

## PREVALENCE OF GASTRO-INTESTINAL PARASITES IN CAPTIVE BIRDS AT KAMLA NEHRU ZOOLOGICAL GARDEN, KANKARIA ZOO, AHMEDABAD, GUJARAT

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### Abstract

A total of 138 group faecal samples collected cagewise of different wild birds from Kamla Nehru Zoological Garden, Kankaria Zoo, Ahmedabad were examined. Out of this 62 (44.93 %) were found positive for parasitic infection. Eggs of *Ascaris* and *Capillaria* species were observed in 25 (71.43%) and 13 (37.14%) samples respectively, while the oocyst of coccidia (*Eimeria* sp.) were observed in 53 (85.48%) samples. Ova of trematode 8 (12.90%) and cestode segment 3 (4.84%) were also observed.

### Keywords

Parasitic infection, zoo birds, *Ascaris*, *Capillaria*, *Eimeria*, Kamala Nehru Zoological Garden, Gujarat

### Introduction

There are 27 natural orders and 8600 families representing 30,000 species of bird in the world. Out of which, in India to day there are 20 orders and 75 families representing 1200 species of birds (Ali, 1996). In spite of providing all possible care and facilities, the birds kept in the zoo are under constant stress due to captivity and are prone to infections. Parasitic infections have caused considerable losses to wild life in this country. A number of parasites are responsible for illness and death of captive birds and exercise great influence on the success of bird management in the zoo. Since a systematic study of parasitic infections has not been conducted in Kamla Nehru Zoological Garden, Kankaria Zoo, Ahmedabad that houses 138 species of birds belonging to 24 families and totalling 2068 individuals, a study was undertaken and is communicated in this article.

### Materials and Methods

Fresh group faecal samples of birds were collected cage wise in clean sterile containers from Kamla Nehru Zoological Garden, Kankaria Zoo Ahmedabad. A part of the sample was fixed in 10 per cent formalin and brought to the laboratory for direct concentration and centrifugation in saturated salt solution. While the other part of each sample was mixed with 2.5% potassium dichromate solution and kept at room temperature for sporulation of coccidian oocyst. Gross helminth pass in the faeces were identified after staining with borax carmine in case of trematodes and cestodes. Nematodes were studied after clearing them in lactophenol as per standard procedure.

### Results and Discussion

The faecal examination of 13814 samples revealed 44.93 per cent parasitic infection with the highest prevalence of nematode eggs (56.45 %) and coccidian oocysts (85.48 %). The infection of trematodes was 12.90% in carnivorous birds while cestode infection was 4.84% in columbid birds (Table 1). Earlier workers have reported parasitic infection varying from 25 to 99% in zoo birds - Baranga Zoo, Orissa (Patnaik & Acharjyo, 1970); Lucknow Zoo, Uttar Pradesh (Pande *et al.*, 1970); Lucknow and Delhi Zoo (Chauhan, *et al.*, 1973); Mysore Zoo (Muraleedharan *et al.*, 1990); Bannerghatta National Park, Bangalore (Reddy *et al.*, 1992), and Ahmedabad and Baroda Zoo, Gujarat (Patel *et al.*, 1998).

Species-wise nematode infection consisted of *Ascaridia* species (71.43%), *Capillaria* species (37.14%) and *Strongyloid* species (8.57%). 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* species and *Capillaria* species in galliformes and columbiformes birds. In this study also nematode infection mainly with *Ascaridia* species (71.43%) and *Capillaria* species (37.14%) in columbiformes and

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galliformes birds was recorded. It seems that nematode infection was 56.45% among all parasitic infections, which is high due to their direct life cycle.

Patnaik and Acharjyo (1970), Islam (1991), and Reddy *et al.*, (1992) reported that cestode infection is mostly found in galliformes and columbiformes. In the present investigation 4.84% cestode infection was observed only in columbiformes birds as reported by Patel *et al.*, (1998). Patnaik and Acharjyo (1970) reported trematode infection in ciconiformes and falconiformes birds. During the present study 12.90% trematode infection was observed in ciconiformes and falconiformes birds. Both trematode and cestode infections were found in low numbers which might be due to their indirect life cycle. Trematode infection in ciconiformes and falconiformes may be due to fish which may act as intermediate host.

## Conclusion

In the present study nematode and coccidian infection were most commonly observed which might be due to their direct life cycle; whereas the trematode and cestode infection were low due their indirect life cycle. Trematode infection was mainly due to fish given to ciconiformes and falconiformes birds. Infected birds did not show any alarming clinical signs because of regular deworming at three months interval for three days in drinking water. However, some birds were not taking drug due to change of water taste. This might be a reason for parasites especially those that have direct life cycle to remain in the cage and reinfect the birds.

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Table 1. Prevalence of parasitic infection in captive birds of Kamla Nehru Zoological Garden, Kankaria Zoo, Ahmedabad

| English name                   | Scientific name                        | No. of birds infected | Type of infection |                       |           |                 |
|--------------------------------|--|-----------------------|-------------------|-----------------------|-----------|-----------------|
|                                |  |                       | Cestode           | Nematode              | Trematode | Eimerian oocyst |
| Galliformes: Phasianidae       |  |                       |                   |                       |           |                 |
| Indian Peafowl                 | <i>Pavo cristatus</i>                  | 11                    | -                 | <i>Capillaria</i> sp. | -         | -               |
| Grey Peacock-pheasant          | <i>Polyplectron bicalcaratum</i>       | 1                     | -                 | <i>Capillaria</i> sp. | -         | -               |
| White Pea fowl                 | <i>Pavo cristatus</i>                  | 30                    | -                 | <i>Ascaridia</i> sp.  | -         | 1               |
| Bhutan Grey Peacock pheasant   | <i>Polyplectron thibetanus</i>         | 4                     | -                 | <i>Capillaria</i> sp. | -         | 1               |
| Edward Pheasant                | <i>Lophura edwardsi</i>                | 1                     | -                 | -                     | -         | -               |
| Golden Pheasant                | <i>Chrysolophus pictus</i>             | 3                     | -                 | -                     | -         | 1               |
| Lady Amherst's pheasant        | <i>Chrysolophus amherstiae</i>         | 4                     | -                 | -                     | -         | -               |
| Silver Pheasant                | <i>Lophura nycthemera</i>              | 17                    | -                 | <i>Capillaria</i> sp. | -         | 1               |
| Red Junglefowl                 | <i>Gallus gallus</i>                   | 1                     | -                 | -                     | -         | -               |
| Grey Junglefowl                | <i>Gallus sonneratii</i>               | 2                     | -                 | <i>Ascaridia</i> sp.  | -         | -               |
| Painted Spurrow                | <i>Galloperdix lunulata</i>            | 1                     | -                 | -                     | -         | -               |
| Red Spurrow                    | <i>Galloperdix spadicea</i>            | 2                     | -                 | -                     | -         | 1               |
| Jungle Bush-Quail              | <i>Perdula asiatica</i>                | 4                     | -                 | -                     | -         | 1               |
| Japanese Green Pheasant        | <i>Phasianus versicolor</i>            | 2                     | -                 | -                     | -         | -               |
| Palwan Peacock Pheasant        | <i>Polyplectron emphanum</i>           | 1                     | -                 | -                     | -         | -               |
| Grey Francolin                 | <i>Francolinus pondicerianus</i>       | 3                     | -                 | -                     | -         | -               |
| Black Francolin                | <i>Francolinus francolinus</i>         | 3                     | -                 | -                     | -         | -               |
| Psittaciformes: Psittacidae    |  |                       |                   |                       |           |                 |
| Cardinal Red-crested Parakeet  | <i>Paroaria cucullata</i>              | 1                     | -                 | -                     | -         | -               |
| Cockatiel                      | <i>Nymphicus hollandicus</i>           | 61                    | -                 | -                     | -         | 1               |
| Grey Cockatiel                 | <i>Colopsitta hollandicus</i>          | 4                     | -                 | -                     | -         | -               |
| Cockatoo                       | <i>Kakatoa</i> sp.                     | 3                     | -                 | -                     | -         | -               |
| Little Corella                 | <i>Kakatoa sanguinea</i>               | 4                     | -                 | -                     | -         | -               |
| Rose crested Cockato           | <i>Kakatoa moluccensis</i>             | 4                     | -                 | -                     | -         | 1               |
| Goffin cockatoo                | <i>Kakatoa sanguinea goffini</i>       | 2                     | -                 | -                     | -         | -               |
| Greater White Crested Cockatoo | <i>Kakatoa alba</i>                    | 3                     | -                 | -                     | -         | -               |
| Black-headed Connure           | <i>Aratinga</i> sp.                    | 1                     | -                 | -                     | -         | -               |
| Brown-eared Connure            | <i>Aratinga</i> sp.                    | 19                    | -                 | <i>Ascaridia</i> sp.  | -         | 1               |
| Jandaya Connure                | <i>Aratinga jandaya</i>                | 3                     | -                 | -                     | -         | -               |
| Pantagonian Connure            | <i>Aratinga</i> sp.                    | 8                     | -                 | -                     | -         | 1               |
| Peruvian Connure               | <i>Aratinga</i> sp.                    | 1                     | -                 | -                     | -         | -               |
| Red-headed Connure             | <i>Aratinga wagleri</i>                | 4                     | -                 | -                     | -         | -               |
| Black Lory                     | <i>Chalcopsitta</i> sp.                | 1                     | -                 | -                     | -         | -               |
| Black-capped Lory              | <i>Chalcopsitta atra petra</i>         | 3                     | -                 | -                     | -         | -               |
| Black-winged Lory              | <i>Eos cyanogenia</i>                  | 1                     | -                 | -                     | -         | -               |
| Chattering Lory                | <i>Domicella garrula garrula</i>       | 4                     | -                 | -                     | -         | 1               |
| Red Mollucan Lorry             | <i>Eos bornea bornea</i>               | 1                     | -                 | -                     | -         | -               |
| Blue and Yellow Macaw          | <i>Ara ararauna</i>                    | 1                     | -                 | -                     | -         | -               |
| Illiger's Macaw                | <i>Ara maracana</i>                    | 2                     | -                 | -                     | -         | -               |
| Scarlet Macaw                  | <i>Ara</i> sp.                         | 1                     | -                 | -                     | -         | -               |
| Yellow-collared Macaw          | <i>Ara auricollis</i>                  | 2                     | -                 | -                     | -         | -               |
| Military Macaw                 | <i>Ara militaris</i>                   | 1                     | -                 | -                     | -         | -               |
| Yellow-headed Amazon           | <i>Amazona ochrocephala tresmariae</i> | 1                     | -                 | -                     | -         | -               |
| Grey Parrot                    | <i>Psittacus erithacus</i>             | 1                     | -                 | -                     | -         | -               |
| Senegal Parrot                 | <i>Poicephalus senegalus</i>           | 2                     | -                 | -                     | -         | -               |
| Red-sided Electus              | <i>Lorius roratus pectoralis</i>       | 1                     | -                 | -                     | -         | -               |
| Parakeet                       | <i>Psittacula</i> sp.                  | 27                    | -                 | -                     | -         | 1               |
| Alexandrine Parakeet           | <i>Psittacula eupatria</i>             | 30                    | -                 | <i>Ascaridia</i> sp.  | -         | 1               |
| Plum-headed Parakeet           | <i>Psittacula cyanocephala</i>         | 15                    | -                 | -                     | -         | -               |
| Rose-breasted Parakeet         | <i>Psittacula</i> sp.                  | 22                    | -                 | -                     | -         | 1               |
| Rose-ringed Parakeet           | <i>Psittacula krameri</i>              | 25                    | -                 | -                     | -         | 1               |

| English name                     | Scientific name                  | No. of birds infected | Type of infection |                      |                      |                 |
|----------------------------------|----------------------------------|-----------------------|-------------------|----------------------|----------------------|-----------------|
|                                  |                                  |                       | Cestode           | Nematode             | Trematode            | Eimerian oocyst |
| Crimson-winged Parakeet          | <i>Aprosmictus erythropterus</i> | 10                    | -                 | -                    | -                    | 1               |
| Crimson Rosella                  | <i>Platycerus</i> sp.            | 2                     | -                 | -                    | -                    | -               |
| Eastern Rosella                  | <i>Platycerus eximius</i>        | 2                     | -                 | -                    | -                    | -               |
| Gruiformes: Rallidae             |                                  |                       |                   |                      |                      |                 |
| Common Moorhen                   | <i>Gallinula chloropus</i>       | 2                     | -                 | -                    | -                    | -               |
| Purple Moorhen                   | <i>Porphyrio porphyrio</i>       | 1                     | -                 | -                    | -                    | -               |
| White-breasted Moorhen           | <i>Amauromis phoenicurus</i>     | 1                     | -                 | -                    | -                    | -               |
| Gruidae                          |                                  |                       |                   |                      |                      |                 |
| Common Crane                     | <i>Grus grus</i>                 | 1                     | -                 | -                    | -                    | -               |
| Demoiselle Crane                 | <i>Grus virgo</i>                | 7                     | -                 | -                    | <i>Lypersoma</i> sp. | 1               |
| Anseriformes: Anatidae           |                                  |                       |                   |                      |                      |                 |
| Brahmini Shelduck                | <i>Tadorna ferruginea</i>        | 5                     | -                 | <i>Ascaridia</i> sp. | -                    | 1               |
| Comb Duck                        | <i>Sarkidiornis melanotos</i>    | 10                    | -                 | -                    | -                    | 1               |
| Common Duck                      | <i>Anas</i> sp.                  | 27                    | -                 | <i>Ascaridia</i> sp. | -                    | 1               |
| Northen Pintail                  | <i>Anas acuta</i>                | 2                     | -                 | -                    | -                    | -               |
| Spot-billed Duck                 | <i>Anas poecilorhyncha</i>       | 6                     | -                 | -                    | -                    | -               |
| Japanese Duck                    | <i>Anas</i> sp.                  | 4                     | -                 | -                    | -                    | -               |
| Mandarin Duck                    | <i>Aix galericulata</i>          | 8                     | -                 | -                    | -                    | 1               |
| Common Teal                      | <i>Anas crecca</i>               | 1                     | -                 | -                    | -                    | -               |
| Lesser Whistling-Duck            | <i>Dendrocygna javanica</i>      | 2                     | -                 | -                    | -                    | -               |
| Black Swan                       | <i>Chenopsis atratus</i>         | 5                     | -                 | -                    | -                    | -               |
| Goose                            | <i>Anser</i> sp.                 | 6                     | -                 | <i>Ascaridia</i> sp. | <i>Lypersoma</i> sp. | -               |
| Bar-headed Goose                 | <i>Anser indicus</i>             | 5                     | -                 | -                    | <i>Lypersoma</i> sp. | 1               |
| Canadian Goose                   | <i>Branta canadensis</i>         | 1                     | -                 | -                    | -                    | -               |
| Greylag Goose                    | <i>Anser anser</i>               | 5                     | -                 | -                    | -                    | 1               |
| Ciconiiformes: Threskiornithidae |                                  |                       |                   |                      |                      |                 |
| Eurasian Spoonbill               | <i>Platalea leucorodia</i>       | 8                     | -                 | -                    | -                    | -               |
| Black Ibis                       | <i>Pseudibis papillosa</i>       | 1                     | -                 | -                    | -                    | -               |
| White Ibis                       | <i>Threskiornis acthiopica</i>   | 24                    | -                 | -                    | -                    | 1               |
| Phalacrocoracidae                |                                  |                       |                   |                      |                      |                 |
| Little Cormorant                 | <i>Phalacrocorax niger</i>       | 13                    | -                 | -                    | -                    | 1               |
| Ardeidae                         |                                  |                       |                   |                      |                      |                 |
| Cattle Egret                     | <i>Bubulcus ibis</i>             | 19                    | -                 | <i>Ascaridia</i> sp. | -                    | 1               |
| Grey Heron                       | <i>Ardea cinerea</i>             | 1                     | -                 | -                    | -                    | -               |
| Western Reef-egret               | <i>Egretta gularis</i>           | 6                     | -                 | -                    | -                    | -               |
| Black-crowned Night-heron        | <i>Nycticorax nycticorax</i>     | 40                    | -                 | -                    | <i>Lypersoma</i> sp. | 1               |
| Indian Pond-heron                | <i>Ardeola grayii</i>            | 1                     | -                 | -                    | -                    | -               |
| Charadriidae                     |                                  |                       |                   |                      |                      |                 |
| Red-wattled Lapwing              | <i>Vanellus indicus</i>          | 1                     | -                 | -                    | -                    | -               |
| Phoenicopteridae                 |                                  |                       |                   |                      |                      |                 |
| Flamingos                        | <i>Phoenicopterus</i> sp.        | 31                    | -                 | <i>Ascaridia</i> sp. | -                    | 1               |
| Pelecanidae                      |                                  |                       |                   |                      |                      |                 |
| Dalmatian Pelican                | <i>Pelecanus crispus</i>         | 1                     | -                 | -                    | -                    | -               |
| Great White Pelican              | <i>Pelecanus onocrotalus</i>     | 17                    | -                 | -                    | <i>Lypersoma</i> sp. | 1               |

| English name                | Scientific name                   | No. of birds infected | Type of infection |                        |                      |                 |
|-----------------------------|-----------------------------------|-----------------------|-------------------|------------------------|----------------------|-----------------|
|                             |                                   |                       | Cestode           | Nematode               | Trematode            | Eimerian oocyst |
| Laridae                     |                                   |                       |                   |                        |                      |                 |
| Brown-headed Gull           | <i>Larus brannicephalus</i>       | 3                     | -                 | -                      | -                    | -               |
| Recurvirostridae            |                                   |                       |                   |                        |                      |                 |
| Black-winged Stint          | <i>Himantopus himantopus</i>      | 1                     | -                 | -                      | -                    | -               |
| Ciconidae                   |                                   |                       |                   |                        |                      |                 |
| Greater Adjutant-stork      | <i>Leptoptilos dubius</i>         | 1                     | -                 | -                      | -                    | -               |
| Black Stork                 | <i>Ciconia nigra</i>              | 1                     | -                 | -                      | -                    | -               |
| Black-necked Stork          | <i>Ephippiorhynchus asiaticus</i> | 2                     | -                 | -                      | <i>Lypersoma</i> sp. | 1               |
| Painted Stork               | <i>Mycteria leucocephala</i>      | 1                     | -                 | -                      | -                    | 1               |
| European White Stork        | <i>Ciconia ciconia</i>            | 2                     | -                 | <i>Capillaria</i> sp.  | <i>Lypersoma</i> sp. | -               |
| White-necked Stork          | <i>Ciconia episcopus</i>          | 1                     | -                 | -                      | -                    | -               |
| Accipitridae                |                                   |                       |                   |                        |                      |                 |
| Black Vulture               | <i>Sarcogyps</i> sp.              | 1                     | -                 | -                      | -                    | 1               |
| Red-headed Vulture          | <i>Sarcogyps calvus</i>           | 3                     | -                 | <i>Ascaridia</i> sp.   | <i>Lypersoma</i> sp. | -               |
| Indian White-backed Vulture | <i>Gyps bengalensis</i>           | 8                     | -                 | <i>Ascaridia</i> sp.   | -                    | 1               |
| Casuariiformes: Casuaridae  |                                   |                       |                   |                        |                      |                 |
| Cassowary                   | <i>Casuarus casuarus</i>          | 1                     | -                 | -                      | -                    | -               |
| Emu                         | <i>Dromaius novaehollandicus</i>  | 7                     | -                 | <i>Ascaridia</i> sp.   | -                    | 1               |
| Bucerotiformes: Bucerotidae |                                   |                       |                   |                        |                      |                 |
| Indian Grey Hornbill        | <i>Ocyrceros birostoris</i>       | 3                     | -                 | -                      | -                    | -               |
| Cucliformes: Cuclidae       |                                   |                       |                   |                        |                      |                 |
| White cheeked Turaco        | <i>Turaco leucotis</i>            | 1                     | -                 | -                      | -                    | -               |
| Columbiformes: Columbidae   |                                   |                       |                   |                        |                      |                 |
| Nicobar Pigeon              | <i>Caloenas nicobarica</i>        | 19                    | -                 | <i>Strongyloid</i> sp. | -                    | 1               |
| Crowned Pigeon              | <i>Goura cristata</i>             | 9                     | -                 | <i>Strongyloid</i> sp. | -                    | -               |
|                             |                                   |                       |                   | <i>Ascaridia</i> sp.   | -                    | -               |
| Green Imperial-Pigeon       | <i>Ducula aenea</i>               | 2                     | -                 | -                      | -                    | -               |
| Pied Imperial-Pigeon        | <i>Ducula bicolor</i>             | 2                     | -                 | -                      | -                    | -               |
| Victoria Crowned Pigeon     | <i>Goura victoria</i>             | 2                     | -                 | -                      | -                    | -               |
| Dove                        | -                                 | 6                     | -                 | <i>Capillaria</i> sp.  | -                    | -               |
| Oriental Turtle-Dove        | <i>Streptopelia orientalis</i>    | 2                     | -                 | -                      | -                    | 1               |
| Diamond Dove                | <i>Geopelia cuneata</i>           | 4                     | -                 | <i>Capillaria</i> sp.  | -                    | 1               |
| Jacobin Pigeon              | <i>Columba</i> sp.                | 23                    | -                 | <i>Capillaria</i> sp.  | -                    | 1               |
|                             |                                   |                       |                   | <i>Raillietina</i> sp. | -                    | -               |
| Green Fan-tail Pigeon       | <i>Columba</i> sp.                | 50                    | -                 | <i>Ascaridia</i> sp.   | -                    | -               |
|                             |                                   |                       |                   | <i>Capillaria</i> sp.  | -                    | 1               |
| Black Fan-tail Pigeon       | <i>Columba</i> sp.                | 56                    | -                 | <i>Capillaria</i> sp.  | -                    | -               |
|                             |                                   |                       |                   | <i>Strongyloid</i> sp. | -                    | 1               |
| White Fan- tail Pigeon      | <i>Columba</i> sp.                | 55                    | -                 | <i>Ascaridia</i> sp.   | -                    | -               |
|                             |                                   |                       |                   | <i>Raillietina</i> sp. | -                    | -               |
|                             |                                   |                       |                   | <i>Capillaria</i> sp.  | -                    | -               |
| Shiraji Pigeon              | <i>Columba</i> sp.                | 17                    | -                 | <i>Capillaria</i> sp.  | -                    | 1               |
| Phouter Pigeon              | <i>Columba</i> sp.                | 28                    | -                 | <i>Ascaridia</i> sp.   | -                    | 1               |
| Khal Pigeon                 | <i>Columba</i> sp.                | 238                   | -                 | <i>Ascaridia</i> sp.   | -                    | -               |
|                             |                                   |                       |                   | <i>Raillietina</i> sp. | -                    | -               |
|                             |                                   |                       |                   | <i>Capillaria</i> sp.  | -                    | 1               |
| Broze hybrid Pigeon         | <i>Columba</i> sp.                | 25                    | -                 | <i>Ascaridia</i> sp.   | -                    | 1               |

| English name               | Scientific name             | No. of birds | Type of infection |                      |           |                 |
|----------------------------|-----------------------------|--------------|-------------------|----------------------|-----------|-----------------|
|                            |                             |              | Cestode           | Nematode             | Trematode | Eimerian oocyst |
| Passeriformes: Passeridae  |                             |              |                   |                      |           |                 |
| Finches                    | <i>Teaniopygia</i> sp.      | 43           | -                 | <i>Ascaridia</i> sp. | -         | 1               |
| Golden-cherry Love-bird    | <i>Agapornis</i> sp.        | 48           | -                 | -                    | -         | 1               |
| Blue Peach-faced Love-bird | <i>Agapornis</i> sp.        | 134          | -                 | <i>Ascaridia</i> sp. | -         | 1               |
| Peach-faced Love-bird      | <i>Agapornis</i> sp.        | 98           | -                 | -                    | -         | -               |
| Fischer's Love-bird        | <i>Agapornis fischerii</i>  | 150          | -                 | <i>Ascaridia</i> sp. | -         | 1               |
| Estrilidae                 |                             |              |                   |                      |           |                 |
| Red Munia                  | <i>Amandava amandava</i>    | 4            | -                 | -                    | -         | -               |
| Spotted Munia              | <i>Lonchura punctulata</i>  | 5            | -                 | -                    | -         | 1               |
| Three coloured Munia       | -                           | 4            | -                 | -                    | -         | -               |
| White-throated Munia       | <i>Lonchura malabarica</i>  | 5            | -                 | -                    | -         | -               |
| Black-headed Munia         | <i>Lonchura malacca</i>     | 5            | -                 | -                    | -         | -               |
| Passerinae                 |                             |              |                   |                      |           |                 |
| Common Sparrow             | <i>Passer domesticus</i>    | 1            | -                 | -                    | -         | -               |
| Java Sparrow               | <i>Padda oryzivora</i>      | 108          | -                 | <i>Ascaridia</i> sp. | -         | 1               |
| Budgeriger                 | -                           | 292          | -                 | <i>Ascaridia</i> sp. | -         | 1               |
| Canary                     | -                           | 5            | -                 | -                    | -         | -               |
| Pycnonotidae               |                             |              |                   |                      |           |                 |
| Red-vented Bulbul          | <i>Pycnonotus cafer</i>     | 2            | -                 | -                    | -         | -               |
| Corvidae                   |                             |              |                   |                      |           |                 |
| White Crow                 | <i>Corvus splendens</i>     | 2            | -                 | <i>Ascaridia</i> sp. | -         | 1               |
| Koel                       | <i>Eudynamis scolopacea</i> | 2            | -                 | -                    | -         | -               |
| Turdinae                   |                             |              |                   |                      |           |                 |
| Pakin Robbin               | -                           | 1            | -                 | -                    | -         | -               |
| Sturnidae                  |                             |              |                   |                      |           |                 |
| Brahmini Starling          | <i>Sturnus pagodarum</i>    | 3            | -                 | -                    | -         | -               |
| Common Myna                | <i>Acridotheres tristis</i> | 2            | -                 | -                    | -         | -               |
| Jungle Myna                | <i>Acridotheres fuscus</i>  | 5            | -                 | -                    | -         | 1               |
| Starling Myna              | -                           | 1            | -                 | -                    | -         | -               |