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TSETSE FLY INVESTIGATIONS.

A very considerable amount of time has been devoted to investigations with regard to the breeding and other habits of this pest. Full reports of the work have been supplied at the end of every expedition, and in the October number of the Agricultural Journal an article was published giving the results of the investigations to date. Briefly summarised the advance in our knowledge consists:- (1) The discovery of the pupae in numbers in their natural surroundings, furnishing us with some knowledge of the breeding haunts of the fly. (2) Observations on the change in the distribution of the fly at different seasons and the conditions that influence this change, (3) Other notes on the habits of the pest, especially in regard to its tendency to follow a food supply and the distance to which it may be carried, these facts having relation to the outbreaks of trypanosomiasis on farms some distance from the permanent "belts" (4) Observations on the sex ratio at different seasons, (5) Experiments on the possibility of trapping Tsetse on animals with cloth smeared with bird-lime, (6) Contributions to the mapping of the "fly-belts" in the territory.

It may appear that whilst these investigations have advanced our knowledge of the bionomics of the Tsetse, the scientific value of the results has up to the present been more obvious than the economic. As the latter can only be obtained through the former, progress in the one is, or may be, progress towards the other. It cannot be said however, that there is at present any immediate prospect of a solution of the "fly" problem.

The following expeditions were made during the year in connection with Tsetse Fly Investigations:- (1) March 28th - April 26th, below the Escarpment in Lomagundi. (2) July 28th - August 29th in the Sebungwe District. (3) October 17th - November 8th to Umwati River through Lomagundi, Hartley and Mafungabusi. (4) November 14th - 15th Near Hartley.

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The question of the possibility of blood-sucking flies other than Tsetse being concerned in the transmission of Trypanosomiasis still remains unsettled, and can only be settled finally by direct laboratory experiments. At the same time our experience in this territory is not such as to produce much anxiety on the score of the

- 2 -

possibility of the disease being spread to any extent away from the "fly belt" although there are undoubtedly occasional outbreaks on what may be termed as the outskirts of fly-areas which are very difficult to account for on the basis that each case of disease must be due to the bite of a Tsetse fly. The writer is by no means persuaded that direct transmission does not take place through the agency of other flies, and in support of this, it may be stated that Mr. Walter Jowett succeeded in conveying the disease in Capetown by means of either *Haematopota* or *Stomoxys*. That flies other than Tsetse are not capable of perpetuating the disease for more than a single season seems however to have been proved by experience, and may probably be attributed to the shortness of the lives of these insects. The need therefore of experiments to determine what flies, if any, are capable of thus conveying the organism from the sick to the healthy animal is not so great from a practical point of view as appeared at first, the Tsetse being from all indications the fundamental factor in the matter.

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