



Research note

First records of parasites from the Long-tailed Meadowlark *Sturnella loyca* (Passeriformes: Icteridae) from the Biobío Region, Chile

Primer registro de parásitos de la loica *Sturnella loyca* (Passeriformes: Icteridae) de la región del Biobío, Chile

Marta Soto¹, Lucila Moreno², María S. Sepúlveda³, J. Mike Kinsella⁴, Sergei Mironov⁵ and Daniel González-Acuña^{1✉}

¹Facultad de Ciencias Veterinarias, Universidad de Concepción, Casilla 537, Chillán, Chile.

²Facultad de Ciencias Naturales y Oceanográficas, Universidad de Concepción, Casilla 160C, Concepción, Chile.

³Department of Forestry and Natural Resources, Purdue University, West Lafayette, IN 47907, USA.

⁴Helm West Lab, 2108 Hilda Avenue, Missoula, MT 59801, USA.

⁵Zoological Institute, Russian Academy of Sciences, Universitetskaya Embankment 1, Saint Petersburg 199034, Russia.

✉ danigon@udec.cl

Abstract. A total of 27 Long-tailed Meadowlarks *Sturnella loyca* (Molina, 1782) from the Biobío Region were examined between January 2005 and December 2008. Birds were infected with chewing lice (Phthiraptera), feather mites (Acari), and helminths (Platyhelminthes, Acanthocephala). Three species of chewing lice were found: *Brueelia boae* Cicchino and Castro, 1996 (26% prevalence), *Menacanthus leistidis* Cicchino, 1984 (7.4%), and *Menacanthus sturnellae* Price, 1977 (7.4%). Mites included 4 taxa: *Amerodectes* sp. (Mironov, 2008) (14.8%), *Harpyrhynchoides* sp. (Fain, 1972) (7.4%), *Mesalgoides* sp. (Fain, 1972) (3.7%), and *Proctophyllodes* sp. (Robin, Mégnin, 1877) (3.7%). Gastrointestinal helminths included the cestode *Anonchotaenia longiovata* (Fuhmann, 1901) (18%) and the acanthocephalan *Mediorhynchus robustus* (Van Cleave, 1916) (3.7%). With the exception of *B. boae* and *M. leistidis*, all parasites represent new records for this passerine bird species.

Key words: helminths, gastrointestinal, ectoparasites, mites, lice, Chile.

Resumen. Se analizaron 27 loicas *Sturnella loyca* (Molina, 1782) procedentes de la región del Biobío entre enero de 2005 y diciembre de 2008. Se recolectaron piojos (Phthiraptera), ácaros de plumas (Acari) y helmintos (Platyhelminthes, Acanthocephala). Se identificaron 3 especies de piojos: *Brueelia boae* Cicchino y Castro, 1996 (26% prevalencia), *Menacanthus leistidis* Cicchino, 1984 (7.4%) y *Menacanthus sturnellae* Price, 1977 (7.4%). Los ácaros incluyeron 4 taxa: *Amerodectes* sp. (Mironov, 2008) (14.8%), *Harpyrhynchoides* sp. (Fain, 1972) (7.4%), *Mesalgoides* sp. (Fain, 1972) (3.7%) y *Proctophyllodes* sp. (Robin, Mégnin, 1877) (3.7%). Los helmintos gastrointestinales encontrados fueron: el cestodo *Anonchotaenia longiovata* (Fuhmann, 1901) (18%) y el acantocéfalo *Mediorhynchus robustus* (Van Cleave, 1916) (3.7%). Con excepción de *B. boae* y *M. leistidis*, todos los parásitos representan nuevos registros para esta especie.

Palabras clave: helmintos, gastrointestinal, ectoparásitos, ácaros, piojos, Chile.

The Long-tailed Meadowlark, *Sturnella loyca* (Molina, 1782) (Passeriformes: Icteridae) inhabits the cold temperate region of South America. In Chile, it can be found from Copiapó (Atacama Region, 27°22'02" S, 70°20'04" W) to Tierra del Fuego (Magallanes Region, 54°01'54" S, 68°31'13" W) (Araya and Millie, 2000) and from the coast and continental islands to an altitude of 2 500 m (Goodall

et al., 1957). Its preferred habitats include areas with moist terrain and shrubs (Couve and Vidal, 2003), close to pastures (De la Peña and Rumbol, 1998), as well as coastal ravines and open grass areas (Couve and Vidal, 2003). Long-tailed Meadowlarks are also commonly observed in urban areas (Estades, 1995; Urquiza and Mella, 2002). In addition, it is considered a beneficial species for the maintenance of healthy ecosystems (SAG, 2007).

Although it is well known that wild birds harbor a large variety of parasites (Figueiroa et al., 2002), only a handful

of studies have been published on this subject from Chilean bird species (Hinojosa and González-Acuña, 2005). Further, the present study constitutes the first report on the parasitic fauna of Long-tailed Meadowlarks in Chile.

Between January 2005 and December 2008, a total of 27 Long-tailed Meadowlarks were retrieved from different locations within the Biobío Region. Carcasses (resulting from roadkills, poaching, dog kills, etc.) were taken to the Faculty of Veterinary Sciences, Universidad de Concepción, Chillán for parasite examination. Ectoparasites were collected manually with fine forceps after exhaustive examination and preserved in 70% ethanol. They were then cleaned in 20% potassium hydroxide, dehydrated in a series of ethanol solutions (40, 80, and 100%), cleared for 24 h in clover oil, and finally mounted in Canadian balsam (Palma, 1978). Techniques used for the collection, fixation, and staining of endoparasites followed those described in Kinsella and Forrester (1972) and Pritchard and Kruse (1982). Ectoparasites were identified using keys from Price (1977), Cicchino (1984), and Cicchino and Castro (1996) for Phthiraptera and from Park and Atyeo (1971), Mironov and Fain (2003), Valim and Hernandez (2006), Mironov (2008), Mironov et al. (2008), Atyeo and Braasch (1966), and Gaud and Atyeo (1996) for Acari. Endoparasites were identified to species using keys by Rausch and Morgan (1947) and Schmidt and Kuntz (1977). Mean intensity, range, and abundance for each parasite species were calculated as described in Bush et al. (1997). All specimens have been deposited in the Department of Zoology, Universidad de Concepción, Chile.

Table 1 summarizes the parasites found from the 27 Long-tailed Meadowlarks examined. In total, 8 taxa were recovered, 3 species of chewing lice (overall prevalence of 26.6%), 4 species of feather mites (22.2%), 1 cestode, and 1 acanthocephalan (22.2%).

Overall, there was a large variation in the number of ectoparasites recovered from the birds examined, which could be due to the fact that birds were collected after their death. This variation in abundance could also be due to annual and seasonal differences in host and parasite numbers. For some species, it was possible to calculate sex and developmental ratios. For instance, a total of 33 *Brueelia boae* Cicchino and Castro, 1996 were collected, of which 7 were males, 17 were females, and 9 were nymphs (female:male ratio of 2.2 and nymph:adult ratio of 0.37). In *Pterodectes*, a larger number of females (31) than males (20) were collected (ratio of 1.55). In this species, the nymph:adult ratio was 0.1. Finally, in *Harpyrhynchoides*, the sex and developmental stage ratios were 0.83 and 0.5, respectively.

Phthiraptera. The genus *Brueelia* Kéler, 1936 (Ischnocera, Philopteridae) includes approximately 276 species (Cicchino and Castro, 1998b) parasitizing a large number of bird orders including Passeriformes, Piciformes, Coraciiformes, and Trogoniformes (Cicchino and Castro, 1998a). Despite *Brueelia*'s broad host distribution, members of this genus are highly species-specific, with ~ 90% of them infecting only 1 host species (Johnson et al., 2002). Before this study, *B. boae* had only been described from *S. loyca loyca* from Argentina (Santa Rosa, Provincia de

Table 1. Summary of ecto and endoparasites found in Long-tailed Meadowlarks *Sturnella loyca* from the Biobio Region, Chile

Parasite	Prevalence (%)	Range intensity	Mean intensity	Mean abundance
Ectoparasites				
Phthiraptera: Ischnocera				
<i>Brueelia boae</i>	26	1 - 26	4.7	1.2
Phthiraptera: Amblycera				
<i>Menacanthus leistidis</i>	7.4	0 - 2	1.5	0.1
<i>Menacanthus sturnellae</i>	7.4	0 - 3	2.0	0.1
Acari: Proctophyllodidae				
<i>Proctophyllodes</i> sp.	3.7	0 - 2	2.0	0.1
<i>Amerodectes</i> sp.	14.8	3 - 35	13.8	2.0
Acari: Psoroptoididae				
<i>Mesalgoides</i> sp.	3.7	0 - 3	3.0	0.1
Acari: Harpyrhynchidae				
<i>Harpyrhynchoides</i> sp.	7.4	4 - 8	8.5	0.06
Endoparasites				
Platyhelminthes:				
Acanthocephala				
<i>Mediorhynchus robustus</i>	3.7	0 - 1	1.0	0.037
Platyhelminthes: Cestoda				
<i>Anonchotaenia longiovata</i>	18	1 - 9	3.0	0.55

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