

about 1-2 mm. long, was found to be leaving the pouch at periods.

Seven weeks after the injection, the young was found to weigh 180 gm. which, compared with other young of approximately the same age, was at least 30 per cent below normal. Also the abdomen was somewhat distended, and the fur was short and sparse and remained like this until the experiment was terminated. Ten weeks after the injection of the culture of kala-azar, the animal was markedly undersized, frail and weak, though still eating and moving about freely. Its abdomen was markedly distended, and on palpation an enlarged liver and spleen could be felt. The possum now weighed 390 gm. It was anaesthetized with ether, and blood was obtained by heart puncture. A few minutes after this the animal died suddenly. An immediate autopsy showed a greatly enlarged spleen which had a mottled appearance, and on cross-section large whitish nodules were seen. It weighed 8.9 gm. This is at least five times the normal weight for an animal of this size. The liver, which was greatly enlarged, was pale but contained numerous small diffuse, hæmorrhagic areas. It weighed 26.2 gm. The left and right kidney weighed 3.4 gm. and 3.2 gm. respectively. A blood count showed a marked microcytic anaemia with a colour index of 0.69. There were 22 nucleated red cells per 100 leucocytes and a marked neutropenia (4 per cent). A smear made from the pulp of the spleen contained numerous Leishman-Donovan bodies particularly in the cytoplasm of the monocytes. The parasites were also seen in sections of liver and bone marrow. In cultures prepared from spleen, sternum and blood, the flagellate form of the pathogenic protozoon could be seen.

The mother was killed some three weeks after the death of its offspring, and no evidence of infection could be found at autopsy in the spleen, liver, bone marrow or blood.

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A Wasp Preying on House-Flies and Stable-Flies

Rubrica surinamensis (DeGeer) is a large and striking neotropical wasp belonging to the family Bembicidae. Its geographical range extends from the Argentine to Trinidad. It is commonly found nesting gregariously in a semi-social manner with other individuals in areas of bare sandy ground exposed to the sun. Flies of many different families comprise the prey. The flies captured are stung to death and used for provisioning the nest, the developing wasp larva being fed progressively from day to day.

In Trinidad this wasp normally preys upon horse-flies and hover-flies. However, other species of flies, including the house-fly, *Musca domestica* L., and the stable-fly, *Stomoxys calcitrans* (L.), have been observed on occasion to comprise the prey.

The wasp apparently exploits any readily available source of prey. Nests examined were sometimes found to contain the remains of many different kinds of flies. At other times only a single species was represented in the prey.

Wasps carrying house-flies were caught at the entrance to their nests. On digging up one such nest, a partly-grown wasp larva was found together with three intact house-flies and the remains of three others. Other individuals bearing stable-flies were similarly captured. In this case the abdomen of the prey was frequently greatly distended with blood. On releasing such wasps, they returned after a few minutes with other stable-flies, also gorged with blood. This was repeated a number of times. Apparently these individuals were utilizing a supply of stable-flies feeding presumably on livestock. The nest of one such wasp on examination was found to have been provisioned entirely with stable-flies.

As few natural enemies of either the house-fly or the stable-fly are known, it is thought to be of sufficient general interest to place the above observations on record.

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A Colonial Scientific Service

In the concluding remarks to his article¹ on *Anopheles gambiae* in America, my old friend and colleague, Dr. John Smart, of the British Museum (Natural History), suggests that men engaged at present on anti-malarial or other entomological work with the Forces may be engaged after the War to continue work of this kind in the Colonies and elsewhere.

I have served in the Colonial Empire both as a scientific worker and as an administrative officer, and I believe the time will be ripe after the War for inaugurating a 'Colonial Scientific Service' or possibly even more than one scientific service, including perhaps a Colonial Biological Service. At any rate, such a scientific service would have its own departmental head (or heads), who would be responsible for the seconding of personnel to wherever they were wanted and to appropriate work. The departmental head would also be able to put together teams of scientific workers for attacking several problems from the necessary different points of approach in co-operation.

It may be said that those men of science who work in the already existing Colonial departments and the few scientific specialist departments (such, for example, as the Tsetse Research Department in Tanganyika) have already accomplished work of such value that no change is needed to improve quality or quantity of individual work by scientific workers in the Colonies. I should not disagree with such a view, but I think that the proposition of a Colonial Scientific Service or Services bears careful consideration from two points of view.

First, there is unnecessary divergence and consequent loss of efficiency due to the same problem being attacked in different Colonial territories by differently qualified personnel approaching it from different preconceived ideas of attack, as it were. To make this clear, let me again quote the very fine work done by the Tsetse Research Department in Tanganyika during some years; in the neighbouring Colony of Kenya, tsetse work is done entirely by the Veterinary Department, and the officer whose time is devoted entirely to this work at present is not an entomologist, but a veterinarian. In Nigeria, again, tsetse work is carried out by the Medical