the interesting question arose as to whence they were derived. There were no signs whatever of an epidemic among the animals in the animal house. Naturally a search was made for similar organisms in the intestinal contents of normal guinea-pigs. It was never found, though cultivations were made from feces taken from each part of the gut from duodenum to rectum. On the other hand, it was easy to recover the organism from the feces of those animals whose internal organs were found to contain it. The feces of guinea-pigs treated in various other ways were also examined for the presence of the organism but always with a negative result. The number of these and of normal guinea-pigs examined was too small to admit of making a definite statement as to the complete absence or otherwise in them of such an organism.

The occurrence of these organisms, whether they were the cause of death or no, in the tissues of about 10 per cent. of animals treated in the manner stated above is remarkable, and if excuse be needed for putting on record the above facts, necessarily too incomplete to draw any conclusion from, since the subject cropped up incidentally in the course of other work, it is that the point appears to indicate a line of research into the association between the typhoid and para-typhoid organisms which may be usefully followed by others.

TRYPANOSOMIASIS IN THE EGYPTIAN SUDAN.

By J. B. CHRISTOPHERSON, M.D.

Sudan Civil Administration, Khartoum.

In July, 1904, Captain Head, E.A.V.D., asked me to examine some blood taken from a donkey at Goz-abu-Gomez, which was suffering from a disease that was wide-spread amongst animals taking part in a patrol in the Bahr-el-Ghazel. The symptoms of the disease suggested a tsetse fly infection. The donkeys were very thin, eczematous, anemic and weak, but took their food well. The temperatures of the animals, when
the blood specimens were taken, was generally 103°-105° F. I could not find any trypanosomes, but the blood cells in some of the slides suggested some interglobular infection (? a piroplasm); time did not allow of an exhaustive search then. However, there were two mules in the sick lines at Khartoum that had come down from the same expedition, apparently well, two months previously. Trypanosomes were present in their peripheral blood, and became more numerous as the animals got worse, and died. I sent a slide of the blood to Mr. Austen, as I was unable to identify the species of trypanosome.

The symptoms of the mule disease were: temperature 103°-104° F. Attitude characteristic; head drooping, ears hanging, back legs leaning against each other for support, ribs very conspicuous, oedema of legs, chest and sheath, anaemia of mucous membranes and running at the eyes and nose. The animals looked starved and listless, with their eyes closed, but fed and drank voraciously. These two mules were Syrian and had been in the Niam-Niam country South of Wau. The Abyssinian ones used in the expedition escaped sickness.

The above seems interesting, especially since Major Griffiths found Glossina morsitans, in 1903, on the banks of the Pongo "where the road to Dar Zubeir crosses it" (about lat. 7°) (see Lord Cromer's Report, Egypt, No. 1, p. 94). I believe this specimen of tsetse fly is in the British Museum (Natural History). Glossina palpalis has not yet been found in the Egyptian Sudan. In Mr. Austen's "Monograph of Tsetse Flies," page 145, Mr. and Mrs. Petterich are shown to have found tsetse flies near Adel in 1869 (lat. 6°35). It is not at all clear that Arnaud, in 1852 (p. 126), or Marno, in 1872 (p. 153), found tsetse in the "Isle of Sennaur," Blue Nile. The seroot fly is very persistent there, but horse sickness and not trypanosomiasis is common during the "charik" or rainy season in Sennaur, Kassala, and Kordofan. Of course tsetse flies may have existed up the Blue Nile in 1852 and 1873, and not in 1904.

NOTE BY E. E. AUSTEN.

In the slide sent the trypanosomes are very numerous. In the position of the centresome the specimens resemble T. brucei (Plimmer and Bradford). The nucleus, however, seems very large.

A CASE OF PLAGUE.

BY MAJOR W. MOULD.
Royal Army Medical Corps.

Cases of plague are rare in British soldiers, so I thought this case might be of interest to my brother officers.

Private S., aged 23, service six years, India three years, was employed as a hospital orderly and living in a room of the hospital. He had had many attacks of ague since his arrival at the Station, Fatehgarh, Upper