

CORIDROMIUS CHENOPODERIS TATARNIC & CASSIS, 2008: A NEW INTRODUCED MIRIDAE (HEMIPTERA: HETEROPTERA) IN CHILEAN FAUNA

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Abstract

The presence in South America of the Australian species *Coridromius chenopoderis* Tatarnic & Cassis, 2008 is here reported for the first time in Chile from Copiapó (Provincia de Copiapó), Región de Atacama (UTM, Datum WGS 84, East 356696, North 6979721, HUSO 19). This is the first species of the tribe Halticini in Chile. Diagnostic characters, figures, antecedents of introduced species in this country as well as a complete bibliography are here given.

Key words: Chile, new introduced species, Biogeography, Heteroptera, Halticini Miridae.

***Coridromius chenopoderis* Tatarnic & Cassis, 2008: un nuevo Miridae (Hemiptera: Heteroptera) introducido en la fauna Chilena.**

Resumen

Se informa sobre la presencia en América del Sur de la especie australiana *Coridromius chenopoderis* Tatarnic & Cassis de 2008 aquí por primera vez para Chile, en Copiapó (Provincia de Copiapó), Región de Atacama (UTM, Datum WGS 84, Este 356696, Norte 6979721, HUSO 19). Esta es la primera especie de la tribu Halticini en Chile. Se ofrecen los caracteres diagnósticos, fotos, antecedentes de las especies introducidas en este país, así como una bibliografía completa.

Palabras clave: Chile, nueva especie introducida, Biogeografía, Heteroptera, Halticini Miridae.

Introduction

Beyond the transport of domestic or ornamental animals made by man for centuries, the phenomenon of inadvertent transport of wildlife through international trade has been known for centuries. It is enough to mention the case of rats (*Rattus rattus* Linnaeus, 1758 and *R. norvegicus* (Berkenhout, 1769)), present today on islands far distant from the continent, or the bed bug (*Cimex lectularius* (Linnaeus, 1758)) also worldwide distributed, the mosquito *Aedes aegypti* (Linnaeus, 1762) or the various species of domestic cockroaches to get an idea of how important it is for men this fact, from the point of view of health and the economic (Aguirre Muñoz & Mendoza Alfaro, 2009).

Increasing international trade in recent years has facilitated the transport and consequently the appearance of many foreign species in southern South American countries. Many of these species, poorly adapted, transported in small numbers of individuals, or with restricted feeding habitus, do not survive in the new environment but a small number of them, more adaptable, are able to survive each year in our distant lands.

In this context, we have witnessed both in Argentina and Chile the emergence of species of Hemiptera Heteroptera originating from different countries:

1. *Brachynotocoris parvinotum* (Lindberg, 1840) (Miridae) pest on *Fraxinus oxiphylla*, from Mediterranean region and found in Chile and Western Argentina (Mendoza) (Carpintero & Holgado, 2002).
2. *Zelus cervicalis* Stål, 1872 (Reduviidae) a North American predacious species, found for the first time in Chile and posteriorly present in Argentina (Elgueta & Carpintero, 2004).
3. *Thaumastocoris peregrinus* Carpintero & Dellapé, 2006 (Thaumastocoridae) pest on various species of *Eucalyptus*, from Australia, which appeared in 2003 in South Africa and in 2004 in Argentina.
4. *Loxa deducta* Walker, 1867, added to the Chilean fauna by Mondaca *et al.* (2008).
5. *Acliedra gregalis* Berg, 1878, added to the Chilean fauna by Faúndez *et al.* (2009).

In this paper we report the introduction of the Australian Miridae species *Coridromius chenopoderis* Tatarnic & Cassis, 2008 to Northern Chile.

Materials and Methods

The specimens were cleared using 10% potassium hydroxide and washed in distilled water, then placed in Essig's aphid fluid and slide-mounted in Canada balsam. Photographs were taken with an Olympus digital camera (model C-3040Z) mounted on an Olympus SZT-6045 dissecting microscope. Specimens are deposited in the Colección del Servicio Agrícola y Ganadero (SAG) Lo Aguirre, entomological collection (Chile) (CSLA) and in the Museo Argentino de Ciencias Naturales "Bernardino Rivadavia" entomological collection (Argentina) (MACN).

Results

Subfamily Orthotylinae Van Duzee, 1916

Tribe Halticini Costa, 1853

Coridromius chenopoderis Tatarnic & Cassis, 2008 (Fig. 1)

Diagnosis: This species is recognized by the following combination of characters defined in the original description (Tatarnic & Cassis, 2008): "proepisternum unilobed; metanotum not proemi-

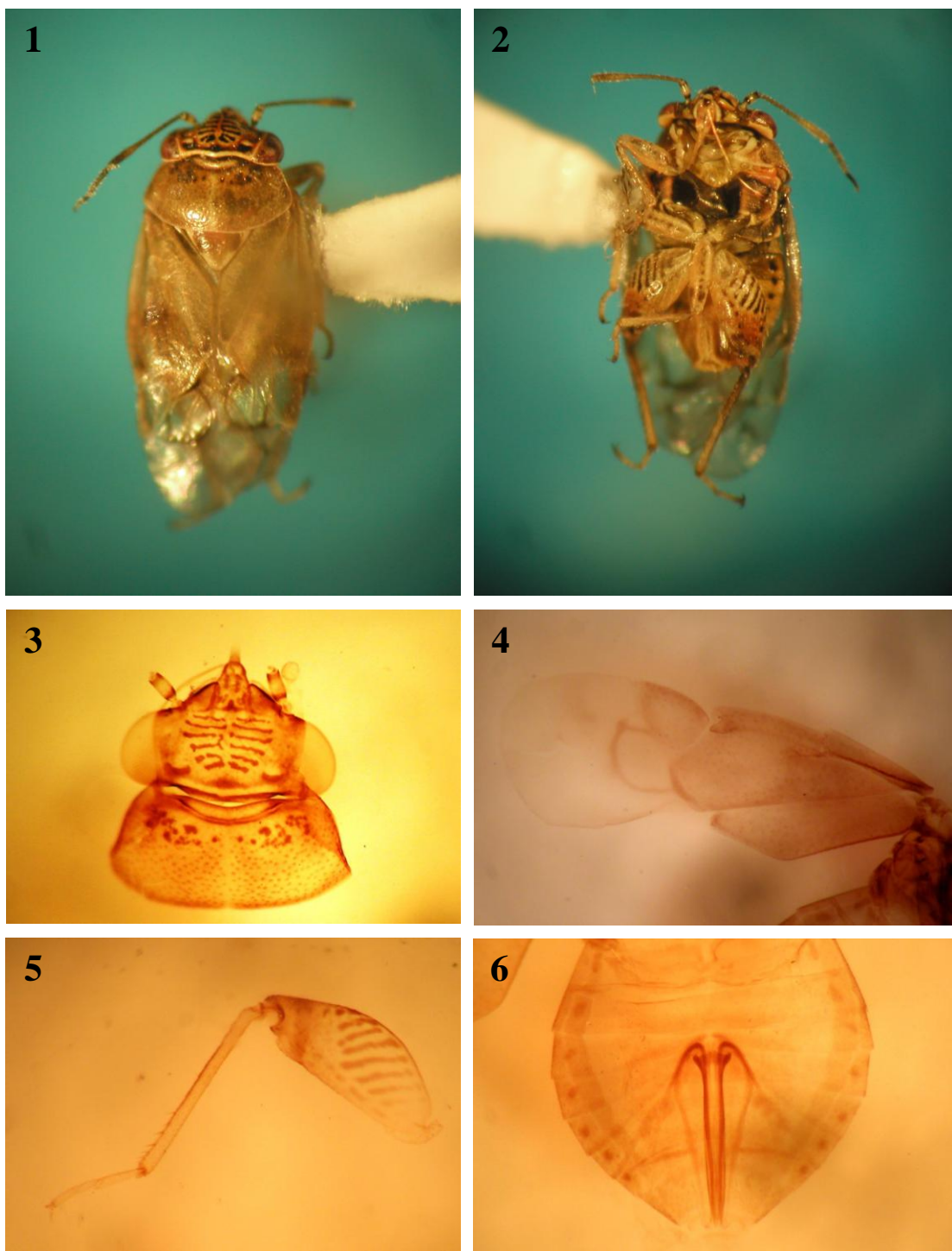


Figure 1. *Coridromius chenopoderis* Tatarinic & Cassis, 2008. Female, length clypeus-cuneus 1,65 mm. Dorsal view. **Figure 2.** Idem. Ventral view. **Figure 3.** Idem. Head. **Figure 4.** Idem. Wing. **Figure 5.** Idem. Posterior leg. **Figure 6.** Idem. Female genitalia.

Figura 1. *Coridromius chenopoderis*. Tatarinic & Cassis, 2008. Hembra. Longitud clípeo-cúneo 1,65 mm. Vista dorsal. Figura 2. Idem. Vista ventral. Figura 3. Idem. Cabeza. Figura 4. Idem. Ala. Figura 5. Idem. Pata posterior. Figura 6. Idem. Genitalia femenina.

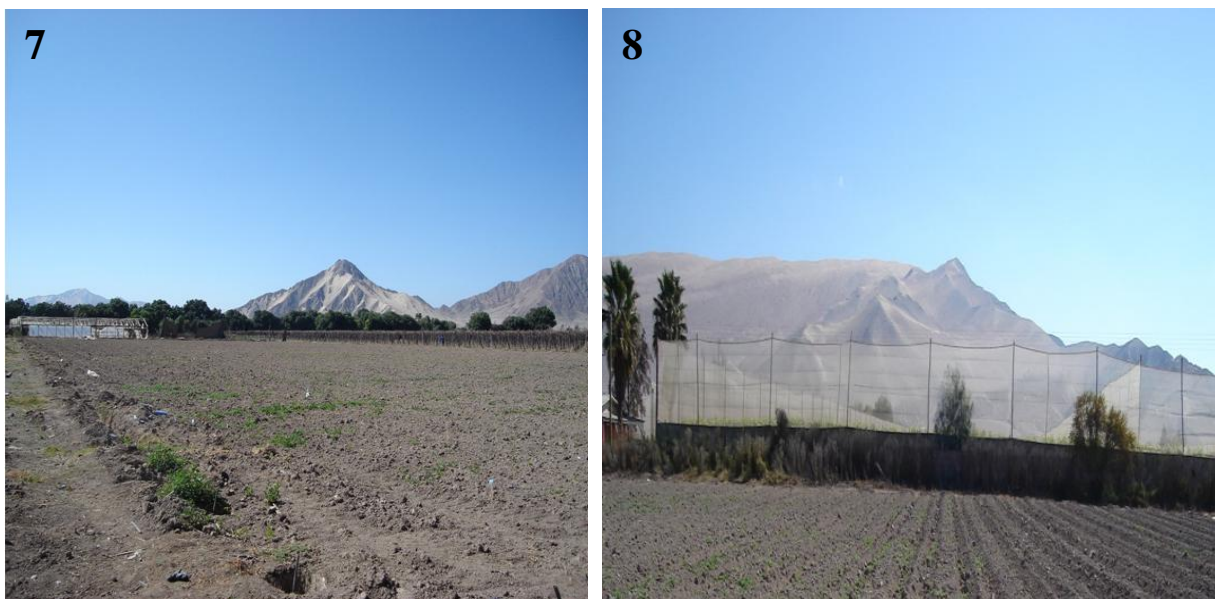


Figure 7. Collecting site. **Figure 8.** Collecting site.

Figura 7. Sitio de colecta. Figura 8. Sitio de colecta.

nently flared; posterior margin of pygophore biconvex, with prominent fold on left side forming deep U-shaped groove, without small apophysis on right margin of groove.

C. chenopoderis; *C. monotocopsis* Tatarnic & Cassis, 2008; *C. pilbarensis* Tatarnic & Cassis, 2008 and *C. variegatus* (Montrouzier, 1861) are all very similar and often difficult to tell apart. Of the four species, *chenopoderis* exhibit the most phenotypic variation in both size and coloration and has the widest variety of known host plants of all *Coridromius*. It has a somewhat narrower body shape and is typically smaller than the others, though size ranges do overlap. Males can be distinguished from the other species by the relatively shorter left paramere, the much deeper U-shaped fold on the posterior margin of the pygophore, by the lack of a small apical process on the right margin of this fold (found only in *pilbarensis*) and by the lack of a small rounded lobe on the posterior margin of the metepimeron as found in *variegatus*.

Material examined: CHILE: 8 ♀ Copiapó, (Provincia de Copiapó), Región de Atacama (UTM, Datum WGS 84, Este 356696, Norte 6979721, HUSO 19), Jan. 19, 2010, Leg. Rafael Vieyra (CSLA, MACN).

Habitats: This species was collected in the Páramo Puneña subregion, Atacama Province. The vegetation is generally low, but there are rich communities, supported rainfall deposited by the clouds that form in winter due to the currents of the Pacific Ocean (Morrone, 2001). The landscape is dry but there are areas which sustain vineyards and vegetable crops. The specimens were collected through pest a monitoring yellow sticky trap of the Servicio Agrícola y

Ganadero. The trap was placed in a melon orchard surrounded by tomatoes, grapes and grass weeds (Figures 7-8).

Discussion and Conclusions

Miridae is the most diverse family among the Hemiptera Heteroptera (Schuh & Slater, 1995). This ratio is respected also in the Chilean fauna, where this family is represented by 103 species (Prado, 2008). However, this is the first record of the Halticini in Chile, tribe that has no known native representatives. The presence of this species, therefore, should not be understood as Gondwanean fauna, of which there are many examples among the Hemiptera, including the family Peloriididae (Coleorrhyncha), the genus *Isodermus* (Aradidae) or the family Idiostolidae (Morrone, 2001).

Body shape (see under genus), swollen legs and hypognathous head (Figure 3) are characteristic on tribe Halticini. Tatarnic & Cassis (page 7 and 17) discussed the systematic placement of *Coridromius* among the Halticini. The genus *Coridromius* Signoret, 1862 is easily distinguishable by the following characters: body compact and stout; small, with most species between 2-3 mm; greatly enlarged metafemora (Figure 5), frequently marked with dark brown diagonal banding and highly specialized male genitalia with a membranous aedeagus, without sclerotizations; left paramere larger than right and generally scythe-shaped, with gutter running from base to apex, coupled with aedeagus to form piercing intromittent organ (Tatarnic & Cassis, 2008) as in most of Cimicoidea.

Despite having only females for study, the fact that this species has been introduced in adjacent countries (New Zealand) and others as distant as Hawaii, the continental United States and Mexico and the variety of plants on which it feeds, and, bearing both unique and distinctive characteristics of this species, help to confirm the identity of the species we have in hand.

Acknowledgements

This work was supported by Consejo Nacional de Investigaciones Científicas y Técnicas, CONICET. We thank Hector Carrillo of S.A.G. Copiapo for photographs of collecting area, Marco Riveras Entomology Lab Lo Aguirre, captured the images of the adults and arranged the digital images.

Referencias bibliográficas

- Aguirre Muñoz, A. & R. Mendoza Alfaro, 2009. Especies exóticas invasoras: impactos sobre las poblaciones de flora y fauna, los procesos ecológicos y la economía. *En: Capital Natural de México. Vol II: Estado de conservación y tendencias de cambio*. CONABIO, México. Pp. 277-318.
- Carpintero, D. L. & P. M. Dellapé, 2006. A new species of *Thaumastocoris* Kirkaldy from Argentina (Heteroptera: Thaumastocoridae: Thaumastocorinae). *Zootaxa*, 1228: 61-68.

- Carpintero, D. L. & M. Holgado, 2002. Primera cita de la especie paleártica *Brachynotocoris parvicornis* (Hemiptera: Miridae) en la Argentina y Chile. *Revista de la Sociedad Entomológica Argentina*, 61(3-4): 73-74.
- Elgueta, M. & D. L. Carpintero, 2004. *Zelus cervicalis* Stål (Hemiptera: Reduviidae: Harpactorinae), aporte neártico a la entomofauna introducida de Chile. *Gayana*, 68(1): 133-136.
- Faúndez, E. I. & L. M. Verdejo, 2009. The genus *Acladra* Signoret, 1864 (Hemiptera: Heteroptera: Pentatomidae) in Chile. *Zootaxa*, 2147: 49-58.
- Mondaca, J., J. Valenzuela, E. Urtubia, E. Zúñiga & R. Cabrera, 2008. Presencia de *Loxa deducta* Walker en Chile (Hemiptera: Pentatomidae). *Revista Chilena de Entomología*, 34: 73-76.
- Morrone, J. J., 2001. *Biogeografía de América Latina y el Caribe*. M & T - Manuales & Tesis Sociedad Entomológica de Aragón, Zaragoza, España. 148 pp.
- Prado, C. E., 2008. Conocimiento actual de los Hemiptera-Heteroptera de Chile con lista de especies. *Boletín del Museo Nacional de Historia Natural, Chile*. 57: 31-75.
- Schuh, R. T. & J. A. Slater, 1995. *True Bugs of the World (Hemiptera: Heteroptera)*. *Classification and natural History*, 340 pp. Comstock, Cornell University Press: Ithaca and London.
- Signoret, V., 1862. *Coridromius* n. n. for *Ocypus* Montrouzier. *Bulletin de la Société Entomologique de France*, 4(2): 5.
- Tatarnic N. J. & G. Cassis, 2008. Revision of the plant bug genus *Coridromius* Signoret (Insecta: Heteroptera: Miridae). *Bulletin of the American Museum of Natural History*, 315: 95 pp.