

# New host and geographical records for helminths parasites of Ardeidae (Aves, Ciconiiformes) in Brazil

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**ABSTRACT.** One thousand two-hundred-four helminth samples recovered from Brazilian Ardeidae birds during 54 years were studied. Samples consisted of cestodes, trematodes, and nematodes, parasites of egrets and herons. Based on the present results 49 new host and three new geographical distribution records were established.

**KEY WORDS.** Helminths, birds, Ciconiiformes, Ardeidae, new host and geographical distribution records, Brazil

The ardeid birds, commonly known as egrets and herons, belong to the order Ciconiiformes, generally inhabiting tropical and subtropical regions in mudflats, ponds, lakes, water reservoirs and dam areas, as well as wetlands. Ardeids feed on fishes, amphibians, reptiles, insects and mollusks, that could serve as intermediate hosts for the helminths. Some ardeids can act as definitive hosts for some potential zoonotic helminth species, such as *Phagicola angrense* (Travassos, 1916), playing an important role in such infections that can be transmitted to man from the same intermediate hosts.

The helminths studied herein were recovered from 12 species of ardeid birds, collected during major Brazilian parasite surveys, between 1909 and 1963, that were incorporated to the Helminthological Collection of the Oswaldo Cruz Institute (CHIOC).

## MATERIAL AND METHODS

The present new records were obtained from 1204 studied samples of helminths parasites of ardeids, deposited in the Helminthological Collection of the Oswaldo Cruz Institute (CHIOC). Specimens are kept either in numbered vials or as whole mounts, matched with respective numbered files. The source of samples according to the host species is: *Ardea cocoi* (Linnaeus, 1766), *Butorides striatus* (Linnaeus, 1758), *Casmerodius albus* (Linnaeus, 1758), *Egretta thula* (Molina, 1782), *Florida caerulea* (Linnaeus, 1758), *Ixobrychus exilis* (Gmelin, 1789), *Nyctanassa violacea* (Linnaeus, 1758), *Nycticorax nycticorax* (Linnaeus, 1758), *Nycti-*

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*corax* sp., *Pilherodius pileatus* (Boddaert, 1783), *Syrigma sibilatrix* (Temminck, 1824), *Tigrisoma lineatum* (Boddaert, 1783), representing 50% of the Brazilian ardeid species.

Helminths were preserved in 70° GL ethanol, AFA, or Railliet & Henry solution (0,85 NaCl solution: 93 ml; formaldehyde: 3 ml; glacial acetic acid: 2ml) and processed for study as described elsewhere (MUNIZ-PEREIRA & AMATO 1995, 1998; VICENTE et al. 1995a). NHR and NGR indicate New Host Record, and New Geographical Records, respectively. Classification of hosts follows SICK (1997). Determination of the digenean specimens to generic level was based on YAMAGUTI (1971) and TRAVASSOS et al. (1969). Cestodes were determined to generic level according to the keys of SCHMIDT (1986) and KHALIL et al. (1994). Assignment of the digeneans and cestodes to a specific level was obtained from the available literature. The diagnosis of the nematodes to a specific level was achieved by the catalogue of the nematodes from birds (VICENTE et al. 1995b), YAMAGUTI (1961), and SKRJABIN & SOBOLEV (1963). The classification of the major groups of Platyhelminthes follows BROOKS (1989). Voucher determined specimens were deposited in the Helminthological Collection of the Oswaldo Cruz Institute (CHIOC) as whole mounts and wet material.

## RESULTS

Platyhelminthes Gegenbauer, 1859

Digenea Van Beneden, 1858

Clinostomidae Luehe, 1901

### ***Clinostomum marginatum* (Rudolphi, 1819) Braun, 1899**

NHR: *Tigrisoma lineatum*.

Site of infection: buccal cavity and proventriculus.

Locality: Angra dos Reis, RJ and Manguinhos, Rio de Janeiro, RJ.

Studied specimens: CHIOC 6001 (wet material); 24639 (whole mount).

Other hosts: *Ardea cocoi*, *Butorides striatus*, *Casmerodius albus*, *Nyctanassa violacea* and *Nycticorax nycticorax* according to TRAVASSOS (1969).

### ***Ithyoclinostomum dimorphum* (Diesing, 1850) Witenberg, 1926**

NHR: *Nycticorax* sp. and *Tigrisoma lineatum*.

Site of infection: esophagus.

Locality: Pirassununga, SP (*Nycticorax* sp.), and São João, MS (*T. lineatum*).

Studied specimens: CHIOC 156, 3520, 3522, 8316 (wet material).

Other host: *Ardea cocoi* according to TRAVASSOS (1969).

Cyathocotylidae Poche, 1926

### ***Mesostephanus infecundus* Lutz, 1935**

NHR: *Butorides striatus*.

Site of infection: intestine.

Locality: Rio de Janeiro, RJ.

Studied specimens: CHIOC 25449, 25450 (whole mounts).

## Diplostomidae Poirier, 1886

***Diplostomum* sp.**

NHR: *Butorides striatus* and *Nyctanassa violacea*.

Site of infection: intestine.

Locality: Rio de Janeiro, RJ.

Studied specimens: CHIOC 24579, 24580b, 24887, 24892, 24893, 24894, 24895, 24896, 24897, 24898a, 24899b, 24900, 24901, 24902, 25349a, 25350a (whole mounts).

## Heterophyidae Odhner, 1914

***Phagicola angrense* (Travassos, 1916) Travassos, 1929**

NHR: *Ardea cocoi*.

Site of infection: intestine.

Locality: Manguinhos, Rio de Janeiro, RJ.

Studied specimens: CHIOC 6637 (wet material).

Other hosts: *Butorides striatus*, *Butorides* sp., *Ixobrychus exilis*, *Nyctanassa violacea* according to TRAVASSOS (1969), and YAMAGUTI (1971).

***Pygidiopsis pindoramensis* Travassos, 1929**

NHR: *Nyctanassa violacea* and *Nycticorax nycticorax*.

Site of infection: intestine.

Locality: Manguinhos, Rio de Janeiro, RJ.

Studied specimens: CHIOC 6632, 6633 (whole mounts); 6641, 6696, 7039 (wet material).

Other host: *Ixobrychus exilis* according to TRAVASSOS (1969).

## Microphallidae Travassos, 1921

***Gynaecotyla jagerskioldi* (Travassos, 1920) Yamaguti, 1939**

NHR: *Butorides striatus*, *Florida caerulea* and *Nyctanassa violacea*.

Site of infection: intestine.

Locality: Manguinhos, Rio de Janeiro, RJ.

Studied specimens: CHIOC 2231a, 2232b, 2233, 2234, 2235, 2236, 2237, 2239a, 2589, 2590c, 2591c, 2645, 2780, 2781a, 2782a, 2803a, 2804a, 2805a, 2806, 2897, 12040, 12095, 12096, 17515, 25361, 25368 (whole mount); 12222 (wet material).

***Levinseniella cruzi* Travassos, 1920**

NHR: *Nyctanassa violacea*.

Site of infection: intestine.

Locality: Manguinhos, Rio de Janeiro, RJ.

Studied specimens: CHIOC 2238, 2239b (whole mounts); 2866, 2870, 2875 (wet material); 3080 (whole mount).

**Levinseniella sp.**

NHR: *Nyctanassa violacea* and *Nycticorax nycticorax*.

Site of infection: intestine.

Locality: Manguinhos, Rio de Janeiro, RJ.

Studied specimens: CHIOC 2664, 2665, 2666, 2667, 2694, 17443, 17496, 25349, 25350, 25352, 25353, 25361b (whole mounts); 2865, 2894, 5991, 7165, 8348 (wet material).

**Maritrema nicolli Travassos, 1920**

NHR: *Florida caerulea* and *Nyctanassa violacea*.

Site of infection: intestine.

Locality: Manguinhos, Rio de Janeiro, RJ.

Studied specimens: CHIOC 2585, 2586, 2587, 2588, 2590a, 2591a, 2646, 2803b, 2804b, 2805b (whole mounts).

**Maritrema sp.**

NHR: *Butorides striatus* and *Nyctanassa violacea*.

Site of infection: intestine.

Locality: Brazil (*B. striatus*), and Manguinhos, Rio de Janeiro, RJ (*N. violacea*).

Studied specimens: CHIOC 18056 (wet material); 25368 (whole mount).

## Opisthorchiidae Braun, 1901

**Amphimerus interruptus (Braun, 1909) Barker, 1911**

NHR: *Ardea cocoi*, *Nycticorax nycticorax*, *Pilherodius pileatus*, *Syrigma sibilatrix* and *Tigrisoma lineatum*.

Site of infection: pancreas and gall bladder.

Locality: São João, MS.

Studied specimens: CHIOC 3488 (whole mount); 3497, 3510, 3511, 3512, 3513 (wet material).

Other host: *Butorides striatus* ? according to TRAVASSOS (1969).

## Philophtalmidae Travassos, 1918

**Philophtalmus lacrymosus Braun, 1902**

NHR: *Nyctanassa violacea*.

Site of infection: eye.

Locality: Rio de Janeiro, RJ.

Studied specimens: CHIOC 861 (whole mount); 17964 (wet material).

Other host: *Casmerodius albus* according to TRAVASSOS (1969).

**Proctobium proctobium Travassos, 1918 (Travassos, 1921)**

NHR: *Ardea cocoi* and *Egretta thula*.

Site of infection: Bursa Fabricii, cloaca, and intestine.

Locality: São João, MS (*A. cocoi*), and Manguinhos, Rio de Janeiro, RJ (*E. thula*).

Studied specimens: CHIOC 33978, 34241 (whole mounts).

Other host: *Nyctanassa violacea* according to TRAVASSOS (1969).

### Stomylotrematidae Poche, 1926

#### ***Stomylotrema graciosus* Travassos, 1922**

NHR: *Syrgima sibilatrix*.

Site of infection: cloaca.

Locality: Salobra, MS.

Studied specimens: CHIOC 11278 (whole mount).

### Strigeidae Railliet, 1919

#### ***Apatemon globiceps* Dubois, 1937**

NHR: *Nyctanassa violacea*.

Site of infection: intestine.

Locality: Brazil.

Studied specimens: CHIOC 24548 (whole mount).

#### ***Apharyngostrigea brasíliana* (Szidat, 1928) Szidat, 1929**

NHR: *Butorides striatus* and *Nyctanassa violacea*.

Site of infection: intestine.

Locality: Brazil (*B. striatus*), and Manguinhos, Rio de Janeiro, RJ (*N. violacea*).

Studied specimens: CHIOC 17203, 17204, 17218, 24551 (whole mounts).

### Eucestoda

#### Dilepididae Railliet & Henry, 1909

#### ***Anomotaenia* sp.**

NHR: *Ardea cocoi*.

Site of infection: intestine.

Locality: Ilha de Marajó, PA.

Studied specimens: CHIOC 10142 (wet material).

#### ***Dendrouterina* sp.**

NHR: *Ardea cocoi*.

Site of infection: intestine.

Locality: Salobra, MS.

Studied specimens: CHIOC 34031 (whole mount).

#### ***Dendrouterina pilherodíae* Mahon, 1956**

NHR: *Casmerodius albus*.

Site of infection: intestine.

Locality: Gaspar Lopes, Alfenas, MG.

Studied specimens: CHIOC 30728 a-d (whole mounts).

Other host: *Pilherodius pileatus* according to SCHMIDT (1986).

***Dilepis fuhrmanni* Railliet & Henry, 1909**

NHR: *Egretta thula*.

Site of infection: intestine.

Locality: Manguinhos, Rio de Janeiro, RJ.

Studied specimens: CHIOC 1022 (whole mount); 1023, 2388 (wet material).

***Valipora* sp.**

NHR: *Pilherodius pileatus*.

Site of infection: intestine.

Locality: Urucum, MS.

Studied specimens: CHIOC 20578, 20579 (wet material); 34077, 34078 (whole mounts).

Hymenolepididae Ariola, 1849

***Diploposthe bifaria* Siebold, 1946**

NHR: *Butorides striatus*.

NGR: Salobra, MS.

Site of infection: intestine.

Studied specimens: CHIOC 34043 (whole mount).

This species was referred to Europe, Asia, Africa, Australia and North America according to KHALIL *et al.* (1994).

***Jardugia* sp.**

NGR: Exu, PE.

Host: *Ardeidae* sp.

Site of infection: intestine.

Studied specimens: CHIOC 34081a-b (whole mounts).

Species from this genus was referred in Nigeria by KHALIL *et al.* (1994).

***Drepanidotaenia* sp.**

NHR: *Ardea cocoi*, *Butorides striatus*, *Butorides* sp., *Ixobrychus exilis*.

Site of infection: intestine.

Locality: Salobra, MS, (*A. cocoi*, and *B. striatus*), Bodoquena, MS (*B. striatus*), Angra dos Reis, RJ (*Butorides* sp., and *B. striatus*) and Manguinhos, Rio de Janeiro, RJ (*I. exilis*).

Studied specimens: CHIOC 34032, 34042, 34045, 34090, 34093, 34094, 34104 (whole mounts).

Nematoda Rudolphi, 1808  
Spiruroidea Railliet & Henry, 1915

**Spiruroidea sp.**

NHR: *Casmerodius albus*.

Site of infection: esophagus.

Locality: Salobra, MS.

Studied specimens: CHIOC 12777 (wet material).

Acuariidae Seurat, 1913

**Acuaría sp.**

NHR: *Nyctanassa violacea*.

Site of infection: proventriculus.

Locality: Manguinhos, Rio de Janeiro, RJ.

Studied specimens: CHIOC 494, 1809, 1810, 2830, 2832 (wet material).

**Cheilospirura hamulosa (Diesing, 1851) Diesing, 1861**

NHR: *Nyctanassa violacea* and *Syrgima sibilatrix*.

Site of infection: proventriculus and peritoneum.

Locality: Rio de Janeiro, RJ (*N. violacea*), and Barranco Alto, MS (*S. sibilatrix*).

Studied specimens: CHIOC 14198 (wet material); 34238 (whole mount).

Dracunculidae Leiper, 1912

**Avioserpens sp.**

NHR: *Nycticorax nycticorax*.

NGR: Manguinhos, Rio de Janeiro, RJ.

Site of infection: esophagus.

Studied specimens: CHIOC 9156 (whole mount).

Species from genus *Avioserpens* were referred in North America, France, India and Asia (YAMAGUTI 1961). This is the first geographical record for South America.

Onchocercidae (Leiper, 1911)

**Pelecitus sp.**

NHR: *Syrgima sibilatrix* and *Tigrisoma lineatum*.

Site of infection: among tendons of feet.

Locality: Barranco Alto, MS.

Studied specimens: CHIOC 14204, 14206, 14479, 14602 (wet material); 34023 (whole mount).

## Tetrameridae Travassos, 1914

***Tetrameres cochleare* Travassos, 1917**

NHR: *Nycticorax nycticorax*.

Site of infection: proventriculus.

Locality: Manguinhos, Rio de Janeiro, RJ.

Studied specimens: CHIOC 3553 (whole mount).

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