



A new genus of Chrysomelinae from Australia (Coleoptera: Chrysomelidae)

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Abstract

A new genus, *Canobolas* Reid, Jurado-Rivera & Beatson, is erected for four species of Chrysomelinae: *C. nobilis* (Lea) (**comb. nov.** from *Geomela* Lea, and type species), *C. jarrah* **sp. nov.**, *C. minang* **sp. nov.** and *C. tubrabucca* **sp. nov.**, all of which are described. *Canobolas* is endemic to Australia, where it is confined to the far western and eastern edges of the continent. All species are flightless, with narrow ranges. Feeding has not been observed and immature stages are unknown but the hostplant range may be wide, by inference from plant DNA sequenced from one specimen of *C. nobilis*. *Canobolas* is compared with other genera of Chrysomelinae.

Key words: leaf-beetle, morphology, taxonomy, plant DNA

The leaf-beetle subfamily Chrysomelinae, with approximately 3000 species worldwide, is particularly diverse in Australia, where there may be 750 species (25% of the world species; Reid 2006a). Generic level diversity of Chrysomelinae in Australia is also comparably high, although imprecise due to the unstable classification of the world genera. The first modern checklist included 176 genera (Daccordi 1982), the second, by the same author, 133 (Daccordi 1994), but the underlying evidence for the changes has not been provided (Reid 1995, 2006a). Nevertheless, if there are between 133 and 176 world genera, a significant portion is native to Australia: 42 (Reid 2006a), which is between 24% and 32% of the world fauna.

Detailed study of the Australian fauna is clearly a prerequisite for any study of the systematics of the subfamily and a taxonomic review of the Australian genera has been undertaken, defining genera along cladistic lines, but without testing these hypotheses and utilising only adult characters (Reid 2006a). Further work is required to test monophyly of the genera and to determine their relationships within the world fauna. In particular, the speciose genera dominated by small-sized species, for example *Peltoschema* Reitter and *Geomela* Lea, need to be reassessed (Reid 2006a). The morphological part of this work is being undertaken by CAMR and the molecular by JAJR. To this end a number of collecting trips were undertaken in 2005–2006, during which we rediscovered *Geomela nobilis* Lea, which on morphological grounds was wrongly placed in *Geomela* and does not easily fit into any existing named genus.

A new genus is raised for this species, and for three similar undescribed species discovered amongst material in Australian collections, and all taxa are described below. The morphological character set which was formulated to define and distinguish the genera of Australian Chrysomelinae (Reid 2006a) is used for description of the new genus.

Abbreviations: AMS = Australian Museum, Sydney; ANIC = Australian National Insect Collection, Canberra; BMNH = Natural History Museum, London; MMS = Macleay Museum, Sydney; SAM = South Australian Museum, Adelaide.