

ASCETOTILLA, A NEW GENUS OF MUTILLIDAE FROM NEW GUINEA (Hymenoptera)^{1,2}

By D. J. Brothers³

Abstract: A new genus, *Ascetotilla*, is established for 8 species of Mutillidae from New Guinea. The type species, *Mutilla carinata* Smith, is transferred from the genus *Ephutomorpha* and is redescribed. The following 7 new species are described: *A. ferruginata*, *A. stanleyi*, *A. uncinata*, *A. francae*, *A. inermis*, *A. clypeata* and *A. notidana*. All the species are figured and keyed.

The mutillid fauna of the Australian region is extremely rich and that of New Guinea in particular includes a number of striking forms, many metallic in coloration. The New Guinea fauna has been little studied, although Mickel (1935) listed 23 species from New Guinea, 15 of these in the portmanteau genus *Ephutomorpha* which was provisionally established by André (1902, 1903) to include most of the species of Mutillidae from Australia. *Ephutomorpha* now contains a heterogeneous assortment of species belonging to a number of distinct groups, each of generic status. The receipt of an extensive collection of Mutillidae from the Australian region from the Bernice P. Bishop Museum in Hawaii has aided in the establishment of some of the generic limits in the Australian Mutillidae. Included in this collection are 1 described and 7 undescribed species in a distinctive new genus which is described below.

Genus *Ascetotilla* Brothers, new genus

"asketos" (Gr.), curiously wrought, ornamented + "[Mu]tilla"; gender feminine.

Type-species: *Mutilla carinata* Smith, 1859.

♀. Body slightly metallic; many erect setae very finely barbed, especially those on anterior face of 1st metasomal tergum. *Head* transverse to quadrate, as broad as mesosoma or slightly broader, somewhat produced behind eyes, rounded posteriorly; surface densely punctate, but depressed and smooth posteroventrally on each side lateral to postgenal carinae; eyes oval, almost circular, prominent, strongly convex, without distinct facets; antennal tubercles distinctly separated; antennal scrobes transversely carinate above; 1st flagellar segment about 2× as long as 2nd; prementum flattened with a few long setae on apical margin; palpi long. *Mesosoma* pyriform, narrower posteriorly than anteriorly; dorsum densely and deeply punctate, convex, merging smoothly into flattened propodeum; scutellar scale absent; propodeal spiracles distinct, very slightly projecting; prepectus and pleura micropunctate and shining, except for coarsely

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punctate dorsal area of mesopleuron; lateral surface of propodeum shining; metasternal process stout, acute; fore tarsus with pecten undeveloped; mid and hind tibiae each with a single row of spines externally, the apical spine on a conical process; calcaria subequal in length. *Metasoma* ovate; 1st tergum disciform with distinct dorsal and anterior faces, not sessile with 2nd tergum, anterior face sparsely punctate and shining; 2nd tergum about $2\times$ as wide as 1st, finely and densely punctate except anterolaterally where punctures sparser, with surface slightly depressed on each side apically, apical margin usually with paired, approximated pale patches; 1 pair of felt lines laterally on 2nd tergum, length of felt line about $0.2\times$ that of tergum laterally; 3rd to 5th terga densely and finely punctate; last tergum without definite, margined pygidial area, but with smooth, glabrous, median area, lateral areas finely punctate, apex acute, slightly upturned; 1st sternum with weak, simple, longitudinal carina; 2nd sternum with transverse, shallowly V-shaped carina anteriorly, with relatively sparse, moderate punctures; 3rd to 6th sterna densely and finely punctate; 6th sternum deeply notched apically, with a narrow tooth extending posteriorly on each side of sting.

♂. Body slightly metallic; many erect setae very finely barbed. *Head* transverse, about as broad as mesosoma, somewhat produced behind eyes, rounded posteriorly; surface deeply punctate, but depressed and smooth posteroventrally on each side lateral to postgenal carinae; eyes oval, almost circular, prominent, strongly convex, with very indistinct facets; ocelli small; postocellar distance about $1/4$ ocellocular; antennal tubercles distinctly separated; scape without carinae; 1st flagellar segment about as long as 2nd; prementum flattened, with a few long setae on apical margin; palpi long. *Mesosoma* pyriform, narrower posteriorly than anteriorly; dorsum deeply punctate; parapsidal furrows absent; tegulae small, convex, punctate; axillae produced posterolaterally, forming an acicular spine on each side; scutellum convex, simple; propodeum evenly convex, deeply punctate; mesopleuron with very weak horizontal furrow; metasternal process stout, acute. *Legs* without spines externally; calcaria subequal in length. *Forewing* with elongate marginal cell acute apically; 2nd submarginal cell with very short anterior margin, almost pedunculate, approximately triangular, about $1/2$ as long as 1st; 2 submarginal cells and 1 recurrent vein; hind wing with veins M and r-m absent or very faint. *Metasoma* elongate; 1st segment petiolate, not much constricted apically; 2nd tergum about $2\times$ as wide as first, with a shallowly transverse furrow anteriorly; 1 pair of felt lines laterally on anterior $1/2$ of 2nd tergum, each about $0.3\times$ as long as tergum laterally; 3rd to 6th terga densely and finely punctate; last tergum simple, not flattened, basally densely punctate with apical $1/2$ smooth and glabrous, with distal margin slightly upcurved; 1st sternum with weak, simple, longitudinal carina; genitalia with parameres slender, cuspides simple.

Ascetotilla is distinguished from the other groups in the *Ephutomorpha* complex by a combination of characters, including, in the ♀, the form of the head, the pedunculate apical tibial spines, the form of the first metasomal tergum and the lack of a definite pygidial area and, in the ♂, the form of the scape, axillae, tegulae, wing venation and apical tergum.

KEY TO SPECIES OF ASCETOTILLA

1. ♀♀, wingless..... 2
 ♂♂, winged 8
2. Mandibles apically tridentate, the 2 inner apical teeth subequal, the innermost tooth blunt (fig. 1, 2)..... 3
 Mandibles apically bidentate, rarely with a minute tooth between the apical teeth, the inner tooth acute (fig. 3-7) 4
3. Mesosoma black with greenish reflections dorsally, sometimes a testaceous spot medially on pronotum **carinata** (Smith)
 Mesosoma ferruginous dorsally and anteriorly, not metallic **ferruginata***

4. First metasomal tergum armed dorsally with hooklike or finlike projections.....5
 First metasomal tergum unarmed dorsally 7
5. First metasomal tergum with paired dorsal projections 6
 First metasomal tergum with median, finlike, dorsal projection **notidana***
6. Integument fuscous with deep purple and violet reflections, basal tooth of posterior margin of mandible at about midpoint of margin, head about as wide as mesosoma **uncinata***
- Integument black with faint purple and green reflections, basal tooth of posterior margin of mandible about 1/3 length of margin from base, head slightly wider than mesosoma **francae***
7. Head wider than mesosoma, mandible without dorsal basal tooth but with inner basal tooth (fig. 5)..... **inermis***
- Head about as wide as mesosoma, mandible with dorsal basal tooth but without inner basal tooth (fig. 6)..... **clypeata***
8. Wings basally and apically hyaline, hypopygium unarmed..... **carinata** (Smith)
 Wings completely infuscated, hypopygium with a blunt tooth on each side basally.....
 **stanleyi***

Ascetotilla carinata (Smith, 1859), new combination Fig. 1, 8, 9, 14, 15.

Mutilla carinata Smith, 1859, *J. Proc. Linn. Soc. Lond.* (Zool.) 3: 150, ♀ and ♂. — Dalla Torre, 1897, *Catalogus Hymenopterorum* 8: 21, ♀.

Mutilla (*Sphaerophthalma* [sic]) *carinata*: André, 1896, *Ann. Mus. Civ. Stor. Nat. Genova* 37: 80, ♀ (in part).

Ephutomorpha carinata: André, 1903, *Genera Insectorum* 11: 49, ♀. — Zavattari, 1914, *Bull. Soc. Ent. Ital.* 45: 106, ♀. — Mickel, 1935, *Trans. R. Ent. Soc. Lond.* 83: 295, ♀ and ♂.

Since no formal lectotype designation has been made for this species, the following designation is necessary. The type series is best considered to be comprised of 2 specimens in the Saunders Collection, Hope Department of Entomology, University Museum, Oxford, England. In the original description Smith described the ♀ first, and the ♀ specimen bears a "type" label whereas the ♂ bears a similar "cotype" label. It is thus evident that the ♀ must be considered the lectotype, although it has been treated as the allotype in the collection at Oxford; the ♂ must be considered a paralectotype. Since there is no record of the number of specimens which Smith had before him when describing this species, it is felt that the designation of additional paralectotypes is unwarranted. There is, however, a further ♀ specimen in the collection of the British Museum (Natural History), collected on Aru, presumably by Wallace, but labeled by Smith in a slightly different style from the Oxford specimens.

Association of the sexes was apparently based entirely on the fact that only one species of Mutillidae of each sex was collected on Aru. This association is also supported to some extent on morphological grounds since the mouthparts and calcaria are similar in both sexes.

The following redescription is based on the lectotype and paralectotype.

♀. Length 9.3 mm. Head and mesosoma black with purplish and greenish reflections; clypeus,

* Described as new.

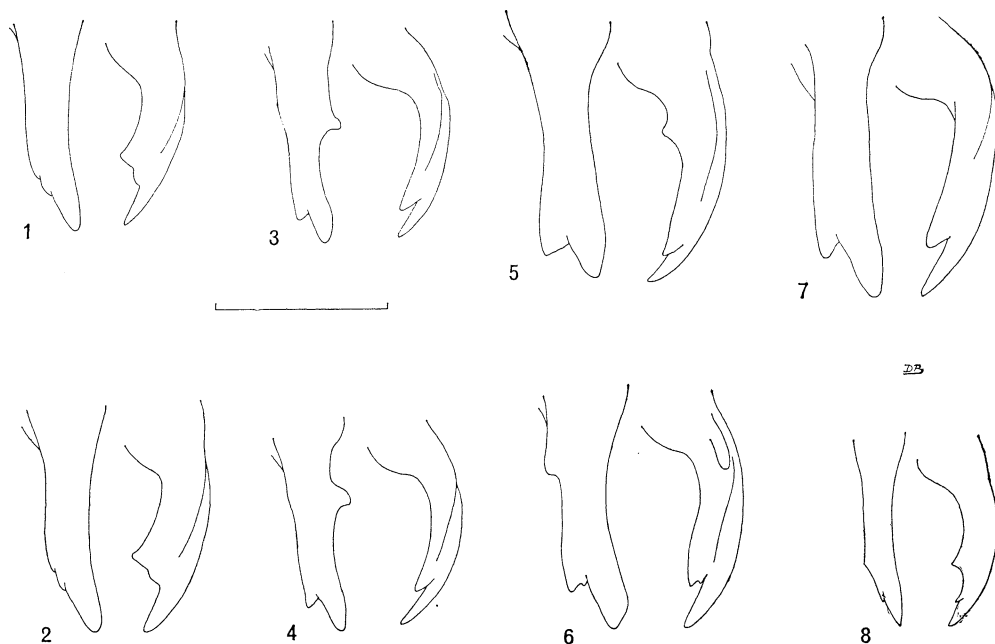


Fig. 1-8. Left mandibles, lateral view (left) and front view, of species of *Ascetotilla* n. gen.: 1, *A. carinata* (Smith), ♀, Aru; 2, *A. ferruginata* n. sp., ♀; 3, *A. uncinata* n. sp., ♀; 4, *A. francae* n. sp., ♀; 5, *A. inermis* n. sp., ♀; 6, *A. clypeata* n. sp., ♀; 7, *A. notidana* n. sp., ♀; 8, *A. carinata* (Smith), ♂, Aru. Scale: 1.0 mm.

mouthparts, scape, pedicel, neck and legs pale ferruginous; propodeal spiracular scales testaceous; metasoma black except for testaceous apical bands on 1st and 2nd terga and 2nd sternum laterally (that on 2nd tergum broadened and bilobed medially) and ferruginous 1st sternum, apical band on 2nd sternum, lateral bands on 2nd tergum and mesal area on last tergum. *Head* 1.8 × as wide as long, 1.3 × as wide as mesosoma; sides converging behind eyes, produced posteriorly 0.6 × length of eye; malar space 0.5 × as long as eye height; antennal scrobes weakly carinate above with carina extending to about 2/3 distance from antennal tubercle to eye; clypeus protuberant dorsally with a small tubercle on each side of midline, ventrally transversely concave, shiny, shagreened; mandibles broadened apically, obliquely tridentate, middle tooth somewhat smaller than innermost which is blunt (fig. 1); postgenal carina weak, continuous with raised margin of proboscis fossa; pubescence fuscous dorsally, pale posteroventrally. *Mesosoma* 1.4 × as long (excluding neck) as wide; dorsum with sparse fuscous pubescence; pro-mesothoracic suture faintly visible dorsally as a fine, smooth, angulate line; propodeal declivity with shallow, coarse, reticulate punctation, sparse, erect, pale pubescence and fairly dense, decumbent, palish pubescence; dorsal margin of prepectus not carinate; pleura with decumbent, fine, pale pubescence; metasternal process with 2 blunt lateral teeth and acute medial tooth. *Legs* with pale pubescence; mid tibiae with 3 and hind tibiae with 4 ferruginous spines in a single row externally; calcaria ferruginous. *Metasoma* with 1st tergum disclike with distinct anterior and dorsal faces separated dorsally by a carina bearing a small, blunt, transverse tooth on each side of midline (fig. 9), dorsally and laterally densely and finely punctate with pale pubescence, anterior face with few, pale, erect hairs; 2nd tergum with dorsal surface slightly flattened, pubescence fuscous except for pale pubescence laterally and in area of testaceous cuticle, ex-

cept that apex of tergum has fuscous pubescence broadened into a line extending medially through pale area; 3rd to 5th terga with fuscous pubescence except for median areas of obscure pale pubescence on 4th and 5th terga; 6th tergum with glabrous area smooth, oval, weakly margined on each side apically, lateral areas with pale, short pubescence and long, fuscous hairs; all sterna with pale pubescence; 2nd sternum simple, evenly convex.

♂. Length 9.5 mm. Head and dorsum of mesosoma dark greenish blue; propodeum and pleura black; metasoma black with deep violet reflections; clypeus, antennae, mouthparts, apices of 1st and 7th metasomal terga and metasomal sterna castaneous; tegulae castaneous with faint bluish reflections; legs testaceous; wings slightly infuscated except for basal 1/3 and extreme apices of fore wings which are hyaline (fig. 14). *Head* 1.8 × as wide as long, as wide as mesosoma, densely punctate, not shining, with sparse pale pubescence; sides converging behind eyes, produced posteriorly 0.8 × length of eye; vertex somewhat flattened; malar space 0.4 × as long as eye height; clypeus unarmed, protuberant dorsally, transversely concave ventrally; mandibles slender, unarmed on posterior margin, apex acute, obliquely tridentate, middle tooth smallest (fig. 8); postgenal carina weak, not reaching margin of proboscidal fossa. *Mesosoma* 1.5 × as long as wide, with pale pubescence; pronotum and mesonotum densely punctate, not shining; tegulae dull; propodeum with large, dense punctures becoming smaller laterally; mesopleuron finely granulate anteriorly, deeply punctate posteriorly; metapleuron micropunctate; metasternal process with 2 blunt lateral teeth and acute medial tooth. *Legs* with pale pubescence; calcaria testaceous. *Wings*: Forewing with length of marginal cell on costal margin 1.7 × stigmal length; 2nd submarginal cell 0.5 × as long as 1st (fig. 14). *Metasoma* 2.2 × as long as wide, with sparse fuscous pubescence dorsally, pale pubescence laterally and ventrally; 1st tergum with shallow, moderate punctures becoming finer and denser laterally; 2nd tergum with punctuation moderate except for posterior 1/4 where punctures fine and dense; 2nd sternum evenly convex, not flattened, with sparse, moderate punctures, finer and denser apically; 3rd to 7th sterna with moderately dense, fine punctures; hypopygium simple, with fairly dense, fine punctures. *Genitalia* with parameres simple, not flattened; cuspides conical (fig. 15).

Variation: This species is extremely variable, at least in the ♀. Variation in the ♀♀ is most noticeable as follows: length varies from 6.6 mm to 10.8 mm; the clypeus shows a tendency for development of a tubercle on each side of the depressed ventral area, most markedly so in NW New Guinea, and the 2 dorsal teeth are absent in the specimen from New Britain; the mesosoma varies in color, with development of a middorsal testaceous spot on the pronotum, especially, but not exclusively, in specimens from the coastal regions, and including the New Britain specimen; leg color varies from pale ferruginous in the Aru specimens to fuscous in those from Karimui, the trochanters always paler than the other segments; the dorsal teeth on the 1st metasomal tergum vary greatly, tending to be smallest in the east (mere blunt protuberances in the New Britain specimen) and largest in the west [definite triangular teeth with a slight backward curve in specimens from the Sukarnapura (=Hollandia) area], although the Aru specimens are similar to that from New Britain in this respect, and the Morotai specimen is intermediate; the testaceous integumental areas on the 2nd tergum and the dark pubescence in these areas vary considerably so that northwestern specimens have a large pale area slightly emarginate anteriorly and southeastern specimens have 2 distinct pale patches side by side. The ♂♂ vary in the color of the legs, which are fuscous in the Karimui specimen, and of the wings which have the fuscous area slightly smaller in the Karimui specimen; the punctuation of the sterna is finer and denser in the Karimui specimen; the cuspis of the volsella also varies slightly, having a slight apical emargination in the Karimui specimen, tending towards the state in *A. stanleyi*.

DISTRIBUTION: This is a rather widely distributed species, apparently occurring generally throughout New Guinea and the neighboring islands. André (1896) recorded a specimen which was most likely of this species from the Solomon Islands.

SPECIMENS EXAMINED: Lectotype, ♀, bearing the following labels from top to bottom: 1. "Aru" [handwritten, circular, blue label]; 2. "Type / H. T." [printed, circular label with red edge]; 3. "Mutilla / carinata / Smith" [handwritten, blue label]; 4. "carinata" [handwritten in pencil, a later addition]; 5. "TYPE [printed] HYM: 131 $\frac{2}{2}$ / Ephutomorpha / carinata SMITH. / ♀ A. T. [handwritten] / HOPE DEPT. OXFORD [printed]" [white label with black border]; 6. "LECTOTYPE / Mutilla / carinata ♀ / Smith, 1859 / D. J. Brothers, 1971" [handwritten, red label] [collected by Wallace], (Hope Dept., Oxford). Paralectotype, ♂, ARU [Wallace], (Hope Dept., Oxford). MOLUCCAS: 1 ♀, Morotai Island, Wallace [British Museum (Natural History)] (BMNH). ARU, 1 ♀ (BMNH). NW NEW GUINEA: (West Irian, part), 1 ♀, Nabire, S of Geelvink Bay, 10-15 m, 1-5.IX.1962, J. Sedlacek; 1 ♀, Swart Valley, Karubaka, 1500 m, 20.XI.1958, J. L. Gressitt; 1 ♀, Japen I., SSW of Sumberbaba, Dawai River, X.1962, N. Wilson; 1 ♀, Genjam, 40 km W of Hollandia, 100-200 m, 1-10.III.1960, T. C. Maa; 2 ♀♀, Waris, S of Hollandia, 450-500 m, 16-23.VIII.1959 & 24-31.VIII.1959, Maa; 1 ♀, above Ifar, 500-750 m, 23.VI.1959, palms, Gressitt; 1 ♀, Ifar, Cyclops Mts, 450-500 m, 9.IX.1962, J. Sedlacek. NE NEW GUINEA: 1 ♀, Eliptamin Valley, 1665-2530 m, 19.VI.1959, W. W. Brandt; 1 ♀, Tsenga, 1200 m, Upper Jimmi Valley, 14.VII.1955, Gressitt; 5 ♀♀, 1 ♂, Karimui, 1080 m, 11-12.VII.1963 & 13.VII.1963, J. Sedlacek; 1 ♀, Kassam, 1350 m, 48 km E of Kainantu, 7.XI.1959, Maa; 1 ♀, Wau, Morobe District, 1300 m, 26-27.VII.1961, J. Sedlacek; 1 ♀, Bubia, Markham Valley, 50 m, 20.IX.1955, Gressitt; 1 ♀, 56 km SW of Lae, 150 m, 18.III.1963, J. Sedlacek; 1 ♀, Lae, sea level, 26.VII.1955, Gressitt; 1 ♀, Busu River, E of Lae, 100 m, 14.IX.1955, Gressitt. SE NEW GUINEA: (Papua), 1 ♀, Tapini, 1200 m, 17.V.1961, Gressitt. NEW BRITAIN: 1 ♀, Gazelle Peninsula, Bainings, St. Paul's, 350 m, 6.IX.1955, Gressitt. In my collection and that of Bishop Museum, Hawaii.

This species is most similar to *A. ferruginata* from which it differs mainly in coloration.

***Ascetotilla ferruginata* Brothers, new species** Fig. 2.

Mutilla (*Sphaerophthalma* [sic]) *carinata*: André, 1896, *Ann. Mus. Civ. Stor. Nat. Genova* 37: 80, ♀ (in part).

M[utilla] (*Ephuta*) *carinata*: Mantero, 1900, *Ann. Mus. Civ. Stor. Nat. Genova* 40: 584, ♀.

♀. Length 9.1 mm. Head black with slight purplish reflections dorsally, clypeus, mandibles, palpi, and pedicels ferruginous, flagella and scapes fuscous; mesosoma fuscous except for ferruginous prothorax, meso- and metanota and basal 1/4 of propodeum dorsally; legs fuscous except for ferruginous trochanters and slightly paler tarsi; metasoma black except for testaceous median dorsal patch on 1st tergum, paired testaceous apical patches produced posterolaterally on 2nd tergum, and fuscous mesal area on apical tergum. *Head* 1.8 × as wide as long, 1.3 × as wide as mesosoma; sides gradually converging behind eyes, produced posteriorly 0.8 × length of eye; malar space 0.6 × as long as eye height; antennal scrobes weakly carinate above with carina extending to about 2/3 distance from antennal tubercle to eye; clypeus protuberant dorsally with a minute tubercle on each side of midline, ventrally transversely concave, shiny, shagreened in middle; mandibles broadened with apex obliquely tridentate, middle tooth slightly

smaller than innermost which is blunt (fig. 2); postgenal carina weak, continuous with raised margin of proboscidal fossa; pubescence fuscous dorsally, pale posteroventrally. *Mesosoma* $1.3 \times$ as long (excluding neck) as wide; dorsum with sparse testaceous pubescence; pro-mesothoracic suture very faintly visible dorsally as a fine, smooth, curved line; propodeal declivity with sparse, small punctures, not reticulate, with sparse, erect, pale pubescence and fairly dense, decumbent, palish fuscous pubescence; dorsal margin of prepectus not carinate; pleura with decumbent, palish fuscous pubescence; metasternal process with 2 very blunt, rounded, lateral teeth and acute medial tooth. *Legs* with pale pubescence; mid tibiae with 2 and 4 and hind tibiae with 4 fuscous spines in a single row externally; calcaria ferruginous. *Metasoma* with 1st tergum dislike with distinct anterior and dorsal faces separated dorsally by a weak and short carina on each side of midline, dorsally and laterally densely and finely punctate with pale pubescence, anterior face with few, pale, erect hairs; 2nd tergum with dorsal surface slightly flattened, pubescence fuscous except for pale pubescence laterally and in areas of testaceous cuticle; 3rd and 4th terga with fuscous pubescence except for median area of obscure pale pubescence on 4th tergum; 5th tergum with pale pubescence except for narrow lateral bands of fuscous pubescence; 6th tergum with glabrous area weakly and finely longitudinally rugose, oval, weakly margined on each side apically, lateral areas with pale pubescence and long fuscous hairs; all sterna with pale pubescence; 2nd sternum simple, evenly convex.

♂. Unknown.

Variation: Length varies from 7.3 mm to 9.9 mm; color varies slightly, one specimen having bluish reflections on the head and another having the scapes and first flagellar segments, as well as other areas which are usually ferruginous, more castaneous, this color including the entire propodeal declivity, and also with the apical testaceous patches on the 2nd tergum tending to merge medially towards the apex.

DISTRIBUTION: This species is apparently confined to the southeastern section of New Guinea. The 2 specimens mentioned by André (1896) and Mantero (1900) from Fly River and Dilo (see synonymy above) are almost certainly members of this species.

SPECIMENS EXAMINED: Holotype, ♀ (BISHOP 9442), SE New Guinea: (Papua), Popondetta, 60 m, 3-4.IX.1963, J. Sedlacek (BISHOP). Paratypes, SE New Guinea: (Papua), 2 ♀♀, Kokoda-Pitoki, 400 m & 450 m, 23.III.1956 & 24.III.1956, J. L. Gressitt; 1 ♀, Popondetta, 60 m, 3-4.IX.1963, J. Sedlacek; 1 ♀, Central District, Otomata Plantation, 1 m, E of Moresby, 2.XI.1960, Gressitt (collection of Bishop Museum and my own).

Etymology: "ferruginus" (L.), rust-colored; in reference to the color of the dorsum of the mesosoma.

This species is very similar to *A. carinata* from which it differs mainly in coloration and sculpturing of the propodeum.

***Ascetotilla stanleyi* Brothers, new species** Fig. 16.

♀. Unknown.

♂. Length 10.1 mm. Head, pronotum, mesoscutum and tegulae dark blue with greenish reflections; scutellum, metanotum and propodeum dark blue; propodeum posteriorly and laterally, and pleura black; metasoma dark blue dorsally, dark castaneous with purplish reflections ventrally; clypeus and antennae fuscous; mandibles fuscous but ferruginous near apex; palpi and legs ferruginous, with tarsi and femora, especially apically, darkened; wings entirely infuscated, with bluish sheen. *Head* $1.8 \times$ as wide as long; very slightly narrower than mesosoma, moderately densely punctate, shining, with sparse pubescence pale except fuscous on

either side of ocelli; sides strongly converging behind eyes, produced posteriorly $0.8 \times$ length of eye; vertex somewhat flattened; malar space $0.3 \times$ as long as eye height; clypeus unarmed, protuberant dorsally, transversely concave ventrally; mandibles slender, unarmed on posterior margin, apex acute, obliquely tridentate, middle tooth smallest; postgenal carina weak, not reaching margin of proboscidal fossa. *Mesosoma* $1.3 \times$ as long (excluding neck) as wide, with pubescence pale except fuscous on mesonotum; pronotum densely punctate especially anterolaterally, shining; mesoscutum moderately densely punctate, shining; tegulae moderately punctate, shining; scutellum densely punctate, shining, with faint raised medial line; propodeum with large, dense punctures becoming smaller laterally; mesopleuron granulate anteriorly, deeply punctate posteriorly; metapleuron micropunctate; metasternal process without definite lateral teeth, medial tooth acute. *Legs* with pale pubescence; calcaria pale ferruginous. *Wings*: Forewing with length of marginal cell on costal margin $2.2 \times$ stigmal length; 2nd submarginal cell $0.6 \times$ as long as 1st. *Metasoma* $2.6 \times$ as long as wide, with sparse pubescence fuscous except pale on 1st segment, laterally on 2nd tergum and anterior 2/3 of 2nd sternum; 1st tergum with moderate punctures becoming finer and denser laterally; 2nd tergum with punctuation fine and moderately dense, slightly denser on posterior 1/4; 2nd sternum slightly flattened on anterior 2/3, sparsely and finely punctate; 3rd to 7th sterna sparsely and finely punctate; hypopygium with a blunt tubercle on each side basally, with fine punctuation sparse medially and dense laterally and apically. *Genitalia* with parameres slightly flattened with a blunt pre-apical inner protuberance; cuspides bilobed apically (fig. 16).

SPECIMEN EXAMINED: Holotype, ♂ (BISHOP 9443), NE New Guinea: Finisterre Range, Sidor, Gabumi Village, 1-21.VII.1958, W. W. Brandt (BISHOP).

Etymology: It is in deep appreciation of his many sacrifices on my behalf that I name this species after my father, Mr Stanley A. Brothers.

This species differs from *A. carinata*, the only other species for which the ♂ is known, mainly in color, sculpture, form of hypopygium and form of the genitalia.

Ascetotilla uncinata Brothers, new species Fig. 3, 11, 17.

♀. Length 9.3 mm. Body fuscous with deep purple and violet reflections; clypeus and antennae fuscous; mandibles and palpi castaneous; legs castaneous with tarsi becoming ferruginous apically; apices of 1st to 5th metasomal terga ferruginous medially; last tergum with mesal area ferruginous. *Head* $1.5 \times$ as wide as long, as wide as mesosoma; sides almost parallel behind eyes, produced posteriorly $1.1 \times$ length of eye; malar space $0.9 \times$ as long as eye height; antennal scrobes weakly carinate above with carina extending just beyond 1/2 distance from antennal tubercle to eye; clypeus unarmed, protuberant dorsally, ventrally transversely concave, dull; mandibles slightly broadened apically, obliquely bidentate, teeth acute, inner tooth slightly smaller than apical, with a blunt tooth midway along posterior margin (fig. 3); postgenal carina hardly developed, ending well before proboscidal fossa; pubescence fuscous dorsally, pale ventrally. *Mesosoma* $1.2 \times$ as long (excluding neck) as wide; dorsum with sparse fuscous pubescence; pro-mesothoracic suture faintly visible dorsally as a fine, smooth, angulate line; propodeal declivity with weak, raised medial line, hardly punctate, merely with uneven, dull surface, with sparse, erect, pale pubescence and fairly dense, decumbent, palish fuscous pubescence; dorsal margin of prepectus not carinate; pleura with decumbent, fine, palish fuscous pubescence except pale anteriorly; metasternal process with 2 blunt lateral teeth and acute medial tooth. *Legs* with pale pubescence; mid and hind tibiae each with 2 ferruginous spines externally; calcaria ferruginous. *Metasoma* with 1st tergum dislike with distinct anterior and dorsolateral faces separated by well developed carina bearing a long, hooklike, posteriorly curved spine on each side of midline, a posteriorly bent tooth lateral to that, a dorsoventral toothlike

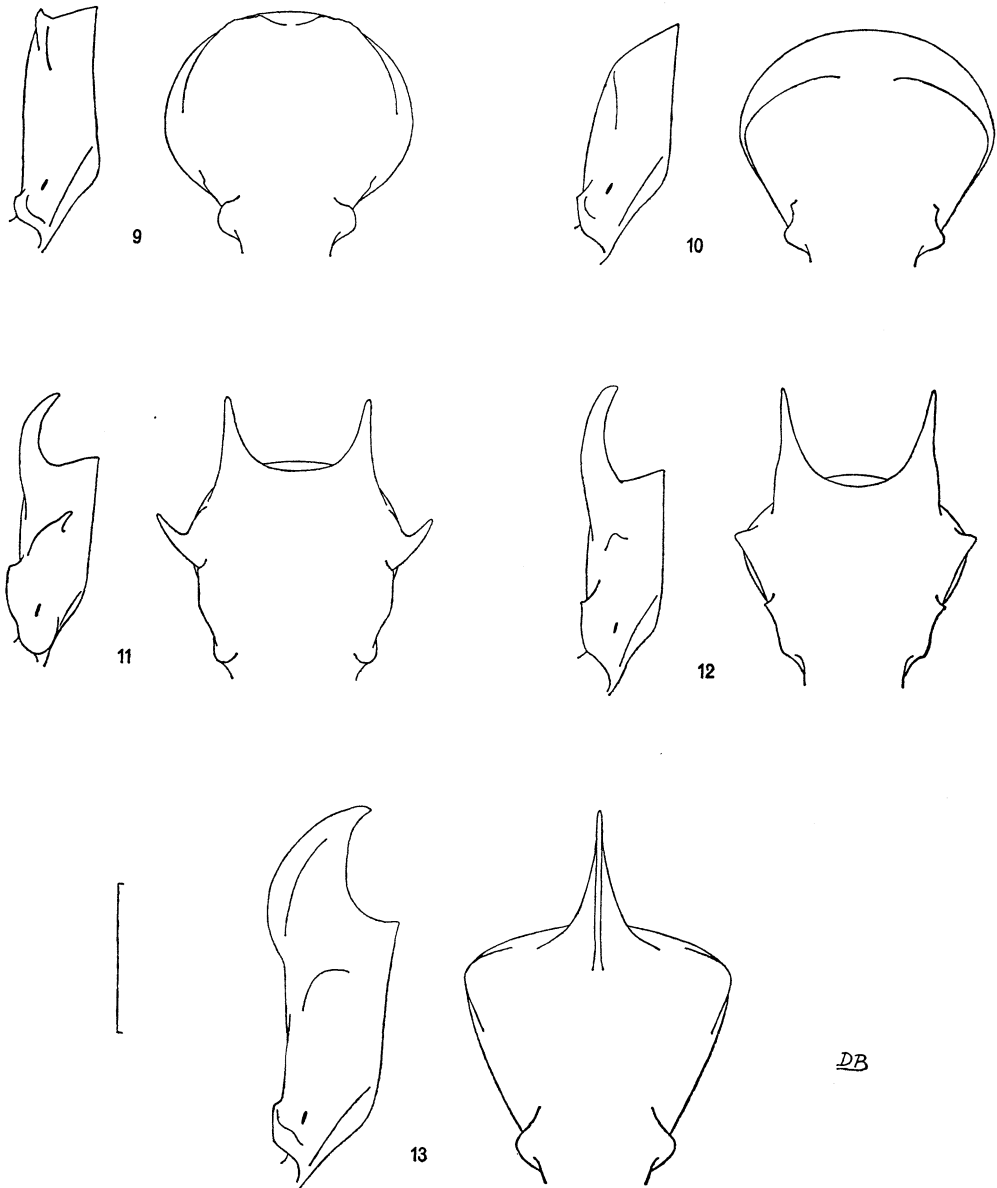


Fig. 9-13. First metasomal terga, lateral view (left) and front view, of species of *Ascetotilla* n. gen., ♀♀: 9, *A. carinata* (Smith), Aru; 10, *A. inermis* n. sp.; 11, *A. uncinata* n. sp.; 12, *A. francae* n. sp.; 13, *A. notidana* n. sp. Scale: 1.0 mm.

carina anteroventral to that and a rounded lobe ventrally on each side (fig. 11), dorsally and laterally sparsely and finely punctate with pale pubescence, golden medially, anterior face with few, pale, erect hairs; 2nd tergum with dorsal surface evenly convex, pubescence fuscous except broadly golden medially and apically, and pale laterally; 3rd to 5th terga with fuscous pubescence except for broad median areas of golden pubescence; 6th tergum with glabrous area smooth, oval, very weakly margined on each side apically, lateral areas with fuscous pubescence, except golden mesally; 1st to 5th sterna with pale pubescence; 6th sternum with golden pubescence; 2nd sternum with low medial convexity on posterior 1/3, depressed on each side of midline posterior to this (fig. 17).

♂. Unknown.

Variation: Length varies from 7.7 mm to 9.3 mm; color varies slightly in darkness of integument from basically fuscous to castaneous.

SPECIMENS EXAMINED: Holotype, ♀ (BISHOP 9444), NW New Guinea: (West Irian, part), Wisselmeren, Enarotadi, 1800 m, 6.VIII.1955, J. L. Gressitt (Bishop Museum, Hawaii). Paratypes, NW New Guinea: (West Irian, part), 1 ♀, Wisselmeren, 1500 m, Itouda, Kamo Valley, 14.VIII.1955, Gressitt (my collection); 1 ♀, Wisselmeren, 1530 m, Urapura, Kamo Valley, 15.VIII.1955, Gressitt (BISHOP).

Etymology: "uncinatus" (L.), hooked, barbed; in reference to the armature of the 1st metasomal tergum.

This species is most similar to *A. francae* form which it differs mainly in the position of the tooth on the posterior margin of the mandible, form of the head and coloration.

***Ascetotilla francae* Brothers, new species** Fig. 4, 12.

♀. Length 8.2 mm. Body black with weak purplish reflections dorsally, faint greenish reflections on frons, pleura and 2nd metasomal sternum; clypeus fuscous; antennae dark castaneous with paler pedicel; mandibles, palpi and legs dark castaneous, coxae, trochanters and tarsi slightly paler; sterna dark castaneous; apices of 2nd to 5th metasomal terga medially and mesal area on last tergum dark ferruginous. *Head* 1.6 × as wide as long, 1.1 × as wide as mesosoma; sides strongly converging behind eyes, produced posteriorly 0.8 × length of eye; malar space 0.6 × as long as eye height; antennal scrobes weakly carinate above with carina extending just beyond 1/2 distance from antennal tubercle to eye; clypeus protuberant dorsally with a blunt tubercle on each side just above transversely concave, dull, ventral region; mandibles slightly broadened apically, obliquely bidentate, teeth acute, inner tooth smaller than apical, with a blunt tooth on posterior margin 1/3 length of margin from base (fig. 4); postgenal carina hardly developed, ending well before proboscidal fossa; pubescence fuscous dorsally, pale ventrally. *Mesosoma* 1.4 × as long (excluding neck) as wide; dorsum with sparse fuscous pubescence; promesothoracic suture not visible dorsally; propodeal declivity with weak, raised, medial line, with very shallow, large, sparse punctures, with sparse, erect, pale pubescence and fairly dense, decumbent, palish fuscous pubescence; dorsal margin of prepectus not carinate; pleura with decumbent, fine, palish fuscous pubescence except pale anteriorly; metasternal process without lateral teeth, medial tooth acute. *Legs* with pale pubescence; mid and hind tibiae each with a single row of 4 ferruginous spines externally; calcaria ferruginous. *Metasoma* with 1st tergum disclike with distinct anterior and dorsolateral faces separated by well developed carina bearing a long, hooklike, posteriorly curved spine on each side of midline, a blunt tooth lateral to that and a dorsoventral toothlike carina anteroventral to that (fig. 12), dorsally and laterally very sparsely and finely punctate with pale pubescence, anterior face with few, pale, erect hairs;

2nd tergum with dorsal surface evenly convex, pubescence fuscous except pale laterally and apically; 3rd to 5th terga with fuscous pubescence except pale in narrow medial band; 6th tergum with glabrous area smooth, oval, weakly margined on each side apically, lateral areas with fuscous pubescence, except pale mesally; all sterna with pale pubescence; 2nd sternum without definite mesal convexity, with surface depressed on each side of midline on apical 1/4.

♂. Unknown.

Variation: The single paratype is 9.1 mm long, but otherwise does not differ from the holotype.

SPECIMENS EXAMINED: Holotype, ♀ (BISHOP 9445), NE New Guinea: Karimui, 1080 m, 8-10.VII.1963, J. Sedlacek (Bishop Museum, Hawaii). Paratype, ♀, same data as holotype (my collection).

Etymology: It is with much appreciation for her constant interest and encouragement that I name this species after my mother, Mrs France S. Brothers.

This species is very similar to *A. uncinata* from which it differs mainly in the form of the mandibles, form of the head and size of the eyes, number of spines on the mid and hind tibiae, and coloration.

***Ascetotilla inermis* Brothers, new species** Fig. 5, 10.

♀. Length 9.9 mm. Body black with very faint purplish tinge; clypeus and antennae fuscous; mouthparts and legs dark castaneous with paler coxae, trochanters and tarsi apically; 1st to 5th metasomal terga ferruginous apically in the middle, the patches on 3rd to 5th terga very small; last tergum almost entirely ferruginous. *Head* 1.5 × as wide as long, 1.2 × as wide as mesosoma; sides almost parallel behind eyes, produced posteriorly 1.2 × length of eye; malar space 0.8 × as long as eye height; antennal scrobes very weakly carinate above with carina extending to about 2/3 distance from antennal tubercle to eye; clypeus protuberant dorsally, produced into a blunt tooth on each side of lenticular ventral, depressed, dull area; mandibles broadened apically, obliquely bidentate, teeth acute, inner tooth slightly smaller than apical, inner margin with a blunt tooth about 1/3 distance from base to apex of mandible (fig. 5); postgenal carina very weak, ending well before proboscidal fossa; pubescence fuscous dorsally, pale postero-ventrally. *Mesosoma* 1.3 × as long (excluding neck) as wide; dorsum with sparse fuscous pubescence; pro-mesothoracic suture faintly visible dorsally as a fine, smooth, curved line; propodeal declivity with fairly dense, moderate punctures, sparse, erect pubescence fuscous dorsally and pale ventrally, and fairly dense, decumbent, fuscous pubescence; dorsal margin of prepectus weakly carinate; pleura with decumbent, fine, fuscous pubescence; metasternal process without lateral teeth, with medial tooth acute. *Legs* with palish fuscous pubescence; mid tibiae with 2 and 3 and hind tibiae with 4 ferruginous spines in a single row externally; calcaria testaceous. *Metasoma* with 1st tergum disclike with distinct anterior and dorsal faces separated dorsally by a weak transverse carina which is obsolete medially, unarmed (fig. 10), dorsally densely and finely punctate, laterally more sparsely so, with golden pubescence dorsally, pale laterally, anterior face with few, erect, palish hairs; 2nd tergum with dorsal surface slightly flattened, with distinct dorsal and lateral faces, pubescence fuscous except palish laterally and golden apically and in obscure medial line; 3rd to 5th terga with fuscous pubescence except for median areas of golden pubescence on each; 6th tergum with glabrous area smooth, rhomboidal, not margined on each side apically, lateral areas with golden pubescence; 1st to 4th sterna with pale pubescence; 5th and 6th sterna with golden pubescence; 2nd sternum with mesal convexity, not depressed posterior to this.

♂. Unknown.

SPECIMEN EXAMINED: Holotype, ♀ (BISHOP 9446), NE New Guinea: Mt Otto, 2200 m, 24.VI.1955, J. L. Gressitt (BISHOP).

Etymology: "inermis" (L.), unarmed; in reference to the simple 1st metasomal tergum.

This species is very similar to *A. clypeata* from which it differs mainly in the form of the head, clypeus, mandibles and the 2nd metasomal segment.

Ascetotilla clypeata Brothers, new species Fig. 6.

♀. Length 9.9 mm. Head and mesosoma black with faint purple and bronze reflections dorsally, violet reflections laterally; antennae and legs fuscous, except pedicels and tarsi slightly paler; mouthparts castaneous; metasoma black except for ferruginous dorsum of 1st tergum, most of last tergum and apical 1/2 of last sternum, with faint bronze reflections on 2nd tergum. *Head* 1.4 × as wide as long, as wide as mesosoma; sides gradually converging behind eyes, produced posteriorly length of eye; malar space 0.7 × as long as eye height; antennal scrobes weakly carinate above with carina extending to about 2/3 distance from antennal tubercle to eye; clypeus protuberant dorsally, strongly produced into an acute tooth on each side overhanging the short, depressed, ventral region; mandibles broadened at apex, bidentate, with inner tooth smaller than apical, inner tooth with posterior (outer) margin bearing a minute 3rd tooth at base, anterior (dorsal) margin of mandible bearing a blunt tooth 1/3 distance from base to apex of mandible (fig. 6); postgenal carina weak and short, ending well before proboscidal fossa; pubescence fuscous dorsally, palish ventrally. *Mesosoma* 1.4 × as long (excluding neck) as wide; dorsum with sparse fuscous pubescence; pro-mesothoracic suture hardly visible dorsally as a fine, smooth, curved, much interrupted line; propodeal declivity with fairly dense, moderate punctures and weak, medial, raised line, with sparse, erect pubescence fuscous dorsally, palish ventrally, and fairly dense, decumbent, fuscous pubescence; dorsal margin of prepectus carinate; pleura with decumbent, fine, fuscous pubescence; metasternal process with small, rounded, lateral teeth and short, acute, medial tooth. *Legs* with palish fuscous pubescence; mid tibiae with 2 and hind tibiae with 3 and 4 ferruginous spines in a single row externally; calcaria testaceous. *Metasoma* with 1st tergum disclike with distinct anterior and dorsal faces separated dorsally by a weak transverse carina which is obsolete medially, unarmed, dorsally densely and finely punctate, laterally more sparsely so, with golden pubescence dorsally, pale laterally, anterior face with few, erect, palish hairs, darker medially; 2nd tergum with dorsal surface evenly convex, dorsal and lateral surfaces merging smoothly, pubescence fuscous except golden in apical band produced anteriorly to form broad triangular apical patch and obscure broad golden band medially; 3rd to 5th terga with fuscous pubescence except for medial golden patch on 3rd tergum; 6th tergum with glabrous area smooth, rhomboidal, not margined on each side apically, lateral areas with golden pubescence; 1st sternum with pale pubescence; 2nd to 6th sterna with golden pubescence; 2nd sternum with mesal convexity, depressed posterior to this on each side of midline.

♂. Unknown.

SPECIMEN EXAMINED: Holotype, ♀ (BISHOP 9447), SE New Guinea: (Papua), Owen Stanley Range, Goilala, Bome, 1950 m, 24.II.-7.III.1958, W. W. Brandt (BISHOP).

Etymology: "clypeata" refers to the distinctive form of the clypeus.

This species is very similar to *A. inermis* from which it differs mainly in the form of the head, clypeus, mandibles and 2nd metasomal segment, and coloration.

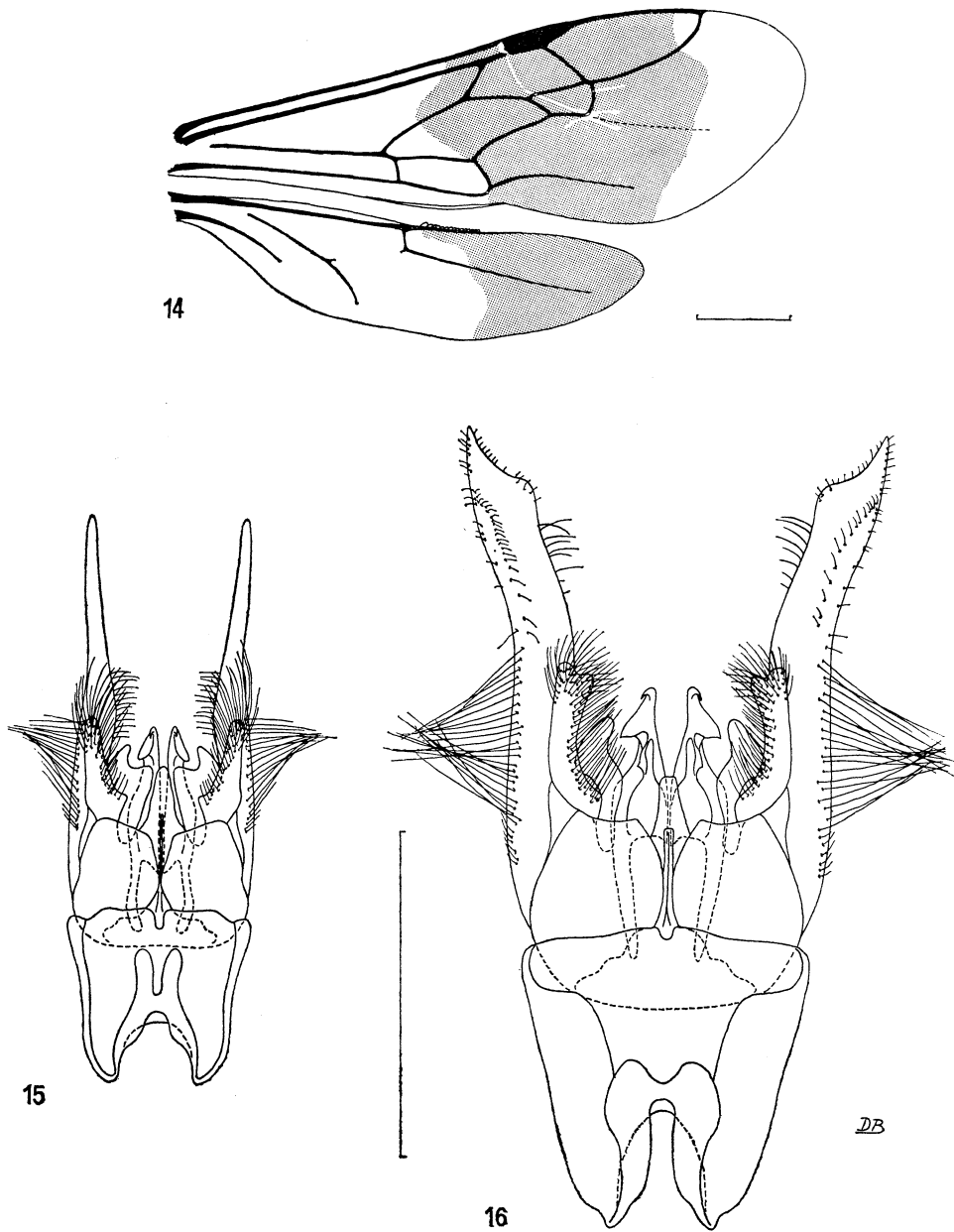


Fig. 14-16. Species of *Ascetotilla* n. gen., ♂♂: 14, wings of *A. carinata* (Smith), Karimui; 15, genitalia of *A. carinata* (Smith), Aru, ventral view; 16, genitalia of *A. stanleyi* n. sp., ventral view. Scales: 1.0 mm.

Ascetotilla notidana Brothers, new species Fig. 7, 13.

♀. Length 10.7 mm. Body black with faint greenish bronze reflections, reduced on pleura and sterna; flagella castaneous; scapes, pedicels, clypeus, mouthparts, neck, legs, apical band of 1st metasomal tergum, extreme lateral band of 2nd metasomal tergum broadened posteriorly, 1st metasomal sternum, base and median apex of 2nd metasomal sternum, ferruginous; propodeal spiracular scales, a patch on each side of 2nd metasomal tergum on apical 1/2 separated by a distance equal to width anteriorly and almost merging posteriorly, medial patches on 3rd to 5th terga and glabrous area of last tergum, testaceous. *Head* $1.7 \times$ as wide as long, $1.2 \times$ as wide as mesosoma; sides almost parallel behind eyes, produced posteriorly $0.8 \times$ length of eye; malar space $0.6 \times$ as long as eye height; antennal scrobes strongly carinate above, carina continuous with antennal tubercle, extending to just below eye; clypeus protuberant dorsally with a blunt tubercle on each side above, anterior (dorsal) margin of ventral, transversely concave, shagreened area produced, with 4 strong tubercles; mandibles gradually broadened apically, obliquely bidentate, teeth acute, inner tooth slightly smaller than apical (fig. 7); postgenal carina strong, continuous with raised margin of proboscidal fossa; pubescence fuscous dorsally, pale posteroventrally. *Mesosoma* $1.4 \times$ as long (excluding neck) as wide; dorsum with sparse fuscous pubescence; pro-mesothoracic suture not visible dorsally; propodeal declivity with shallow, moderately dense, coarse punctation, with raised median line anteriorly, sparse, erect, pale pubescence and fairly dense, decumbent, palish pubescence darker anteriorly; dorsal margin of prepectus not carinate; pleura with decumbent, fine, palish pubescence; lateral area of propodeum shining with a few small punctures dorsally, micropunctate ventrally; metasternal process with 2 blunt lateral teeth and narrow, acute, medial tooth. *Legs* with pale pubescence; mid tibiae with 3 and 4 and hind tibiae with 4 ferruginous spines in a single row externally; calcaria ferruginous. *Metasoma* with 1st tergum disclike with anterior and dorsal faces not separated by a carina, slightly produced on each side dorsolaterally, with a single, long, laterally flattened, posteriorly curved, finlike process dorsally in middle (fig. 13), dorsally densely and finely punctate, laterally more sparsely so, with pale pubescence, anterior face with few, palish, erect hairs; 2nd tergum with dorsal surface slightly flattened, with lateral depressed areas extending anteriorly in pale apical patches, pubescence fuscous except for pale pubescence laterally and in areas of testaceous cuticle; 3rd tergum with pale pubescence except for median and lateral

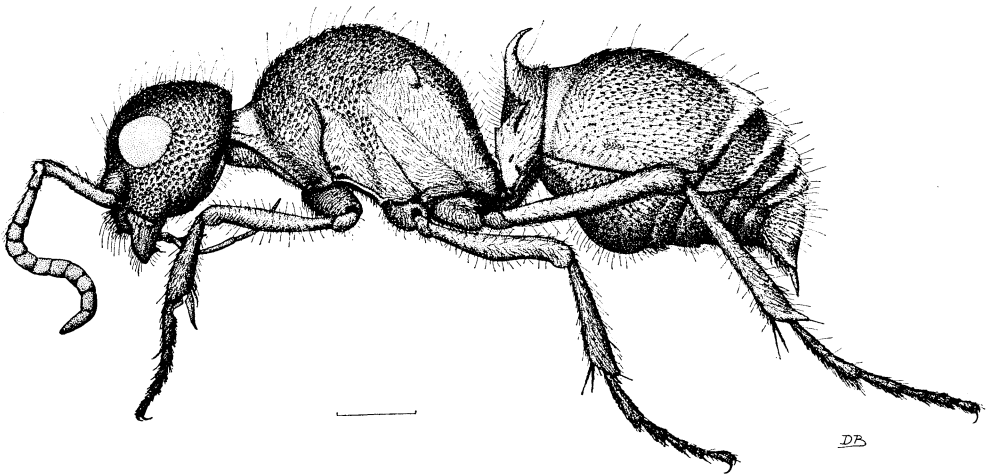


Fig. 17. *Ascetotilla uncinata* n. sp., ♀, lateral view. Scale: 1.0 mm.

bands of fuscous pubescence; 4th and 5th terga with fuscous pubescence except for pale median band; 6th tergum with glabrous area smooth, oval, very weakly margined on each side apically, lateral areas with fuscous pubescence, except pale mesally; all sterna with pale pubescence; 2nd sternum simple, evenly convex.

♂. Unknown.

SPECIMEN EXAMINED: Holotype, ♀ (BISHOP 9448), NW New Guinea: (West Irian, part), Waris, S of Hollandia, 450-500 m, 1-7.VIII.1959, T. C. Maa (BISHOP).

Etymology: "notidanos" (Gr.), with pointed dorsal fin; in reference to the armature of the 1st metasomal tergum.

This species is not clearly more closely related to any one of the other species in the genus than to any other, although it is perhaps most similar to *A. carinata*, from which it is readily distinguished by the form of the mandibles and the 1st metasomal tergum; it differs from the other species with bidentate mandibles mainly in the form of the 1st and 2nd metasomal segments.

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