Assemblages of Ectoparasites and Haemoparasites in the *Gallus gallus* Complex in Selangor, Malaysia

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Abstract

Parasites are known to be host-specific through adaptive radiation and tandem evolution with their hosts. However, selective pressures like rapid environmental changes and the adaptation of the hosts to novel habitats often influence the assemblages of parasites. This research investigates the ectoparasite and haemoparasite fauna on the *Gallus gallus* complex in Selangor, with reference to two groups, namely, the wild Red Jungle fowl which is believed to be the ancestor of all the domestic chickens, and the indigenous free-ranging village chickens. Fifteen adult Red Jungle fowls (9 females and 6 males) and 15 indigenous village chickens (8 females and 7 males) were examined to determine the ectoparasite and haemoprotozoan assemblage among the *Gallus gallus* complex in Selangor. Blood was collected via venipuncture for detection of intra- and inter-erythrocyte haemoparasite. Five feathers from various parts of the body, namely, the primary wing, tail, axilla, thigh, neck, back and breast were plucked from each bird for examination of ectoparasites. Four species of blood parasites were found including microfilaria, *Trypanosoma*, *Plasmodium* and *Leucocytozoon sabrazesi*. The Red Jungle fowl and village chickens did not share the same kind of blood parasites apart from microfilaria. Six species of ectoparasites were detected, namely, *Lipeurus caponis, Menopon gallinae*, *Gonoides dissimilis*, *Megninia cubitalis, Goniocotes* sp. and *Haemaphysalis* sp. The species composition of ectoparasites was found to be similar between the Red Jungle fowl and village chickens. However, the prevalence and intensity of infection was higher in the Red Jungle fowl. There appears to be subtle microhabitat segregation between the species of ectoparasites. The *Lipeurus caponis* are distributed throughout the body in both the Red Jungle fowl and village chickens, indicating that they are not selective. *Menopon gallinae* and *Gonoides dissimilis* selected the shorter feathers on the neck, thigh, axilla, back and breast, which is closer to host body. *Megninia cubitalis* preferred the wing and tail feathers. The Red Jungle fowl harbors more ectoparasite and haemoparasite at a higher infestation rate compared to village chickens. This may be due to the differences in habitat, behaviour and diet, and warrants further investigation.

Keywords: ectoparasite, haemoparasite, *Gallus gallus*, Red Jungle fowl, village chicken