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## Descriptions and Records of Bees - XLV

T. D. A. Cockerell  
*University of Colorado*

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J. H. Frierson

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Descriptions and Records of Bees. - XLV.  
T. W. A. Cockerell

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*B. lateralis wilmatiae* n. n. n.

*P. guatemalensis* sp. n.

Descriptions and Records of Bees.—XLV.

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

*Given specific rank by  
Franklin.*

*Bombus lateralis wilmattæ*, subsp. n.

Worker.—Hair of head black or with a little pale on front; hair of thorax very pale yellow, with a broad black band between wings; hair of abdomen pale yellow on first dorsal segment, middle half of second, and a small elongate triangle of yellow (sometimes nearly obsolete) on middle of third; the apex of the little triangle points towards the second segment, the yellow of which is emarginate in the middle. Compared with a worker *lateralis* from Costa Rica (*Bruner*) our insect averages distinctly smaller (length about 13 mm.); the yellow hair is paler and includes the anterior and posterior parts of thorax above; the ocelli are distinctly smaller, and the malar space is perhaps a trifle shorter. The brownish wings are the same.

*Hab.* Antigua, Guatemala (type locality), six (*W. P. Cockerell*); Guatemala City, Guatemala, four (*W. P. Cockerell*).

The original *B. lateralis*, Sm., was described from the mountains of Guatemala, at a higher altitude than the localities of *wilmattæ*. I think it is probable that the difference is only racial, the form from the higher altitudes being more melanic. It is the Guatemala City form in which the yellow triangle on the third segment is evanescent.

*Psithyrus guatemalensis*, sp. n.

*o.s.  
Franklin.*

♂.—Length about 17 mm.; anterior wing  $11\frac{1}{2}$ .

Black, with the elongate obconical abdomen; malar space broader than long; antennæ black, the flagellum rather thick, its joints not in the least arcuate; hair of head long and black, a little pale on lower part of front, that on top of head behind ocelli entirely very pale ochreous, but that on cheeks black; hair of thorax long and loose, very pale ochreous, a moderate amount of black on posterior middle of mesothorax and middle of scutellum, hair of hind part of pleura (especially a tuft beneath wings) and of metathorax black; tegulæ with a rufous spot posteriorly. Wings dusky, strongly reddish. Legs with black hair, that on inner side of tarsi dark red except at base; hind tibiæ slender, convex; hind basitarsi hardly as broad as tibiæ. Abdomen shining, with abundant black hair, but a large pale ochreous tuft at

each side of first segment, and small yellowish-white tufts on sides of segments 3 to 5.

Distinguished from the North-American species by the colours of the pubescence; also as follows:—Compared with *P. tricolor*, Franklin, it is rather less robust, and the hair of the abdomen is considerably shorter; the wings are much redder; malar space shorter (its length perhaps a trifle greater than width of mandibles at base, but in *tricolor* much greater); mandibles much more slender; third antennal joint shorter; hair of hind tibiæ and basitarsi very much shorter, mostly not longer than half diameter of leg. (The male of the European *P. quadricolor*, Lep., has even shorter hair on hind basitarsus, but long hair on the tibia. The male of the European *P. campestris* (Panz.) has the hair on hind tibia and tarsus practically as in *P. guatemalensis*.)

*Hab.* Guatemala City, Guatemala (*W. P. Cockerell*).

The first *Psithyrus* from Central America.

*Anthophora usticauda*, sp. n.

♀.—Length about  $10\frac{1}{2}$  mm.

Black; tarsi reddish at apex; eyes green; antennæ black; clypeus with a rather broad, subapical, transverse, yellow band, interrupted in middle; labrum densely and strongly punctured, yellow except narrow apical margin and a large spot at each upper corner; mandibles with a large more or less bilobed yellow mark; malar space almost obsolete; hair of face and cheeks white, stained with ochreous on front; hair of vertex long and black (not going so far forward as anterior ocellus), of occiput ochreous; hair of thorax above mixed pale fulvous and black, at sides and behind a livelier fulvous, without black, but on lower part of pleura white; tegulæ rufo-piceous. Wings smoky, nervures black; anterior femora and trochanters with long white hair behind. Hair on outer side of legs fulvous (that of hind tibiæ abundant, shining), but brush on end of hind basitarsus black; hair on inner side of middle and hind tibiæ and basitarsi black; spurs ferruginous. Abdomen ornamented with appressed, scale-like, rufo-piceous pile, with black hairs intermixed; the rufo-fulvous parts include rather narrow apical margin of first segment, broader margin of second, most of third except a narrow longitudinal median band and a large basal area on each side, fourth except a median stripe and a little space at extreme sides, fifth (the colour paler) except a large black median triangle; beneath, the abdomen has white hair.

*Hab.* Antigua, Guatemala (type locality), four (*W. P. Cockerell*) ; Amatitlan, Guatemala, one, Feb. 5, 1912 (*W. P. Cockerell*).

The third abdominal segment may be without evident dark basal areas. This is a very red member of the subgenus *Micranthophora*, and is closely related to the Mexican *Anthophora squammulosa*, Dours, differing by the absence of any border of dark hair to the abdominal segments, the black hair of vertex not mixed with white, the smoky wings, &c.

*Cœlioxys sanguinosus*, sp. n.

♀.—Length about 11 mm.

Black, with the tegulae and legs very bright ferruginous ; venter of abdomen also red, as well as first dorsal segment (except middle of apical margin narrowly), and sides of second and third more or less, the red extending suffusedly and obscurely over a good part of second ; mandibles stout, red, with black apex ; lateral margins of labrum broadly red ; eyes purplish, their hair very short ; sides of face and region about antennae with pure white hair ; clypeus finely hairy, but not enough to hide the finely rugose gently convex surface, the lower margin straight and entire ; antennae entirely black ; vertex with large punctures ; cheeks densely covered with white hair ; thorax with the usual hair-bands and spots, the dorsal ones creamy ; mesothorax shining, with very large, not very dense punctures ; scutellum with large punctures, closely placed, but a small smooth space in the middle ; middle of hind margin of scutellum with a small but conspicuous shining triangular tooth ; axillar spines straight, rather long, with large punctures. Wings dusky toward apex, a fuliginous purplish streak in upper part of marginal cell ; recurrent nervures joining second s.m. equally distant from base and apex. Hair on inner side of tarsi shining light yellowish. Abdomen with very narrow, entire, pure white hair-bands ; first dorsal segment with scattered strong punctures ; second to fifth rather well punctured basally, but beyond that smooth and with few punctures except at sides ; last dorsal with small punctures and a feeble keel, the apex rather thick and very obtuse ; last ventral prolonged some distance beyond last dorsal, broad and spoon-shaped, margined with very short dark hair, neither notched at sides nor with a terminal appendage ; penultimate ventral segment only moderately produced, sparsely punctured.

*Hab.* Gualan, Guatemala (*W. P. Cockerell*).

In my table in 'Psyche,' October 1905, this runs to *C. texana*, Cresson, which, however, has the middle and hind tarsi black, and differs in other ways. The shape of the last dorsal segment resembles that of *C. comstockii*, Cress., but there is a slight median nodule in the middle of the apical truncation; in other characters the insect is quite unlike *comstockii*. In Schrottky's table of Brazilian species it runs to *C. ignava*, Sm., which has a quite different apex of abdomen.

*Xenoglossa assimilis* (Smith).

Quirigua, Guatemala; two males at flowers of *Ipomæa sidæfolia*, Choisy, Feb. 12 and 20 (*W. P. Cockerell*).

This is *Melissodes assimilis*, Smith; it is a *Xenoglossa* related to *X. pruinosa*, Say. The maxillary palpi are five-jointed, the fifth joint very short.

*Agapostemon proscriptus*, sp. n.

♀.—Bright green, with the size and general appearance of *A. radiatus*, Say, but differing as follows:—Base of metathorax coarsely rugose, without well-defined ridges; broad basal bands of white hair on abdominal segments 2 to 4 more conspicuous; knees (broadly), tibiae, and tarsi ferruginous; hair on inner side of hind tarsi orange-fulvous; second s.m. very broad, broader than high. The mandibles are light yellow basally and rufous apically; the labrum is dark reddish.

*Hab.* Guatemala City, Guatemala, two (*W. P. Cockerell*).

Resembles the little-known *A. pulcher*, Smith, but the wings are distinctly dusky (somewhat yellowish), and the femora are black except at apex. Both specimens have gathered bright orange pollen.

*Megachile zeemeniæ*, sp. n.

♀.—Length about 12 mm.

Black, rather long and parallel-sided, general appearance much like *M. lenticula*, Vachal; head broad; eyes purplish; clypeus short and broad, closely punctured, with a rudimentary median ridge, the lower margin gently concave, with a median tubercle; mandibles broad, black, the two apical teeth distinct, the long inner cutting-edge without distinct teeth; supraclypeal area shining, convex, with scattered distinct punctures; hair of face creamy white, mixed with black, long black hairs from each side directed toward

middle of clypeus; hair of vertex black, of cheeks white; antennæ black, ordinary; mesothorax dullish, finely punctured, quite closely except posterior middle, with sparse short black hair, and a little pale in front; scutellum with conspicuous black hair; scutello-mesothoracic suture with a narrow band of dense pale orange tomentum; postscutellum and metathorax with creamy white hair; pleura with white hair below, but a tuft of black just below wings, contrasting with the dense creamy hair bordering tubercles; tegulæ piceous. Wings dusky translucent, darker apically, especially beyond end of marginal cell; nervures black. Legs black, with mostly whitish hair, that on inner side of tarsi and inner side of middle tibiæ orange-ferruginous; spurs yellowish white; claws simple; hind basitarsi broad and flat; abdomen of the parallel-sided type, above dense black, very finely punctured, with very short black hair, some pale hair on first segment, and very fine pale (yellowish) pruinosity on sixth, also extremely narrow apical yellowish hair-bands on the segments, only at sides on first; ventral scopa very bright orange-ferruginous, with some black at sides of third and following segments, black on last segment except at base.

*Hab.* Quirigua, Guatemala, at flowers of *Zexmenia virgulta*, Klatt (*W. P. Cockerell*, 42).

Related to *M. mexicana*, Cress., and *M. zapoteca*, Cress. From *mexicana* it is known by the largely black hair on face and the larger size; from *zapoteca* also by the size and the colours of the ventral scopa. I was a little in doubt whether to refer it to *M. zapoteca*, but after carefully reading Cresson's description I believe it must be distinct.

*Megachile tuxtla*, Cresson.

Male from Guatemala City (*W. P. Cockerell*); female from Antigua, Guatemala (*W. P. Cockerell*).

The female has not been described; it is like the male except in the usual sexual characters; clypeus with black hair, but sides of face with white; ventral scopa pale ferruginous, becoming white basally, black on apical segment; abdomen broad, shovel-shaped; hair on inner side of tarsi very bright orange-ferruginous; hind basitarsi only moderately broadened. In Friese's table of females of the Mexican region ('Das Tierreich,' 28 Lief.) it runs nearest to *M. mexicana*, Cress.

At Antigua my wife also took a female *M. chrysophila*, Ckll.



*Megachile montezuma*, Cresson.

Quirigua, Guatemala, one female (*W. P. Cockerell*).

*Megachile aurantipennis*, sp. n.

♀.—Length about 8 mm.; anterior wing 7.

Black, short and broad, the antennæ, mandibles, and legs black, spurs dark; head large; mandibles broad, of the quadridentate type, but the teeth little developed; clypeus convex, shining, densely punctured at sides, sparsely in middle, the lower margin broadly and quite deeply emarginate, with a median tubercle; mouth-parts rather short; cheeks about half as wide as eye; front, vertex, and cheeks very densely punctured, with largely appressed shining ochreous pubescence, only moderately dense; a little band of the same shining hair extends down anterior orbits, but is overlapped by black hair; mesothorax densely covered with appressed shining ochreous (golden-brown) hair, tubercles densely tufted with pale hair, and a tuft of fulvous hair behind the wings; pleura strongly punctured; tegulæ ferruginous, with a basal tuft of short black hair. Wings orange-ferruginous, with ferruginous nervures and unusually large stigma; apical field brownish hyaline, not orange, the apex of marginal cell and beyond fuscous. Hair on inner side of tarsi red; hind basitarsus broad and flat. Abdomen short and broad, fourth and fifth segments with broad dense apical bands of golden-ochreous hair, and sixth covered with the same; ventral scopa pale golden-ochreous, without black, at base (second segment) with a large V-shaped band of yellowish-white hair.

♂.—Length about 6 mm.

Similar to the female, except in the usual sexual characters and those now given; clypeus not emarginate, almost without punctures in middle; sides of face with conspicuous pale golden-ochreous hair, not overlapped with black; antennæ long, ordinary; base of metathorax with a median groove; tegulæ rufo-piceous. Wings dusky ferruginous instead of clear orange. Anterior legs simple; no coxal spines. First abdominal segment fringed with ochreous hair; end of abdomen with two short, sharp, black spines, far apart.

*Hab.* Quirigua, Guatemala, one of each sex, at flowers of plant no. 15, Feb. 11, 1912 (*W. P. Cockerell*). The male is the type.

Allied to the Mexican *M. bidentis*, Ckll., but easily separated by the hair on the mesothorax and the colour of the



wings. In Friese's table ('Das Tierreich') the female runs nearest to *M. candida*, Sm., which is much larger and altogether different, or perhaps equally well to the vicinity of *M. zapoteca* and *palmeri*, which are even more different, if that is possible. The male runs nearest to *M. bidens* and *tuxtla*, much larger species. It is worth while to note that the species of *Megachile* which I described in 1896 from tropical Mexico are placed in 'Das Tierreich' among the species of the United States, and are quite erroneously stated to come from Utah and New Mexico. I make the male of *M. aurantipennis* the type, because the separation from the allied *bidentis* is necessarily based on a comparison of males, only this sex of *bidentis* being known. By some strange error, the original description of *bidentis* states that the insect is a female; it is, in fact, a male. In male *bidentis* the fifth and sixth abdominal segments are densely covered with golden-ochreous hair, and the apex has a pair of short triangular teeth or tubercles; in male *aurantipennis* the fifth is largely dark (the surface showing) at base and the end is bispinose. Male *bidentis* has the wings coloured like female *aurantipennis*; male *aurantipennis* has them much browner, the orange being mixed with fuscous. It is possible, perhaps, that the female described under *aurantipennis* really belongs to *bidentis*, but considering the circumstances of capture this is unlikely. No doubt the females of the two will be found to be very much alike, the male *aurantipennis* having diverged from the common type. Another very close relative is the Brazilian *M. microsoma*, Ckll. In this (male) the tuft of hair on upper part of sides of metathorax is black and the wings are not reddened. The apex of the abdomen is nearly as in *aurantipennis*.

*Megachile (Oligotropus) gualanensis*, sp. n.

♀.—Length 8–9½ mm.

Parallel-sided, black (including antennæ, mandibles, and legs), with white hair, on clypeus with long coarse black hairs intermixed, and the same (hardly so conspicuous) on scutellum and hindmost part of mesothorax; ventral scopa white, on last segment black with some pale at sides; the four teeth on apical margin of clypeus rather poorly developed and variable; tegulæ piceous at base, testaceous outwardly. Wings greyish hyaline, nervures piceous. Abdomen with narrow white hair-bands.

♂.—Length 7–8 mm.

Anterior legs simple; sixth abdominal segment feebly bituberculate, the tubercles very close together.

*Hab.* Gualan, Guatemala, five females, eight males (*W. P. Cockerell*, 1). The female is the type.

In Friese's table the female runs to *M. zaptlana* and *M. abacula*, the male runs to *M. abacula* and *M. bipartita*. *M. gualanensis* is, in fact, very close to *M. zaptlana*, Cress., but the female has less black hair on head and the wings are not fuliginous on apical costal margin. Otherwise Cresson's description of *zaptlana* practically agrees. *M. abacula*, Cress., differs at once by the fulvo-ochraceous hair on abdomen. Among the United States species, *M. gualanensis* stands nearest to *M. subexilis*, Ckll. The male flagellum is proportionately shorter in *gualanensis* than in *subexilis*, and in the female the distance from the top of the eye to the occipital margin is much less in *gualanensis* than in *subexilis*.

*Melissodes raphaelis*, Cockerell.

Quirigua, Guatemala (*W. P. Cockerell*). One female at yellow composite, less robust than types. Six normal males (one at flower no. 7; two, Feb. 11, at flower no 15; one, Feb. 12, at *Ipomœa sidefolia*, Choisy); one male with fulvous hair on head and thorax above, the only dark hairs a few on scutellum; eight variously intermediate males (three, Feb. 11, at flower no. 15; one, Feb. 12, at *Ipomœa sidefolia*).

In spite of the great variation all are evidently one species. The lighter-haired male is easily distinguished from *M. floris*, Ckll., by the deep notch on each side of yellow of clypeus, black hair on outer side of hind tibiæ, and colours of abdomen.

*Melissodes tepaneca aschenborniana*, subsp. n.

♂.—Differs from *M. tepaneca*, Cresson, by having the fifth abdominal segment with pale hair like the fourth, though the sixth has it black; second segment with black hair between the basal and median band (it is ochreous in *tepaneca*); median band of second segment narrower; hair on hind tarsi shorter; wings more dusky. It is very like *M. masuca*, Ckll., from Texas, but smaller, with the second abdominal segment between the bands more closely punctured and the eyes differently coloured (light green). The middle and hind tibiæ at apex and their tarsi are ferruginous; labrum, large spot on mandibles, and clypeus yellow, the last with the usual spots, but the yellow not notched;

flagellum black above, clear ferruginous beneath; tegulae bright ferruginous. The type has the hair of thorax above bright orange-fulvous, and that of abdomen all (except the black) warm reddish; the other specimen has the hair of thorax above pale ochreous and the median bands on second and following abdominal segments white. The hind margins of the abdominal segments are broadly more or less pallid. The middle of the mesothorax is shining, with rather sparse strong punctures.

*Hab.* Gualan, Guatemala (*W. P. Cockerell*). Two at flowers of *Vernonia aschenborniana*, Schauer.

I treat this as a subspecies of *M. tepaneca*, on account of the geographical proximity of that insect, but by the characters it is actually closer to the Texan *M. masuca*.

*Exomalopsis pulchella*, Cresson.

Quirigua, Guatemala (*W. P. Cockerell*). Two females; one has the hair behind ocelli pale ochreous, the other (from flowers of *Zexmenia virgulta*, Klatt) has hair behind ocelli and on scutellum black, and the stigma and nervures bright ferruginous.

*Thygater cockerelli* (Crawford).

Quirigua, Guatemala (*W. P. Cockerell*). One female, at flowers of no. 420.

*Thygater nigravillosa* (Crawford).

Quirigua, Guatemala (*W. P. Cockerell*). Two males, Feb. 20, at flowers of *Ipomæa sidafolia*, Choisy.

*Leptergatis armata* (Smith).

Quirigua, Guatemala (*W. P. Cockerell*). Twenty females (mostly Feb. 20), four males (two, Feb. 20; one, Feb. 12; one at flowers of *Zexmenia virgulta*).

It is almost impossible to separate the females of this from *Leptergatis toluca* (*Melissodes toluca*, Cresson), but the males are easily separated by the hind legs.

*Leptergatis toluca* (Cresson).

Gualan, Guatemala (*W. P. Cockerell*). One male, Feb. 15, at flowers of *Cordia alba*, R. & S.

*Tetrapedia mayarum*, sp. n.

♂.—Length nearly 10 mm.

Black, with the labrum (except a median basal reddish spot), patch at base of mandibles, and broad lower corners of clypeus pellucid whitish; hind tarsi clear ferruginous, with their hair entirely orange-ferruginous; an obscure round red spot on inner side of hind tibiæ near apex; hair of head and thorax scanty, black above, silvery-white on cheeks, sides of face, and lower parts of pleura and metathorax; head shining; clypeus with strong punctures, dense in middle of sides; front with extremely fine punctures and an oblique groove on each side; sides of occiput with a sharp elevated margin; antennæ dark, the scape with a light yellowish-red spot at base, flagellum red beneath; mesothorax and scutellum dull, with a granular appearance; base of metathorax punctured; tubercles with short dark brown hair; tegulæ shining black. Wings dark fuliginous, a little paler apically, nervures fuscous, stigma amber-colour; second s.m. considerably narrowed above, receiving first r. n. about halfway between middle and apex. Legs black (except as stated above), small joints of tarsi obscure reddish; posterior apex of hind tibiæ broadly and thickly covered with red hair like that on tarsus; anteriorly the hind tibia has some white hair near end; anterior and middle legs with the hair black, partly red on tarsi; anterior tibiæ smooth and shining on outer side; anterior basitarsi broad and thick; middle basitarsi broad and flat, truncate at apex, with an obtuse lobe on inner apical corner; hind coxæ and trochanters simple; hind basitarsi very broad and flat, with a triangular process on inner margin a little before middle; spurs dark, simple. Abdomen smooth and shining, dorsally without markings; apical segment triangular, ending in a pencil of hair; fourth ventral with an undulate margin and its base broadly yellowish white; sixth ventral triangularly produced.

♀.—Length about 11 mm.

Similar to the male, except for the usual sexual characters; mandibles ferruginous; labrum black, with a red spot on each side, and fringed with copper-red hairs; face entirely black; clypeus well punctured; scape suffusedly red at base; scutellum somewhat bigibbous; claw-joints all red; hind tarsi only obscure reddish, except apically; spurs simple; hind femora with a red patch near apex; hind tibiæ behind with a curious patch of pure white material near apex, among the black hairs, the same on each side, entangled in pure white very long-plumose hairs; on inner side of

hind tibiae the hair is red apically ; hind basitarsi with hair black on outer side and behind, on inner side and the broad apical brush red, in front of basal part broadly white ; fifth dorsal abdominal segment with a large cream-coloured spot on each side.

*Hab.* Quirigua, Guatemala (*W. P. Cockerell*). One of each sex.

Related to *T. bunchosiae*, Friese, but in the female the third ventral segment is like the second (not opaque and strongly punctured), while in the male the clypeus has less pale colour, and there are other differences. There are several more or less related species in South America, none having the same structure in detail as *T. mayarum*.

*T. bombitarsis*, Vachal, must belong to this group, and, if so, is not allied to *T. maura*, as Vachal states. The groups containing *maura* and *bunchosiae* differ in the spurs and otherwise, and are only superficially similar.

Named after the Mayas, who built temples and made remarkable sculptured monuments at Quirigua. The male is the type.

At flowers of *Pontederia cordata*, L., at Quirigua, Feb. 11, 1912, Mrs. Cockerell took females of *Tetrapedia calcarata*, Cress., and *T. maesta*, Cress.

