

A systematic revision of the plantbug genus *Kirkaldyella* Poppius (Heteroptera: Miridae: Orthotylinae: Austromirini)

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The genus *Kirkaldyella* is revised and thirteen species are described, twelve of which are new: *K. adunca*, *K. anasillosi*, *K. argoantyx*, *K. boweri*, *K. carotarhani*, *K. mcalpinei*, *K. mcmillani*, *K. ngarkati*, *K. notaurantia*, *K. ortholata*, *K. pilosa* and *K. schuhi*. The type species, *K. rugosa* Poppius is redescribed and illustrated. The biology and host associations of the species are discussed. A cladistic analysis of the species is given with all the relationships fully resolved, aside from the most terminal clade (*K. notaurantia* + *K. schuhi* + *K. rugosa*). The analysis is based primarily on characters of the male genitalia.

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Introduction

The Austromirini were erected as a tribe of Orthotylinae by Carvalho (1976) to include a complex of elongate genera, usually with an acute frons, including *Austromiris* Kirkaldy, *Dasymiris* Poppius and *Zanessa* Kirkaldy. Cassis & Gross (1995) assigned the ant-mimetic genera *Myrmecoridea* Poppius and *Myrmecoroides* Gross to this tribe, but placed *Kirkaldyella* Poppius within the nominotypical tribe. Cassis & Asquith *in preparation* are redefining the tribe and revising the constituent genera, and recognise *Kirkaldyella* as a member of the Austromirini. The austromirines include a complex of ant-mimetic genera that exhibit a range of morphological specialisations. Myrmecomorphy in *Kirkaldyella* Poppius is restricted to the larvae, with the adults possessing less apparent mimetic fascies.

Most of the species of *Kirkaldyella* are morphologically alike, with all species being dark, elongate to elongate-ovoid insects. The male genitalia, particularly the spiculum, separates all the species and is extensively described and illustrated in this work. Supporting external characters include those of the vestiture and colour patterns.

Prior to this work, *Kirkaldyella* comprised the type species *K. rugosa* Poppius alone. We describe 12 new species from temperate Australia, where

the genus appears to be confined. Species richness is greatest in New South Wales (6 species) and Western Australia (7), but this may be partially due to extensive collections by one of us (GC) in the heathland and open forest habitats of these states. Many species are broadly distributed, although a few of the Western Australian species have more restricted distributions in the south-western region of the state.

The Austromirini are a dominant group of phytophagous insects in a broad range of Australian environments. The group has received scant taxonomic and no ecological work, yet they are abundant on many plant species. In this work we establish host records for ten species of *Kirkaldyella*. *K. rugosa* Poppius and *K. schuhi* sp. n., have been collected from a monocot species, *Lomandra longifolia* Labill. The host records are from thirteen genera and ten plant families, representing a broad range of unrelated hosts.

Methods and materials

Two hundred and sixty four specimens were examined in this study. This material was borrowed from several Australian and American institutions. The institutional acronyms listed in the species descriptions are: