THE HAEMATOZOA OF SOUTH AFRICAN BIRDS. III. THE CARMINE BEE-EATER *MEROPS NUBICOIDES* DES MURS AND PUCHERAN

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The prevalence of parasites in the blood of southern African birds has only recently been established (Oosthuizen & Markus 1967a, 1967b, 1967c). Haematozoa present in the peripheral circulation of a sample of 19 adult *Merops nubicoides* Des Murs & Pucheran are listed here. The bee-eaters were captured for ringing purposes 15 miles N.W. of Bulawayo, Rhodesia, on 26 November, 1967, and thin blood films (one smear per bird) were kindly prepared by Janet Webber.

A thorough examination of the slides revealed the presence of the following: *Haemoproteus* only, 2 birds; *Leucocytozoon* only, 4 birds; microfilaria only, 2 birds; both *Haemoproteus* and *Leucocytozoon*, 2 birds; both *Haemoproteus* and microfilaria, 1 bird; and both *Leucocytozoon* and microfilaria, 1 bird. Negative diagnoses were made in the cases of the other 7 individuals.

Differences relating to the intensity of infection were evident and it was discovered that the parasite burden was greatest for each of the three haematozoa where the organism occurred alone. However, the incidence of microfilariae in the blood is liable to be subject to considerable fluctuation if the filarioids show a periodicity. By determining the number of infected cells per 20,000 erythrocytes in each case, extreme figures for *Haemoproteus* of 0·43% and 0·01% were obtained, the former for one bird where *Haemoproteus* alone was present and the latter in both instances where *Leucocytozoon* occurred also. There were 38 cells parasitised by *Leucocytozoon* per 20,000 blood cells in one of the bee-eaters harbouring *Leucocytozoon* only whilst the lowest figure for this parasite was 1 per 20,000 cells (in one of the two cases where it was found together with *Haemoproteus*). The protozoan gametocytaemia is relatively low and no immatures were seen. The peak of parasitaemia is reached fairly soon after the infection is patent and a chronic infection is indicated by a scarcity of mature and absence of small parasites. In no case did a parasitised cell contain more than one gametocyte of either protozoan. Classification of gametocytes showed that females outnumbered the males. 20,000 blood cells were examined in the case of each infection, both single and double, and the following averages calculated. *Haemoproteus:* macrogametocytes 55·3%, microgametocytes 44·7%; *Leucocytozoon:* macrogametocytes 65·5%, microgametocytes 34·5%. An area measuring 55 x 24 mm. on each of the smears positive for microfilaria was taken and the maximum number of 94 embryos (estimated at 1 microfilaria for every 96,000 blood cells) was recorded for one of the single infections. Only five microfilariae were counted in the blood of the bird infected with *Haemoproteus* also (estimated at 1 embryo for every 1,920,000 blood cells), this being the lowest figure.

Haemoproteus has been found in the blood of *M. nubicus* Gmelin in the Sudan (Balfour 1908) and microfilariae in the Congo (Kerandel 1909). Some authors consider *M. nubicus* and *M. nubicoides* to be conspecific. The *Leucocytozoon* infection apparently represents a new host-parasite record.

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