

A NEW ANT OF THE DACETINE GENUS *ORECTOGNATHUS*  
(HYMENOPTERA: FORMICIDAE)

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Abstract

*Orectognathus rostratus* sp.n. is described from Eastern Australian rain forest. It is placed confidently in the genus *Orectognathus* Smith, despite superficial resemblances to the related genera, *Arnoldidris* and *Epopostruma*.

INTRODUCTION

*Orectognathus* Smith has been revised by Brown (1953b), and several subsequent papers (Brown 1957 and Mercovich 1958) have added species to the genus. *O. rostratus* sp.n., described here, brings the total of known species to twelve. Distribution of the genus ranges from New Guinea down the east coast of Australia into Tasmania, and also includes New Caledonia, Lord Howe Island and New Zealand. The measurements and abbreviations used below are those established by Brown (1953a) for dacetine descriptions.

*Orectognathus rostratus* sp.n.

*Type locality.* Karrumbyn Creek (locally called Breakfast Creek), Mt. Warning State Park, 10 miles west of Murwillumbah, north-eastern New South Wales; in rain forest at c.900 ft. The *type colony* was located in a vertical crevice in a volcanic rock in deep shade; 30.viii.1962, B. B. Lowery.

*Type Deposition.*—*Holotype* and numerous *paratypes* (queen and workers and pterergate) in the Australian National Insect Collection, C.S.I.R.O., Canberra (Type No. 7501); further *paratype* material deposited in museums of all Australian State Capitals, in the British Museum (Nat. Hist.) London, in the Museum of Comparative Zoology, Cambridge, Massachusetts, U.S.A. (type No. 31319), and in the B.P. Bishop Museum, Honolulu.

*Type workers.*

The following description is based on the holotype and 26 nidoparatypes.

Dimensions (holotype cited first): HL(maximum) 0.72, 0.70-0.79 mm; HW 0.62, 0.60-0.67 mm; CI 86, 85-91; SL 0.52, 0.50-0.56 mm; SI 84, 83-88; maximum diameter of compound eye 0.20, 0.19-0.21 mm; ML 0.42, 0.40-0.44 mm; MI 58, 57-62; WL 0.84, 0.82-0.93 mm; petiole L in side view 0.42, 0.42-0.47 mm; TL c.3.35, 3.30-3.60 mm.

General form as shown in Figures 1 and 2. Main portion of head almost rectangular, evenly convex dorsally, sides parallel; eyes relatively large and placed at anterolateral corners; occipital lobes relatively small, convex dorsally, without the undulations and flattening found in other species; frontal carinae poorly developed, with sharp, vertical, but inconspicuous (unless viewed in profile) anteoocular teeth; preocular portion of head narrow, about two thirds as wide as cranium and approximately half as long as wide. Mandibles narrow, almost straight and parallel-sided, converging apically; apical teeth relatively small; preapical concavity very weak; barely any flange or thickening basad of apical teeth. Antennae typical of genus (Fig. 1). Mesosomal profile as in Figure 2; structure unusual for *Orectognathus* in having a continuously convex pronotal dorsum and in lacking mesonotal teeth or protuberances; humeral spines well developed, horizontal; their apices curved forwards and directed anterolaterally; not breaking the pronotal profile when viewed from the side; propodeal spines slender, acute, (0.19 mm long in holotype), elevated at an angle of about 120 degrees to the propodeal dorsum;

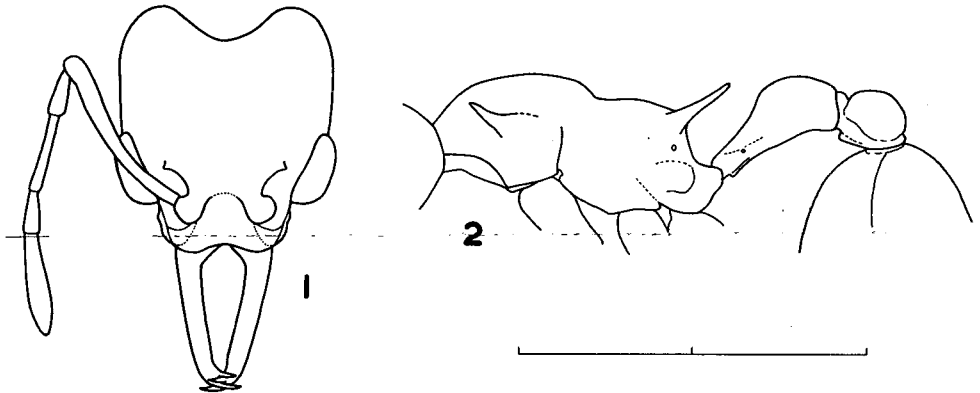
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viewed from above, each diverges from the midline by approximately  $25^\circ$ ; distance between their bases about one third their length. Petiole again atypical for the genus; profile as in Figure 2; the whole structure *Arnoldidris*-like, though relatively short; its dorsum, viewed from above, longitudinally ovoid and about three-quarters as wide as the postpetiole, which is transversely ovoid and about 1.2 times as broad as long.

Body smooth, shining; head, mesosoma and petiole densely covered with shallow, circular, umbilicate foveolae; those in centre of head *c.*0.02 mm in diameter, their average spacing about 1.5 times this distance; foveae less abundant along a mid-dorsal strip of mesosoma and petiole, on the sides of the pronotum below the humeral spines, and on the lower parts of the mesepisterna. Postpetiole with vestiges of foveolate puncturation, especially laterally. Gaster smooth and highly polished.

Antennae, mandibles and legs with short, sparse, adpressed pubescence. Rest of body, except for propodeum and gaster, with a moderate cover of fine, erect, minutely bristle-like hairs, a few fine long hairs crossing the space between mandibles; a few hairs at tip of gaster. Mandibles pale yellow; head, legs and gaster rich yellowish-red; postpetiole slightly darker; mesosoma and petiole shining black; apices of humeral and propodeal spines translucent yellow.

Apart from the dimensional differences given above, there is little variation in the nidoparatype series.



FIGS. 1, 2.—*Orectognathus rostratus* sp.n., holotype worker: (1) full-face view of head, sculpture omitted; (2) same, lateral view of mesosoma and nodes.

*Further material examined.*—

The following additional material has been examined, and the specimens designated as paratypes. Relevant ecological data are included.

1. Binna Burra, S.E. Queensland, rain forest, *c.*3000 ft, ex rotten log, queen and 6 workers, 23.v.1962, R. W. Taylor.

The remaining series, collected by the author, are all from rain forest areas in northern N.S.W.

2. Tomewin, 8 miles north of Murwillumbah, *c.*1200 ft; nest in dead bark sheath projecting over the exposed roots of Bangalow Palm (*Archontophoenix cunninghamiana*); queen and 5 workers, 2.ix.1966.

3. Karrumbyn Creek; 2 further series between rocks at c.1000 ft, one containing a queen and 4 workers, the other a queen and 13 workers; 1.ix.1965 and 7.ix.1966.
4. Iluka; sealevel; 2 nests under very small rocks, one containing a queen and 12 workers, the other a queen and 25 workers; 15.ix.1964.
5. Bruxner Park, Coff's Harbour; 250 ft; 2 series taken: (a) one (queen and 6 workers) between rock and tree trunk, (b) another (queen and 8 workers) in an old 10-inch-high termite mound; 28.viii.1965.

#### *Worker variation.*

The worker material listed above shows little significant variation. The Binna Burra specimens tend to be slightly smaller than average, the Iluka and Coff's Harbour specimens average slightly larger. One of the Coff's Harbour specimens is exceptionally large, but is otherwise normal except for a slight expansion of the mesonotal area of the mesosoma, and the development of a pair of mesothoracic lobes which appear from their position to be vestigial wings. In the terminology of Wheeler (1905), this specimen would be called a "pterergate". Its dimensions are: HL 0.80 mm, HW 0.74 mm, CI 92, SL 0.58 mm, SI 78, eye diameter 0.21 mm, ML 0.47 mm, MI 59; WL 0.95 mm; petiole L 0.49 mm; TL 3.81 mm.

In addition, the more southerly series vary in colour; the Binna Burra and Tomewin colonies resemble the type nest series. However, most individuals in the Iluka and Coff's Harbour series differ from the sharply bicoloured holotype nest material. Many specimens are moderately bicoloured, with medium to dark brown colouration on the mesosoma and petiole, contrasting with slightly lighter colour on the head and gaster; in some cases the pronotum is lightly infuscated; some specimens are entirely self-coloured reddish-brown. The species thus appears to vary in this region along much the same lines as *Pristomyrmex quadridentatus* (André) (See Taylor 1965).

#### *Paratype queens.—*

(Based on one dealate queen taken in the holotype nest and 4 other queens from series 1, 3, 4 and 5 (b) above).

Dimensions (type nest queen cited first):

HL 0.81, 0.80-0.82 mm; HW 0.73, 0.71-0.73 mm; CI 89, 88-89; SL 0.58, 0.57-0.58 mm; SI 79, 79-80; eye diameter 0.21, 0.20-0.21 mm; ML 0.46, 0.45-0.46 mm; MI 57, 55-58; WL 0.99, 0.98-1.04 mm; petiole L 0.49, 0.49-0.51 mm; TL c. 3.80, 3.80-3.89 mm.

Like worker, but with the usual sexual differences: larger size, presence of ocelli and unreduced structure of mesosoma. Pronotum short; mesonotum large, high but gently convex; humeral spines shorter and blunter, propodeal spines thicker and relatively slightly shorter than in worker. Pilosity and sculpturation as in worker, but colouration more variable; gaster with slight lateral and dorsal dark infuscations; ocelli yellow; the Binna Burra queen has reddish mesonotal suffusion.

#### DISCUSSION

*O. rostratus*, so named because of the beak-like appearance of head and mandibles, is the smallest *Orectognathus* yet described and also a very distinctive one. Neither head nor mesosoma is at all typical of the genus as presently conceived; the absence of mesonotal teeth and of protuberances of any kind sets it apart from all the other species. The head and mandibles recall those of the genus *Epopostruma* (Brown 1953a); however, the lateral eyes and the four-segmented funiculus with an elongated second segment unmistakably characterize *rostratus* as an *Orectognathus*. Again, if mesosomal structure is considered, this species bears a remarkably close resemblance to the New Guinea genus *Arnoldidris* (Brown 1953a, 1957) in having the promesonotum continuously convex and the petiole unarmed and slightly elongated. *O. rostratus* therefore places some doubt on the status of *Arnoldidris*. Future revisers, with more material at their disposal, may consider *Arnoldidris* a synonym of *Orectognathus*, though the possibility remains that these resemblances are due to convergence.

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