



## Review of the Australian leafhopper genus *Trocnada* with notes on related genera (Hemiptera: Cicadellidae: Iassinae)

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### Abstract

The Australian leafhopper genus *Trocnada* Walker is reviewed and includes three previously described species: *T. alpina* Evans, *T. dorsigera* Walker and *T. minuta* Evans. Redescriptions of the genus and species are provided and include the first descriptions and illustrations of the genitalia. Taxonomic notes on all species of the genus and comparisons with related genera are given. A key to all species is provided and geographical distribution data are provided. Morphological evidence is given to support original definition of Trocnadini including only the type genus and a key to tribes of Iassinae is also provided.

**Key words:** Hemiptera, Auchenorrhyncha, Cicadina, leafhoppers, morphology

### Introduction

Leafhoppers constitute one of the largest families of insects, with more than 22,000 described species (Oman et al., 1990; Dietrich, 2005). The subfamily Iassinae is one of the larger subfamilies of leafhoppers, and comprises seven tribes (Dietrich, 2005). The iassine tribe Trocnadini was created by Evans (1947) based on the unique head structure of the endemic Australian genus *Trocnada* Walker (1858). This tribe is characterized by the shape of the head and thorax—the vertex of the head is vertical to the level of the antennal ledges, forming a continuous curve with the strongly declivous anterior part of the pronotum (Evans, 1947; Linnavuori and Quartau, 1975; Dietrich, 2005). Apart from being catalogued by Metcalf (1966), the tribe received no attention until Oman et al. (1990) placed the Oriental genus *Trocnadella* Pruthi in the tribe without explicit justification. Dietrich (2005) retained the more restricted definition of the tribe originally proposed by Evans (1947).

*Trocnada* was originally described to include only the type species, *Trocnada dorsigera* Walker (1858). Subsequently, Evans (1936, 1939) described *T. alpina* and *T. minuta*, respectively. Recently, Fletcher (2009) provided habitus photos of the three species but, until now, the male genitalia, which in other cicadellids provide the most reliable diagnostic characters at the species level, have not been described or illustrated in detail. In other groups of Iassinae, characters of the male genitalia have been very useful for delimiting genera and species and for elucidating their phylogenetic relationships (Linnavuori and Quartau 1975, Blocker 1979a, b). In this paper, we redescribe the three poorly known species of *Trocnada* and provide photos of the external habitus and female genitalia, and line drawings of the male genitalia. We also show, based on comparative morphological study, that *Trocnada* is not closely related to *Trocnadella*.

### Materials and Methods

Morphological terminology follows that of Dietrich (2005) except for wing venation, which follows Anufriev and Emeljanov (1988). Dry pinned specimens were used for the descriptions and illustrations. Specimens were identified based on descriptions by Evans (1966), illustrations provided by Fletcher (2009) and comparison with identi-