

A NEW GENUS, TWO NEW SPECIES AND A NEW SUBSPECIES OF PHILIPPINE ANTS (HYMENOPTERA: FORMICIDAE)¹

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ABSTRACT

Apomyrmex, n. gen., and the following new species and subspecies of Philippine ants respectively are described and illustrated: *Apomyrmex manobo*, *Myrmecaria aphidicola* and *Strumigenys godeffroyi geococci*. Biological notes are also included.

Key words: Formicidae, ants, new genus, new species, new subspecies.

INTRODUCTION

The ants (Family Formicidae) are regarded as a world dominant taxon consisting of over ten thousand species (Wilson, 1963). The known living ants comprise 11 subfamilies, 303 genera, and approximately 8,800 species (Wilson, 1988). It is far below the number that really exists.

Wheeler and Chapman (1925) studied 67 species of Philippine ants some of which were new species belonging to the subfamilies Dorylinae, Cerapachyinae and Ponerinae. More new ants of which five were new species, two new subspecies and two new subgenera were collected and described by Wheeler (1935) from several rich collections of Philippine ants received from Dr. J.W. Williams, Dr. F.X. Williams and Dr. R.C. McGregor. On the other hand, Chapman and Capco (1951) made a checklist of Philippine ants and in 1963, Chapman added new ants from the Philippines belonging to subfamilies Dorylinae, Ponerinae, Myrmecinae and Formicinae. In the Catalogue of Philippine Hymenoptera, Baltazar (1966), listed 307 species and subspecies of ants belonging to 66 genera and seven subfamilies recorded to occur in the Philippines.

The taxonomy of ants in the Philippines as well as in other parts of the world is still unfinished. Majority of the species remains to be discovered and described and need revisionary studies for those species already named.

This paper aims mainly to described new taxa of ants from the Philippines.

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DESCRIPTIONS OF NEW TAXA

APOMYRMEX, n. gen.**Type-Species:** *Apomyrmex manobo*, n. sp.

Description. Mandible with seven visible teeth; clypeus with apical margin slightly lobed; antennae 12-segmented, with 3-segmented club; promesonotal and mesopropodeal suture markedly impressed; propodeum laterally armed with a pair of long spines pointing backwards and with a pair of small spines ventrally; petiole and post petiole subequally rounded but petiole pedunculate anteriorly; only first gastral segment visible dorsally.

Remarks. This genus is here established for a species that does not fit satisfactorily in any of the known genera of the subfamily Myrmecinae because the erect setae are not bifid nor trifid. It would have been referred to *Vollenhovia* Mayr since hairs are simple and the body is heavily sculptured, but it does not have a large subpetiolar process projecting forward between the hind coxae as a flat vertical lamella.

On the other hand, the presence of a pair of large lateral spines and another pair of small spines below on the propodeum, and the heavy sculpturing from head to the petiole is shared with *Triglyphotrix striadens*. However, this new genus has its first gastral segment large and occupying the whole abdomen when viewed dorsally.

Etymology. The genus derives its name from Mount Apo, the mountain where it was collected.

1. *Apomyrmex manobo*, n. sp.

Figure 1

Description. Body 4 mm long, shining dark brown. Head subquadrangular, heavily sculptured, with few very long simple setae; mandibles long, triangular with seven visible teeth; clypeus slightly bilobed at apical margin, basal margin subtriangular, carinate; antennae 12-segmented with 3-segmented club; outer sides of antennal sockets near basal clypeal margin, up to dorsal or head vertex carinate; eyes large, length as long as first funicular segment, elevated, rounded and positioned at mid lateral sides of the head; occiput slightly depressed.

Alitrunk heavily sculptured, longer than broad, narrow with numerous very long simple setae; promesonotal and mesopropodeal sutures markedly impressed; propodeum armed with a pair of long spines laterally and a pair of small spines ventrally; legs short and robust; front tibial spur large, with long fringed hairs ventrally.

Petiole heavily sculptured, pedunculate anteriorly, subequally rounded as post petiole, with several very long simple setae; gaster oval, shiny and smooth without any sculpturing, with numerous very long simple setae; only first gastral segment visible dorsally; basal portion longitudinal striated.

Etymology. The specific epithet is derived from *Manobo*, the name of the indigenous tribe living in Mt. Apo.

Material Examined. HOLOTYPE: Worker, MINDANAO: North Cotabato: Kidapawan: Ago, Mt. Apo, underneath leaves of *Arundo donax* Linn., 02.v.1988

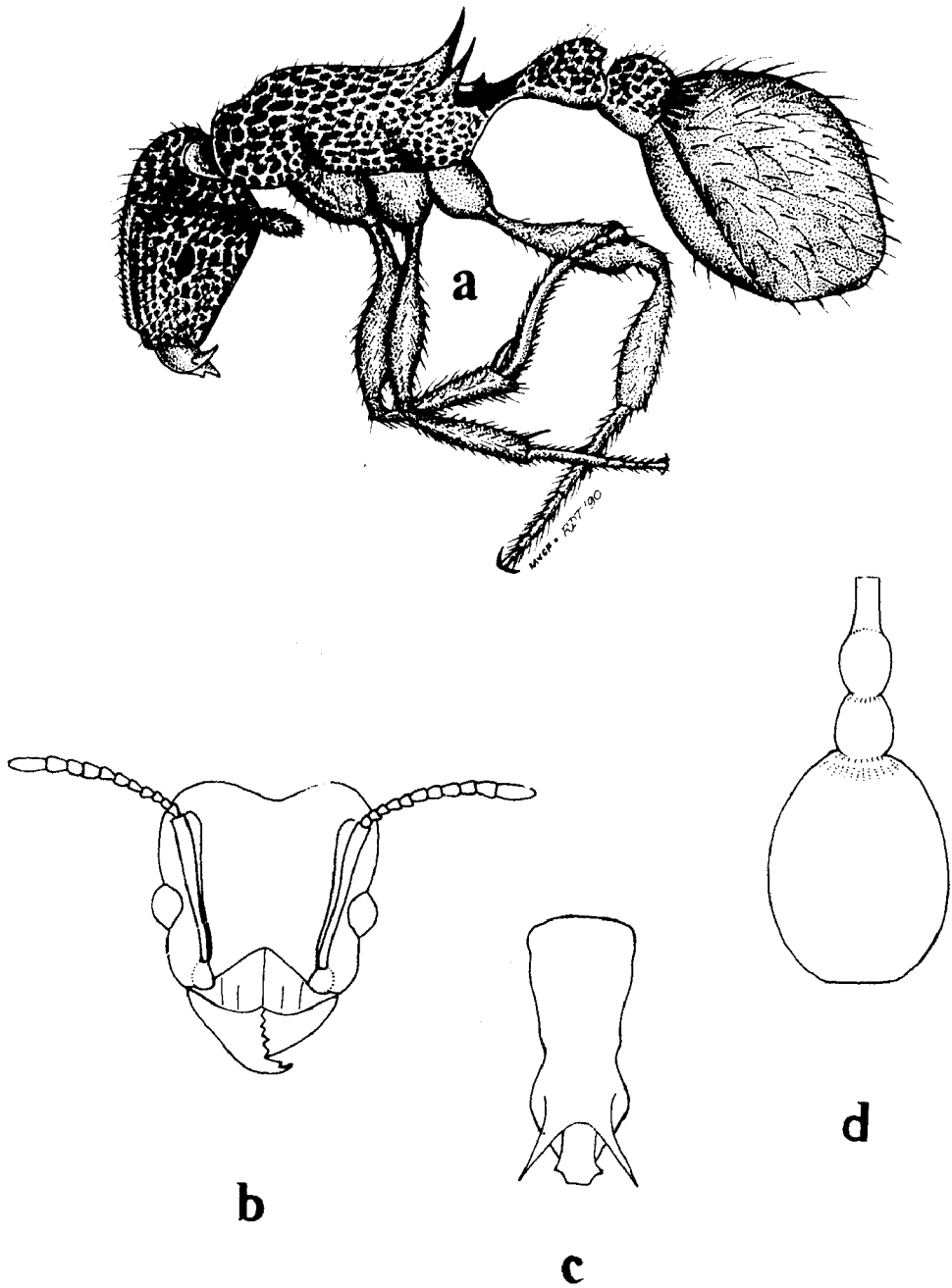


Figure 1. *Apomyrmex manobo*, n. gen., n. sp. a. Profile b. Head, frontal view c. Alitrunk or mesosoma, dorsal view d. Node and gaster, dorsal view.

(MV.J. Calilung, MVJC 021) (UPLB-MNH).

Distribution. Philippines (Mindanao).

Biological Notes. This ant is associated with the aphid, *Toxoptera odinae* (van der Goot). It was found alone underneath leaves of *Arundo donax* Linn. (Poaceae). It solicits honeydew from the aphid by brushing with its antennae the posterior end of the aphid's abdomen. When the aphid raises its abdomen, honeydew is excreted.

2. *Myrmicaria aphidicola*, n. sp.

Figure 2

Description. Body 5-6 mm long, reddish brown to brown, with numerous long and coarse setae.

Head longer than broad, subquadrangular and roughly sculptured; mandibles large, short and triangular, with linear sculpturing; apical margin behind first tooth with four exposed unequal and loosely spaced denticles; antennae 7-segmented, club indistinct, antennal sockets close to basal margin of clypeus, antennal scrobes absent; frontal carinae widely separated; clypeus convex, triangular at basal margin, lined with long setae; eyes large, as long as first funicular segment, elevated.

Pronotum and mesonotum separated by very weak promesonotal suture, suboctagonal, elevated but flat dorsally, sharply angled laterally and roughly sculptured; mesonotum bluntly bituberculate, posterior portion more or less vertical; metanotal groove deeply impressed; propodeum lower than pronotum and mesonotum, with a pair of spines or bispinose positioned posteriorly, sharply angled laterally; legs long and slender with numerous long, erect setae; forelegs with large tibial spur fringed with hairs on inner margin; fore tarsal segments with fringed hairs ventrally or on inner margin.

Petiole and post petiole rounded and elevated with numerous erect and long setae; petiole with long anterior peduncle; gaster elongate-oval with numerous long and short setae; gastral segments one and two large and subequal, almost covering the whole gaster; only three gastral segments visible when viewed dorsally; third gastral segment four times smaller than segment one or segment two; sting visible, long and somewhat flattened from side to side.

Remarks. This species differs from *brunnea* in having all the gastral segments uniformly brown while *brunnea* has the basal margin of the five terminal segments dark brown. They differ also in size wherein according to Saunders' original description (1841), this ant is 6/10 to 8/10 inch, which is much bigger than *aphidicola*. Saunders' descriptions were all based on coloration and very short description. Bolton (1973) reported that the *Myrmicaria* are general predators and scavengers, but this species is found associated with aphids. However, they are not totally dependent on the honeydew secreted by the aphid since small pieces of grasshoppers and beetles were also found inside the nest.

Material Examined. HOLOTYPE: Worker, MINDANAO: North Cotabato: Kidapawan: Agco, Mt. Apo, on leaf sheath of *Phragmites* sp., 06.v 1988 (MV.J. Calilung, MVJC 026) (UPLB-MNH). PARATYPES: 8 workers, same data as holotype (UPLB-MNH).

Distribution. Philippines (Mindanao).

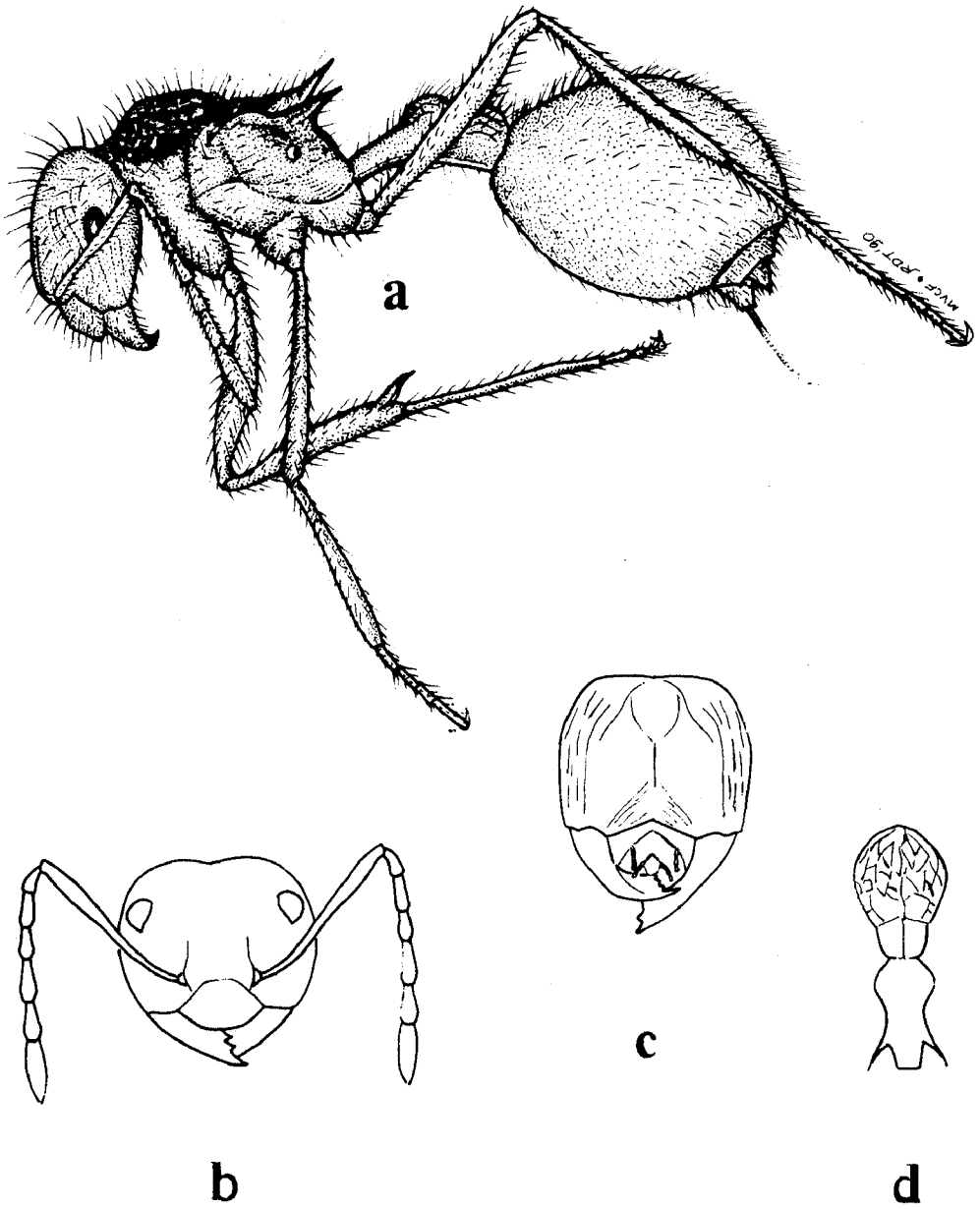


Figure 2. *Myrmicaria aphidicola*, n. sp. a. Profile b. Head, frontal view c. Head, ventral view d. Alitrunk or mesosoma, dorsal view.

Biological Notes. These ants build their nest on the leaf sheath of *Phragmites* sp. (Poaceae) and inside the nest are aphids, *Toxoptera odinae* (van der Goot). They protect these aphids by building a nest over them and the ants benefit from the honeydew provided by the aphids. These ants do not totally depend on the honeydew secreted by these aphids because nests were seen with dead insects like small grasshoppers and beetles. According to Bolton (1973), these ants made nests directly into the earth, often with long sunken runways visible on the surface of the ground.

I observed that their nests are not only made of soil but also mixed with pieces of dried plant parts like stems and leaves. There are some traces of soil particles going up to the leaf sheath where the nest is built.

3. *Strumigenys godeffroyi geococci*, n. subsp.

Figure 3

Description. Body 2-2.5 mm long, light brown to brown. Head large, heart-shaped with more or less U-shaped depression on vertex, not abruptly indented at eyes; with clavate hairs laterally from vertex to clypeus; mandibles elongate, linear, with one preapical tooth aside from forked teeth; eyes large situated at lateroventral side of head; antennae 6-segmented with second and third funicular segments so reduced that antennae appear 5-segmented; lower lateral sides of pedicel with several lined clavate hairs; antennal scrobes present.

Alitrunk elongate, linear with pronotum rounded and slightly elevated, with abundant long subreclinate or arching fine hairs giving a woolly appearance on dorsum; mesonotum and propodeum narrow; promesonotal suture and mesopropodeal suture obscure; propodeum bearing spongiform lamellae posteriorly; legs short, robust with several reclinate hairs; forelegs with large tibial spur; tibia as long as first tarsal segment.

Petiole elongate, slightly elevated posteriorly; postpetiole short and rounded; petiole and postpetiole covered with spongiform appendage; gaster brown, ovate, bends ventrally at rest, first segment just posterior to postpetiolar spongiform appendage bearing dense fringe of long, reclinate, posteriorly directed hairs.

Remarks. This subspecies is morphologically intermediate between *godeffroyi* and *lewisi*. It differs from *godeffroyi* by the presence of spongiform lamellae on the rear face of propodeum and is similar by the presence of numerous long, subreclinate, fine hairs on dorsum of mesosoma. On the other hand, this differs from *lewisi* by the presence of numerous, long, subreclinate, fine hairs and similar by the presence of spongiform lamellae.

Etymology. The subspecies is named after the mealybug genus *Geococcus* which is associated with this ant.

Material Examined. HOLOTYPE: Worker. LUZON: Laguna: Mt. Makiling, on roots of *Beaucarnea recurvata* (Lem.) Hemsl., 23 iv. 1988 (MV. J. Calilung, MVJC 099) (UPLB-MNH).

Distribution. Philippines (Luzon).

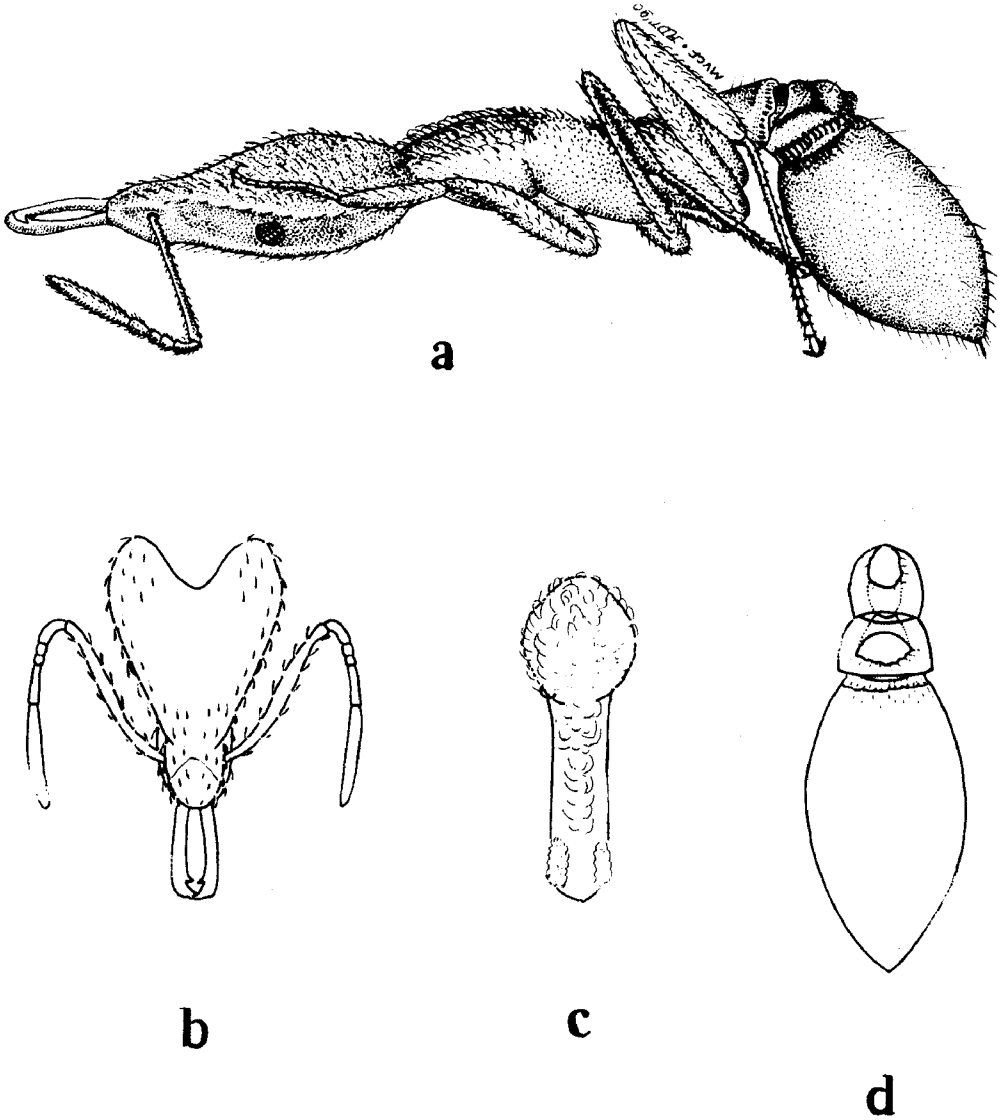


Figure 3. *Strumigenys godeffroyi geococci*, n. subsp. a. Profile b. Head, frontal view c. Alitrunk or mesosoma, dorsal view d. Node and gaster, dorsal view.

Biological Notes. This ant is associated with three species of mealybugs, namely: *Geococcus coffeae* Green, *Geococcus associatus* Lit and *Dysmicoccus brevipes* (Cockerell). All are found on roots of *Beaucarnea recurvata* (Lem.) Heml. This was also mentioned by Lit (1992) in his description of *G. associatus*.

It is very unusual that in one location there would be three species of mealybugs. This ant might have transported these mealybugs in one place to be able to solicit honeydew from them. This observation suggests that this ant does not bother if it is the same species or not as long as it can solicit honeydew from them.

Bolton (1973) reported that species of *Strumigenys* nest in rotten wood, leaf litter, or directly into hard-packed earth. Two species of *Strumigenys* are arboreal and nest in rot-holes in the trunks and branches of low trees. The smaller species often nest in small twigs in the leaf-litter or in compressed leaf mould and are quite common in Berlese funnel samples from the forest zone.

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LITERATURE CITED

- BALTAZAR, C.R. 1966. A Catalogue of Philippine Hymenoptera (with a Bibliography, 1758-1963). Pacific Insects. Monograph 8:1.
- BOLTON, B. 1973. The Ant Genera of West Africa: A Synonymic Synopsis with Keys (Hymenoptera: Formicidae). Bull. Brit. Mus. Nat. Hist. 27(6): 317-368.
- CHAPMAN, J.W. 1963. Some New and Interesting Philippine Ants (Hymenoptera: Formicidae). Philipp. J. Sci. 92(2): 247-263.
- CHAPMAN, J.W. and S.R. CAPCO. 1951. Checklist of the ants (Hymenoptera: Formicidae). Monographs of the Institute of Science and Technology, Philippines, 1:1-327.
- LIT, I. Jr. L. 1992. A new genus and ten new species of Philippine mealybugs (Pseudococcidae, Coccoidea, Hemiptera). Philipp. Ent. 8(5): 1158-1181.
- SAUNDERS, W.W. 1841. Descriptions of Two Hymenopterous Insects from Northern India. Trans. Ent. Soc. Lond. 3:57.
- WHEELER, W.M. 1935. New Ants from the Philippines. Psyche 42:38-52.
- WHEELER, W.M. and J. W. CHAPMAN. 1925. The Ants of the Philippine Islands: Part I, Dorylinae and Ponerinae. Philipp. J. Sci. 28(1): 47-73.
- WILSON, E.O. 1963. Social Biology of Ants. Ann. Rev. Ent. 8: 345-368.
- WILSON, E.O. 1988. The Current Status of Ant Taxonomy. In: Trager, J.C. (ed.), Advances in Myrmecology. E.J. Brill: New York pp. 3-10.