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## Descriptions and Records of Bees - LVII

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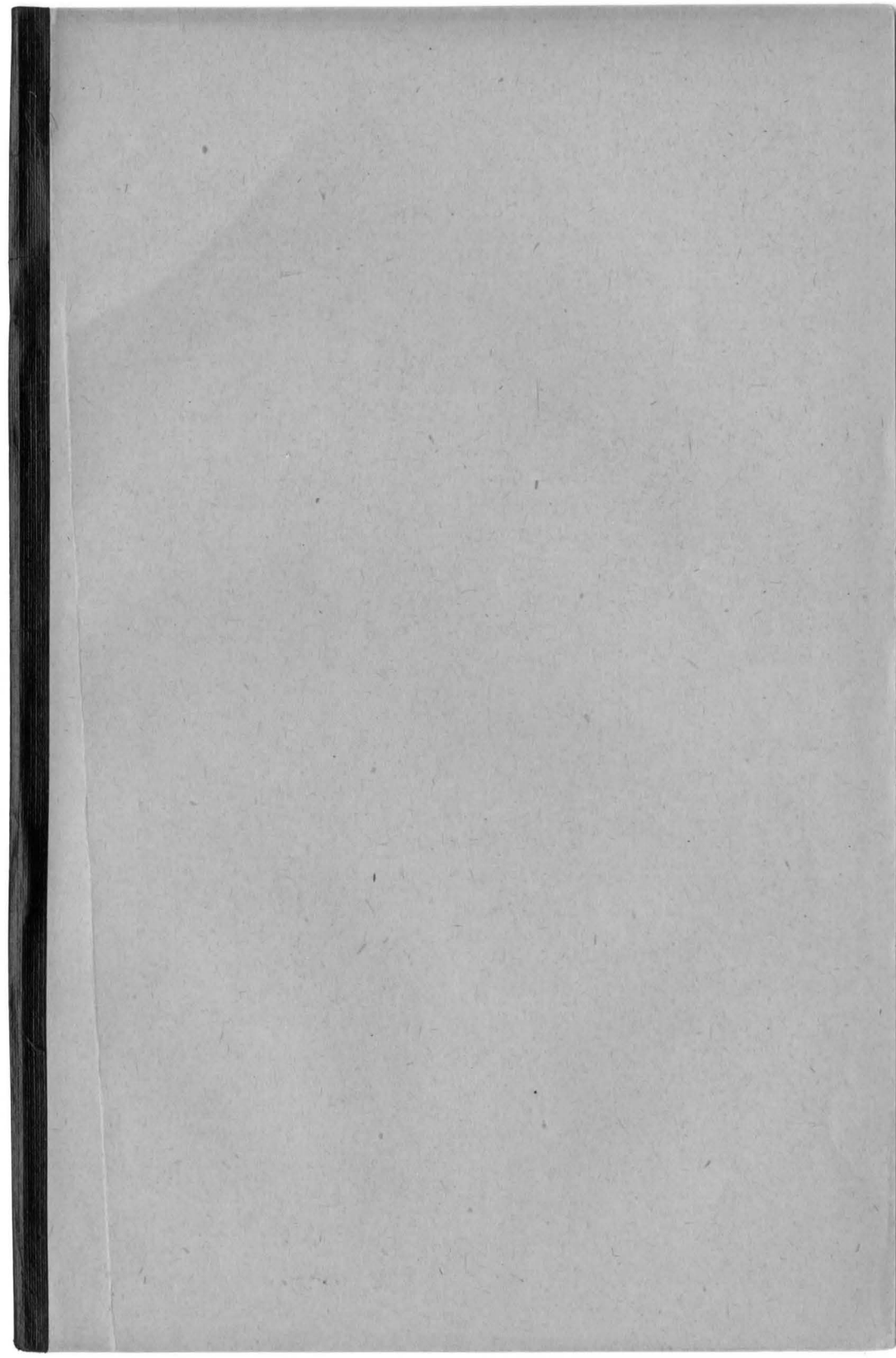
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*Descriptions and Records of Bees.*—LVII.

By T. D. A. COCKERELL, University of Colorado.

*Mesotrichia bakeriana*, sp. n.

♀.—Length about 20 mm., anterior wing  $18\frac{1}{2}$ .

Robust, black, with black hair, that on face inconspicuously mixed with greyish white, that on cheeks wholly black except a few pale hairs behind lower part of eyes. Wings very dark fuliginous, with golden-green and purple tints. Very close to *M. amauroptera* (*Xylocopa amauroptera*, Pérez), but differing in the venation, the lower side of the second s.m. being much more than twice as long as the upper and little shorter than the lower side of the first. Also, the tibial scale or process (large in *amauroptera*) is poorly developed, a slender carina ending in an inconspicuous lamina. The tarsi are not reddish brown apically as in *amauroptera*, and the hair on their inner side is wholly black.

Compared with *M. bombiformis* (*Xylocopa bombiformis*, Sm.) our insect is distinguished by the well-punctured cheeks and the extremely dark wings.

*Hab.* Los Banos, Philippine Is. (C. F. Baker, 1786).

*Nomia nevadensis*, Cresson.

Grossmont, near San Diego, California (C. H. Richardson).

*Triepeolus cressonii*, Robertson.

Quanah, Indian Territory, on *Helianthus*, June 10, 1906 (J. D. Mitchell).

*Crocisa calceata*, Vachal.

Grangezieht, S. Africa, Nov. 30, 1907 (*C. K. Brain*).

This agrees exactly with one collected by Dr. Brauns at Bothaville, Orange Free State, March 10, 1899.

*Dianthidium ehrhorni* (Cockerell).

Grossmont, near San Diego, California (*C. H. Richardson*).

*Dianthidium tegwaniense*, sp. n.

♀.—Length about 7 mm.

Robust, black, marked with lemon-yellow; pubescence scanty, white, ventral scopa glittering creamy white; labrum and mandibles black, mandibles with strong deep oval punctures; clypeus yellow, with the lower margin black, minutely nodulose; a black sutural band extends over upper margin of clypeus and halfway down sides, and connects with a broad, rather bottle-shaped, median black band which divides the supraclypeal yellow into two halves; otherwise the supraclypeal area, as well as sides of face, yellow up to level of antennæ, and the lateral face-marks extending upwards as narrowing bands, which end in a point on orbital margin above middle of front; flagellum rufo-piceous beneath; head and thorax above very densely and strongly punctured; scutellum with a projecting edge, obtusely emarginate; the angular tubercles marked with yellow and a light yellow mark beneath and behind wings, but thorax otherwise black; tegulæ piceous, with a broad light reddish margin, and a yellow spot in front. Wings strongly dusky, b.n. meeting t.-m., second r. n. going beyond second s.m. Legs black at base, but femora otherwise red, the anterior and middle ones with a broad yellow band beneath; tibiæ and basitarsi yellow on outer side, ferruginous on inner, the hind tibiæ clouded with dusky within; hind basitarsi very broad; small joints of tarsi ferruginous; first three abdominal segments black, with broad yellow widely interrupted bands, confined to the lateral thirds or less; band on fourth segment narrowly interrupted; fifth segment yellow except the ferruginous hind margin, sixth segment yellow; venter (beneath the scopa) ferruginous, with narrow dark bands.

*Hab.* Tegwani, S. Africa, Jan. 5, 1909 (*C. K. Brain*).

In Friese's table of *Anthidium* ('Die Bienen Afrikas') this runs close to *A. cordatum* and *A. truncatum*, but is easily distinguished by the markings. *D. tegwaniense* belongs to the subgenus *Anthidiellum*.

*Megachile lachesis nigrolateralis*, subsp. n.

♂.—Agrees with *M. lachesis*, Sm., from Bismarck Archipelago, except as follows:—Hair of sides of face wholly black, but light between antennæ; wings paler, especially the basal two-thirds. It is much smaller than *M. atrata*, Sm.

*Hab.* Los Banos, Philippine Is., 2 ♂ (*Baker*, 1789).

*Panurginus crawfordi*, sp. n.

♂.—Length about 7 mm.

Black, the clypeus (but no lateral face-marks) pale primrose-yellow; anterior tibiæ yellow in front, their tarsi reddish yellow; middle tarsi pale dull reddish, hind tarsi dark; antennæ black; first r. n. joining first s.m. near end.

This has almost exactly the characters of *P. herzi*, Mor., from Siberia, closely resembling *P. montanus*, but differing by the very delicately punctured clypeus, the darker hind legs, the hind basitarsus slender, with the three following joints cordiform, and the sixth ventral segment without hair-patches. *P. herzi*, however, has the abdomen opaque or nearly so, in the manner of *montanus*, while the Japanese species has it brilliantly shining. The mesothorax of our species is very shiny, with widely scattered extremely minute punctures, while in *montanus* it is duller; the antennæ are longer than in *montanus*, and the stigma is darker.

*Hab.* Harima, Japan, April 1912 (*Fukai*). U.S. National Museum.

The *P. montanus* compared was collected by Friese at Airolo, June 29, 1884. This is the first *Panurginus* from Japan. Mr. J. C. Crawford, in transmitting it to me, expressed the opinion that it was new.

*Andrena fukaii*, sp. n.

♀.—Length about  $12\frac{1}{2}$  mm.

Robust, black, the head and thorax with ochraceous hair; head very broad, facial quadrangle much broader than long; front of head with much dull pale brownish-tinted hair, more distinctly fuscous on front and sides of face, quite dark about ocelli, but pale on occiput; mandibles ordinary, red at extreme tip and with a red basal tubercle; malar space short, more than twice as broad as long; process of labrum low, rather narrowly truncate; clypeus very strongly and confluent punctured; facial foveæ moderately broad, seal, brown, not much separated from eye below, where they end

considerably below level of antennæ; antennæ wholly dark, third joint longer than next two combined, but not quite as long as next three; hair of thorax above erect, rather bright ochreous; mesothorax shining, with very strong punctures, which are sparse on disc posteriorly; pleura very densely punctured; area of metathorax triangular, covered with exceedingly large and coarse vermiform rugæ; tegulæ dark red. Wings hyaline, slightly dusky; nervures ferruginous; stigma of moderate size, dark red; b.n. meeting t.-m.; second s.m. quadrate, receiving first r.n. a little beyond middle. Legs black, ordinary; spurs light ferruginous, hind spurs strongly curved; hair of legs mostly pale, but light fulvous or orange-fulvous on inner side of tarsi, middle tibiæ with fuscous hair on outer side, tuft of hair on hind knees dark reddish fuscous; hind tibial scopa creamy white, fuscous above basally. Abdomen shining black, well but not closely punctured, the punctures on first segment large, on the others small; segments with a deep transverse subapical sulcus and the apical margins distinctly elevated; surface of abdomen thinly covered with pale hair (long on first segment); hind margins of second to fourth segments with narrow greyish-white hair-bands, only noticeable at sides on second and third, but entire on fourth; apical fimbria dark reddish fuscous.

*Hab.* Harima, Japan, April 15, 1912 (*Fukai*). U.S. National Museum.

Related to *A. mitsukurii*, Ckll., but distinguished by the paler wings, b.n. meeting t.-m., &c. Only the male of *mitsukurii* is known, but *A. fukaii* is too different to be its female.

In Schmiedeknecht's table of European species it runs to 137, and is then doubtful, because the red tubercle at base of mandibles is fairly well developed; it is, however, not like *A. insolita*. Run beyond, it goes to 191, and is then again doubtful, because the scopa is fuscous at base; but run on to 193 it falls closest to *A. dissidens*, which is quite different. It is quite unlike any European or Asiatic species in my collection.

*Ctenoplectra vagans*, Cockerell.

This was described from the male. Professor Baker sends a female collected on Mt. Makiling, Luzon. It has degenerate lateral ocelli, as in the male, which will readily separate it from *C. chalybea*. The mesothorax and scutellum are minutely rugose, with scattered very feeble punctures. The

apical part of the abdomen beneath is covered with dark ferruginous hair. There are no dentiform processes on the labrum.

*Xylocopa virginica* (Drury).

Garrison, N.Y., 2 ♂ (*Eleth Cattell*).

*Anthophora ursina*, Cresson.

Garrison, N.Y., 2 ♀ (*Eleth Cattell*).

*Anthophora marginata*, Smith.

Rito de los Frijoles, New Mexico, August (*Cockerell*).

*Anthophora vestita*, Smith.

Rosebank Experiment Station, S. Africa, Dec. 9, 1909,  
2 ♀ (*C. K. Brain*).

*Anthophora rufolanata*, Dours.

Milletts Pt., S. Africa, Nov. 27, 1910, in holes in bank  
(*C. K. Brain*).

The two females before me agree perfectly with Dours's description, except that when extended they are fully 12 mm. long, and the wings are distinctly dusky. The species is closely allied to *A. vestita*, but quite distinct.

*Anthophora fallax*, Smith.

Devil's Peak, S. Africa, Dec. 1, 1907, 1 ♂ (*C. K. Brain*).

Very close to *A. circulata*, but, I think, distinct. The flagellum is entirely black. Is not *A. circulata*, var. *obscuriceps*, Fr., the same thing?

*Anthophora griseovestita*, sp. n.

♂.—Length about or nearly 10 mm.

Black, with abundant light greyish-ochreous hair above, black below; hair of vertex black, but of front and occiput light; hair of thorax above strongly mixed with black; eyes light reddish; clypeus (except rather broad black lateral borders, with a lobe-like extension inwards near upper end), a very minute supraclypeal mark, lateral marks filling space between clypeus and eye (but deeply excavated above), labrum (except a spot at each basal corner and four small dentiform tubercles on apical margin), large spot on base of

mandibles, and broad stripe on scape all yellow; flagellum black, very obscurely reddish beneath; third antennal joint about as long as next two combined; tegulæ rufo-testaceous. Wings dusky, nervures dark fuscous; b. n. falling a little short of t.-m.; third s.m. as broad above as below. Hair of legs like that on body, but orange-fulvous on inner side of tarsi, and middle tarsi with a broad brush of black hair on each side of last joint, the whole shaped like a peacock's feather. Hair of abdomen rather dense, coloured like that of rest of insect, but hind margins of segments with dense pallid (not white) hair-bands, the segments of apical half with some black hair between the bands; venter reddish.

*Hab.* Rosebank, S. Africa, on flowers, Dec. 9, 1909 (C. K. Brain).

Related to *A. schultzei*, Friese, but smaller, second s.m. much narrower above, t.-m. falling short of b. n. (going basad of it in *schultzei*), &c. Also related to *A. braunsiana*, Friese, but smaller, black brush on middle tarsus broader, clypeus with less black, sides of thorax without red hair, &c. Also related to *A. vestita*, but somewhat smaller, without red or fulvous hair; abdomen distinctly banded, clypeus with more black, tegulæ much paler. According to Friese's tables the abdomen of *vestita* is without black hair, but in reality the fifth and sixth segments have some black hairs, inconspicuous and nearly hidden by the segments in front.

*Anthophora imitatrix*, Pérez (litt., Nov. 1911).

*Anthophora soror*, Pérez, 1910 (Syria and Russia).—Not *A. soror*, Pér., 1905 (Japan).

*Tetralonia rupicola*, sp. n.

♀.—Length  $10\frac{1}{2}$  mm., width of abdomen scarcely  $4\frac{1}{2}$ .

Black, the small joints of tarsi (but not the basitarsi) ferruginous; head very broad, facial quadrangle broader than long; no yellow or white markings, but lower edge of clypeus obscure reddish; mandibles with a reddish mark near middle; labrum densely covered with ochreous hair; clypeus very densely punctured; hair of head long, white, slightly ochreous behind ocelli; mesothorax dull and rough in front, but on the posterior middle brilliantly shining, with sparse strong punctures; scutellum shining, with small punctures; hair of thorax above light ochreous, at sides and beneath white; tegulæ clear rufo-testaceous. Wings greyish

hyaline, not milky; nervures dark rufo-fuscous; b. n. falling short of t.-m.; femora with white hair, that of tibiæ and tarsi distinctly yellowish, though very pale; light reddish hair on outer side of middle tibiæ; hair on inner side of middle and hind tarsi bright ferruginous; spurs cream-colour. Abdomen rather elongate; hind margins of segments testaceous; first segment with long white hair on basal part; segments 2 to 4 with creamy-white tomentum at base, then a broad black zone (finely punctured and having sparse black hair), and on the apical margin a band of dull white tomentum; fifth segment covered with ochreous tomentum, clear ferruginous on apical middle; sixth with red hair; venter with long pale hair; second ventral segment with a modified basal area, strongly bilobed and finely transversely striate.

*Hab.* Rosebank Experiment Station, S. Africa, on flowers, Dec. 9, 1909, 4 ♀ (*C. K. Brain*).

Closely related to *T. minuticornis*, Friese, but smaller in every way. Also allied apparently to *T. kobrowi*, Friese, but without any pale band on clypeus, which I infer to exist in *kobrowi* from Friese's comparison with *T. dentata*. *T. rupicola* does not especially resemble *T. dentata*, and it would not occur to me to make comparison with that species. Friese says that the mandibles of *kobrowi* are reddish yellow apically, which is not true of *rupicola*. The flagellum of *rupicola* is dark reddish above (black in *kobrowi*) and paler but dull red beneath, the third joint is a little shorter than the next two together. The tarsi of *kobrowi* are red, whereas only the small joints are red in *rupicola*.

The maxillary palpi of *T. rupicola* are short, with the two apical joints small, sometimes looking like one.

*Tetralonia dilecta* (Cresson).

Bloomington, Indiana, May 16, 1 ♂ (*Max Ellis*).

This species ranges unchanged west to Colorado.

*Tetralonia robertsoni*, sp. n.

♀.—Length about or nearly 15 mm.

Black, robust; clypeus entirely black, strongly punctured; third antennal joint a very little longer than the next two together; hair of head, thorax, and basal segment of abdomen very pale ochreous; hair of rest of abdomen black, reddish black at sides of apex; anterior femora with whitish hair, middle femora with a patch of reddish hair beneath at

base, hind femora with mostly pale hair, the apical tuft dusky reddish; tibiae and tarsi with fuscous hair, a conspicuous ochreous patch at apex of anterior ones in front, hair on outer side of middle tibia shining mouse-colour in certain lights, scopa of hind legs black. Wings strongly brownish, first r. n. joining second s.m. more than a third from its apex; apical half of second abdominal segment with distinct though fine punctures.

*Hab.* Washington, D.C. (type locality), May 15 (*Cockerell*); Garrison, N.Y. (*Eleth Cattell*).

This is evidently *Synhalonia atriventris fuscipes*, Robertson, but the name is not available because of *Tetralonia fuscipes*, Morawitz. It is possible, but I now think not probable, that *T. illinoensis* (Rob.) is its male; should this prove to be the case, the name *illinoensis* will have to be used.

*Tetralonia cordleyi orophila*, subsp. n.

♀.—Like *T. cordleyi*, but with abdominal bands broader, that on second segment about as broad at the sides as in the middle; bands on second and third segments each with a small median projection on upper (basal) side.

*Hab.* Boulder, Colorado, June 29 (*T. D. A. Cockerell*).

*Tetralonia chrysophila*, sp. n.

♀.—Like *T. aragalli*, but differing as follows: no distinct smooth area on upper part of clypeus; hair of thorax cream-colour, not fulvous; second s.m. larger; apical plate of abdomen less broadened basally, less triangular; abdominal bands much whiter; fifth segment dark reddish fuscous in middle, white at sides.

*Hab.* Las Vegas, New Mexico, at flowers of *Ribes aureum*, May 9 (*T. D. A. Cockerell*).

I have had this for many years, labelled as a variety of *T. frater* (Cress.).

The following key will serve for the separation of *Tetralonia* females related to *T. chrysophila* and *orophila*:—

- |   |                          |
|---|--------------------------|
| Hind spurs hooked at end; basal half of second abdominal segment covered with greyish-white tomentum, but fuscous tomentum at extreme base, normally covered by first segment ..... | <i>dilecta</i> (Cress.). |
| Hind spurs not hooked .....   | 1.                       |
| 1. Fourth abdominal segment entirely covered with black hair .....  | <i>lycii</i> (Ckll.).    |

- Fourth abdominal segment with some or much pale hair ..... 2.
2. Abdominal bands rather inconspicuous; bands on third and fourth segments narrow, thin or broken in middle ..... *truttæ* (Ckll.).
- Abdominal bands broad and very conspicuous ..... 3.
3. Hair on inner side of hind basitarsi very dark fuscous or brownish black ..... *intrudens* (Cr.).
- Hair on inner side of hind basitarsi clear ferruginous ..... 4.
4. Second abdominal segment entirely beset with pale hair, except the narrow apical margin, and sometimes black hair at extreme base, normally covered by first segment ..... 5.
- Second abdominal segment not entirely beset with black hair, the band conspicuously narrowed at base (laterally) or at apex (in middle), or the whole band narrowed ..... 8.
5. Pale hair of second segment dense all over ..... 6.
- Pale hair of second segment thin on basal part, with a dense white band on apical part ..... 7.
6. Clypeus with a strong median smooth ridge ..... *phacelia*, Ckll.
- Clypeus without such a ridge ..... *douglasiana*, Ckll.
7. Tegulae dark rufo-piceous ..... *virgata* (Ckll.).
- Tegulae clear amber-colour ..... *fowleri* (Ckll.).
8. Hair on fifth abdominal segment purplish black, white only on extreme lateral margins; basal half of second segment black at sides ..... 9.
- Hair on fifth abdominal segment broadly white or pale ochreous laterally, at least on apical half ..... 10.
9. Band on second abdominal segment only about half as broad sublaterally as in middle; upper margins of bands of second and third segments concave laterally.... *cordleyi* (Vier.).
- Band on second abdominal segment as broad sublaterally as in middle; upper margins of bands on second and third segments scarcely concave laterally .... *cordleyi orophila*, Ckll.
10. Larger; anterior wing  $12\frac{1}{2}$  mm. long; tegulae amber-colour ..... *speciosa* (Cress.).
- Smaller; anterior wing less than 11 mm. long ..... 11.
11. Band on second segment relatively narrow, more than basal half of segment black at sides; upper edge of band straight; bands snow-white; clypeus very coarsely and confluent punctured ..... *belfragei* (Cress.).

- Band on second segment not thus narrowed; when (*chrysobotryæ*) second segment is rather broadly black right across basally, bands creamy white, and clypeus less coarsely punctured ..... 12.
12. Hair on thorax above white; bands not yellowish-tinted; band on fourth segment not angulate in basal middle; clypeus with longitudinal ridges, between which are punctures..... *annæ*, Ckll.
- Hair on thorax above pale ochreous, cream-colour, or fulvous; clypeus without such distinct ridges ..... 13.
13. Band on second abdominal segment about twice as broad at sides as in middle; band on fourth segment angulate in apical middle..... 14.
- Band on second abdominal segment about as broad at sides as in middle, except at extreme lateral margins; bands on third and fourth segments narrower and much whiter than in *chrysophila* ..... *chrysobotryæ*, Ckll.
14. Second s.m. receiving first r. n. before beginning of its last third; abdominal bands very pale ochreous, that on second segment invaded by a lobe of black at sides basally ..... *aragalli* (Ckll.).
- Second s.m. receiving first r. n. beyond beginning of its last third; abdominal bands greyish white, that on second segment not invaded by a lobe of black at sides basally ..... *chrysophila*, Ckll.

*Melissodes suffusa*, Cresson.

Falfurrias, Texas, May 18, 1907, on *Helianthus*, 2 ♂ (*A. C. Morgan*).

*Melissodes humilior*, Cockerell.

Rito de los Frijoles, New Mexico, Aug., 1 ♀ (*T. D. A. Cockerell*).

*Xenoglossa pruinosa* (Say).

Santa Fé, New Mexico, Aug. 2 (*T. D. A. Cockerell*).

