

The Occurrence of *Grahamella couchi* sp.n. in the Multimammate Mouse (*Mastomys coucha*) in South Africa.

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INTRODUCTION.

In 1903 Graham-Smith found intracellular parasites in the erythrocytes of approximately 10 per cent. of moles (*Talpa europea*) in England. Brumpt in 1911 named these parasites *Grahamella talpae*. Since the recognition of these organisms, no less than thirty species have been described from Europe, Africa, Asia and America, chiefly in the mammals belonging to the class Rodentia and Insectivora. The object of this paper is to record the occurrence of a species of *Grahamella* found in several multimammate mice caught on a farm adjoining the grounds of the Onderstepoort Veterinary Laboratory.

OBSERVATIONS.

During the month of September, 1936, several multimammate mice were examined. They were found to be infested with mites (*Iaelaps muricola*) and lice (*Polyplox waterstoni*). Blood smears stained with Giemsa were prepared from seven mice. One of them was found to harbour *Trypanosoma lewisi*, and in the others no blood parasites could be demonstrated even after a prolonged search. In all the blood films Jolly bodies and polychromatic stained erythrocytes could be demonstrated. In order to ascertain whether the mice harboured parasites six were splenectomized. Blood smears were examined for a period of fourteen days and subsequently twice weekly for another six weeks. In four of the mice *Grahamella* appeared on the third day and in two on the fifth day after the operation. In the beginning the number of parasitized erythrocytes was extremely rare, but after a week 0.25 to 0.5 per cent. of the red-blood-cells were found to be infected. This level of infection was maintained for the rest of the period of observation. At the commencement of the infection the number of parasites per cell varied from 4-24, but after a month as many as 30-40 parasites were

frequently seen, and on some occasions as many as 72 organisms were observed. From these observations it would appear that although the number of parasitized cells was very low, the number of parasites in individual cells showed a noticeable increase.

Morphologically these parasites resemble those described in other species of animals. Measurements showed a variation of 0.5 to 1.0 μ in length and 0.2 μ in width.

Attempts to transmit these organisms to three normal rats, a splenectomized rat and two sheep gave negative results.

The question whether this parasite is distinct from any of the already described *Grahamella* is difficult to answer. The fact, however, that rats proved to be refractory is significant, since both the rat and the multimammate mouse belong to the same family Murinae. It is proposed to name this parasite provisionally *Grahamella couchi*.

SUMMARY.

The multimammate mice were found to be infested with lice and mites. One mouse was infected with *Trypanosoma lewisi*, and in six splenectomized mice one new species of *Grahamella* was found for which the name *Grahamella couchi* is proposed.

LITERATURE.

KIKUTH, W. (1932). Die Bartonellen und verwandte Parasiten bei Mensch und Tieren. *Ergeb. Hyg. Bakt. Immunitätsforsch. & Expt. Therapie*. Bd. 13, pp. 559-619.

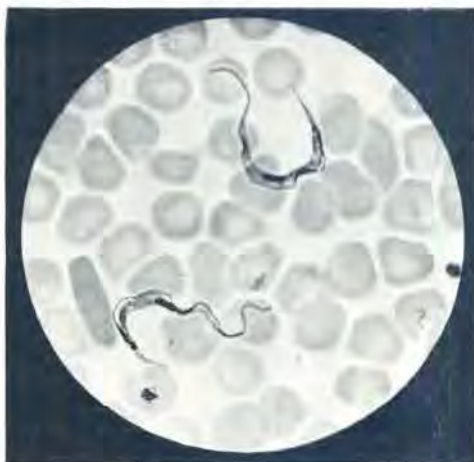


Fig. 1.—*Trypanosoma lewisi* in the multimammate mouse. Magnification 1,100 \times .

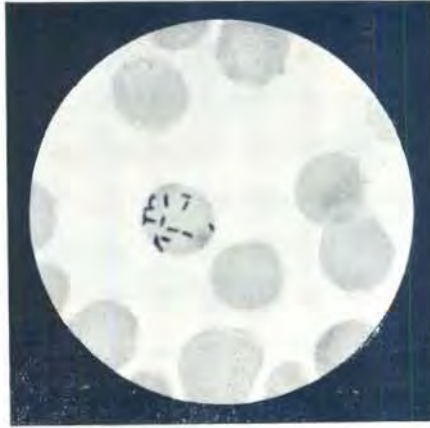


Fig. 2.—*Grahamella couchi*. Erythrocyte infected with 14 parasites.
Magnification 1,500 \times .



Fig. 3.—*Grahamella couchi*. Erythrocyte infected with 22 parasites.
Magnification 1,500 \times .

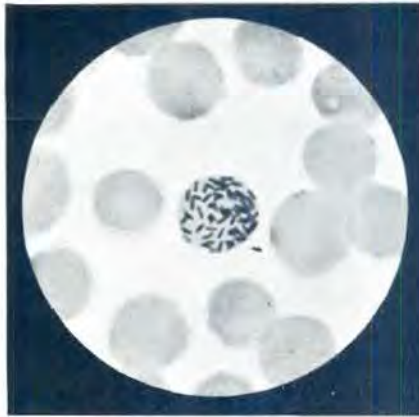


Fig. 4.—*Grahamella couchi*. Erythrocyte infected with 48 parasites. One free form is also present. Magnification 1,500 \times .