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Some Bees of the Genus *Megachile* from New Mexico and Colorado

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XX.—Some Bees of the Genus *Megachile* from New Mexico and Colorado. By T. D. A. COCKERELL, Entomologist of the New Mexico Agricultural Experiment Station.

Megachile Wootoni, sp. n.

♂.—Length about 13 millim.

Moderately robust, black, with rather thin yellowish pubescence. Head ordinary, facial quadrangle about square, face up to level of antennæ with dense cream-coloured pubescence; vertex with large close punctures and thinly clothed with long yellowish hair, *with some shorter black ones intermixed*; cheeks broad, very thinly pubescent, lower part with a conspicuous broad transverse band of yellowish-white hair; antennæ wholly black, *last joint broadened and flattened*; mandibles tridentate, more or less elbowed, fringed beneath with shining yellow hair beyond the bend; *a rounded tubercle at base of mandible beneath*, tufted with yellowish hair; mesothorax strongly and closely punctured, with thin erect pubescence, yellowish on anterior half, *mostly black on posterior half*; scutellum and pleura with longer and denser hair, that on the pleura yellowish white; tegulæ black; wings dusky hyaline, broadly darker on apical margin; nervures black, second submarginal cell receiving second recurrent nervure a short distance before its apex; legs black, with yellowish-white hair; four hind femora and tarsi ordinary, the tarsi with fulvous hair on inner side; spurs ferruginous; middle coxæ ordinary; anterior coxæ with a stout tooth, above which at base is a well-defined patch of shining coppery hair; the tooth itself has a pale stripe on one side; *anterior femora pale orange ferruginous, with a black apex and a black stripe on outer side from base to apex*; anterior tibiæ ferruginous within, black without, broadly pale yellowish at apex, *with a broad rounded lamina projecting at right angles*; *anterior tarsi cream-colour*; *first joint hollowed, canoe-shaped*, a little produced at end, but not as far as tip of second joint, its end rounded; the basal two thirds of its inner edge with a narrow fringe of very short fuscous or black hairs; *its outer margin near the base within with some very short black hairs, not forming a distinct patch*, and easily overlooked; its hind margin with the usual long fringe of pale hair, of which the inner hairs are strongly tipped with black; remaining joints of anterior tarsi gradually diminishing, formed as in allied species; abdomen rather short, fairly broad, nearly parallel-

sided; with thin erect pubescence, *yellowish on the first two segments and the first half of the third, beyond that black, with a little yellowish intermixed; no tendency to hair-bands; apical segment with a very broad and deep semicircular emargination; subapical ventral teeth placed in a broad triangle, all large and long, pointed.*

Hab. Ruidoso Creek, New Mexico, 7800 feet, July 6, asleep on a plant doubtfully referred to *Vicia americana* (E. O. Wooton, 57). I had taken this for *M. fortis*, but it is perfectly distinct, and is apparently more allied to *M. melanophæa*, Smith. The real *M. fortis* was taken by Prof. Townsend on the west fork of the Gila River, July 16.

Megachile perihirta, sp. n.

♂.—Length about 12 millim.

Moderately robust, black, with rather thin yellowish pubescence. Head ordinary, facial quadrangle a little longer than broad, slightly narrowed below; face up to level of antennæ with dense cream-coloured pubescence, but the very closely punctured clypeus, though somewhat hidden beneath a long projecting supraclypeal fringe, is itself pubescent only at the sides; vertex with strong close punctures and erect yellowish pubescence, *not mixed with black*; cheeks broad, thinly pubescent, *with two oblique bands of white hair on lower part*; antennæ wholly black, last joint somewhat flattened, *but hardly broadened*; mandibles not elbowed, *lower edge with a conspicuous yellowish-ferruginous stripe; behind base of mandibles is a broad projecting lamella, with a narrow line of minute white pubescence on its anterior face*; mesothorax dull, very closely punctured, with erect pubescence not hiding the surface, *nowhere mixed with black*; about equally dense and of the same yellowish colour on scutellum and pleura; tegulæ piceous, closely punctured; wings dull hyaline, broadly dusky at apex; nervures black, second submarginal cell long, receiving second recurrent nervure almost at its apex; legs black, with pale hair; middle femora incrassate, middle tibiæ arcuate; middle tarsi simple, but first joint very pubescent, and with a long brush of pale hair behind; spurs whitish; hind tarsi within with copious orange-fulvous pubescence; first joint of hind tarsi somewhat broadened; anterior coxæ with a strong spine, at base of which is no bright pubescent patch; anterior femora orange-fulvous, apical two-thirds black on outer surface, and on inner surface having a black stripe; anterior tibiæ orange-fulvous becoming ferruginous, pellucid yellowish white at apex, on outer surface with a

black patch, on inner edge with a black stripe, apex with a small dentiform projection; anterior tarsi cream-colour, somewhat suffused with pale ferruginous, the last joint pale ferruginous; first joint deeply hollowed, but not very broad, not much produced at end, *the margins of the hollow fringed with dark rufous hair*, the hind margin with the usual long pale fringe, the inner hairs of which are black at ends; second to fourth joints of anterior tarsi successively smaller, almost bilaterally symmetrical; *abdomen with very distinct punctures*, broad and short, the lateral margins gently concave, clothed with erect yellowish hair, not concealing the surface, not mixed with black, not at all tending to form bands; apex with a small emargination, on each side of which are two or three irregular teeth; apical ventral segment obtusely angled in the middle, with a small tooth on each side.

Hab. Colorado Springs, Colorado, middle of July (*Chll.* 3571). At the same locality and time I took a form of *M. fidelis*, Cress., a little different from specimens found in New Mexico.

Megachile Casadæ, sp. n

♂.—Length about $13\frac{1}{2}$ millim.

Black, with dull white pubescence. Head ordinary, but rather large; eyes sage-green; facial quadrangle nearly square, slightly longer than broad, hardly at all narrowed below; face with white hair, absent about the middle of the shining well-punctured clypeus; vertex shining, with large punctures, thinly pubescent, some black hairs just behind the ocelli; cheeks quite hairy, sloping away behind eyes; antennæ black (broken at ends in type specimen); mandibles wholly black, no tooth or tubercle behind their base; mesothorax dullish, strongly and closely punctured, thinly clothed with dull white pubescence, some inconspicuous black hairs on hinder part; scutellum quite shiny; tegulæ piceous, with minute punctures; wings dusky hyaline, nervures black, recurrent nervures entering second submarginal cell very near its base and apex; anterior coxæ with a rather short spine, having a light yellowish patch at apex; anterior femora orange-rufous above and below, black behind, with long white hair, and having a broad black stripe from base to apex in front; anterior tibiae orange-fulvous beneath and at apex, also the anterior half (longitudinally) within, otherwise black; a small erect spine at apex; anterior tarsi light yellow, the last joint blackish except at base; the joints are not much modified, but the second to fourth are oblique, emarginate at end; the first has a rather shallow groove, and all are black

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on the inner hind margin behind the long fringe, which is as in the species with highly modified tarsi, and is wholly white viewed from without, but within the hairs are black for their whole length. The four hindmost legs are black; middle tibia with a rufous spine at apex; middle femora quite stout; spurs pale ferruginous; middle tarsi with a very long fringe of white hair behind; hind tarsi with orange-fulvous hairs on inner side; abdomen fairly broad, parallel-sided, punctured, second and third segments more or less depressed at base; first segment broadly excavated, so that the dorsal (as distinguished from the anterior) surface is very small; pubescence very thin, white; the hind margins of the segments with dense white hair-bands, that on the first thin and weak; apex not at all emarginate, irregularly notched on each side of the middle; the three subapical ventral teeth in the same transverse plane, the middle one long and sharp, the lateral ones short, broad, and blunt.

Hab. Las Cruces, New Mexico. One in the collection of the New Mexico Experiment Station, probably collected by Prof. Townsend. It had been studied by Miss J. E. Casad, who left some descriptive notes.

The following table separates the males of *Megachile* with peculiar front tarsi which are found in New Mexico, including also the species from Colorado described above. All have spines on the anterior coxæ.

Abdomen without hair-bands	1.
Abdomen with hair-bands	2.
1. Last joint of antennæ dilated and flattened; subapical ventral teeth of abdomen very large; abdomen with much black hair	<i>Wootoni</i> , sp. n.
Last joint of antennæ not or hardly dilated; subapical ventral teeth of abdomen small; abdomen without black hair	<i>perihirta</i> , sp. n. (Colo.)
2. First joint of anterior tarsi produced to a free apex	3.
First joint of anterior tarsi not produced to a free apex	4.
3. The free apex like the end of a finger; hair-bands of abdomen fulvous	<i>fidelis</i> , Cress.
The free apex not like the end of a finger; hair-bands white	<i>pugnata</i> , Say.
4. Thorax very pubescent, the pubescence more or less ochreous or fulvous	5.
Thorax not very pubescent, the pubescence pale greyish to white	7.
5. Flagellum slender, not crenulated beneath	<i>latimanus</i> , Say.
Flagellum stout, crenulated beneath	6.
6. Pubescence of thorax yellowish grey	<i>comata</i> , Cress.

- Pubescence of thorax fulvous *fortis*, Cress.
7. Anterior legs slender; anterior tarsi with basal joint merely expanded into a flat lamina at the side *occidentalis*, Fox.
- Larger; anterior femora stout, subtriangular in section 8.
8. Anterior femur yellow where it touches tibia; pubescence of face yellowish; a white band of pubescence at scutello-mesothoracic suture *sidalcea*, Ckll.
- Anterior femur rufous where it touches tibia; pubescence of face white; no band of pubescence at scutello-mesothoracic suture *Casadea*, sp. n.

The following are new to the fauna of New Mexico:—

Megachile comata, Cress. 1872.

Tuerto Mountain, near Santa Fé, 8025 feet, Aug. 7, at flowers of *Senecio* (Ckll.).

Megachile pugnata, Say, 1837.

Five males from Santa Fé (Ckll.); one, July 11, at flowers of *Lactuca pulchella*; two at flowers of *Rudbeckia laciniata*, July 27 and Aug. 2; one, July 6; one, July 18.

Megachile latimanus, Say, 1823.

Three at Santa Fé (Ckll.); one ♀, July 25, at flowers of *Sphaeralcea angustifolia*; one ♂, Aug. 1, at flowers of *Cleome serrulata*; one ♂, Aug. 3, inside closed flower of *Argemone platyceras*.

Megachile texana, Cress. 1878.

Ruidoso Creek, 6400 feet, July 8, at flowers of *Pentstemon*, two females (*E. O. Wooton*).

Megachile Townsendiana, sp. n.

♂.—Length about $10\frac{1}{2}$ millim.

Black, with scattered white pubescence. Head large, transversely oval; eyes sage-green; facial quadrangle a little longer than broad, perceptibly narrowed below; face (including clypeus) densely clothed with white hair; vertex strongly punctured, with very sparse white pubescence; cheeks sparsely pubescent above, densely clothed with white hair below; antennæ black, flagellum slender, last joint not broadened; mandibles wholly black, the long hairs on their inferior margin whitish; mesothorax very strongly and

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closely punctured; thoracic dorsum almost nude, the white hairs few and scattered, except at the scutello-mesothoracic suture, where they are dense enough to form a band, and on anterior part of mesothorax, where they form two obscure sublateral longitudinal bands; tegulae testaceous; wings hyaline, nervures dark brown, second submarginal cell receiving first recurrent nervure almost at its extreme base, and second near its end; legs black, with white pubescence, pale orange on inner side of tarsi; spurs whitish; all the legs slender and simple; anterior coxae with the usual stout spines; abdomen short and broad, rather shiny, strongly and closely punctured, hardly at all pubescent, except that the hind margins of the first four segments have dense white hair-bands, the last being continued on to the base of the fifth; sixth segment densely white-pubescent at base, at apex narrowed, produced and emarginate, the outline being like that of the two humps of a camel, but viewed from the side the outline is that of a rose-thorn, the end being curved downwards; beneath, the apex presents an obtuse median prominence and a short tooth on each side, laterad of which is an angle representing an incipient tooth; venter very sparsely pubescent.

Hab. Las Cruces, New Mexico, Aug. 23, 1897, at flowers of *Chrysopsis villosa* in the *Larrea*-zone (C. H. T. Townsend). Another, also from Las Cruces, is only 9 millim. long, but evidently conspecific.

M. Townsendiana by the shape of the apex of the abdomen recalls *M. deflexa*, Cress., from Kansas, but in the latter the tip is not emarginate and the mesothorax and vertex show black hairs.

XXI.—A North-American Freshwater Jellyfish. By EDWARD POTTS*.

ON June 10, 1880, the first-known freshwater jellyfish (*Limnocodium Sowerbii*, Allman and Lankester) was discovered in the Victoria Regia tanks in Regent's Park, London. Near the end of November 1884 a primitive "hydriform organism," from which it was supposed the jellyfish might have been derived, was found in the same tanks and described by Alfred Gibbs Bourne†.

* From 'The American Naturalist,' December 1897, pp. 1032-1035; communicated by the Author.

† 'Proceedings of the Royal Society,' Dec. 11, 1884, vol. xxxviii. p. 9 &c. See also paper by F. A. Parson, Journ. of Queckett Club, 2nd series, vol. ii. 1885-86.