

distributed through the liver than in the ox, and I think that is why the blood vessel lesion is absent. In the horse and sheep the vessels are certainly compressed and obliterated, but the compression takes place all over the organ.

DESCRIPTION OF PLATE V.

Fig. 1. Section near the centre of a cavernous angioma of the liver of an ox.

Fig. 2. Section through the same angioma farther from the centre.

Fig. 3. Section through the outer part of the same angioma.

PRELIMINARY NOTE ON THE SERO-DIAGNOSIS OF GLANDERS.

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A REMARKABLE example of the useful application to every-day medical practice of what was at first regarded as a discovery interesting only to bacteriologists, is afforded by the so-called sero-diagnosis of typhoid fever, recently introduced by Professor Widal of Paris.

It has for some years been known that the blood-serum of animals experimentally rendered immune against a particular disease exerts a peculiar action on the specific bacteria of that disease, the most manifest effect of this action being a grouping of the bacteria into relatively coarse clumps when they are freely suspended in liquid. Widal discovered that this action is not confined to animals experimentally made immune, or hyper-vaccinated, but is also possessed by the blood of human beings suffering from typhoid fever, and he showed that it might be utilised in the diagnosis of that disease. Grünbaum, Durham and Grüber, and Delépine and Sidebotham have published observations that are confirmatory of Widal's discovery.¹

The demonstration of this remarkable property of the blood of typhoid patients immediately suggests that in other bacterial diseases of man and animals the blood may exert a similar effect on the specific microbes, and the purpose of the present note is to put on record some observations which appear to show that the method of sero-diagnosis is applicable to the case of glanders.

On the 19th December I collected a few ounces of blood from a horse affected with chronic glanders. The clinical history of the case indicated that the disease had been in existence for several months (nasal discharge, loss of condition, etc.), and the diagnosis of glanders, made by my colleague Professor Hobday, was verified by a decided reaction to mallein two days before the horse was killed, and by the discovery of typical glanders lesions at the *post-mortem* examination.

The blood serum of this horse when diluted with nine times its volume of sterile bouillon and mixed with an equal volume of bouillon holding in suspension a rich culture of glanders bacilli (three days' culture on agar at 37° C.) was found to produce marked "clumping" of the

¹ See the *Lancet* for 14th November, and 5th, 12th, and 17th December of this year.

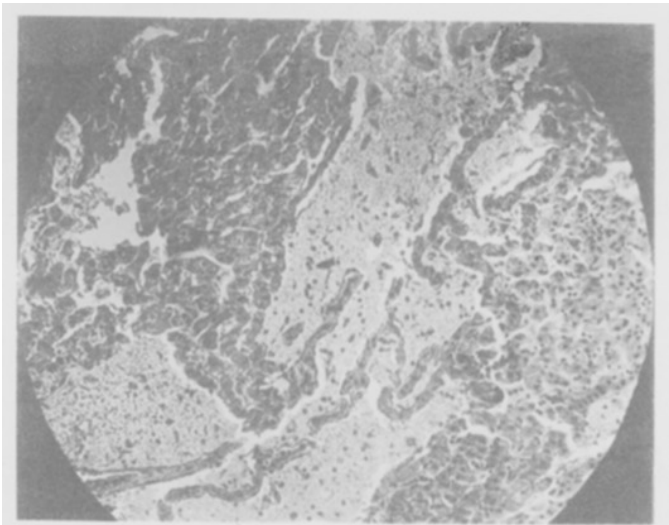


Fig. 1

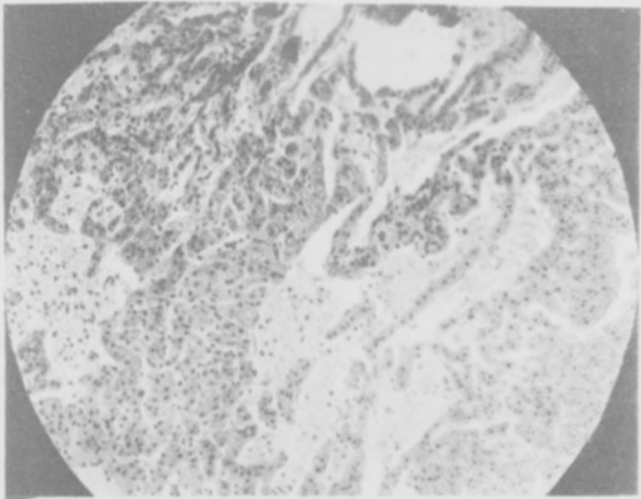


Fig. 2

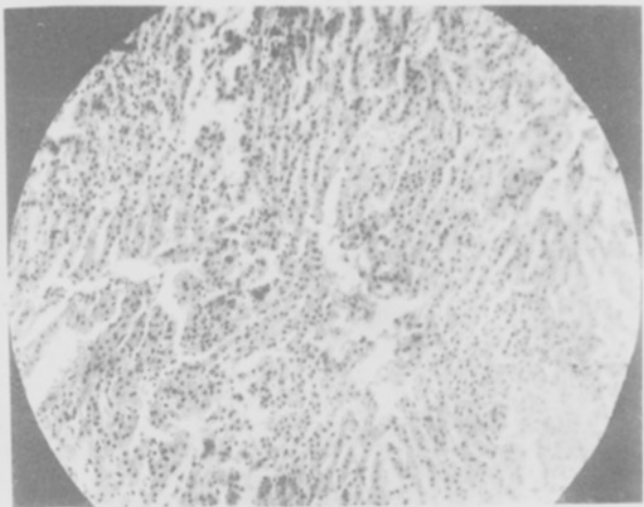


Fig. 3

bacilli. The reaction was quite distinct after an hour, and at the end of two hours almost the whole of the bacilli had become motionless and collected into large irregular clumps.

Control observations were made at the same time with blood-serum (diluted to the same extent) from two horses not suspected of being glandered, and since tested by mallein with a negative result. The serum from one of these animals produced no appreciable clumping even after several hours; in the other case a tendency to "clumping" was observable in some of the preparations, but it was later in setting in, and never anything like so complete as in the preparations from the glandered horse.

The observations here referred to were made on "hanging drop" preparations viewed under the microscope.

Should further observations confirm these results, a valuable addition to our methods of diagnosing glanders will have been made. Considering the perfect reliability of the mallein test and the simplicity of its application, it cannot be expected that the method of sero-diagnosis will displace it, for Widal's method must always remain a laboratory test. But the latter has the advantage of being serviceable for diagnosis on the dead subject, and it may be employed as a prompt confirmatory test in those occasional cases in which no glanders lesions, or only lesions of a doubtful character, are discovered at the autopsy of horses that have reacted to mallein.

EDITORIAL ARTICLES.

CATTLE DISEASE IN JAMAICA.

IN the month of August last Professor Williams of the New Veterinary College, Edinburgh, paid a visit to Jamaica in order to determine the nature of the disease or diseases responsible for the unwonted mortality among the cattle there. The results of his investigations are given in a Report which is published as a supplement to the *Jamaica Gazette*, and which we have reprinted at a later part of this number.

Before proceeding to notice one or two points in Professor Williams' Report, it may be observed that this is the second inquiry which has recently been made regarding cattle disease in Jamaica. The first was conducted by a Commission which was appointed in the latter part of 1894, and presented its Report in December of that year.¹ The members of the Commission visited various places on the island from which complaints of heavy losses among cattle had been received, and they there took the evidence of farmers and others, and also personally inspected diseased animals before and after death.

The Commissioners reported that they had obtained evidence of

¹ Supplement to the *Jamaica Gazette*, 17th January 1895.