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A new ortheziid (Hemiptera: Coccoidea) from Australia associated with *Acropyga myops* Forel (Hymenoptera: Formicidae) and a key to Australian Ortheziidae

JOHN S. LAPOLLA[1], CHRIS BURWELL[2], SEÁN G. BRADY[3] & DOUGLASS R. MILLER[4]

[1]*Department of Biological Sciences, Towson University, 8000 York Road, Towson, Maryland 21251, USA. E-mail: jlapolla@towson.edu*
[2]*Biodiversity Program, Queensland Museum, P.O. Box 3300, South Brisbane 4101, Queensland, Australia. E-mail: chris.burwell@qm.qld.gov.au*
[3]*Department of Entomology and Laboratories of Analytical Biology, Smithsonian Institution, 4210 Silver Hill Road, Suitland, Maryland 20746, USA. E-mail: bradys@si.edu*
[4]*Systematic Entomology Laboratory, Agricultural Research Service, U.S. Department of Agriculture, Beltsville, Maryland 20705, USA. E-mail: dmiller@sel.barc.usda.gov*

Abstract

A peculiar new genus of Ortheziidae is described from Queensland, Australia. *Acropygorthezia williamsi* LaPolla & Miller, **n. gen. & sp.** was discovered in two localities in the nests of *Acropyga myops*. Descriptions and illustrations are provided for the adult female, adult male, first-instar nymph, prepupa, and pupa; descriptions only are provided for the second- and third-instar nymphs. Prior to this study, *Acropyga* ants were known to enter into trophobiotic relationships only with mealybugs (Hemiptera: Pseudococcidae). Therefore, this study represents the first non-mealybug association between a scale insect and *Acropyga*. The new ortheziid genus has a number of unusual morphological attributes: no definite wax plates; no ovisac; an anal ring lacking setae and pores, located dorsally in the middle of the abdomen; simple, large metasternal and mesosternal apophyses; numerous spines over the body, and various instars that are so similar that they are difficult to separate. These characteristics may represent adaptations to its relationship with ants. A key is provided to the Australian Ortheziidae.

Key words: mealybug, trophobiosis, trophophoresy

Introduction

We report here the first non-mealybug trophobiotic association of ants in the genus *Acropyga* Roger (Hymenoptera: Formicidae). Investigations of nests of *Acropyga myops* Forel in Australia led to the discovery of a morphologically peculiar new ortheziid genus that is apparently a trophobiont of the ants. Ortheziids are best known for their adornment with thick wax patches or plates that cover most of their body and a thick waxy ovisac that is attached to the body of the adult female (Miller, 1991). There have been only scattered reports of ortheziids associated with ants. For example, *Orthezia olivacea* Cockerell has been found in the nest of a *Lasius* sp. (Cockerell, 1905) and *Orthezia occidentalis* (Douglas) has been found in a nest of *Formica integra* Nylander in Colorado (Morrison, 1925). More specifically, associations of ortheziids with *Acropyga* were first suggested by Bünzli (1935) when he found *Mixorthezia reynei* (Laing) (formerly *Ortheziopa reynei*) living in *Acropyga* nests in Brazil. Interestingly, a single specimen of this same ortheziid species was collected along with mealybugs from a nest of *Acropyga ayanganna* LaPolla from Guyana (LaPolla, 2004; Williams, 2004). Whether or not it was associated with the *Acropyga* is unclear, but given Bünzli's observations it is certainly possible.

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