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Notes on Some Bees Collected by Mr. H. L. Viereck
in New Mexico in 1902.

By T. D. A. COCKERELL.

The bees treated herein are from the expedition sent out by the Philadelphia Academy of Natural Sciences in 1902, and are the property of that institution.

Xylocopa californica arizonensis (Cress.) var. a.

♂.—Clypeus with a cream-colored spot; clypeal keel reduced; first abdominal segment with hardly any hair.

Alamogordo, May 30.

Anthophora petrophila (Ckll.).

Alamogordo, May 3, 1 ♀. New to New Mexico. The hair of the vertex and thorax above is white, not mixed with black.

The male, not hitherto described, has been found by Dr. Davidson at or near Los Angeles. In my table of *Micanthophora* (Trans. Am. Ent. Soc., xxxii.) it runs to eight, and runs out because the fifth and sixth abdominal segments appear black, contrasting with the others because lacking the white tomentum. Thus it appears to run close to ♀ *A. flexipes*, but

it is very distinct from male *flexipes* by the normal middle tarsi. The flagellum is bright ferruginous beneath; scape yellow in front; clypeus with a broad yellow band; mandibles strongly bidentate; labrum yellow, with the usual dark spots, its lower edge with a little median notch, and a broad shallow excavation on each side of it; end of abdomen with a pair of short, blunt, light ferruginous teeth, and very short dark lateral spines.

***Anthophora curta* Provancher.**

Alamogordo, May 7 to 15, many of each sex; Highrolls, June 11, ♀s. This excellent series led me to go over the whole of the available material of *curta* and its varieties, with the result of finding that *A. curta peritomae* Ckll. (ENT. NEWS, Oct. 1905) is a perfectly distinct species. In the male of genuine *curta*, there is at the apex of the abdomen a long plate, broad basally, and narrowed apically, where it is truncate. The lateral spines are strongly developed and black. In male *peritomae* the abdomen ends in a pair of short light ferruginous spines, so that with the slender dark lateral spines the abdomen is quadrispinose. In the females, the difference is not so obvious, but the hair on the inner side of the hind basitarsus is very dark brown or almost black in *A. curta*, clear ferruginous in *A. peritomae*. The yellow clypeal band is very broad, and extends practically to the eyes in *A. curta*, but in *A. peritomae* there is usually a wide interval between the ends and the orbital margins, while in the middle it sends a conspicuous pointed process upwards, this being usually absent in *curta*. The marginal cell of *curta* is very short; in *peritomae* it is more produced apically.

A. curta in my collection comes from San Pedro, California, July 10, a male peculiar for having the clypeus all black (Ckll.); Juarez, Mexico, May 12 (Ckll.); Las Cruces, N. M., male, Aug. 23, at flowers of *Wedelia incarnata*, female, May 12, at *Dithyrea wislizeni* (C. H. T. Townsend); Mesilla Park, N. M., males, Aug. 14, at plum flowers, Sept. 17, at *Pectis papposa* (Ckll.). I find no specimens from Northern New Mexico or Colorado.

A. peritomae (typical) comes from Las Cruces, N. M., males at *Solidago canadensis*, end of August (Townsend and Ckll.), females at *Helianthus annuus*, Sept. 21-22 (Ckll.); Mesilla Park, N. M., at flowers of *Isocoma wrightii*, Sept. 11, male (W. Porter); Pecos, July 15 (W. P. Ckll.); San Ignacio, Sept. 1 (Porter and Ckll.); Embudo, September 27, females at *Chrysothamnus* (Ckll.); Rociada, August 20 (W. Porter); Santa Fe, August, male at *Chrysopsis* (Ckll.);—all these localities in New Mexico.

Alamosa, Colorado (Johnson). There is a very evident preference for the yellow-flowered Compositae. The range is from the Transition Zone to the Middle Sonoran, in the latter overlapping that of *curta*.

Two varietal forms of *peritomae* may be recognized:

(a) var. *interspersa*. Male, with much black hair interspersed on vertex and mesothorax. The type is the male from Alamosa, reported in ENT. NEWS, Oct., 1905, p. 272, as *curta*. Another is from Rociada, N. M., at flowers of *Grindelia nuda*, Aug. 8 (W. P. Ckll.). Specimens from Santa Fe, July, and Las Cruces (one of these obtained by Townsend from *Solidago canadensis*, Aug. 27) are intermediate between *interspersa* and typical *peritomae*.

(b) var. *tinctula*. Light hair of vertex and thorax above, fulvous instead of white, in the female, with much black hair interspersed, in the male with few dark hairs. The type of *tinctula* is a ♀ from Rociada, at flowers of *Grindelia nuda*, Aug. 8 (W. P. Cockerell); others are from Las Vegas, at flowers of *Grindelia nuda*, Aug. 10 (S. L. Miza); Las Vegas, *Verbesina exauriculata*, July 31 (Ckll.); and a male from Santa Fé, August, at *Peritoma serrulatum*.

Melissodes tristis Ckll.

Alamogordo, May 13, 1 ♂; Highrolls, May 30-June 14, 4 ♂.

Melissodes pallidicincta Ckll.

Highrolls, May 30, 1 ♀; Cloudcroft, June 16, 1 ♀; Alamogordo, June 7, 1 ♀. This is probably the female of *M. tristis*. Mr. Viereck also took *M. gilensis* Ckll. at Cloudcroft, June 16, ♀.

Nomada ruidosensis Ckll.

Cloudcroft, June 16, 1 ♂. In this specimen the first abdominal segment has a couple of transverse yellow lines (rudiments of a band), and hence in my table of Rocky Mountain *Nomada* (Bull. 94, Colo. Exp. Sta.) it runs to *N. pallidella* Ckll.; but that species has yellow spots on scutellum, and much more yellow on first abdominal segment; the yellow color also is pale, not bright as in *ruidosensis*.

Prosopis basalis Smith.

Cloudcroft, May 27, 1 ♂. A boreal species.

Alamogordo is in the Middle Sonoran Zone, with a desert fauna characteristic of the southwest, some members of it extending to Southern California (as *Anthophora petrophila*) or even the Pacific coast region of Mexico (as *Perdita howardi*). Within a few miles, it is possible to ascend through the Upper Sonoran and Transition into the Canadian Zone, where, as at Cloudcroft, some typically boreal species occur. Thus the region is one of extraordinary interest and would be well suited for the establishment, preferably at a fairly high level, of a small permanent biological station. It may be added that the Sacramento Mountains afford, in addition to well-known boreal and subboreal species, a fine series of endemic forms.