

COMMENTS ON *NOMIA*(*PTILONOMIA*) WITH  
DESCRIPTIONS OF TWO NEW SPECIES  
FROM NEW GUINEA

(Hymenoptera, Halictidae)<sup>1</sup>

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*Ptilonomia* was quite recently established by Dr. C. D. Michener as a subgenus of *Nomia*, based upon the single species *Nomia plumosa* Michener from New Guinea. It is one of the unusual species of *Nomia* because of the presence of the long plumose hairs on the head and thorax, the darkening due to the dense minute hairs along the costa of the hind wing, etc. The last mentioned character is only found in *Reepenia*, from which *Ptilonomia* is distinguished in having the normal ocelli and the elongated malar area.

Dr. Michener considers that the short glossa of *Ptilonomia* is also one of the characteristics which separates it from *Reepenia*, and states that *glossa is shorter than clypeus and exceeded by both labial and maxillary palpi*. Actually, however, *Nomia plumosa* has a moderately elongated glossa which is about as long as in *Reepenia*; that is, the glossa is nearly as long as the orbit. I suppose that Dr. Michener based his description upon the specimen(s) in which the glossa have shrunk. Killing the bees by cyanide, it frequently happens that the glossa is shrunk into the prementum recessed in the hypostoma or proboscoidal fossa, so that we cannot see the natural length of the glossa. However, one can easily extract the glossa in such a condition to its natural size by pulling it out gently after boiling the proboscis in hot water for a few minutes. I was able to ascertain the length of the glossa of *Nomia plumosa* by this method.

In addition to *Nomia plumosa*, I recognized two new species of *Ptilonomia* in the collection of Bishop Museum as described below. In these forms the glossa is also nearly as long as the orbits. Thus, the moderately elongated glossa usually found in *Nomia* s. l., like *Curvinomia*, *Hoplonomia*, *Mellitidia*, *Nomia* s. str., *Reepenia*, but unlike *Rhopalomelissa*, is also characteristic of *Ptilonomia*.

Another correction of lesser importance will be made on the length of the malar area of the female *Ptilonomia*. As I describe below, the female of *Nomia laevisoma* has a much shorter malar area than *Nomia plumosa*. Accordingly, the malar area varies from half as long as wide to as long as wide in the female *Ptilonomia*. This is related to *Mellitidia*.

In addition, the first metasomal sternum of either sex of *plumosa* shows an

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interesting feature. That sternum is armed with an apical projection. In the male of *plumosa*, the first sternum is exceedingly convex transversely in the shape of  $\Delta$ , the top of which ends as a conical projection at the apex. In the female, the same sternum is only longitudinally ridged basally, and is provided with an apical conical projection which is as sharp as that of the male. In the females of *Ptilonomia* other than *plumosa* there exists also a conical projection on the same sternum, and the shape of that projection varies slightly from species to species. Thus, this character will serve as a more valuable diagnosis when the males of all the species are taken.

It seems worthy to note that in *Ptilonomia* the surface of the body is not strongly punctured, unlike most other species of *Nomia*. The only space which has more or less strong punctures is neither the thorax nor the metasoma, but the face.

The material on which the following descriptions were based is preserved in the Entomology Department, Bishop Museum, Honolulu. I am grateful to Dr. J. L. Gressitt who allowed me to study them, and to Prof. K. Yasumatsu of Kyushu University for his kind guidance.

*Nomia (Ptilonomia) micheneri* sp. n.

This species is a close relative of *Nomia plumosa* Michener, from which it is distinguished primarily in having the hairs on the head, sides of thorax as well as propodeum being grey (ochreous in *plumosa*), the hairs on the inner sides of tibiae and tarsi of the middle and hind legs black (bright ochreous to ferruginous in *plumosa*), the tibial spurs darker, the punctures on the clypeus weaker and sparser, the coxae of the fore legs not angulated outwardly (outer margin angulated nearly at right angle in *plumosa*), and the trochanters of the same subcylindrical (convex posteriorly in *plumosa*). In addition to these, the supraclypeal area is narrower

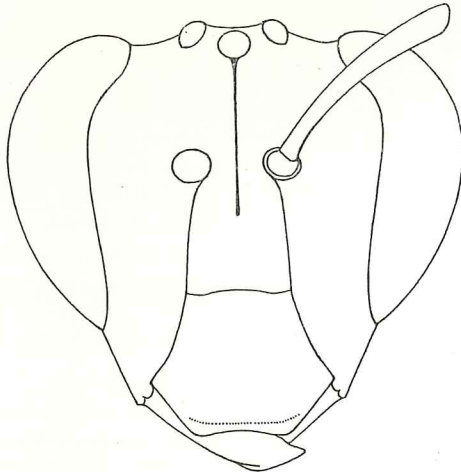


Fig. 1. *Nomia (Ptilonomia) micheneri* sp. n., front view of female head.

and the clypeus more even than in *plumosa*, but these differences seem to be very slight, since there is a slight variation within the species.

*Female*: Length, 12 mm., a little smaller than *plumosa*; wing length, 10 mm. Relative head measurements: width, 11.5; length, 10.2; eye length, 7.3; upper interocular distance, 5.2; lower interocular distance, 6.5; clypeo-antennal distance, 2.8; supraclypeal width at apex, 2.6. Inner eye margin a little converging below except upper one-third strongly convergent toward ocelli; mandibles bidentate, widened subapically where they are as broad as base; malar area as long as basal width of mandible; ocellular distance a little shorter than in *plumosa*, and this space more deeply concave; interocellar distance as long as or a little longer than ocellular distance, the latter less than twice an ocellar diameter (more than twice in *plumosa*); first metasomal sternum with a large subconical projection somewhat rounded at apex in lateral view; this projection larger than in *plumosa*. Glossa about as long as orbit when extended, one-third of its length in repose; scutellum weakly biconvex like *plumosa*; metanotum strongly elevated and weakly biconvex like *plumosa*; propodeal enclosure like *plumosa*; forecoxa not angulate outwardly; fore trochanter subcylindrical; tibial spurs finely serrate as in *plumosa*; basitibial plate slender, about twice as long as wide, tapering and pointed at apex like *plumosa*; third submarginal cell distinctly longer than first, the latter a little more than two times as long as second (about three times as long as second in *plumosa*). Surfaces of head and thorax distinctly tessellate, thus less shiny than in *plumosa*; clypeus rather flat, although it is highly elevated relative to eyes in side view, with scattered, rather strong punctures which are less coarse than in *plumosa*; punctures on rest of head weaker than in *plumosa*; mesoscutum a little more closely punctured than in *plumosa* with punctures irregular in size; metasoma less roughened with weaker punctures than in *plumosa*, and in one paratype specimen first two terga nearly polished.

*Colour*: Black; apical halves of mandibles red; flagellum brown beneath; tegulae brown; wings slightly brownish; veins brown; tibial spurs fuscous; basitibial plate reddened in holotype; metasoma jet black, shiny.

*Pubescence*: Hairs on head and thorax long, strongly plumose like *plumosa*, grey or slightly yellowish except those on frons, vertex, region of tubercles, mesoscutum and scutellum fuscous; hairs on coxae, trochanters and femora like those on sides of thorax except for some black hairs on apices of hind femora; hairs on tibiae and tarsi wholly black except for some lighter hairs on fore pair; metasoma scanty of hairs like *plumosa*.

*Type material*: Holotype female (BISHOP 7007) and 1 paratype female, Wau, 1,750 m., New Guinea, 6. IX. 1965 (J. & M. Sedlacek, by Malaise trap); 1 paratype female, 10. IX. 1965 and 1 paratype female, 24. IX. 1965 (J. & M. Sedlacek, by Malaise trap).

This species is named in honor of Prof. C. D. Michener of the University of Kansas who has made an invaluable contribution toward the knowledge of the bees of the Australian and South Pacific regions.

*Note*: There remain, in the collection of Bishop Museum, several female specimens of *Ptilonomia* which I could not determine at this time. They deviate from *plumosa* in having the black hairs on the inner sides of the tibiae and tarsi like *micheneri*,

but differ from the latter in having the ochreous hairs on the thorax and slightly different head measurements. It seems probable to me that they may represent a separate species, the characters of which will be clarified after the male specimens are taken.

*Nomia* (*Ptilonomia*) *laevisoma* sp. n.

This species is easily separated from *Nomia plumosa* and *micheneri* in having the short malar area which is about one-half as long as the basal width of the mandible. This species is also characterized in having the ferruginous legs and the golden hairs on the legs as well as on the ventral parts of the head, thorax and metasoma. The darkening due to the aggregation of minute hairs along the costa of the hind wing is weak.

*Female*: Length about 11 mm.; wing length, 10 mm. Relative head measurements: width, 11.2; length, 9.8; eye length, 7.5; upper interocular distance, 5.1; lower interocular distance, 6.0. Inner orbits subparallel except upper part (about one-fourth) strongly convergent toward ocelli; malar area about one-half as long as basal width of mandible; mandible bidentate, broadened subapically; supraclypeal area strongly convex transversely, clypeo-antennal distance distinctly longer than width of supraclypeal area in middle; frons rather convex, not flat as in *plumosa* or *micheneri*; ocellocular space hardly concave; interocular distance as long as ocellular distance, about twice an ocellar diameter; scape considerably exceeding vertex as in *plumosa*; first two flagellar segments about as long as wide, remaining segments longer and becoming elongate successively toward terminal segment; first metasomal sternum with a subconical projection larger than in *plumosa* and smaller than in *micheneri*. Scutellum only slightly biconvex; metanotum biconvex; basal zone of propodeum bounded by a sharp — -shaped carina, neither pitted nor punctured; third submarginal cell longer than first, the latter two and a half times as long as second; middle tibial spur finely serrate like hind tibial spurs; posterior depression of first tergum much broader than in *plumosa* not sharply marked in middle; that of second and third distinct. Surfaces of head and thorax minutely roughened due to aciculation; clypeus with strong punctures irregular in distribution; supraclypeal area with similar punctures on lateral portions; paraocular areas below antennae with denser, shallower punctures except near orbits; frons with very weak, scattered punctures; mesoscutum with minute, scattered punctures weaker than in *plumosa*; basal terga of metasoma nearly polished, or only microscopically tessellate, hence much more shining than head and thorax; first tergum nearly impunctate; second tergum with scattered punctures much weaker than those on clypeus; posterior depression nearly impunctate.

*Colour*: Black; mandibles red, slightly darkened apically and basally; apical part of clypeus and malar area reddened; both ends of scape, pedicel, and underside of flagellum reddened; posterior lobe of pronotum reddened, tegulae ferruginous subhyaline; wings pale brownish with yellow reflection like *plumosa*; veins fuscous, stigma blackened; legs ferruginous including spurs and claws; metasoma partly piceous, venter broadly reddened.

*Pubescence*: Hairs on head and thorax rather long, strongly branched, golden

except for sparse ones on frons and vertex and for most hairs on mesoscutum and scutellum fuscous; hairs on legs golden to ferrugineous except for bristles on outer faces of tibiae fuscous (a few on front, more on middle, mostly fuscous on hind pairs); metasomal terga scanty of hairs; hairs on first tergum and extreme sides of following terga golden; third and following terga intermixed with brown hairs; hairs on sterna bright, nearly ferrugineous.

Type material: Holotype female (BISHOP 7008), Star Mts. Sibil Val., 1,245 m., West New Guinea, 18. X-8. XI. 1961 (S. & L. Quate, by Malaise trap).

The specific name refers to the smooth, not strongly punctured integument of the body which is unusual for *Nomia* proper.

The females of *Ptilonomia* known at present may be separated by the following key.

1. Malar area about one-half as long as basal width of mandible; legs ferrugineous with golden hairs except for hairs on outer faces of tibiae, especially those on mid and hind pairs, fuscous; vertex between orbit and ocellus hardly concave; hairs on sides of thorax golden; length about 11 mm. .... *laevisoma*  
Malar area about as long as basal width of mandible; legs black; hairs on sides of thorax ochreous or grey ..... 2
2. Hairs on sides of thorax ochreous; hairs on inner sides of tibiae and tarsi of mid and hind pairs bright ochreous to ferrugineous; clypeus weakly biconvex, slightly transversely concave above; supraclypeal area rather shiny in middle; fore coxae angulated laterally; fore trochanters convex posteriorly; length about 13 mm. .... *plumosa*  
Hairs on sides of thorax greyish; hairs on inner sides of mid and hind pairs black; clypeus and supraclypeal area more densely tessellate, dull; clypeus rather flat; fore coxae not angulated; fore trochanters subcylindrical; length about 12 mm. .... *micheneri*

16 mm!

#### Literature

- Michener, C. D. 1965. A classification of the bees of the Australian and South Pacific regions. Bull. Amer. Mus. Nat. Hist., vol. 130, 362 pp., 789 figs., 15 pls.