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NEW RECORDS OF BEES

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BEES AT FLOWERS OF *Gilia calcaria* JONES

At the Ten Sleep Ranch, near Elbert, Colorado, altitude about 6700 feet, on June 3, 1934, Mr. J. D. Figgins collected a series of bees at flowers of *Gilia calcaria*. Although the flowers are inconspicuous, they are very attractive to bees, as the following list shows.

Halictus trizonatus Cresson. 7 females. All have the bands of abdomen white, instead of fulvescent, as is usual in the species. The recently described *H. athabascensis* Sandhouse is closely allied, but is easily separated by the shorter, more coarsely sculptured area of meta-thorax in the female. [Paratype from Kaslo, B. C. (Dyar) compared.]

Agapostemon virescens (Fabricius). Two females.

Monumetha albifrons (Kirby). Two males.

Anthidium dentipygum (Swenk). One female.

Anthidium astragali Swenk. One male. All the tibiae have a broad yellow stripe on outer side, but in another male, taken at the same time and place, the stripe on hind tibiae is reduced to a mark at either end. The thorax above has ferruginous hair, and the tegulae have a large black spot surrounded by yellow.

Anthidium tenuiflorae Cockerell. One male. A variety with hair on head and thorax above bright ferruginous. It is readily known from *A. astragali* by the black scape with a yellow apical spot, the tegulae yellow in front and black behind (the yellow not enclosing a spot), and the tibiae black on outer side, with a small pale basal mark.

Megachile wootoni calogaster Cockerell. Two males.

Megachile montivaga Cresson. One male.

Megachile onobrychidis Cockerell. Three males. Some years ago I concluded that *M. onobrychidis* might be considered a race or variety of *M. perbrevis* Cresson. Professor T. B. Mitchell now informs me that he has examined the type of *M. perbrevis* and finds it identical with *M. brevis*. He is recognizing *onobrychidis* as a western variety of *M. brevis*.

Say, and has seen it from California, British Columbia, and east as far as Nebraska, Colorado, and Texas.

Coelioxys ribis Cockerell. Two males.

Alcidamea producta Cresson. One female.

Osmia bruneri Cockerell. One female.

***Osmia giliarum* Cockerell**

FEMALE.—Length, 8 mm.; robust, head ordinary, with normal clypeus; head and thorax glaucous green, densely punctured, the vertex, and mesothorax on disc, shining between punctures, the punctures of vertex coarser than those of mesothorax; hair of head and thorax dorsally white, without any black intermixed, of pleura entirely black, but white at sides of metathorax; face with long coarse black hair, but mixed with white on upper part, or practically all black; no orange hair below clypeus; face broad; mandibles tridentate; clypeus and sides of face dark blue, densely punctured, apical margin of clypeus shining; antennae black, or the flagellum very faintly reddish beneath; a groove, but no smooth band, down front; area of metathorax dull, bluish, shining at sides posteriorly, contrasting with the green postscutellum; tegulae shining green anteriorly, but the posterior half black; wings strongly brownish, but with no marked cloud in marginal cell; basal nervure meeting nervulus; second cubital cell long, receiving first recurrent nervure far from base, the second somewhat nearer apex; second cubital a little broader on marginal than first; legs entirely black, with black hair, dense and seal brown on inner side of front tarsi; spurs black; abdomen short and broad, shining, with entirely black ventral scopa; above, the hair is white on first tergite, on second white, but thin and short, only noticeable in side view, on the others black, but short; smooth margins of tergites broad, steel blue; second tergite finely punctured, but conspicuously shining.

Five females, three from *Gilia*. In my table (1928) this runs to 71, differing from *O. hypoleuca* by the wholly black hair of pleura. Carried beyond, it goes to *O. grindeliae*, which differs by the dull second tergite and rather narrow abdomen. In the Sandhouse tables to Californian and Canadian species it also runs to the vicinity of *O. grindeliae*, differing by the green mesothorax, and basal nervure meeting nervulus. The shining second tergite is the best character, and is very distinctive.

***Osmia figginsi*, new species**

MALE.—Length about or slightly over 8 mm.; head and thorax yellowish green, with very abundant long wholly white hair, shining silvery on face; face narrow; eyes gray; mandibles bidentate; vertex densely punctured and dull; antennae long, entirely black, simple; mesothorax densely punctured, shining between the close punctures on posterior disc; area and posterior face of metathorax dull, bluish green; tegulae green, black on outer side; wings hyaline, not evidently brownish; basal nervure meeting nervulus; second cubital cell receiving recurrent nervures far from base and apex, the distances about equal; legs strongly metallic, but the front femora and tibiae shining black in front; hair of legs white, brownish on inner side of tarsi;

last joint of hind tarsi dusky red; middle tarsi simple; hind basitarsi slender, not toothed; abdomen shining, mostly steel blue, but greener toward base, and the first tergite yellowish green; smooth margins of tergites rather narrow; first tergite with long white hair, the others with scanty short white hair; sixth tergite with a small but deep notch, seventh bidentate; venter simple. One male. In my key (1928) this falls with *O. pulsatillae* Cockerell, which has dark hairs intermixed on thorax above. It is also very like *O. wheeleri* Cockerell, but readily separated by the clear green color of the legs and the much smaller and narrower apical bidentate process of abdomen. The mesonotum posteriorly is very densely punctured, not shining as in *O. wheeleri*.

In the Sandhouse table of Californian species it runs out at 15, having the sixth tergite notched and the hind basitarsi simple. In the Sandhouse table of Canadian species it runs out next to *O. coerulescens* (Linnaeus), but the pubescence is not fulvous.

A *Melissodes* NEW TO COLORADO

Melissodes bimaculata Lepeletier

At Boulder, in the immediate vicinity of the University, on July 27, 1934, Mr. Maurice James collected a female *M. bimaculata*. This species is so conspicuous and easily recognized that it is hard to believe that it has been a member of our fauna during the past years of collecting. We know little or nothing concerning the migrations of bees, but as the records become more complete and accurate it may well be that evidence concerning such movements will be forthcoming.

Osmia FROM CALIFORNIA

Osmia regulina Cockerell

FEMALE.—Herkey Creek, California, June 24, 1934 (Cockerell). It was at flowers of *Lupinus*. I submitted the plant to Miss Alice Eastwood, who writes: "It is one of the many varieties of *L. bicolor* Lindley; it may be *L. bicolor microphyllus*, which in Southern California is erroneously called *L. micranthus*." In the table of California *Osmia* by Miss Sandhouse this does not run well, because she says "femora obscurely metallic." They are strongly metallic.

Osmia celsa Sandhouse

FEMALE.—Mountain Home Creek, San Bernardino Mts., California, June 17, 1934, at flowers of *Dicentra chrysantha* (Cockerell). Big Pines, California, at flowers of *Phacelia heterophylla*, July 2 (Cockerell). The amount of white hair varies, but it is entirely black on the face. The species is extremely close to *O. pogonigera* Cockerell, but the face appears more shining.

***Osmia pinorum*, new species**

FEMALE.—Length about 7.3 mm., anterior wing 6.2; robust, with very broad abdomen; head and thorax dark bluish green, steel blue at sides of face; hair, including ventral scopa, mainly black, long and black on face, thin, with white and black mixed, on front and vertex, entirely clear white on dorsum of thorax, white on tubercles, white on metathorax except at extreme sides; abdomen with long white hair on first tergite; first three tergites with very thin bands of rather long white hairs; hair of legs mainly black, but light on front tarsi; antennae black, the flagellum very obscurely reddish beneath; tegulae with the anterior half green; wings brownish hyaline, basal nervure meeting nervulus; second cubital cell very long, receiving first recurrent nervure far from base, and second much nearer apex; hind basitarsi very stout. Clypeus normal, strongly convex, very densely punctured, in middle blackish, turning to yellowish green above, at sides bluish; front dull, very densely punctured; vertex behind ocelli yellowish green, glistening between the dense punctures; mesothorax dull, extremely finely and densely punctured, scutellum moderately shining in middle; area of metathorax bluish green, the basal part dull, the apical part shining; abdomen highly polished, greenish, with the depressed apical margins of tergites broad, minutely sculptured, more bluish. Mandibles very broad, strongly tridentate. Big Pines, California, July 2 (Cockerell).

In my table, and the table of Californian species by Miss Sandhouse, this runs exactly to *O. grindeliae* Cockerell, from which it differs at once by the polished second tergite. Herein it more approaches *O. giliarum* Cockerell, differing by the white hair bands on abdomen.

O. pinorum is in most respects very like *O. liogastra* Cockerell, from which it is easily distinguished by the long coarse black hair on face, and the much stouter hind basitarsi.

BEES AT FLOWERS OF *Convolvulus hermannioides* A. GRAY

Mr. H. B. Parks sends a series of small bees collected in the vicinity of San Antonio, Texas, at flowers of *Convolvulus hermannioides*.

Ancyllosceles maculifera Cockerell. 13 males, 3 females. The males all differ from the holotype in having the labrum entirely black, but otherwise they agree. The female is new. In my key 1923, Proc. Calif. Acad. Sci., XII, p. 84, it runs as follows:

- 1.—Antennae black, the flagellum obscurely reddish beneath. *melanostoma* Cockerell.
Flagellum distinctly red beneath. 2.
- 2.—Scape black; red of flagellum dusky; clypeus shining, very finely striate and punctured. *maculifera* Cockerell.
Scape red; red of flagellum very bright; clypeus much more coarsely sculptured. 3.
- 3.—Ocelli red; clypeus dull *globulifera* (Cockerell).
Ocelli white; clypeus glistening *armata* Smith.

The female might be thought a form of *A. melanostoma*, but the male shows that it is distinct. Mr. Parks writes:

"*Convolvulus hermannioides* is a small morning-glory having a white flower about an inch in diameter. When the flower opens it is pure white; after pollination occurs, the tube and centre of the disc turn blood red. I have found *A. maculifera* on this morning-glory wherever I have found the plant, and on no other flower."

Exomalopsis (Anthophorula) compactula (Cockerell).—Numerous specimens of both sexes. The male has the clypeus, supraclypeal mark, labrum, and greater part of mandibles light yellow. The flagellum is thick, light orange-ferruginous, each joint with a raised black mark above, and the last joint broadly black above at end. The scape is mainly black, or extensively marked with yellow. (The male of *E. coquilletti* Ashmead has a much longer, slender, quite different flagellum.)

This species exists in two forms:

(a). *E. compactula*, typical form.—Anterior wings with only two cubital cells, the second intercubitus lacking; apex of wing with a distinct dusky cloud; scape of male with a large yellow spot on apical half, and usually a line extending from this toward the base. Type from Mesilla Valley, New Mexico. Both sexes, with red tegulae, from Brownsville, Texas (Snow). Four of each sex taken by Mr. Parks at *Convolvulus*.

(b). Variety **completa**, new variety.—Anterior wings with three cubital cells, the first recurrent nervure joining apical corner of second cubital; no distinct cloud at apex; scape of male black, with at most a rather obscure pale mark near apex. Organ Mountains, New Mexico. Four females and three males taken by Mr. Parks at *Convolvulus*. The type of the variety is a male from near San Antonio.

The two forms appear to have the same distribution and, notwithstanding the differences, seem to belong to a single species.

The remaining species are represented by only one to three specimens each, and probably have no special connection with the *Convolvulus*.

Exomalopsis (Anthophorula) morgani Cockerell.—Two males, one female. This species was described from the female, taken at Falfurrias, but the males before me evidently belong to it. The supraclypeal area is shining black; the clypeus and labrum are lemon yellow; mandibles black basally, with the apical half obscurely reddish. Scape black; flagellum dull red beneath except at base. The antennae are simple and only moderately long; they differ little from those of the female. This male is near to *E. bruneri* Crawford, but rather smaller, and the abdomen not shaggy with long hairs, the wings grayish and the stigma dusky.

Melissodes agilis Cresson, variety **parksii**, new variety.—A very small male, with very long antennae, the flagellum light ferruginous

below, dusky reddish above; eyes very dark brown; clypeus, labrum, and large mark on mandibles pale lemon yellow; hair of head and thorax abundant, entirely white; wings slightly milky, but nervures dark; second cubital cell broad, parallel-sided, receiving recurrent nervure a little beyond the middle; tergites with hyaline margins, and dense slightly ochreous hair-bands; subapical lateral teeth triangular. The anterior wings are 5 mm. long, the flagellum of antenna 7 mm.; third antennal joint short, but longer than second; knees, tibiae at end, and tarsi except basally, red.

Taken May 17. It is very possibly a distinct species, and if not, it could about as well be regarded as a race of *M. pimella* Cockerell, 1906, described from Arizona.

***Nomada pasitura*, new species**

FEMALE.—Length about 5.7 mm., anterior wing 4.4; head and thorax shining black, without yellow markings, but lower margin of clypeus, labrum, and mandibles dark red, and tubercles red; face, sides of front, and cheeks posteriorly, with silvery-white hair; head very broad, facial quadrangle broader than long; upper part of clypeus dull and finely punctured, lower part polished; mandibles simple; third antennal joint short, but longer than second or fourth; scape black, with a red spot at end; flagellum thick, not very long, black; eyes dark slate-color; mesothorax and scutellum shining, but well punctured; pleura crossed by a very broad band of dense silvery hair; white hair at each side of upper border of prothorax, at anterior corners of scutellum (which is swollen but not at all bigibbous), forming a transverse band at each side of lower part of scutellum, on postscutellum, and on posterior face of metathorax except in middle; metathorax behind with a median groove; tegulae bright apricot-color; wings hyaline, with a dusky cloud in end of marginal cell, and a dusky spot at apex of wing; stigma rather small, reddish, nervures fuscous; basal nervure meeting nervulus; second and third cubital cells subequal, higher than broad, receiving recurrent nervures some distance from end; legs bright ferruginous, with white hair, all the tibiae with a blackish patch on outer side; hind femora and tibiae stout; spurs black; abdomen shining, bright ferruginous, the apical portion suffusedly blackish; some white hair at sides of first tergite, a large pure white patch at each side of second, the others with broadly interrupted white bands; apical plate broad, truncate, entire, covered with fine silvery hair; venter red, in lateral view showing silver-white hair.

One male, taken May 20, 1934. I suspect that it is a parasite of *Exomalopsis compactula*. It is a remarkable species, the abdomen resembling that of *Pasites*. In general appearance, it suggests *N. grindeliae* Cockerell and *N. heleniella* Cockerell, but these have the abdomen red only in the female.

AN EPEOLINE SUPPOSED TO BE PARASITIC ON *Nomia****Triepeolus bardus* (Cresson)**

Mr. H. B. Parks sends a series of 8 ♀ and 2 ♂ *Triepeolus*, with a note that they were taken under circumstances strongly suggesting that they may be parasitic on *Nomia*. They were at flowers of *Ximenesia encelioides* (presumably the form *exauriculata*), Wilson County, Texas, Oct. 22, 1934. One male is *T. concavus* (Cresson), but all the others are *T. bardus* (Cresson), which apparently must be local in Texas, as Brues (Entom. News, 1903, p. 82) did not find it. The females average somewhat larger than the type and show color variations as follows:

(a). Scutellum and axillae red, as also are labrum, mandibles, two large marks on apex of clypeus, scape and two following antennal joints, tubercles, anterior corners of mesothorax, large transverse mark on mesopleura, pygidial plate, and legs.

(b). Scutellum with two red spots, axillar spines red; mark on pleura and red at corners of mesothorax reduced.

(c). Scutellum, axillae, and mesothorax all black; no red mark on pleura.

The legs also vary, often having much black on the femora.

The male is similar to the female; scutellum, axillae, mesothorax, and pleura all black; scape black, a little red at each end, but third antennal joint with a large bright red area in front.

In all, the wings are dark fuliginous.

The species is related to *T. simplex* Robertson, but quite distinct.

A BEE VISITING FLOWERS OF *Parosela nana* (TORREY)

This species was collected near San Antonio, Texas, by Mr. H. B. Parks, who writes that he has found only the pair described.

***Xenoglossodes habrocoma*, new species**

MALE (type).—Length about 9 mm.; black, with the small joints of tarsi red; clypeus black, with a broad yellow apical band; labrum and large spot on mandibles also very pale yellow; antennae very long, reaching to third abdominal tergite, black, the flagellum faintly brownish beneath; scape shining, extremely short; third antennal joint short; facial quadrangle about square; eyes green; clypeus, labrum, and lower part of cheeks with pure white hair; that on upper part of face and on front somewhat grayish; head and thorax above with long white hair, and no dark intermixed; mesothorax shining, finely punctured, scutellum dullish, more closely punctured; tegulae light brown; wings hyaline, with dark nervures; basal nervure falling far short of nervulus; second cubital cell broad, receiving recurrent nervure a little beyond middle; legs with white hair, pale ferruginous on inner side of tarsi and of front tibiae; abdomen dullish, closely punctured, the margins of the tergites brown; the abdomen is thinly covered with very short white hair, and the margins of second and following tergites have rather weak bands.

FEMALE.—Length about 9.5 mm.; more robust, with short antennae, the flagellum dusky red beneath except at base; eyes blue-green; facial quadrangle broader

than long; clypeus and labrum black, but the latter appearing light because densely covered with pale hair; mandibles dark reddish, black at apex; hair of head and thorax above conspicuously stained with brown; front and middle tibiae with reddish hair at apex; abdomen broad, thinly covered with fine white tomentum, the middle of fifth and sixth tergites with dark chocolate; venter with short red hair, bright at apex.

One of each sex, taken May 20, 1934. The female resembles *X. albata* (Cresson), from which it is best distinguished by the dark hair at end of abdomen. The male differs at once from *X. albata* by the face markings. It may be worth while to note that *Dianthidium profugum* Cockerell, 1923, said to be from "*Dahlia spinosa*," was really from *Parosela* (or *Dalea*) *spinosa*.