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ON THE MEXICAN BEES OF THE GENUS AUGOCHLORA.

BY T. D. A. COCKERELL, MESILLA, N. M.

The Mexican species of this beautiful genus may be readily separated by the following table :—

- A. Hind spur of hind tibia minutely ciliate or simple. = AUGOCHLORA, s. str.
 - 1. Entirely copper colour, with tints of carmine *flammea*, Sm.
 - 2. Head and thorax dark indigo blue, abdomen black with some green reflections *nigrocyanæa*, Ckll.
 - 3. Head and thorax green 4.
 - 4. Abdomen black, size small *seminigra*, Ckll.
Abdomen crimson *ignita*, Sm.
Abdomen green, without hair-bands 5.
 - 5. Hind margins of abdominal segments broadly black; large blue-green species, with fuscous nervures *Binghami*, n. sp. ♂.
Hind margins of abdominal segments narrowly or not black; smaller, more yellowish-green species 6.
 - 6. Small, wings dusky, nervures fuscous *aurifera*, n. sp.
Medium size, nervures dull testaceous 7.
 - 7. Face broad, emargination of eyes deep *labrosa*, Say.
Face narrow, emargination of eyes shallow *pura*, Say.
- B. Hind spur of hind tibia pectinate. = AUGOCHLOROPSIS,
 - subg. nov. (type, *subignita*).
 - 1. Head and thorax black, abdomen ferruginous *aspasia*, Sm.
Head and thorax green 2.
 - 2. Abdomen crimson *subignita*, Ckll.
Abdomen brassy, with dense short fulvous pubescence beyond basal segment *aurora*, Sm.
Abdomen green, of the same colour as head and thorax, with two narrow bands of yellow pubescence *splendida*, Sm.
- C. Hind spur of hind tibia not yet described.
 - 1. Bright green, agreeing only with *splendida* in having abdominal hair-bands, but these are white *viridana*, Sm.
 - 2. Small piceous species; margin of mesothorax, postscutellum, most of enclosure of metathorax, and bases of second and third abdominal segments shining green *tisiphone*, Gribodo.

A. labrosa is cited from Mexico by its describer, but I have not seen it from that country. Mr. Robertson sends it to me from Illinois. There are two species found in Texas, which may be expected also across the

Mexican border. One of them is what passes for *A. sumptuosa*, Sm., in this country, and indeed agrees with Smith's description; but Col. Bingham finds that a co-type in the British Museum belongs to Section A above (spur minutely ciliate), while our insect belongs to Sect. B. It is just possible that the B. M. co-type is not identical with the true type of *sumptuosa*; if this is not so, our *sumptuosa* will have to be renamed. The other Texan species referred to was recorded by Cresson as *A. lucidula*, Sm., but it differs from that, and is referable to *A. humeralis*, Patton, of which it may perhaps constitute a geographical race. I have several specimens collected by Prof. C. H. T. Townsend at Beeville, Texas, Aug. 29, 1896, on a species of Compositæ. Col. Bingham's studies at the British Museum show that *A. humeralis*, which belongs to Sect. B, cannot be identical with *A. fervida*, Sm., as Robertson has supposed, since that belongs to Sect. A. Also, Patton was wrong in referring *lucidula*, Sm., which belongs to Sect. B, to *viridula*, Sm., which is of Sect. A. I will now describe the two new species indicated above:—

Augochlora Binghami, n. sp. (subg. *Augochlora*, s. str.)—♂. Length about 12 mm., brilliant bluish-green, the face a yellowish green. Face narrowing below, eyes deeply emarginate; sides of face with conspicuous, partly appressed, silky white pubescence; cheeks with long white hairs. Clypeus, supraclypeal area and middle of vertex with sparse, inconspicuous black hairs. Clypeus rather prominent, subcancellate with very large close punctures, its anterior margin and the upper half of the labrum whitish, mandibles wholly dark. Vertex finely and very closely punctured. Antennæ reaching to base of wings, piceous, flagellum obscurely rufescent beneath, last joint conspicuously hooked. Mesothorax shining, with very distinct rather small close punctures, much densest at the sides, where a minute cancellation results. Parapsidal grooves distinct. Prothoracic keel fairly strong. Enclosure of metathorax fairly well defined, irregularly wrinkled, its hind margin gently curved, not angled. Posterior truncation roughened, bounded below at sides by an acute ridge, which ascending rapidly fails. Pubescence of thorax sparse, grayish-white, black and inconspicuous on dorsum. Tegulæ shining piceous, anteriorly whitish, basally green and punctured. Wings smoky-hyaline, apical margin darker, stigma dull testaceous, nervures fuscous, marginal cell minutely appendiculate. Legs green with black tarsi, pubescence short and pale. Abdomen shining, closely punctured, hind margins of segments broadly

purplish-black. No hair-bands, but a very fine glittering pile all over, longer pale hairs at base of first segment, sparse black hairs on dorsum of hindmost segments and at tip. Punctuation of second segment conspicuously closer than that of first. Venter piceous, first three segments with blue reflections. End of third segment with a large dark brown brush of hair, shaped like the tail of a fish; *i. e.* deeply emarginate, the sides diverging and ending in a point.

Hab.—San Rafael, Vera Cruz, March 13, on flowers of plant No. 4, which is papilionaceous (C. H. T. Townsend).

This beautiful species is named after Lt.-Col. Bingham, without whose notes on the British Museum types I should not have attempted this paper.

Augochlora aurifera, n. sp. (subg. *Augochlora*, s. str.)—♀. Length about $7\frac{1}{2}$ mm, green; head and thorax dullish, rather a bluish-green; abdomen shining, a yellowish green, with the hind margins of the segments very narrowly coppery. Face fairly broad, emargination of eyes deep. Pubescence of head and thorax sparse and inconspicuous, dirty whitish, some black hairs on thoracic dorsum; lower part of face in certain lights canescent. Clypeus with close punctures of unequal size, supraclypeal area more finely punctured, vertex coarsely granular. Labrum and margin of clypeus black. Mandibles notched within, stout, rufescent medially. Glossa very long and narrow, coming to a fine point. Antennæ black, flagellum slightly rufescent beneath. Mesothorax very closely, finely, and uniformly punctured. Enclosure of metathorax conspicuously longitudinally, or rather radiately, sulcate. Truncation shining, finely malleate, with a median groove. Tegulæ shining piceous, the margin subhyaline. Wings smoky, stigma dull testaceous, nervures fuscous, marginal cell appendiculate. Legs piceous-black, with brownish pubescence; only the anterior femora show any green. Abdomen shining, with minute, not very close, punctures; pubescence very sparse, no hair-bands. It requires a strong lens to see the abdominal punctures.

Hab.—San Rafael, Vera Cruz, March 9, on flowers of plant No. 6, referred by Dr. Rose to the genus *Melopodium*. The hind legs, base of thorax and abdomen, and ventral surface of abdomen, carry considerable quantities of the orange pollen. Another specimen differs by being much bluer, the punctuation a little coarser, the stigma fuscous; but it is evidently the same species. It is from San Rafael, March 14, on flowers of plant No. 5, a *Vernonia*. Both were collected by Prof. C. H. T. Townsend.