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THE CARPENTER BEES OF THE PHILIPPINE ISLANDS

By T. D. A. COCKERELL

(University of Colorado)

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THE CARPENTER BEES OF THE PHILIPPINE ISLANDS

By T. D. A. COCKERELL

(University of Colorado, Boulder)

The carpenter bees (Xylocopidæ), so-called because they nest in wood, are easily recognized by their large size and robust form; the wings are often brilliantly iridescent. They are commonly seen about houses. Two genera may be recognized, *Mesotrichia* Westwood and *Xylocopa* Latreille. *Koptorthosoma* Gribodo, *Platynopoda* Westwood, and *Cyaneoderes* Ashmead are here regarded as divisions of *Mesotrichia*. In *Mesotrichia* the hind part of the thorax is flattened (at least in the females), the scutellum having a sharp rim, and this posterior thoracic truncation faces a similar basal truncation of the abdomen. The basal segment of the abdomen contains a pouch, which opens on the anterior face, and in this pouch will be found mites of the genus *Paragreenia* Cockerell (family Gamasidæ). In true *Xylocopa* the hind part of the thorax is rounded as in other bees, and the first abdominal segment also lacks a sharp or angular rim above its basal declivity.

For my Philippine material of this group I am indebted to Professor C. F. Baker. It was principally collected for him by Mr. Julian Valdez, who visited many of the islands for the purpose.

Genus XYLOCOPA Latreille

Species.

- a*¹. Face of male narrow, the area below antennæ about as broad as long; sexes differently colored, the male with a good deal of olive-brown hair, the female black, with the abdomen dark green.

fuliginata Pérez.

- a*². Face of male broad, the area below antennæ much broader than long.

- b*¹. Wings brilliant rosy purple, with the apical field peacock green; anterior wing of female 28 millimeters long; abdomen black, without green tints (China)..... *dissimilis* Lep.

- b*². Wings otherwise colored, not so brilliant.

- c*¹. Abdomen black; male with only a small part of clypeus (band at upper end) light *mimetica* Ckll.

- c*². Abdomen distinctly greenish; male with larger part of clypeus pale. *fallax* Maidl.

Xylocopa fuliginata Pérez, 1901.

MINDANAO, Dapitan, Iligan, and Davao (*Baker*); BASILAN (*Baker*); LUZON, Benguet, Baguio, and Laguna, Mount Maquiling (*Baker*). Probably the commonest species in the Philippines. Pérez described it from Mindanao and Palawan; the former is to be considered the type locality.

Xylocopa mimetica Cockerell, 1915.

PALAWAN.

Xylocopa fallax Maidl, 1912.

LUZON, Benguet, Baguio (*Baker*), 2 males.

The three following species of *Xylocopa* have not been seen from the Philippines by me, and their presence there, though reported, requires confirmation:

Xylocopa dissimilis Lepeletier, 1841.

Probably the Philippines supposed *dissimilis* was *fallax*.

Xylocopa tranquebarica (Fabricus), 1804.

This is more generally known as *X. rufescens* Smith. It is a large ferruginous insect, quite unlike anything I have seen from the Philippines. It has the curious habit of flying at night.

Xylocopa sonorina Smith, 1874.

Sunda Island; probably not in the Philippines. The female has the pubescence all black, except on anterior tarsi beneath, where it is ferruginous; wings fuscohyaline, with darker cloud beyond cells, and with bright purple and coppery iridescence.

Genus MESOTRICHIA Westwood

Species.

- a*¹. Thorax covered with bright yellow hair above, abdomen black, wings very dark (Sumatra, etc.)..... *confusa* Pérez, ♀.
- a*². Thorax with fox-red hair above (with some black), abdomen black.
..... *cuernosensis* Ckll.
- a*³. Thorax and abdomen covered with greenish or tawny hair.
- b*¹. Hair of thorax yellowish; anterior wing a little over 17 millimeters.
..... *bakeriana* Ckll., ♂.
- b*². Hair of thorax green or greenish.
- c*¹. Anterior wing about 20 millimeters..... *euchlora* Pérez, ♂.
- c*². Anterior wing about 23 millimeters; very large, robust insect.
..... *major* Maidl, ♂.
- a*⁴. Thorax with at least the disk dark, abdomen with not more than first segment covered with light hair.
- d*¹. Thorax with a yellow band in front and behind and first abdominal segment yellow-haired *ghilianii* Gribodo.

- d*². Thorax with a yellow band behind and first abdominal segment yellow; a smaller species than the last.. *philippinensis chlorina* Ckll.
- d*³. Much like the last, but thorax with two patches instead of a band posteriorly; wings dark rosy purple (green in *chlorina*).
philippinensis Smith.
- a*⁵. Thorax dark above; first abdominal segment without light hair.
- e*¹. Very large, anterior wing over 25 millimeters.
- f*¹. Scape enlarged at end.
- g*¹. Wings brilliant green, brassy apically, purple at extreme base; male with anterior legs greatly modified..... *latipes* (Drury).
- g*². Wings purple..... *latipes basioptera* Ckll.
- f*². Scape not enlarged at end; scutellum hairy (nude in *latipes*).
bombiformis Smith.
- e*². Much smaller, anterior wing not nearly 25 millimeters long.
- h*¹. Small species; anterior wing about 14 millimeters long; wings brassy *capitanensis* Ckll.
- h*². Much larger.
- i*¹. Wings brassy and coppery..... *bakeriana* Ckll., ♀.
- i*². Wings green and purplish..... *amauroptera* Pérez.

The species tabulated are before me. I include some particulars in the following list concerning species that I do not possess:

Mesotrichia adusta (Pérez), 1901.

Female. Mindanao. Like *M. nobilis* as to size, and anterior and posterior borders of thorax yellow, but abdomen all black. In *M. nobilis*, *adusta*, and *occipitalis* the abdomen is very hairy, the surface being more or less completely covered. In *M. ghilianii*, which has similar yellow markings, the abdomen is less hairy, so that the surface is visible.

Mesotrichia amauroptera (Pérez), 1901.

PALAWAN, Puerto Princesa (*Baker*), 1 female.

Mesotrichia bakeriana Cockerell, 1914.

LUZON, Laguna, Los Baños, and Mount Maquiling (*Baker*), females. What I suppose to be the male comes from Mount Maquiling; it resembles *M. euchlora*, but is smaller and more tawny, not distinctly green.

Mesotrichia bombiformis (Smith), 1874.

LUZON, Benguet, Baguio; Laguna, Los Baños and Mount Maquiling (*Baker*). A large black insect; the wings purple, apically dark greenish. The hairy scutellum at once distinguishes it from *M. latipes*.

Mesotrichia clavicus (Maidl), 1912.

Luzon and Ceylon, according to Maidl. Male near *volatilis* Smith; hind femora extremely broad. Clypeus reddish yellow.

Mesotrichia confusa (Pérez), 1901.

Reported as *aestuans* (which is African) and *bryorum* (which is Australian). It occurs in Java, Sumatra, etc.; I have no Philippine specimens.

Mesotrichia cuernosensis Cockerell, 1915.

NEGROS (*Baker*).

Mesotrichia dapitanensis Cockerell, 1915.

MINDANAO (*Baker*).

Mesotrichia euchlora (Pérez), 1901.

MINDANAO, Dapitan and Zamboanga (*Baker*), males. Maidl suggests that this is the male of *M. philippinensis*, which seems very probable.

Mesotrichia ghilianii (Gribodo), 1891.

MINDANAO, Iligan (*Baker*).

Mesotrichia major (Maidl), 1912.

LUZON, Tayabas, Malinao (*Baker*). Only the male known.

The type was collected in the Philippines by von Schadenberg in 1890.

Mesotrichia occipitalis (Pérez), 1901.

Female. Mindanao. Differs from *M. adusta* by yellow collar on prothorax, hair of abdomen black, etc.

Mesotrichia philippinensis (Smith), 1854.

LUZON, Tayabas, Malinao (*Baker*).

Mesotrichia philippinensis bilineata (Fries), 1914.

Female. Luzon, Smaller, pleura black-haired, hind margin of thorax with broader, yellower hair band. Length, 15 millimeters. Is this not a distinct species? I have not seen it.

Mesotrichia philippinensis chlorina Cockerell, 1915.

The common form at Los Baños, Luzon.

Mesotrichia sulcifrons (Pérez), 1901.

Female. Palawan. Length, 15 to 16 millimeters; allied to *amauroptera*. Wings only a little reddened, semitransparent. Hair of clypeus black.

Mesotrichia tricolor (Ritsema), 1876.

A species allied to *nobilis*, 27 millimeters long, from the Sula Islands. Its occurrence in the Philippines needs confirmation.

Mesotrichia trifasciata (Gribodo), 1891.

Female, 21 to 22 millimeters long. Mindanao. Very close to *M. nigroplagiata*, but head densely gray-haired. The first abdominal segment is densely yellow-haired.

Mesotrichia vachali (Pérez), 1901.

Male from Palawan. Very near to *M. confusa*; the yellow hair of thorax tinted with red; on abdomen the tint is olivaceous, becoming dusky from the admixture of black hairs. This also is related to *M. euchlora*.

Subgenus *Platynopoda* Westwood

Mesotrichia latipes (Drury), 1773.

NEGROS, Cuernos Mountains (*Baker*), 1 female.

Mesotrichia latipes basilopectera subsp. nov.

Female.—Length, about 28 millimeters; anterior wing, 28; wings very dark, splendid deep purple, the basal half with some bluish green tints. Scape broadened at end; lateral frontal basins extending above lateral ocelli.

PALAWAN, Puerto Princesa (*Baker*, 6298).

Mesotrichia tenuiscapa (Westwood), 1840.

Differs by the simple scape of antennæ, not distinctly enlarged at end. It occurs in India, and I have not seen Philippine specimens.

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