



**A NEW SPECIES OF *RANTHIDIELLUM* FROM THAILAND, WITH A  
KEY TO THE SPECIES (HYMENOPTERA: MEGACHILIDAE)**

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**Abstract** – A new species of anthidiine bee (Megachilidae: Megachilinae: Anthidiini), *Anthidiellum (Ranthidiellum) ignotum* sp. n., is described and figured from northeastern Thailand, the furthest North this subgenus has yet been recorded. The species is distinguished from its congeners, being most similar to *A. (R.) apicepilosum* (Dover) in the coloration of the legs, but is otherwise quite unique for the group. A provisional key to the species of *Ranthidiellum* is provided.

**KEY WORDS:** Hymenoptera, Apoidea, Anthophila, Thailand, new species, *Anthidiellum*, *Ranthidiellum*, taxonomy.

**Izveček** – NOVA VRSTA PODRODU *RANTHIDIELLUM* IZ TAJSKE, S  
KLJUČEM DO VRST (HYMENOPTERA: MEGACHILIDAE)

Opisana in prikazana je nova vrsta čebel plemena Anthidiini (Megachilidae: Megachilinae: Anthidiini), *Anthidiellum (Ranthidiellum) ignotum* sp. n., iz severovzhodne Tajske. To je najsevernejša točka, v kateri je bil najden ta podrod. Vrsta se razlikuje od drugih svojega rodu. Po barvi nog je najbolj podobna vrsti *A. (R.) apicepilosum* (Dover), drugače pa je v svoji skupini precej edinstvena. Pripravljen je zasilen ključ do vrst podrodu *Ranthidiellum*.

**KLJUČNE BESEDE:** Hymenoptera, Apoidea, Anthophila, Tajska, nova vrsta, *Anthidiellum*, *Ranthidiellum*, taksonomija.

### Introduction

The subgenus *Ranthidiellum* Pasteels, of the large widespread bee genus *Anthidiellum* Cockerell, comprises three infrequently encountered species of

Southeast Asian anthidiines. The subgenus most closely resembles species of *Ananthidiellum* Pasteels, of approximately the same region, by the similar habitus and the apically broad female mandible. *Ranthidiellum* differs from the latter in the absence of the preoccipital carina, the absence of a carina separating the anterior-facing and dorsal-facing surfaces of the first metasomal tergum, and in the presence of distinctly arcuate subantennal sulci (Figs. 2, 5). Three species have been included historically within *Ranthidiellum* – *Anthidiellum* (*Ranthidiellum*) *rufomaculatum* (Cameron, 1902; type species of the subgenus; originally described in *Protoanthidium*); *A. (R.) meliponiforme* (Cockerell, 1919; originally described in *Dianthidium*); and *A. (R.) apicepilosum* (Dover, 1929; originally described in *Dianthidium*). Pasteels (1969, 1972) provided modern descriptive notes for the species, while Pagden (1934) provided a few notes on the nesting biology of *A. apicepilosum* (repeated by Pasteels, 1972).

Herein I provide the description of a fourth species of *Ranthidiellum*. The new species comes from northeastern Thailand, the furthest North that any species of the subgenus has been collected from mainland Asia. Morphological terminology follows that of Engel (2001) and Michener (2007).

### Systematics

Genus *Anthidiellum* Cockerell

Subgenus *Ranthidiellum* Pasteels

*Anthidiellum (Ranthidiellum) ignotum* Engel sp. n.

(Figs. 1–3)

**Holotype:** ♀; Thailand: Sakaerat, 10 July 1995 [no collector indicated]; deposited in the Division of Entomology, University of Kansas Natural History Museum, Lawrence, Kansas. Sakaerat refers to the Sakaerat Environmental Research Area, about 40 km South of Nakhon Ratchasima in Nakhon Ratchasima Province, northeastern Thailand.

**Diagnosis:** The new species is immediately recognizable among species of *Ranthidiellum* by the combination of the absence of black integument on the head and mesoscutellum; the nearly entirely ferruginous metasoma, with some reddish brown apical margins; the presence of reddish integument on the mesocoxae, mesofemora, metacoxae, and metafemora; the golden tomentum of the sixth metasomal tergum; and the white metasomal scopa.

**Description:** ♀ Typical *Ranthidiellum* with total body length ca. 8.45 mm (Fig. 1); forewing length 7.75 mm. Head wider than long [width 3.25 mm, length (as measured from top of vertex to apical clypeal margin) 2.75 mm]; subantennal sulci arcuate (Fig. 2); intertegular distance 2.50 mm. Head coarsely and largely contiguously punctured (Fig. 2) except on clypeus punctures separated by less than a puncture width, integument between smooth. Mesoscutum, mesoscutellum, and pleura coarse-



**Figs. 1–3:** Photomicrographs of *Anthidiellum (Ranthidiellum) ignotum* Engel sp. n., female; 1) Lateral habitus; 2) Facial aspect; 3) Dorsal habitus.



**Figs. 4–6:** Photomicrographs of female of *Anthidiellum (Ranthidiellum) rufomaculatum* (Cameron) from southernmost Peninsular Malaysia (Johore); 4) Lateral habitus; 5) Facial aspect; 6) Dorsal habitus.

ly and contiguously punctured except anterior-facing surface of pronotum, integument anterior to omaular carina, and propodeum with smaller weaker punctures separated by a puncture width or less and apparently faintly imbricate between punctures. Metasoma finely punctured, punctures separated by less than a puncture width, integument between punctures smooth and shining.

Head largely yellowish orange except apex of mandible black and deep reddish orange markings as follows (Fig. 2): inverted heart-shaped mark in supraclypeal area, longitudinal paramedian marks above antennal toruli demarcating a central ovoid yellowish orange area anterior on frons to median ocellus, transverse band running between upper borders of compound eyes and crossing ocellar triangle, thin and faint band along posterior border of compound eye (Fig. 1). Mesosoma yellowish orange except mesoscutum largely black with lateral and anterior borders yellowish orange and with thin notaular stripes of orange tapering posteriorly (Fig. 3), reaching, or nearly so, the posterior border; mesoscutellum yellowish-orange except inverted reddish orange triangle medially along border with mesoscutum; metanotum dark ferruginous; propodeum orange except thin black border with metanotum laterally; pleura orange except black spot in hypoepimeral area bordering metepisternum and ventrally on mesepisternum. Legs largely reddish orange except black on metatibia, metabasitarsus, mesobasitarsus, posteriorly on mesotibia, and some dark brown to black apically on metafemur (Figs. 1, 3), tarsi otherwise reddish orange to orange. Forewing largely subhyaline, with yellowish infuscation in basal half, particularly in costal cell, radial cell, first cubital cell, first medial cell, and first submarginal cell; veins light brown, becoming more yellowish brown apically including pterostigma. Metasoma largely reddish orange (Figs. 1, 3), with reddish brown apical margins on first, second, and third metasomal terga, weaker so on fourth and fifth; six metasomal tergum entirely black; sterna reddish orange, apically becoming dark brown.

Setae of head and mesosoma generally golden or fulvous throughout except black on mesotibia, mesobasitarsus, metatibia, metabasitarsus, and apically on metafemur. Metasomal setae generally fulvous and scattered, with black setae laterally on first, second, and third metasomal terga, such setae present but less prominent on fourth tergum laterally; fifth tergum with scattered golden setae slightly more numerous than setae on preceding terga (Fig. 1); sixth tergum with moderately dense plumose golden tomentum (Fig. 1); metasomal scopa white (Fig. 1).

♂ unknown.

**Derivatio nominis:** The specific epithet is taken from the Latin term *ignotus* meaning, “unknown” or “strange”.

**Comments:** This species is the most lightly colored of all of the known species of *Ranthidiellum*. Generally, several features of the new species are reminiscent of *A. (R.) apicepilosum* from southernmost Thailand and Peninsular Malaysia. Such similarities include the reddish integument of the mid and hind legs and the golden tomentum of the sixth metasomal tergum. In *A. (R.) apicepilosum*, however, the scopa is distinctly fulvous in color, the metasoma is entirely dark brown, although with red high-



lights and reddish apical margins on some segments, and the head and mesosoma have extensive black integument. In *A. (R.) meliponiforme* the mid and hind legs are entirely black (as in *A. rufomaculatum*), the metasoma is dark reddish brown to dark ferruginous, sometimes with reddish apical margins (in *A. rufomaculatum* the metasoma is dark brown to black), the scopa is fuscous (in *A. rufomaculatum* the scopa is largely white or fulvous), and the sixth metasomal tergum lacks tomentum (in *A. rufomaculatum* the sixth metasomal tergum is covered in white plumose tomentum).

**Provisional Key to Species of *Ranthidiellum***  
(females only)

- 1 Face with extensive black areas (Figs. 4–6); mesoscutellum with anteromedial black triangular marking (Fig. 6); metasoma largely black, dark brown, or dark ferruginous ..... 2
- Face and mesoscutellum without black integument (Figs. 2, 3); metasoma largely ferruginous, with broad apical areas of darker reddish brown (Figs. 1, 3) [northeastern Thailand] ..... *A. (R.) ignotum*, sp. n.
- 2 Mid and hind legs entirely black (Figs. 4, 6); metasoma uniformly dark reddish brown, dark brown (e.g., Figs. 4, 6), or black, sometimes with reddish apical margins ..... 3
- Mid and hind legs at least partly ferruginous, typically on coxae and femora; metasoma dark brown to black, with metallic red reflections on second and third segments and with reddish apical margins [Peninsular Malaysia, southernmost Peninsular Thailand] ..... *A. (R.) apicepilosum* (Dover)
- 3 Metasoma dark brown or black with broad apical bands of ferruginous or reddish brown integument; metasomal scopa dark fuscous; sixth metasomal tergum not covered in plumose tomentum [Peninsular Malaysia and Sabah] ..... *A. (R.) meliponiforme* (Cockerell)
- Metasoma dark brown to black (Figs. 4, 6); metasomal scopa white or pale yellow (Fig. 4); sixth metasomal tergum covered in plumose white tomentum (Fig. 4) [Malaysia (Sarawak); Indonesia (Sumatra)] ..... *A. (R.) rufomaculatum* (Cameron)

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