

PARASITIC INFECTIONS AMONG CAPTIVE BIRDS AT SAKKARBAGH ZOO, JUNAGADH, GUJARAT

H.R. Parsani¹, R.R. Momin² and C.N. Bhuva³

¹ Veterinary Officer, ² In-charge, Professor and Head,

Department of Parasitology, College of Veterinary Science and Animal Husbandry, Gujarat Agricultural University, Sardar Krushinagar, Gujarat 385506, India.

³ Zoo Superintendent, Sakkarbagh Zoo, Junagadh, Gujarat 362001, India.

Abstract

A total of 28 group faecal samples of different captive birds at Sakkarbagh Zoo, Junagadh were examined cage-wise. Out of this 20 (71.43%) were found positive for parasitic infections. Eggs of *Ascaridia* sp. and *Capillaria* sp. were found in nine (69.23%) and five (38.46%) group faecal samples respectively; oocyst of coccidia (*Eimeria* sp.) in 10 (50%); ova of trematode in five (25%) and cestode segment in one (0.50%) group faecal samples were observed.

Key words

Parasitic infection, birds, *Ascaridia* sp., *Capillaria* sp., *Eimeria* sp., Junagadh Zoo

Introduction

Birds in zoological parks are under constant stress due to captivity and are prone to various bacterial, viral, fungal and parasitic infections. Among these, parasitic diseases are most common and cause considerable loss to wildlife in this country. A number of parasites are responsible for illness and death of captive birds and thus greatly influence the success of bird management in the zoo. A study was conducted for the prevalence of parasitic infection among captive birds at Sakkarbagh Zoo, Junagadh. Sakkarbagh Zoo was the first zoo in Gujarat established before independence in 1872. This Zoo has 193 captive birds belonging to 12 families.

Materials and Method

Fresh group faecal samples of 193 birds were collected cage-wise in clean sterile containers. A part of each sample was fixed in 10 per cent formaline and brought to the laboratory for direct examination. On concentration and centrifugation, in saturated salt solution, the samples revealed a variety of parasitic ova or

cyst. A part of each sample was also mixed with 2.5 per cent potassium di-chromate solution and kept at room temperature for sporulation of coccidian oocyst. Gross helminth parasites in the faeces were identified after staining with borax carmine in case of cestodes and trematodes. Nematodes were studied after clearing the samples in lactophenol.

Result and Discussion

In the present investigation, examination of 28 faecal samples revealed 71.43 per cent (n = 20) parasitic infection. Nematode and coccidian infections were observed in 65 per cent and 50 per cent of the samples respectively. Trematode infection was revealed in 25 per cent of carnivorous birds and cestode infection was observed in 0.50 per cent of columbid birds as indicated in Table 1. On faecal sample examination, mainly the ova of nematodes, viz., *Ascaridia* sp. (69.23%), *Capillaria* sp. (38.46%), *Trichostrongylus* sp. (7.69%), *Spiruroid* sp. and *Heterakis* sp. (7.69%) were observed.

In a similar type of study by Patnaik and Acharjyo (1970), Pande *et al.* (1970), Chauhan *et al.* (1973), Muraleedharan *et al.* (1990), Islam (1991), Reddy *et al.* (1992) and Patel *et al.* (1998) reported 25 to 99 per cent parasitic infection on examination of faecal samples of zoo birds. The present investigation revealed 71.43 per cent parasitic infection.

Patnaik and Acharjyo (1970) reported trematode infection in Ciconiformes and Falconiformes birds. In the present study, 25 per cent of the samples revealed trematode infection in Ciconiformes and Falconiformes birds.

Patnaik and Acharjyo (1970), Chauhan *et al.* (1973), Islam (1991), Reddy *et al.* (1992) and Patel *et al.* (1998) reported nematode infection mainly with *Ascaridia* sp. and *Capillaria* sp. in

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Table 1. Prevalence of parasitic infections in captive birds of Sakkarbagh Zoo, Junagadh

Name of Birds	# Birds	Types of parasitic infection			
		Trematode	Cestode	Nematode	Eimerian oocyst
Psittacidae					
Cockatiel (<i>Nymphus hollandicus</i>)	4	-	-	<i>Ascaridia</i> sp.	1
Grey cockatiel (<i>Colopsitta hollandicus</i>)	6	-	-	<i>Ascaridia</i> sp.	1
Red-breasted Parakeet (<i>Psittacula krameri</i>)	7	-	-	-	-
Alexandrine Parakeet (<i>Psittacula eupatria</i>)	8	-	-	<i>Ascaridia</i> sp.	-
Rose-ringed Parakeet (<i>Psittacula krameri</i>)	6	-	-	-	-
Eclectus Parrot (<i>Eclectus roratus</i>)	2	-	-	-	-
Passeridae					
Love Bird (<i>Agornis</i> sp.)	40	-	-	<i>Spiruroid</i> sp.	1
Budgeriger (<i>Melopsittacus undulatus</i>)	20	-	-	-	1
Phasianidae					
Deshi Fowl (<i>Gallus gallus</i>)	4	-	-	<i>Ascaridia</i> sp.	1
Chinese Fowl (<i>Gallus</i> sp.)	3	-	-	<i>Heterakis</i> sp.	1
Guinea Fowl (<i>Numida melegradis</i>)	2	-	-	<i>Ascaridia</i> sp. <i>Trichostrongylus</i> sp. <i>Capillaria</i> sp.	-
Turkey	1	-	-	-	-
White Peacock (<i>Pavo cristatus</i>)	2	-	-	<i>Ascaridia</i> sp. <i>Capillaria</i> sp.	-
Grey Partridge (<i>Francolinus ponticerianus</i>)	2	-	-	-	-
Silver Pheasant (<i>Lophura nuchthemera</i>)	3	-	-	-	1
Casuaridae					
Emu (<i>Dromaius novaehollandicus</i>)	1	-	-	-	-
Bucerotidae					
Hornbill (<i>Tockus briosiris</i>)	1	1	-	<i>Ascaridia</i> sp.	-
Accipitridae					
Tawny Eagle (<i>Aquila rapax</i>)	1	1	-	-	-
Threskiornithidae					
Spoonbill (<i>Platylea leucorodia</i>)	4	1	-	-	-
Black Ibis (<i>Priudibis papillosa</i>)	2	-	-	-	-
Ciconidae					
Painted Stork (<i>Ibis leucocephalus</i>)	4	1	-	-	-
Phoenicopteridae					
Flemingo (<i>Phoenocopterus roseus</i>)	5	-	-	-	-
Pelecanidae					
Rosy Pelican (<i>Pelecanus onocrotalus</i>)	2	1	-	<i>Ascaridia</i> sp.	-
Anatidae					
Duck (<i>Anas</i> sp.)	8	-	-	-	1
Columbidae					
White Fantail Pigeon (<i>Columba livia intermedia</i>)	15	-	-	-	1
Nicobar Pigeon (<i>Goura gristata</i>)	4	-	-	<i>Capillaria</i> sp.	1
Phouter Pigeon (<i>Columba</i> sp.)	20	-	-	<i>Capillaria</i> sp.	-
Shiraji Pigeon (<i>Columba</i> sp.)	16	-	1	<i>Ascaridia</i> sp. <i>Capillaria</i> sp.	-

Galliformes and Columbiformes birds. The present investigation also recorded nematode infection mainly with *Ascaridia* sp. (69.23%) and *Capillaria* sp. (38.46%) in Columbiformes and Galliformes birds.

Patnaik and Acharjyo (1970), Islam (1991) and Reddy *et al.* (1992) reported that cestode infection was mostly found in Galliformes and Columbiformes birds. In the present findings 0.50 per cent cestode infection was observed only in Columbiformes birds as reported by Patel *et al.* (1998).

Conclusion

It seems, from the results that nematode and coccidian infection were most commonly observed due to their direct life cycle where as trematode and cestode infections were low due to their indirect life cycle. Trematode infection was mainly due to fish and mutton given to carnivorous birds, which act as intermediate host for trematodes. Birds did not show any alarming signs inspite of parasitic infection due to regular deworming at three-month intervals. However some birds do not take the drugs due to change of taste and thereby spread the infection to the others in the cage.

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