



Zootaxa 2459: 1–101 (2010)  
www.mapress.com/zootaxa/

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Monograph

ISSN 1175-5326 (print edition)

**ZOOTAXA**

ISSN 1175-5334 (online edition)

# ZOOTAXA

2459

## **A Review of the Eriococcid Genera (Hemiptera: Sternorrhyncha: Coccoidea) of South America**

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Magnolia Press  
Auckland, New Zealand

*Accepted by L. Mound: 1 Mar. 2010; published: 14 May 2010*

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(*Zootaxa* 2459)

101 pp.; 30 cm.

14 May 2010

ISBN 978-1-86977-513-1 (paperback)

ISBN 978-1-86977-514-8 (Online edition)

FIRST PUBLISHED IN 2010 BY

Magnolia Press

P.O. Box 41-383

Auckland 1346

New Zealand

e-mail: [zootaxa@mapress.com](mailto:zootaxa@mapress.com)

<http://www.mapress.com/zootaxa/>

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ISSN 1175-5326 (Print edition)

ISSN 1175-5334 (Online edition)

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## Abstract

This paper reviews the present status of all genera of Eriococcidae (Hemiptera: Sternorrhyncha: Coccoidea) known from South America and provides generic diagnoses based on the adult females of all available species for each genus. Redescriptions and illustrations are provided for the adult females of *Aculeococcus morrisoni* Lepage, *Apiococcus gregarius* Hempel, *Capulinia sallei* Signoret, *Carpochloroides viridis* Cockerell, *Macracanthopyga verganiana* Lizer y Trelles, *Pseudocapulinia lanosa* Hempel and *Tectococcus ovatus* Hempel, which are all type species of their respective genera. In addition, modified reproductions of original illustrations are provided for the adult females of the following species as representatives or type species of South American genera: *Acanthococcus aceris* Signoret, *Chilechiton lynnae* Hodgson & Miller, *Chilecoccus browni* Miller & González, *Coxicoccus foldi* Kozár & Konczné Benedicty, *Eriobalachowskya valenzualae* (Balachowsky), *Exallococcus laureliae* Miller & González, *Hempelicoccus paranaensis* (Foldi & Kozár), *Icelococcus nothofagi* Miller & González, *Intecticoccus viridis* Kondo, *Melzeria horni* Green, *Orafortis luma* Hardy, *Oregmomyga neglecta* (Cockerell), *Poliloculus stipae* González, *Pseudotectococcus anonae* Hempel and *Stibococcus cerinus* Miller & González. Descriptions and illustrations are also provided of the first-instar nymphs of: *Acanthococcus aceris* Signoret, *Aculeococcus morrisoni*, *Apiococcus gregarius*, *A. singularis* Hempel (which appears to be sexually dimorphic), *Capulinia sallei*, *Carpochloroides viridis*, *Chilechiton lynnae*, *Exallococcus laureliae*, *Hempelicoccus tucumanensis* (González & Granara de Willink), *Icelococcus lithrae* Miller & González, *Melzeria horni*, *Oregmomyga peruviana* Granara de Willink & Diaz, *Pseudocapulinia lanosa*, *Pseudotectococcus anonae* and *Tectococcus ovatus*. In addition, illustrated descriptions of the adult males of *Capulinia sallei*, *Carpochloroides viridis*, and *Tectococcus ovatus* are included. The first-instar nymphs and adult males of the other genera, where they are known, are also diagnosed and discussed. Based on the molecular studies of Cook & Gullan (2004), most species currently included in *Eriococcus* Targioni Tozzetti known from South America are considered to belong to the genus *Acanthococcus* Signoret, resulting in the following new combinations: *A. clapsae* (González) **n. comb.**, *A. cuneifoliae* (González) **n. comb.**, *A. divaricatae* (González) **n. comb.**, *A. pituilensis* (González) **n. comb.** and *A. lahillei* (Leonardi) **n. comb.** In addition, *Eriococcus pumuliae* González, *E. santiaguensis* González & Granara de Willink and *E. tucumanensis* González & Granara de Willink are transferred to *Hempelicoccus*, as *H. pumuliae* (González) **n. comb.**, *H. santiaguensis* (González & Granara de Willink) **n. comb.** and *H. tucumanensis* **n. comb.** (González & Granara de Willink). The status of *Opisthoscelis prosopidis* Kieffer & Jorgensen, the only species from the Neotropics currently included in *Opisthoscelis* Schrader, is discussed, and it is concluded that this species is unlikely to belong to this genus but is currently unrecognizable. Keys are provided for the identification of the 24 genera now known from South America based on the morphology of: (i) the adult females; (ii) the first-instar nymphs; and (iii) adult males, as far as these are known. In addition, Appendix 1 lists all Eriococcidae known from South America with their current generic placement, along with a brief summary of their host plants.

**Key words:** new combinations, taxonomy, Eriococcidae, *Acanthococcus*, Neotropical

## Introduction

The family Eriococcidae has been demonstrated to be non-monophyletic using morphology of adult females (Cox & Williams, 1988) and adult males (Hodgson, 2002), and using molecular analysis (Cook *et al.*, 2002; Cook & Gullan, 2004). The latter works suggest the existence of three major lineages in the Eriococcidae *sensu lato* (Cook & Gullan, 2004), one of which is Gondwanan in distribution and encompasses species from Australia, New Zealand, and South America. The South American fauna also contains components of the more widespread acanthococcid clade (Cook & Gullan, 2004; Kondo *et al.*, 2006) but not the third clade which includes representatives of the Beesoniidae, Stictococcidae and *Eriococcus buxi* (Boyer de Fonscolombe) plus a few other eriococcid taxa.

There currently are 72 species of described eriococcids in 24 genera (not counting “*Opisthoscelis*” *prosopidis* Kieffer & Jorgensen) in South America (see appendix 1). This fauna is relatively poorly known (Kondo *et al.*, 2006; Kozár & Konczné Benedicty, 2008) although there has been increased interest in the area in the last 10 or 15 years. Recent works include those of Kozár (2009), Foldi and Kozár (2007), González (2008a, 2008b, 2009), Granara de Willink and Diaz (2007), Hardy *et al.* (2008), Hodgson and Miller (2002), Hodgson *et al.* (2004), Kondo *et al.* (2006), and Kozár and Konczné Benedicty (2008). Some of the more important older works include those of Hempel (1900, 1900a, 1919, 1932, 1934, 1937), Miller and González (1975), and Morrison (1919). Most other descriptive research encompasses descriptions of single species.