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Short communication

Two new records of helminth parasites of domestic cat from Uruguay: *Alaria alata* (Goeze, 1782) (Digenea, Diplostomidae) and *Lagochilascaris major* Leiper, 1910 (Nematoda, Ascarididae)

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ABSTRACT

Eight helminth taxa were recovered from the necropsy of four stray domestic cats from Colonia Miguelete, county of Colonia, Uruguay. Two of them are recorded for the first time for domestic cats in that country: *Alaria alata* (Goeze, 1782) from the small intestine (which is also the first trematode species found in domestic cat in Uruguay), and *Lagochilascaris major* Leiper, 1910 from the pharynx. The remaining helminth species found were *Toxocara mystax* (Zeder, 1800) and *Spirometra* sp. from the small intestine, *Trichuris serrata* (von Linstow, 1879) from the caecum, *Eucoleus aerophilus* (Creplin, 1839) from the trachea, and *Pearsonema feliscati* (Diesing, 1851) from the urinary bladder. Moreover, four female specimens of an unidentified Spiruroidea were collected from the stomach and small intestine of one host.

1. Introduction

The following helminth species has been recorded for the domestic cat in Uruguay to date; Eucestoda: *Spirometra* sp. (Sampaio et al., 1987), *Dipylidium caninum* (Linneo, 1758) (Varela and Spiritoso, 1958), *Taenia taeniaeformis* (Batsch, 1786) (Carballo Pou, 1947), and *Echinococcus granulosus* (Batsch, 1786) (as hydatic cysts) (Carballo Pou, 1933); Nematoda: *Eucoleus aerophilus* (Creplin, 1839) (as *Capillaria aerophila*) (Cristi, 1954), *Pearsonema feliscati* (Diesing, 1851) (as *Capillaria felis-cati*) (Calzada, 1935), *Trichinella spiralis* (Owen, 1835) (Castro and Trenchi, 1954), *Soboliphyme baturini* Petrow, 1930 (Cristi, 1957) (unfortunately was a mistaken identification; the photos and description included in the work clearly permit the identification of the involved parasite as an acanthocephalan, probably of the genus *Corynosoma*), *Lagochilascaris minor* Leiper, 1909 (Sakamoto and Cabrera, 2002), and *Aelurostrongylus abstrusus* (Railliet, 1898) (Bacigalupo et al., 1942). Additionally, by means of the finding of eggs in coprological analysis, the presence of *Trichuris* sp., *Toxocara* sp. and *Ancylostoma* sp. have been recorded (Freyre et al., 1983).

The objective of this communication is to record for first time in Uruguay the presence of *Alaria alata* (Digenea, Diplostomidae) and *Lagochilascaris major* (Nematoda, Ascarididae) parasitizing stray domestic cats from a semi-rural zone of Colonia county.

2. Materials and methods

In 2007, the refrigerated corpses of four stray domestic cats were remitted from Colonia Miguelete (34°44′S, 56°06′W), County of Colonia, Uruguay, to the Faculty of Veterinary of Montevideo, UdelaR, for parasitological necropsy. Based on size and dentition, it was estimated

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that the animals, two females and two males, were between 2 months and 1 year old. At the necropsy, the animals were examined for ectoparasites using a thin comb on a white sheet. On the same sheet it was added all the content of the bag used to transport the corpse. After incision through medioventral line, the gastrointestinal and respiratory tracts, as well as the urinary bladder, were analyzed to recover all endoparasites. The stomach, small intestine (divided in three sections of the same length), large intestine, pharynx, trachea and urinary bladder were opened out and the macroscopically observed parasites withdrawn to and placed in saline. Next, the content of each organ was washed and subjected to successive sedimentations to reach clean sediment. The totality of the sediment obtained was examined under a stereo microscope. The lungs and the liver were cut in small pieces (~0.5 cm of side), then slightly macerated and filtered through a 2-mm sieve, and the resulting filtrate was sedimented.

The flatworms were fixed in AFA (93 parts of alcohol 70%, five parts of formalin, and two parts of acetic acid) and shifted to alcohol 70% after 24 h. For further scrutiny, the trematodes were stained with carmine. Nematodes were fixed in alcohol 70% and cleared in glacial acetic acid.

Faeces were collected from the rectum, when present. Flotation (saturated NaCl solution, specific gravity 1.20) and sedimentation methods were used for faecal examination.

Specimens of *A. alata*, *L. major* and Spiruroidea gen. sp., as well as eggs of *A. alata*, were measured using an ocular micrometer. All the measurements are given in millimeters (mm) and expressed as arithmetic mean (range; S.D.).

To describe the helminthic community of these cats, the ecological terms prevalence and mean abundance were used as suggested by Bush et al. (1997).

3. Results

The only ectoparasite found was a specimen of *Ctenocephalides felis* (Bouché, 1835) on a female adult cat. Eight endoparasitic taxa were collected: one trematode, one cestode and six nematodes (Table 1). The five trematode specimens found in the first section of the small intestine of a male adult cat were identified as belonging to the species *A. alata* based on their morphology (Fig. 1A) and morphometrics (Table 2). Eggs were recovered only by the sedimentation technique, and their measurements are presented in Table 2. From the pharynx (Fig. 1B) of the same cat, 17 ascarid specimens (six females, three males and eight fourth stage larvae) were recovered, which were identified as *L. major* according their morphology (Fig. 1C) and morphometrics (Table 3).

From a male cat (ca. 3 months old) four female spiruroid nematodes of an unidentified genus were collected (one from the stomach and three from the small intestine), with a length of 4.2 (3.5–5.2; 0.7) and the vulva nearest to the posterior end of the body (Fig. 1D).

4. Discussion

Five of the eight taxa found in this study has been recorded parasitizing domestic cats in Uruguay: *Spirometra* sp. (Sampaio et al., 1987), *P. feliscati* (Calzada, 1935), *E. aerophilus* (Cristi, 1954), *Toxocara mystax* and *Trichuris serrata* (Freyre et al., 1983; as *Toxocara* sp. and *Trichuris* sp., respectively, in both cases by finding eggs in coprological analysis).

The measurements of *A. alata* specimens fall in the range of those recorded by Travassos et al. (1969) from Brazil, although the egg length is greater in the present study (range 0.098–0.125 mm according to Travassos et al., 1969, mean 0.130 mm in our study). The *A. alata* specimens studied by Martínez (1986), collected from the Geoffroy's cat *Oncifelis geoffroyi* (Carnivora, Felidae) from Argentina, are bigger than ours (total length 4.15–5.67 mm according to Martínez, 1986, 1.72–2.45 mm in our study, etc.).

According to Niewiadomska (2001) the distribution of the genus *Alaria* (Eurasia and tropical North America) excludes South America. However, *A. alata* has been recorded parasitizing various wild canids and felids in Argentina, Brazil and Uruguay (Travassos et al., 1969; Martínez, 1986; Capellino et al., 2003; Lunaschi and Drago, 2007), as well as domestic dogs in Corrientes, Argentina (Lombardero and Santa Cruz, 1986). However, this is the first finding of *A. alata* parasitizing domestic cats in Uruguay.

Besides Southern South America, *A. alata* has been recorded from a wide diversity of carnivore hosts from Eurasia, from Spain (Criado-Fornelio et al., 2000; Segovia et al., 2003) in the west to Ucrania, Belarus, and Yakutia

Table 1
Prevalence, mean abundance and infection site of helminths recovered from four stray domestic cats from Colonia Miguelete, Colonia, Uruguay.

Parasite	Prevalence (%)	Mean abundance (S.D.) (range)	Location
Trematoda: *Digenea*			
Alaria alata	25.0	1.25 (2.50) (0–5)	Small intestine
Cestoda			
Spirometra sp.	75.0*	2.50 (2.38) (0–5)	Small intestine
Nematoda			
Toxocara mystax	100.0	13.25 (5.38) (8–20)	Small intestine
Lagochilascaris major	25.0	4.25 (8.50) (0–17)	Pharynx
Spiruroidea gen. sp.	25.0	1.00 (2.00) (0–4)	Stomach and small intestine
Trichuris serrata	25.0	0.50 (1.00) (0–2)	Caecum
Eucoleus aerophilus	50.0	3.75 (4.79) (0–10)	Trachea
Pearsonema feliscati	75.0	1.75 (1.71) (0–4)	Urinary bladder

* One cat (a male adult) hosted strobilated specimens of Spirometra sp., whereas in the remaining two only scolices were observed.