

A new species of the *Camponotus aureopilus* VIEHMEYER, 1914 species group (Hymenoptera: Formicidae) from Papua New Guinea

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Abstract

The *Camponotus aureopilus* VIEHMEYER, 1914 species group contains nine known species from Papua New Guinea and Australia. Recently a tenth species, *Camponotus royi* sp.n., has been discovered from west-central Papua New Guinea rainforests. This new species is described and the key to this species group modified to accommodate it.

Key words: Taxonomic description, Hymenoptera, Formicidae, *Camponotus royi*, new species, Papua New Guinea.

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Introduction

The *Camponotus aureopilus* VIEHMEYER, 1914 species group is a small set of distinctive species limited to New Guinea and neighboring Queensland, Australia. They can be recognized by the presence of either or both of the following characters: (1) head with an angle, ridge or strong inflection line running between the compound eye and the posterolateral corner, the area immediately below this ridge varying from weakly to strongly concave, and / or (2) the presence of numerous enlarged, closely spaced, elongate, finely barbed white or yellow hairs on the dorsum of the pronotum, mesonotum and / or gaster. These enlarged setae are noteworthy in that they are highly distinctive and rarely found in other taxa within the ants. The group was established by SHATTUCK (2005) and its taxonomy and biology were reviewed. It was found to contain nine species, five of which were newly described. At that time it was noted that these are rare ants and that additional collecting in Papua New Guinea and eastern Indonesia would likely be rewarded with additional species. This has proven true with the recent discovery of *Camponotus royi* sp.n. in lowland primary rainforest of the Western Province, Papua New Guinea.

Methods

The following measurements were recorded in millimetres using a Leica M205C stereomicroscope equipped with a cross-hair reticule and a Nikon X-Y micrometer stage connected to digital readouts using magnifications between approximately 20 × and 160 ×. Measurements were recorded to the nearest 0.001 mm but have been rounded to the nearest 0.01 mm (as the average recording error was approximately 0.005 mm). Indices were calculated using the measurements indicated. Measurements follow SHATTUCK (2005).

CI Cephalic index (HW / HL * 100).

- HL Maximum head length in full face view, measured from anterior-most point of clypeal margin to mid-point of a line drawn across posterior margin of head.
- HW Maximum head width in full face view excluding eyes.
- ML Mesosomal length measured from anterior margin of pronotal collar to posterior extension of propodeum lobes when viewed laterally.
- MTL Maximum length of mid tibia, excluding proximal part of articulation which is received into distal end of femur.
- SI Scape index (SL / HW * 100).
- SL Length of scape (first antennal segment) excluding basal neck and condyle.

Results and Discussion

Camponotus MAYR, 1861

Camponotus royi sp.n. (Figs. 1 - 3)

Etymology. We dedicate this species to Roy Snelling, who recently passed on while on a collecting trip to western Kenya, one of his favorite stomping grounds. Roy had been more than generous over many years, always there with a kind (or harsh, as appropriate) word and a willingness to share his extensive knowledge, experience and material.

Type material. Holotype worker and 1 worker paratype from Kaiangabip Village, Upper Fly River, 40 km SE Tabubil, 5° 32' 47" S, 141°30' 14" E, 150 - 250 m a.s.l., Western Province, Papua New Guinea, March 2008, leg. Milan Janda, lowland primary rainforest, foragers on vegetation (Australian National Insect Collection, Accession Number ANIC32-044358).

Diagnosis (minor worker). Enlarged hairs on pronotum present, cream-colored and covering majority of dorsal

surface; pubescence on dorsum of head abundant and closely spaced; erect hairs on dorsum of head between eyes and frontal carinae black.

Description (minor worker). Posterolateral margin of head angular, dorsal surface weakly convex, lateral surface weakly concave, with a ridge running from eye to posterolateral corner. Petiolar node low, block-like, its dorsal surface broadly convex. Individual erect hairs abundant on dorsum of head, mesosoma and gaster, those on anterior of head black and some on pronotum white with black tips; enlarged cream-colored hairs present on dorsal surface of pronotum; pubescence thick and abundant across majority of body. Color black.

Measurements. Minor worker (holotype followed by paratype): CI 80, 81; HL 2.10, 2.07 mm; HW 1.67, 1.67 mm; ML 3.44, 3.43 mm; MTL 2.62, 2.67 mm; SI 199, 198; SL 3.32, 3.31 mm.

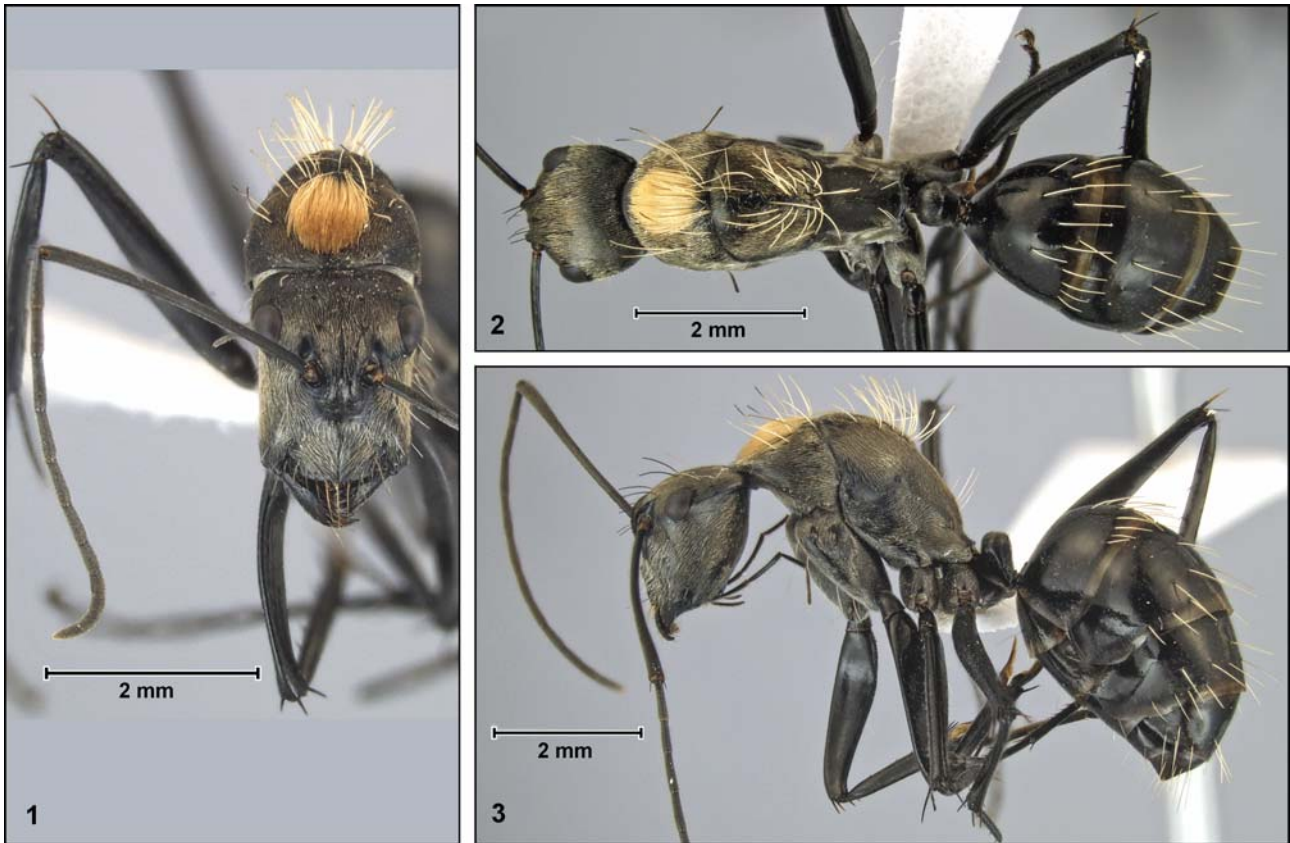
Comments. This species, known from a single collection and two specimens, was found in lowland primary rainforest where the workers were foraging on vegetation. The head shape is similar to *C. cyrtomyrmodes* DONISTHORPE, 1941 and *C. subpilus* SHATTUCK, 2005 in being widest above the eyes and weakly convex between the eyes and mandibular insertions (in full face view), but differs in having the eyes located much more posteriorly on the head capsule. It also differs in having denser pubescence and more abundant enlarged erect hairs on the head and mesosoma compared to either of these species. This species, and other members of the *C. aureopilus* group, are best placed within the subgenus *Myrmophyma* FOREL, 1912, noting that this placement is based on overall morphological similarity and a more rigorous study of the subgeneric and species-group classification within the genus is long overdue.

The following key has been modified from SHATTUCK (2005) and will allow the identification of all known species within the *Camponotus aureopilus* species group.

Key to species of the *Camponotus aureopilus* group based on major and minor workers

- 1a Dorsum of mesosoma with fewer than 6 scattered hairs and lacking patches of enlarged hairs (SHATTUCK 2005: figs. 5, 6); anterolateral pronotum projecting as a narrow ridge (SHATTUCK 2005: fig. 4). *C. cyrtomyrmodes*
- 1b Dorsum of mesosoma and / or gaster with at least a small patch of enlarged hairs (SHATTUCK 2005: fig. 9); anterolateral pronotum rounded, not ridged (SHATTUCK 2005: fig. 1). 2
- 2a Metapleural gland present above the hind leg (SHATTUCK 2005: figs. 24, 26); enlarged hairs on dorsum of mesosoma bright yellow (SHATTUCK 2005: figs. 23, 24) (Australia). *C. thadeus* SHATTUCK, 2005
- 2b Metapleural gland absent (SHATTUCK 2005: fig. 9); enlarged hairs on dorsum of mesosoma white (SHATTUCK 2005: figs. 14, 15) or pale yellow-white (SHATTUCK 2005: figs. 8, 9) (Papua New Guinea). 3
- 3a Enlarged hairs absent from pronotum (but thin erect hairs present) (SHATTUCK 2005: figs. 2, 3, 17, 18). 4

- 3b Enlarged hairs present on pronotum (SHATTUCK 2005: figs. 14, 15, 19, 20). 6
- 4a Enlarged hairs on gaster limited to a small central cluster (SHATTUCK 2005: figs. 2, 3). *C. aureopilus*
- 4b Enlarged hairs on gaster covering entire dorsal surface (or nearly so) (SHATTUCK 2005: figs. 17, 18). 5
- 5a Erect hairs on dorsum of mesosoma abundant (SHATTUCK 2005: fig. 18); dorsal surface of head reticulo-punctate and with a matte appearance; enlarged hairs on gaster more extensive (SHATTUCK 2005: fig. 17). *C. posteropilus* SHATTUCK, 2005
- 5b Erect hairs on dorsum of mesosoma fewer (SHATTUCK 2005: fig. 29); dorsal surface of head with very fine leather-like sculpturing and relatively shiny; enlarged hairs on gaster less numerous (SHATTUCK 2005: fig. 28). *C. xanthopilus* SHATTUCK, 2005
- 6a Larger erect hairs on dorsum of head between eyes and frontal carinae black (Fig. 2). *C. royi* sp.n.
- 6b Larger erect hairs on dorsum of head between eyes and frontal carinae (when present) white or pale yellow (SHATTUCK 2005: figs. 13, 14). 7
- 7a Enlarged hairs on pronotum covering entire dorsal surface (SHATTUCK 2005: figs. 14, 15). 8
- 7b Enlarged hairs on pronotum limited to a band along the central third of its width (SHATTUCK 2005: fig. 20). 9
- 8a Enlarged pronotal hairs white (SHATTUCK 2005: figs. 14, 15); pubescence on dorsum of head abundant and closely spaced (SHATTUCK 2005: fig. 13). *C. mussolinii* DONISTHORPE, 1936
- 8b Enlarged pronotal hairs pale (but distinctly) yellow (SHATTUCK 2005: figs. 8, 9); pubescence on dorsum of head thin and widely spaced (SHATTUCK 2005: fig. 7). .. *C. densopilus* SHATTUCK, 2005
- 9a Dorsal surface of head with abundant, closely spaced pubescence; mesonotum strongly arched and dorsum of mesosoma forming a strong arch with the propodeum relatively low (similar to fig. 6 in SHATTUCK 2005); dorsum of gaster golden yellow, lighter in color than mesosoma. *C. flavocrines* DONISTHORPE, 1941
- 9b Dorsal surface of head with scattered, widely spaced pubescence (SHATTUCK 2005: fig. 19); mesonotum weakly arched and dorsum of mesosoma forming a shallow arch with the propodeum relatively high (SHATTUCK 2005: fig. 21); dorsum of gaster having same color as mesosoma. *C. subpilus*



Figs. 1 - 3: *Camponotus royi* sp.n., minor worker, holotype. (1) Front of head, (2) dorsum of mesosoma, (3) side of body.

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The earlier paper on this group would not have been possible without Roy Snelling's input and he commented on seeing the manuscript that it was a "nice little study," which was Roy-speak for "you've done a good job on this one." Such critiques will be sorely missed. The fieldwork during which this species was collected was supported by Czech Academy of Sciences (KJB612230701), Czech Ministry of Education Grant Agency (LC06073) and by NSF (DEB-02-11591) (all to MJ).

Zusammenfassung

Die Artengruppe des *Camponotus aureopilus* VIEHMEYER, 1914 umfasste bisher neun bekannte Arten aus Papua-Neu-

guinea und Australien. Kürzlich wurde eine zehnte Art, *Camponotus royi* sp.n., in einem Regenwald im westlich-zentralen Papua-Neuguinea entdeckt. Hier wird diese neue Art beschrieben und der um sie erweiterte Bestimmungsschlüssel für die Artengruppe präsentiert.

References

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