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First report of *Neosilba pradoi* and *Dasiops friesei* (Diptera: Lonchaeidae) in cultivated and wild hosts in Uruguay

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The members of the family Lonchaeidae (lance flies) are glossy black color with a blue or green metallic shine, or a mixture of both blue and green. The larvae usually are saprophagous or frugivorous (Bentancourt et al. 2009). This family is very well represented in South America, although knowledge of the frugivorous Lonchaeidae is just being developed; presently, little or nothing is known about the identity and biology of the many South American species (Korytkoioski & Ojeda 1971; Norrbom & McAlpine 1997; Strikis et al. 2011; Gislotti et al. 2017).

The family Lonchaeidae possibly has received little attention because several species are opportunists associated with fruit fly (Diptera: Tephritidae) infestations (McAlpine & Steyskal 1982), rather than being primary pests. However, Araujo & Zucchi (2002), Aguiar-Menezes et al. (2004), Strikis & Lerena (2009), and Nicácio & Uchôa (2011) found that some species were primary invaders, and not dependent on previous oviposition by tephritids.

In Uruguay, there have been few reports of Lonchaeidae associated with fruit. *Dasiops uruguayensis*, described by Enderlein in 1936 (Korytkoioski & Ojeda 1971), and *Lonchaea chalybea* Wiedemann are the only records for this country (Ruffinelli & Carbonell 1954).

Between Nov 2013 and May 2014, mature fruits were collected from potential hosts of Diptera in Salto (31.3865°S, 57.7176°W) and Canelones (34.6207°S, 56.3612°W), Uruguay. Fruits (from plants or recently fallen) were collected from 18 plant species (Table 1). The samples were counted, weighed, and stored individually in screen-covered plastic pots containing

Table 1. Species of plants sampled, fruit weight, number of fruits sampled, number of adult Lonchaeidae emerged, average number of adults per kg, and percentage of fruit infested.

Plant taxa	Fruit weight (g)	No. fruit sampled	No. lonchaeids emerged	No. adults per kg	% fruit infested
Myrtaceae					
<i>Psidium cattleianum</i>	1396.0	145	3	2	2
<i>Myrcianthes pungens</i>	655.4	345			
<i>Psidium guajaba</i>	7986.9	195			
<i>Acca sellowiana</i>	10270.7	373			
<i>Eugenia uniflora</i>	162.6	8	1	6	13
<i>Hexachlamis edulis</i>	449.2	25			
Ebenaceae					
<i>Diospyros kaki</i>	2922.3	46			
Moraceae					
<i>Ficus carica</i>	2147.6	40			
<i>Maclura pomifera</i>	6359.0	21			
Rutaceae					
<i>Fortunella margaritus</i>	192.2	20			
<i>C. reticulata</i> × <i>C. sinensis</i>	13227.2	119			
<i>Citrus sinensis</i> cv. W Navel	14721.6	82			
<i>Citrus sinensis</i> cv. Valencia	3888.4	30	27	7	17
<i>Citrus paradisi</i>	9364.0	39			
Sapotaceae					
<i>Pouteria gardneriana</i>	791.6	56			
Passifloraceae					
<i>Passiflora caerulea</i>	33.1	2	13	393	100
Rosaceae					
<i>Pyrus communis</i>	27001.5	181	1	0.04	0.6
Santalaceae					
<i>Acanthosyris spinescens</i> *	3015.3	308	2	0.001	0.6

*First record of a lonchaeid infesting this plant.

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Table 2. Numbers of adults of *Neosilba pradoi* and *Dasiops friesei* by host, average number of adults per kg, and percent of fruit infested.

Plant Species	<i>Neosilba pradoi</i>			<i>Dasiops friesei</i>		
	No. adults	No. adults per kg	% fruit infested	No. adults	No. adults per kg	% fruit infested
<i>Citrus sinensis</i> cv. Valencia	1	0.3	3.3	26*	6.7	6.7
<i>Passiflora caerulea</i>	12	362.5	100	—	—	—
<i>Eugenia uniflora</i>	1	6.2	12.5	—	—	—

*First record of host for the *D. friesei*.

sterile sand, and kept at 25 °C. The emerged adults were preserved in 70% ethanol for identification.

A total of 47 specimens of Lonchaeidae were obtained from 6 plant species. Forty specimens were identified as *Neosilba pradoi* Strikis & Lerena 2009 (Lonchaeinae) and *Dasiops friesei* Norrbom & McAlpine, 1997 (Dasiopinae). The rest were identified only to family level. These two species are recorded for first time in Uruguay (Table 2). A total of 5 males and 9 females of *N. pradoi* emerged from fruits collected from plants, and 14 males and 12 females of *D. friesei* from fruits collected from both the plants and on the soil beneath the trees. In most fruits (85% of those infested) a single species emerged, but in one fruit of *Psidium cattleianum* Sabine (Myrtaceae) and one of *Citrus sinensis* (L.) (Rutaceae), adults of *Anastrepha fraterculus* (Wiedemann) and *Ceratitis capitata* (Wiedemann) (both Diptera: Tephritidae) emerged along with the lonchaeids, respectively. As noted previously, some species of Lonchaeidae should be considered to be of economic importance and regarded as primary invaders. Though sometimes associated with tephritid infestation, lonchaeids seem to be independently capable of attacking fruit (Uchôa 2012).

In Brazil, *N. pradoi* has been reported to occur in *Passiflora caerulea* L. (Passifloraceae), though Marsaro et al. (2012) found lower levels of infestation as compared to us (28.4 larvae per kg of fruit infested by *N. pradoi* or *Lonchaea* sp.). Moreover, *Eugenia uniflora* (L.) (Myrtaceae) and *Citrus sinensis* were described as hosts by Garcia & Norrbom (2011). They found infestation levels (2.7 adults per kg and 4.0 adults per kg, respectively) similar to what we observed, but this is the first time that *N. pradoi* has been found in the orange cv. Valencia. Aguiar-Menezes et al. (2004) found that *D. friesei* had the highest infestation index (considering lonchaeids and tephritids) infesting *Passifloraceae* spp. in southeastern Brazil.

This study is the first report of these species for Uruguay and it is the most southern detection of them, and thus can aid in the determination of the species' distribution and ecology. In addition, this is the first record of *Acanthosyrus spinescens* Griseb. (Santalaceae) as host for a lonchaeid. More extensive and intensive surveys of lonchaeid hosts should be conducted in Uruguay to improve our knowledge of the diversity and ecology of these important dipteran species, which could have important effects on fruit production.

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Summary

We report *Neosilba pradoi* and *Dasiops friesei* (Diptera: Lonchaeidae) for the first time in Uruguay, which is the most southern distribution yet found for these species. Moreover, new host associations are recorded: *D. friesei* in *Citrus sinensis* cv. Valencia and an undetermined lonchaeid in *Acanthosyrus spinescens*.

Key Words: lance flies; *Eugenia uniflora*; *Passiflora caerulea*; *Citrus sinensis*

Sumario

Se reportan por primera vez para Uruguay *Neosilba pradoi* y *Dasiops friesei* (Diptera: Lonchaeidae), siendo la distribución más austral. Además, se registran nuevas asociaciones de hospederos: *Citrus sinensis* cv. Valencia para *D. friesei* y *Acanthosyrus spinescens* para una especie indeterminada de Lonchaeidae.

Palabras Clave: lonqueídios; *Eugenia uniflora*; *Passiflora caerulea*; *Citrus sinensis*

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