

A Rickettsiosis New to South Africa.

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THE object of this preliminary note is to record the occurrence of *Rickettsia ovina* in the monocytes in blood, intima, and lung smears of two sheep sent in during January, 1939, by the Government Veterinary Officer, Mr. J. G. de Wet, District Grootfontein, South West Africa.

The rickettsiae were more prevalent in the smears of one animal than in those of the other. A field containing two affected cells is reproduced below.



It may be of interest to mention briefly the observations recorded by Mr. de Wet regarding the above outbreak.

Severe losses, confined to the sheep only—cattle and goats not being affected—occurred on this farm over a period of about 12 months. The symptoms appeared very suddenly and animals, which had a normal appearance the previous evening, were found dead the next day. In fact a number of cases was noticed to ail only for about two hours prior to death. Not a single case suffering from this disease has yet recovered.

The animals became recumbent, lay on their side with outstretched legs, the head turned backwards and appeared to be unconscious. The eyes protruding from the orbit appeared glassy. A febrile condition was suspected.

On autopsy ticks were numerous on all sheep examined, but no heartwater producing ticks could be found. The changes noted on post mortem simulated those of heartwater to some extent, namely hydropericardium, hydrothorax, ascites, subepicardial and subendocardial haemorrhages, hyperaemia and oedema of the lungs, tumor splenis with prominent Malpighian bodies, soft and pulpy kidneys. To exclude this disease, the hippocampi of the above two sheep and those of other animals sent in at the same time were examined for *Rickettsia ruminantium*, although the officer stated that no heartwater ticks were found on the sheep in that vicinity. The result of the histological examination of this material was, however, negative for heartwater.

The former Government Veterinary Officer of Grootfontein, Dr. Sigwart, described similar symptoms in sheep on the same farm, but in addition mentioned that paralysis of the hindquarters and opisthotonus were seen in some of the sheep shortly before death. He applied the vest pocket test for cyanide poisoning with negative results. The presence of arsenic could not be demonstrated in the material sent to Onderstepoort for that purpose. He found numerous blue ticks and bontleg ticks on the sheep and stated that the veld conditions on this farm were dry and showed signs of overstocking. In addition a fairly marked verminosis consisting of wireworms, tapeworms and nodularworms was recorded in some sheep.

A blood smear sent in by him proved to be negative on microscopical examination and in the brain material of affected sheep the causal organism of heartwater could not be found.

From the above it would appear that the heavy mortality among the sheep cannot be attributed to a rickettsia infection alone, but possibly also to contributory factors such as verminosis, tick infestations and nutritional disturbances.

Much to our regret, as no further cases occurred by the time the diagnosis was made, it was impossible to investigate the outbreak further.

Lestoquard and Donatien have described *Rickettsia ovina* a parasite of the monocytes in the blood of sheep in Algiers and Anatolia. They were able to exclude anthrax, piroplasmosis and pernicious anaemia as a possible cause of the mortality. By inoculating bone-marrow and blood of affected sheep subcutaneously into susceptible ones, a febrile reaction was produced and *R. ovina* was demonstrated in the peripheral blood. Based on the results of their experiments they suggest that *Rhipicephalus bursa* is the vector of this rickettsia.

As *R. ovina* occurs exclusively in the monocytes, presenting a morphology analogous to that of *R. canis* and *R. bovis*, and as it is often frequent in the peripheral circulation, it can be easily differentiated from *R. ruminantium*, the causal organism of heart-water.

It may be mentioned here that my colleague, Mr. W. O. Neitz, was good enough to show me a preparation in which he had already found *R. ovina* in a blood smear of a sheep from the Brits area in the Transvaal prior to the arrival of the material from South West Africa. As this was a single case he naturally refrained from publishing it.

Obviously no research can be undertaken on this new condition until active outbreaks are discovered from which further material including live ticks can be obtained. This brief note is therefore published in the hopes that veterinarians in the field who encounter similar conditions will report them to enable further investigation.

REFERENCE.

- DONATIEN, A. ET LESTOQUARD, F., Etat actuel de connaissances sur les Rickettsioses animales. *Arch. de l'Institut Pasteur d'Algerie* XXV; 142, 1937.