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New Host Records of Parasites in the Malayan Red Jungle Fowl, *Gallus gallus spadiceus*

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ABSTRAK

Tiga puluh spesies parasit telah dijumpai di dalam tujuh ekor ayam hutan merah Malaya jantan dewasa Gallus gallus spadiceus *dari Ulu Langat, Selangor, Malaysia. Lima belas daripada spesies parasit adalah rekod baru bagi perumah ini, iaitu* Pseudolynchia canariensis, Eimeria *sp.*, Trichomonas gallinarum, Ascaridia galli, Capillaria annulata, Capillaria contorta, Cardiofilaria nilesi, Dispharynx spiralis, Gongylonema *sp.*, Heterakis gallinarum, Tetrameres fissispina, Hymenolepis cantaniana, Raillietina cesticillus, R. tetragona *dan* Postharmostomum gallinum. *Parasit yang paling biasa terdapati ialah spesies nematod* Heterakis *dan* Capillaria.

ABSTRACT

Thirty species of parasites were recovered from seven adult male Malayan red jungle fowls Gallus gallus spadiceus *from Ulu Langat, Selangor, Malaysia. Fifteen species of the parasites are newly recorded for this host; they are* Pseudolynchia canariensis, Eimeria *sp.*, Trichomonas gallinarum, Ascaridia galli, Capillaria annulata, Capillaria contorta, Cardiofilaria nilesi, Dispharynx spiralis, Gongylonema *sp.*, Heterakis gallinarum, Tetrameres fissispina, Hymenolepis cantaniana, Raillietina cesticillus, Raillietina tetragona *and* Postharmostomum gallinum. *The most common parasites are the nematode species of* Heterakis *and* Capillaria.

INTRODUCTION

The Malayan red jungle fowl, *Gallus gallus spadiceus* is one of the four species of jungle fowl found in the Indian subcontinent and South East Asia. It is regarded as the ancestor of the domestic fowl (*Gallus domesticus*) due to its widespread distribution. The other three species of jungle fowl are the grey jungle fowl (*Gallus sonneretii*), the Ceylonese jungle fowl (*Gallus lafayetti*) and the green jungle fowl (*Gallus varius*) (Beebe 1926; Nishida *et al.*1985).

There are several reports on parasites of the Malayan red jungle fowl (Chin *et al.* 1974; Dissanaike and Fernando 1974a, 1974b; Fernando and Dissanaike 1975; Amin-Babjee *et al.* 1985; Lee *et al.* 1985a, 1985b; Lee *et al.* 1989a, 1989b; Lee and Amin-Babjee 1990). In the case of the Ceylonese jungle fowl, *Ascaridia galli, Raillietina tetragona* and *Eimeria praecox* are the only parasites recorded (Rysavy *et al.* 1973; Long *et al.* 1974), whereas in the grey jungle fowl *Lemdana sonneretta* is the only parasite recorded (Ali 1969). The objective of this study was to compile a check-list of all species of parasites collected from the Malayan red jungle fowl.

MATERIALS AND METHODS

Seven red jungle fowls were obtained from Ulu Langat district, Selangor State, Malaysia. One thin blood film was prepared directly on a clean glass slide and about 2 ml of blood was collected in a heparinised tube from each bird. The thin films were dried at room temperature, fixed in methanol and stained in 10% Giemsa-buffer solution in a coplin jar. From the heparinised blood, direct wet smears were made and examined for any active parasites like microfilaria or trypanosome and if negative for microfilaria, Knotts blood concentration technique was performed to verify it.

After autopsy, the feathers were soaked in 70% alcohol for any ectoparasite. The intestines and organs were opened separately with scissors and soaked in normal saline (NS) for helminths. Helminths collected were rinsed twice in NS and relaxed in hot 70% alcohol (for nematodes); wrapped around glass slides (for cestodes) or placed between glass slides (for trematodes), tied loosely with rubber bands and fixed in hot 70% alcohol. The eyes, ears and skin were searched grossly for parasites. Rectal faeces were processed and floated with saturated sodium chloride for ova or oocysts.

TABLE 1
Parasites from the Malayan red jungle fowls

Parasite	Site	No of birds	
		examined	infected
ARTHROPODS			
Lipeurus caponis (lice)	plumage	7	1
Menopon gallinae (lice)	plumage	7	4
Megninia cubitalis (mites)	plumage	7	2
*Pseudolynchia canariensis** (hippoboscids)	plumage	7	1
PROTOZOA			
*Eimeria sp**	faeces	7	1
Plasmodium gallinaceum	blood	7	1
*Trichomonas gallinarum**	caecum	7	1
NEMATODES			
*Ascaridia galli**	small intestine	7	1
*Capillaria annulata**	crop	7	1
*Capillaria contorta**	gizzard	7	1
Capillaria obsignata	caecum	7	5
*Cardiofilaria nilesi**	body cavity	7	1
*Dispharynx spiralis**	proventriculus	7	1
*Gongylonema sp.**	crop	7	2
Heterakis beramporia	caecum	7	3
*Heterakis gallinarum**	caecum	7	5
Lemdana latifi	body cavity	7	3
Lemdana sonneretta	body cavity	7	1
Oxyspirura mansoni	eye	7	3
Pelecitus galli	base of leg	7	1
Strongyloides avium	small intestine	7	1
*Tetrameres fissispina**	proventriculus	7	1
CESTODES			
Amoebotaenia cuneata	duodenum	7	3
Davainea proglottina	duodenum	7	4
*Hymenolepis cantaniana**	small intestine	7	1
*Raillietina cesticillus**	small intestine	7	3
Raillietina echinobothridia	small intestine	7	4
*Raillietina tetragona**	small intestine	7	1
TREMATODES			
*Postharmostomum gallinum**	caecum	7	2
Tanaisia vietnamensis	kidney	7	1

* New host records

Parasites were gathered by using the stereomicroscope. Mites were mounted in Hoyers medium, nematodes in lactophenol and cestodes/trematodes stained with acid-alum-carmine for identification under a compound microscope.

RESULTS AND DISCUSSION

Thirty species of parasites have been recovered from the red jungle fowl. Fifteen of the species from the present study are considered new records for this host. The new host records are *Pseudolynchia canariensis, Eimeria* sp., *Trichomonas gallinarum, Ascaridia galli, Capillaria annulata, C. contorta, Cardiofilaria nilesi, Dispharynx spiralis, Gongylonema* sp., *Heterakis gallinarum, Tetrameres fissispina, Hymenolepis cantaniana, Raillietina cesticillus, R. tetragona* and *Postharmostomum gallinum.*

Twenty other species of parasites reported by Amin-Babjee *et al.* (1985) were not observed in this study. They are *Haemaphysalis wellingtoni, Neoschongastia gallinarum, Megninia cubitalis, Menopon gallinae, Lipeurus caponis* and *Gonoides dissimilis* (all arthropods); *Plasmodium gallinaceum, Plasmodium juxtanucleare* and *Leucocytozoon sabrazesi* (protozoa); *Heterakis berampora, Capillaria obsignata, Lemdana* sp., *Tetrameres crammi, Cheilospirura hamulosa, Syngamus trachea* and *Strongyloides avium* (nematodes), *Mediorhynchus gallinarum* (acanthocephala); *Raillietina echinobothrida, Amoebotaenia* sp. and *Davainea* sp. (cestodes); *Tanaisia vietnamensis* and Heterophyginae family (both trematodes). Their absence in this study may be due to the larger number of fowls studied (16) from a wider area (Banting, Dengkil and Kajang) by Amin-Babjee *et al.* (1985) as compared to only seven birds from Ulu Langat district in the present study.

There was only a single specimen of the fly *Pseudolynchia canariensis* encountered from one of the birds. This fly is commonly present in pigeons but may exist in some wild birds (Soulsby 1986).

The few oocysts seen in the rectal faeces of one of the jungle fowls were identified as that of *Eimeria* sp. Morphologically they were small, ovoidal and without micropyle. They may be similar to some of the species of coccidia found in domestic chicken since species of jungle fowl in Asia are considered to be the ancestors of the domestic fowl (Long *et al.* 1974).

The single nematode *Gongylonema* was not identified down to the species level because no male specimen was available for the purpose.

However, this study corresponds to an earlier study in which the most common parasites were the nematodes *Heterakis (H. beramporia* and *H. gallinarum*) and *Capillaria (C. annulata, C. contorta* and *C. obsignata*) (Amin-Babjee *et al.* 1985).

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