

NEW BEES FROM THE MADEIRA ISLANDS. (HYM.)

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Three of the species now described were collected by Wollaston, the greatest student of the entomology of the Atlantic Islands, and placed in the British Museum as far back as 1858. The fourth was recently obtained by myself in Porto Santo, an island from which no bees had been recorded. All of the species are closely related to European forms. These are the only endemic bees described from Madeira, excepting the beautiful *Anthophora maderae* Sichel, which the British Museum has from Canical, Madeira, April 21-25, 1904. This *Anthophora*, though a very striking form, is so near to the European *A. quinquefasciata* Vill., that authors treat it as a mere variety. The bee-fauna of the Madeira Islands is certainly very limited as Wollaston and Eaton obtained only eleven species, and I found only two more. This fact, and the close relationship of the endemic species to continental ones, indicate clearly that the Madeiran bees are not relics of extreme antiquity, such as many of the snails, but are derived from ancestors which reached the islands in comparatively recent times. Probably they date back to the Pleistocene, but certainly not to the Miocene. During Tertiary time, it would seem that the islands possessed no bees, or if they existed, they have become extinct. Had there been Tertiary bees, we should expect to find a fauna with numerous allied species, as in the Hawaiian Islands.

***Halictus wollastoni*, n. sp.**

Female.—Length about 5.5 mm.; a small species of the subgenus *Chloralictus*, with the head and thorax bluish-green; abdomen very dark brown, with the hind margins of the segments pallid; stigma dusky reddish, wings dusky. The mesothorax may or may not show brassy tints. Very closely allied to *H. morio* Fab., but the head and thorax are larger, the mesothorax dull and closely punctured, the area of metathorax considerably longer. The type is a female.

Male.—Differs from *morio* by the much broader face, the clypeus not snout-like, and not at all pallid apically; mesothorax with a distinct median groove; abdomen broader basally, not at all claviform. The flagellum is clear ferruginous beneath.

Madeira, several of each sex in British Museum, collected by Wollaston. One of the males has a darker stigma, and lacks the median groove of mesothorax; it may possibly be distinct. Some specimens have clearer wings.

Edward Saunders recorded this in 1903 as *Halictus* n. sp., near *morio*. In the Museum, it has stood as *H. unicolor* Brullé, but quite erroneously, as that Canarian insect is entirely black. Brullé described four Canarian species with green thorax, but this seems to agree with none of them.

Andrena maderensis, n. sp.

Female.—Length about 12 mm.; very close to *A. bimaculata* Kirby, but differing thus: clypeus shining, with well separated punctures, smooth down the middle; labrum fringed with shining red hair, and its process pointed; mesothorax posteriorly not distinctly punctate, and without a shining area; stigma with a strong dark margin; nervures fuscous; second submarginal cell very broad; area of metathorax less distinctly defined and less coarsely sculptured; abdomen distinctly greenish, and first two segments without distinct punctures; hair at apex of abdomen dark reddish; scope of hind tibiae redder, blackened posteriorly. The dark chocolate facial foveae are like those of *bimaculata*.

Male.—Similar to *A. bimaculata*, but easily separated by the shining clypeus, dark margined stigma, and other characters as in the female.

Madeira, 4 ♀, 2 ♂, in British Museum (*T. V. Wollaston*). This was recorded by E. Saunders as *A. bimaculata* var?

Andrena portosantana, n. sp.

Female.—Like *A. maderensis*, and differing similarly from *A. bimaculata*, but the thin abdominal hair-bands are white, without any fulvous tint, the apical tuft is black; the wings are clearer, not so red; the hair of front and vertex (but not occiput) is black, and on face dull white, but there is a conspicuous reddish band from eye to eye at level of antennae; the discs of mesothorax and scutellum have pure black hair, that on pleura is long and white; the process of labrum is more rounded, without a distinct point or tubercle; the clypeus, though shining, lacks a distinct smooth median line. The greenish tint of the abdomen is very obscure.

Porto Santo, near the south side of the Pico do Castello, January, 1921, at flowers of *Oxalis cernua* and *Calendula* (*Cockerell*). 3 ♀.

Andrena wollastoni, n. sp.

Female.—Like *A. minutula* Kirby, but area of metathorax dull and granular, with sculpture hardly visible under a lens; mesothorax less punctured; stigma larger and darker.

Male.—Recorded by E. Saunders from the Mount, Funchel (*Eaton*); the specimens are in the British Museum. He remarks that they are apparently *minutula*, a form with the mesonotum rugulose and with very distinct shallow punctures, with the long-haired face characteristic of the first brood.

Madeira; eight in British Museum; the females collected by Wollaston. *A. pusilla* Pérez, from Constantine, Algeria, is very similar, and agrees in the sculpture of the metathorax, but is easily separated by the more shining mesothorax.

A single female, collected by my wife in Porto Santo, is referred to *A. wollastoni*, though it is distinctly smaller and otherwise slightly different. It was on flowers of *Euphorbia*, north of the Villa Baleira, January 16, 1921. Possibly a series would indicate a separate form.