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New North American Bees

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NEW NORTH AMERICAN BEES.

BY T. D. A. COCKERELL, UNIVERSITY OF COLORADO.

Melitta Willardi, n. sp. (Fossil.)

♀.—Thorax and legs apparently black; tegulae pallid; thorax robust, 5 mm. wide; scopa of hind tibia and basitarsus abundant, coarse; no floccus at base of hind legs; hind femur about $2\frac{1}{2}$ mm. long, tibia about 3, basitarsus about 2; middle tibia short and very broad, about 1700 μ long and 850 broad at end. Anterior wings about 9 mm. long, hyaline, stigma and nervures pale brown; stigma long and narrow, but very distinct; venation normal for *Melitta* (e. g., *M. leporina*), except that the upper segment of the basal nervure is shorter; in the description here given all the measurements are in microns.

Marginal cell 2414 long, 629 deep, pointed on costa; stigma 340 deep; three submarginal cells, the first much the longest, the second much the shortest, and receiving the first recurrent nervure at about the end of its first third; length of first submarginal from lower basal to upper apical corner 1717, from lower basal to lower apical corner (not allowing for curve) 1530; length of second submarginal above (on marginal) 408, below (measured in a straight line from corner to corner) 493; second submarginal on first discoidal 187, on third discoidal 340; third submarginal cell on marginal 374, on third discoidal 680, its total length 952, the distance from second recurrent nervure to apical appendiculation 221; third transverse-cubital nervure with its upper part, before the strong curve, nearly straight; total length of first discoidal cell (lower basal to upper apical corner) 2805; outer side of third discoidal practically straight (as in *Andrena*, etc.); basal nervure on first submarginal cell 374, on first discoidal 1241; basal nervure meeting transverso-medial, the latter oblique, the lower end more apicad.

Hab.—Fossil in the Miocene shales of Florissant, Colorado (*Willard Rusk*, 1909). The reference of this insect to *Melitta* seems safe; the hind legs are so preserved that a floccus would be visible on the trochanters were it present; and the form of the stigma, the proportions of the submarginal cells, and the second submarginal receiving the recurrent nervure well before the middle, are all extremely characteristic. *Melitta* is a rather isolated and probably ancient genus, with few living species, all palæarctic except three, two in the north-eastern United States, and one in Lower California.

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Colletes lippiarum, n. sp.

♀.—Length about 11½ mm., anterior wing 7; black, shining, the first two abdominal segments with a strong glaucous-blue tint; pubescence white and black, nowhere at all yellowish except on legs, and here only conspicuously so on inner side of anterior tibiæ and tarsi; head broad, its copious hair white except some black on the vertex; facial foveæ narrow at apex, but rapidly broadening below; *supraclypeal area not punctured, but very finely, longitudinally striate*; clypeus prominent, very shiny, depressed in the middle, irregularly and coarsely, but not densely, striate-punctate; malar space short, more than twice as broad as long; labrum with a deep central groove and weaker lateral ones; mandibles with the apical half ferruginous, inner tooth strong; antennæ black, the flagellum after the first two joints dark reddish-brown below; middle joints of flagellum broader than long; prothoracic spines rather short but evident; hair of thorax rather dull white, black on scutellum and mixed with black on mesothorax, but dense and white in scutello-mesothoracic suture; mesothorax with strong, rather dense punctures; scutellum with large, well-separated punctures; base of metathorax with the usual plicate area, the plicæ numerous and close together, making the pits numerous and narrow, legs ordinary, the middle and hind basitarsi rather broad and flat; hind spur minutely ciliate; tegulæ dark, distinctly reddish; wings hyaline, stigma dark reddish, nervures dark sepia; second submarginal cell very broad, receiving the first recurrent nervure in the middle; abdomen very shiny, with rather narrow, but dense and very conspicuous pure white hair-bands on apices of first four segments; *no trace of a band on base of second*; first segment with very minute punctures, extremely sparse in middle, but rather close at sides; second segment with very fine punctures all over; ventral segments only moderately fringed.

Hab.—La Cueva, Organ Mts., New Mexico, prox. 5,300 feet, at flowers of *Lippia Wrightii*, Sept. 5 (*C. H. T. Townsend*). Related to *C. Texanus* and *C. scopiventer*, but readily known by the total absence of a band at base of second abdominal segment, and other characters. *C. Texanus* and *scopiventer* are spring-flying species.

Megachile megagyna, n. sp.

♀.—Length, 16 mm. or a little over, black, with the general form and appearance of *M. generosa*. Cresson, but very much larger, with conspicuous white hair in the scutello-mesothoracic suture, and yellowish-white

hair on the postscutellum; wings dilute, fuliginous all over. Head large; eyes olive-green; vertex broad, strong and extremely densely punctured, but at sides, behind summits of eyes, sparsely punctured; lateral ocelli considerably nearer to eyes than to hind margin of head; antennæ black; clypeus densely punctured, rather more sparsely in the middle, the punctures throughout conspicuously of different sizes; clypeal margin with a small median tubercle, and a slight dentiform angle some distance on each side of it; mandibles broad, obtusely quadridentate; maxillary palpi small; first joint of labial palpi about as long as second; hair of head and thorax white, with more or less of a yellowish tinge; vertex with extremely scanty short dark hair; mesothorax denuded, dull and densely punctured, with remnants of a pair of anterior lines of white hair, in the manner of allied species; tegulæ very dark reddish-brown; legs with light hair, that on inner side of tarsi pale orange; claws with basal tooth poorly developed; middle tarsi broad and flat, densely covered with pale yellowish hair on outer side; hind basitarsus very broad and flat; abdomen broad, with narrow but conspicuous yellowish-white hair-bands; surface between the bands with very short black hair; when the abdomen is seen from above the black hair projects at sides, but is very short; sixth segment convex, with no differentiated lip, its base with dark hairs like those of the other segments, its apical half with appressed yellowish hair; last ventral segment projecting a little beyond last dorsal; ventral scopa creamy-white, black on last segment.

Hab.—Lee County, Texas, June, 1908 (*Birkmann*). Nearest, I think, to *M. Newelli*, Ckll., but much larger, with the vertex much broader, and the punctures of mesothorax much larger and not so dense. It is easily known from *M. generosa*, Cress., by the larger size and the extreme brevity of the black hair on the abdomen. The dark wings readily separate it from *M. sexdentata*, Rob.

GEOMETRID NOTES—*EUPITHECIA MISERULATA*, GROTE.

BY L. W. SWETT, BOSTON, MASS.

In "Entomological News" (Vol. XIX, July, 1908, page 312), Mr. R. F. Pearsall gives us an excellent article on *Eupithecia miserulata*, and has without doubt established its identity correctly. This summer I have been gathering material from all parts to find out more about this troublesome species, with a fair degree of success. It evidently has more than

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