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Mann, 1922 (Hymenoptera: Formicidae)**

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DESCRIPTION OF THE GYNE OF THE ANT *THAUMATOMYRMEX FEROX* MANN, 1922 (HYMENOPTERA: FORMICIDAE)

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Abstract—*Thaumatomyrmex* is a rarely collected ponerine genus in which the mandibles are armed with long spine-like teeth. We provide the first description of the gyne for the genus. The gyne is similar to the worker in having the same type of tooth morphology, color and pilosity, but differs in having mesosomal development associated with flight. The specimen still possesses the wing bases.

Key words: Neotropical, poneromorph, Thaumatomyrmicini, Ponerini, Ponerinae.

INTRODUCTION

The female reproductive caste (gyne) for the majority of ant species are morphologically differentiated from the workers by the presences of wings, notal sclerites for housing flight muscles, larger eyes and the presences of ocelli. However, the gynes and males for several species are worker-like (e.g., *Hypoponera* and *Dinoponera*). Many ant species lack descriptions for their reproductive forms as the likelihood of collecting both the workers and reproductive castes together is serendipitous. We present here the first description of the gyne of *Thaumatomyrmex*, which was collected from leaf litter with an associated worker (*T. ferox* Mann, 1922).

Thaumatomyrmex is a rarely collected but extremely distinct genus that has unique fork-like mandibles and glossy nitid integument with scattered curved decumbent setae. They range from Cuba (Baroni Urbani and De Andrade, 2003) and the Greater Antilles through Mexico (<http://www.antweb.org/specimen.do?name=casent0173031>; <http://www.antweb.org/locality.do?name=JTL004162>), Belize south into Peru and Brazil (Kempf, 1975; Longino, 1988). The natural history of these ants is interesting as they are specialized predators on polynexid millipedes. After capturing the millipede, *Thaumatomyrmex* remove the setae and then consume the denuded animal (Brandão et al., 1991).

MATERIALS AND METHODS

The specimen is vouchered in the William and Emma Mackay collection held at the University of Texas at El Paso. The specimen was measured following universal myrmecological morphological measurement and indices (Ward, 1985; Longino, 1988; LaPolla, 2009).

Digital micrographs were taken with a Leica MZ16 stereomicroscope with a Leica DFC 420 digital camera using the Leica Application Suite (LAS) software package combined ZP for stacking and processing images.

RESULTS

Thaumatomyrmex ferox Mann, 1922 Figures 1A–C

Thaumatomyrmex ferox Mann, 1922: 3, Fig. 1, worker, Type Locality Honduras.

Thaumatomyrmex paludis Weber, 1942: 68, Figs. 1 and 2, worker. Junior synonym of *T. ferox* by Longino, 1988.

DIAGNOSIS: Unmistakable, not confused with any other ant genus; worker-like, mandibles with three elongated teeth; integument black and shiny with bluish reflections.

DESCRIPTION: *Gyne*. Total length (maximum length from front of head to posterior tip of gaster) 4.51 mm; Head width (maximum width of head, including eyes) 0.41 mm; Head length (midline length of head) 0.39 mm; Cephalic index (Head Width * 100/Head Length) 105.1; Mandible length (full face view) 0.36 mm; Eye length (maximum length of compound eye) 0.23 mm; Eye width (maximum width of compound eye,

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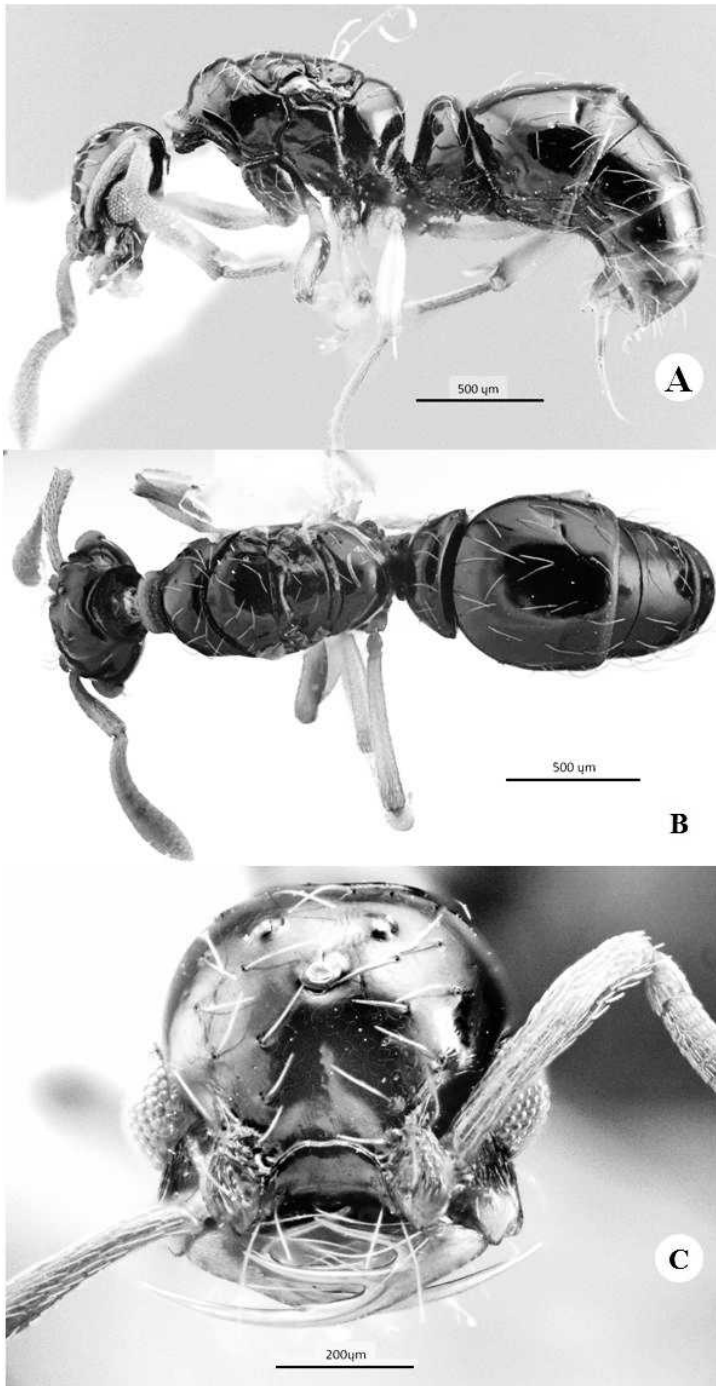


Fig. 1. *Thaumatomyrmex ferox* A. Body showing notal development and wing fragments (lateral). B. Habitus (dorsal). C. Head with unique mandibles (frontal).

measured along short axis) 0.16 mm; Ocular index (maximum diameter of eye expressed as percentage of head width (EL*100)/Head Length) 58.9; Scape length (length of first antennal segment excluding basal condyle) 0.36 mm; Scape index (Scape Length* 100/Head Width) 87.8; Mesosomal length (total length from pronotum to posterior edge of propodeum) 0.36 mm; Pronotal length (viewed dorsally, measured from anterior to posterior edge at midline) 0.47 mm; Petiole height (maximum height of petiole in lateral view, not including subpetiolar process) 0.65 mm; Petiole length (distance from midpoints of anterior and posterior faces in lateral view) 0.44 mm.

Head: Mandible with three elongated teeth, basal tooth small, apical tooth twice as long (0.39 mm) as other teeth; integument smooth, nitid, golden-yellow in color; four long (0.9 mm–0.12 mm), decumbent hairs present. Clypeus nitid black; projecting between frontal lobes, anterior border concave, surface concave, posterior border of clypeus medially convex, reflective with punctures at posterior margins; four long lateral suberect golden - yellow hairs present on clypeus. Frontal lobes wide (0.21 mm) between medial edges, covering antennal insertions, protruding and reflected outward; two long decumbent hairs on each lobe, ten yellow curved and appressed hairs; integument dark yellow. Scape reaching but not surpassing posterior border of head covered in appressed fine pubescence; integument nitid; dark yellow. Funiculus 0.51 mm in length, with eleven segments, segments gradually enlarge, not forming distinct club, dark yellow in color; covered in dense short, fine appressed hairs. Eyes (in frontal view) conspicuous, oval-shaped; in lateral view eyes covering one third of head; 12 ommatidia across at widest portion of the eye (worker [N = 3] with only nine ommatidia at widest portion of the eye). Ocelli small, well-developed; medially positioned, not reaching posterior margin of head; yellowish 0.02 mm distance between two posterior ocelli, 0.01 mm distance between posterior and anterior ocellus. Head integument nitid black; 18 golden-yellow long curved decumbent hairs on dorsum of head, all hairs directed medially, hairs surrounded by small pits. Posterior margin of head convex; neck rugose non-reflective. **Mesosoma:** Anterior margin of pronotum in dorsal view rounded. Lateral portion of pronotum devoid of hairs, dorsum with scarce long golden decumbent hairs (about 4) directed posteriorly;

nitid black integument. Promesonotal articulation deeply depressed (0.025 mm). Mesonotum rectangular with slightly protruding borders (in dorsal view); long golden-brown decumbent hairs scattered on dorsum; hairs absent on lateral regions. Tegulae well developed. Scutum nitid black; anterior edge convex in dorsal view, trapezoidal-shaped, gradually reducing in width and becoming slender towards posterior edge. Golden-yellow long scattered appressed hairs posteriorly directed on scutum. Transcutal fissure present. Anterior portion of axilla inclined posteriorly. Scutellum (0.39 mm l, dorsal view) width reduced posteriorly; rounded and prominent, sides depressed, striae on small protrusions surround depressions alongside wing bases; five golden-brown short curved scattered decumbent hairs along the surface. Articulation present between the scutellum and metanotum, running down the lateral side. Metanotum present, anterior face straight, posterior face convex. Metanotal-propodeal articulation present. Wing bases present. Portion of hind wing present (0.36 mm); curled posteriorly. Metapleural sulcus present. Mesometapleural sulcus present, deeply depressed. Metapleuron rectangular shaped, bulging at borders in dorsal view. Metapleural gland bulla costulate laterally, smooth-glossy integument. Propodeum black, smooth, glossy integument, declined posteriorly perpendicular to petiole, posterior face flat; dorsal view triangular shaped; lateral view has several faint carinae; propodeal spiracle present, circular, opened laterally. Four golden curved scattered decumbent hairs on laterodorsal area. Legs smooth, pale-yellow; sparse, long, pale-yellow appressed hairs present on coxa, proximal portion of coxa dark brown to black, distal portion yellow; femur (0.48 mm l) with long fine pale-yellow scattered decumbent hairs, integument smooth, yellow. Tibia (0.32 mm) with one spur, very fine suberect pilosity present, integument smooth, slightly darker than other leg parts, golden-brown. Tarsus (0.54 mm l) light golden brown, smooth, with small golden very fine suberect hairs present. **Abdomen:** Petiole triangular in shape (in lateral view), wider at base converging apically, apical portion rounded with carina running down lateral sides; 14 golden long fine decumbent hairs present on sides and dorsum of petiole, absent from anterior and posterior faces, integument smooth glossy, black. Subpetiolar process glossy, ranging from black to

reddish-brown; projecting posteriorly, roughly rectangular with rounded edges; similar to worker. Gaster smooth and glossy; girdling constriction at posterior edge of first tergum; golden fine long, appressed, suberect and decumbent hairs; pilosity present on dorsum of gaster. First and second terga black, smooth and glossy first tergite (0.85 mm in length, lateral view). Third tergite light brown, fourth tergite golden light brown. Sting (visible) 0.31 mm in length.

MATERIAL EXAMINED: PANAMA:, Cerro Campana: 950 m, 05-vi-1995, R. Anderson # 17837, wet montane forest litter, 1 gyne.

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