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Ruthmuelleria, a new genus of Carinodulini (Coleoptera: Coccinellidae: Microweiseinae) from South Africa

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Abstract

A new genus of ladybird beetles, *Ruthmuelleria,* belonging to the pantropical tribe Carinodulini, is described based on a new species *R. grootdrifensis* from South Africa. The genus is diagnosed by the unique 8-segmented antennae and posteriorly-directed metaventral postcoxal lines. A key to the genera and discussion of diagnostic characters of Carinodulini are also included.

Key words: Coleoptera, Coccinellidae, Microweiseinae, Carinodulini, ladybird beetles, taxonomy, new genus, South Africa

Introduction

The tribe Carinodulini of the coccinellid subfamily Microweiseinae consists of three genera and four named species, known from isolated mountainous areas of North and Central America, Asia and Central Africa (Escalona and Ślipiński 2012). All species of Carinodulini are small, wingless, lightly-sclerotised beetles found in litter. Members resemble Anamorphinae (Endomychidae) rather than true ladybird beetles due to their elongate-oval bodies, the pronotal sublateral carinae and pronotum and mesoventrite often with foveae.

Carinodula (Gordon, Pakaluk and Ślipiński, 1989) was described and placed in its own tribe, Carinodulini, in the subfamily Sticholotidinae. Ślipiński and Jadwiszczak (1995) and Ślipiński and Tomaszewska (2002) described two more genera in Carinodulini, discussed the heterogeneity of Sticholotidinae and pointed out apparently apomorphic characters that unite Carinodulini with Microweiseini and Sukunahikonini. Ślipiński (2007) divided Coccinellidae into two subfamilies, Microweiseinae and Coccinellinae, based on adult and larval morphology, but was not able to confidently place Carinodulini based on morphology alone. The division of Coccinellidae into two major clades proposed by Ślipiński (2007) has been confirmed by subsequent molecular (Giorgi *et al.* 2009) and combined molecular and morphological analyses (Seago *et al.* 2011). The latter paper has also firmly placed Carinodulini in the Microweiseinae. Escalona and Ślipiński (2012) investigated phylogenetic relationships of the genera of Microweiseinae and confirmed Carinodulini as a monophyletic group and a sister taxon to the clade including Microweiseini + Serangiini. These authors also described *Carinodulina ruwenzorii,* the first African member of Carinodulini.

The new genus described herein is very distinctive. It is the only member of Carinodulini in which the metaventral postcoxal lines are not recurved, and the antenna 8-segmented. This discovery extends the geographical range of Carinodulini to South Africa, strongly suggesting that more taxa are likely to be discovered in higher elevations in Asia and Africa.

Material and methods

Dry-mounted specimens were relaxed in warm water and dissected. Details of morphology were studied in temporary transparent glycerol slide preparations; male genitalia of the holotype as dehydrated in isopropanol,

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Pronotum (Figs. 1, 5) elongate, anterior angles indistinct, posterior angles slightly obtuse; PL 0.26–0.30 mm, PW 0.23–0.25 mm; pits located near anterior corners and along posterior pronotal margin, pit openings fully visible only in lateral and latero-posterior view; sublateral carinae narrow. Pronotal disc covered with fine but distinct punctures separated by spaces subequal to diameter of puncture, vestiture composed of sparse, short, nearly recumbent setae.

Elytra (Fig. 1) oval, broadest slightly anterior to middle; EL 0.53–0.58 mm, EW 0.34–38 mm, elytral base broadly V-shaped; punctures and setae similar to those on pronotum.

Legs (Figs. 6–7) short, coxa subglobose; trochanter elongate, subtriangular; femur broadest near distal third; tibia slightly curved; tarsus robust, tarsomeres I–II subequal in length, III slightly longer.

Male genitalia as in Figs. 8–9.

Distribution. South Africa, W Cape (Fig. 2).

Etymology. This species is named after the type locality, Grootdrif farm.

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