

WILLIAM L. BROWN

ANTS OF THE GENUS *PHEIDOLE*, SUBGENUS *HENDECAPHEIDOLE*

(HYMENOPTERA, FORMICIDAE)

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The subgenus *Hendecapheidole* was described by Wheeler in 1922 for those species of *Pheidole* which have 11 segments in the antenna of the worker, soldier and female. As genotype he designated *Pheidole tachigaliae* Wheeler (1921), a species described from Kartabo, British Guiana, on the basis of the worker, soldier and dealated female, and originally thought to have 12 antennal segments in all those castes. In the 1922 paper Wheeler also described *P. (H.) emersoni* from workers, a dealated female, and males collected from a termite nest in Kartabo. These were the only two species included in *Hendecapheidole* until 1925, when two others were assigned to the subgenus. One of these, *mendicula* Wheeler (1925), was based on numerous workers, two soldiers and two males collected on Barro Colorado Island, Canal Zone. The other, *Tetramorium (Cephalomorium) bahai* Forel (1922, Rev. Suisse de Zool. 30: 91), described from a single worker supposedly collected at Faisons, North Carolina, was assigned by Santschi (1925, Soc. Ent. Belg. Bul. et Ann. 65: 228) to *Hendecapheidole*. Being doubtful of Santschi's placement of the species when I prepared the section on ants in the Hymenoptera of America North of Mexico (1951, U. S. Dept. Agr. Monogr. No. 2, p. 833), I included *bahai* among the unrecognized forms of Myrmicinae.

Of the four species formerly considered to belong to *Hendecapheidole*, two are now known to be incorrectly placed in that subgenus. At my request, Charles Ferriere of the Museum d'Histoire Naturelle, Geneva, Switzerland, examined the holotype of *bahai* and found that, although it was a *Pheidole*, it had 12 segments in the antenna and was therefore not a *Hendecapheidole*. Both W. L. Brown and E. O. Wilson have examined the cotypes of *emersoni* in the Museum of Comparative Zoology, Cambridge, Massachusetts, and report them to be *Pheidole* but not members of the subgenus *Hendecapheidole*.

In this paper I give the known taxonomic and biological information concerning *Hendecapheidole*. I redescribe the soldier and worker of both *tachigaliae* and *mendicula*, and furnish keys for the identification of these castes. Wheeler's original description of the dealated female of *tachigaliae* and the male of *mendicula* are reproduced, since specimens of these two castes are not available to me.

***Pheidole*, subgenus *Hendecapheidole* W. M. Wheeler**

Pheidole (Hendecapheidole) W. M. Wheeler, 1922, Amer. Mus. Novitates 46: 3, worker, soldier, dealated female, (not male).

Pheidole (Hendecapheidole) W. M. Wheeler, W. M. Wheeler, 1925, Biol. Bul. 49 (3): 174, male. Fig. 1 (d, head of male; e, antenna of male).

Type: *Pheidole tachigaliae* W. M. Wheeler. Orig. desig.

This subgenus is characterized especially by having 11 segments in the antenna of the worker, soldier and female and 12 segments in the antenna of the male. The

soldier presents the best characters for specific recognition. The soldiers of both *tachigaliae* and *mendicula* have an antennal sulcus and also a high angular crest on the thorax in the vicinity of the humeral angles with a distinct anteroventrad and posteroventrad slope from this region. At present, species are known only from British Guiana and the Canal Zone. The available biological information is given under each species.

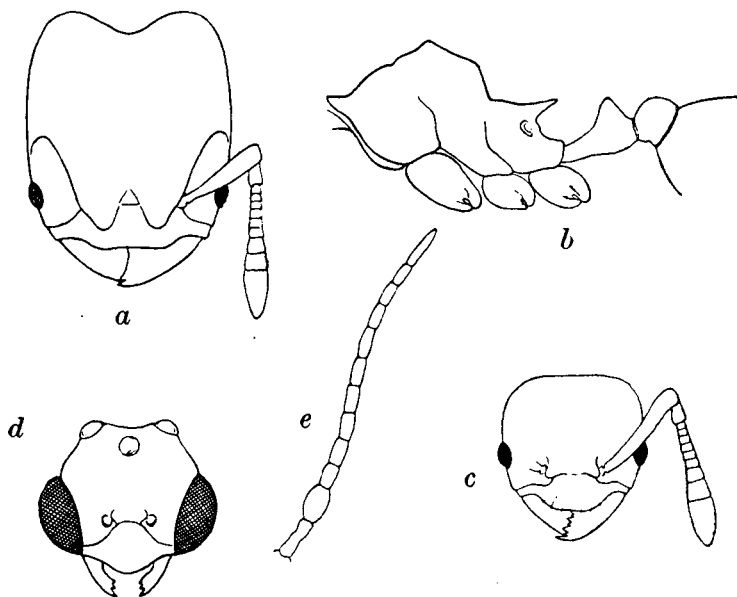


Fig. 1, *Pheidole* (*Hendecapheidole*) *mendicula* W. M. Wheeler; a, head of soldier, dorsal aspect; b, thorax and pedicel of same, in profile; c, head of worker, dorsal aspect; d, head of male; e, antenna of same. (After Wheeler).

KEY FOR THE IDENTIFICATION OF THE SOLDIERS

1. Dorsal surface of head with longitudinal rugulae; body light brown or reddish brown; British Guiana..... *tachigaliae* W. M. Wheeler
Dorsal surface of head with transverse rugulae (some of which may even be concentric); body dark brown; Canal Zone; fig. 1 (a, b).....
..... *mendicula* W. M. Wheeler

KEY FOR THE IDENTIFICATION OF THE WORKERS

1. Head and thorax dark brown and with dense, punctulate sculpturing which gives these areas a subopaque effect; Canal Zone.....
..... *mendicula* W. M. Wheeler
Head and thorax light brown or yellowish brown and with dense but weak punctulate sculpturing which gives these areas a slightly shining effect; British Guiana..... *tachigaliae* W. M. Wheeler

Pheidole (Hendecapheidole) mendicula W. M. Wheeler

Fig. 1 (a, head of soldier; b, thorax, petiole and post-petiole of soldier; c, head of worker; d, head of male; e, antenna of male).

Pheidole (Hendecapheidole) mendicula W. M. Wheeler, 1925, Biol. Bul. 49 (3): 172-175, worker, soldier, male.

Soldier.—Length 1.6-2 mm. (1.3 mm. according to Wheeler).

Head subrectangular, distinctly longer than broad, with rounded occipital lobes and noticeably emarginate posterior border, the vertex with a longitudinal impression but without a frontal furrow extending from the impression to the frontal area. Frontal carinae strongly diverging posteriorly. Scape short, slender at base, noticeably enlarged apically, when fully extended attaining approximately half the length of the head; antennal club longer than the remainder of the funiculus. Greatest diameter of eye slightly more than 0.10 mm. and bearing therein approximately six ommatidia. Thorax widest through the humeral angles which are very pronounced. Posterior part of mesonotum almost perpendicular to the base of the epinotum. Epinotal spines well developed but scarcely half as long as the distance between their apices. Legs moderately short, with noticeably enlarged femora and tibiae. Petiolar node, in profile, strongly compressed anteroposteriorly; viewed from above and behind the node appears somewhat wedge-shaped and has a straight or excised superior border. Postpetiolar node broader than long, also broader anteriorly than posteriorly.

Dorsal surface of head very strikingly transversely rugulose (some of the rugulae often somewhat concentric). Epinotum largely punctulate. Pronotum and mesonotum irregularly rugulose-reticulate, with punctulate interspaces. Mandibles, clypeus, dorsal surfaces of petiolar and postpetiolar nodes, and gaster rather smooth and shining; dorsal surface of petiolar node frequently shining.

Hairs yellowish, suberect to erect, moderately abundant, many of them rather long. Scape of antenna also with a number of rather long hairs. Body dark brown, appendages somewhat lighter.

Worker.—Length 1.3 mm. (Wheeler gives the length as 1 mm.).

Head 1.10 times as long as broad, differing especially from the soldier in having more convex sides and a straight posterior border. Greatest diameter of eye less than 0.10 mm. and with about five ommatidia. Thorax with weakly developed humeri. Legs, petiole, postpetiole and gaster very much as in the soldier.

Head, thorax, lower portions of the petiole and postpetiole mainly coarsely and densely punctate, subopaque; mandibles, dorsal surface of petiolar and postpetiolar nodes and gaster smooth and shining but the clypeus punctulate and also longitudinally rugulose, subopaque.

Hairs light yellowish or grayish, moderately abundant but rather long. Scape with a few long hairs.

Body dark brown; mandibles, antennae and legs lighter.

“*Male*.—Length nearly 2 mm.

“Slender; head, including the eyes, as long as broad, narrowed behind, with straight sides and concave posterior border. Eyes and ocelli large. Mandibles and clypeus small, the former tridentate, the latter convex in the middle, with rounded anterior border. Antenna 12-jointed; scape very small and slender, scarcely longer than the swollen, ovoidal first funicular joint; joints 2-6 about twice as long as broad; 7-10 somewhat longer, the terminal joints slender and elongate. The

funiculus tapers gradually to its tip. Thorax broader than the head, the mesonotum large, convex in front, as broad as long. Epinotum convex, with subequal base and declivity, rounding into each other. Petiole slender, parallel-sided, with very low and indistinct node; postpetiole somewhat broader, campanulate, as long as broad. Gaster and legs slender.

"Shining; head subopaque and very finely and densely punctate; pronotum also finely punctate but more shining.

"Pilosity yellowish, similar to that of the soldier and worker but shorter, especially on the legs, where the hairs are also more reclinate.

"Yellowish brown; dorsal surface of body darker; head black; mandibles, mouthparts, antennae, legs, insertions of wings and genitalia, pale yellow. Wings hyaline, with colorless veins and pterostigma."

Type locality.—Barro Colorado Island, Canal Zone.

Types in the Museum of Comparative Zoology at Cambridge, Massachusetts.

In addition to a soldier and two worker cotypes of *mendicula*, I have studied four soldier and eight worker topotypes collected by I. Molino, August 22, 1923, and two soldiers and five workers from Cooper's Place, edge of Rio Aejeta, Canal Zone, August 19, 1923 by James Zetek, now in the National Museum. There is no biological information on the last two mentioned collections.

The species was described from a colony nesting in the soil immediately around the fungus chamber of the ant, *Sericomyrmex amabilis* W. M. Wheeler.

***Pheidole (Hendecapheidole) tachigaliae* W. M. Wheeler**

Pheidole tachigaliae W. M. Wheeler, 1921, Zool. 3 (4): 148-150, *worker, soldier, deälate female*.

Pheidole (Hendecapheidole) tachigaliae W. M. Wheeler, W. M. Wheeler, 1922, Amer. Mus. Novitates 46: 3, *worker, soldier, deälate female*.—W. M. Wheeler, 1925, Biol. Bul. 49 (3): 175, *worker, soldier*.—W. M. Wheeler, 1942, Harvard Univ., Mus. Compar. Zool. Bul. 90 (1): 6, 67, 192.

Soldier.—Length 2 mm.

Head, frontal carinae, scape, eye, thorax, legs, petiole and postpetiole similar to *mendicula*.

Dorsal surface of head with longitudinal rugulae which diverge posteriorly, some of them even extending onto the occipital lobes. Sculpturing of body rather difficult to discern clearly because of the light body color; the epinotum, however, appears punctulate. Mandibles, clypeus, postpetiolar node and gaster rather smooth and shining.

Hairs of body similar to those of *mendicula* even to the scapes.

Body light brown or yellowish brown to reddish brown, the appendages and gaster lighter.

Worker.—Length 1.2 mm. (Wheeler gives the length as 1-1.1 mm.).

Remarkably similar to that of *mendicula*, differing mainly in the smaller and more slender epinotal spines with acuter tips, lighter body color (light brown or yellowish brown), and the weaker (punctulate) sculpturing, especially of the head and thorax.

"*Female (deälated)*.—Length 2.5 mm.

“Head subrectangular, a little longer than broad, a little narrower in front than behind, with straight sides and posterior border. Frontal carinae and antennal scrobes as in the soldier. Antennae longer, the scapes reaching to the posterior third of the lateral borders of the head. Upper surface of the head convex, without vertical impression. Ocelli rather far apart. Thorax elliptical, as broad as the head, the mesonotum and scutellum flat above. Epinotum very small and sloping, with small teeth. Petiole and postpetiole much as in the soldier; gaster larger and more elongate.

“Sculpture, pilosity and color as in the soldier. There is a black spot on the ocellar triangle and the brown fasciae on the gaster are broader and darker. Wing insertions blackish.”

Type locality—Kartabo, British Guiana.

Types in the Museum of Comparative Zoology, Cambridge, Massachusetts and in the U. S. National Museum.

I have studied only one soldier and two worker cotypes of *tachigaliae*.

This species was originally collected from a colony nesting in the leaf petiole of a species of *Tachigalia*. In a later paper (1922) Wheeler lists the species from the leaf petioles of *Tachigalia paniculata* Aublet and the stem-swellings of *Cordia nodosa* Lam. var. *hispidissima* Fres.