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Ants of the genus *Meranoplus* F. SMITH, 1853 (Hymenoptera: Formicidae): Three new species and others from northeastern Australian rainforests

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Abstract

Meranoplus beatoni sp.n., *M. hoplites* sp.n., and *M. schoedli* sp.n. are described. *Meranoplus hirsutus* MAYR, 1876, *M. dimidiatus* F. SMITH, 1867, and *M. armatus* F. SMITH, 1862 are reviewed. All are illustrated.

Key words: Ants, *Meranoplus*, taxonomy, Australia, new species.

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Introduction

The African, Oriental and Indo-Australian myrmicine ant genus *Meranoplus* is exceptionally species-rich in Australia. There are thirty-eight named continental species (including eighteen described as new by SCHÖDL in press), and many other taxa represented in collections remain undescribed. Perhaps surprisingly, apart from the common *M. hirsutus* MAYR, 1876, the genus is extremely sparsely represented, even rare, in rainforested habitats (TAYLOR 1990, ANDERSEN 2006, SCHÖDL in press).

This paper provides descriptions of three new *Meranoplus* species represented in the Australian National Insect Collection (ANIC) from Queensland rainforest sites. Several more are known in other collections, some of them possibly conspecific with undescribed New Guinean species. The new species described below seem likely to be related to *M. hirsutus*, since all conform to a similar "ground plan". *Meranoplus hirsutus* is illustrated and its distribution summarised, and the very distinctive, previously reviewed (TAYLOR 1990) species *M. dimidiatus* F. SMITH, 1867 and *M. armatus* F. SMITH, 1862 comprehensively illustrated.

Materials and methods

Abbreviations: NP = National Park; SF = State Forest. Some distribution records are reported using 1-degree geographical mapping coordinates. 17 / 145, for example, indicates the mapping grid cell 17° S × 145° E.

Illustrations: The standard set of illustrations include (1) lateral view including head, mesosoma and waist nodes, (2) frontal view of head, (3) dorsal view of gaster, (4) dorsal view including head, mesosoma and waist nodes. They include both Scanning Electron Micrographs (SEMs) and Extended Focus (Z-stack) Images (EFIs).

SEM illustrations were prepared using a JEOL JSMU3 scanning electron microscope. EFI illustrations were prepared using an Olympus E330 digital SLR camera, a custom-built stepper stage to position and move subject specimens, and Combine-Z software (www.microscopy.uk.org.uk).

Measurements and indices: All measurements are in mm, and were prepared using an eyepiece ruler reading directly at 50× magnification to mm / 100 using a Zeiss stereomicroscope.

HW Maximum width of head capsule, full face view, measured at its widest point (usually in *Meranoplus* behind the eyes).

HWE Maximum Head Width (across eyes), full face view, across and including the eyes.

HL Head Length, full-face view, measured along midline from mid-point of vertex to mid-point of anterior clypeal margin.

CI Cephalic Index: HW × 100 / HL.

EL Maximum length across longest axis of eye, all structural ommatidia included.

OI Ocular Index: EL × 100 / HW.

SL Chord length of scape excluding basal condyle (SL is not easily measured in species with deep antennal scrobes, and some estimation is required. In such cases the term "c." is cited or the measurement is omitted).

SI Scape Index: SL × 100 / HW.

PSW Promesonotal Shield Width; overall maximum width of shield, dorsal view, measured along right-transverse axis spanning its lateral extremities (usually the apices of opposite bilateral spines, or spine-like or lamellar extensions).

PSL Promesonotal Shield Length; overall maximum length of shield, dorsal view, measured on axis of midline, between transverse level of anteriormost extremity to transverse level of posteriormost extremity, including spines and spine-like or lamellar extensions (measured to level of apex of pronotal collar when it is the anterior extremity).

PSI Promesonotal Shield Index: PSW × 100 / PSL.

GW Maximum width of gaster (which is sufficiently incompressible in *Meranoplus* to facilitate this measurement).

PSW and PSL in effect specify the dimensions of a rectangle framing the entire promesonotal shield.

Discussion of individual species

Meranoplus hirsutus MAYR, 1876 (Figs. 1 - 4)

Meranoplus hirsutus MAYR, 1876: 112: worker. Type locality: Australia: Gayndah (25 / 151), Queensland.

Material examined and distribution: Known from sections of the Great Dividing Range and its eastern flanks