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Diversity and abundance of gastrointestinal parasites in large mammals in the Wasgomuwa National Park, Sri Lanka

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Information on the parasite occurrence and load of gastrointestinal parasites are required for managing healthy large mammal populations in their natural environment. Thus, a survey of gastrointestinal (GI) parasitic forms in large mammals of the Wasgomuwa National Park was undertaken to fill the locally existing knowledge gap in this field.

A total of 36 faecal samples of six large mammal taxa: *Viverricula* sp. (civet) (4 samples); *Panthera pardus kotiya* (leopard) (3 samples), *Bubalus* sp. (buffalo) (7 samples), *Elephas maximus* (elephant) (3 samples), *Melursus ursinus* (bear) (16 samples) and *Semnopithecus priam / Macaca cinica* (monkey) (3 samples) were randomly collected from the roadsides and grasslands within the Wasgomuwa National Park. Microscopy of wet faecal mounts prepared using Saline/ Lugol's Iodine, and the density flotation method were used for qualitative analysis, while the formol-ether technique resulted in the generation of quantitative data. Eight types of parasitic ova, a rhabditiform larva and several types of protozoan cystswere recorded in the faeces. The four nematode ova were of the strongyle, strongyloid, ascarid, and trichuroid types, while the four platyhelminthes ova were of 3 different digenean types, and a single cyclophillidean (cestode) ova type. Of the faecal samples analysed (n = 36), 86% screened positive for one or more GI parasitic stages. Civet, buffalo and leopard faecal samples showed 100% incidence for GI parasites, while the monkey showed the lowest (33%). Some parasitic infections were restricted to selected mammal species, *e.g.* cyclophillidean ova only in buffalo and leopard dung. A comparatively high Shannon-Weiner Diversity Index was recorded in both the civet (1.49) and elephant (1.35), whilst the lowest was recorded in the monkey (0.05). Across all host species, protozoan cysts were dominant over the other ova types. Of the infected dung samples, the lowest parasite incidence were for nematode larvae (6.45%), highest was for protozoan cysts (87.09%), while other ova types were of moderate incidence (38.7% to 12.9%). The bear harboured the highest parasitic load for both strongyle type ova (74 ova/ g faeces) and for protozoan cysts (401 cysts/g faeces). Digenean ova were most abundant in the buffalo with a load of 97 ova/ g faeces, while the rhabditiform larva was found in high abundance in the elephant (20 larvae/ g faeces).

This study, for the first time, documented baseline data of gastrointestinal parasitic forms of wild dwelling mammals in Sri Lanka. The results generated through this survey would therefore be of critical importance for both park management and veterinary purposes.

Keywords: Parasite load, large mammals, diversity, wild

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