Check List 10(6): 1573–1578, 2014

ISSN 1809-127X (available at *www.biotaxa.org/cl*)

Check List
Journal of species lists and distribution

NOTES ON GEOGRAPHIC DISTRIBUTION

New records of *Lubens lubens* (Braun, 1901) and *Pojmanskia riosae* Zamparo, Brooks & Causey, 2003 (Digenea) in *Taraba major* (Vieillot) (Aves: Thamnophilidae) from Argentina

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ABSTRACT: *Pojmanskia riosae* (Digenea: Leucochloridiidae) and *Lubens lubens* (Digenea: Dicrocoeliidae) are described from the intestine and cloaca of the Chororó or Great Antshrike, *Taraba major* (Passeriformes: Thamnophilidae) from Formosa Province, Argentina. The finding of *P. riosae* constitutes the first record of the genus for South American birds and the first record in thamnophilid birds. The discovery of *L. lubens* in *T. major* represents a new host record and the first report of this species in Argentina. Moreover, *Lubens phelpsi* is synonymized with *L. lubens.*

DOI: 10.15560/10.6.1573

The Chororó or Great Antshrike, *Taraba major* (Vieillot) (Passeriformes, Thamnophilidae), is a little bird with a wide distribution in the Neotropical Region from Mexico to Tierra del Fuego, Argentina. It is generalist feeder, including a wide variety of invertebrates, small vertebrates and vegetables in their diet. Arthropods, mollusks, fishes, lizards, frogs, tadpoles and mammals are the most common prey items (López *et al*. 2005; Zimmer and Isler 2003). Usually, the generalist feeders are exposed to a greater number of potential intermediate host species, resulting in greater helminth richness when compared to a specialized consumer (Poulin 1997, 2007; Santoro *et al*. 2012). In despite of the broad diet of *T. major*, a few reports about its helminths are known: *Prosthogonimus ovatus* (Rudolphi, 1903) (Digenea: Prosthogonimidae), *Tetrameres* sp. (Nematoda: Tetrameridae) and *Diplotriaena* sp. (Nematoda: Diplotriaenidae) from Brazil; *Strigea orbiculata* Lunaschi & Drago, 2013 (Digenea: Strigeidae) and *Lyperosomum oswaldoi* (Travassos, 1919) (Digenea: Dicrocoeliidae) from Argentina (Travassos and Freitas 1940; Kohn and Fernandes 1972; Vicente *et al*. 1983; Lunaschi and Drago 2013).

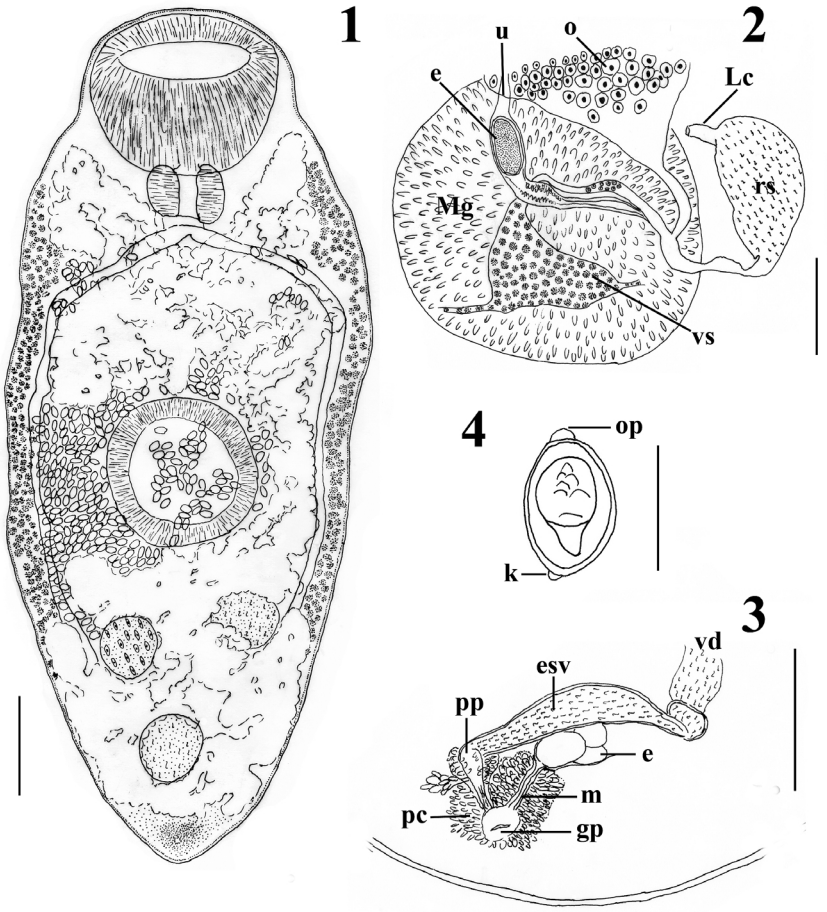
The aim of this paper is to increase the knowledge of the diversity of helminths of the Great Antshrike, *T. major*, as well as actualize the geographical distribution of its parasites.

Seven specimens of *Taraba major* were collected with a shotgun in September 2009, June and September 2012 at La Marcela farm, Pirané, Formosa Province, Argentina (26°17′35″ S; 59°08′38″ W), with authorization of Ministerio de la Producción y Ambiente, Dirección de Fauna y Parques of Formosa Province. The birds were dissected in the field and their viscera immediately analyzed after capture. All specimens were recovered alive, fixed in 5% hot formalin, stored in 70% ethanol, stained with hydrochloric carmine, and mounted in Canada balsam (Langeron 1942). The drawings were made with the aid of a light microscopy with a drawing tube. Measurements are given in micrometres (µm) unless otherwise stated, as the range followed by the mean in parentheses. The digeneans were deposited in the Helminthological Collection of the Museo de La Plata (MLP-He), and the hosts in the Ornithological Collection of the Museo de La Plata (MLP), La Plata, Argentina. The abbreviations of the metrical features are as follows: Atl: Anterior testis length; Atw: Anterior testis width; Bl: body length; Bw: body width; Csl: cirrus sac length; Csw: cirrus sac width; Dvg-Ep: distance from the extremity of vitelline bands to the posterior extremity of the body; E: eggs; Ltl: left testis length; Ltw: left testis width; M: Metraterm; Oel: oesophagus length; Ol: ovary length; Osl: oral sucker length; Osw: oral sucker width; Ow: ovary width; Phl: pharynx length; Phw: pharynx width; Ptl: Posterior testis length; Ptw: Posterior testis width; Rtl: right testis length; Rtw: right testis width; Vg: vitelline glands length; Vsl: ventral sucker length; Vsw: ventral sucker width. The abbreviations of relative proportions (ratios) are as follows: B/E: Body length/Egg length; L/W: Body length/Body width; Ph/Os: pharynx length/oral sucker length; Vs/Os: sucker width ratio.

Brachylaimoidea Poche, 1907
Leucochloridiidae Poche, 1907
Pojmanskia Zamparo, Brooks & Causey, 2003

Pojmanskia riosae Zamparo, Brooks & Causey, 2003 (Figures 1–4)

Description (based on 17 specimens). Body oval, 1.1–1.7 (1.4) mm long by 0.6–0.8 (0.7) mm wide; tegument with minute spines, difficult to observe in stained specimens. Oral sucker well developed, subterminal, rounded, 266–



Figures 1–4. *Pojmanskia riosae*. **1**. Entire worm, ventral view. Scale bar = 200 µm. **2**. Enlarged view of ovarian complex. Scale bar = 50 µm. **3**. Enlarged ventral view of terminal genitalia. Scale bar = 100 µm. **4**. Egg. Scale bar = 25 µm. *Abbreviations*: e – egg; esv – external seminal vesicle; gp – genital pore; k – knob; Lc – Laurer's canal; m –metraterm; Mg – Melhis gland; o – ovary; op – operculum; pc – prostatic cells; pp – pars prostatica; rs – seminal receptacle; u – uterus; vd – vas deferens; vs – vitelline reservoir.

358 (307) long by 328–397 (363) wide. Ventral sucker equatorial, well developed, similar in size to oral sucker, 309–386 (340) long by 309–418 (365) wide. Prepharynx absent; oesophagus very short; pharynx wider than longer, 95–111 (102) long by 128–167 (146) wide; caeca slender, long, extending to posterior testis. Genital pore median, subterminal, ventral, surrounded by gland cells free in the parenchyma, genital atrium shallow. Cirrus sac 44–48 long by 29 wide, containing a short cirrus, pars prostatica, and small internal seminal vesicle; external seminal vesicle large, tubular, situated transversely to the body axis, near to posterior testis, 189 long. Gonads in hindbody, intercaecal, rounded, arranged in triangle. Anterior testis located on the left side of the body 119–157 (144) long by 119–167 (145) wide; posterior testis in middle line, near the posterior end of the body, 129–148 (169) long by 119–164 (121) wide. Ovary dextral, intertesticular, lateral to mid-line of body, on opposite side of anterior testis, similar in size to the testes, 114–135 (128) long by 119–131 (127) wide. Laurer's canal present. Seminal receptacle present as distal dilation of Laurer's canal. Mehlis' gland immediately posterior to ovary. Vitellaria in two lateral fields extending from posterior region of oral sucker to ovarian region; follicles mainly extracaecal, some of them overlapping the caeca. Uterus, containing immature eggs, extends anteriorly along dextral side of body, reaches the oral sucker level and descend through the left side of body. Later, containing mature eggs, runs to the right side in the post-acetabular region, and crosses ovarian-testicular space forming several extra caecal loops in the gonadal area. Metraterm short, 44 long, surrounded by gland cells. Mature eggs dark brown, thick shelled, asymmetrical, operculated, with small knob at the abopercular end, and with fully developed miracidium, 24–29 × 14–21 (26 × 18). Excretory vesicle Y-shaped, short and wide, bifurcating immediately posterior to the posterior testis; excretory pore dorso-subterminal.

Host: *Taraba major* (Vieillot) (Chororó, Great Antshrike) (Passeriformes, Thamnophilidae).
Locality: La Marcela farm (26°17′35″ S; 59°08′38″ W), Pirané, Formosa Province, Argentina.
Date of collection: June and September 2012.
Site of infection: cloaca.
Prevalence: 44 % (4 of 9).
Mean Intensity: 34 (5–118).
Specimens deposited: MLP-He 6731.

In Argentina, only four representatives of the Brachylaimoidea have been reported: *Tinamutrema canoae* Zamparo, Brooks & Causey, 2003 [as *Brachylaima centrodes* (Braun) Dollfus, 1935] (Brachylaimidae) in *Crypturellus tataupa* (Temminck) (Tinamidae) from La Plata Zoological Garden, Buenos Aires Province,

Brachylaima migrans Dujardin, 1843 (Brachylaimidae) in *Didelphis albiventris* (Lund) and *Lutreolina crassicaudata* (Desmarest) (Didelphidae) from Chaco and Corrientes Provinces, and *Brachylaima yupanquii* Freitas, Kohn & Ibáñez, 1967 (Brachylaimidae) in *Cariama cristata* (L.) (Cariamidae) from Formosa Province, and *Urotocus fusiformis* McIntosh, 1935 (Leucochloridiidae) in *Pteroptochos tarnii* (King) (Rhinocryptidae) from Gutiérrez and Mascardi lakes, Río Negro Province (Boero and Boehringer 1967; Boero and Led 1968; Martínez 1986, 2003; Flores *et al*. 2003; Zamparo *et al*. 2003a; Lunaschi and Drago 2012). Zamparo *et al*. (2003b) erected the genus *Pojmanskia* to contain specimens found parasitizing several species of birds from Costa Rica. This genus was considered as leucochloridiid-like brachylaimoid by Zamparo *et al*. (2003b) and Zamparo and Brooks (2006, 2007), and included in Leucochloridiidae by Rodríguez-Ortíz *et al*. (2004) and Pojmańska *et al*. (2008). Zamparo *et al*. (2003b) characterized this genus by possessing the genital pore ventral and surrounded by gland cells, excretory pore dorsal, cirrus sac containing cirrus, pars prostatica, short internal seminal vesicle, testes tandem, ovary intertesticular, and seminal receptacle formed by an expansion of Laurer canal. Later, Zamparo and Brooks (2007) emended its diagnosis to include the presence of an external seminal vesicle. At present, *Pojmanskia* is represented only by the type species, *Pojmanskia riosae*, found parasitizing the small intestine, rectum and gall bladder of passeriform, cuculiform and trogoniform birds from Costa Rica. These specimens share with those here described the conformation of ovarian complex and the terminal genitalia, but differ by being longer (1.5–2.5 mm *vs.* 1.1–1.7 mm), by having a larger oral sucker (370–466 x 400–503 *vs.* 266–358 x 328–397), testes (anterior testis 122–323 × 141–266 *vs.* 119–157 × 119–167; posterior testis 114–323 x 118–366 *vs.* 129–148 x 119–164) and metraterm (95–114 *vs.* 44), and smaller eggs (18–24 x 13–17 *vs.* 24–29 x 14–21).

On the other hand, the specimens here described have some resemblance to those of *Leucochloridium parcum* Travassos, 1922 described by Travassos (1922, 1928) from Brazil, reported parasitizing passeriform birds, *Psarocolius decumanus* (Pallas) (as *Ostinops d*.) (Icteridae) and *Tachyphonus cristatus brunneus* (Spix) (Thraupidae). *Leucochloridium parcum* was transferred by Kagan (1952) to genus *Urogonimus* Monticelli, 1888 [as *U. parcus* (Travassos, 1922)], and by Pojmańska (1973) to genus *Michajlovia* Pojmańska, 1973 [as *M. parcum* (Travassos, 1922)] when considering the genital pore in ventral position. Finally, Brasil *et al*. (1991) analyzed the type material and specimens found in *Passer domesticus* (L.) (Passeridae) from Brazil, and established the dorsal position of the genital pore, therefore retained this species in the genus *Leucochloridium* Carus, 1835. This species is similar to *P. riosae* by possessing the gonads arranged in triangle, vitelline follicles extending between the pharynx and the posterior testis, and the uterus with extracaecal loops in forebody. Nevertheless, differs by having a dorsal genital pore, a Laurer's canal opening in the excretory vesicle without forming a seminal receptacle, a cirrus sac spherical, and by lacking an external seminal vesicle. The absence of these characters allow us to conclude that the specimens found parasitizing *T. major* belong to *P. riosae*.

Pojmanskia riosae is a generalist parasite reported in a wide range of birds belonging to Cardinalidae, Cuculidae, Dendrocolaptidae, Polioptilidae, Sylviidae, Troglodytidae, Trogonidae and Tyrannidae. This finding allows us to increase the list of definitive host of this digenean, adding the family Thamnophilidae, and to enlarge the geographical distribution of genus *Pojmanskia* to Argentina.

Gorgoderoidea Looss, 1899
Dicrocoeliidae Looss, 1899
Leipertrematinae Yamaguti, 1958
Lubens Travassos, 1919

Lubens lubens (Braun, 1901) Shtrom, 1940 (Figure 5; Tables 1 and 2)

Description: (based on 2 specimens) Body oval to elongate oval; tegument with small papillae. Oral sucker subterminal, rounded. Ventral sucker well developed, slightly larger than the oral sucker, situated in anterior third of the body. Pharynx, globular. Oesophagus short. Caeca long and wide, reaching posterior end of body. Genital pore median, at level of posterior border of pharynx. Cirrus sac small. Testes intercaecal, rounded, approximately equal in size, symmetrical. Ovary dextral, rounded, located behind testes and separated from them by loops of uterus. Seminal receptacle and Laurer's canal present. Mehlis' gland diffuse. Vitelline bands composed of numerous follicles occupying caecal and extracaecal regions from posterior border of ventral sucker or anterior margin of testes. Uterus occupying all available space of hindbody; eggs operculated. Excretory vesicle not seen. Excretory pore terminal.

Figure 5. *Lubens lubens*. Entire worm, ventral view. Scale bar = 1 mm.

Table 1. Comparative morphometric data for *Lubens lubens* from Neotropical birds.

	Lubens lubens								
Source	Present study	Braun (1901)	Travassos (1944) *	Denton and Byrd (1951)	Tallman and Tallman (1994)	Heyneman *et al.* (1960) **	Travassos (1944) φ	Travassos (1944) δ	Lamothe-Argumedo (1979)
Host group	Passeriformes						Falconiformes	Gruiformes	Galliformes
Country	Argentina	Brazil	Brazil	USA	Ecuador	Venezuela	Brazil	Brazil	México
Bl (mm)	4.1–5.4	6	2.2–9	2.5–5.6	2.5–5.8	12	7.6–8.3	4.2	6.2–6.8
Bw (mm)	1.5–1.6	2	1.6–4.2	2.3–2.6	1.3–2.5	5.3	3.9–4.3	2.7–2.9	3.0–3.7
Osl	348–358	360	280–580	420–470	280–600	756	780	580–630	676–756
Osw	406–464		300–590			853		490–530	660–756
Vsl	435–445	470	330–660	420–500	300–590	519	830	780–830	805–901
Vsw	561–571		370–700			688		580–740	885–933
Phl	135–145	100	100–200	160	80–190	250	200–240	160–190	171–257
Phw	174–184		120–220	190–210		275	240–280	160–190	144–273
Oel	174–242	–	80–390	—	—	—	160	120–160	161–241
Csl	193–242	–	200–370	380	—	—	280–330	240–370	193–243
Csw	121–130	–	80–200	110	—	—	120	110–160	80–131
Rtl	276–280	–	190–580 × 190–660	300–500	—	399	240–280 × 280–410	240–330 × 300–370	338–483
Rtw	280–300	–			—	412			322–450
Ltl	280–319	–			—	344			322–402
Ltw	242–309	–			—	509			305–483
Ol	42–309	–	120–660	280–430	200–310	481	280–370	330–410	289–322
Ow	242–329	–	160–580		120–480	440	280–410	300–410	370–547
Vg (mm)	1.9–2	2	0.8–4.7	—	—	—	3.6–4.3	1.8–2.8	—
Dvg-Ep (mm)	1.0–2.5	–	0.4–3.1	—	1.1–3.1	4.2	2.9–2.9	0.8–1.8	2–2.2
E	29–43 × 19–27	32 × 22	28–35 × 20–25	26–31 × 17–23	14–35 × 14–21	31–32 × 14–15	30–35 × 22–25	28–32 × 20	33–37 × 18–26
Ratios									
Vs/Os	0.7–0.8	1.3	0.5–1.1 ψ	0.9–1 ψ	0.9–1ψ	1.2 ψ	1–1.1	0.7–1 ψ	0.7–0.8 ψ
Ph/Os	2.4–2.6	3.6 ψ	1.5–3.8 ψ	2.6–3 ψ	3.2–3.5 ψ	3 ψ	1.3–1.5 ψ	2.8–3.6 ψ	2.9–4 ψ

* Range of measurements obtained from itemized morphometric data for each host species in the tables provided on pages 74-77.
** Originally described as *Lubens phelpsi* Heyneman, Brenes & Díaz Ungría, 1960
φ Measurements provided in the specific diagnosis, correspond to specimens from *H. diodon*.
δ Range of measurements obtained from itemized morphometric data for *Laterallus melanophaius* (Vieillot) in the table provided on page 75.
ψ Calculated from original descriptions

Host: *Taraba major* (Vieillot) (Passeriformes, Thamnophilidae).
Locality: La Marcela farm (26°17′35″ S; 59°08′38″ W), Pirané, Formosa Province, Argentina.
Date of collection: 28 September 2013.
Site of infection: intestine.
Prevalence: 11 % (1 of 9).
Intensity of infection: 2
Specimens deposited: MLP-He 6730 (2 specimens).

Considering the key provided by Pojmańska (2008), the specimens collected from the Great Antshrike are members of the genus *Lubens* by possessing a well developed ventral sucker, long caeca, testes located posterolateral to ventral sucker, ovary posterior to testes, vitellarium forming narrow bands, which usually begin at level of ventral sucker. The genus *Lubens* was considered as a subgenus of *Eurytrema* Looss, 1907 by Travassos (1919, 1944, 1945) and Bhalerao (1936). Shtrom (1940) raised it to full generic status, and afterwards was treated in this way by Denton and Byrd (1951), Skrjabin and Evranova (1952), Heyneman *et al*. (1960), Travassos *et al*. (1969), Yamaguti (1971) and Pojmańska (2008).

Lubens lubens was described by Braun (1901) as *Dicrocoelium lubens* Braun, 1901 parasitizing *Rupicola rupicola* (L.) (as *Pipra r*.) (Passeriformes, Cotingidae) from Brazil. Travassos (1944) revised the original material of this species, and all *Eurytrema* spp. described by himself (*Eurytrema robustum* Travassos, 1919, *Eurytrema polymorphum* Travassos, 1919, *Eurytrema intermedium* Travassos, 1919 and *Eurytrema cuyabai* Travassos, 1922), and concluded that all of these species were synonymous of *Eurytrema* (*Lubens*) *lubens* (Braun, 1901), actually considered a synonym of *Lubens lubens*. Travassos (1944) considered that this species parasitizes a wide range of bird hosts and possess a high intraspecific variability; in the specific diagnosis provides a narrow range of measurements, corresponding to specimens from Falconiformes, but this range is wider when specimens of *L. lubens* from Passeriformes and Gruiformes are included (see Table 1).

The specimens found parasitizing *T. major* are morphometrically similar to those described by Travassos (1944) for passeriform and gruiform birds, but are smaller than those reported in *Harpagus diodon* (Temm) (Falconiformes), and the specimens studied in Mexico by Lamothe-Argumedo (1979) from *Ortalis poliocephala* (Wagler) (as *O. vetula p*.) (Table 1).

Heyneman *et al*. (1960) described a new species, *Lubens phelpsi* Heyneman, Brenes & Díaz Ungría, 1960, based on one specimen found parasitizing the Amazonian Umbrellabird, *Cephalopterus ornatus* Geof. (Cotingidae) from Venezuela. These authors considered valid all species synonymized with *L. lubens* by Travassos (1944), and characterized *L. phelpsi* by having the oral sucker slightly larger than the ventral sucker, a larger body, by parasitize other host species, and by possessing a different geographical distribution. However, the ventral sucker larger than the oral sucker also occurs in the type specimen of *L. lubens* from *R. rupicola* described by Braun (1901),

Table 2. List of definitive host species and countries of *Lubens lubens* in the American continent.

ORDER	FAMILY	HOST SPECIES	COUNTRY	AUTHORS
Cuculiformes	Cuculidae	*Crotophaga ani* L.	Brazil	Travassos *et al*. (1969)
Falconiformes	Accipitridae	*Harpagus diodon*	Brazil	Travassos *et al*. (1969)
		Rupornis magnirostris (Gmelin)	Brazil	Travassos *et al*. (1969)
	Falconidae	*Micrastur ruficollis*(Vieillot)	Brazil	Travassos *et al*. (1969)
		Falco rufigularis Daudin	Brazil	Travassos *et al*. (1969)
		Milvago chimachima chimachima (Vieillot)	Brazil	Travassos *et al*. (1969)
Galliformes	Cracidae	*Ortalis poliocephala*	Mexico	Lamothe-Argumedo (1979)
Gruiformes	Rallidae	*Gallinula chloropus* (L.)	USA	Lumsden and Zischke (1963)
		Laterallus melanophaius	Brazil	Travassos (1919, 1944); Travassos *et al*. (1969)
		Pardirallus nigricans (Vieillot)	Brazil	Travassos *et al*. (1964, 1969)
		Porzana albicollis (Vieillot)	Brazil	Travassos *et al*. (1969)
		Porzana carolina (L.)	USA	Lumsden and Zischke (1963)
Passeriformes	Cardinalidae	*Piranga olivacea* (Gmelin)	USA	Denton and Byrd (1951)
	Corvidae	*Calocitta formosa* (Swainson)	Costa Rica	Brenes *et al*. (1966); Lamothe-Argumedo (1979)
		Cyanocorax chrysops chrysops(Vieillot)	Brazil	Travassos *et al*. (1969)
		Cyanocorax cyanomelas(Vieillot)	Brazil	Travassos (1919, 1944); Travassos *et al*. (1969)
	Cotingidae	*Cephalopterus ornatus*	Venezuela	Heyneman *et al*. (1960)
		Rupicola rupicola	Brazil	Braun (1901, 1902); Viana (1924); Travassos (1944)
	Emberizidae	*Volatinia jacarina jacarina* (L.)	Brazil	Travassos *et al*. (1969)
		Zonotrichia capensis Müller	Brazil	Travassos *et al*. (1969)
	Hirundinidae	*Progne chalybea*	Brazil	Travassos (1919, 1944); Travassos *et al*. (1969)
	Icteridae	*Cacicus haemorrhous haemorrhous* (L.)	Brazil	Travassos *et al*. (1969)
		Icterus croconotus(Wagler)	Brazil	Travassos (1922, 1944)
		Icterus pyrrhopterus(Vieillot)	Brazil	Travassos *et al*. (1969)
		Psarocolius decumanus (Pallas)	Brazil	Travassos *et al*. (1969)
		Quiscalus mexicanus prosopidicola (Lowery)	USA	Denton and Byrd (1951)
	Thamnophilidae	*Gymnopithys bicolor* (Lawrence)	Ecuador	Tallman and Tallman (1994)
		Hylophylax sp.	Ecuador	Tallman and Tallman (1994)
		Phlegopsis erythroptera (Gould)	Ecuador	Tallman and Tallman (1994)
		Pygiptila stellaris (Spix)	Ecuador	Tallman and Tallman (1994)
		Taraba major	Argentina	Present study
		Thamnomanes ardesiacus (Sclater & Salvin)	Ecuador	Tallman and Tallman (1994)
		Willisornis poecilinotus (Cabanis)	Ecuador	Tallman and Tallman (1994)
	Thraupidae	*Conirostrum bicolor bicolor* (Vieillot)	Brazil	Travassos, (1944); Travassos *et al*. (1969)
		Ramphocelus carbo carbo (Pallas)	Brazil	Travassos *et al*. (1969)
	Troglodytidae	*Troglodytes musculus musculus* Naumann	Brazil	Travassos *et al*. (1969)
	Tyrannidae	*Myiozetetes similis*	Brazil	Travassos (1919, 1944); Travassos *et al*. (1969)
Piciformes	Bucconidae	*Nystalus maculatus pallidigula* Cherrie & Reich.	Brazil	Travassos *et al*. (1969)
		Nystalus chacuru (Vieillot)	Brazil	Travassos(1944), Travassos *et al*. (1969)
	Picidae	*Campephilus robustus* (Lichtenstein)	Brazil	Travassos (1945)
		Celeus flavescens (Gmelin)	Brazil	Travassos *et al*. (1964)
Strigiformes	Strigidae	*Glaucidium brasilianum brasilianum* (Gmelin)	Brazil	Travassos *et al*. (1969)
Trogoniformes	Trogonidae	*Trogon curucui curucui* L.	Brazil	Travassos *et al*. (1969)
		Trogon viridis viridis L.	Brazil	Travassos (1945)

and in the specimens from *Progne chalybea* (Gmelin), *H. diodon* and *Myiozetetes similis* (Spix). The morphometric differences could be given by effect of the compression during fixation. This analysis allows us to conclude that *L. phelpsi* should be consider as a synonymous of *L. lubens*, because the morphometric characters proposed by the authors for its creation, are not sufficient to distinguish significantly both species. Moreover, *L. lubens* is a generalist parasite with a wide geographical distribution (see Table 2).

The finding of *L. lubens* in *T. major* increases the list of definitive host of this digenean and enlarges the geographical distribution of genus *Lubens* to Argentina.

Acknowledgements: The authors express their gratitude to Dr. Carlos Montoya for his help and hospitality during our stay in Formosa Province; to Luis Pagano (Sección Ornitología, División Zoología Vertebrados, Museo de La Plata) by assistance in collecting and identification of bird hosts. The authors, Lía Lunaschi and Regina Draghi, are members of the Comisión de Investigaciones Científicas de la provincia de Buenos Aires (CIC) and Fabiana Drago of the Universidad Nacional de La Plata (UNLP). The present study was funded by CIC (Res. Nº 243/13) and UNLP (11/N603).

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Received: April 2014
Accepted: October 2014
Published online: December 2014
Editorial responsibility: Simone Chinicz Cohen