Presence of *Haemoproteus* sp. in House Sparrows in England

ALTHOUGH there have been many records of *Haemoproteus* in the English sparrow (*Passer domesticus*) from America and Europe[1-3] there appears to be no published record of the parasite occurring in Britain.

Recent examinations of blood films taken from the peripheral blood of nineteen sparrows which had become trapped in experimental animal buildings at Weybridge showed two of the birds to be infected with *Haemoproteus*. One bird had a pure infection of *Haemoproteus*, the other a mixed infection of *Haemoproteus* and *Plasmodium relictum*. *P. relictum* was present in less than 1 per cent of the erythrocytes. Because of morphological differences between the two *Haemoproteus* parasites, those from the sparrow with the double infection were designated Type *A*, and those from the pure infection Type *B*.

In the blood parasitized by Type *A*, the parasitaemia was 0·69 per cent, calculated from 10,000 erythrocytes, most of the parasites being mature gametocytes similar in shape to those usually described (Fig. 1). With only a few exceptions there was only one parasite in each parasitized cell. Of the gametocytes 67 per cent were macrogametocytes and 33 per cent were microgametocytes. The microgametocytes in Type *A* showed a hyaline cytoplasm which stained pale blue or pinkish, with a dispersed nucleus containing fine chromatin granules. By comparison the cytoplasm of the macrogametocytes stained a much deeper blue. The nucleus was compact and contained a karyosome. The light brown pigment granules of the microgametocyte were generally aggregated into masses towards the poles, whereas those of the macrogametocyte were uniformly scattered throughout the parasite. Counts of the numbers of pigment granules showed that the average number for microgametocytes was 9·14 (minimum 6, maximum 12), and for macrogametocytes 12 (minimum 9, maximum 15).

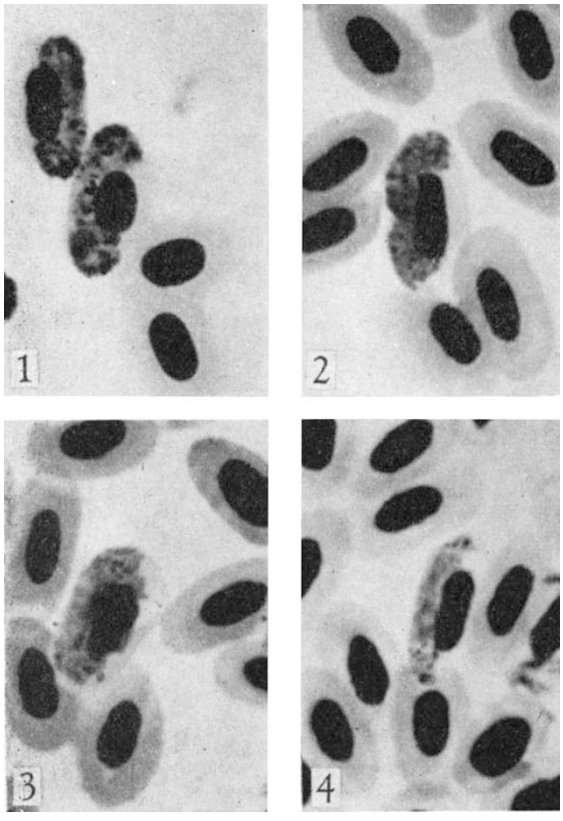

Fig. 1. Macrogametocyte Type *A*.

Fig. 2. Macrogametocyte Type *B*.

Figs. 3 and 4. Microgametocytes Type *B*. (Giemsa, × 1,550.)

In the *B* type infection the parasitaemia was 10·06 per cent. Many cells contained two or three young gametocytes. There was a greater morphological difference between the mature gametocytes than in Type *A*. In particular the microgametocytes were larger and broader with their poles flat rather than rounded and some with finger-like edges. There was also slight displacement of the host cell nucleus in many of the parasitized cells. This was not observed with Type *A*.

Immature gametocytes were more predominant. Differential counts of mature gametocytes showed that 41 per cent were macrogametocytes and 59 per cent microgametocytes.

Pigment granules were yellow in colour, and counts showed the average number for microgametocytes to be 10·6 (minimum 6, maximum 17) and for macrogametocytes 13·12 (minimum 9, maximum 19). Although the range between minimum and maximum numbers is greater in Type *B* than in Type *A*, it is unlikely that this difference is significant.

The absence of tissue stages from these infections, and the lack of sufficient visual descriptions from existing records, makes it difficult to enable an accurate comparison to be made with specifically recorded species of the parasite.

It is not possible to be sure whether the infections in the two birds are of different species of *Haemoproteus* or whether they merely represent different morphological phases. Different species of the parasite may possibly infect the same species of bird[4].

It is hoped that this record of *Haemoproteus* will stimulate further examinations of *Passer domesticus* throughout the British Isles, and that the vector will eventually be identified.

M. A. PEIRCE

Central Veterinary Laboratory,
Ministry of Agriculture, Fisheries and Food,
New Haw, Weybridge,
Surrey.

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Breeding Frequency in the Albatrosses *Diomedea melanophris* and *D. chrysostoma*

IT is now generally accepted that the two great albatrosses *D. exulans* and *D. epomophora* take about twelve months to rear their young, and if successful breed only in alternate years[1-4], but the breeding cycles of the smaller species are not so prolonged and there has been less reason to suppose that annual breeding is not the rule. Recent studies at Bird Island, South Georgia (54° 00′ S., 38° 02′ W.) (ref. 5), however, indicate that although the black-browed albatross *D. melanophris* breeds annually, the grey-headed albatross *D. chrysostoma* breeds less frequently.

The two species are closely related, and both belong to that group of albatrosses known as mollymauks. There is no significant difference in size or body weight between adults, and although the head plumage and bill markings are strikingly different, the similarity of their habits and behaviour on the breeding grounds has led to the observation that remarks on the nesting of one species apply equally to the other[1]. In fact, although they are not easy to demonstrate, differences are apparent in breeding biology, oceanic distribution[6] and feeding[7].