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New American Bees

T. D. A. Cockerell

University of Colorado

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Recommended Citation

Cockerell, T. D. A., "New American Bees" (1905). Ca. Paper 277.
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PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

NEW AMERICAN BEES.

BY T. D. A. COCKERELL.

The described bees of North America, including Central America and the West Indies, number nearly 2,000 species, while Europe has upward of 1,800, not counting the Palæarctic portion of Africa. New species are still frequently found in Europe, while in our own country there are vast areas of which the bees are still practically unknown, and it is probably well within the mark to suppose that we have in reality at least 5,000 species. It is not surprising, therefore, that recent collections are found to contain many undescribed forms, some of which are herewith recorded. It is much regretted that in several cases the collectors' data are not more complete, but there is rapid improvement in this respect, and it is hoped that the time will soon come when we shall be supplied with not only precise localities and dates, but flower-visiting records as well. It will be observed that the species most deficient in these respects come from old collections.

***Synhalonia cressoniana* sp. nov.**

Female.—Length a little over 10 mm.; pubescence in general white, but dense and rather lively ochraceous on thorax above, and tinged with the same color on occiput; abdomen shining black (though beset with numerous minute punctures), with four entire, well-defined, rather narrow white hair-bands, occupying the base of the second segment, and the margins of the second to fourth, those on the third and fourth being purer white, and

a little broader; fifth segment with the hair brown-black or very dark chocolate in the middle, white at the sides; sixth with it very dark chocolate; ventral segments 4 and 5 with much short dark red hair about their middle and on hind margin; spurs pale, normal; tegulæ rufous; wings short, clear, nervures ferruginous; hair on inner side of basal joint of hind tarsi ferruginous; facial quadrangle about square; flagellum, except basally, ferruginous beneath. This is one of the *belfragei* group, and is best defined by comparison with other species. It can not be the ♀ of *S. lepida* Cr., because the disc of mesothorax is dull and densely punctured (in *lepida* shining with well-separated punctures, though the anterior part is dull and densely and minutely rugoso-punctate, in complete contrast), and the marginal cell is conspicuously shorter, and more rounded at the end. It has nearly the appearance of *honesta*, so far as regards the thoracic pubescence and abdominal bands; but *honesta*, according to Robertson, is the ♂ of *belfragei*, with which it certainly agrees (differing from *cressoniana*) in having the hind margins of the second and third abdominal segments free from pubescence, the bands not being really marginal. From *S. belfragei* ♀, *cressoniana* differs greatly in its smaller size; in the base of the second abdominal segment having a conspicuous light band (in *belfragei* the base is perfectly black, the second segment having only one band); and in the ferruginous under side of flagellum. From *S. virgata* (*S. belfragei virgata* Ckll.) it differs by its narrower abdomen, with a conspicuous band at base of second segment; the lack of light ventral hair-bands; the rounded apex of marginal cell; the color of the antennæ, etc. From *S. fowleri* Ckll. it differs by the bright ochraceous hair of thorax above; the much redder antennæ; the very distinctly though densely punctured disc of mesothorax (this part in *fowleri* being granular with separated weak punctures); and in having the black parts of the abdomen distinctly punctured and bare, not covered over with black tomentum. The punctuation of the abdomen resembles greatly that of *Melissodes spissa* Cresson.

Habitat.—Texas (no other particulars known); from the Cresson collection.

***Synhalonia fuscotincta* sp. nov.**

Female.—Length about 11 mm.; form and appearance of *S. fowleri* Ckll., though narrower, and easily distinguished by the fact that the hind part of the disc of mesothorax, and the scutellum, are covered with dark fuscous hair. The maxillary palpi are 6-jointed, as is normal in the genus. Abdomen with broad white hair-bands at hind margins of segments 2 to 4, and the fifth segment with a white patch on each side. Flagellum black, with only the faintest reddish tinge beneath near apex; vertex without black hair, but one or two hairs over the ocelli have a fuscous stain; mandibles black; pubescence generally white, but of mesothorax, where not fuscous, stained with ochraceous; tegulæ shining piceous; wings rather short, slightly dusky, nervures black; first recurrent nervure joining second submarginal cell at its end; hair of legs mostly white, that on inner side of basal joint of hind tarsi ferruginous, tuft on hind knees pale smoky;

hair of middle of fifth abdominal segment, and of apex, black, much less white at sides of fifth than in *S. fowleri*. Hind spurs straight and normal. From *S. belfragei* it is known among other things by its much smaller size, and the tint of the white abdominal bands, which have not the peculiar bluish tint of *belfragei*.

Habitat.—Oak Creek Canyon, Arizona, 6,000 feet. August. *F. H. Snow* 1997.

***Synhalonia gillettei snoviana* subsp. nov.**

Male.—Smaller, length about 13 mm., antennæ about 10.5 mm.; tarsi ferruginous, the basal joints very dark; basal joint of hind tarsi slender, scarcely broader than second joint; second submarginal cell much shorter, so that its lower side does not greatly exceed the outer. Resembles *S. lepida* Cr., in having the mesothorax shining and punctured, and the mandibles with a very small yellow spot, but is much larger than *lepida*, and otherwise different.

Habitat.—Clark Co., Kansas, 1,962 feet. June. *F. H. Snow* 1185.

***Synhalonia lippiae semilippiae* subsp. nov.**

Female.—Hair on inner side of basal joint of hind tarsi dark fuscous with a little ferruginous at extreme base (in *lippiae* it is entirely dull ferruginous); maxillary palpi 5-jointed, with three long joints and two small apical joints, these two combined a trifle longer than the third; hair of thorax above more ochraceous, and some of the hair on scutellum even stained with fuscous. The maxillary palpi are those of *Xenoglossodes* rather than of *Synhalonia*, and in my tables the insect runs to *Xenoglossodes ex-currens*, from which it is easily known by the entirely black flagellum, and the patches of white tomentum at the sides of the fifth abdominal segment.

Habitat.—Oak Creek Canyon, Arizona, 6,000 feet. August. *F. H. Snow* 1989.

***Melissodes pecosella* sp. nov.**

Female.—Length slightly over 10 mm.; facial quadrangle broader than long, but not excessively broad; eyes blue-gray; apical part of mandibles with a yellowish stripe; flagellum very dark reddish beneath; hair of head white and abundant, some black hair on vertex; hair of thorax above ochraceous, black on posterior part of mesothorax and disc of scutellum; tegulae black, with ochraceous hair; wings dusky, nervures black or nearly black; hair on basal joint of hind tarsi within black or very dark fuscous, at the apex with a reddish tint; scopa of hind legs white, copious; abdomen with three broad bands just as in *pallidicincta*; the two apical segments covered with black hair, a tuft of white on each extreme side of fifth. In most of its characters it agrees with *M. sphaeralceæ* Ckll., but the abdomen is rather narrower, with broader hair-bands, and without the characteristic shining appearance of *sphaeralceæ*; the hair on inner side of basal joint of hind tarsi is differently colored (ferruginous in *sphaeralceæ*); the black hair

on the thorax does not extend so far forward, and the hind margin of the first abdominal segment is black (broadly yellowish-white in *sphaeralceæ*). It looks like a diminutive *M. pallidicincta*, but has not the broad head of that species. It belongs to the group of *M. intermediella*, *humilior* and *sphaeralceæ*. Compared with *M. humilior* Ckll., and *M. intermediella* Ckll., the abdomen is much narrower, with much broader hair-bands; the antennæ also are much darker.

Habitat.—Pecos, New Mexico. W. P. Cockerell.

• ***Melissodes pecosella verbesinarum* subsp. nov.**

Female.—Rather more robust; hair on inner side of basal joint of hind tarsi more decidedly fuscous; flagellum, after the first two joints, *bright ferruginous beneath*; basal band of second abdominal segment broad and very white; hair of thorax in front paler; eyes pale sea-green. Could very easily be taken for an undersized *pallidicincta*, but the much narrower face at once distinguishes it.

Habitat.—Las Cruces, New Mexico, at flowers of *Verbesina encelioides*. September 22. T. D. A. Cockerell.

***Melissodes nigrosignata pallidesignata* subsp. nov.**

Female.—Segments 2 to 4 of abdomen almost wholly covered with pale ochraceous hair; hair on outer side of middle tarsi all yellowish-white; spurs pallid. Easily known from *M. grindeliæ* by the entirely light hair of the tegulæ. Maxillary palpi as usual in the genus. This has a very distinct appearance, but seems to be only a variety. The characteristic fulvous and black hair of the hind legs is as in the type. There is a general resemblance to *M. suffusa*.

Habitat.—Oak Creek Canyon, Arizona, 6,000 feet. August. F. H. Snow 1985.

***Melissodes hortivagans* sp. nov.**

Male.—Length about 13.5 mm.; black, rather stout; head and thorax with abundant grayish-white pubescence very faintly tinged with ochraceous above, scutellum with some short black hair; eyes pale yellowish-gray; head broad, facial quadrangle not far from square; clypeus (except a small spot on each side), labrum and basal half of mandibles lemon-yellow; apical part of mandibles with a fulvous stripe; antennæ rather long, third joint much longer than second; fourth longest of all, but not as long as the next two together; last joint normal; flagellum wholly bright ferruginous beneath; mesothorax and scutellum shining and well-punctured; tegulæ red, fuscous in front; wings very strongly stained with yellow, stigma ferruginous, nervures dark ferruginous; second submarginal cell much shorter than first or third, oblique but with almost equal sides; first recurrent nervure entering it not much beyond the middle; hair of legs wholly pale, that on inner side of tarsi orange-ferruginous; tarsi ferruginous, as also are the tibiæ at apex and largely on inner side; abdomen with conspicuous but rather narrow entire median (or submedian) white hair-bands on seg-

ments 2 to 4, and more or less of a basal band on 2; hind margin of first segment narrowly dull white; fifth and following segments with black hair, but the hair on the apex of fifth is partly light, producing a rather ill-defined light band; spines at sides of fifth and sixth segments well developed; apical plate dark red, with the apical part black, squarely and deeply notched at sides; hair of venter entirely reddish-fuscous, not very dark. In my tables it runs to *M. communis* Cress., but it is easily separated by its larger size, red tegulæ, much less black hair on thorax, and very yellow wings. I at first thought it might be a form of *M. illinoensis* Rob. (which I know only from description), but it is larger, the venation appears to be different, and the wings are strongly yellow; the ornamentation of the abdomen also appears to be different. It must also resemble *M. comptoides* Rob., but the dark hair on scutellum, the light hair on fifth abdominal segment, and other characters are sufficient for separation. In its build, and the banding of the abdomen, it is very much like *M. blakei* Ckll., ♀, but close comparison shows that it can not well be the male of that species.

Habitat.—Garden City, Kansas. August, 1895. *H. W. Menke*. From the University of Kansas, No. 1062.

***M. hortivagans* var. a.**

A series of five males and one female from Morton Co., Kansas, 3,200 feet (*F. H. Snow* 1787, 435, 433, 432, 431, 1788) must be referred to *M. hortivagans* as a variety. The males agree with *hortivagans*, except that they have the stature of *communis*. The female resembles *communis* (taking the Georgia examples as typical), but differs by being more robust, with a much broader abdomen; the legs with less light hair; and more space between the sides of the black patch on the mesothorax and the tegulæ, owing to the fact that the thorax is broader than in *communis*, while the black patch remains the same size. The tegulæ are dark with a narrow reddish margin. Both sexes were taken in June.

***Melissodes galvestonensis* sp. nov.**

Female.—Length about 11 mm.; hair of face and cheeks white, of occiput faintly yellowish; vertex with black hairs, not very numerous; flagellum, after second joint, rather dark ferruginous beneath; mandibles with a broad rufo-fulvous apical stripe; thorax above with dense, short deep, rufo-fulvous hair, a patch on hind middle of mesothorax, and anterior part of scutellum, exposed, shining but strongly punctured; hair of lower part of pleura black in front, white behind, that of the rest of pleura grayish or dull; tegulæ rufous, dark in front; wings dusky, nervures dark fuscous; hair of legs pale but dull; a sooty patch on outer side of middle tibiæ; hair on inner side of basal joint of hind tarsi, and their tibiæ except at extreme base, bright ferruginous, scopa on outside of these joints white or yellowish-white, in the type filled with bright orange pollen; abdomen with an entire but narrow median band on second segment, and basal bands on 2 and 3, of yellowish tomentum; 4 covered with white tomentum, except a

median apical transverse area; remaining segments with perfectly black hair, but a good deal of long white hair at extreme sides of fifth; hair of venter dark reddish-fuscous, white at sides; first ventral segment with a pair of broad oblique bright orange bands. In all respects very close to *M. tepaneca* Cr., from which it is known by the black hair of lower part of pleura in front, the much darker flagellum, the entirely white hair of face, the white outer scopa of hind legs, etc. It also nearly agrees with *M. comptoides* Rob., but will be easily known from that by the color of the hair on hind tarsi, and other characters.

Male.—Length about 11 mm.; clypeus lemon yellow with a black spot on each side; mandibles with a large yellow basal spot; antennæ long, third joint a little longer than second, flagellum bright ferruginous beneath; hair of cheeks white, of face rather dull white, of occiput very long and yellowish, of vertex without black; hair of thorax above fulvous, of pleura dull yellowish white; tegulæ red, dark basally; second abdominal segment with a narrow median entire white band; third and fourth segments with extremely broad basal bands of white tomentum, from which spring scattered black bristles; hair of fifth and following segments entirely black; legs with fulvous hair, the short hair on inner side of hind tibiæ fuscous; abdomen broader than in *M. tepaneca* or *M. kallstroemiæ*. Easily known from *tepaneca* by the white (not yellowish-stained) bands of third and fourth abdominal segments, the absence of long white hairs at sides of fifth, the dark hair on inner side of hind tibiæ, and the dark apices of wings. By the color of the abdominal bands it resembles *M. kallstroemiæ* var. *phenacoides*, but it is a stouter insect, and the hair of the hind legs is quite differently colored.

Habitat.—Galveston, Texas. May. F. H. Snow 2077 and 2080.

***Emphoropsis rugosissima* sp. nov.**

Female.—Like *E. floridana* (Smith), but a little larger and more robust; wings less darkened, and the second submarginal cell more narrowed above; hair of occiput yellowish-white (black in *floridana*), a tuft of pale hair also on each side of antennæ; clypeus coarsely rugose; extreme sides of fifth abdominal segment with some long glittering white hairs; scopa of hind tarsi shorter and denser, brown-black or very dark purplish-fuscous. The hair of the cheeks and the pleura (except the extreme upper part) is black; that of the thorax above is pale ochraceous, not at all mixed with black.

Habitat.—Nevada (no other particulars known); in coll. Amer. Ent. Society; loaned through Mr. Viereck. The *E. floridana* used for comparison is from Georgia (Cresson collection).

***Xenoglossa utahensis* sp. nov.**

Female.—About 14 mm. long, broad; head, thorax and abdomen entirely rather dark reddish-brown or ferruginous; legs bright ferruginous; pubescence very pale ochraceous, becoming dull white on labrum, cheeks,

lower part of pleura, extreme base of abdomen, etc.; abdomen finely punctured, delicately pruinose, tomentose at extreme lateral base of second segment; the tomentum forming a band across third segment, and covering the following ones, quite ochraceous on the last two; scape clear red (rest of antennæ absent in type); clypeus convex, as closely punctured as possible; ocelli large; mandibles bidentate at apex, and with the apical half outside mainly shining orange; maxillary palpi 6-jointed, the second and third very long, the last three small, the last two very minute; tegulæ light ferruginous; wings rather yellowish, nervures ferruginous. The hind tibia and tarsi, with the black dots, the scopa, etc., are exactly as in *X. pruinosa*, but the hind spur is somewhat longer; the inner tooth of the claws is considerably shorter than in *pruinosa*. The apical plate is broad. Manifestly a *Xenoglossa*, notwithstanding the palpi. It is smaller and much duller colored than *X. patricia*.

Habitat.—Utah (no other particulars known); in the Cresson collection. Loaned through Mr. Viereck.

***Anthophora porterae semiflava* var. nov.**

Male.—Light hair of thorax above, first abdominal segment and occiput yellowish; a long light fulvous tuft behind anterior ocellus. A color variety only, but quite a striking one.

Habitat.—Fort Collins, Colorado. May 28, 1904. S. A. Johnson.

***Diandrena nothocalaidis* sp. nov.**

Male.—Length, 8 mm.; head, thorax and abdomen olive-green; legs, antennæ and mandibles black; pubescence long and erect, pale ochraceous dorsally, white on pleura, cheeks and face except at sides, where it is black; a little tuft of black hair above the top of each eye; head large, facial quadrangle much broader than long; cheeks broad; tegulæ shining black; stigma and nervures dull ferruginous, the latter quite light; base of metathorax slightly longitudinally wrinkled. In all respects very close to *D. chalybæa* (Cress.), from the Pacific coast region; and Mr. Viereck suggests that it may be a race of that insect. As the locality is so far from that of *chalybæa*, and my quite considerable series is constant, I treat it as a distinct species. On May 17 my wife took two females, one at flowers of *Nothocalais*, the other at *Antennaria*. The former is dark bluish-green (the abdomen bluer than the thorax), the latter dark olive-green; but they are manifestly conspecific. Length, just over 9 mm., differing from *D. chalybæa* by having the hair of the head all black, except that on the occiput, which is partly pale, with a reddish tint; flagellum entirely black; hair of legs black or sooty; fourth abdominal segment with a rather distinct pale and slightly reddish hair-band; apical fimbria dilute black. The process of labrum is emarginate, and the black facial foveæ extend downwards only to the level of the antennæ, or an almost imperceptible distance beyond.

Habitat.—Boulder, Colorado, numerous at flowers of *Nothocalais*, May 3 and some days after. T. D. A. and W. P. Cockerell.

***Triepeolus hopkinsi* sp. nov.**

Male.—Length, about 8.5 mm.; black with pale grayish-creamy markings, hair of face white; eyes light greenish-yellow; mandibles reddish in middle; labrum dark reddish; antennæ black, only the third joint red beneath; stripes on anterior part of mesothorax not joined by pubescence; tegulæ deep coppery-red; scutellum strongly bilobed; lateral teeth black, sharp and rather large; wings a little dusky, nervures piceous; legs (except coxæ) entirely red, spurs red; hair on inner side of basal joint of hind tarsi light orange; abdomen obconical not at all globose, with six uniform entire bands of tomentum; black area on first segment a transverse band, on second pointed laterally; both the elevated ventral fringes entirely creamy-white. Close to *T. occidentalis* Cr., but distinguished by its smaller size, the color of the spurs, the narrow apical plate of the abdomen, and the anterior process of pubescence on sides of second abdominal segment large and directed antero-mesad, in the manner of *T. callopus*, only it is broader than in that insect. The lower part of the pleura, as in *occidentalis*, is extremely densely punctured, but it is only partly bare of pubescence. In many respects it resembles *T. isocomæ* Ckll., but it is easily distinguished by the color of the pubescence of the hind tarsi, the seminude lower part of pleura, etc. It also much resembles *T. callopus* Ckll., and I should think it might be the undescribed male of that insect, were it not for the different color of the spurs, and the much more developed lateral teeth of the scutellum.

Habitat.—Grand Canyon of the Colorado, Arizona, August 3, 1904. (Webb). Received from Mr. Viereck, to whom it has been returned. It is named after Professor Hopkins, who sent it to Mr. Viereck, and who has done good work in the region of the Grand Canyon.