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Four new species of *Dilobocondyla* (Hymenoptera: Formicidae) from the Philippines

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Abstract

In the Philippines, the ant genus *Dilobocondyla* is represented by at least six species, four of which are new. *Dilobocondyla silviae* sp.n. from Leyte, *D. rugosa* sp.n. from Luzon, *D. carinata* sp.n. from Mindoro, and *D. oswini* sp.n. from Mindanao are described. A key to workers includes the new species, *D. chapmani* Wheeler, 1924 that is widely distributed in the Philippines, and one hitherto unnamed species.

Key words: Hymenoptera, Formicidae, *Dilobocondyla*, new species, Philippines, taxonomy, key

Zusammenfassung

Zur philippinischen Fauna zählen mindestens sechs Arten der Ameisengattung *Dilobocondyla*. Davon werden vier neu beschrieben: *Dilobocondyla silviae* sp.n. von Leyte, *D. rugosa* sp.n. von Luzon, *D. carinata* sp.n. von Mindoro und *D. oswini* sp.n. von Mindanao. Ein Bestimmungsschlüssel schließt die neuen Spezies, die auf den Philippinen weit verbreitete Art *D. chapmani* Wheeler, 1924 und eine weitere Art, die unbenannt bleibt, ein.

Introduction

Dilobocondyla Santschi, 1910 is an ant genus of the tribe Formicoxenini, subfamily Myrmicinae (Bolton 2003) and distributed in the Oriental and Australasian Region. A recent survey (Bharti & Kumar 2013) counts fifteen species plus two subspecies. All species are rarely collected and information on distribution and intraspecific variation is still scarce. Several species are known only from their type localities, some only from the holotype.

The information about Philippine species is very scarce. Wheeler (1924) described the worker of *Dilobocondyla chapmani* Wheeler, 1924 from the island of Negros, and later (Wheeler 1935) added *Dilobocondyla chapmani* subspecies *rufobrunnea* Wheeler, 1935 from the same island including the description of the gyne and the male. Worker syntypes of both taxa were depicted in the internet (Alpert & General 2010). A possible heterospecificity is discussed below. In addition, General & Alpert (2012) reported the finding of an undescribed species from southern Luzon.

The present study describes four new species, discusses the *D. chapmani* species complex, and provides a provisional key to the workers of Philippine species known so far.

Material and methods

Specimens are dry mounted on card triangles. Original labels are cited. Depositories are mentioned in the material sections of the taxonomical part. Examination of specimens was carried out with a Leica Wild M10 stereomicroscope. Measurements were taken from all specimens at magnifications of 50× (TL) and 80× (others) and given in millimetres.

Measurements and indices:

CI Cephalic index. HW/HL × 100.

HL Head length, in full-face view, excluding mandibles, measured from an imaginary line connecting the most anterior points on clypeal margin to an imaginary line connecting the most posterior points on head margin.

HW Head width. Maximum width of head, in full-face view, including eyes.

PnW Pronotum width. Measured in dorsal view, between apices of pronotal teeth.

PpH Postpetiole height. Measured in lateral view, at level of most dorsal point of postpetiole perpendicular to axis.

PpL Postpetiole length. Measured in dorsal view along midline, from posterior margin of petiole to posterior margin of postpetiole.

PpW Postpetiole width. Maximum width of postpetiole in dorsal view.

PtH Petiole height. Measured in lateral view, at level of most dorsal point of petiole perpendicular to axis.

PtI Petiole index. PtL/PtH × 100.

PtL Petiole length. Measured in dorsal view along midline, from posterior margin of propodeum to posterior margin of petiole.

PtW Petiole width. Maximum width of petiole in dorsal view.

SI Scape index. SL/HW × 100.

SL Scape length. Maximum length of antennal scape, measured as a straight line, excluding basal constriction.

TL Total length. Length of entire ant measured in dorsal view, with head, petiole and postpetiole stretched out, from apex of closed mandibles to apex of abdomen. (If mandibles are open, the measurement is reduced by the gap between clypeus and basal angle of mandible.)

Stacked digital images (Figs. 1 - 18) were taken with a Leica DFC camera attached to a Leica MZ16 binocular microscope and processed with the help of Leica Application Suite. They were then stacked with ZereneStacker 64-bit and processed with Adobe Photoshop 7.0.

Taxonomy

Dilobocondyla Santschi, 1910

Type species: *Atopomyrmex selebensis* Emery, 1898

Taxonomic notes: We follow Stitz (1911), Forel (1915) and Viehmeyer (1916) and treat *Dilobocondyla* as a feminine name (compare also species epithets in *Cardiocondyla* Emery, 1869). In contrast Bharti & Kumar (1913) treated it as masculine. Their new species

epithets *gasteroreticulatus* and *propotriangulatus* should be cited as *gasteroreticulata* and *propotriangulata*.

Diagnostic characteristics of worker (modified from Bolton 1994, General & Alpert 2012): Head massive, with posterior corners angulate or dentate. Frontal carinae well-developed. Antennal scrobe present dorsal of eye. Clypeus medially slightly emarginated, with stout median seta. Mandible striated, with six teeth on masticatory margin, with unarmed basal margin. Antenna twelve-segmented, apically with moderately widened three-segmented club. Pronotum with toothed corners. Propodeum without teeth; propodeal lobes large and rounded in Philippine species. Petiole almost cylindrical, lacking a distinct node, anteroventrally toothed. Head and mesosoma with rugous, often coarse sculpture; gaster with microsculpture. Entire body including scape, femora, tibiae, and first tarsomeres with erect, stout setae.

Key to Philippine species of *Dilobocondyla* (workers)

1 Posterior margin of head (Figs. 1 - 4) strongly concave. Antennal scrobe strongly developed, dorsally limited by prominent frontal carina terminating at posterior corner of head. Petiole either elongated (Figs. 7 - 9), with PtI 191 - 219, or with a highly raised transverse ridge (Fig. 10). (*D. chapmani* group) 2

– Posterior margin of head (Figs. 5, 6) nearly straight, with faint concavity at its middle. Antennal scrobe moderately developed, dorsally limited by fine frontal carina that is posteriorly fading and not stronger than other rugae of head. Petiole (Figs. 11, 12) without dorsal transverse ridge and relatively stout, PtI 169 - 180. (*D. oswini* group) 5

2 Petiole with sharp highly raised transverse ridge (Fig. 10). Anterodorsal face of postpetiole with regular sharp longitudinal rugae (Fig. 10). ..... ***D. carinata* sp.n.**

– Petiole without transverse ridge (Figs. 7 - 9). Anterodorsal face of postpetiole differently sculptured. 3

3 Trunk yellowish to light brown. ..... ***D. chapmani* complex**

– Trunk entirely or chiefly black or blackish brown. 4

4 Sculpture very coarse (Figs. 3, 9, 15). Meshes on mesosomal dorsum without microsculpture, shiny. Gaster tergite 1 with yellow base (Fig. 15). ..... ***D. rugosa* sp.n.**

– Sculpture much finer (Figs. 2, 8, 14). Meshes on mesosomal dorsum with dense microsculpture, matt. Gaster tergite 1 entirely dark (Fig. 14). ..... ***D. silviae* sp.n.**

5 Clypeus with faded microsculpture and 2 - 5 longitudinal rugae (Fig. 5). Sculpture of entire mesosoma (including meso- and metapleura) fine, with a dense reticulum of irregular rugae; their meshes with micro-punctures, but still shiny (Fig. 17). Petiole and postpetiole relatively elongated (Fig. 11); PtI 177 - 181. ..... ***D. oswini* sp.n.**

– Clypeus matt, densely microsculptured, with 7 or more longitudinal rugae (Fig. 6). Sculpture of mesosoma coarse (Fig. 18); dorsum with stronger rugae and wider meshes with dense micro-puncturation, matt; meso- and metapleura with longitudinal rugae. Petiole and postpetiole extremely stocky (Fig. 12); PtI ca. 169. .... **D. sp. 1** sensu General & Alpert (2012)

Dilobocondyla chapmani Wheeler, 1924 species complex (Figs. 1, 7, 13)

Material examined (in Natural History Museum Vienna and first author's collection): 1 worker "Philippinen: Negros Or.\ Cuernos de Negros, Va-\ lencia, Apolong, Casaroro\ Falls, 25.-26.10.2004\ leg. C. Pangantihon (P400)"; 1 worker, 1 gyne "Philippinen: Negros Or.,\ Cuernos de Negros, Va-\ lencia, Apolong, Casaroro\ Falls, 9.-13.3.2005\ leg. H. Zettel (420)"; 1 gyne "Philippines: Cebu City\ Tabunan, Cantipla-Uno\ 19.-20.9.2008, leg.\ C. Pangantihon (P301)";

5 workers, 1 gyne "Philippinen: Mindanao,\ Bukidnon, Malaybalay,\ Kaamulan, 650 m, 15.-20.\ 3.2000,leg.H.Zettel (247)".

Diagnosis of worker: Yellowish to light brown. Posterior margin of head concave. Frontal carinae strong, reaching posterior corners of head. Sculpture on head coarse, on mesosoma moderately coarse; interspaces on head reticulated and matt, on mesosoma, petiole, and postpetiole usually smooth, only mesosoma dorsally with reduced micropuncturation and petiole anterodorsally reticulated. Petiole very slender; PtI 202 - 210.

Comparative notes and discussion: *Dilobocondyla chapmani* sensu lato can be diagnosed by light body colour, pronounced frontal carinae, and a very slender petiole without dorsal transverse ridge.

Wheeler (1924) described the worker of *D. chapmani* from Dumaguete in southeastern Negros, and later (Wheeler 1935) added *D. chapmani* ssp. *rufobrunnea* from "Victoria, Negros Oriental" based on worker, gyne and male. He stated that ssp. *rufobrunnea* differs by slightly larger size (length 3.8 mm), slightly more opaque surface, and colouration. Wheeler (1924) published a body length of 3.2 - 3.5 mm for the worker of *D. chapmani*, but when measuring TL of the illustrations in the internet (Alpert & General 2010), a syntype of *D. chapmani* with strongly downcurved head and gaster is even slightly larger (TL ca. 5.2) than a syntype of ssp. *rufobrunnea* (TL ca. 4.8). Workers examined have TL 4.7 - 5.1, except one worker (from Negros, sample #420) that is considerably smaller (TL 3.9). However, a gyne (TL 5.6) from the same sample is of similar size as the other two gynes (TL 5.4 and 5.7). This small worker is notable also in other respect: The mesosoma bears a finer sculpture than in other workers and it is strongly narrowed behind the prothorax, and the propodeum is forming a ridge. There is little information available on a possible worker polymorphism in *Dilobocondyla* (e.g., Bharti & Kumar 2013 on *D. fouqueti* Santschi, 1910), because no large nest series have been retrieved so far.

The colour of the examined specimens is relatively uniform, yellowish brown (see Figs. 1, 7, 13), except the gyne from Cebu (sample #P301) is partly infuscated on the dorsum of head, mesosoma, postpetiole, and gaster.

Wheeler (1924) and also Bharti & Kumar (2013) in their key, wrongly state that the pronotum is almost as long as broad. Although the posterior border of the pronotum is difficult to recognize (Fig. 13), in all examined specimens the pronotum width is more than 1.5 times its length.

Wheeler (1924) also stated that the mandible of *D. chapmani* has two large apical teeth and three or four smaller and more indistinct basal teeth. In the nest series from Mindanao (sample #247) there are workers with two slightly larger apical teeth and others where the length of the teeth is more regularly decreasing from apex to base. It is concluded that this character is variable.

At present it cannot finally be decided whether the available material belongs to one variable species or to several similar species.

Dilobocondyla silviae **sp.n.** (Figs. 2, 8, 14)

Etymology: This species is dedicated to the second author's wife.

Type locality: Philippines, Leyte Island, Leyte Province, Baybay, above Leyte State University, Calbiga-a river valley, ca. 50 m a.s.l., 10°52' N, 124°43' E (coordinates by Google Earth).

Figs. 1 - 6: Head, full face view: (1) *Dilobocondyla chapmani*; (2) *D. silviae* sp.n.; (3) *D. rugosa* sp.n.; (4) *D. carinata* sp.n.; (5) *D. oswini* sp.n.; (6) *D.* sp. 1.

Type material: Holotype (worker; National Museum Manila) and one paratype (worker; in first author's collection) labelled "Philippinen: Leyte, Baybay\ LSU,50-100m,Calbiga-a Riv.\ 20.-21.3.2005, leg. Zettel\ & C. Pangantihon (422)".

Diagnosis of worker: Blackish brown; scape and distal tarsomeres yellow. Posterior margin of head concave. Frontal carinae strong, reaching posterior corners of head.

Figs. 7 - 12: Habitus, lateral view: (7) *Dilobocondyla chapmani*; (8) *D. silviae* sp.n.; (9) *D. rugosa* sp.n.; (10) *D. carinata* sp.n.; (11) *D. oswini* sp.n.; (12) *D.* sp. 1.

Figs. 13 - 15: Habitus, dorsal view: (13) *Dilobocondyla chapmani*; (14) *D. silviae* sp.n.; (15) *D. rugosa* sp.n.

Figs. 16 - 18: Habitus, dorsal view: (16) *Dilobocondyla carinata* sp.n.; (17) *D. oswini* sp.n.; (18) *D.* sp. 1.

Sculpture of head and mesosoma moderately coarse; interspaces mostly reticulated and matt. Petiole slender, PtI 191 - 195.

Description of worker: Measurements: Holotype: TL 3.91; HW 1.01; HL 1.07; CI 94; SL 0.61; SI 60; PnW 0.68; PtL 0.41; PtH 0.20; PtW 0.21; PtI 195; PpL 0.31; PpH 0.30; PpW 0.31. Paratype: TL 4.06; HW 1.08; HL 1.17; CI 92; SL 0.68; SI 63; PnW 0.76; PtL 0.42; PtH 0.21; PtW 0.22; PtI 191; PpL 0.34; PpH 0.31; PpW 0.33.

Colour: Body uniformly blackish brown. Mandibles medium brown. Antennae chiefly brown; scape and base of funiculus yellow. Legs brown; trochanters, bases of femora, and distal tarsomeres pale.

Structures: Head dorsally with almost regular striation and very few interconnections posteriorly, interspaces filled with dense micro-reticulum; sides of head with reticulated rugae. Posterior margin of head concave; hind corners angular. Frontal carinae and antennal scrobes reaching hind corners. Clypeus with numerous longitudinal rugae; interspaces with reduced micro-reticulum, shiny.

Mesosoma entirely reticulated; rugae forming moderately large meshes; an imaginary line between pronotal corners transecting 12 meshes; interspaces shiny laterally, but micro-reticulated dorsally. Petiole and postpetiole with micro-reticulum that is strongly reduced on petiole posterodorsally and laterally. Petiole posterodorsally and laterally with coarse irregular rugae, slender; its dorsal outline in lateral view almost evenly convex, but slightly concave before hind margin; anteroventral tooth spine-like, slender. Postpetiole in lateral aspect with broadly rounded apex; both anterodorsal and posterodorsal surface with longitudinal rugae. Gaster tergite 1 at base with very dense fine striation distinctly longer than longest seta on postpetiole.

Distribution: Only known from the type locality on Leyte.

Comparative notes: This species is very similar to *D. chapmani* sensu lato in most characteristics, but immediately distinguishable by blackish colour, small size, a very distinct micro-reticulum on the dorsum of the mesosoma, and by slightly smaller PtI (191 - 195 vs. 202 - 210). It can be distinguished from small specimens of the *D. chapmani* complex (see notes above) by a very different form of the propodeum, which is not compressed.

***Dilobocondyla rugosa* sp.n.** (Figs. 3, 9, 15)

Etymology: This species is named for its particularly coarse sculpture.

Type locality: Philippines, Luzon Island, Camarines Sur Province, municipality of Lupi, barangay Sooc, ca. 100 m a.sl., 13°52' N, 122°56' E (coordinates by Google Earth).

Type material: Holotype (worker; San Carlos University, Cebu City) and three paratypes (workers; in Natural History Museum Vienna and in first author's collection) labelled "Philippinen: Camarines\ Sur, Lupi, Sooc\ 29.2.2004, leg.\ C. Pangantihon (P47)"; one paratype (worker; in first author's collection) labelled "Philippinen: Luzon, Cam.\ Sur, Lupi, Sooc, Looban\ 15.3.2004\ leg. H. Zettel (381)".

Diagnosis of worker: Black; scape, distal tarsomeres, and base of gaster yellow. Posterior margin of head concave. Frontal carinae strong, reaching posterior corners of head. Sculpture of head and especially of mesosoma coarse; interspaces on head mostly reticulated, on mesosoma smooth and strongly shiny. Petiole very slender, PtI 196 - 219.

Description of worker: Measurements: Holotype: TL 3.98; HW 1.02; HL 1.10; CI 93; SL 0.65; SI 64; PnW 0.76; PtL 0.42; PtH 0.20; PtW 0.21; PtI 210; PpL 0.31; PpH 0.31;

PpW 0.32. Paratypes: (1) TL 4.20; HW 1.06; HL 1.14; CI 93; SL 0.65; SI 61; PnW 0.80; PtL 0.45; PtH 0.22; PtW 0.22; PtI 205; PpL 0.32; PpH 0.33; PpW 0.33. (2) TL 4.34; HW 1.09; HL 1.18; CI 92; SL 0.69; SI 63; PnW 0.82; PtL 0.46; PtH 0.22; PtW 0.24; PtI 209; PpL 0.34; PpH 0.34; PpW 0.34. (3) TL 4.15; HW 1.05; HL 1.12; CI 94; SL 0.67; SI 64; PnW 0.79; PtL 0.46; PtH 0.21; PtW 0.21; PtI 219; PpL 0.31; PpH 0.32; PpW 0.32. (4) TL 4.20; HW 1.07; HL 1.16; CI 92; SL 0.67; SI 63; PnW 0.81; PtL 0.45; PtH 0.23; PtW 0.22; PtI 196; PpL 0.34; PpH 0.34; PpW 0.35.

Colour: Body chiefly black. Mandibles yellowish brown. Antennae dark brown; scape and base of funiculus yellow. Legs brown; trochanters, bases of femora, and distal tarsomeres pale. Gaster tergite 1 with distinct yellow mark at base.

Structures: Head dorsally and on genae with almost regular striation and scarce interconnections, rather reticulated below and behind eyes. Interspaces on dorsum of head usually with distinct micro-reticulation that is only reduced and indistinct near hind margin and medially of frontal carinae. Posterior margin of head concave; hind corners angular. Frontal carinae and antennal scrobes reaching hind corners. Clypeus with three distinct longitudinal rugae (medial one short in small specimens), its surface smooth, at most with traces of a micro-reticulation.

Mesosoma almost entirely with very coarse reticulation; highly elevated rugae forming large polygonic meshes; an imaginary line between pronotal corners transecting nine or ten meshes; mesopleura partly smooth, as shiny as all interspaces. Petiole anterodorsally with fine micro-reticulum; posterodorsally and laterally with coarse irregular rugae, at most with remnants of microsculpture; in lateral view slender, dorsal outline almost evenly convex, anteroventral process spine-like, slender. Postpetiole in lateral aspect distinctly raised, with broadly rounded apex; anterodorsal surface with very fine rugae and distinct micro-reticulation, posterodorsal surface with regular longitudinal rugae and smooth interspaces. Gaster tergite 1 at base with very dense fine striation that gradually changes to a fine reticulum where the yellow mark ends.

Distribution: Only known from the type locality in southern Luzon.

Comparative notes: This species shares a bicoloured gaster tergite 1 (with yellow base) with *Dilobocondyla carinata* sp.n., but strongly differs from that species by sculpture and the lack of a transverse ridge on the petiole. *Dilobocondyla selebensis* (Emery, 1898) from Sulawesi, described from a gyne shares a concave hind margin of the head and strong rugae on its dorsal surface, but it has less developed antennal scrobes, is entirely black and relatively large (TL ca. 6 mm).

Dilobocondyla carinata **sp.n.** (Figs. 4, 10, 16)

Etymology: The Latin adjective *carinatus* (= keeled) refers to the characteristic carina on the petiole.

Type locality: Philippines, Mindoro Island, Oriental Mindoro Province, Calapan City, barangay Parang, ca. 50 m a.sl., 13°24' N, 121°12' E (coordinates by Google Earth).

Type material: Holotype (worker; San Carlos University, Cebu City) and one paratype (worker; in first author's collection) labelled "Philippines: Oriental Mindoro\ Calapan City, Parang\ 26.-27.5.2008, leg.\ C. Pangantihon (P290)".

Diagnosis of worker: Brown; with yellow mark on gaster tergite 1. Posterior margin of head concave. Frontal carinae strong, reaching posterior corners of head. Sculpture of head and mesosoma coarse; interspaces mostly shiny. Petiole with transverse carina. Postpetiole dorsally regularly striated.

Description of worker: Measurements: Holotype: TL 4.35; HW 1.09; HL 1.14; CI 96; SL 0.70; SI 64; PnW 0.72; PtL 0.51; PtH 0.31; PtW 0.24; PtI 167; PpL 0.37; PpH 0.38; PpW 0.37. Paratype: TL 4.20; HW 1.06; HL 1.11; CI 95; SL 0.68; SI 64; PnW 0.71; PtL 0.50; PtH 0.30; PtW 0.24; PtI 167; PpL 0.36; PpH 0.37; PpW 0.37.

Colour: Head with mandibles, mesosoma and legs, petiole and postpetiole brown; dorsum of head, sides of mesosoma, and node of petiole slightly infuscated; trochanters and distal tarsomeres pale. Gaster blackish brown, tergite 1 with yellow mark anteriorly. Antenna dark brown except yellow scape.

Structures: Head with almost regular coarse striation, except more or less vermiculated rugae behind eyes. Interspaces shiny, almost smooth, at most with very superficial microsculpture. Posterior margin of head concave; hind corners angular. Frontal carinae and antennal scrobes reaching hind corners. Clypeus with five longitudinal rugae; interspaces weakly micro-reticulated.

Mesosoma almost entirely reticulated; coarse rugae forming large meshes; an imaginary line between pronotal corners transecting nine meshes; meso- and metapleura smooth, as shiny as all interspaces. Petiole dorsally unsculptured, laterally with longitudinal rugae; its outline in lateral view unique, anteriorly and posteriorly slender, at mid-length raised to a dorsal transverse ridge; anterodorsal and posterodorsal outline slightly concave; anteroventral tooth small, triangular. Postpetiole in lateral aspect subtriangular, with narrowly rounded apex; both anterodorsal and posterodorsal surface with regular coarse striation. Gaster tergite 1 at base with very dense fine striation that gradually changes to a fine reticulum where the yellow mark ends.

Distribution: Only known from the type locality on Mindoro.

Comparative notes: *Dilobocondyla carinata* sp.n. can be immediately distinguished from all congeners by the petiole bearing a dorsal transverse ridge. The presence of this ridge results in a low PtI of 167, although the petiole is slender as in other species of the *D. chapmani* group.

Dilobocondyla oswini **sp.n.** (Figs. 5, 11, 17)

Etymology: This species is dedicated to the second author's brother.

Type locality: Philippines, Mindanao Island, Bukidnon Province, Malaybalay City, Kaamulan site, ca. 650 m a.sl., 8°09' N, 125°08' E (coordinates by Google Earth).

Type material: Holotype (worker; National Museum Manila) and two paratypes (1 worker, 1 gyne; in first author's collection) labelled "Philippinen: Mindanao,\ Bukidnon, Malaybalay,\ Kaamulan, 650 m, 15.-20.\ 3.2000,leg.H.Zettel (247)".

Diagnosis of worker: Blackish brown; scape yellow. Head with slightly angular posterior corners and almost straight posterior margin. Frontal carinae weak, posteriorly not stronger than other rugae. Clypeus with 2 - 5 longitudinal rugae. Microsculpture of clypeus, mesosoma, and petiole less developed than on frons and tergite 1; mesosoma slightly shiny. Meso- and metapleura with irregular vermiculated rugae. Petiole relatively stout, PtI 177 - 180.

Description of worker: Measurements: Holotype: TL 4.44; HW 1.08; HL 1.09; CI 99; SL 0.70; SI 65; PnW 0.78; PtL 0.43; PtH 0.24; PtW 0.26; PtI 180; PpL 0.37; PpH 0.33; PpW 0.35. Paratype: TL 4.31; HW 1.06; HL 1.09; CI 97; SL 0.67; SI 63; PnW 0.77; PtL 0.46; PtH 0.26; PtW 0.25; PtI 177; PpL 0.34; PpH 0.33; PpW 0.36.

Colour: Body uniformly dark brown. Mandibles yellowish brown. Antennae chiefly brown; scape and base of funiculus yellow. Legs brown, except yellowish brown trochanters and bases of femora, and yellowish tarsi.

Structures: Head dorsally and on genae with almost regular longitudinal rugae and few interconnections, but rugae reticulated below and behind eyes. Interspaces matt, with dense micro-reticulum. Posterior margin of head almost straight, with weak concavity at middle, hind corners forming a sharp, but obtuse angle. Frontal carinae and antennal scrobes weakly developed behind eyes. Clypeus with two to five longitudinal rugae; interspaces weakly reticulated.

Mesosoma entirely reticulated; moderately developed rugae forming small meshes; an imaginary line between pronotal corners transecting twelve meshes; interspaces more or less shiny, with micro-punctures which are dorsally weakly developed and laterally hardly recognizable. Sculpture of petiole and postpetiole similar as on mesosoma, but slightly coarser on petiole and predominately longitudinal on dorsum of postpetiole. Dorsal outline of petiole almost regularly convex; anteroventral tooth relatively long and slender. Dorsal outline of postpetiole convex, highest point behind mid-length. Gaster tergite 1 almost entirely reticulated; basally with longitudinal striation that is distinctly shorter than length of longest seta on postpetiole.

Description of gyne: Measurements: TL 4.75; HW 1.07; HL 1.11; CI 96; SL 0.66; SI 62; PnW 0.85; PtL 0.47; PtH 0.26; PtW 0.28; PtI 181; PpL 0.40; PpH 0.34; PpW 0.38.

Colour, pilosity, and structures similar to worker. Head with three small ocelli. Mesosoma fully developed, its sculpture on the dorsal surface slightly coarser and more longitudinally orientated than in worker. Wings broken off.

Distribution: Only known from the type locality on Mindanao.

Comparative notes: This species is very distinctive from all described Philippine species. However, *Dilobocondyla* sp. 1 (sensu General & Alpert 2012) is closely related and can be separated by the sculptural characteristics given in the key. *Dilobocondyla borneensis* Wheeler, 1916, a species described from Mt. Bongo, Sarawak, Borneo (Wheeler 1916), has a similar structure of head and mesosoma, but a much coarser sculpture. In addition, the petiole of this and some other *Dilobocondyla* species from the southeast Asian mainland is more slender, similar as in the *Dilobocondyla chapmani* species group (compare Figs. 7 - 9).

***Dilobocondyla* sp. 1** (sensu General & Alpert 2012) (Figs. 6, 12, 18)

Material examined (in first author's collection): 1 worker "Philippinen: Leyte\ E Ormoc, Lake Danao\ 13.2.2000\ leg. H. Zettel (237)".

Diagnosis of worker: Black; scape yellow. Posterior margin of head with faint concavity at middle. Frontal carina fine, posteriorly fading out. Entire body (inclusive clypeus and petiole) matt, densely micro-reticulated. Clypeus with seven or more longitudinal rugae. Mesosoma dorsally with distinct rugae forming wide meshes. Meso- and

metapleura with longitudinal rugae. Petiole stout, PtI 169, without transverse ridge dorsally. Postpetiole extremely stocky. Longitudinal rugae at base of gaster tergite 1 extremely short.

Descriptive notes for worker: Measurements: TL 4.86; HW 1.14; HL 1.17; CI 97; SL 0.75; SI 66; PnW 0.84; PtL 0.48; PtH 0.29; PtW 0.27; PtI 169; PpL 0.37; PpH 0.38; PpW 0.39.

Colour: Black. Mandibles brown. Scape yellow; funiculus basally yellowish brown, infuscated towards apex. Legs blackish brown; trochanters, bases of femora and tibiae, and entire tarsi yellowish brown.

Structures: Entire body, except striated mandible, with a dense micro-reticulum resulting in a matt appearance. Dorsum of head with longitudinal rugae and few interconnections. Mesosoma dorsally reticulated, with relatively large meshes; an imaginary line between pronotal corners transecting twelve meshes; meso- and metapleura with a few, slightly irregular, longitudinal rugae hardly connected to each other. Outline of petiole in lateral view characteristic: very stout, anterodorsally slightly convex, posterodorsally slightly concave. Postpetiole with anterior declivity longer than posterior declivity. Base of gaster tergite 1 with very short striation, length of striae about half of the setae on postpetiole.

Notes: General & Alpert (2012) report on an "... unidentified species ... from a transect study at Mt. Isarog, Camarines Sur Province, Luzon Island (Alpert and General, in prep.)". This species is illustrated on their website (Alpert & General 2010). A worker specimen from Leyte is provisionally identified as this species, because no significant differences to these pictures could be detected. *Dilobocondyla* sp. 1 is similar to *D. oswini* sp.n. and can be distinguished by the characters given in the key.

Zoogeographical considerations

Based on the structures of the head and petiole (characteristics described in key couplet 1), the six recognised species can be divided in two species groups: (I) The *D. chapmani* species group includes *D. chapmani*, *D. silviae* sp.n., *D. rugosa* sp.n., and *D. carinata* sp.n. (II) The *D. oswini* species group includes *D. oswini* sp.n. and *D.* sp. 1. The *D. chapmani* species group seems to have its closest relatives in Sulawesi (*D. selebensis*), New Guinea and Australia (*D. cataulacoidea* Stitz, 1911 and its „variation" *concolor* Viehmeyer, 1914; for synonymy see Taylor 1991). The *D. oswini* species group, although distinct from all congeners by the stout petiole, seems to be more closely related to the species of south-eastern Asia including *D. borneensis* Wheeler, 1916 from Borneo as the geographically nearest species. However, this very preliminary interpretation of faunal relationships may change as soon as more taxonomical and distributional data become available.

It is very likely that all Philippine species of *Dilobocondyla* are endemic to this country. There is strong evidence for an intra-Philippine regional endemism in both epigaeic ants (e.g., *Odontomachus* Latreille, 1804, see Sorger & Zettel 2011; *Myrmoteras* Forel, 1893, see Zettel & Sorger 2011) and arboreal ants (e.g., *Pristomyrmex* Mayr, 1866, see Zettel 2006; *Polyrhachis* F. Smith, 1858, see Sorger & Zettel 2009). Such endemism patterns can be explained by pleistocene connections between islands and are congruent in many terrestrial and limnic plants and animals (Ong & al. 2002, Catibog-Sinha & Heaney 2006). Hoever, the present data are to scarce to make conclusions on the regional distribution of *Dilobocondyla* species.

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