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## Descriptions of new North American Hymenoptera in the collection of the American Entomological Society

Ezra Townsend Cresson

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**Descriptions of new North American HYMENOPTERA in  
the collection of the American Entomological Society.**

BY E. T. CRESSON.

Family A P I D Æ.

**Panurgus chalybæus.**—♀.—Steel-blue, sometimes tinged with dark green; head and thorax opaque, very densely punctured, clothed with long whitish pubescence, mixed with black on the face; head wider than thorax, anterior orbits broadly black, subdepressed and silvery-sericeous in certain lights; face very broad; mandibles reddish at tips; scape of antennæ densely clothed with black pubescence, flagellum sometimes testaceous beneath; metathorax truncated posteriorly, uniformly and densely punctured; tegulæ shining black; wings hyaline, faintly dusky at tips; marginal cell pointed at tip, second submarginal cell nearly as long as the first submarginal cell, receiving the first recurrent nervure about one-fourth from the base and the second about one-fifth from the tip; legs black, clothed with long whitish pubescence; abdomen elongate-ovate, depressed, shining steel-blue, densely and minutely punctured, clothed with appressed pale glittering pubescence longer on the sides and more conspicuous on the apical margins of the segments, apex fimbriated with long pale pubescence; venter tinged with brown, the segments fringed at apex with long pale hairs. Length .40—.50 inch.

♂.—Smaller, more pubescent, the face with only a few black hairs on lateral margin; antennæ longer, scape with whitish pubescence; abdomen with erect pubescence longer at base. Length .30—.40 inch.

*Hab.*—California, (Henry Edwards). Seven specimens. Easily distinguished from all other species known to me by the steel-blue color of the body.

This as well as all the following species described under this genus, have the marginal cell long and pointed at apex.

**Panurgus maurus.**—♀.—Entirely deep black, shining, feebly punctured, clothed with a short sparse black pubescence, longer and more dense on face and cheeks; head rather wider than thorax, face broad, clypeus truncate at apex and fringed with pale pubescence; enclosed space at base of metathorax finely longitudinally striated; sides of thorax near intermediate coxæ with a short obtuse tubercle; tegulæ polished black; wings hyaline, faintly dusky at tips, second submarginal cell much narrowed towards marginal, receiving the first recurrent nervure near the base and the second about one-fifth from the tip; legs robust, clothed with short black pubescence, posterior femora armed with a short subacute tooth at extreme base beneath, their tibiae rather suddenly dilated beneath before apex; abdomen smooth and shining, the apical segments clothed with black pubescence. Length .35 inch.

*Hab.*—Colorado, (H. K. Morrison). Five specimens.



**Panurgus regularis.**—♂.—Black, rather shining; head and thorax clothed with a long rather dense cinereous pubescence, very slightly mixed with black; head not wider than thorax, vertex smooth, almost nude and polished, ocelli arranged nearly in a straight line; occiput with a few black hairs; thorax delicately punctured, densely pubescent, that on mesothorax sometimes faintly tinged with ochraceous; base of metathorax opaque; wings faintly tinged with dusky, second submarginal cell much narrowed towards marginal, receiving the first recurrent nervure near the base and the second one-fourth from the tip; legs with rather long whitish pubescence; abdomen oblong-ovate, subdepressed, clothed with a short suberect pale pubescence slightly mixed with black, at the base and sides it is longer, apical margin of each segment with a regular narrow fascia of dense white pubescence. Length .40 inch.

*Hab.*—California, (Henry Edwards). Three specimens. This has much the general appearance of an *Andrena*.

**Panurgus andrenoides.**—♂.—Black, shining, clothed with a long whitish pubescence, most dense on face and sides of thorax; head broader than thorax, sinuate on posterior margin; face very broad, ocelli arranged in a slight curve; clypeus, except two black points, and spot on each side of face, pale yellow; mandibles long and slender; antennæ long, scape with long hairs, flagellum fulvous beneath; tegulæ piceous; wings hyaline, iridescent, nervures and stigma brown, second submarginal cell three-fourths the length of the first submarginal, receiving the first recurrent nervure one-fifth from the base and the second same distance from the tip; legs slender, clothed with long pale pubescence; abdomen oblong-ovate, shining, thinly clothed with a short pale pubescence, when viewed in certain lights the apical margins of the segments have a narrow fascia subinterrupted medially. Length .35 inch.

*Hab.*—Colorado, (Morrison); Texas, (Belfrage). Six specimens. Very closely resembles certain species of *Andrena*.

**Panurgus nigrifrons.**—♂.—Form of *andrenoides*; entirely shining black, delicately punctured, rather thinly clothed with long pale pubescence; head wider than thorax, face very broad, clypeus large, flat, sparsely punctured, the tip squarely produced and slightly reflexed, the margin submarginate; mandibles long, acute, and reddish at tip; cheeks flattened, the upper margin carinate; antennæ long, flagellum brownish; tegulæ dull testaceous; wings hyaline, slightly dusky at tips; second submarginal cell nearly as long as the first, narrowed nearly one-half towards marginal and receiving the recurrent nervures one-fifth from base and apex respectively; legs brown, clothed with pale pubescence; abdomen elongate, subdepressed, polished, thinly clothed with short pale pubescence. Length .26 inch.

*Hab.*—Texas, (Belfrage). One specimen.

**Panurgus marginatus.**—♀.—Black; head subopaque, flattened, not wider than thorax, clothed with pale pubescence, that on occiput and thorax above short, dense and dull fulvous; clypeus short, very transverse, truncate at apex, which is fringed with long hairs; antennæ short, flagellum pale testaceous beneath towards apex; sides of thorax with long pale pubescence; metathorax sparsely pubescent, the enclosed space at base very well marked, flattened and minutely sculptured; wings as in *andrenoides*; legs subrobust,

rather thickly clothed with pale pubescence, tips of tarsi pale testaceous; abdomen oblong-ovate, shining, thinly pubescent except at apex; apical margin of the segments broadly testaceous, fringed more or less with pale pubescence. Length .35 inch.

*Hab.*—Kansas, (Prof. F. H. Snow). One specimen. Has much the general appearance of an *Halictus*.

**Panurgus haliectulus.**—♂.—Black, subopaque, clothed with a whitish pubescence, very dense on face, cheeks and sides of thorax; head not wider than thorax. clypeus short, transverse, densely pubescent; antennæ long subcrenulated, flagellum testaceous beneath; thorax above minutely punctured, rather thickly pubescent, enclosed space at base of metathorax flattened; wings as in *andrenoides*, but with darker nervures; legs clothed with white pubescence; tarsi, except base, yellow; abdomen oblong, shining, thinly pubescent, more densely so at sides and apex and the depressed apical margin of the segments have a fringe of thin pale pubescence. Length .35 inch.

*Hab.*—Colorado, (Morrison); Utah, (Putnam). Five specimens. This also looks very much like an *Halictus*.

**Panurgus fimbriatus.**—♀.—Black; head and thorax clothed with a rather dense pale pubescence; head not wider than the thorax; face and cheeks thinly pubescent; anterior margin of clypeus transverse; antennæ short, entirely black; thorax above with short, slightly fulvous pubescence; enclosed space at base of metathorax flattened and finely reticulated; wings as in *andrenoides*, with the second submarginal cell more narrowed towards marginal; legs clothed with pale pubescence, quite dense on tibiae and tarsi; abdomen ovate, depressed, polished, apical margin of the segments depressed, dull testaceous and having a fascia of white pubescence, less conspicuous on basal segments; anal fimbria tinged with fulvous. Length .30 inch.

*Hab.*—Colorado, (Morrison). One specimen. This may be the ♀ of the preceding species. It has much the appearance of certain species of the following genus, which however have the marginal cell more or less truncate at tip.

**Calliopsis coloradensis.**—♀.—Short, robust, black; head broader than the thorax, clothed with pale pubescence on vertex and cheeks, face very thinly clothed, the pubescence on vertex slightly tinged with ochraceous; sides of the face extending narrowly nearly to the summit of the eyes, a triangular spot between antennæ, clypeus except two cuneiform black marks sometimes nearly confluent, and base of mandibles occasionally, pale yellow; labrum sometimes brown; flagellum testaceous beneath; thorax above clothed with a short dense dull ochraceous pubescence, the sides with longer whitish pubescence; a narrow slightly interrupted yellow band on posterior margin of prothorax; tegulae dull testaceous yellow anteriorly; wings faintly dusky, marginal cell long, obliquely truncated at tip, second submarginal as long as the first, much narrowed towards marginal; legs with pale pubescence, more dense on tibiae and tarsi; four anterior knees pale yellowish; abdomen short ovate, depressed, shining, the segments with an apical fringe of dense white pubescence. Length .33 inch.



♂.—Smaller than the ♀, with the sides of face, clypeus entirely, labrum, mandibles, scape beneath, tips of femora and the tibiae and tarsi, bright yellow. Length .30 inch.

*Hab*—Colorado, (Ridings; Morrison). Five specimens. This closely resembles *andreniformis*, Smith, (of which his *flavipes* is doubtless the male), but is larger, more pubescent and easily distinguished by the yellow mark on sides of the face being attenuated above and extending up on the orbits nearly to the summit of the eye.

**Calliopsis zebratus.**—♀.—Black; head and thorax rather thickly clothed with a pale glittering pubescence; sides of face narrowly, clypeus except a subtriangular black mark on each side of the middle, a subtriangular spot between antennae, a round spot on each side, and a dot at base of mandibles, pale yellowish; flagellum testaceous beneath; disk of thorax sparsely pubescent, closely punctured; wings hyaline, second submarginal cell shorter than the first, and much narrowed towards marginal; legs robust, thinly clothed with pale glittering pubescence, four anterior tibiae short, yellowish in front, their tarsi honey-yellow; intermediate femora compressed and keeled at base beneath; abdomen oblong-ovate, subopaque, segments one to four each with a yellow band across the middle, narrowed within, the fifth segment with a broad yellow band slightly interrupted on the disk; anal fimbria whitish; venter entirely black, the apex with fulvous pubescence. Length .43 inch.

*Hab.*—Colorado, (Morrison). One specimen. A very handsome species, easily distinguished by the rather broad continuous yellow bands on the abdomen.

**Calliopsis scitulus.**—♀.—Shining black, thinly clothed with whitish pubescence; head rather broader than thorax, sparsely punctured; a sub-euneiform mark on each side of face, subtriangular spot between antennae, spot on each side of clypeus and spot at base of mandibles, whitish; flagellum dull testaceous beneath; thorax with a few scattered punctures; wings as in *zebratus*; legs subrobust, clothed with pale glittering hairs; knees and line on anterior tibiae in front, whitish; abdomen ovate, depressed, polished, a sublunate spot on each side of first and second segments, and a rather broad band on the three following segments, sometimes slightly interrupted on the disk and sinuate or subemarginate on each side posteriorly, yellowish-white, apex fimbriated with pale pubescence. Length .30 inch.

*Hab.*—Colorado, (Morrison). Twenty-two specimens collected. A very pretty little species, easily recognized by the ornamentation of the abdomen.

**Calliopsis Edwardsii.**—♀.—Black, shining, sparsely punctured, thinly clothed with pale pubescence; a small triangular spot on each side of face, a longitudinal mark on disk of clypeus and spot on base of mandibles, white; flagellum beneath dull testaceous; mesothorax polished, rather thickly punctured in front, smooth on disk; pleura thickly pubescent; wings dusky, veined

as in preceding species; legs clothed with pale pubescence; abdomen ovate, depressed, a rounded spot on each side of first and second segments, a band on third and fourth, broadly interrupted on third and slightly so on fourth, and a dot on each side of fifth segment, whitish; anal fimbria pale; venter piceous, immaculate. Length .35 inch.

♂.—Smaller than ♀; a larger triangular mark on each side of face, a dot between antennæ, clypeus except its apical margin and two minute dots near base, the mandibles except tips, four anterior knees and anterior tibiæ before, all white or yellowish-white; segments 1—5 of abdomen each with a narrow white fascia, those on first and second segments dilated on the sides and interrupted on the disk, the others slightly widened on sides; sixth segment, in one specimen, has a narrow fascia abbreviated laterally. Length .30 inch.

*Hab.*—California, (H. Edwards). Three specimens.

**Calliopsis pictipes.**—♂.—Black, shining, delicately punctured, head and thorax thinly clothed with white pubescence; sides of face, spot between antennæ, clypeus, labrum and mandibles, white; flagellum long, testaceous beneath; wings hyaline, veined as in preceding species, costal vein pale testaceous; legs with scattered white pubescence, a line on anterior femora within, all the knees, the four anterior tibiæ in front, their tarsi entirely, base of posterior tibiæ, their extreme tips exteriorly, and first joint of their tarsi, all white; basal joint of posterior tarsi as long as the remaining joints taken together, flat, dilated, truncate at tip, which has a tuft of long pale pubescence; abdomen oblong, convex, smooth and shining, thinly clothed with erect white pubescence, a subapical white band on all the segments except the last, more or less emarginate on each side posteriorly; venter shining black, immaculate. Length .26 inch.

*Hab.*—Colorado, (Morrison). One specimen. A pretty little species, easily recognized by the curiously formed posterior tarsi.

**Calliopsis lateralis.**—♀.—Robust, black, shining, sparsely punctured; head and thorax rather thickly clothed with a pale pubescence slightly tinged with ochraceous; a subtriangular spot on each side of face near base of mandibles, an elongate dot on disk of clypeus, and spot on base of mandibles, white; antennæ short, flagellum dull testaceous beneath; disk of mesothorax almost nude, polished; wings faintly dusky, veined as in preceding species; legs subrobust, clothed with short yellowish pubescence; abdomen broad ovate, depressed, shining, minutely punctured at base, a yellowish-white spot on each extreme side of segments 1—4, rounded on one and two and transverse on three and four; anal fimbria ochraceous. Length .35 inch.

*Hab.*—California, (Crotch). One specimen. This species has a broad abdomen, with pale lateral spots.

**Calliopsis mexicanus.**—♀.—Black, head and thorax very coarsely confluent punctured, very thinly pubescent; apex of flagellum beneath testaceous; immediately behind the postscutellum the margin of the metathorax is coarsely striated, behind which there is on each side a smooth polished space; wings subhyaline, broadly dusky at apex, second submarginal cell as long as the first, narrowed one-third to marginal, receiving the first recurrent nervure one-third from the base and the second near the tip; posterior tibiæ



thickly clothed with a long pale pubescence; abdomen oblong-ovate, shining, strongly punctured, the depressed apical margin being smooth and impunctured and obscure testaceous, base of third segment and the remaining segments thickly clothed with a short appressed ochraceous sericeous pubescence; anal fimbria ochraceous. Length .35 inch.

♂.—More coarsely punctured than ♀ and more pubescent; abdomen more sparsely and coarsely punctured, the segments depressed at base and having on each side a patch of pale sericeous pile, not very distinct, but seen only when viewed in certain lights. Length .30 inch.

*Hab.*—Mexico, (Sumichrast). Three specimens. Distinguished from all the other species by the very coarse sculpturing of the head and thorax. Resembles *æthiops* Cress., in form, but much smaller and more coarsely sculptured.

**Calliopsis illinoiensis.**—♂.—Black, shining, head and thorax quite thickly clothed with a short whitish pubescence, tinged on vertex and mesothorax with ochraceous; sides of face not higher up than clypeus, the clypeus entirely, labrum, middle of mandibles, and dot on tubercles lemon-yellow; flagellum and tegulæ pale testaceous; wings dusky, slightly darker at apex; second submarginal cell narrowed one-half to the marginal, receiving the first recurrent nervure at about one-fourth from the base and the second about one-fifth from the apex; legs clothed with pale glittering pubescence; knees, anterior tibiæ in front, base of posterior pair and all the tarsi pale yellow; abdomen elongate-ovate, shining, thinly pubescent except at tip where the pubescence is rather dense, apical margin of the segments depressed and obscure testaceous. Length .20 inch.

*Hab.*—Illinois. Six specimens. This was presumed, both by Mr. Smith and myself, to be the ♂ of *andreniformis*, but judging from analogy in *coloradensis*, a closely allied species, the ♂ of *andreniformis* must have a broad form like the ♀, and like that of *flavipes* Sm., which is doubtless the true ♂ of that species.

**Calliopsis pauper.**—♀.—Uniformly shining piceous black, finely punctured, very slightly pubescent; clypeus with larger scattered punctures; tips of mandibles, flagellum beneath and tegulæ testaceous; mesothorax very finely and densely punctured; metathorax faintly striolate at base; wings hyaline iridescent, slightly dusky at apex, marginal cell obliquely truncate at tip, second submarginal narrowed towards marginal, receiving the first recurrent nervure one-fourth from its base, and the second very near or at the tip; legs clothed with short pale glittering pubescence, anterior pair and all the tarsi brown; abdomen oblong ovate, subconvex, shining, clothed with pale pubescence at apex. Length .22 inch.

♂.—More pubescent than ♀; lower corner of face, clypeus, spot on labrum, and the mandibles white; all the knees, anterior tibiæ, base and apex of two posterior pairs, and all the tarsi yellowish-white. Length .20 inch.

*Hab.*—New York; Colorado. Six specimens. This little species has the body almost destitute of pubescence, otherwise it closely resembles *illinoiensis*.

**Calliopsis californicus.**—♂.—Black, shining, thinly clothed with pale pubescence; head thickly punctured; clypeus almost entirely pale yellowish, in two specimens the yellow is reduced to a small spot; scape with long pale pubescence, flagellum dull testaceous beneath; mesothorax and scutellum sparsely punctured; metathorax roughened at base; tegulæ piceous; wings dusky hyaline, with neuration as in *illinoensis*, except that the marginal cell is more broadly truncated at tip; legs with pale glittering pubescence, spot on all the knees, line on anterior tibiæ and the four anterior tarsi more or less pale yellowish; abdomen oblong, shining, clothed with a short thin appressed pale sericeous pile, much more dense on apical segments, the second, third and fourth segments are slightly constricted at base and have in certain lights a pale sericeous band; venter brownish. Length .25 inch.

*Hab.*—California, (Edwards, Crotch). Twelve specimens. The pale markings of the head are confined to the clypeus, and specimens will doubtless occur in which that part will be immaeculate.

**Calliopsis atricornis.**—♂.—Shining black, very thinly clothed with pale pubescence; head broad, strongly punctured, triangular mark on each side of face, clypeus, a small triangular spot immediately above, and spot on labrum, white; antennæ entirely black; mesothorax sparsely punctured, scutellum medially depressed, base of metathorax rugulose; tegulæ pale posteriorly; wings dusky, neuration as in *illinoensis*; legs slender, with thin pale pubescence, tips of tarsi yellowish; abdomen oblong, shining, with only a little pubescence at apex, second, third and fourth segments above transversely depressed at base and apex. Length .33 inch.

*Hab.*—Colorado, (Morrison). Two specimens. Allied to *californicus* in form, but is larger, head broader and the face differently ornamented.

**Calliopsis clypeatus.**—♂.—Black, shining, thinly clothed with whitish pubescence; clypeus entirely white; antennæ entirely black; mesothorax finely not closely punctured; metathorax roughened at base; pleura clothed with long pale pubescence; wings hyaline, second submarginal cell about one-half the length of the first, the *first recurrent nervure uniting with the second transverse cubital nervure*, the second recurrent is received by the second submarginal cell near its apex; legs clothed with pale pubescence, long on the femora; anterior knees, line on their tibiæ and basal joint of four anterior tarsi whitish; basal joint of posterior legs pale at base, rather broader than usual; abdomen ovate, subdepressed, smooth and shining, clothed at apex with pale pubescence. Length .23 inch.

*Hab.*—Colorado, (Ridings). One specimen. Closely resembles *californicus*, but easily distinguished by the different neuration of anterior wings.

**Calliopsis atriceps.**—♂.—Entirely black, shining, thinly clothed with a long whitish pubescence; head broader than thorax, face very wide, clypeus flat, deeply and widely emarginate anteriorly, leaving the lateral angles prominent and acute, the labrum being retracted; mandibles long and slender; antennæ longer than usual, reaching to the end of the thorax; sides of thorax densely pubescent; tegulæ dull testaceous; wings hyaline, neuration as in



*clypeatus* except that the second submarginal cell is not so much narrowed towards the marginal; legs piceous, thinly clothed with pale pubescence, tarsi pale brownish; abdomen oblong, smooth and shining, with short scattering pale pubescence, apex tufted with long pale pubescence. Length .25 inch.

*Hab.*—California, (H. Edwards). One specimen.

**Calliopsis lepidus.**—♀.—Black, thickly clothed with pale pubescence, slightly mixed with black on vertex and thorax above; spot on sides of face, a dot between antennæ and a short longitudinal mark on disk of clypeus, white; flagellum pale testaceous beneath; mesothorax subopaque, subæneous, minutely and closely punctured, clothed with short sparse pubescence; on postscutellum and pleura the pubescence is long and thick; tegulæ black, polished; wings hyaline, dusky on apical margin, second submarginal cell very much narrowed towards marginal, receiving the first recurrent nervure about one-fifth from the base, and the second recurrent same distance from the tip; legs rather thickly clothed with pale pubescence, which on the broad basal joint of tarsi beneath is short dense and fulvous, this joint on the posterior pair has a tuft of long pubescence at the tip above, having the appearance of a spur; abdomen ovate, subconvex, shining, sericeous, the segments depressed on apical margin and having a narrow fringe of white pubescence widely interrupted on first segment; sides and apex fringed with longer pale pubescence. Length .30 inch.

*Hab.*—Georgia, (Morrison). One specimen. A very distinct species, having much the appearance of an *Ilulictus*.

**Calliopsis abdominalis.**—♀.—Black, opaque, finely and densely punctured, head and thorax clothed with a very short sparse pale subsericeous pile; a large transverse spot on middle of face, sinuate beneath, base of mandibles, anterior half of tegulæ, and tubercles, yellow; flagellum beneath and posterior half of tegulæ testaceous; posterior margin of prothorax pale sericeous; scutellum and postscutellum unusually large and transverse, fulvous; metathorax short and broadly rounded, finely sculptured, more or less stained with fulvous; wings uniformly pale fuscous, stigma dull fulvous; legs subrobust, four anterior knees, their tibiæ except tips and base of their tarsi yellowish, posterior tibiæ rather thickly pubescent, the basal joint of their tarsi with a long spur of pubescence at apex; abdomen oblong-ovate, subdepressed, fulvous, apical margin of the segments depressed and golden yellow in certain lights; a round black spot on each extreme side of second segment, and a black band on base of third to fifth segments, reduced in one specimen to a small lateral spot, anal fimbria pale yellow; venter varied with black and fulvous. Length .33 inch.

♂.—Much narrower than ♀ and more pubescent; the face entirely, labrum, mandibles except tips, scape beneath, tegulæ anteriorly, tubercles and the legs yellow; scutellum obscure fulvous; abdomen entirely fulvous except black spot on each side of second segment and a blackish stain on each side of apical segment. Length .28 inch.

*Hab.*—Texas, (Heiligbrodt). Four specimens. Easily recognized by the fulvous abdomen.

**Perdita hyalina.**—♂.—Form elongate; head and thorax bluish green, rather thickly clothed with an erect white pubescence; head not wider than thorax, clypeus slightly protuberant; mandibles long, slender, simple, reddish at tips; antennæ pale testaceous beneath; prothorax unusually narrow above,

nearly subquadrate, the sides broadly and deeply grooved, mesothorax and scutellum delicately punctured, a finely impressed longitudinal line on each side over tegulæ; metathorax smooth shining, impressed above at base; tegulæ pale testaceous; wings whitish-hyaline, nervures and stigma pale yellow, marginal cell as long as first submarginal, broadly truncated at tip, second submarginal half the length of the first and narrowed to marginal; legs slender, piceous, thinly clothed with white pubescence, anterior tibiæ in front and all the tarsi pale; abdomen oblong-ovate, depressed, black, the depressed apical margins of the segments very pale, almost whitish, and more or less thinly fringed with white pubescence, more obvious on apical segments, extreme lateral margin of segments and the terminal segment testaceous. Length .32 inch.

*Hab.*—Colorado, (Ridings, Morrison). Two specimens.

**Perdita zebata.**—♀.—Very much like *albipennis* Cress., but smaller; head and thorax blue or greenish blue, thinly clothed with pale pubescence; a deep longitudinal groove on anterior orbits, more conspicuous than in *albipennis*; sides of face narrowed above, clypeus, two dots above, sometimes confluent, occasionally an irregular transverse line on front above antennæ, labrum, mandibles except tips, scape beneath, interrupted band on prothorax, tubercles and tegulæ white or yellow; sometimes the clypeus has two or more black dots; flagellum pale testaceous, brown above; thorax smooth and shining; wings whitish-hyaline, nervures and stigma white or yellowish, neuration as in *hyalina*; legs yellow the two anterior pairs more or less black behind, posterior femora above and their tibiæ except base, black, tarsi varied with fuscous; abdomen oblong-ovate, flat, shining, yellow, with more or less broad black or brown band at apex of each segment above; in well marked specimens these bands bend obliquely downwards on base of the following segment; the first segment being black or brown with a yellowish band on the disk; apical segments fringed with pale hairs; venter yellow. Length .25 inch.

*Var.*—Four anterior legs entirely yellow; abdomen yellow with narrow blackish band at apex of segments 1—4, ending laterally in a dot which is sometimes separated from the band.

*Hab.*—Colorado, (Ridings, Morrison). Seven specimens. This species is quite variable in its markings and specimens will doubtless be found with the abdomen entirely yellow.

Mr. Frederick Smith, to whom specimens were sent, refers this species to *Nomioides* Schenck.

**Perdita affinis.**—♀.—Form of *zebrata*; head and thorax blue or greenish-blue thinly clothed with pale pubescence; sides of face, narrowed above, clypeus except sometimes two or more black points, occasionally a spot or two above clypeus, base of mandibles, scape beneath, a spot on each side of prothorax, tubercles and tegulæ pale yellow; flagellum pale testaceous beneath; wings as in *zebrata*; legs black with pale pubescence, the knees, and the four anterior tibiæ in front yellowish; abdomen black, shining, a yellowish band on segments 1—4, interrupted on the disk and more or less dilated and oblique on the sides; fifth segment immaculate and fringed with pale pubescence; apical segment testaceous; generally, the spot on each side of fourth segment does not reach the lateral margin. Length .20—.25 inch.



♂.—Face, clypeus, labrum, mandibles, lower posterior orbits, antennæ beneath, two spots on prothorax, tubercles, tegulæ and most of four anterior legs, yellow; abdomen with yellowish band on segments 1—3, slightly interrupted on disk and dilated laterally on second segment; fourth segment with two small pale spots. Length .20 inch.

*Hab.*—Colorado, (Ridings). Five specimens. Closely resembles *S-maculata* Say, but much smaller and with clearer wings.

***Perdita obscurata.***—♀.—Form of *zebrata*; head and thorax blue, thinly clothed with pale pubescence; sides of face, sides of clypeus, spot on disk, mandibles except tips, scape beneath, spot on each side of prothorax, tubercles and tegulæ, yellowish; flagellum testaceous beneath; thorax smooth and shining; wings as in *zebrata* except that the second submarginal cell is smaller, being scarcely more than one-third the length of the first submarginal; legs brown, with pale pubescence, knees, four anterior tibiæ in front and all the tarsi yellowish; abdomen piceous, shining, pubescent at tip, an obscure yellowish fascia, interrupted medially at base of segments 2—4. Length .23 inch.

♂.—Brighter in color and more pubescent; all beneath antennæ, narrow line on lower posterior orbits, scape entirely, flagellum except brown line above, interrupted line on prothorax, tubercles, tegulæ and the legs entirely except spot on apex of posterior femora above and their tibiæ above, bright yellow; a narrow uneven, ill-defined yellowish band at base of segments 2—6, apical segment and venter fulvo-testaceous. Length .20 inch.

*Hab.*—Georgia, (Morrison). Two specimens.

***Perdita interrupta.***—♂.—Head and thorax blue, thinly clothed with pale pubescence; head broader than thorax, face broad and rather thickly pubescent, lower corner of face, clypeus, labrum, and mandibles except tips white; flagellum pale beneath; thorax subopaque, tegulæ dull testaceous; wings hyaline, venation as in *hyalina*; legs black, thinly clothed with pale pubescence, knees and line on the four anterior tibiæ, and their tarsi yellowish; abdomen oblong-ovate, convex, shining black, a pale yellowish fascia on segments 2—5, interrupted on the disk and more or less suddenly dilated laterally, sometimes a pale lateral spot on sixth segment. Length .23 inch.

*Hab.*—California, (Crotch). Three specimens.

***Macrotera texana.***—♀.—Piceous, smooth and shining, rather thinly clothed with a short whitish pubescence, sparsely punctured; head a little wider than thorax, anterior orbits with a deep longitudinal groove, clypeus with a few coarse punctures, tips of mandibles reddish; antennæ short, flagellum brown; metathorax very short, transverse rounded on the sides; tegulæ pale testaceous; wings hyaline, nervures brown; marginal cell about as long as first submarginal, obliquely truncate at tip, appendiculate, second submarginal about half the length of the first, narrowed one-half towards marginal; legs clothed with pale pubescence, that on posterior tibiæ long and loose; abdomen ovate, depressed, apical margin of segments obscurely testaceous, anal fimbria short and pale; venter broadly fasciate with testaceous. Length .35 inch.

*Hab.*—Texas, (Heiligbrodt). Three specimens.

**Macrotera megacephala.**—♂.—Head very large, transversely sub-compressed, shining brown, finely punctured; face very broad, prominent between antennæ, the anterior margin truncate, clypeus small, short, coarsely punctured, mandibles long, pale testaceous, fuscous at tips, a moderately deep longitudinal groove on anterior orbits above the antennæ which are short and fuscous; thorax smaller than head, black, prothorax transversely compressed; metathorax smooth and shining; tegulæ pale testaceous; wings as in *texana*; legs brown, with short pale pubescence; abdomen short ovate, subconvex, shining, reddish-brown or ferruginous, apex with a few pale hairs, sides of second and third segments with a submarginal groove; anal segment small, quadrate, flattened, coarsely punctured. Length .26—.30 inch.

*Hab.*—Texas, (Heiligbrodt). Three specimens. This may be the ♂ of *texana*. The head is very broad, and is larger in the specimen with dark abdomen; otherwise there appears to be no difference between them.

**Macrotera californica.**—♂.—Head and thorax blue, or greenish-blue, thinly clothed with whitish pubescence; head broader than thorax; face broad, a short indistinct groove on upper anterior orbits; clypeus broadly subtriangular, the lateral corners reaching the base of mandibles, the apex deeply emarginate for the labrum which is deeply foveate; broad lower margin of face, sometimes a dot beneath insertion of each antenna, clypeus except two black points near base, labrum and mandibles, except tips, white or yellowish white; antennæ pale testaceous beneath; mesothorax delicately punctured, with a finely impressed longitudinal line on each side over tegulæ; metathorax smooth, broadly rounded; tegulæ pale testaceous; wings hyaline, neuration much as in *texana*, except that the marginal cell is shorter and squarely truncate at tip; legs black, thinly clothed with pale pubescence, anterior tibiæ in front and all the tarsi testaceous; abdomen short, ovate, convex, shining, black, the segments rather broadly margined at base and apex with dull testaceous, apex incurved, the terminal segment short and broad, apical margin sinuate and having beneath two divergent obtuse teeth. Length .25 inch.

*Hab.*—California, (Edwards, Crotch). Three specimens.

**Macrotera cephalotes.**—♂.—Lemon-yellow, shining; head very large, transversely quadrate, slightly emarginate above, and broadly truncate beneath, middle of vertex longitudinally impressed, face very broad, clypeus exceedingly small, tuberculiform, tinged with fulvous; labrum also very small; mandibles large, broad at base, acute and simple at tip; a sinuate band from eye to eye at summit, a punctiform dot just below on anterior orbits and tips of mandibles black; antennæ ———; thorax smaller than head; prothorax prominent, formed much as in the Sphegidæ; a stripe on each side of prothorax, another beneath wings, pleura beneath, and the metathorax except two pale spots black or bluish-black; wings whitish-hyaline, neuration as in preceding species; legs entirely yellow; abdomen broadly ovate, nearly circular, flattened, smooth and polished, base of first segment and a band near apical margin blackish, the remaining segments tinged with brownish on apical margins; apex acuminate. Length .25 inch.

*Hab.*—Nevada, (H. Edwards). One specimen. A very curiously formed species.



**Nomada Edwardsii.**—♂.—Black, head and thorax closely and deeply punctured; sides of the face, narrowed above but not quite reaching the summit of eyes, spot on vertex beneath ocelli, clypeus except two black dots, spot above, labrum, mandibles except tips, posterior orbits, scape beneath, collar, lateral margin of mesothorax dilated anteriorly, two short lines on disk, tubercles, large mark on pleura, scutellums, large angular mark on each side of metathorax, and tegulæ, all lemon-yellow; flagellum ferruginous at base and beneath, second and third joints subequal, the second slightly longer; wings dusky, darker at apex; legs yellow, coxæ, femora and tibiæ behind more or less black; abdomen very minutely punctured, lemon-yellow, basal half of first segment and basal margin of remaining segments, black. Length .50 inch.

*Hab.*—California, (Henry Edwards). One specimen. This fine species closely resembles *superba* Cress., but is quite distinct.

In giving the relative lengths of the third and fourth joints of antennæ, (second and third of flagellum), the view is always taken from beneath, the greatest difference being generally noticeable in the males.

**Nomada Morrisoni.**—♀.—Ferruginous; head and thorax densely and confluent punctured; sides of face, clypeus, spot above, labrum, base of mandibles, posterior orbits, collar, tegulæ, tubercles, band or two spots on scutellum, generally a line on postscutellum, and a more or less distinct mark on pleura, yellow; dot on each side of clypeus at base, space around base of antennæ, spot enclosing ocelli, posterior margin of head, most of prothorax, anterior middle of mesothorax, and the metathorax, except two yellow spots sometimes margined with ferruginous, black; antennæ pale ferruginous, third and fourth joints equal in length; scutellum slightly bilobate; wings faintly dusky, darker at apex; legs pale ferruginous, knees and tibiæ more or less yellow, coxæ black behind; abdomen shining, very minutely punctured, yellow, basal half of first segment ferruginous, apical margin of segments 1—4 narrowly brown or ferruginous; venter yellow, ferruginous at base; the yellow band on first segment is often more or less deeply notched on the anterior middle. Length .40—45 inch.

*Hab.*—Colorado, (H. K. Morrison). Eight specimens.

**Nomada Belfragei.**—♀.—Form short, unusually robust, ferruginous, head strongly, clypeus finely, and mesothorax coarsely and confluent punctured; line connecting ocelli and tips of mandibles black; flagellum fuscous above, the second joint of flagellum longer than third; collar, tubercles, two spots on scutellum and line on postscutellum obscurely yellow; scutellum strongly bilobate; metathorax nearly smooth, with white pubescence laterally; pleura strongly and sparsely punctured; wings fuscous on apical margin; abdomen finely and closely punctured shining, a large ovate spot on each side of first and second segments, largest on second, an interrupted band on third and a narrower band on fourth and fifth, yellow; venter immaculate. Length .40 inch.

*Hab.*—Texas, (G. W. Belfrage). A very distinct species, with an unusually robust form.

**Nomada zebrata.**—♀.—Ferruginous; head and thorax very densely punctured; sides of face, collar, tubercles, tegulæ, scutellums, spot on each side of metathorax, and large irregular longitudinal mark on pleura, pale yellow; tips of mandibles black; second and third joints of flagellum subequal, the second slightly longer; wings hyaline, dusky at apex; legs pale ferruginous, spot on coxæ and knees yellow; abdomen dull ferruginous, an interrupted band on first segment, a band on the second, third and fourth segments, narrowed in the middle, that on second broadest, and the fifth segment entirely, yellow; venter banded with yellow. Length .40 inch.

♂.—Marked similar to ♀ but brighter in color; sides of face, clypeus, spot above, orbits, clypeus, labrum, and mandibles except tips, yellow; scape short, broadly dilated, almost globose, second joint of flagellum much longer than third; spot behind antennæ, spot connecting ocelli, and spot at base of metathorax black; the yellow on scutellum is generally divided into two spots by a narrow ferruginous line; abdomen with six yellow bands and the venter banded and spotted with yellow; the head above antennæ, the flagellum except base and the mesothorax sometimes varies to black instead of ferruginous, and in two specimens from Kansas the prevailing color of both thorax and abdomen is black. Length .45 inch.

*Hab.*—Colorado; Kansas, (Ridings). Six specimens. The ♂ of this species is readily distinguished by the short dilated scape.

**Nomada opposita.**—♀.—Pale ferruginous, head and thorax very densely punctured, clothed with pale pubescence; sides of face, clypeus, spot above, labrum, base of mandibles, collar, tubercles and postscutellum, yellow; tips of mandibles, line connecting ocelli, anterior suture of thorax narrowly and the metathorax, except a large ferruginous mark on each side enclosing a yellow spot, black; antennæ entirely pale ferruginous, third and fourth joints equal in length; scutellum bilobate pale ferruginous; wings dusky at tips; abdomen minutely punctured, apical margin of the segments narrowly fuscous, a spot on each side of third segment, and broad band on fourth and fifth segments, yellow; venter varied with yellow. Length .38 inch.

*Hab.*—California, (H. Edwards). One specimen.

**Nomada adducta.**—♂.—Head ferruginous, closely punctured; large spot on vertex extending more narrowly back to occiput covering ocelli, posterior margin of head and tips of mandibles, black; sides of face, clypeus and base of mandibles, yellow; antennæ rather short, fuscous, paler beneath, scape short, dilated, ferruginous at base; third joint slightly longer than fourth; thorax black, densely and strongly punctured; a large mark on each side of mesothorax, the scutellums and most of pleura, ferruginous; scutellum bilobate; metathorax not distinctly sculptured, the sides with patch of silvery pile; an obscure yellowish line on each side of collar; tegulæ and tubercles, ferruginous; wings hyaline, fuscous at extreme tips; legs ferruginous, base of coxæ and of femora more or less, spot at tip of posterior tibiæ and base of their tarsi, black; abdomen closely punctured, ferruginous, immaculate except a black band on first segment and a dusky spot on each side of second; extreme lateral apical margin of the segments and apex with white pubescence. Length .36 inch.

*Hab.*—Colorado, (Morrison). One specimen. The scape resembles that of *zebrata* in shape, although not so much dilated.



**Nomada affabilis.**—♂.—Black; head and thorax densely and confluent punctured, thickly clothed with short pale pubescence; sides of face, clypeus, spot above, labrum, mandibles except tips, dot at summit of eyes, posterior orbits, scape beneath, collar, tubercles, tegulæ, scutellums, spot on each side of metathorax and two spots or band on pleura, yellow; flagellum fulvous beneath, second joint slightly longer than third; scutellum bilobate; wings hyaline, faintly dusky at tips; legs ferruginous, the tibiæ and tarsi more or less yellow, posterior femora and tibiæ black behind; abdomen closely and finely punctured, a yellow band on all the segments except the last, broadest on second, all more or less narrowed in middle and that on first segment sinuate; venter banded with yellow. Length .40—.45 inch.

*Hab.*—New York; Illinois. Two specimens. This looks much like the ♂ of *vineta* Say, which however has the second joint of flagellum much shorter than the third.

**Nomada Ridingsii.**—♀.—Black, head and thorax strongly punctured; face shining, sparsely punctured; large irregular mark on each side of face, spot on base of mandibles, short line on posterior orbits, collar, tubercles, tegulæ, two spots on scutellum, postscutellum and lunate mark on pleura, white; labrum, mandibles, antennæ, spot beneath wings, sides of metathorax and the legs ferruginous; antennæ short, second joint of flagellum longer than third; mesothorax coarsely and confluent punctured; scutellum slightly bilobate; base of metathorax smooth, impunctured, sides clothed with short silvery pubescence; wings fuscous at tips; abdomen closely and strongly punctured, ferruginous, segments 1—5 each with a white band, broad and even on the first, broad and dilated laterally on second and narrow on the remaining segments; venter ferruginous with a white dot on each side of the third segment. Length .40 inch.

*Hab.*—Colorado, (Mr. James Ridings). This handsome species resembles *Putmani* Cress., which however has the mesothorax sparsely punctured and shining; the ornamentation is very much alike in both species.

**Nomada suavis.**—♀.—Black, opaque; head and thorax strongly punctured, mesothorax coarsely so; face shining, sparsely punctured; sides of face nearly up to summit of eyes, clypeus, confluent spot above, labrum, mandibles except tips, dot below anterior ocellus, posterior orbits, scape beneath, collar, tubercles, tegulæ, band or two spots on scutellum, postscutellum, two ovate spots on metathorax, and large mark on pleura, lemon-yellow; flagellum dull testaceous, brown above, second joint longer than third; scutellum bilobate; wings fuscous on apical half with hyaline mark beneath marginal cell; legs yellow more or less black behind, four anterior femora generally fulvous at base before; abdomen closely and rather strongly punctured, black with a yellow band on segments 1—4, very broad and dilated laterally on second, fifth segment entirely yellow, apical margin of the segments often tinged with fulvous especially on the sides; venter banded with yellow, the last segment with a large round yellow spot on each side. Length .35 inch.

♂.—Resembles the ♀, but the metathorax is black immaculate, clothed laterally with silvery-white pubescence. Length .40 inch.

*Hab.*—California, (Behrens); Oregon, (H. Edwards).

**Nomada Snowii.**—♀.—Black, opaque, densely and strongly punctured; middle of face, clypeus, antennæ at base and beneath, pleura beneath, two dots on metathorax and flanks, legs and first abdominal segment above and beneath, ferruginous; mark on each side of face, apex of labrum obscurely, spot at base of mandibles, posterior orbits, collar, tubercles, tegulæ, scutellums and large mark, notched behind, on pleura, white; second joint of flagellum equal in length with the third; scutellum nearly flat, very faintly impressed medially; wings slightly dusky, hyaline near tips; line on four anterior femora beneath near tips, line on all the tibiæ at base and spot at tips, white; abdomen opaque finely and closely punctured, a dot on each side of first segment near apex, a broad band narrowed medially on segments 2—4, and the fifth segment entirely pale yellowish-white; venter banded with white. Length .34 inch.

♂.—Marked like the ♀, but without any ferruginous color, except on antennæ beneath and on legs: sides of face, clypeus, labrum, mandibles except tips, spot on scape beneath, collar, scutellums, tubercles, large notched mark immediately beneath tubercles and tegulæ, yellowish-white; face silvery; legs ferruginous, the femora more or less black behind, knees and tibiæ in front yellow, a black spot on four posterior tibiæ near tips; first segment of abdomen with a narrow yellow band, deeply indented on each side anteriorly and nearly interrupted on the disk, segments 2—6 each with a yellow band, broad on second segment and narrowed in the middle; venter banded with yellow. Length .35 inch.

*Hab.*—Colorado, (Prof. F. H. Snow ♀; Morrison ♂). Two specimens. A very pretty species.

**Nomada Heiligbrodtii.**—♀.—Black, opaque, coarsely and confluent punctured; mouth tinged with ferruginous; large cuneiform spot on each side of face, spot on base of mandibles, spot on upper posterior orbits, collar, two spots on scutellum, postscutellum, tubercles, sublunate spot on pleura and tegulæ, white; antennæ with three basal joints ferruginous, third joint longer than fourth; metathorax immaculate, impunctured, clothed laterally with pale pubescence; wings fuliginous along costa and at tip; legs entirely ferruginous; abdomen finely and closely punctured, rather shining, a continuous yellowish-white band on segments 1—5, that on second segment dilated laterally, and that on the fifth subinterrupted medially; venter black, with a narrow curved pale line on each side of third and fourth segments. Length .35 inch.

♂.—Smaller and more slender than ♀, and more shining, with the pale markings lemon-yellow; the entire face beneath antennæ is yellow; antennæ entirely ferruginous except at tip above; the yellow spot on pleura reduced to a dot; wings darker; the yellow bands on abdomen are broader and interrupted medially on segments 2—4, while on basal segment there is only a small lunate spot or line on each side near apex, sixth segment with a yellow spot on each side; venter black immaculate. Length .29 inch.

*Hab.*—Texas, (Mr. L. Heiligbrodt). Three specimens. This is closely allied to *modesta* Cress., which always has a yellow spot on each side of metathorax.

**Nomada Krugii.**—♀.—Black; head and thorax densely and rather finely punctured; face, sides of thorax and of metathorax clothed with a fine silvery-white sericeous pile; sides of face, spot at base of mandibles, posterior



orbits, collar, band or two spots on scutellum, short line on postscutellum, two spots on metathorax, tubercles, lunate mark on pleura, and tegulæ, yellow; face smooth and shining, very finely punctured; mandibles, antennæ beneath and legs ferruginous; second and third joints of flagellum short, about equal in length; scutellum bilobate; wings hyaline, fuscous at extreme tip; a fuscous spot or line on posterior tibiæ behind; abdomen shining; a band near apex of first and second segments narrowed in the middle, a transverse spot on each side of third and fourth segments and a band on the fifth, yellow; venter with a broad yellow band on third segment. Length .30 inch.

♂.—Marked like the ♀ except that the clypeus, spot above, and labrum, are yellow; posterior legs behind and broad line on their tibiæ in front black, knees, line on all the tibiæ in front, base and apex of posterior pair, and base of their tarsi yellow. Length .30 inch.

*Hab.*—Porto Rico, (Mr. Leopold Krug). Four specimens. Resembles *cubensis* somewhat in ornamentation.

**Nomada limata.**—♀.—Black or brown, and shining, clothed with short pale pubescence, longer and more dense on sides of abdomen; a line on anterior orbits curved inwardly to clypeus, a dot on clypeus, collar, tubercles, a dot on pleura, a bilunate line on scutellum, and the postscutellum, white; antennæ brown, ferruginous at base, third joint a little longer than fourth; mesothorax smooth, polished, impunctured; scutellum flat; pleura rather coarsely punctured; metathorax with whitish pubescence at sides; tegulæ ferruginous; wings subhyaline, costal margin broadly fuliginous; legs brown or black, immaculate; abdomen finely punctured, clothed above with a short sericeous pile, base tinged with ferruginous, a narrow continuous whitish band on segments one, two, and four, and a broader interrupted one on fifth segment; venter immaculate. Length .35 inch.

*Hab.*—Mexico, (Sumichrast). One specimen. This resembles very closely the *tibialis* Cress., from Cuba, but in that species the legs are red and the wings are dusky only at tip; in both species the mesothorax is polished and impunctured.

**Nomada mexicana.**—♀.—Black, opaque, head and thorax strongly and confluent punctured; narrow anterior orbits ending in small spot on each side of clypeus, narrow posterior orbits, spot on middle of clypeus, spot on base of mandibles, collar, band at base of scutellum, one on postscutellum, spot on each side of metathorax, and three spots on pleura, whitish; base of antennæ, tubercles, tegulæ and legs ferruginous; third and fourth joints of antennæ about equal in length; scutellum obliquely flattened, roughly sculptured; wings hyaline, costal margin fuliginous; abdomen slightly ferruginous at extreme base, a narrow whitish band on first and second segments, curved anteriorly on the lateral margin, fourth and fifth segments each with an narrow ill-defined pale band abbreviated laterally; venter with a pale spot on disk of first segment and a broad band on second segment. Length .35 inch.

*Hab.*—Mexico, (Sumichrast). One specimen. Marked much like *limata*, but more slender in form and separated at once from that species by the coarsely sculptured mesothorax.

**Nomada pilosula.**—♂.—Black, immaculate, shining, rather thickly clothed with pale pubescence, finely punctured; head slightly narrower than thorax; eyes large, the front narrowed above, so that the space between the eyes and ocelli is quite narrow; antennæ short, slender, flagellum ferruginous, second and third joints short and equal in length; mesothorax finely and sparsely punctured; scutellum subbilobate; base of metathorax depressed and polished; wings hyaline, dusky on apical margin; legs tinged with brown, thickly clothed with whitish pubescence, tarsi more or less testaceous; abdomen short-ovate, polished, the apical margin of the segments fringed with whitish pubescence; venter brown, fringed with pale hairs. Length .40 inch.

*Hab.*—New York. One specimen. More pilose than any species known to me, and easily recognized by the color being entirely black, and the surface smooth and shining.

**Nomada scita.**—♂.—Black, opaque; head and thorax strongly and confluent punctured, clothed with whitish pubescence; face silvery sericeous; sides of face, clypeus, spot above, labrum, mandibles except tips, antennæ beneath, two spots on collar, tubercles and tegulæ, yellow; antennæ blackish above, except in middle and extreme tip which are pale fulvous, scape very robust cylindrical, third joint about half the length of fourth which is joined obliquely to the third and narrowed at tip, the flagellum crenulated when viewed laterally; scutellum subbilobate, entirely black, a minute pale spot on each side of postscutellum; wings hyaline, with a dusky spot at tip, third submarginal cell narrowed almost to a point towards marginal; legs pale ferruginous or fulvous, most of coxæ and trochanters beneath, black; abdomen shining, finely punctured, a narrow interrupted band on first segment, and an continuous band on the following segments, broadly dilated laterally on second, white; venter brown. Length .30 inch.

*Hab.*—Colorado, (Morrison). One specimen. A beautiful little species, with antennæ formed like those of *articulata* Smith.

**Nomada accepta.**—♀.—Black, opaque; head and thorax coarsely and densely punctured; orbits, very broad anteriorly, clypeus except base, labrum, mandibles, antennæ, collar, four stripes on mesothorax, scutellums, four spots on metathorax, tubercles, most of pleura and tegulæ, ferruginous; antennæ dusky above, third joint much shorter than fourth; scutellum strongly bilobate, shining; wings dusky, with hyaline spot near tip; legs ferruginous, coxæ and femora more or less black at base; abdomen shining, closely and minutely punctured, varied with ferruginous, a narrow sinuate subinterrupted band on first segment, a broad band on second segment, narrowed gradually to middle where it is slightly interrupted, a line on each side of third segment and the fifth segment notched on each side posteriorly, all white; posterior margin of third segment broadly ferruginous; venter ferruginous, varied with blackish. Length .30 inch.

*Var.* ♀.—Abdomen entirely black above except a transverse cuneiform spot on each side of second segment, a spot on each side of third, an interrupted band on the fourth, and a square spot on middle of fifth segment, all white. Length .30 inch.

♂.—Larger and more robust than ♀, black; sides of face narrowly, anterior margin of clypeus, and scape beneath white; labrum, mandibles, flagellum



beneath, line on collar, tubercles, scutellum, tegulæ, spot before and mark on pleura, ferruginous; wings hyaline, apical margin fuscous; legs ferruginous, coxæ and femora behind black; abdomen marked as in ♀, except that the fourth, fifth and sixth segments are ferruginous with a narrow white band, venter with four white spots. Length .35 inch.

*Hab.*—Colorado, Kansas, (Snow ♂, Morrison ♀). Three specimens.

**Nomada vitticollis.**—♀.—Yellow, opaque, head and thorax densely and strongly punctured; vertex except sides and spot beneath ocelli, and the occiput, black; flagellum ferruginous, second and third joints subequal, the former slightly longer, scape yellow, black behind; mesothorax black with four longitudinal yellow lines; sutures of the thorax narrowly and a stripe on middle of metathorax black; scutellum obliquely flattened, not at all depressed medially; wings faintly dusky, darker at tip; legs pale yellow, a stripe on posterior femora above and beneath and their tibiæ within fuscous; abdomen strongly narrowed at base, blackish above, segments 1—5 each with a narrow yellow band, broader on the sides, that on first segment with a fuscous dot on each side posteriorly, apical margin of first segment broadly dull testaceous; venter yellow. Length .35 inch.

*Hab.*—Mexico, (Sumichrast). One specimen.

**Nomada civilis.**—♂.—Black, opaque; head and thorax densely and confluent punctured and thickly clothed with short pale pubescence; sides of face extending narrowly up on anterior orbits, clypeus, sometimes a spot above, labrum, mandibles except tips, posterior orbits, scape beneath, line or two spots on collar, sometimes wanting, tubercles, irregular mark beneath, occasionally a small spot on each side of metathorax, and the tegulæ yellow; scape robust, flagellum ferruginous with a black line above, second joint a little shorter than third; scutellum not at all prominent; wings faintly dusky at tips; legs yellow, coxæ at base, all the femora behind more or less, and a spot on all the tibiæ behind, black; tarsi more or less ferruginous; abdomen shining, yellow, basal half of first segment and narrow basal margin of remaining segments black, apical margin of segments 1—4 narrowly fuscous, anterior margin of yellow band on first segment sinuate; venter yellow, sometimes banded with black. Length .35—.45 inch.

*Hab.*—Colorado, (Ridings, Morrison). Nine specimens. This is closely allied to the ♂ of *luteola* St. Farg.

**Nomada vicinalis.**—♂.—Black, opaque; head and thorax densely and finely punctured and rather thickly clothed with short pale pubescence, tinged with yellowish on vertex and thorax above, on face and sides of thorax silvery sericeous; an emarginate line on sides of face, line beneath eyes, clypeus, labrum, base of mandibles, scape beneath, tubercles and spot beneath, yellow; scape behind and spots on basal half of flagellum behind black; second joint of flagellum rather more than one-half the length of third; two narrow obscure stripes on mesothorax, scutellum and tegulæ, ferruginous; scutellum subbilobate, not prominent; wings narrowly fuscous on apical margin; legs ferruginous, posterior coxæ and all the femora behind more or less black; abdomen smooth and shining ferruginous, basal half of first segment and spot on extreme

sides of the segments black; a yellow band, more or less interrupted on middle on segments 1—6, broader and narrowed towards middle on second segment; venter ferruginous, spotted or banded with yellow. Length .40 inch.

*Hab.*—Colorado, (Morrison). Two specimens. This may be only a variety of the preceding species.

**Nomada rivalis.**—♂.—Black, opaque; head and thorax densely punctured, rather thickly clothed with pale pubescence, which is darker on vertex and thorax above; sides of face, lower posterior orbits, clypeus, spot above, labrum, mandibles except tips, scape beneath, collar, two spots on scutellum, tubercles, a more or less large irregular mark on pleura, and tegulæ, yellow; antennæ black behind, scape robust, flagellum ferruginous beneath, second joint about one-third the length of third; scutellum subbilobate, not prominent; wings faintly dusky at tips; legs yellow, tinged with ferruginous, coxæ at base, trochanters behind, four posterior femora at base and behind, and spot or stripe on their tibiæ black; abdomen shining, black, a broad yellow band on all the segments, that on the first deeply notched in the middle anteriorly, the others more or less narrowed in the middle anteriorly, venter yellow. Length .40 inch.

*Hab.*—California, (H. Edwards, Behrens). Three specimens. This and the next species resemble the two preceding species in color and ornamentation, but are distinguished at once by the second joint of the flagellum being much shorter in proportion to the length of the third joint.

**Nomada fragilis.**—♂.—Black, opaque; head and thorax densely punctured, rather thickly clothed with pale pubescence; line on sides of face, clypeus, labrum, base of mandibles, line beneath eyes, scape beneath, tubercles, sometimes a spot beneath, and occasionally two spots on scutellum, pale yellow; antennæ long, black behind, scape robust, flagellum ferruginous, second joint about one-fourth the length of third; scutellum not prominent; tegulæ and legs ferruginous, coxæ and all the femora more or less behind black, sometimes the posterior femora is almost entirely black as well as their tibiæ behind and base of tarsi; wings dusky on apical margin; abdomen marked as in the preceding species. Length .30 inch.

*Hab.*—Colorado, (Ridings, Morrison). Three specimens.

**Nomada citrina.**—♀.—Black, opaque; head and thorax strongly and densely and face finely punctured; sides of face, clypeus except black dot on each side, spot above, labrum, mandibles except tips, broad posterior orbits, spot beneath lower ocellus, scape beneath, collar, tegulæ, spot before, scutellums, spot on each side of metathorax, tubercles and pleura laterally and beneath, all pale lemon-yellow; the pleura has a black dot beneath wings and a short black line behind each anterior coxa; antennæ rather long, flagellum fulvous, black at tip, second joint a little shorter than third, both together being longer than scape; scutellum bilobate; wings varied with fuscous; legs pale lemon-yellow, coxæ and femora above and behind and a stripe on four posterior tibiæ behind, black; tips of tarsi fulvous; abdomen pale lemon-yellow, subopaque, base of first, and narrow apical margin of first and second segments black,



narrow apical margin of third and fourth segments dull testaceous; venter lemon-yellow. Length .40 inch.

*Hab.*—California, (H. Edwards). One specimen. Closely resembles *Edwardsii*, but the second joint of the flagellum is shorter than the third.

**Nomada munda.**—♀.—Black, opaque; head and thorax strongly and confluent, face finely, punctured, clothed with pale ochraceous pubescence; sides of face, anterior and posterior orbits, clypeus, labrum, mandibles except tips, antennæ, collar, lateral margin of mesothorax, scutellums, tubercles, large mark on pleura, tegulæ and legs, ferruginous; second joint of flagellum a little shorter than third; scutellum subbilobate, not very prominent; wings fuscous, pale at base and before apex, costal vein and stigma fulvous; posterior femora and tibiæ black behind; abdomen smooth and shining, first segment entirely ferruginous except a black dot on each side near base; segments 2—5 white, the second narrowly fulvous at apex, the third and fourth narrowly black at apex, and the fourth and fifth narrowly black at base; venter ferruginous, immaculate. Length .45 inch.

*Hab.*—Colorado, (Ridings). One specimen.

**Nomada dilucida.**—♀.—Ferruginous, head and thorax strongly and confluent punctured, spot on each side of the face, large spot behind eyes, collar, lateral anterior corners of mesothorax, band at base of scutellum, tubercles and two large marks on metathorax, yellow; spot between antennæ, dot on each side of clypeus, posterior margin of head, sides of prothorax, sutures of thorax, sides of metathorax and stripe on middle, black; second joint of flagellum a little shorter than third; scutellum depressed, slightly impressed medially; tegulæ smooth and shining; wings subhyaline, fuscous on apical margin; anterior tibiæ in front and spot at base and tip of posterior tibiæ yellowish; posterior femora black behind; abdomen smooth and shining, yellow above, basal half of first and apical margin of segments 1—4, fuscous; venter ferruginous, banded with yellow. Length .45 inch.

*Hab.*—Colorado, (Morrison). One specimen.

**Nomada libata.**—♀.—Ferruginous, opaque; head and thorax very densely and confluent punctured; tips of mandibles, dot on each side of clypeus, spot behind each antenna, confluent with a spot enclosing the ocelli, a stripe on middle of mesothorax dilated anteriorly and posteriorly and interrupted before middle, broad stripe on middle of metathorax, dot on sides of prothorax and spot above middle coxæ, black; apex of flagellum fuscous, second joint slightly shorter than third; scutellum subbilobate; tegulæ opaque and coarsely punctured; wings faintly tinged with fuscous, apical margin fuscous; abdomen opaque, minutely punctured, a large round spot on sides of second segment, a band on third and fourth and the fifth segment entirely, pale yellow; venter ferruginous, immaculate. Length .45 inch.

♂.—Head yellow; a dot on each side of clypeus, tips of mandibles, vertex and occiput, black; antennæ ferruginous, more or less black or fuscous behind and at tip, third joint much shorter than fourth; thorax ferruginous; mesothorax black with broad lateral margin and narrow stripe on each side of middle ferruginous, sometimes ferruginous with a broad median black stripe dilated posteriorly; scutellum more strongly bilobed than in ♀; postscutellum

yellowish; disk and lateral margin of metathorax and spot on each side of prothorax black; wings hyaline, narrowly fuscous on apical margin; abdomen yellow above, the apical margin of the segments ferruginous; first segment ferruginous with a narrow interrupted yellow band, more or less indented anteriorly and posteriorly. Length .40 inch.

*Hab.*—Colorado, (Ridings). Four specimens.

**Nomada parata.**—♀.—Ferruginous, opaque; head and thorax strongly punctured, densely and confluent so on mesothorax; two spots behind antennæ, line connecting ocelli, posterior margin of cheeks, narrow stripe on disk of mesothorax ending in a spot on anterior and posterior margins, sutures of pleura narrowly, spot on each side of prothorax and broad stripe on middle of metathorax, black; flagellum dusky toward apex, second joint shorter than third; scutellum strongly bilobate, shining, sparsely punctured; tegulæ polished with a few scattered punctures; wings subhyaline, narrowly fuscous on apical margin; femora and tibiæ more or less black behind; abdomen opaque, densely and minutely punctured, ferruginous, basal half of first segment black, a small yellow spot on each side of middle, segments 2—4 each with a very broad yellowish-white band, those on two and three slightly indented on each side posteriorly, fifth segment entirely yellowish-white; venter immaculate. Length .45 inch.

*Hab.*—Colorado, (Ridings). One specimen. This and the preceding species are closely allied, but may be easily separated by the tegulæ, which in *libata* is larger, coarsely sculptured and opaque.

**Nomada pacata.**—♀.—Ferruginous, opaque; head and thorax strongly and confluent punctured, the face finely punctured; a spot or line on lower anterior orbits, two spots at base of metathorax, sometimes wanting, and occasionally two spots on pleura, yellow; dot on each side of clypeus, tips of mandibles, two spots behind antennæ sometimes confluent with spot enclosing ocelli, posterior margin of cheeks, collar, sutures of the thorax broadly, a stripe on middle of mesothorax, sometimes a stripe on each side, pleura beneath, and broad stripe on middle of metathorax, black; antennæ robust, scape narrowed at base, third joint short, rather more than one-half the length of third; scutellum prominently bilobate, shining, sparsely punctured; tegulæ pale ferruginous, shining; wings dusky at tips, with the usual pale spot before the darker apical margin; legs ferruginous, with the coxæ, femora and tibiæ more or less black behind; abdomen varied with ferruginous, shining, a yellow band on segments 1—5, all more or less interrupted in middle, that on first segment narrow and undulate anteriorly, sometimes subobsolete, that on second segment broad laterally and narrowed within, all slightly indented on each side posteriorly, those on fourth and fifth sometimes enclosing a fuscous spot; venter ferruginous, sometimes spotted with yellow at apex. Length .32—.35 inch.

*Hab.*—Colorado, (Ridings). Three specimens.

**Nomada Crotchii.**—♀.—Head opaque, black, thickly clothed with a short pale pubescence, lower corners of face, anterior margin of clypeus, labrum, base of mandibles and spot at summit of each eye, whitish; anterior and posterior orbits obscurely ferruginous; antennæ fulvo-testaceous beneath, third joint a little shorter than fourth, both together being longer than scape



which is narrowed at base; thorax densely punctured, dull ferruginous, the sides and metathorax thickly clothed with pale pubescence, the sutures of thorax, stripe on middle of mesothorax, pleura beneath and most of metathorax black; dot on each side of collar, spot on each side before scutellum, two spots on postscutellum, spot on each side of metathorax nearly obscured by pubescence, tubercles and an obscure spot on pleura, whitish; scutellum subbilobate, not very prominent; wings narrowly fuscous on apical margin; legs ferruginous, the coxæ, femora and tibiæ behind, and the tarsi more or less black; knees, tips of tibiæ and line or spots on four posterior tarsi white; abdomen oblong, shining, ferruginous, varied with black at base of the segments, segments 1—5 each with a white band dilated laterally and narrowed medially, enclosing on each side a small ferruginous or fuscous spot, the band on second segment suddenly dilated on the sides; venter white varied at base with dull ferruginous. Length .40 inch.

*Hab.*—Fort Tejon, California, (Crotch). One specimen.

**Nomada crudelis.**—♀.—Large, robust, opaque sanguineo-ferruginous; tips of mandibles, dot on each side of clypeus, two spots behind antennæ, line connecting ocelli, flagellum, sutures of thorax laterally and beneath, three obscure stripes on mesothorax and middle of metathorax, black; third joint of antennæ a little more than one-half the length of fourth; mesothorax coarsely and confluent punctured; scutellum prominently bilobed; wings uniformly fuscous; basal half of first abdominal segment black. Length .60 inch.

*Hab.*—Georgia, (Morrison). One specimen. This and *grandis* Cress., are our largest species.

**Nomada melliventris.**—♂.—Head and thorax black, opaque, densely punctured, thickly clothed with a pale pubescence; lower corners of face, clypeus, labrum, and mandibles except tips yellow; antennæ black, ferruginous beneath, third joint one-third the length of fourth; thorax immaculate; scutellum not at all prominent; tegulæ yellowish; wings hyaline, dusky at tips; legs pale ferruginous, coxæ, trochanters and femora beneath, black; abdomen yellowish-ferruginous, subsericeous, two spots at base of first segment and sometimes a dot on each extreme side of second, black; in one specimen the second segment has an obscure yellowish spot on each side; venter immaculate, polished. Length .27 inch.

*Hab.*—California, (H. Edwards). Two specimens.

**Osiris mexicanus.**—♀.—Black, smooth and polished; orbits, clypeus, spot above, collar, scutellum, spot on each side at base, large mark on basal middle of metathorax, tubercles and tegulæ, pale yellow; antennæ dull testaceous, fuscous at tips and behind; collar bilobate; wings fuscous, with a strong æneous reflection, stigma yellow; legs black or brown, clothed with a pale silky pile, anterior pair in front, pale; abdomen polished, pale yellow, the apical margin of the segments broadly black; venter black, the long apical process yellowish. Length .40 inch.

♂.—Pale greenish-yellow, flagellum pale fulvous; a broad blackish stripe on each side of mesothorax connected anteriorly by a transverse band; anterior margin of pleura narrowly black; wings yellowish-hyaline, faintly dusky; legs pale yellow, the four posterior trochanters and femora fuscous

beneath; abdomen above marked as in ♀; venter banded with fuscous and yellow. Length .35 inch.

*Hab.*—Mexico, (Sumichrast). Three specimens.

**Osiris marginatus.**—♂ ♀.—Pale yellow, smooth and polished; flagellum pale fulvous, fuscous above and at tip; mesothorax greenish-fuscous; collar strongly bilobate; wings yellowish-hyaline, faintly dusky at tips; legs immaculate; abdominal segments above broadly margined at apex with black, those on the apical segments of the male dilated in the middle; venter faintly banded with fuscous. Length .30—.35 inch.

*Hab.*—Mexico, (Sumichrast). Two specimens.

**Phileremus americanus.**—♂ ♀.—Form robust, black, finely punctured; middle of face, margins of the thorax above, two short lines on anterior middle of mesothorax, line encircling the scutellum and tubercles, and sides of metathorax, clothed with short cinereous pubescence; scutellum bilobate, the lateral teeth short and blunt; tegulae dull testaceous; wings faintly dusky at tips; knees, tips of tibiae and the tarsi ferruginous; abdomen short, convex and nearly globose ♂, longer in ♀; a large lunate patch on each side of first segment broad and confluent at base, and a band on apex of the three or four following segments, interrupted in the middle on second segment, composed of short appressed cinereous scale-like pubescence; venter brown, pale at tip. Length .30 inch.

*Hab.*—Canada, (Saunders); Colorado, (Morrison). Two specimens. This and the next species have much the appearance of *Epeolus compactus* described below.

**Phileremus montanus.**—♂.—Form short, robust, compact, black; face, anterior margin of mesothorax, posterior margin of scutellum, post-scutellum, sides of metathorax, and patch beneath tegulae, clothed with a dense cinereous pubescence; antennae short, entirely black; mesothorax finely punctured, shining, with several longitudinal impressed lines in front; scutellum very slightly impressed medially; tegulae dull testaceous; legs robust, clothed with a pale subsericeous pile, tarsi pale testaceous at tips; abdomen short, convex, subglobose, a large lunate mark on each side of first segment broadly confluent at base, a band on apex of second segment interrupted on disk, four spots on third segment, those on the sides small, and two spots on apical middle of third and fourth segments, all composed of short appressed cinereous scale-like pubescence. Length .25 inch.

*Hab.*—Nevada, (H. Edwards). One specimen.

**Phileremus fulviventris.**—♂.—Black, opaque, finely punctured, clothed with a short, pale pubescence, most dense on the face, sides of thorax, around scutellum and on metathorax; mesothorax rather broadly and deeply impressed on anterior middle; scutellum obtusely bilobate; tegulae and the four anterior legs in front more or less ferruginous; wings fuscous, with a pale spot before apex; abdomen opaque, dull fulvo-ferruginous, black at extreme base and apex, apical margin of the segments with a narrow line of short whitish pubescence, dilated on each side of the disk on segments 3—5. Length .30 inch.

*Hab.*—California, (Henry Edwards). One specimen.



**Phileremus? pulchellus.**—♀.—Black, opaque, densely punctured; head broader than thorax; face, sides of occiput, margin of thorax above, sides of metathorax and large patch beneath wings clothed with short appressed white scale-like pubescence; mandibles, tegulæ and tubercles, ferruginous; flagellum brown; wings hyaline, faintly dusky at tips, marginal cell as long as the two submarginal cells, rounded at tip, second submarginal cell less than half the length of the first, narrowed nearly to a point toward marginal, receiving the second recurrent nervure a little beyond the middle, the first recurrent is received by the first submarginal cell near its apex or junction with the second; legs with short pale glittering hairs, the femora at tips and the tibiæ more or less varied with ferruginous; tibiæ spinulose on outer edge; abdomen ovate, very densely and confluent punctured, opaque, fulvo-ferruginous, the segments above stained with black on the middle, a circular line on each side of first segment, and four equidistant spots at base of segments 2—5 composed of appressed white scales; fifth segment longitudinally carinate on the disk; venter fulvo-ferruginous, spotted laterally with fuscous, apical segment emarginate at tip. Length .20 inch.

? ♂.—Like the ♀ except that the ferruginous color entirely disappears and the head, thorax and abdomen above are yellowish-brown; apical margin of abdominal segments obscurely pale testaceous. Length .23 inch.

*Hab.*—Colorado, (Ridings). Three specimens. This differs from the preceding species in the neurulation of anterior wings, the first and second submarginal cells receiving each a recurrent nervure.

**Epeolus distinctus.**—♀.—Black; head, thorax, legs and venter with a short sericeo-cinereous pubescence, more obvious in certain lights on sides of face, sides of pleura and of metathorax; upper margin of prothorax, narrow lateral and apical margins of mesothorax, two short lines on anterior middle, entire first segment of abdomen above except base and small slightly transverse spot on disk, and apical margins of segments 2—4, buff, the latter shading into cinereous; fifth segment entirely cinereous in certain lights, the dorsal space very finely punctured; mesothorax and pleura very coarsely punctured; scutellum subbispinuate behind, with very long acute slightly incurved lateral teeth; anterior legs varied with pale ferruginous; wings subhyaline, broadly margined at tip with black; last ventral segment convex, acuminate at tip. Length .50 inch.

♂.—Face, metathorax and pleura densely sericeo-cinereous; labrum, tegulæ, anterior legs and all the tarsi, ferruginous; wings darker; scutellum bilobate, lateral teeth more strongly incurved; apical margin of abdominal segments five and six whitish. Length .45 inch.

*Hab.*—Georgia, (Ridings). Two specimens. A very distinct species.

**Epeolus bardus.**—♀.—Black; head short, with brown pubescence, not pale around base of antennæ; labrum, tips of mandibles, base of antennæ, tubercles, tegulæ, scutellar teeth and legs, ferruginous; tibial spurs black; upper margin of prothorax, narrow lateral and posterior margins of mesothorax, two short lines on anterior middle, sides of metathorax, margins of tubercles, first abdominal segment above (except extreme base and small transverse spot on middle connected with base by a narrow line), and apical margins of segments 2—4, not dilated laterally, all buff; wings fuscous, darker

on apical margins; mesothorax and pleura coarsely punctured; scutellar teeth broad and prominent; apical middle of fifth abdominal segment more finely punctured than remainder of the segment; last ventral segment convex and acuminate at tip. Length .45 inch.

*Hab.*—Texas, (Belfrage). One specimen. In the ornamentation of the abdomen this species strongly resembles *distinctus*, but otherwise they are widely different.

**Epeolus zacatecus.**—♀.—Black; spot surrounding base of each antenna, line on upper margin of prothorax, line before scutellum, line on postscutellum, patch on each side of metathorax, posterior margin of tubercles, four posterior coxæ and the tibiæ exteriorly, silvery-white; large patch on each side of first segment of abdomen, emarginate within, a small patch on each side of second segment and narrow apical margins of segments 2—4, white, tinged with yellow; a whitish spot on each side of fifth segment; wings tinged with fuscous; lateral teeth of scutellum long and subacute; last ventral segment convex, broadly rounded at tip. Length .60 inch.

*Hab.*—Mexico, (Sumichrast). One specimen. The pale markings of abdomen are almost white.

**Epeolus concavus.**—♀.—Large, robust, deep black; head entirely black; posterior margin of prothorax, broad anterior margin of mesothorax as far back as tegulæ, narrow line over tegulæ continued round before scutellum, tubercles and spot behind, broad band beneath scutellum, a large bilobed spot on each side of metathorax, broad band on first abdominal segment more or less interrupted medially by a transverse black mark, and apical margin of second, third and fourth segments, that on second broadly dilated laterally, yellowish-white or pale buff; mesothorax and pleura very densely punctured; lateral teeth of scutellum short and blunt; wings fuscous; apical segment of abdomen sparsely punctured before apex; last ventral segment prolonged beyond dorsal segment, longitudinally concave, the tip produced and slightly incurved. Length .50—.60 inch.

*Hab.*—New Mexico, (Yarrow); California, (H. Edwards); Georgia, (Ridings); Louisiana, (Dr. Lewis). Five specimens. Readily distinguished by the last ventral segment being produced and concave. Very much like *remigatus* Fab. in ornamentation; but besides the different shape of the last ventral segment, that of the third submarginal cell is also quite different, being, in *remigatus*, much broader at its junction with the marginal cell.

**Epeolus robustus.**—♀.—Large, robust, black; sides of face, above antennæ and posterior margin of head, fulvous; upper margin of prothorax, broad anterior margin of mesothorax, continued narrowly on the sides and before scutellum, patch beneath tegulæ covering the tubercles, narrow posterior margin of scutellum, postscutellum, triangular patch on each side of metathorax, spot on four posterior coxæ, tibiæ and tarsi exteriorly, first segment of abdomen above, (narrowly interrupted medially and squarely emarginate within, forming a broad transverse black line), broad apical margin of segments 2—4, that



on second segment abruptly and squarely dilated on each side, and that on third segment slightly and acutely dilated on each side, all yellowish; clypeus flattened, shining and sparsely punctured; scutellum rather strongly bilobate, the lateral teeth very small; wings fuliginous, apical margins darker; last ventral segment flattened, with apex broadly rounded and slightly recurved. Length .65 inch.

*Hab.*—New Mexico, (Yarrow). The single specimen before me has been in alcohol, and the pale markings are obscured; the smooth flattened clypeus and face, not at all prominent between antennæ, and the broad, flattened, recurved last ventral segment, will readily distinguish this fine species.

**Epeolus nevadensis.**—♀.—Deep opaque black; clypeus and face smooth, polished, sparsely punctured; space between antennæ quite prominent; band above base of antennæ, upper margin of prothorax, margins of mesothorax, broad in front, tubercles, spot beneath tegulæ, posterior margin of scutellum, postscutellum, sublunate mark on each side of metathorax near base, spot on posterior coxæ, femora exteriorly, narrow posterior margin of abdominal segments 1—4, (that on one and two abruptly and squarely dilated on each side, and on first segment continued inwardly and nearly meeting on the disk, leaving a broad black abbreviated band on the disk) all fulvous-yellow; fifth segment shining at base, apex densely punctured and clothed with short dense black pubescence, pale sericeous in certain lights; venter opaque, last segment convex, narrowed gradually to apex which is obtuse; scutellum faintly emarginate behind, lateral teeth obsolete. Length .55 inch.

*Hab.*—Nevada, (H. Edwards). One specimen. The thorax is marked as in *remigatus*, but the last ventral segment is acuminate at tip, and the face and clypeus are polished.

**Epeolus californicus.**—♀.—Small, black, almost entirely covered with a bright citron-yellow appressed scale-like pubescence; band on vertex, labrum, mandibles, antennæ, anterior margin of pleura, mesothorax except lateral and posterior margins, and two stripes on middle, band on scutellum, narrow band on first abdominal segment, broader band at base of second, pointed and oblique laterally and narrow basal margin of segments 3—5, slightly dilated on each side on three and four, and in middle on five, all black; scutellum bisinuate, with short broad lateral teeth; last ventral segment convex and broadly rounded at tip. Length .40 inch.

*Hab.*—California, (H. Edwards). A very distinct species.

**Epeolus scelestus.**—♀.—Black; patch around base of each antenna, upper margin of prothorax, lateral and apical margins of mesothorax, two short lines in front, posterior margin of scutellum, postscutellum, a spot behind insertion of posterior wings, a spot beneath tegulæ covering tubercles, a spot on each side of first abdominal segment, deeply and squarely emarginate within, the points nearly meeting on the middle, and narrow apical margins of segments 2—4, that on second slightly interrupted medially, all pale buff; third joint of antennæ reddish; mesothorax and pleura densely and confluent punctured; scutellum bisinuate behind, lateral teeth prominent, obtuse;

legs more or less tinged with brown-ferruginous, tibial spurs black; wings hyaline, apical margins dusky; fifth abdominal segment brownish at tip which is not more coarsely sculptured than remainder of the segment; venter nude, densely and finely punctured, apical segment depressed, apex broadly rounded, almost truncate. Length .48 inch.

*Hab.*—Texas, (Belfrage). Two specimens.

**Epeolus totonacens.**—♀.—Black; face around base of antennæ, patch behind posterior wings, coxæ more or less and spot on each side of fifth abdominal segment, silvery cinereous; upper margin of prothorax, lateral margin of mesothorax more or less interrupted, two short lines on anterior middle, posterior margin of scutellum, postscutellum, tubercles posteriorly, basal, lateral and apical margins of first segment of abdomen, interrupted medially and rather broad apical margins of segments 2—4, slightly interrupted on second, all bright buff; basal joint of flagellum ferruginous; mesothorax and pleura finely and densely punctured; scutellum subbisinuate behind, with short broad lateral teeth; wings subhyaline; legs black or brown, with cinereous pubescence; last ventral segment rather broadly rounded at tip. Length .40 inch.

*Hab.*—Mexico, (Sumichrast). Two specimens.

**Epeolus texanus.**—♂.—Black; face silvery; upper margin of prothorax, lateral and posterior margins of mesothorax, two short stripes on anterior middle, apical margin of scutellum, postscutellum, semicircular line on each side of metathorax, tubercles, large spot beneath tegulæ, coxæ more or less, basal half and broad lateral and apical margins of first abdominal segment, slightly interrupted medially, narrow apical margins of segments 2—6, and a spot on each side of second segment, all white or tinged with buff; vertex and occiput with pale pubescence; mesothorax and pleura densely and confluent punctured; scutellum bisinuate behind, lateral teeth short; legs, except coxæ, ferruginous, tibial spurs black; wings hyaline, dusky at tips; apex of venter sometimes ferruginous, apex of fourth and fifth segments with a fringe of curved black hairs; sometimes the anterior margin is broadly cinereous. Length .45—.55 inch.

*Hab.*—Texas, (Belfrage). Five specimens.

**Epeolus occidentalis.**—♀.—Black; patch around base of each antenna, cheeks, upper margin of prothorax, lateral and posterior margins of mesothorax, two short stripes on anterior middle, line at base of scutellum, its posterior margin, postscutellum, metathorax except triangular space at base, tubercles, a large irregular patch beneath tegulæ, coxæ more or less, first abdominal segment except a rather broad band on middle abbreviated laterally, rather broad apical margins of segments 2—4, a triangular spot at sides of second segment confluent with apical band, spot at sides of fifth segment, and apical margin of second and third ventral segments, all white or pale buff; tegulæ and legs ferruginous; wings hyaline, with dusky apical margin; mandibles and third joint of antennæ sometimes ferruginous; vertex, occiput and sides of postscutellum, with long pale pubescence; scutellum strongly bisinuate behind, with stout prominent lateral teeth; mesothorax and pleura very densely punctured; spurs of four posterior tibiæ black; last ventral segment convex, broadly rounded at tip. Length .40—.50 inch.



♂.—Face and pleura beneath silvery; abdominal segments 2—6 with apical whitish band, the lateral spot on second segment sometimes much reduced or wanting; sometimes the mandibles and labrum are more or less ferruginous, and the pleura and metathorax are occasionally entirely whitish or silvery; otherwise like the ♀. Length .40—.45 inch.

*Hub.*—Colorado, (Ridings). Twenty specimens.

**Epeolus tepanceus.**—♂.—Deep black; face, oblique mark on each side of metathorax and coxæ silvery-white; posterior margin of prothorax, line over tegulæ, line behind tubercles, angular mark on each side of first abdominal segment, broader laterally and sometimes nearly confluent on the middle posteriorly, and a narrow band on apex of remaining segments slightly interrupted medially, all cinereous, sometimes yellowish-cinereous; a silvery cinereous band on apex of second and third ventral segments; third and fourth ventral segments fringed with long curved black pubescence; mesothorax shining, sparsely punctured; outer edge of tegulæ dull testaceous; wings dark fuscous. Length .55 inch.

*Hub.*—Mexico, (Sumichrast). Three specimens. This has much the general appearance of *donatus* Smith.

**Epeolus mercatus** Fabr. Syst. Piez. p. 389.—♀.—Black; face around base of antennæ, upper margin of prothorax, lateral margin of mesothorax, interrupted on each side of tegulæ, two short lines on anterior middle, posterior margin of scutellum, postscutellum, patch on each side of metathorax, posterior margin of tubercles, sublunate mark on each side of pleura, patch between intermediate coxæ, rather narrow basal, lateral and apical margins of first abdominal segment, narrow apical margins of segments 2—4, that on second sometimes narrowly dilated on each side, and sides of fifth segment, all cinereous or pale buff; scape, labrum, mandibles, tegulæ, trochanters, femora beneath, tibiæ and tarsi, ferruginous; mesothorax and pleura densely and confluent punctured; scutellum subbisinuate behind, with short, prominent lateral teeth; wings pale fuliginous; tibial spurs black; last ventral segment very broadly rounded at tip, almost truncate. Length .40 inch.

♂.—Face, thorax beneath, sides of metathorax, coxæ, tibiæ, tarsi and middle of venter silvery; apical margins of abdominal segments five and six almost white; wings paler; labrum, mandibles, scape and femora entirely often obdurate. Length .35—.40 inch.

*Hub.*—Virginia, Georgia, (Ridings); Texas, (Belfrage). Ten specimens. This is probably the true *mercatus*, although the very short description given by Fabricius will apply quite as well to several other species, not found, however, east of the Mississippi River.

**Epeolus lectus.**—♀.—Black; face, cheeks, thorax beneath, coxæ, sides of fifth segment of abdomen and venter densely cinereous; upper margin of prothorax, lateral and posterior margins of mesothorax, two lines on anterior middle, scutellum behind, postscutellum, sides of metathorax, basal half and narrow apical margin of first abdominal segment, confluent laterally, narrow apical margins of segments 2—4 and apical margins of ventral segments 2—4, all yellowish-cinereous; base of antennæ more or less, tegulæ and legs, ferruginous; wings hyaline, dusky on apical margin; mesothorax and pleura

coarsely and sparsely punctured: scutellum bilobate, with short prominent lateral teeth; tibial spurs black; abdomen strongly punctured, middle of fifth segment not at all roughened; last ventral segment tinged with ferruginous, convex and rather broadly rounded at tip. Length .40 inch.

*Hab.*—Kansas, (Dr. Wilson). One specimen.

**Epeolus aguatus.**—♂.—Small, black; face and clypeus clothed with a dense appressed silvery pubescence, on cheeks and occiput the pubescence is more sparse; thorax beneath, upper margin of prothorax, lateral and posterior margins of mesothorax, two lines on anterior middle, posterior margin of scutellum, sides of metathorax, basal and apical margins of first abdominal segment confluent laterally, narrow apical margins of segments 2—6 above and two and three beneath, cinereous; remainder of segments five and six above and beneath brown; basal joint of flagellum, tegulæ and legs more or less yellowish-ferruginous, tibial spurs yellowish; mesothorax, scutellum and pleura coarsely not densely punctured, abdomen strongly punctured; scutellum bilobate, with broad prominent lateral teeth; wings hyaline, fuscous at tips. Length .40 inch.

*Hab.*—Dakota Territory, (Ulke). This may be the ♂ of *lectus*, although the tibial spurs are pale; the thorax and abdomen are sculptured much alike.

**Epeolus compactus.**—♀.—Small, compact; black; face around base of antennæ, upper margin of prothorax, lateral and apical margins of mesothorax, one or two spots on anterior middle, broad apical margin of scutellum, postscutellum, sides of metathorax, large spot beneath tegulæ, pleura beneath, coxæ, basal half and broad lateral and apical margins of first abdominal segment, broad apical margins of segments 2—4, dilated laterally and slightly interrupted medially, base of fifth segment, and apical margins of ventral segments 1—4, all more or less whitish or pale buff; tegulæ, tubercles and legs ferruginous; mandibles, labrum and base of antennæ sometimes more or less ferruginous; vertex and occiput with long pale pubescence; mesothorax and pleura densely and confluent punctured; scutellum subbisinate behind, lateral teeth short, obtuse; tibial spurs ferruginous; last ventral segment subconvex, broadly rounded at tip; wings hyaline, dusky at tips; abdomen short, robust. Length .35 inch.

♂.—More compact, with abdomen almost globose; markings the same as ♀ except the fifth and sixth segments are broadly whitish at tip; sometimes the second segment has a more or less distinct whitish lateral spot. Length .25—.35 inch.

*Hab.*—Texas, (Belfrage); Colorado, (Ridings, Morrison). Fourteen specimens. Easily distinguished by the short compact form, and by the ferruginous legs having concolorous tibial spurs.

**Epeolus aztecus.**—♀.—Black; face around base of antennæ, and sides of fifth segment of abdomen cinereous; upper margin of prothorax, lateral and posterior margins of mesothorax, posterior margin of scutellum, postscutellum, patch on each side of metathorax behind posterior wings, posterior margin of tubercles, oblique line on each side of pleura, large spot on each side of



first segment of abdomen, obtusely emarginate within and nearly meeting on apical middle, and narrow uninterrupted apical margins of segments 2—4, pale buff; basal joint of flagellum ferruginous; mesothorax and pleura finely and densely punctured; scutellum subbisinuate behind, with short lateral teeth; wings pale fuscous; legs brown, coxæ, tibiæ and tarsi with cinereous pubescence; last ventral segment broadly rounded at tip. Length .45 inch.

*Hab.*—Mexico, (Sumichrast). Two specimens.

**Epeolus mexicanus.**—♂ ♀.—Black; face, line on occiput, posterior margin of prothorax, tubercles, line over tegulæ, continued before scutellum, narrow line behind scutellum, sides of metathorax, lunate patch on pleura, large obliquely sublunate patch on each side of first abdominal segment, and rather broad band on apex of segments 2—4 ♀, 2—6 ♂, all covered with a dense appressed yellowish pubescence, sometimes changing in certain lights to silvery-white; the band on prothorax and markings of abdomen varies from pale yellow to dark buff; legs, extreme sides of abdomen, broad on apical segment ♀, and venter clothed with a very short fine cinereous pile; base of flagellum and tegulæ ferruginous; mesothorax closely and confluent punctured; wings varied with dusky, darker on apical margin, yellowish at base; tibiæ and tarsi often more or less varied with ferruginous; apical ventral segment of ♀ convex and broadly rounded at tip; ♂ with a band of cinereous pubescence on ventral segments two and three, and fringe of long yellow pubescence on four and five. Length .35—.45 inch.

*Hab.*—Mexico, (Sumichrast). Sixteen specimens. Resembles *fumipennis* Say, but readily distinguished by the obliquely sublunate pubescent patch on each side of first abdominal segment and the bands on remaining segments except the last; *fumipennis* has a transverse sublunate mark on each side of the first segment and a band only on the second, and the scutellum and legs are always ferruginous.

**Epeolus glabratus.**—♂.—Shining black; vertex, mesothorax, scutellum and pleura coarsely and sparsely punctured; tips of mandibles, labrum, three or four basal joints of antennæ, anterior lateral corners of mesothorax, tubercles, tegulæ, scutellum, legs and two basal segments of abdomen except apical margins, ferruginous; face, thorax beneath, posterior margin of scutellum and sides of metathorax densely silvery; upper margin of prothorax yellowish; scutellum strongly emarginate medially, the lateral teeth broad, acute and prominent; abdomen finely punctured, smooth and shining, nude, except a patch of pale pubescence at base of first segment and a narrow submarginal band, (broader laterally and narrowed and interrupted on middle) on all the segments except the last; ventral segments two and three with apical margin whitish and four and five with an apical fringe of long curved yellowish pubescence; wings fuliginous, darker at apex. Length .35 inch.

*Hab.*—Georgia, (Morrison). One specimen. This is congeneric with what I take to be the *zonatus* of Smith, having the abdomen smooth and shining, the form shorter and more robust, etc. This however differs from that species by the coarse sculpturing of the thorax and the deeply emarginate scutellum.

**Crocisa ? lata.**—♂.—Form short, broad, very robust, black, finely punctured; head shining, sides of the face, clypeus, cheeks and occiput clothed with rather long white pubescence; antennæ obscure testaceous at tip and beneath; mesothorax nude between the wings, subopaque, finely carinate on lateral margin and with a longitudinal impressed line on the disk and another less deep on each side; thorax in front, at sides and behind clothed with long whitish pubescence: a patch on each side of mesothorax anteriorly, a tuft on each side behind tegulæ, a patch behind scutellum and the anterior margin of pleura clothed with black pubescence; scutellum subbilobate, broadly depressed on disk; tegulæ pale testaceous; wings tinged with yellowish-fuscous, a dark streak at tip of marginal cell, which is elongate, lanceolate, the tip rounded and extending beyond the third submarginal cell, second submarginal cell narrow, obliquely subquadrate, the first recurrent nervure uniting with the second transverse cubital nervure, third submarginal about twice the breadth of the second, the apical nervure obtusely angular, receiving the second recurrent nervure at about the middle; legs clothed with black pubescence, a patch on coxæ and on base and apex of tibiæ above of white pubescence, the femora beneath shining and fringed with black pubescence, posterior legs robust; abdomen short, broad, convex, opaque, a broad transverse spot on each side of first segment, and a large subangular mark, broadly dilated laterally, on each side of segments 2–5, of dense appressed white pubescence. Length .40 inch.

*Hab.*—Texas, (Belfrage). One specimen.

**Melecta californica.**—♂ ♀.—Black; head and thorax thickly clothed with cinereous pubescence; a slight tuft on each side of face, two tufts on anterior margin of mesothorax, a tuft on each side behind tubercles, and the pleura beneath, of black pubescence; antennæ very robust, the flagellum being of uniform thickness; disk of mesothorax and of scutellum nude, shining, sparsely punctured, the lobes of scutellum acute at tip; tegulæ obscurely testaceous; wings broadly fuscous at tip, generally the apical cells are more or less spotted with fuscous; femora fringed behind with a long white pubescence, the tibiæ covered above with a dense white pile, with a black or brown patch at base and near apex of anterior and posterior pairs; abdomen opaque, a broad band, interrupted medially, dilated laterally and subsinuate on each side anteriorly, composed of dense appressed white pubescence, on all the segments except the last. Length .35–.40 inch.

*Hab.*—California, (H. Edwards, Behrens). Ten specimens.

**Melecta pacifica.**—♂.—Black; head clothed with long black pubescence, that about base of antennæ and on occiput mixed with pale; clypeus nude, shining and margined at tip; antennæ subrobust, scape clothed with pale pubescence; mesothorax, scutellum and a patch before tegulæ, clothed with long dense ochraceous or pale ochraceous pubescence, elsewhere it is black; scutellum with a short acute spine on each side, hidden by the pubescence; wings more or less tinged with fuscous, sometimes only on apical margin; legs entirely black; abdomen shining, with a bluish or purplish iridescence in certain lights, clothed with black pubescence, with a few pale hairs intermixed, basal segment with long pale pubescence; venter piceous. Length .50 inch.

*Hab.*—California, (H. Edwards). Two specimens. Allied to *tho-*



*racica* Cress., which, however, has fulvous pubescence on thorax and on first abdominal segment above, and fuscous wings.

**Melecta Edwardsii.**—♂.—Robust, black; head clothed with long black pubescence, mixed with pale on occiput; antenae about as long as head and thorax, rather slender, flagellum brownish beneath; thorax above and anterior margin of pleura clothed with a long dense pale ochraceous pubescence, elsewhere it is black; scutellum with a long acute spine on each side; wings faintly dusky on apical margin; legs entirely black, at base of outer spur on posterior tibiae a short subacute tooth; abdomen short-ovate, convex, shining, clothed with short black pubescence; venter shining. Length .50 inch.

*Hab.*—California, (H. Edwards). One specimen. Rather more robust than *pacifica* and distinguished by the longer antennae, by the long sharp spines on scutellum, and by the anterior margin of the pleura being clothed with pale ochraceous pubescence as on thorax above.

**Stelis australis.**—♀.—Black, strongly punctured, confluent on head and thorax and sparsely on occiput and abdomen; face and sides of thorax clothed with a rather dense pale pubescence; anterior orbits, dot above summit of eyes, mandibles, scape beneath, line on lateral margin of mesothorax, slightly broader and arcuated anteriorly, sides of scutellum broadly, tegulae, tubercles, and a broad fascia on each side of abdominal segments 1—5, all sanguineous; tubercles flat, the anterior edge straight and slightly reflexed; scutellum truncate behind; wings smoky-hyaline, much darker in marginal cell and apical margin; second recurrent nervure passing beyond tip of second submarginal cell; legs short robust, clothed with short pale pubescence, knees, tibiae and tarsi pale ferruginous, posterior tibiae with an outer darker line; abdomen short, robust, convex, shining, apex more closely punctured, rounded; venter sparsely pubescent. Length .40 inch.

*Hab.*—Georgia, (Morrison). One specimen. This fine species has much the appearance of an *Anthidium*, but the venter is without a scopa.

**Stelis laticincta.**—♀.—Black; head and thorax closely and strongly punctured; broad anterior orbits, dot on each side of clypeus, interrupted line behind eyes, broad transverse line on occiput, line on lateral margin of mesothorax curved anteriorly, broad line on posterior margin of scutellum, tubercles, large indented spot on pleura anteriorly, spot beneath posterior wings, knees, and line on anterior tibiae yellow; tegulae brown, broadly yellow anteriorly; wings tinged with fuscous, darker along costa, second recurrent nervure uniting with the third transverse cubital nervure; abdomen convex, shining, sparsely punctured, a broad continuous fulvous yellow band on middle of segments 1—5. Length .32 inch.

*Hab.*—California, (H. Edwards). One specimen.

**Stelis? nitida.**—♀.—Black, shining, sparsely and rather finely punctured, clothed with erect pale glittering pubescence; face finely and closely punctured; head as wide as thorax, transverse; mandibles rather broad at tip, tridentate; ocelli placed in a triangle; antennae filiform, scape cylindrical;

thorax broad, scutellum broadly rounded behind, depressed on the disk; pleura prominent on the sides, closely punctured; tegulae polished; wings tinged with fuscous toward apex, marginal cell long, lanceolate, pointed at tip, second submarginal cell a little longer and larger than the first, narrowed toward the marginal, receiving the first recurrent nervure near the base and the second near the tip; legs very thinly pubescent, tibiae acute at tip, basal joint of the tarsi as long as the remaining joints together, longer on posterior legs; abdomen ovate, convex, polished, finely and sparsely punctured, with pale pubescence at sides and black at tip; a narrow white band on middle of segments 1—5, interrupted medially on the first, and more or less sinuate posteriorly on the other segments; apical segment broad, depressed and roughly sculptured; venter flat, nude, minutely punctured, shining, the segments brownish at tip; in some specimens the white bands on segments 2—4 are slightly interrupted on disk, and that on five abbreviated laterally. Length .30—.40 inch.

*Hab.*—Canada, (Saunders); New York, (Comstock). Three specimens.

**Stelis? submarginata.**—♀.—Same form and color as *nitida*, subopaque, densely punctured, thinly clothed with pale pubescence, rather dense on face and sides of thorax; scutellum flat, slightly depressed on disk; wings as in *nitida*, except that the second submarginal cell is much longer and larger than the first, and receives the first recurrent nervure further from the base and the second recurrent nearer the tip; abdomen oblong-ovate, convex, shining, sparsely and finely punctured at base and more closely and strongly toward apex; segments 1—5 each with a narrow white band on the middle, slightly interrupted on the disk and broadly submarginate on the sides posteriorly, apical segment flattened, rounded at tip, the last ventral being slightly longer; venter opaque, nude. Length .35 inch.

*Hab.*—Colorado, (Ridings). Two specimens. Closely allied and congeneric with *nitida*, but differing by the more dense punctation of the head and thorax, and by the form of the abdominal fasciae. A specimen from Illinois, probably only a variety, differs chiefly by the darker wings and by the second recurrent nervure uniting with the third transverse cubital nervure.

**Stelis? subcaerulea.**—♂.—Robust, blue-black, shining, head and thorax strongly and sparsely punctured, rather thickly clothed with black pubescence, slightly mixed with pale on thorax above, while on the face it is dense and white, with a slight admixture of black; mesothorax with a slightly impressed longitudinal line on the disk and a short one on each side; pleura closely punctured; wings dusky, neuration as in *nitida*; middle tibiae bispinose at tip above; abdomen short, convex, almost globose, apex recurved, minutely punctured, polished, a narrow white band on segments 1—4, very slightly interrupted on disk, that on fourth segment attenuated laterally and broadly submarginate on each side of the middle; on the fifth segment two approximate transverse white spots. Length .32 inch.

*Hab.*—California, (H. Edwards). One specimen. This is congeneric with *elegans* Cress., also found in California, but is larger, and much less densely punctured.



**Stelis? monticola.**—♀.—Robust, black, sparsely punctured, shining, head and thorax rather thinly clothed with a pale pubescence, which is thick on the face; mesothorax longitudinally impressed on the disk; apex of scutellum depressed; middle tibiæ prominently bispinose at tip above; wings as in *subcærulea*; abdomen short, subglobose, shining; a narrow white band on segments 1—4, very slightly interrupted on the disk and broadly subemarginate on the sides posteriorly; fifth segment with two approximate transverse white spots. Length .30 inch.

*Hab.*—Colorado, (Ridings). One specimen. Very much like *subcærulea*, but without any of the blue color so conspicuous in that species.

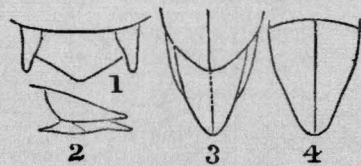
**Cælioxoides (n. g.) punctipennis.**—♀.—Black, shining; head as wide as thorax, with coarse sparse punctures, vertex grooved on each side behind antennæ; eyes large, elongate, nude; ocelli placed in a curved line; face short, clypeus truncate at tip, prominent; labrum large, quadrate; mandibles acute at tip, cheeks flat, carinate on posterior margin; face and clypeus except a transverse black mark on middle, line on anterior orbits curving inward behind antennæ, and line on posterior orbits composed of dense appressed silvery white pubescence; antennæ slender, filiform, second and third joints dull ferruginous; mesothorax deeply impressed on the disk and on each side, and with scattered large deep punctures, scutellum large, square, and perfectly flat, opaque black, with a small obtuse black tubercle on each side at base; pleura convex and coarsely punctured on the sides, flat and smooth beneath; a narrow line on posterior margin of prothorax, line on middle of mesothorax another over tegulæ, spot on each side of scutellum and line at tip, spots on pleura, and spot on each side of metathorax at extreme tip, over posterior coxæ, composed of short dense snow-white pubescence; pleura tinged with



ferruginous beneath; tegulæ dull testaceous; wings fuscous, with a purplish reflection, a subhyaline band before apex and a round hyaline spot at tip of marginal cell; neuration as in accompanying cut; legs robust, dull ferruginous, varied with fuscous and with patches of short dense white pubescence; posterior trochanters obtusely lobed beneath, tibiæ short, rather suddenly narrowed at base, the two posterior pair acute at tip, spurs short; tarsi slender, the basal joint long, ungues robust, simple; abdomen narrow, acutely conical, elevated and recurved at tip, the last ventral segment prolonged much as in *Osiris*; dorsal surface smooth, impunctured, depressed at base, polished and convex at the acutely pointed tip, segments 1—4 narrowly fringed at apex with short snow-white pubescence; venter convex, shining, varied with ferruginous, entirely nude except a patch of short dense black pubescence on first segment and two spots of the same on apical middle of second and third segments. Length of head and thorax .22 inch; of abdomen .30 inch.

*Hab.*—Mexico, (Sumichrast). Two specimens. This curious insect has at first sight much the form of a narrow attenuated *Cælioxys*, but is widely distinct, as will appear from the characters given above. The apex of the abdomen is stylated as in *Osiris* ♀, but the neuration of anterior wings is different from anything known to me.

**Celioxys tolteca.**—♀.—Black, smooth and shining; middle of face longitudinally prominent, the ocelli place in moderately deep foveæ; eyes with very short hairs; sides of face and cheeks clothed with a very short dense pale ochraceous pile; occiput fringed with pale pubescence; clypeus deeply punctured; mandibles ferruginous; mesothorax with a few scattered deep punctures on the sides and behind; scutellum (fig. 1) large, extending over the metathorax, flat at base, angular and recurved at tip, the sides with a few deep punctures, the lateral teeth long, broad at base, subacute and twisted at tip; a line on anterior margin of thorax continued beneath, spot before

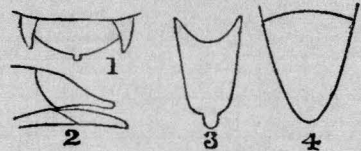


tegulæ, two spots at base of scutellum, and line on posterior margin of pleura, composed of dense appressed whitish pubescence, the sides of the metathorax have a rather long, thin pale pubescence; in front of tegulæ a sharp transverse carina; tubercles, tegulæ and legs ferruginous;

wings tinged with dusky on apical margin; abdomen smooth and shining, having a few scattered punctures, segments 2—5 have a rather deeply impressed line on each side, and all the segments except the last have an apical fringe of short dense white pubescence, slightly interrupted in the middle; apical segment (fig. 4) rather short, rounded at tip, a sharp longitudinal central carina, on each side of which at tip there is a deep oblique groove; venter ferruginous laterally and at tip, sparsely and strongly punctured, last segment short, broad, extending a little beyond the last dorsal segment, rounded at tip, (fig. 2, apex of abdomen in profile; fig. 3, apex from beneath). Length .40 inch.

**Hab.**—Mexico, (Sumichrast). One specimen.

**Celioxys aperta.**—♀.—Black, opaque, head and thorax densely and confluent punctured; face, vertex and cheeks clothed with a dense white pubescence, that on middle of vertex radiating around the lower ocellus; top of head uniformly punctured; pubescence on eyes short; mesothorax above clothed with short sparse pale pubescence; anterior margin of thorax, spot on anterior middle of mesothorax, line over tegulæ, and line before scutellum, of short appressed white pubescence; sides of thorax, metathorax and post-scutellum thickly clothed with long pale pubescence; scutellum (fig. 1) broadly rounded behind, with a short obtuse tooth at tip, lateral teeth acute and slightly bent inwardly; immediately before the tegulæ a



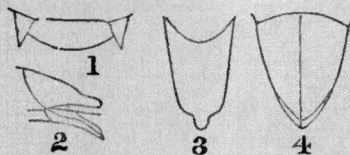
sharply defined acute transverse carina; wings tinged with fuliginous at tip; tegulæ and legs black, the latter with short whitish pubescence, tibial spurs ferruginous; abdomen shining toward tip deeply punctured, more densely so at base,

finely so on apical segment; sides of first segment with rather long pale pubescence, apical margin of segments 1—5 with a narrow fringe of white pubescence; second and third segments with a transverse deeply impressed line across the middle; apical segment (fig. 4) broad, short, narrowed gradually to tip which is rather broadly rounded and depressed; ventral segments 2—5 each with an apical fringe of dense white pubescence; apical segment (fig. 3) broad, rather short, extending beyond the upper segment and having a short appendage at tip, (fig. 2, apex in profile). Length .60 inch.

**Hab.**—Colorado, (Morrison). One specimen.



**Cœlioxys deplanata.**—♀.—Robust, black, opaque, head and thorax coarsely and confluent punctured, a small smooth impunctured space on each side of ocelli; lower portion of face and the clypeus covered with a very short appressed pale ochraceous pubescence scarcely hiding the sculpturing, but longer on tip of clypeus; on upper part of face the pubescence is longer, radiating around the lower ocellus, which is placed in a shallow depression; cheeks thinly covered with short white pubescence, the posterior margin of occiput fringed with pale ochraceous hairs; eyes with very short pubescence; line on anterior margin of thorax continued beneath and dilated into two spots on anterior middle of mesothorax, a line over tegulæ and line at base of scutellum and behind, composed of short, appressed, pale ochraceous, scale-like pubescence; sides of metathorax with long pale pubescence, on pleura

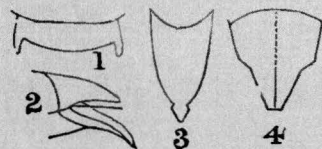


beneath it is short and white; scutellum (fig. 1) broadly rounded behind, lateral teeth large, subacute compressed laterally, directed slightly outwards; immediately in front of tegulæ a thin sharp subsinuate transverse carina; tegulæ testaceous; wings dusky on apical margin; legs pale

ferruginous, coxæ black and more or less densely clothed with short white pubescence; abdomen shining, deeply not confluent punctured, basal corners of first segment, and narrow apical margins of segments 1—5 broader laterally, clothed with short dense pale ochraceous scale-like pubescence; second and third segments each with a deeply impressed transverse line on the middle; sides and base of first segment sometimes more or less red; apical segment (fig. 4) finely and densely punctured, opaque, short, broad at base and gradually narrowed to tip which is rounded and margined, a fine central longitudinal carina on the entire length of the segment, on each side of which at the apex the surface is depressed; venter deeply punctured, more or less red at base, a spot on middle of first segment and the apical margin of the segments 2—5 narrowly, of short white pubescence; apical segment (fig. 3) broad, incurved, a little longer than the upper segment, gradually narrowed to the tip which has a short subacute appendage (fig. 2, apex in profile). Length .48 inch.

*Hab.*—Kansas, Colorado, (Kiddings). Three specimens. This is nearly allied to *aperta* in the formation of the apical segments of the abdomen, but otherwise is quite distinct.

**Cœlioxys Comstockii.**—♀.—Robust, opaque black, coarsely and confluent punctured; vertex, face and clypeus clothed with dense pale ochraceous pubescence, long on vertex and short on base of clypeus; cheeks, thorax beneath and legs with short appressed white pubescence; mandibles piceous; eyes with short pubescence; pro- and metathorax with long pale ochraceous pubescence; scutellum (fig. 1) coarsely sculptured, broadly rounded behind, the lateral teeth long, subacute and slightly incurved; transverse carina before



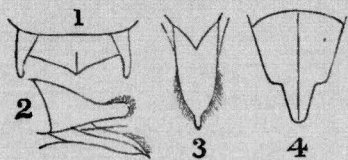
tegulæ not conspicuous, being covered by the pubescence; tegulæ piceous; wings rather broadly fuliginous on apical margin; anterior tibiæ and all the tarsi more or less ferruginous, spines on anterior coxæ very short; abdomen robust, shining, sparsely

punctured, more deeply so on basal segment which has a patch of pale ochraceous pubescence on each basal corner; a narrow fringe of pale pubescence on

apical margin of segments 1—5, a deeply impressed transverse line on segments two and three; apical segment (fig. 4) short, broad, suddenly constricted on the sides about half way to tip which is truncate, an obscurely defined longitudinal carina on the disk; venter deeply punctured, shining, middle of first segment and apical margins of 2—5 with a fringe of dense white pubescence; apical segment (fig. 3) longer than the upper, very much incurved, broad, gradually narrowed to the tip before which on each side there is a slight notch, (fig. 2, apex in profile). Length .50 inch.

*Hab.*—New York, (Prof. J. H. Comstock). One specimen.

***Cœlioxys chichimeca.***—♀.—Rather slender, shining black; face, clypeus and cheeks covered with a short dense white pubescence, longer on vertex and cheeks beneath; anterior orbits on each side of antennæ finely carinate; pubescence on eyes very short; mesothorax margined all around with short dense pale ochraceous pubescence, on the sides of metathorax the pubescence is long and white, and on the pleura short, having a line of dense white pubescence on anterior and posterior margins; mesothorax with large deep not confluent punctures; in front of tegulæ a sharp sinuate transverse carina; scutellum (fig. 1) coarsely and deeply punctured, acutely angular behind, the lateral teeth long and compressed laterally; tegulæ and legs honey-yellow, the latter fringed with snow-white pubescence; wings dusky on apical margin and on upper half of marginal cell; teeth on anterior coxæ very short



and blunt, outer tip of tibiæ with two short acute teeth; posterior tarsi more or less black, the basal joint dilated and suddenly constricted at base, the lower edge coarsely serrate; abdomen smooth and polished, with fine scattered punctures, more numerous at base of the segments, an oblique im-

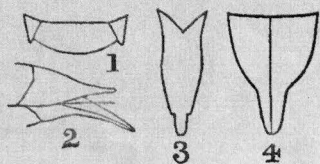
pressed line on each side of segments 2—4, basal margin of the first and apical margin of five basal segments narrowly fringed with dense white pubescence; first segment entirely and sides of second and third more or less, ferruginous; apical segment (fig. 4) finely and somewhat closely punctured, suddenly constricted or pinched before the tip which is obtuse, subcompressed laterally and having a few erect black hairs; venter bright ferruginous, polished, sparsely punctured, apical margin of the segments narrowly fringed with a dense snow-white pubescence; apical segment (fig. 3) black, rather broad, longer than upper segment, and very gradually narrowed to tip which has a subacute spine and having on the sides a fringe of black pubescence, (fig. 2, apex in profile). Length .45 inch.

*Hab.*—Mexico, (Sumichrast). One specimen.

***Cœlioxys lucrosa.***—♀.—Black, shining; head and thorax deeply not closely punctured, face, cheeks and sides of thorax clothed with griseous pubescence; eyes with rather long, not very dense hairs; scutellum (fig. 1) coarsely sculptured, broadly rounded behind, lateral teeth short, subacute; transverse carina before tegulæ straight, not very conspicuous; tegulæ black, polished; wings tinged with dusky, darker on apical margin; legs black, with sparse pale pubescence, spurs ferruginous; abdomen smooth and polished, sparsely punctured; sides of segments two and three transversely impressed, triangular patch on lateral apical corners of first segment and narrow fascia on apical



margin of segments 1—5, more or less interrupted on middle, of dense white pubescence; apical segment (fig. 4) more closely punctured, rather suddenly



depressed and narrowed to tip which is obtuse, an indistinctly defined central longitudinal carina; venter with large sparse elongate punctures, the segments fringed at apex with short pale pubescence, apical segment (fig. 3) narrow, slightly incurved, longer than upper segment, gradually narrowed to tip, before which on each side there is a slight notch, (fig. 2, apex in profile).

Length .53 inch.

*Hab.*—New York, (Comstock); Colorado, (Morrison). Three specimens.

***Cœlixys floridana.***—♂.—Black, shining; head and thorax with large deep punctures, clothed with pale pubescence most dense on face, vertex and sides of thorax; head larger than usual, lower part of cheeks with a broad rather deep groove, their posterior margin carinate; pubescence on eyes short; the usual lines and spots of dense white pubescence on thorax; carina before tegulæ acute and emarginate in middle; scutellum broadly rounded behind, with a short tubercle in middle, lateral teeth long, divergent and acute; tegulæ pale testaceous; wings fuliginous at apex; legs slender, ferruginous, coxæ black, intermediate trochanters elongate subcylindrical when viewed laterally; abdomen shining, sparsely punctured, segments 2—5 each with a deep oblique groove, which on segments four and five have a line of white pubescence; sides of segment one, and apical margin of 1—5 with a fringe of short white pubescence; a short spine on each side of fifth segment; sixth segment deeply grooved at apex, produced into two bifurcate processes, the teeth acute and straight, the lower pair slightly longer than the upper, a short spine on each side at base; venter banded with white pubescence. Length .53 inch.

*Hab.*—Florida. One specimen.

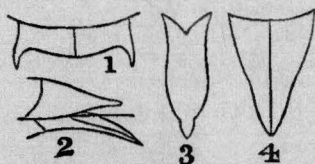
***Cœlixys coloradensis.***—♂.—Black, opaque; head and thorax coarsely confluent punctured, thickly clothed with whitish pubescence, which, on the face is very dense, long and pale ochraceous; eyes densely pubescent; scutellum broadly rounded behind, the lateral teeth long, acute and slightly hooked at tip; tegulæ polished black; wings clear, the apical margin fuliginous; legs black, the femora, especially the two anterior pairs fringed behind with long white pubescence, tibial spurs and tarsi pale ferruginous; abdomen rather closely punctured, a deep transversely impressed line at base of segments 2—5, sides and apical margin of segments 1—5, and basal margin of 4—6 with a fascia of white pubescence; base of first segment thinly clothed with erect pale pubescence; a blunt tooth on each side of fifth segment, and also on the sixth which is produced at apex into two bifurcate processes, the upper teeth short, blunt and slightly divergent, the lower teeth straight, acute and much longer than the upper; venter banded with white pubescence. Length .45 inch.

*Hab.*—Colorado, (Morrison). One specimen. This and the next species are closely allied, differing chiefly in the armature of the scutellum and apex of abdomen, and in the color of the legs.

***Cœlioxys sodalis*.**—♂.—Very much like *coloradensis*, but differs as follows: head and thorax more densely and less coarsely punctured; lateral teeth of scutellum short and obtuse; legs entirely black, including tibial spurs; abdomen more finely punctured, no spine on sides of fifth segment, that on sides of the sixth long and acute, the teeth on apical processes straight, when viewed from above the upper two are on a line with the lower two. Length .42 inch.

*Hab.*—New York; Colorado. Three specimens.

***Cœlioxys mexicana*.**—♀.—Black; head and thorax closely and deeply punctured; face and cheeks with short dense pale ochraceous pubescence, most dense on sides of face; pubescence on eyes very short; anterior margin of mesothorax, spot behind tegulæ, line on base of scutellum and line on post-scutellum of short dense appressed pale ochraceous pubescence; two lines of short dense white pubescence on sides of pleura confluent beneath with a broad central longitudinal stripe on the middle; scutellum (fig. 1) broadly rounded behind, with a well defined central longitudinal carina, lateral teeth long, divergent and compressed laterally; sides of postscutellum and of metathorax with long pale pubescence; tegulæ and legs fulvo-ferruginous; wings dusky, darker on apical margin, coxæ black, trochanters fuscous, the middle pair elongate and subcylindrical when viewed laterally; teeth on anterior coxæ short and acute; abdomen shining, finely and sparsely punctured, a deeply



impressed transverse line on sides of segments 2—4, sides of the first and apex of segments 1—5 with a narrow fringe of dense pale pubescence; apical segment (fig. 4) long, gradually narrowed to tip which is rounded, the sides slightly sinuate, an obscurely defined central longitudinal carina; venter banded

with white pubescence, the fifth segment acutely angular at tip, the apical segment (fig. 3) longer than the upper, broadly rounded on the sides and then narrowed to apex, before which on each side there is a slight notch, (fig. 2, apex in profile). Length .45 inch.

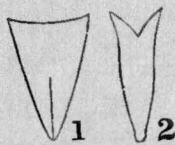
♂.—Face with dense golden pubescence, pale on tip of clypeus; apex of abdominal segments 2—5 deeply transversely impressed, and lined with white pubescence, the apical margin reflexed and smooth; segments 4—6 with a line of white pubescence at base; sides of fifth segment with a very short blunt tooth; apical segment with an acute tooth on each side, the apex produced into two bifurcate processes, the two upper teeth blunt and divergent, the lower two longer than the upper, subacute and nearly straight; venter banded with white pubescence, sometimes tinged with ferruginous, apical middle of fourth segment with two short acute teeth. Length .45 inch.

*Hab.*—Mexico, (Sumichrast). Four specimens.

***Cœlioxys zapoteca*.**—♀.—Black; head and thorax with large deep and rather sparse punctures; broad anterior orbits and cheeks clothed with dense silvery-white pubescence, on middle of face and clypeus which is finely sculptured, there is a very fine appressed pale pile and a short scattered erect pubescence; clypeus squarely produced at tip beneath which there is a fringe of dense pale ochraceous pubescence; a curved line of rather long fuscous hairs on vertex beneath posterior ocelli; a short carina between antennæ; pubescence of eyes very short; mandibles ferruginous; sinuate line on anterior



margin of mesothorax, spot behind tegulæ, line at base of scutellum, one on postscutellum and two lines on pleura, of dense white or pale ochraceous pubescence; sides of metathorax with long pale hairs; scutellum much like that of *mexicana* but rather angular behind, longitudinally carinate on disk, the lateral teeth shorter and truncate at tip; tegulæ and legs fulvo-ferruginous; wings dusky, darker on apical margin; middle trochanters elongate and subcylindrical when viewed laterally, spines on anterior coxæ rather long, acute; abdomen smooth and shining, finely and sparsely punctured, finely transversely impressed on each side of second and third segments, basal margin of the first



and apical margin of segments 1—5 narrowly fringed with short white pubescence, broadly interrupted on middle of first segment; extreme sides of first and second segments ferruginous; apical segment (fig. 1) gradually narrowed to tip which is depressed and acute; venter ferruginous, banded with white pubescence, strongly and sparsely punctured, fifth segment very finely punctured, elongate, acute at tip; apical segment (fig. 2) longer than the upper, narrow, incurved, gradually narrowed to tip which is subacute; the apex when viewed in profile much as in *mexicana*. Length .45 inch.

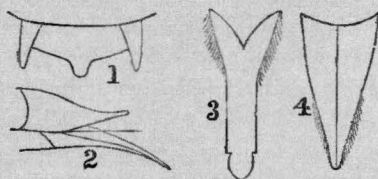
*Hab.*—Mexico, (Sumichrast). One specimen. Very different from all other species by the squarely produced clypeus.

***Cœlioxys azteca.***—♀.—Black, smooth and polished; face and cheeks with short pale ochraceous pubescence, most dense on sides of face and cheeks; clypeus deeply emarginate or cleft on the apical middle, giving the apex the appearance of being bituberculate; a curved fringe of dark hairs on vertex; on each side of ocelli a large smooth impunctured space, behind which there are a few large punctures; eyes with short pubescence; mesothorax ferruginous, blackish on anterior middle and behind, the sides with large scattered punctures; anterior margin, spot behind tegulæ, band at base of scutellum and two parallel lines on pleura laterally of short dense pale ochraceous pubescence; sides of metathorax with long pale pubescence; scutellum large, depressed, ferruginous, having a few large punctures, angular behind, the tip rounded and slightly recurved, lateral teeth subacute, slightly divergent, the tip compressed laterally; carina before tegulæ prominent and subsinuate; tegulæ and legs fulvo-ferruginous; wings dusky on apical margin; legs and abdomen as in *zapoteca*, except that the venter has a fine longitudinal carina on the middle, especially on fifth segment, the apical segments are shaped the same in both species. Length .42 inch.

*Hab.*—Mexico, (Sumichrast). One specimen. The scutellum is shaped much as in *tapaneca*, but the apical process is not so prominent.

***Cœlioxys tepaneca.***—♀.—Black, smooth and polished; head as described in *zapoteca* except that the pubescence is more dense and longer on vertex, the clypeus with short scattered erect black hairs seen better from a lateral view, the middle with an impressed longitudinal line; top of head smooth, with a few deep punctures on each side of ocelli; a few erect yellowish hairs from beneath apex of clypeus; mesothorax depressed posteriorly with a few punctures on the sides; pleura and metathorax clothed with white pubescence; anterior and lateral margins of mesothorax narrowly, and

a bifurcate line on base of scutellum of dense whitish pubescence; scutellum (fig. 1) smooth and polished, impunctured, large, projecting over the metathorax, depressed on the middle, the tip with a broad, flat obtuse tooth, lateral teeth long, slightly divergent and subacute; tegulæ, the sharp transverse subsinuate carina in front, and the legs, fulvo-ferruginous; wings dusky, broadly



fuliginous on apical margin; legs with short white pubescence, posterior femora, tibiæ and tarsi varied with black, middle trochanters elongate, subcylindrical when viewed laterally; abdomen smooth and polished, with scattered punctures; segments 1—5 each with a narrow

apical fringe of white pubescence; sides of first segment broadly ferruginous; apical segment (fig. 4) long, finely punctured, gradually narrowed to tip which is slightly turned up, a fine central longitudinal carina, and on each side before apex a short fringe of ochraceous pubescence; venter ferruginous, with scattered deep punctures, a well defined central longitudinal carina on segments 2—5, the fifth segment elongate, acutely conical and fringed at tip with ochraceous pubescence; apical segment (fig. 3) long and narrow, much longer than upper segment, and incurved, sides parallel nearly to apex which is rounded, with a slight notch on each side, the base fringed with pubescence, (fig. 2, apex in profile). Length .50 inch.

*Hab.*—Mexico, (Sumichrast). A very distinct species.

**Cælioxys otomita.**—♀.—Black, smooth and polished; head as described in *zapoteca* except that the clypeus is flat, nearly nude, with a fringe of dense pale ochraceous pubescence at tip; eyes with very short pubescence; mesothorax smooth, with deep scattered punctures on the sides; anterior margin of thorax, continued beneath, spot behind tegulæ, and band at base of scutellum, of dense, appressed, pale ochraceous pubescence; scutellum large, projecting over the metathorax, depressed, obtusely angular behind, the tip slightly recurved, lateral teeth slightly divergent, obtuse; metathorax with long pale pubescence; transverse carina in front of tegulæ prominent, subsinuate; tegulæ and legs ferruginous; wings dusky, fuliginous at tip; legs clothed with short white pubescence, posterior tarsi dusky above, spines on anterior coxæ short and acute, middle trochanters elongate, subcylindrical when viewed laterally;

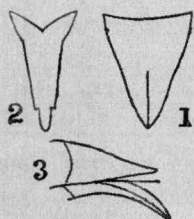


abdomen smooth and polished, with a few scattered punctures, basal margin of the first, and apical margin of segments 1—5 with a narrow fringe of white pubescence, extreme sides of first segment red; apical segment rather closely and finely punctured, gradually narrowed to tip, and curved in profile, a longitudinal roughened depression on each side of the middle; venter ferruginous, shining, with large scattered punctures, banded with white pubescence, fifth segment elongate, conical, apical segment much longer than the upper, slender, incurved, gradually narrowed to tip which is rounded, (figure, apex of abdomen in profile). Length .45 inch.

*Hab.*—Mexico, (Sumichrast). One specimen. The scutellum is formed much like that of *tolteca*, while the apical segments of the abdomen resemble in outline viewed from above, those of *zapoteca*, but in profile are very different.



**Cœlioxys totonaca.**—♀.—Black; head as in *otomita*; mesothorax shining, with large deep, not close, punctures; anterior margin, continued beneath, spot behind tegulæ, and band at base of scutellum of dense pale ochraceous pubescence; sides of metathorax with long pale hairs; the usual line of white pubescence on posterior margin of pleura parallel with that on anterior margin, and a patch of dense snow-white pubescence between middle coxæ, which are elongate subcylindrical in profile; scutellum with large deep punctures, angular behind, the tip with a short obtuse tooth, lateral teeth long, divergent, and



compressed laterally at tip; carina before tubercles prominent, sinuate; tegulæ and legs fulvo-ferruginous; wings dusky on apical margin and on upper half of marginal cell; coxæ blackish, femora and tibiæ with a line of snow-white pubescence; abdomen shining, with scattered punctures, apical margin of segments 1–5 with a narrow fringe of white pubescence, sides of first segment ferruginous; apical segment (fig. 1) longitudinally depressed and roughened on each

side towards apex, which is rounded, the sides slightly sinuate, a well defined central longitudinal carina on apical half; venter as in *otomita*, except that the apical segment (fig. 2) is much shorter and broader, a little longer than the upper, slightly incurved, and with the tip suddenly narrowed, (fig. 3, apex in profile). Length .40 inch.

♂.—Face densely clothed with pale ochraceous pubescence, longer on vertex; mandibles ferruginous; lower part of cheeks deeply and broadly grooved, posterior margin carinate; abdomen as described in *mexicana*, except that apical teeth are more acute. Length .35 inch.

**Hab.**—Mexico, (Sumichrast). Four specimens. The scutellum of this species has much the same form as that of *chichimeca*, except that the apex has a short blunt tooth and the disk has a well defined longitudinal carina.

**Cœlioxys germana.**—♀.—Rather more robust than *totonaca* and differs only as follows: the pubescence is everywhere snow-white; the face is rather broader; the middle trochanters are not elongate subcylindrical, but shaped like the posterior pair, and the abdomen is without any ferruginous color, the white fascia on dorsal segments are slightly dilated laterally, and the last ventral segment is suddenly constricted nearer to the tip, making the appendage shorter. Length .45 inch.

**Hab.**—Illinois, (Dr. Samuel Lewis). One specimen.

**Osmia mandibularis.**—♀.—Steel-blue, shining; head and thorax closely and strongly punctured, clothed with short whitish pubescence, longer and more dense on the face; head very large, subquadrate; clypeus short, anterior margin very uneven and with two short tubercles at tip; mandibles black, with a large knotty process at base above, deeply grooved on the outside and coarsely rugose within, on their face a patch of dense yellowish pubescence; antennæ short, slender, black; tegulæ piceous; wings fuliginous on apical margin, and on upper half of marginal cell; legs slender, black, thinly clothed with griseous pubescence; abdomen shining, finely punctured, clothed at the sides and on lateral apical margin of the segments with whitish pubescence; ventral scopa black. Length .65 inch.

*Hab.*—Colorado, (Morrison). Remarkable for the large nodose process on mandibles.

***Osmia faceta.***—♀.—Steel-blue, shining; head and thorax closely and strongly punctured, thinly clothed above with pale pubescence, dense on face, cheeks and sides of thorax; head large, subquadrate; anterior margin of clypeus uneven, the apical middle with two short obtuse teeth; mandibles large, broad, foveate at base, and near tip with a patch of short dense yellowish pubescence; antennæ black; mesothorax with a finely impressed longitudinal line anteriorly; tegulæ piceous; wings smoky on apical margin and on upper half of marginal cell; legs black, clothed with pale pubescence; abdomen convex, shining, finely, distinctly and not very closely punctured, sides and lateral apical margin of the segments more or less, fringed with whitish pubescence; ventral scopa black. Length .45 inch.

♂.—Face, thorax and base of abdomen thickly clothed with long pale pubescence; anterior margin of clypeus crenulated medially; wings paler than in ♀; apical margin of sixth abdominal segment reflexed, notched in the middle and subsinuate on each side, apical segment bidentate. Length .35—.40 inch.

*Hab.*—Can., N. Y., Ga. Eight specimens. This is allied to *chalybea* Smith, in color and sculpture, but is much smaller, with clearer wings, etc.

***Osmia abjecta.***—♀.—Black, shining; head and thorax finely and closely punctured, clothed rather thickly with pale pubescence, tinged above with dull ochraceous; clypeus with dense fuscous pubescence; flagellum dull testaceous beneath; mesothorax nearly nude, shining, sparsely punctured, a finely impressed longitudinal line on anterior middle and a short elevated line on each side of the disk; basal middle of metathorax smooth and polished; tegulæ rufo-piceous; wings dusky about the middle, second submarginal cell narrowed nearly one-half towards marginal; tarsi dull testaceous; abdomen short, convex, subglobose, shining, delicately punctured, base and sides of first segment, and lateral apical margin of segments 1—3 clothed with short dense pale pubescence; ventral scopa black. Length .30 inch.

*Hab.*—Colorado, (Ridings). One specimen. The white fasciæ on sides of basal segments of abdomen are very distinct.

***Osmia nigrifrons.***—♀.—Robust, black, tinged with dark blue or green; head and thorax strongly and densely punctured; head subquadrate, clothed with long black pubescence, dense on the face, sometimes slightly mixed with pale hairs on sides of face and on vertex; anterior margin of clypeus truncate or obtusely emarginate; thorax above clothed with long pale pubescence, slightly mixed with black, on the sides and beneath the pubescence is black; tegulæ shining black; wings dusky on apical margin; legs with black pubescence, slightly mixed with pale on anterior pair; abdomen convex, polished, with very fine punctures and clothed with short black pubescence except at base where it is long and pale; ventral scopa black. Length .45 inch.

*Hab.*—Colorado, (Morrison). Eight specimens.



***Osmia armaticeps*.**—♀.—Black; head and thorax closely and strongly punctured; head quadrate, clothed above with black pubescence slightly mixed with pale on each side of vertex and on occiput; cheeks broad, sparsely and finely punctured and shining, on each side beneath near base of mandibles a long subacute tooth; face nude; clypeus flat, smooth and polished, a deep fovea on each side near base and the apical middle with two short obtuse teeth; mandibles very long, acute, rugose, having on the outer margin a narrow groove; thorax above clothed with long pale pubescence, slightly mixed with black, on the sides and beneath the pubescence is black; disk of mesothorax sparsely punctured and polished; wings dusky, darker on apical margin; legs clothed with black pubescence; abdomen slightly tinged with blue, shining, delicately punctured except at tip where the punctures are close and rather deep, clothed with short black pubescence, except on first segment where it is long and whitish, slightly mixed with black; ventral scopa black. Length .45 inch.

*Hab.*—Colorado, (Ridings, Morrison). Three specimens. Easily recognized by the elongate-quadrate head, which is armed on each side beneath with a rather long conspicuous tooth.

***Osmia quadriceps*.**—♀.—Black; head and thorax densely punctured; head quadrate, thinly clothed above with long black pubescence, cheeks broad, flattened, polished and sparsely punctured; face nude; clypeus smooth, polished, concave, deeply impressed on each side, the apex produced, and emarginate or notched in middle; mandibles large, rugose, acute at tip, with a deep groove on outer margin; thorax thickly clothed with long black pubescence, which is sparse on disk above; mesothorax sparsely punctured and polished on posterior middle; wings fuscous, with a subhyaline mark before apex; legs with black pubescence; abdomen rather strongly tinged with blue, finely punctured, shining, the pubescence short and black, except on first segment where it is long; ventral scopa black. Length .50—.60 inch.

*Hab.*—California, (H. Edwards). Eight specimens. In shape this resembles *armaticeps*, but the head is not armed beneath, and the pubescence is entirely black.

***Osmia maura*.**—♀.—Entirely deep black; head and thorax densely punctured, clothed with black pubescence, which is dense on the face, thorax and sides of abdomen; head subquadrate; apical margin of clypeus broadly emarginate, the lateral angles prominent; disk of thorax almost nude; wings dusky on apical margin; legs with black pubescence; abdomen shining black, delicately punctured; ventral scopa black. Length .46 inch.

*Hab.*—California, (H. Edwards). One specimen. This is easily distinguished by the body being entirely deep black.

***Osmia cobaltina*.**—♀.—Brilliant deep blue or purple; the head and thorax changing to green, densely punctured, thinly clothed with pubescence, black on head, and pale mixed with black on thorax; clypeus always dark blue, with fuscous pubescence at apex which is truncate; wings dusky; legs green or blue, with short black pubescence; abdomen shining, finely punctured, deep blue, purple or green; ventral scopa black. Length .35—.40 inch.

*Hab.*—Nevada, California, (H. Edwards, Behrens). Ten specimens. This little species is very brilliant, but variable in color, some specimens being entirely blue, purple or green, as the case may be, and some partake of all three colors.

***Osmia coloradensis.***—♀.—Black, tinged with blue; head and thorax densely and strongly punctured, rather thickly clothed with pale pubescence; head subquadrate, clypeus subcarinate down the middle, the apical margin coarsely crenulated; mandibles broad; tegulæ piceous; wings dusky; legs slender, black, with short pale pubescence; abdomen strongly tinged with blue, shining, finely punctured, base of first segment with long pale hairs, lateral and apical margins of all the segments with short pale pubescence; ventral scopa white or yellow. Length .35 inch.

*Hab.*—Colorado, (Ridings, Morrison). Six specimens.

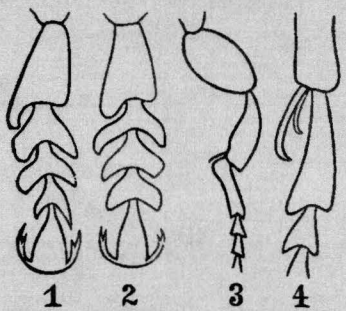
***Osmia georgica.***—♀.—Black, tinged with blue; head and thorax closely and strongly punctured, face and sides of thorax rather thickly clothed with pale pubescence; clypeus with a prominent central longitudinal carina, produced at apex in form of a tooth; mandibles broad, with a patch of yellow hair near tip, and a large transverse process at base above; mesothorax thinly pubescent, disk sparsely punctured; tegulæ piceous; legs slender, black, with pale glittering hairs, yellow on inside of tibiæ and tarsi; abdomen shining, finely not closely punctured, with a thin whitish pubescence at base and sides; ventral scopa yellowish. Length .35 inch.

*Hab.*—Georgia, (Morrison). One specimen. The formation of the mandibles resembles that of *mandibularis*, described above, but the basal process is much smaller and when closed forms an arch, interrupted medially, in front of the clypeus.

***Osmia azteca.***—♀.—Black, closely punctured, entire insect thickly clothed with golden fulvous pubescence, darker on abdomen above and pale on face, sides of thorax and legs; head subquadrate; tegulæ piceous; wings uniformly fuscous; the pubescence on abdomen is dense on apical margin of the segments, especially on the terminal segments; ventral scopa yellow. Length .35 inch.

*Hab.*—Mexico, (Sumichrast). One specimen.

***Osmia abnormis.***—♂.—Black, tinged with blue or green; head and thorax densely and finely punctured, opaque, thickly clothed with a long ochraceous pubescence, that on clypeus very dense and pale; antennæ black, reaching to scutellum, apical joint compressed, broadly rounded at tip; tegulæ piceous; wings dusky on apical margin; legs black, clothed with black pubescence, except on anterior pair and tip of middle femora where it is pale; the posterior femora short, swollen, subglobose, (as in fig. 3) the tibiæ short and incrassate; intermediate tarsi (fig. 1) with basal joint dilated, lobed at tip before and fringed behind with long black hairs, second and third joints short and broadly dilated,





fourth joint much smaller; posterior tarsi (fig. 3) abruptly curved at base, the first joint broad with a rather deep groove on the outside; apical joint of all the tarsi ferruginous, covered with a silvery white pile; abdomen convex, shining, delicately punctured, clothed with short pale pubescence at base, longer and more dense on the sides, the apex with long rather dense black pubescence, sixth segment broadly rounded at tip, and obtusely emarginate in the middle; venter concave, polished, a long acute spine on apical middle of first segment, and a short prominent acute carina on apical middle of second segment; one specimen has the pale pubescence extending to the base of the fourth segment, and the last segment has a few long pale hairs mixed with the black. Length .55—.60 inch.

*Hab.*—Colorado, (Ridings, Morrison). Three specimens. A very curiously constructed species, somewhat allied to *latitarsis* Cress., in the formation of middle tarsi. In the above cut, fig. 1 represents the intermediate tarsi of *abnormis*, and fig. 2 that of *latitarsis*; fig. 3, the posterior leg (in part) of *abnormis*, and fig. 4, that of *latitarsis*, showing the form of the tibial spurs, which are short and normal in *abnormis*.

***Osmia integra.***—♂.—Steel-blue; head and thorax very densely and finely punctured, opaque, thickly clothed with a long erect pale pubescence, tinged with ochraceous above, and most dense on face, where it is silvery-white; anterior margin of clypeus truncate; antennæ not as long as head and thorax, black; wings hyaline, faintly dusky on apical margin; legs black, clothed with black pubescence, mixed with pale on anterior pair, tips of tarsi dull testaceous; abdomen shining, convex, very finely punctured, brilliant steel-blue, first and second segments rather thinly clothed with pale pubescence, the remainder with shorter black pubescence; sixth segment broadly rounded at tip, a shallow depression on posterior middle, apical margin entire; apical segment obtusely emarginate; third ventral segment broadly emarginate on anterior middle which is fringed with long golden hair. Length .50 inch.

*Hab.*—Colorado, (Morrison). Two specimens.

***Osmia marginipennis.***—♂.—Black, slightly tinged with greenish-blue; head and thorax finely and densely punctured, clothed with a long dense pale ochraceous pubescence, that on thorax above tinged with dull ochraceous, that on clypeus whitish, and that on cheeks mixed with black; anterior margin of clypeus subsinuate; antennæ reaching to scutellum; tegulæ piceous; wings hyaline, the apical margin conspicuously fuliginous, a fuscous streak in marginal cell; legs black, clothed with black pubescence, that on four anterior femora more or less mixed with pale, that on tarsi beneath reddish; abdomen shining, finely punctured, more strongly tinged with blue, the first segment and sides of second and third, clothed with pale pubescence, the remainder with black; sixth segment obtusely notched on apical middle, seventh segment bidentate; apical middle of third ventral segment with a small patch of golden hairs. Length .50 inch.

*Hab.*—Colorado, (Morrison). One specimen. This may be the ♂ either of *longula* or *juxta*.

**Osmia 4-dentata.**—♂.—Small, bluish-green, opaque; head and thorax densely punctured, clothed with a long whitish pubescence, very dense on clypeus, the anterior margin of which is subsinuate; antennæ reaching to the scutellum, black; tegulæ piceous; wings faintly tinged with dusky; legs slender, simple, clothed with pale pubescence, tips of tarsi dull testaceous; abdomen narrow, convex, shining, finely punctured, clothed with a short pale glittering pubescence, more conspicuous on the sides and on lateral apical margin of the segments; apex with four prominent teeth (as in figure), sixth segment being broadly sinuate on each side, with the lateral angles prominent and acute, seventh segment bidentate; venter steel-blue, second segment very large, broad, transversely impressed near base, apical margin subsinuate. Length .35 inch.



**Hab.**—New York, (Comstock). Easily recognized by the shape of the two apical segments of the abdomen.

**Osmia inurbana.**—♂.—Small, brassy-green; head and thorax sub-opaque, closely and finely punctured, thickly clothed with a long pale pubescence, tinged with dull ochraceous above, that on clypeus very dense and white; antennæ nearly as long as head and thorax, black; tegulæ piceous; wings faintly dusky on apical margin; legs black, clothed with pale pubescence, that on femora behind long; abdomen shining, rather thickly clothed with a short pale ochraceous sericeous pubescence, which is long on basal segment; apical margin of sixth segment subsinuate on the sides and deeply notched in the middle, seventh segment acutely bidentate. Length .35 inch.

**Hab.**—Colorado, (Ridings, Morrison). Four specimens. This is allied to *rustica* Cress., which is clothed with a bright fulvous pubescence and has the apical margin of sixth abdominal segment strongly sinuate laterally and only slightly notched medially.

**Osmia bella.**—♂.—Small, blue, green, sometimes golden-green; head and thorax densely and strongly punctured, clothed with long whitish pubescence, which is slightly mixed with black on head and thorax above, on clypeus it is dense and white; mandibles and antennæ black, the latter reaching to scutellum; wings faintly dusky on apical margin; legs bluish-green, clothed with pale pubescence, which on basal joint of tarsi beneath is black; abdomen short, convex, shining, feebly punctured, thinly clothed with a short pale pubescence, long on basal segment, and black on apical segments; sixth segment slightly produced at apex and obtusely emarginate on apical middle, seventh segment acutely bidentate; venter steel-blue or purple, second segment very large and fringed at apex with blackish pubescence. Length .35 inch.

**Hab.**—Colorado, (Morrison). Five specimens. A handsome little species, remarkably brilliant in color, which varies through all the shades of blue and green.

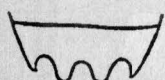
**Osmia exigua.**—♂.—Very small, green, tinged with blue; head and thorax densely and finely punctured, clothed with a long ochraceous pubescence, which is dense and pale on clypeus, and whitish on thorax beneath; head larger than usual; antennæ black, reaching to scutellum; tegulæ golden-green; wings faintly dusky at apex; legs green, clothed with pale pubescence,



tarsi long and slender, dull testaceous; abdomen convex, shining, bluish-green, golden in certain lights, feebly punctured, thinly clothed with a pale ochraceous pubescence, long on basal segment and on sides of apical segments; sixth segment slightly produced and recurved at apex which is rounded; apical segment acutely bidentate; apical margin of second ventral segment broadly rounded. Length .20 inch.

*Hab.*—California, (H. Edwards). This is our smallest species.

**Heriades ? denticulatum.**—♂.—Black, shining, closely punctured; head large, subquadrate, clothed with pale pubescence, which is long, dense and white on face, clypeus and cheeks beneath; antennæ brown beneath; thorax and scutellum thickly clothed above with short dull ochraceous pubescence, laterally and beneath it is longer and white; basal middle of metathorax



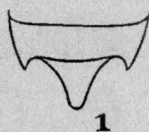
smooth and polished; tegulæ piceous; wings hyaline, marginal cell long and pointed at tip, second submarginal cell larger than the first, receiving the first recurrent nervure about one-third from base, and the second near the tip; legs robust, clothed with white pubescence, tarsi slender, rufo-testaceous at tips; abdomen as wide as thorax and about as long as head and thorax combined, convex, finely punctured, depressed at base and apex, apical margin of the segments with a narrow fringe of dense white pubescence, wider on the sides; apical margin of sixth segment with four equidistant teeth (as in figure), the lateral ones acute, the middle ones broad and subtruncate at tip; venter with two bands of long dense pale pubescence. Length .30 inch.

*Hab.*—Colorado, (Morrison). This may be the same as that which Say describes as the ♂ of his *Osmia buconis*, the ♀ of which is probably that of *Alcidamea producta* Cress.; the clypeus, however, is more or less emarginate at tip, not "entire," and the four anterior tibiæ have each an acute spine at tip before.

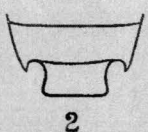
**Chelostoma californicum.**—♂.—Black, shining, very finely punctured, head and thorax thickly clothed with a long fulvo-ochraceous pubescence, sparse on vertex and mesothorax, and pale on cheeks and thorax beneath; tegulæ piceous; wings fuscous, second submarginal cell narrowed at least two-thirds towards the marginal; legs slender, clothed with short pale pubescence; abdomen narrow, convex, much incurved at tip, clothed with a very short ochraceous pile, the apical margin of the segments narrowly fringed with ochraceous pubescence; apical segment with three obtuse teeth, disk deeply excavated; second ventral segment with a large transverse, obtuse elevation. Length .35 inch.

*Hab.*—California, (H. Edwards). One specimen.

**Alcidamea truncata.**—♂.—Black, shining, closely and rather strongly punctured, head and thorax thickly clothed with long ochraceous pubescence,



1



2

paler on thorax beneath, and sparse on vertex and mesothorax; antennæ formed as in *producta*, entirely black; disk of mesothorax and scutellum sparsely punctured; tegulæ piceous; wings dusky on apical margin and in marginal cell; legs clothed with pale glittering pubescence, tips of four anterior tibiæ with a short acute tooth before,

tips of tarsi testaceous; abdomen convex, finely punctured, more coarsely so towards apex, incurved, sides and apical margin of the segments with a fringe of white pubescence; sixth segment with a short acute tooth on each side; apex of seventh segment coarsely rugose, squarely produced at tip (fig. 2) and slightly recurved, ventral segments 2—4 emarginate on apical middle, second segment not at all produced on disk. Length .32 inch.

*Hub.*—Georgia, (Morrison). One specimen. Very distinct from *producta* in the shape of the seventh abdominal segment which is broadly truncate at tip as in figure 2 of above cut, while that of *producta* is pointed, as in figure 1.

**Anthidium cognatum.**—♀.—Black; head and thorax densely and finely punctured, clothed with a whitish pubescence, very dense on face and sides of thorax; oblong spot on each side of face, two spots on apical margin of clypeus, large spot on each mandible, transverse spot on each side of occiput, spot on tegulæ anteriorly, a dot above, spot on each side of scutellum, interrupted line on posterior margin, spot or line at base of tibiæ, and a subapical band on abdominal segments 1—5, (broadly interrupted on each side and on middle, so as to form four spots on each segment, those on extreme sides larger, the two middle spots small and narrow on first, gradually becoming larger to fifth segment which is destitute of the lateral spots), yellowish; legs with whitish pubescence, very dense on basal joint of tarsi; wings smoky towards tip, neuration as in *maculifrons*; abdomen broad, shining, finely punctured, sixth segment densely punctured, apical margin subsinuate on each side with prominent lateral angles; ventral scopa dense and whitish. Length .40 inch.

♂.—Much larger, with pubescence on vertex and thorax above yellow and more dense; sides of face, clypeus, mandibles except tips, line behind ocelli broadly interrupted on middle, scape in front, spot on tegulæ in front, dot above, narrow interrupted line on posterior margin of scutellum, four anterior tibiæ in front, spot at base of posterior tibiæ, basal joint of tarsi, yellow; abdomen marked much the same as in ♀, except that the lateral spots on segments 3—5 are connected with middle spots by a slender line; sixth segment has two median emarginate spots, and a prominent acute incurved tooth on each side, while the apical segment (see figure) has three long prominent teeth, the lateral ones rather broad and obtuse and the middle one a little shorter, acute and slightly incurved. Length .50 inch.

*Hub.*—Georgia, (Morrison). Two specimens. Allied to *maculifrons* Smith, but the shape of the apical segment of abdomen is very different, that of *maculifrons* and of *mormonus*, described below, being almost exactly alike.

**Anthidium aztecum.**—♀.—Black; head and thorax finely and densely punctured, clothed with pale pubescence, very dense on face and sides of thorax; spot on lower side of face, two spots on clypeus, spot on mandibles, spot behind summit of each eye, spot on tegulæ in front, posterior margin of scutellum interrupted laterally, line or spot at base of tibiæ, a spot on each side and two dots on middle of first abdominal segment, a band on second segment interrupted into four spots, a band on segments 3—5, those on three



and four slightly interrupted medially and emarginate on each side anteriorly, that on five emarginate laterally, and on sixth segment a broad transverse mark, occupying nearly the entire surface, all yellow; third and fourth joints of flagellum beneath and more or less of the femora above pale ferruginous; basal joint of tarsi with dense white pubescence; wings smoky towards tips, neuration as in *maculifrons*; abdomen very finely punctured. Length .40 inch.

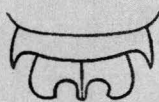
♂.—Larger and more pubescent, the vertex and thorax above clothed with an erect fulvous pubescence; sides of face, clypeus, most of mandibles, scape in front, short line behind summit of eyes, spot on anterior margin of mesothorax, spot on tegulæ, line above, four spots on scutellum, line on four anterior tibiæ, spot at base of posterior pair and basal joint of tarsi, all yellowish; abdomen marked as in ♀ except that the bands are more deeply and squarely emarginate on each side, the two middle spots on first segment larger, and the bands on apical segments more or less interrupted medially; the sixth segment has two nearly confluent spots and a prominent acute lateral tooth; apical segments formed as in *cognatum*. Length .45 inch.

*Hab.*—Mexico, (Sumichrast). Two specimens. Same form as that of *maculifrons* Smith, and closely allied to *cognatum*.

***Anthidium maculosum*.**—♀.—Black; clothed with pale pubescence; two large round spots on clypeus, line on mandibles dilated at base, dot behind summit of each eye, spot on tegulæ anteriorly, two spots on scutellum, spot at base of tibiæ and four spots on abdominal segments 1—5, larger on apical segments, all yellowish white; tarsi densely clothed with white pubescence; wings smoky, neuration as in *maculifrons*; apical margin of last abdominal segment sinuate, the lateral angles prominent and acute; ventral scopa white. Length .40 inch.

*Hab.*—Utah, (Putnam); California, (H. Edwards). Two specimens. This has also the same form as that of the preceding species.

***Anthidium mormonum*.**—♂.—Black, clothed with white pubescence, most dense on face and sides of thorax; sides of face, clypeus, mandibles, dot behind summit of eyes, anterior margin of tegulæ, spot in front, dot above, spot on each basal corner of scutellum, an interrupted line on posterior margin, all the tibiæ in front, basal joint of tarsi, large spot on each side of first abdominal segment, two minute dots on disk, and a band on segments 2—6, more or less interrupted medially and emarginate on each side anteriorly, more deeply and squarely so on segments two and three, all yellow; tubercles cariniform; neuration as in *maculifrons*; sixth segment of abdomen with a long acute lateral tooth, and apical segment with two yellow dots, prominently bilobed at tip and with a subacute central tooth, (see figure). Length .40 inch.



*Hab.*—Utah, (Ulke). One specimen.

***Anthidium montivagum*.**—♀.—Black, clothed with pale pubescence; mark on sides of face, triangular mark on base of mandibles, spot behind summit of eyes, spot on each side of mesothorax in front, anterior margin of tegulæ, spot in front, line above, four spots on scutellum, line on all the tibiæ, band on abdominal segments 1—5, interrupted on middle and deeply emarginate on each side anteriorly, and two rounded spots on sixth segment, pale

yellowish-white; wings hyaline, slightly dusky at tips, recurrent nervures uniting with the transverse cubital nervures; tarsi with dense white pubescence; ventral scopa dense and whitish. Length .35 inch.

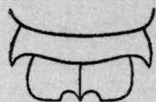
♂.—Sides of face, clypeus, broad stripe on mandibles, dot behind summit of eyes, line on scape in front, margins of tegulæ, spot in front, interrupted line on posterior margin of scutellum, all the tibiæ exteriorly and basal joint of tarsi, all yellowish-white; abdomen marked much as in ♀, except that the band on first segment only is interrupted in middle and instead of being emarginate laterally the band is dilated and encloses a small black spot, the sixth segment has a broad transverse mark emarginate at each end, and has a sharp lateral tooth; last segment with a yellowish band slightly interrupted medially and dilated laterally, the apical margin shaped as in *mormonum*; last ventral segment with three spines, the middle one truncate at tip and the lateral ones acute. Length .33 inch.

*Hab.*—Colorado, (Ridings). Two specimens. In form and markings this is a miniature of *maculifrons* Smith, the ♂ of which, however, has only a single spine at apex of venter.

**Anthidium atriventre.**—♀.—Black, clothed with pale pubescence; face, basal joint of tarsi and venter with fuscous or black pubescence; dot behind summit of eyes, tegulæ anteriorly, dot beneath, two or four spots on posterior margin of scutellum, line at base of all the tibiæ, and band on abdominal segments 1—6, slightly interrupted in middle and emarginate on each side anteriorly, whitish; sometimes the basal band on abdomen encloses a black dot on each side; wings slightly smoky, neuration as in *maculifrons*; anterior margin of clypeus coarsely denticulated. Length .30—.35 inch.

*Hab.*—California, (H. Edwards). Two specimens. A small species marked much like the preceding, but the pubescence on face and ventral segments is black.

**Anthidium jocosum.**—♂.—Black, clothed with whitish pubescence; sides of face, clypeus, mandibles exteriorly except tips, dot behind summit of each eye, tegulæ except middle, spot in front, widely interrupted line on posterior margin of scutellum, line on base of all the tibiæ, basal joint of tarsi, band on abdominal segments 1—6, (gradually broader on apical segments, those on 1—3 slightly interrupted on middle, that on first segment interrupted into four spots, that on second segment squarely emarginate laterally, and those on third and fourth segments slightly sinuate laterally), and two spots on apical segment, pale yellowish; sixth segment with a sharp lateral tooth; apical segment (see figure) broadly, not deeply, emarginate on posterior middle, with a sharp central tooth, the lateral lobes very broad, rounded laterally and truncated posteriorly; anterior margin subarcuate, smooth; wings faintly dusky at tips, neuration as in *maculifrons*. Length .30 inch.



*Hab.*—Colorado, (Ridings). One specimen. A pretty little species, with the bands on apex of abdomen broad and uninterrupted.

**Anthidium Ridingsii.**—♀.—Black, shining; head finely punctured; face, sides of clypeus and cheeks with dense pale pubescence, that on vertex very short and fuscous; mesothorax strongly punctured, with very short



sparing pubescence, behind, on sides of metathorax and on pleura the pubescence is short and dense; wings fuliginous, darker on apical margin; legs with short pale pubescence, that on tarsi beneath dense and fulvous, anterior tarsi and tips of two posterior pairs rufo-testaceous; abdomen convex, shining, finely punctured, apical margin of segments 1—5 narrowly white: ventral scopa fulvous-yellow. Length .50 inch.

*Hab.*—Georgia, (Mr. Jas. Ridings). One specimen. A very distinct species, easily recognized by the abdominal fasciæ being very narrow and regular.

***Anthidium crassipes.***—♀.—Black, thinly clothed with pale pubescence; sides of face, anterior orbits, large triangular mark on clypeus, dot behind summit of eyes, lateral and anterior margin of mesothorax broadly interrupted in front, spot on tegulæ in front, dot beneath, broad lateral margins of scutellum, and large elongate spot beneath wings, bright yellow; anterior margin of clypeus deeply notched on middle; mandibles very robust; head and thorax coarsely punctured; tubercles formed into a transverse concave scale, rounded on the sides and strongly reflexed anteriorly; wings fuscous, neuration as in *maculifrons*; legs short, very robust, ferruginous, four anterior tibiæ more or less, and apex of posterior pair yellow, basal joint of tarsi broad and flat; abdomen strongly punctured, shining, a yellow band on five basal segments, broad laterally, much narrowed medially where they are very slightly interrupted; sixth segment immaculate, densely clothed with pale sericeous pubescence; ventral scopa yellowish. Length .46 inch.

*Hab.*—Florida, (Tatnall). One specimen. The fasciæ on the abdomen are very much narrowed medially.

***Anthidium Edwardsii.***—♂.—Black; head above antennæ and thorax above clothed with dense fulvous pubescence, that on face, thorax beneath and legs is whitish; sides of face, clypeus, mandibles, dot behind summit of eyes, tegulæ in front, interrupted line on posterior margin of scutellum, all the tibiæ exteriorly and basal joint of tarsi, yellowish-ferruginous; wings slightly dusky at tips, neuration as in *maculifrons*; abdomen minutely punctured, shining, a yellow band on segments 1—6, interrupted on middle of first segment and emarginate on each side posteriorly; the bands on remaining segments broad and uninterrupted, being merely notched on anterior middle and that on second only being slightly notched on each side anteriorly, the other bands being even; sixth segment with a sharp tooth on each side; apical segment ferruginous at base, shaped much as in *cognatum*, except that the lateral lobes are slightly divergent and the central tooth shorter; last ventral segment with an oblique tooth on each side. Length .40 inch.

*Hab.*—California, (H. Edwards). One specimen. A very distinct species.

***Anthidium formosum.***—♂.—Large, black, head, thorax and base of abdomen rather thickly clothed with short erect whitish pubescence; sides of face, clypeus, mandibles exteriorly except tips, line behind summit of each eye, spot on tegulæ in front, spot beneath, all the tibiæ exteriorly, basal joint of tarsi, spot on each side of first abdominal segment, a band on segments 2—6 interrupted on middle, those on two and three emarginate on each side

posteriorly, and two large rounded spots on apical segment, all lemon-yellow; the bands on segments 4—6 are broad, even, and slightly interrupted on middle; sixth segment with a long acute lateral spine; last segment (see figure) broadly and deeply emarginate at tip, with a stout acute central spine, as long as lateral lobes which are obliquely sinuate on outer sides and spiniform within; anterior margin of clypeus strongly arcuate and smooth; wings smoky, the second submarginal cell receives the first recurrent very near the base, while the second passes a little beyond the tip. Length .55 inch.

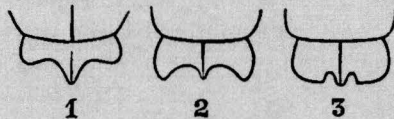
*Hab.*—Colorado, (Ridings). One specimen. Quite distinct by its markings and shape of anal segment of abdomen.

In this and all the following species of this genus, the second recurrent nervure passes beyond the apex of the second submarginal cell.

**Anthidium venustum.**—♀.—Black, clothed with yellowish pubescence; anterior orbits broad on sides of face, line on posterior orbits, two spots on clypeus sometimes confluent on anterior margin, two spots on anterior margin of mesothorax, tegulae anteriorly, spot beneath, posterior margin of scutellum interrupted into a spot on each basal corner, knees, line on anterior femora beneath, all the tibiae exteriorly, their tarsi, and band on abdominal segments 1—6, all yellow; the bands on segments one and two interrupted into three spots, the middle spot on second segment being subinterrupted in middle and notched at each end; the bands on remaining segments slightly interrupted medially and rounded, that on third segment emarginate on each side posteriorly, while those on the two following segments enclose a short black line on each side; the band on sixth segment notched at each end; tubercles formed into a large broad concave scale, rounded laterally and strongly reflexed anteriorly; wings fuliginous; posterior coxae with a stout yellow tooth at apex beneath; anterior margin of clypeus strongly denticulate; mandibles very robust; abdomen strongly and sparsely punctured; ventral scopa pale yellowish. Length .40—.45 inch.

*Hab.*—Colorado, (Ridings, Morrison). Four specimens. Closely related to *interruptum* Say, but larger.

**Anthidium texanum.**—♂.—Black, densely punctured; sides of face, clypeus, narrow anterior orbits, short line behind summit of eyes, and the mandibles, yellowish; sides of face and occiput with pale ochraceous hair; anterior margin of clypeus denticulated; thorax more densely punctured than head; a spot on each side of mesothorax anteriorly, posterior margin of scutellum, interrupted medially, and the tubercles (which have a thin recurved margin anteriorly, yellow or fulvous; sides of metathorax and pleura clothed with a pale ochraceous pubescence; tegulae ferruginous with a yellow spot in front; wings fuliginous, paler beneath marginal cell which is dark fuliginous; legs fulvo-ferruginous, posterior knees, tips of their tibiae and basal joint of their tarsi, yellow; abdomen shining, sparsely and strongly punctured, first segment tinged with ferruginous; a rather broad yellowish-ferruginous band near apex of segments 1—5, those on one and two indented on anterior middle, and those on 3—5 inter-





rupted medially, all enclosing laterally a transverse black spot or line; lateral apical margin of sixth segment narrowly yellowish; apical segment yellowish-ferruginous, shaped as in fig. 1. Length .36 inch.

*Hab.*—Texas, (Belfrage). Two specimens. This is very much like *concinnum* Cress., ♂ in size and ornamentation, but may be distinguished at once by the shape of the last dorsal segment of the abdomen, and by the posterior coxæ being destitute of the strong yellow tooth so conspicuous in *concinnum*. *A. interruptum* Say (= *curvatum* Sm.) ♂, *simile* Cress. ♂, *concinnum* ♂, and *texanum* are all very similar in size and ornamentation, but are easily separated by the shape of the last dorsal segment of the abdomen, as given in the above cut. Fig. 1 represents that of *texanum*; fig. 2, *concinnum*, and fig. 3, *interruptum*; in *simile* the shape of that segment is as represented by fig. 3, except that the apical margin is sinuate on each side of the middle and not emarginate, the central tooth being broad and rounded. All have a stout yellow tooth on posterior coxæ, except *texanum*.

***Anthidium parvum.***—♀.—Small, black; anterior orbits broad on the face, sometimes two spots on clypeus, line behind summit of eyes, two spots on anterior margin of mesothorax, tegulæ anteriorly, spot before, narrow interrupted line on posterior margin of scutellum, knees, spot at base of tibiæ, a spot on each side and line on middle of first segment of abdomen, a broad oblong stripe on each side of segments 2—5, (curved downwards and pointed within, the curved form being given by a deep notch in the middle of each stripe beneath), and sometimes two dots on apical segment, all yellow; tubercles bearing a large broad thin translucent scale, rounded laterally and subreflexed anteriorly; wings subhyaline, marginal cell fuliginous, abdomen shining strongly and sparsely punctured; ventral scopa yellowish. Length .27 inch.

♂.—Marked like the ♀ except that the clypeus is entirely yellow, the sixth segment of abdomen with a yellow spot on disk and dot on each side, and the apical segment yellow and shaped much as in *interruptum*; posterior coxæ each with a stout yellow tooth. Length .28 inch.

*Hab.*—Colorado, (Ridings). Two specimens. Marked very much like *simile*, but smaller.

***Anthidium palliventre.***—♀.—Black; head and thorax clothed with a dense pale pubescence, tinged with yellowish on vertex and thorax above, and sparse on clypeus, the anterior margin of which is subconcave and uneven; a pale spot behind the summit of each eye; wings smoky, tegulæ with a pale spot in front; four anterior tibiæ with a short acute spine at their tip, basal joint of tarsi with blackish pubescence beneath and at tip above of two anterior pairs; abdomen short, broad, convex, shining, sparsely clothed with long pale pubescence, marked as in *atriventre* except that the pale band on first segment is interrupted into four spots; ventral scopa pale. Length .40 inch.

*Hab.*—California, (H. Edwards). This is broader and more pilose than *atriventre* and has the ventral scopa pale.

**Anthidium lepidum.**—♂.—Black, pubescence pale; head and thorax closely and coarsely punctured, and abdomen sparsely punctured and shining; anterior orbits, small spot on vertex, band on occiput extending half-way down the cheeks, a short line beneath eyes, clypeus, mandibles except tips, broad lateral margin of prothorax angular in front, two stripes on disk attenuated before and dilated behind, broad posterior margin of scutellum, interrupted into four spots, basal ones minute, the other two large, knees, tibiae in front, tarsi, stripe on anterior femora beneath, spot on posterior coxæ beneath, transverse sublunate spot on each side of first abdominal segment, band on each of the five following segments, slightly interrupted on middle of segments 2—4, broad and notched medially on five and semicircular on six, all lemon-yellow; apical segment yellow, tipped with black, obtusely pointed with a small acute tooth on each side at base; venter yellowish; wings pale fuliginous, darker beyond stigma; tegulae honey-yellow, paler in front; scutellum rounded behind, slightly notched medially; tubercles subacutely toothed, anterior margin straight, scarcely reflexed. Length .30 inch.

*Hab.*—Georgia, (Morrison). Resembles *jugatorium* Say, in ornamentation of abdomen.

**Anthidium Ulkei.**—♀.—Small, black, with pale pubescence; head and thorax with rather fine, very dense punctures; broad anterior orbits, a dot on middle of face, just above clypeus, a vertical spot on vertex, two dots behind ocelli, stripe behind eyes, spot at base of mandibles, sides of clypeus broadly, two distant spots on anterior margin of mesothorax, tubercles, outer margin of tegulae, posterior margin of scutellum confluent with spot at basal angle, quadrate spot beneath tubercles, four anterior femora beneath, all the knees, tibiae exteriorly, and base of tarsi, all lemon-yellow; tubercles formed into a broad, thin, subconcave plate, with margin rounded laterally and reflexed anteriorly; wings pale fuliginous, darker in marginal cell and beyond, second recurrent nervure passing a little beyond apex of second submarginal cell; apex of scutellum slightly notched; abdomen convex, shining, strongly and sparsely punctured, segments 1—5 each with a lemon-yellow band, that on one and two narrow medially and dilated laterally, slightly emarginate on each side posteriorly; the band on three, four and five broad and slightly interrupted or subinterrupted on the middle; sixth segment with two large sublunate yellow spots; ventral scopa yellow. Length .30 inch.

*Hab.*—Utah, (Mr. Henry Ulke). One specimen. A beautiful little species.

**Anthidium Gabbii.**—♂.—Black, densely punctured, clothed with ochraceous pubescence; broad anterior orbits, spot above antennæ, clypeus, transverse line above, spot on mandibles, broad posterior margin of head, lateral margins of mesothorax curved inwardly in front, broad posterior margin of scutellum, curved line on tegulae anteriorly, knees, stripe on anterior tibiae in front, and a broad uninterrupted band at base of abdominal segments 1—6, all bright sulphur-yellow; wings fuliginous, paler towards base; legs clothed with short pale pubescence, tarsi more or less pale testaceous; abdomen convex, finely and densely punctured, clothed with a short ochraceous pubescence; apical segment obtusely pointed with a stout blunt tooth on each side near base. Length .35 inch.



*Hab.*—Costa Rica, (Mr. W. M. Gabb). One specimen. This somewhat resembles *lepidum* in ornamentation and in the shape of the last dorsal segment of the abdomen.

***Anthidium mexicanum.***—♀.—Black; head and thorax densely punctured, opaque, clothed with a short pale glittering pubescence, dense on sides of face and of metathorax; spot on each side of face, narrow line on posterior margin of head above, and a narrow interrupted line on posterior margin of scutellum, dull yellow; antennæ tinged with ferruginous at base and beneath; tubercles transverse and carinate anteriorly; wings fuscous, darker on costal margin; legs with pale pubescence, anterior pair brown; abdomen convex, shining, finely and sparsely punctured; a transverse mark on each side of first segment pointed within, and a broad band on middle of segments 3–6 abbreviated laterally, all orange-yellow; ventral scopa whitish. Length .30 inch.

♂.—Clypeus, anterior orbits broad on sides of face, spot at base of mandibles, line on scape beneath, and sometimes an interrupted line on anterior margin of mesothorax, yellow; tarsi fringed with long white pubescence, anterior tibiæ fulvous in front, base of all the tarsi more or less yellow; apical segment of abdomen broadly rounded behind, the margin slightly recurved and testaceous; otherwise as in ♀.

*Hab.*—Mexico, (Sumichrast). Ten specimens.

***Anthidium apicale.***—♀.—Short, broad, very robust, black, opaque, densely and finely punctured; vertex with a patch of short, dense fuscous pubescence, otherwise the pubescence is pale; spot on each side of face and line on posterior margin of head above, yellow; mesothorax with a short appressed golden-ochraceous pile; scutellum broadly truncate behind, the margin crenulated, more coarsely sculptured than remainder of thorax; dot above tegulæ, posterior margin of scutellum and dot on the carinate tubercles, yellow; tegulæ fulvous, yellow in front; wings fuscous at tip, yellow on costal margin; legs clothed with pale pubescence, the knees more or less and stripe on middle tibiæ before, yellow; abdomen nearly globose, finely and densely punctured covered with a short, pale sericeous pile; a broad uninterrupted orange-yellow band near apex of segments 3–5, base of sixth segment yellow; ventral scopa yellowish. Length .30 inch.

♂.—Clypeus, sides of face, and large spot on mandibles, yellow; sixth segment of abdomen yellow with two fuscous spots, apical segment broadly rounded at tip, yellow, black at base, lateral apical corners of segments 3–6 lobate; otherwise as in ♀.

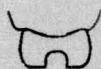
*Hab.*—Mexico, (Sumichrast). Three specimens. This and the two following species are closely related and have a short broad, robust form somewhat like that of *perplexum* and *notatum*.

***Anthidium bivittatum.***—♂.—Form of *apicale*; black, opaque, densely punctured, clothed with a short pubescence, which is fuscous on vertex, dull ochraceous on mesothorax and pale elsewhere; clypeus except base, spot on mandibles, narrow anterior orbits, two lines between antennæ, and a line on posterior margin of head sometimes interrupted, yellow; the front between antennæ prominent and carinate laterally; antennæ tinged with ferruginous at base; scutellum coarsely punctured, rounded behind; two stripes on meso-

thorax, and posterior margin of scutellum, yellow; metathorax smooth and polished, basal margin crenulated; tegulæ brown; wings yellow at base and along costa, and with a fuscous streak at tip of marginal cell; legs clothed with pale pubescence, anterior pair pale brown, stripe on middle tibiæ beneath and spot at apex of posterior pair beneath yellow; abdomen very densely punctured, golden-sericeous, segments 3—6 yellow, more or less margined at apex with fuscous or black; apical segment short, yellow at tip which is rounded and obtusely emarginate medially; venter with a yellow spot on sides of second segment. Length .35 inch.

*Hab.*—Mexico, (Sumichrast). Two specimens.

**Anthidium toltecum.**—♂.—Form and color of *apicale*, but more robust, the pubescence longer and more dense; clypeus, sides of face, and spot on mandibles, yellow; a slightly interrupted line on posterior margin of scutellum and dot on tegulæ yellow; tubercles flattened and scale-like above; wings as in *apicale*; four anterior tibiæ and tarsi fringed behind with long pale pubescence, line on anterior tibiæ in front yellow, tips of middle tibiæ, line on posterior pair behind and all the tarsi, fulvo-ferruginous; abdomen with a short, rather dense golden sericeous pubescence, segments 3—7 yellow, more or less black at base, a transverse spot on each side of segments 3—5 and two spots on apical middle of sixth segment, which is sinuate, black; apical segment deeply and squarely emarginate on apical middle (as in figure). Length .35 inch.



*Hab.*—Mexico, (Sumichrast). One specimen.

**Anthidium agnatum.**—♂.—Small, black, opaque; head and thorax with large deep coarse punctures, thinly pubescent; clypeus, narrow anterior orbits, narrow interrupted line on posterior margin of head above, two spots between insertion of antennæ, broad posterior margin of scutellum, a dot on each side at base, and a broad, even uninterrupted band on segments 3—7, all bright lemon-yellow; tegulæ prominent and cariniform, scutellum broadly rounded behind and obtusely emarginate medially; tegulæ piceous; wings fuliginous, darker on costal margin, legs slender, brown, shining, tarsi thickly clothed with pale pubescence; abdomen finely and densely punctured, gradually more coarsely so at sides, apical segment small, broadly rounded behind. Length .25 inch.

*Hab.*—Mexico, (Sumichrast). One specimen. A pretty little species.

**Megachile totonaca.**—♀.—Black, shining, sparsely and finely punctured; face and cheeks clothed with a short dense white pubescence, on the vertex it is sparse and black; clypeus nude, with a little white pubescence on apical margin; pubescence of thorax black, except a slight admixture of white on each side of prothorax above; mesothorax except sides and scutellum, which is rounded behind, nude and with scattered fine punctures; wings dark fuliginous, violaceous, darker on costal margin, legs clothed with short black pubescence, basal joint of tarsi broad; abdomen finely punctured, nude above, with a little black pubescence at base and scattered black hairs on sides of apical segments; sixth segment sericeous, very densely and minutely sculptured, broadly rounded at tip; ventral scopa yellowish-white, black at sides of basal segments. Length .55 inch.

*Hab.*—Mexico, (Sumichrast). Two specimens.



**Megachile mucida.**—♀.—Black; face, cheeks, thorax entirely, and basal segment of abdomen rather densely clothed with a long pale ochraceous pubescence, slightly mixed with black on clypeus and vertex; wings strongly tinged with fuscous; legs clothed with black pubescence, that on anterior femora behind pale, basal joint of tarsi broad; abdomen short, shining, feebly punctured, clothed with short black pubescence, except on first segment; ventral scopa black. Length .55 inch.

♂.—Pubescence much longer and more dense; legs clothed with long pale pubescence, especially the anterior pair, the coxæ of which are armed with two long black spines, their femora yellowish within, their tibiæ yellowish at tip and within, their tarsi whitish, dilated and fringed beneath with long pubescence, white on outside and black within, first joint with a long pointed white scale-like process at base above, hollowed out on inside and fringed on upper edge within with short black pubescence, second and third joints also prolonged at tip above, claws black, pale at base; intermediate tarsi somewhat dilated and densely hairy, posterior pair with black pubescence above and fringed with long pale hairs beneath; wings dusky on apical margin; abdomen shining, with long pale pubescence on first and base of second segments, elsewhere with long black pubescence except on venter where it is mixed with pale; sixth segment with the apical margin transversely compressed and deeply notched medially; terminal segment with two short teeth on each side and a prominence in the middle. Length .50 inch.

*Hab.*—Georgia, (Morrison). Four specimens.

**Megachile gemula.**—♀.—Black, shining, densely and finely punctured; face, cheeks and thorax clothed with pale ochraceous pubescence, which is short, sparse and slightly mixed with black on mesothorax, on vertex it is sparse and black; wings fusco-hyaline; legs thickly clothed with a short pale ochraceous pubescence, which on tarsi beneath is fulvous; basal joint of tarsi broad; abdomen above black, without any indication of pale bands, basal segment clothed with pale pubescence, long on the sides; ventral scopa dense and yellow. Length .57 inch.

♂.—Pubescence longer and more dense, entirely black on disk of mesothorax; wings dusky on apical margin; legs black, with short black pubescence, anterior coxæ each with a strong black spine, their femora fulvous within, fringed beneath with long pale pubescence, their tarsi brownish, slightly dilated, fringed above with black and beneath with long pale pubescence, basal joint prolonged at tip above and hollowed out on the inside; four posterior legs thinly clothed beneath with long mixed black and pale pubescence; abdomen shining, clothed rather thickly with black pubescence which is long and mixed with pale at tip; basal segment clothed with pale pubescence, and the lateral apical margin of segments 2—4 fringed with pale hairs; sixth segment excavated, the apical margin transversely compressed and deeply notched medially; terminal segment with a short tooth on each side, nearly hidden by the long pale pubescence with which it is clothed. Length .50 inch.

*Hab.*—Georgia, (Morrison). Three specimens. The ♂ of this has much the general appearance of *mucida* ♂, but is easily distinguished by the anterior tarsi being much less dilated and of a different color.

**Megachile Palmeri.**—♀.—Black, entirely clothed with a dense bright fulvo-ferruginous pubescence, slightly mixed with black on vertex; mandibles coarsely rugose; wings margined at apex with fuscous; tarsi ferruginous, basal joint broad; abdomen finely punctured, apical margins of the segments above fringed with a dense fulvous pubescence; ventral scopa dense and fulvous. Length .55—.65 inch.

♂.—Pubescence more dense and longer, that on face golden and that on vertex and thorax above tinged with fuscous; anterior coxæ each with a long curved black spine, their femora fringed beneath with a long dense fulvous pubescence, their tarsi yellowish, dilated, concave and margined with dusky within, and fringed beneath with a long white pubescence, at base above a long hollow process, obtusely pointed, sinuate and honey-yellow at tip, clothed at base with golden pubescence; sixth segment of abdomen excavated, the tip notched and coarsely serrate; apical segment with a short blunt central tooth. Length .55 inch.

*Hab.*—Guadalupe Island, situate in the Pacific Ocean about one hundred miles westward of the coast of the peninsula of Lower California. Five specimens, collected by Dr. Edward Palmer. A beautiful species, the pubescence being dense and bright fulvo-ferruginous.

**Megachile azteca.**—♀.—Black; face and cheeks clothed with pale pubescence, slightly mixed with black, on vertex it is fulvous; thorax above with short dense fulvous pubescence, on the sides and beneath it is griseous; tegulæ fulvous; wings yellowish-hyaline, faintly dusky on apical margin; legs with short pubescence, black on four posterior tarsi above and yellowish beneath, basal joint broad; abdomen with long fulvous pubescence on basal segment, the apical margin of the segments fringed with bright yellow pubescence, apical segment pale subpruinose, with scattered black hairs; ventral scopa whitish except on two apical segments where it is black. Length .50—.55 inch.

♂.—Smaller and narrower than ♀, with the pubescence on face and clypeus dense and golden; legs pale ferruginous; anterior coxæ each with a long black spine, their femora lineate with dusky within, their tarsi whitish, dilated, fringed beneath with long pale pubescence, tipped with fuscous, at base above a long obtusely pointed process, hollowed out on the inside, second and third joints also prolonged at tip above, the former having a shining black spot on the inside; intermediate and posterior coxæ and their femora above and behind blackish, their tarsi slender; abdomen sericeous, with longer pubescence than in ♀; the sides parallel, sixth segment excavated, the apical margin with two stout obtuse teeth; venter shining black, the segments narrowly margined at apex with white. Length .45 inch.

*Hab.*—Mexico, (Sumichrast). Ten specimens.

**Megachile Sayi.**—♂.—Form elongate, rather narrow, parallel, the head, thorax and abdomen being about the same width throughout; black, finely and very densely punctured; face and clypeus with long dense yellowish-white pubescence, which is sparing on vertex and short and white on cheeks; thorax with long dense white pubescence, except on mesothorax where it is short and mixed with black; tegulæ pale brown; wings dusky on apical margin, darker at tip of marginal cell; legs brown-ferruginous or black, clothed with snow-



white pubescence; anterior coxæ each with a long black spine, their tarsi whitish, dilated and fringed beneath with long white pubescence, first, second and third joints prolonged and pointed at tip above, the process on first joint grooved within and margined with fuscous pubescence, second joint within with a black spot; intermediate and posterior tarsi long and slender; abdomen elongate, sides subparallel, densely punctured, base and apex with a thin, rather long, whitish pubescence, segments 1—5 with a narrow white submarginal band of white pubescence; sixth segment deeply excavated on the disk, the apex transversely compressed, deeply notched medially and subserrate on each side. Length .50—.55 inch.

? ♀.—Head subquadrate; sides of face, cheeks, prothorax, metathorax and pleura clothed with griseous pubescence, mesothorax and scutellum almost nude, having a few scattered short black hairs, longer on scutellum; wings dark fuliginous at apex; legs slender, piceous or black, tarsi rufo-testaceous, with yellowish pubescence; abdomen with subparallel sides, segments 1—5 each with a narrow fringe of dense white pubescence at apex; ventral scopa whitish, apical segment clothed with short black hairs. Length .50—.55 inch.

*Hab.*—Del., N. C., Ga., Kans., Tex. Eight specimens. The ♂ specimens from Texas have the legs, except coxæ, entirely brown-ferruginous.

This is closely allied to *pollicaris* Say, and *pugnata* Say (= *scrobiculata* Sm., *disparilis* Cress., *lucrosa* Cress.), and was mistaken by me for the latter species in my list of Texan hymenoptera. It differs, however, from both species by the less dilated anterior tarsi of ♂, the lobate process being much smaller, and from *pollicaris* by the intermediate tarsi being slender and simple. The ♀ of *pugnata* has the head large and cubical, and the cheeks armed at base beneath with a more or less large obtuse tooth, sometimes hidden by the pubescence, thus escaping my notice in describing the single specimen from Texas; otherwise it closely resembles what is doubtfully described above as the ♀ of *Sayi*; it varies greatly in size in both sexes.

In my remarks on *pollicaris* Say, (Trans. Am. Ent. Soc. iv, p. 264), the types have made me say exactly opposite to what was intended. The sentence should read: "This may not be the true *pollicaris*, as Say, although mentioning the long, prominent, yellow scale-like process, tipped with honey-yellow, at base of anterior tarsi, says nothing about the intermediate legs being red," etc.

**Megachile fidelis.**—♀.—Black, opaque, very densely and finely punctured; head subquadrate, the face and clypeus clothed with a long dense yellowish pubescence, which on the cheeks is short and white and on vertex sparing and black; clypeus with a stout, obtuse, transversely compressed, incurved tooth on each side; mandibles rugose; mesothorax and scutellum with a few scattering black hairs; prothorax, lateral margin of mesothorax, sides of scutellum, metathorax and pleura laterally and beneath densely clothed with a long griseous pubescence; tegulæ piceous; wings fuscous, fuliginous on

apical margin and yellowish towards base; legs clothed with short yellowish pubescence, which on tarsi is fulvous; abdomen with subparallel sides, closely punctured, rather deeply transversely impressed at base; first segment clothed with pale pubescence especially at sides, segments 2—5 with short black pubescence and fringed at apex with a short dense yellow pubescence, longer at the sides; apical segment covered with a dense yellow pile, the tip slightly compressed; ventral scopa dense and pale yellowish. Length .45—.50 inch.

♂.—Resembles the ♀, but smaller, the face and clypeus clothed with a long dense pale yellow or white pubescence; clypeus unarmed; cheeks beneath with long white pubescence; wings paler; anterior coxæ each with a long black spine, their femora and tarsi fringed beneath with long white pubescence. that on tarsi tipped within with fuscous, their tibiae more or less fulvous within, the tip acute beneath, their tarsi whitish, the three basal joints dilated, and at base of the first a long pointed yellow lobe, hollow within, the second and third joints also produced at tip above, each having a shining black spot on the inside; four posterior tarsi rufo-testaceous, and clothed with yellow pubescence; abdomen ornamented as in ♀, except that the extreme base of segments 3—5 have a yellowish band at base, and the fifth segment has long fulvous hair; sixth segment deeply excavated, the apical margin transversely compressed and deeply notched medially, with the sides more or less serrate. Length .45 inch.

*Hab.*—Colorado, (Morrison); California, Oregon, (H. Edwards). Fourteen specimen. The parallel form, bright yellow bands on abdomen, and bidentate clypeus of ♀, will readily distinguish this pretty species.

**Megachile mellitarsis.**—♂.—Black, opaque, very densely and finely punctured, clothed with a long white pubescence, very dense on face and clypeus; a short, stout tooth on each side beneath base of mandibles; on vertex and mesothorax the pubescence is very sparing; tegulæ piceous; wings tinged with yellow, the costal vein honey-yellow; legs black, the femora beneath clothed with a long white pubescence, all the tarsi bright saffron-yellow, the two posterior pairs clothed with golden-yellow pubescence; anterior coxæ each with a long black spine, their tarsi dilated and fringed beneath with long white pubescence and on upper margin within with short black hairs, at base above a long process, hollow within, the tip sinuate and prolonged nearly to base of the fourth joint, within the joints are striped or spotted with black; abdomen subquadrate, shining, thickly clothed with a griseous pubescence, long on basal segments, short and dense on apical margin of segments 2—4; sixth segment excavated on disk, the apical margin slightly notched medially and coarsely serrate; apical segment with a short subacute tooth on middle and carinate on each side. Length .45 inch.

*Hab.*—Colorado, (Morrison). One specimen. Easily distinguished by the yellow tarsi; the lobe at base of anterior pair is shaped exactly as in *Palmeri*, the tip being prolonged and curved.

**Megachile integra.**—♂.—Black, closely and minutely punctured especially the thorax; head broader than thorax, the face and clypeus clothed with long dense golden yellow pubescence, which on cheeks is white and on vertex thin and ochraceous; base of mandibles with a patch of white pubes-



cence; thorax with whitish pubescence on sides and beneath, on mesothorax and scutellum ochraceous, short and sparse on the disk; tegulæ dull fulvous; wings faintly dusky on apical margin; legs robust, black, the femora and four anterior tarsi beneath fringed with long white pubescence; anterior coxæ each with a long black spine, their femora yellowish, with the base and upper and lower margin within and apex above black, the lower edge compressed, dilated and broadly rounded to tip, their tibiæ mostly yellowish, their tarsi white, the first four joints dilated, gradually less so to the fourth, the basal joint slightly lobed at tip above, the upper edge sinuate and grooved within, the fringe within black; intermediate tarsi slightly dilated, and fringed behind with long white pubescence; posterior tarsi short and robust; abdomen subquadrate, sides subparallel, densely punctured, clothed with short black pubescence, longer and ochraceous on basal segment, and long and sparse on sides and tip, base of the segments transversely depressed, apical margin of segments 1—5 fringed with ochraceous pubescence, and where the segments are distended the base has a band of whitish pubescence; sixth segment rounded at tip and entire; apical segment with a short stout tooth on each side. Length .48 inch.

*Hab.*—Texas, (Heiligbrodt). Three specimens.

**Megachile manifesta.**—♂.—Black, head, thorax and base of abdomen densely clothed with a long pale ochraceous pubescence, white on face, clypeus, cheeks and thorax on sides and beneath; wings subhyaline, apical margin dusky; legs with long white pubescence, that on the four anterior tarsi beneath very long; anterior coxæ each with a long broad black spine, their femora and tibiæ more or less fulvous within, the former lobed at base beneath and compressed and dilated towards tip to which it is broadly rounded, their tarsi whitish, not broadly dilated, fringed within with short black hairs, at base above a narrow lobe, hollow within, subsinuate above, and not quite reaching to tip of second joint; posterior tarsi with long yellowish hair; abdomen slightly narrowed to tip, clothed above, except base, with short pale pubescence, slightly mixed with black, the apical margin of segments 2—5 with a narrow fascia of short dense white pubescence; sixth segment slightly depressed medially, the apical margin broadly rounded and coarsely serrate; apical segment clothed with long pale pubescence, a short broad tooth on each side, and a long acute spine on the middle. Length .45 inch.

*Hab.*—Colorado, (Ridings). Five specimens.

**Megachile ingenua.**—♂.—Black, shining; head large, finely not densely punctured, face and clypeus with long dense pale yellow pubescence, that on cheeks short and white, that on vertex long, sparing and black; mesothorax sparsely punctured, thinly clothed with long pubescence, black on disk, pale ochraceous at sides and before; on scutellum, metathorax and pleura the pubescence is long and pale ochraceous or white; wings dusky on apical margin; legs slender, black, clothed with whitish pubescence, yellowish on tarsi; anterior coxæ each with a short black spine, their tarsi whitish and slightly dilated, the upper edge of basal joint grooved on the inside and fringed with black hairs, beneath the joints are fringed with long white pubescence, the second, third and fourth tipped with black; intermediate tarsi slightly dilated; abdomen subquadrate, the first and base of second segments with long pale ochraceous pubescence, elsewhere it is short and black except a narrow white fasciæ on apical margin of segments 2—5; sixth segment exca-

vated, the apical margin transversely compressed, deeply notched centrally and more or less coarsely serrate on each side. Length .42 inch.

*Hab.*—Georgia, (Morrison). One specimen.

**Megachile georgica.**—♀.—Form narrow, elongate, subparallel, black, subopaque, closely and strongly punctured; head broader than thorax, sides of face and cheeks clothed with griseous pubescence, clypeus coarsely punctured; pro- and metathorax and pleura with rather long griseous pubescence; wings more or less dusky especially on apical margin; legs slender, black, clothed with short pale pubescence, tarsi slender; abdomen with parallel sides, segments 2—4 deeply transversely impressed near base and together with basal segment narrowly fringed at apex with short white hair, longer laterally, the surface sparsely punctured; ventral scopa white or yellowish-white. Length .50 inch.

♂.—Resembles the ♀ but with the pubescence more dense and snow-white, that on face and clypeus long and dense; flagellum dull testaceous beneath; legs slender, clothed with white pubescence, anterior coxæ each with a black spine, tarsi pale brown, the anterior pair with joints one and two dilated; sixth segment of abdomen deeply notched on apical middle; ventral segments fringed at apex with long snow-white pubescence. Length .45 inch.

*Hab.*—Georgia, (Morrison). Six specimens.

**Megachile avara.**—♂.—Black; face, clypeus, cheeks, thorax, four anterior legs, and abdomen at base, sides and apex clothed with a long, dense, pale pubescence, that on vertex and disk of mesothorax more or less black; wings dusky at tips; anterior coxæ each with a black spine, their femora and tibiæ more or less fulvous within, and with the tarsi fringed beneath with a long dense white pubescence, that on tarsi within tipped with black, the basal joints of the latter dilated, but not broadly so, fuscous or dull testaceous, the upper margin of basal joint grooved on inside and fringed with short black hairs; intermediate tarsi also dilated, and densely clothed with pale yellow pubescence; abdomen subquadrate, shining, the pubescence, especially at base, long and pale, but not concealing the surface which is feebly sculptured, on segments four and five the pubescence is mostly black and the lateral apical margin fringed with white hairs; sixth segment broadly emarginate on apical middle, and clothed beneath with long pale pubescence. Length .45 inch.

*Hab.*—Georgia, Colorado, (Morrison). Eight specimens.

**Megachile otomita.**—♂.—Black, shining, closely and strongly punctured; head rather wider than thorax, the face and clypeus clothed with a long dense white pubescence, shorter on cheeks beneath and sparing on vertex; mesothorax with short sparse pale pubescence, slightly mixed with black, that on scutellum, metathorax and pleura long and pale; tegulæ piceous; wings dusky at tips; anterior coxæ each with a long acute spine, the three basal joints of their tarsi dilated, concave within and clothed outwardly with white pubescence; four posterior tarsi fringed with long white pubescence; abdomen short, convex, basal and apical segment with long pale hairs, base of segments two and three, and the remaining segments entirely covered with a dense bright fulvous scale-like pile; sixth segment bidentate at tip. Length .40 inch.

*Hab.*—Mexico, (Sumichrast). Four specimens.



**Megachile addenda.**—♀.—Form broad; black, shining, closely and finely punctured; face, apex of clypeus and cheeks rather densely clothed with griseous pubescence, long on cheeks beneath, on the vertex the pubescence is sparse, short and black; clypeus shining, strongly punctured; mandibles rugose, fringed beneath with long yellowish hair; thorax clothed with griseous pubescence dense on metathorax and pleura; mesothorax almost nude, having a scattered black pubescence on disk, the anterior and lateral margins with pale pubescence; tegulae piceous; wings tinged with dusky, darker on apical margin; legs with short pale pubescence, that on tarsi beneath dense and yellowish; abdomen minutely punctured, clothed with short black pubescence, segments 2—5 rather deeply transversely depressed towards base and fringed at apex with a short dense white pubescence, first segment clothed with griseous pubescence; apical segment densely punctured, slightly excavate on each side before tip; ventral scopa dense and white, the last segment with short black hair. Length .52 inch.

♂.—Face and clypeus with long dense yellow pubescence; the pubescence of thorax behind and beneath longer than in ♀ and tinged with ochraceous; legs slender, the pubescence long, the tarsi which are simple fringed beneath with long yellowish pubescence, anterior coxae each with a rather long black spine; abdomen narrower than in ♀, similarly sculptured and ornamented, but with longer pubescence on first segment, sixth segment depressed, prominent on basal middle, the apex transversely compressed and deeply emarginate in the middle, forming two broad slightly divergent teeth coarsely serrated on the edge; apical segment with a large acute central tooth and a short one on lateral margin; ventral segments fringed at apex with long whitish pubescence. Length .45—.50 inch.

*Hab.*—Mass., N. J., Ga., Ill., Col., Tex. Sixteen specimens. This resembles *bucephala*, but is much smaller, the head of ♀ smaller, the abdominal segments more deeply transversely depressed, etc.

**Megachile montivaga.**—♀.—Form rather narrow; black, opaque, densely punctured; face, sides of clypeus and cheeks with rather dense whitish, and the vertex with black pubescence; clypeus coarsely punctured; thorax behind and beneath with dense whitish pubescence, on mesothorax it is short, sparse, and black; wings tinged with dusky, dark on apical margin; legs with short pale pubescence, the tarsi slender, clothed beneath with yellow pubescence; abdomen with subparallel sides, finely not closely punctured, segments 2—4 with a transverse deeply impressed line near base, and together with the fifth segment fringed at apex with short white pubescence; sides of first segment clothed with long pale pubescence; apical segment very densely, minutely punctured, covered with a dense ochraceous pile; ventral scopa yellow. Length .50 inch.

♂.—The pubescence much longer and more dense, especially on face and clypeus where it is yellow, on vertex and mesothorax it is long and black; tarsi simple, slender, rufo-testaceous beyond first joint, anterior coxae without spines; sixth segment of abdomen concave, with a slight prominence on basal middle, the apex transversely compressed and more or less emarginate medially; apical segment with a carina or short blunt tooth on each side and one on the middle. Length .35—.45 inch.

*Hab.*—Colorado, (Ridings, Morrison). Twenty specimens.

**Megachile deflexa.**—♂.—Form broad, parallel; black, opaque, finely and densely punctured; face and clypeus clothed with a long dense yellow pubescence, on cheeks it is white and on vertex sparing and mixed with black; mesothorax with a very short sparse black pubescence, while on the prothorax, metathorax and pleura it is long and pale ochraceous; tegulae piceous; wings dusky at tips; legs fulvo-testaceous, clothed with pale pubescence, coxae and four posterior femora black, anterior coxae each with a short black spine, their tarsi simple; basal segment of abdomen and narrow apical margin of segments 2—5 clothed with pale ochraceous pubescence, base of these segments transversely depressed; sixth segment gradually narrowed to tip which is truncate and incurved, and clothed beneath with white pubescence. Length .55 inch.

*Hab.*—Kansas, (Ridings). One specimen. Easily recognized by the shape of sixth dorsal segment of abdomen.

**Megachile texana.**—♀.—Form broad, robust; black, finely and closely punctured; face, cheeks, thorax behind and beneath and basal segment of abdomen densely clothed with whitish pubescence, on vertex and disk of mesothorax and scutellum it is sparse, short and black; clypeus densely punctured, with short fuscous pubescence; wings dusky on apical margin; legs robust, with short pale pubescence, the tarsi broad at base, clothed beneath with dense yellow pubescence; abdomen broad, densely punctured, clothed with short black pubescence longer on lateral margin, segments 2—5 with a narrow fringe of white pubescence at tip, apical segment with a short, dense pale pile; ventral scopa pale yellowish-white, that on two apical segments black. Length .60 inch.

♂.—Form broad, parallel; head slightly broader than thorax, the face and clypeus with dense pale yellowish pubescence; anterior legs pale fulvous within, their coxae each with a short black spine, their tarsi simple, slender, fringed beneath with long white pubescence; abdomen subquadrate, closely punctured, the segments much depressed at base and before apex; first segment clothed with pale pubescence, segments 2—5 with a short white fringe on depressed apical margins and more or less broadly banded at base with a dense pale pubescence, covering also the sixth segment, which is depressed, the apical margin coarsely serrate and deeply emarginate medially; apical segment bisinuate or indistinctly tridentate; ventral segments narrowly fringed at apex with white pubescence. Length .50 inch.

*Hab.*—Texas, (Belfrage). Seven specimens. The pubescence on the two apical segments of venter is entirely black.

**Megachile generosa.**—♀.—Form rather broad, subrobust; black, opaque, finely, not closely punctured; face, cheeks, thorax behind and beneath, and basal segment of abdomen rather densely clothed with white pubescence, that on vertex, mesothorax except sides and scutellum except behind, short, sparse and black; clypeus nude, shining, deeply punctured; mesothorax dull, with the punctures on disk sparse and fine; wings dusky on apical margin; legs with short pale pubescence, that on tarsi beneath dense and yellow; abdomen shining, very finely punctured, clothed with short black pubescence, segments 2—5 with a narrow white fringe on apical margin; apical segment depressed at tip, with a short dense pale pile; ventral scopa



white except on apical segment and at tip of preceding segment where it is black. Length .55—.60 inch.

*Hab.*—North Carolina, Georgia, (Morrison). Eight specimens. This is closely allied to *texana*, but less robust, the mesothorax less closely punctured and the pubescence on the penultimate ventral segment is almost entirely white, having only a few black hairs at tip.

**Megachile pinguis.**—♀.—Form unusually broad, short and robust; black, rather shining; head with the sides of face and cheeks clothed with pale pubescence, elsewhere it is black; clypeus densely punctured; thorax closely punctured, almost nude above, the pubescence being short sparing and black, behind and beneath it is dense and pale; scutellum with a few long black hairs; a small patch of pale hairs behind tegulæ; wings fuliginous on apical margin; legs with pale pubescence, on tarsi it is short and black except a pale fringe beneath on two anterior pairs; basal joint of the tarsi, especially the posterior pair, broad; abdomen short, broad, shining, clothed with short black pubescence, except on basal segment where it is long and pale; apical margin of segments 2—5 with a very narrow apical fringe of white pubescence; apical segment with a dense pale pile; ventral scopa whitish, the apical segment clothed with black hairs. Length .48 inch.

*Hab.*—Georgia, (Morrison). One specimen.

**Megachile mendica.**—♀.—Form broad, robust, black; head and thorax finely and very densely punctured; vertex shining; face, sides of clypeus, cheeks, thorax behind, at sides and beneath, and basal segment of abdomen densely clothed with whitish pubescence, which on vertex, mesothorax and scutellum is black; clypeus strongly not closely punctured; thorax opaque; wings dusky on apical margin; legs with pale pubescence, that on tarsi beneath yellow; abdomen short, broad, finely punctured, shining; clothed with short black pubescence, long on extreme sides of the apical segments, a narrow fringe of white pubescence on apical margin of segments 2—5 more or less interrupted in the middle of 2—4 and generally entire on five; apical segment opaque, very densely punctured and brownish; ventral scopa yellow, the pubescence on apical segment black. Length .45—.50 inch.

*Hab.*—Can., N. Y., Mass., Pa., Del., N. C., Ga., Fla., Ill. Twenty-four specimens.

**Megachile relativa.**—♀.—Form rather narrow, shining, black; head and thorax strongly not densely punctured; face, cheeks, thorax behind, at sides and beneath and basal segment of abdomen clothed with a long dense pale pubescence, long and black on vertex, mesothorax and scutellum; wings dusky on apical margin; legs slender, clothed with pale pubescence, that on tarsi yellow; abdomen shining, finely punctured, clothed with short black pubescence, segments 2—5 with a narrow apical fringe of yellowish pubescence, interrupted medially on two and three; apical segment yellowish-sericeous at tip, densely sculptured; ventral scopa dense and entirely yellow. Length .40—.45 inch.

*Hab.*—Can., N. Y., N. C., Ill., Col. Twenty specimens.

**Megachile infragilis.**—♂.—Form rather narrow, black; finely and very densely punctured, face, cheeks and thorax densely clothed with a long yellow or pale ochraceous pubescence, which on vertex and disk of mesothorax is fuscous; wings dusky at tips; legs slender, clothed with yellowish pubescence, tarsi simple, slender and rufo-testaceous at tips; abdomen clothed with long yellow or whitish pubescence on two basal segments, and fringed at apex with short yellow or whitish hairs, interrupted on middle of segments two and three; middle of segments 3—5 with short black hair; sixth segment depressed on apical middle, the tip transversely compressed, broadly rounded, sometimes subtruncate; sides of venter with long pale pubescence. Length .35—.40 inch.

*Hab.*—New York, (Comstock). This is narrower than *brevis*, and differs also by the apex of sixth abdominal segment being entire. The pubescence in fresh specimens is bright yellow.

**Megachile petulans.**—♂.—Form short, broad, robust; black, rather shining, closely and finely punctured, clothed with yellow pubescence, very dense on face and clypeus and moderately so on thorax behind and laterally, on cheeks and thorax beneath it is white, on vertex, mesothorax and scutellum mixed with black; head broad; a line of dense appressed ochraceous pubescence at base of scutellum; wings dusky at apex; legs slender, clothed with long pale pubescence, anterior coxæ each with a long black spine, their tarsi simple; abdomen quadrate, finely punctured, base of second and third segments deeply transversely depressed, first segment with long yellow pubescence, apical margin of segments 2—4 with a narrow fringe of same and base of the segments more or less ochraceous, sixth segment covered entirely with ochraceous, the apex broadly and deeply emarginate, the margin not serrate. Length .40 inch.

*Hab.*—North Carolina, Georgia, (Morrison). Eight specimens. Closely resembles *brevis* Say, but easily separated by the apex of sixth abdominal segment not having the edge serrate as in that species.

**Megachile perbrevis.**—♂.—Small, short, robust, black, densely and finely punctured, clothed with a yellow pubescence, long and dense on face, clypeus, thorax except above, and on base of abdomen, on the cheeks and thorax beneath it is white; head broad; disk of mesothorax almost entirely nude; wings faintly dusky on apical margin; legs slender, clothed with long pale pubescence, tips of tarsi testaceous, anterior coxæ each with a stout black spine, their tarsi simple; abdomen very short, quadrate, clothed with yellow pubescence, short and dense on apical margin of the segments; sixth segment with dense appressed ochraceous pubescence, the apical margin transversely compressed, notched medially and coarsely unevenly serrate on each side; apical segment carinate and slightly toothed medially; sides of venter with long white pubescence. Length .35 inch.

*Hab.*—Texas, (Belfrage). Three specimens.

**Megachile mexicana.**—♀.—Form broad, robust, black; face, cheeks beneath, thorax behind, laterally and beneath with dense white pubescence, that on vertex, mesothorax and scutellum black; mesothorax almost nude, opaque, finely and sparsely punctured; a narrow line on anterior margin of



mesothorax, and a line at base of scutellum ending each side in a spot behind tegulæ, of short dense appressed whitish pubescence; wings dusky at tips; legs robust, clothed with short pale pubescence, tarsi beneath with dense yellow pubescence, basal joint of two posterior pairs broad and flat; abdomen short and broad, very finely punctured, sides of basal segment, and narrow apical margin of segments 2—5 clothed with pale pubescence; apical segment covered with a pale ochraceous pile and with scattered short black pubescence; ventral scopa yellow, the apical segment with black hairs. Length .40 inch.

♂.—Small, head unusually broad, the face and clypeus with long dense yellow pubescence, on the vertex it is long sparing and black, and on cheeks white; antennæ as long as head and thorax; pubescence of thorax white, except on mesothorax and scutellum where it is black and long on the latter; tegulæ and legs brown, tarsi testaceous, anterior coxæ each with a stout spine, their tarsi simple, slender; abdomen quadrate, fifth segment flattened on each side of disk, deeply margined at apex, covered with a pale pile and with scattered black hairs; sixth densely pale golden yellow, the apex deeply emarginate, the edge without serrations; venter brown, the segments narrowly fringed at apex with white pubescence. Length .30 inch.

*Hab.*—Mexico, (Sumichrast). Sixteen specimens.

**Megachile zapoteca.**—♀.—Form rather broad, black, densely and finely punctured, subopaque; sides of face, sides of clypeus, cheeks, thorax behind, laterally and beneath, with long dense white pubescence, that on vertex, mesothorax and scutellum long and black; disk of clypeus with very short black pubescence; tegulæ piceous; wings dusky at tips, with a brassy reflection; legs with pale pubescence, that on tarsi golden-yellow; abdomen shining, clothed with short black pubescence, that on basal segment long and mixed pale and black, segments 2—5 with a narrow apical fringe of yellow hairs; ventral scopa dense and yellow. Length .40 inch.

*Hab.*—Mexico, (Sumichrast). One specimen.

**Megachile tuxtla.**—♂.—Robust, black, opaque; face and clypeus with long dense yellow pubescence, on the vertex black, and on the cheeks white, very dense and long beneath; antennæ nearly as long as head and thorax; thorax behind, laterally and beneath with long dense, pale ochraceous pubescence, on mesothorax and scutellum it is long and mostly black; tegulæ pubescent; wings dusky at tips; legs slender, with pale pubescence, all the tarsi slender; abdomen oblong-quadrate, first segment with long yellowish pubescence, segments 2—4 narrowly fringed at apex with yellow, fifth segment large, and with the sixth densely golden, clothed with sparse long black hair; apex of sixth segment with two rather long acute teeth. Length .40 inch.

*Hab.*—Mexico, (Sumichrast). Three specimens.

**Megachile tepaneca.**—♀.—Form broad, robust, black; face with mixed pale and black pubescence, that on cheeks entirely pale; middle of clypeus and space above smooth, shining and flattened; flagellum rufo-testaceous beneath; thorax as sides and behind with dense fulvous pubescence, beneath it is pale; mesothorax rather coarsely transversely sculptured, clothed with sparse black hair, scutellum more finely sculptured, with scattered long black hair; tegulæ and four posterior femora fulvous, anterior legs, and rest of four posterior legs brown, basal joint of posterior tarsi very broad, the intermediate

pair subdilated; wings tinged with yellow, dusky on apical margin; abdomen short, broad at base, finely not closely punctured, shining, subiridescent, with short black hair, basal segment with long thin yellowish pubescence, lateral apical margin of segments 2—5 with a narrow pale fringe; apical segment dense pale ochraceous; ventral scopa black, mixed with pale on middle. Length .43 inch.

*Hab.*—Mexico, (Sumichrast). Two specimens.

**Megachile montezuma.**—♀.—Form broad, robust, black; head, thorax and base of abdomen rather densely pubescent, pale on face, cheeks and thorax beneath, and fulvous, more or less mixed with black, on vertex, thorax above and behind and base of abdomen; a small triangular smooth flat space above clypeus; flagellum rufo-testaceous beneath; mesothorax very finely and densely punctured; tegulæ fulvous; wings tinged with yellow, dusky on apical margin; legs black or piceous, clothed with pale pubescence, yellow on tarsi: abdomen clothed with short black pubescence, long on extreme sides, apical margin of segments 2—5 with a fringe of short dense yellow pubescence; apical segment densely ochraceous; ventral scopa fulvous, that on apical segments mixed with black on the extreme sides. Length .43 inch.

♂.—Small, short, robust, head broad, the pubescence longer than in ♀, that on face, clypeus and cheeks long, very dense and pale yellow; antennæ reaching to base of abdomen; wings strongly tinged with yellow; legs piceous, clothed with long pale pubescence, anterior tibiæ broadly dilated, their tarsi slender, simple; abdomen short, quadrate, the apical fasciæ paler than in ♀, sixth segment sinuate at tip. Length .30 inch.

*Hab.*—Mexico, (Sumichrast). Three specimens. The ♀ resembles that of *azteca*, and the ♂ is remarkable for the dilated anterior tibiæ.

**Megachile toluca.**—♂.—Form short, robust, black, opaque; head broader than thorax, the pubescence on face and cheeks is long dense and yellow, that on vertex fuscous, and that on cheeks white and very long beneath; antennæ long, flagellum dull testaceous beneath; thorax and base of abdomen with dense fulvous pubescence, the former on sides and beneath pale, that on disk of mesothorax short and thin, the surface very densely sculptured; tegulæ and legs fulvous, coxæ and trochanters black; anterior coxæ each with an acute black spine, their tarsi slender, simple, fringed beneath with long pale pubescence; wings faintly dusky on apical margin; abdomen short, quadrate, segments 2—5 fringed at apex with dense yellow pubescence, base of fifth segment and the sixth entirely densely ochraceous, the apex of the latter transversely pinched, entire, immediately beneath the tips are two short acute distant teeth. Length .35 inch.

*Hab.*—Mexico, (Sumichrast). One specimen.

**Megachile Sumichrasti.**—♂.—Robust, black, opaque; head with long yellowish pubescence more or less mixed with black, that on base of clypeus and a small tuft on each side of face entirely black; thorax behind and laterally clothed with long dense black pubescence, that on mesothorax short and fulvous, that on thorax beneath pale; tegulæ pale fulvous; wings yellow, the costal vein orange yellow, apical margin dusky; legs black or piceous, with mixed black and pale pubescence, anterior coxæ each with a stout black spine, their femora fulvous within, their tarsi slender and simple; abdomen opaque,



the two basal segments with black pubescence, the apical segments with dense golden pubescence; lateral apical margin of second segment and apical margin of third and fourth segments golden-yellow; apex of sixth segment slightly notched medially. Length .35 inch.

*Hab.*—Mexico, (Sumichrast). Two specimens.

**Megachile chichimeca.**—♀.—Form narrow, black, subopaque, densely and finely punctured; sides of face, cheeks, narrow line on anterior margin of mesothorax, spot on each side behind tegulæ, line behind scutellum, oblique line on sides of metathorax and the tubercles, clothed with dense white pubescence; wings faintly dusky on apical margin and fuliginous on apical costal margin; legs with pale pubescence, basal joint of posterior tarsi broad; abdomen with a narrow pale fringe on apex of segments 1—5, apical segment with dense pale pile; ventral scopa yellowish-white. Length .38—.42 inch.

*Hab.*—Mexico, (Sumichrast). Two specimens.

**Megachile cælioxoides.**—♂.—Black, rather shining, finely not closely punctured; head large, broad; face and apex of clypeus with long dense yellow pubescence, that on base of clypeus black, that on cheeks whitish; mandibles, tegulæ and legs fulvo-ferruginous; mesothorax and scutellum with sparse black pubescence; a narrow line on anterior margin of mesothorax, a spot on each side behind tegulæ, and a line behind scutellum extending on each side behind wings, of dense white pubescence; wings fuliginous, black on costal margin; coxæ, trochanters and base of femora more or less black, anterior coxæ each with a long black spine, all the tarsi slender; abdomen narrow, smooth, shining, sparsely punctured, lateral apical margin of the segments narrowly fringed with white, sixth segment subrugose, clothed with black hair, straight, not at all incurved, the apex truncate. Length .40 inch.

*Hab.*—Mexico, (Sumichrast). One specimen. This has much the general appearance of a *Cælioxys*.

**Megachile zaptlana.**—♀.—Form narrow, elongate, opaque black, very densely and minutely punctured; sides of face, of clypeus and the cheeks clothed with dense white pubescence, that on middle of clypeus, between antennæ and on vertex sparse and black; thorax with whitish pubescence, very short and sparse on mesothorax, slightly mixed with black on scutellum; line over tegulæ, line at base of scutellum, and oblique line on sides of metathorax of dense white pubescence; wings dusky at tips and fuliginous on apical costal margin; legs with short pale pubescence, yellow on tarsi beneath; abdomen elongate narrow, sides parallel, sides of first segment clothed with whitish pubescence, and segments 2—5 narrowly fringed at apex with white, elsewhere the segments above have a scattering black pubescence; apical segment with pale pile; ventral scopa yellowish-white, apical segment with short black hair. Length .45—.55 inch.

*Hab.*—Mexico, (Sumichrast). Five specimens.

**Megachile abacula.**—♀.—Form narrow, parallel, black, subopaque, closely and strongly punctured; sides of face, cheeks, patch beneath tegulæ, spot above and behind tegulæ, and oblique line on each side of metathorax, of dense white pubescence; on vertex, mesothorax and scutellum the pubescence is sparse and black, and on pleura and beneath it is white; tegulæ brownish; wings faintly dusky on apical margin; legs clothed with pale pubescence;

abdomen with parallel sides, base of segments three, four and five entirely densely fulvo-ochraceous, lateral apical margin of segments 1—3 with a narrow white fringe; venter whitish, the apical segment with short black hair. Length .35 inch.

♂.—Very much like the ♀, with the face and clypeus more densely pubescent; the tarsi are all slender; the apex of abdomen incurved, the fourth and fifth segments entirely ochraceous, the apex of sixth segment slightly emarginate medially. Length .30—.35 inch.

*Hab.*—Mexico, (Sumichrast). Twelve specimens.

**Megachile izucara.**—♀.—Form narrow, parallel, black, head and thorax closely and strongly punctured; the face and cheeks with pale pubescence, mixed with black on the clypeus, between the antennæ and on vertex it is long and black; clypeus short, broad, the apex broadly arcuate; the pubescence on mesothorax and scutellum black, on lateral margin of mesothorax, on basal margin of scutellum, on metathorax, and on pleura it is white; tegulæ piceous; wings faintly dusky at tips; legs slender, brown, tarsi with yellowish pubescence; abdomen narrow, convex with parallel sides, basal segment with long pale pubescence, short and dense on lateral apical margin; base of second and third segments and the two apical segments entirely densely fulvous; apical margin of segments 2—4 narrowly fringed with yellow; ventral scopa yellow; fulvous at tip. Length .40 inch.

♂.—Face and clypeus with long dense black pubescence, that on middle of face and tip of clypeus pale; wings fuscous, pale at base; legs slender, simple, the tarsi pale brown; abdomen densely golden-ochraceous on three apical segments, the sixth slightly notched on apical middle. Length .35 inch.

*Hab.*—Mexico, (Sumichrast). Two specimens.

**Ceratina mexicana.**—♀.—Black, shining, slightly tinged with bronze; head strongly punctured; an elongate mark on clypeus and a dot on each extreme side, white or yellowish; labrum brownish, clothed with pale pubescence; flagellum pale brown beneath; mesothorax sparsely and finely punctured, smooth and polished on the disk, and with five finely impressed longitudinal lines; pleura finely and densely punctured; tegulæ fulvo-testaceous; wings subhyaline, sometimes pale fuscous, darker at tips, nervures pale brown; legs brown or piceous, clothed with a whitish pubescence, most dense on posterior pair, tarsi beneath with golden hair, anterior knees with two whitish spots; abdomen dark olive-green, golden at tip, three basal segments shining, finely punctured, apical segments densely and confluent sculptured, the extreme apex produced into a short obtuse spine; venter with whitish pubescence. Length .40—.45 inch.

♂.—Spot on clypeus confluent with small lateral spots and also with short line on lower anterior orbits, labrum and spot at base of mandibles white or yellowish; face and scutellum more or less strongly tinged with green; posterior legs much less pubescent than in ♀; apical segment of abdomen with a short subacute spine at tip. Length .35—.40 inch.

*Hab.*—Mexico, (Sumichrast). Eleven specimens.

**Ceratina azteca.**—♀.—Black, tinged with blue or green; head coarsely punctured; clypeus with an obconic whitish spot; labrum with golden pubescence; flagellum pale beneath; mesothorax sparsely and strongly punctured,



smooth on disk, and with five finely impressed longitudinal lines; scutellum finely and closely punctured, and with the metathorax and pleura strongly tinged with green and more or less clothed with pale pubescence; metathorax smooth, slightly roughened at extreme base; tegulæ piceous; wings tinged with dusky, nervures black; legs piceous, clothed with pale pubescence, most dense on posterior pair; abdomen much narrowed towards base, strongly tinged with green, especially at tip, base of segments 2—4 æneous, base of two densely, and three and four sparsely punctured, the two apical segments densely roughened, apex pointed in the middle and fringed with long pale pubescence. Length .45 inch.

♂.—Anterior margin of clypeus, dilated upwards on disk, dot on each side of face, labrum and spot at base of mandibles, whitish; face strongly tinged with blue; thorax thinly clothed with pale pubescence, postscutellum and metathorax blue-green, mesothorax closely punctured; tegulæ pale piceous; abdomen with first segment and apical margin of following segments blue, basal margin of the segments smooth and impunctured; apical segment with an acute spine at tip, the lateral margin reflexed; venter blue. Length .40 inch.

*Hab.*—Mexico, (Sumichrast). Two specimens.

**Ceratina ignara.**—♀.—Shining black, head and thorax strongly tinged with steel-blue, the abdomen with olive-green, sometimes golden at apex; head larger than usual, strongly punctured, cheeks smooth and polished; clypeus with an elongate yellowish mark, sometimes reduced to a dot or line; flagellum subtestaceous beneath; thorax finely punctured, disk of mesothorax smooth and polished, and with five finely impressed longitudinal lines; extreme base of metathorax above depressed and rugose, the pubescence of thorax short, thin and pale; tegulæ piceous; wings more or less strongly fuscous, generally paler at base, nervures black; legs with pale pubescence, a yellowish dot at extreme base of all the tibiæ; abdomen shining, narrowed towards base, first segment polished, impunctured, second, third and fourth minutely punctured, apical segments densely roughened, the tip pointed and fringed with long pale hair; venter green. Length .30—.35 inch.

*Hab.*—Mexico, (Sumichrast). Eight specimens.

**Ceratina cobaltina.**—♂.—Brilliant dark blue, changing in certain lights to green and purple; head coarsely punctured; spot on lower side of face, apical margin of clypeus, dilated medially, labrum, and mandibles except tips, white; antennæ black, the flagellum brownish beneath; posterior margin of head acutely carinate; thorax finely and closely punctured, sparsely so on pleura, base of metathorax minutely sculptured, a little pale pubescence on each side of scutellum and of metathorax; wings hyaline, faintly dusky at tips, veins fuscous; legs tinged with brown, thinly clothed with pale pubescence, anterior knees and stripe on their tibiæ white; abdomen strongly tinged with purple, the base of second and third segments with a golden reflection in certain lights, finely punctured, the apical segments coarsely sculptured and with a scattered pale pubescence; apical segment obtusely bidentate at tip. Length .32 inch.

*Hab.*—Mexico, (Sumichrast). One specimen. A very pretty species, resembling *cyaniventris* Cress., (from Cuba), in color, but is much larger.

**Xylocopa azteca.**—♀.—Black; the pubescence of head entirely black; clypeus flat, finely and sparsely punctured; thorax clothed with sooty pubescence, slightly mixed with pale, that on the sides white and that beneath black, disk of mesothorax smooth and polished; wings fuscous; legs clothed with black pubescence, that on the four posterior tibiae and tarsi exteriorly dense pale ochraceous; abdomen with the first and sides of second and third segments clothed with a short pale sericeous pubescence, the apical margin of segments two and three with a narrow fringe of dense pale ochraceous pubescence, broadly interrupted medially; three apical segments entirely black. Length .65 inch.

*Hab.*—Mexico, (Sumichrast). One specimen.

**Exomalopsis limata.**—♀.—Shining black; head, thorax and extreme base of abdomen clothed with short black pubescence, that on sides of face and narrow anterior margin of mesothorax white, and on cheeks pale; face and clypeus flat; labrum with fulvous hair; flagellum beneath pale testaceous; disk of mesothorax and of scutellum smooth, polished and impunctured; wings fuscous, paler on apical margin; legs with black pubescence, posterior tibiae and tarsi with a long dense fulvous pubescence; abdomen smooth and polished, impunctured, apex with pale fulvous pubescence at sides, apical margin of segments 3—5 with a very narrow fringe of white pubescence, slightly interrupted on middle of third; ventral segments fringed with long fuscous hair. Length .40 inch.

*Hab.*—Mexico, (Sumichrast). One specimen.

**Exomalopsis mexicana.**—♀.—Black, shining; head, thorax and legs clothed with a griseous pubescence, long and erect on occiput, that on the vertex, mesothorax and scutellum mostly black; sides of face, line on collar, line behind tubercles and line behind scutellum of dense pale ochraceous or whitish pubescence; flagellum fulvo-testaceous beneath; tegulae piceous; wings hyaline, dusky on apical margin, second submarginal cell receiving the recurrent nervure very near the tip; posterior tibiae and tarsi with a dense floccus of ochraceous pubescence, that on tarsi above sooty-black; abdomen smooth and shining, the base and extreme sides thinly clothed with pale pubescence, base of segments three and four with a band of dense appressed pale ochraceous or white pubescence, sometimes narrowed medially, the fifth segment fringed with long ochraceous pubescence; sometimes the second segment has an oblique line of pale pubescence on each side; ventral segments fringed with long griseous hair. Length .35 inch.

*Hab.*—Mexico, (Sumichrast). Three specimens.

**Exomalopsis otomita.**—♀.—Black, clothed with a short black or fuscous pubescence, that on face and cheeks intermixed with pale; on each side of face a small patch of dense white pubescence; flagellum dull testaceous beneath; tegulae piceous; wings yellowish-fuscous, darker on apical costal margin, stigma and nervures pale brown, second submarginal cell broad, receiving the recurrent nervure a little beyond the middle; posterior legs with a dense floccus of long sooty pubescence, with a patch of ochraceous beneath, tips of tarsi pale; abdomen shining, with a slight bluish iridescence, base and sides of first segment thinly clothed with a pale pubescence, that on the three apical segments and venter ochraceous. Length .30 inch.

*Hab.*—Mexico, (Sumichrast). One specimen.



**Exomalopsis tepaneca.**—♀.—Black, clothed with a short black pubescence, that on sides of face and cheeks more or less whitish; clypeus with scattered punctures; labrum with fulvous hair; flagellum pale fulvous beneath; mesothorax finely punctured; tubercles fringed posteriorly with pale pile; wings fusco-hyaline, stigma and nervures pale, second submarginal cell receiving the recurrent nervure very near the tip; legs with black pubescence, posterior pair with a floccus of long dense sooty pubescence, with a patch of ochraceous beneath, tips of tarsi pale ferruginous; abdomen polished, with a dark bluish iridescence, the three apical segments and venter clothed with whitish pubescence, a suboblique line of dense whitish pubescence on sides of third segment; venter pale brown at base. Length .30 inch.

*Hab.*—Mexico, (Sumichrast). One specimen.

**Exomalopsis? mellipes.**—♀.—Black; head thinly clothed with a griseous pubescence, tinged with yellow on occiput; face flat, broad between the eyes, ocelli in a straight line, clypeus flat, nude, shining, feebly punctured, labrum and mandibles except tips dull fulvous; antennæ short, pale fulvotestaceous, first joint long, slender, cylindrical; thorax above clothed with yellow pubescence, long on scutellum, shorter and thin on mesothorax which is opaque, on metathorax and pleura the pubescence is pale; tegulæ honey-yellow; wings yellow-hyaline, nervures honey-yellow, marginal cell broad, long, oblique at tip, second submarginal cell small, quadrate, rather more than one-fourth the length of first, the third a little shorter than first, broadly rounded at tip and narrowed nearly one-third towards marginal; legs honey-yellow, the tibiæ darker above, the pubescence pale, posterior tibiæ and tarsi with a floccus of long, dense beautifully plumose pale pubescence, that on outside tipped with sooty-black, that on the underside short and fulvous; abdomen broad-ovate, depressed, first segment at base and sides dull honey-yellow; a curved band on the middle of segments one and two, and a broader band at base of 3—5 of short appressed yellow pubescence; apex with fuscous, that on the sides long and pale; venter dull honey-yellow at base, fuscous at tip. Length .35 inch.

*Hab.*—Mexico, (Sumichrast). Two specimens. This has not the general appearance of an *Exomalopsis*, but the form of the antennæ and neuration of the wings are much as in that genus; the floccus on posterior legs is not so dense and the pubescence is plumose.

**Tetrapedia maura.**—♀.—Black, shining, the pubescence black, that on face and posterior orbits white; clypeus with a few scattered shallow punctures; antennæ varied with fulvous at base, the flagellum beneath dull testaceous; mesothorax finely and sparsely punctured, disk more or less pubescent, scutellum with long pubescence; wings fuliginous, much paler at apex; legs clothed with black pubescence, that on posterior tibiæ and tarsi long and dense, and that on tips of posterior tibiæ exteriorly yellow or yellowish-white, anterior tarsi with a stout tooth at base exteriorly, spurs of intermediate tibiæ short, robust, finely pectinate, hooked at tip, those of the posterior tibiæ longer, very robust and more distinctly pectinate; abdomen black, polished, the sides, apex and apical margin of ventral segments fringed with long black pubescence. Length .35—.45 inch.

♂.—Sides of face with a patch of silvery pubescence; tegulæ and legs rufo-

piceous, anterior femora beneath produced into a large obtuse spine, the base of their tarsi deformed; intermediate tibiæ and tarsi dilated, clothed with black pubescence, that on tips of tibiæ pale sericeous; posterior coxæ and trochanters each with a spine beneath, their femora silvery sericeous within, their tibiæ constricted at base and dilated towards tip, with a tuft of white pubescence at tip as in ♀, basal joint of their tarsi distorted, fringed on outer edge with black pubescence, inner edge compressed, ferruginous, with a short hooked tooth near base, the tip produced and twisted; abdomen piceous, the apex with black pubescence, third ventral segment clothed and fringed with whitish pubescence. Length .35 inch.

*Hab.*—Mexico, (Sumichrast). Sixteen specimens.

***Tetrapedia lugubris.***—♂.—Black, shining, the pubescence black; apical margin of clypeus, labrum except disk and the mandibles more or less, dull yellow; sides of face, labrum and cheeks with a silvery sericeous pubescence; antennæ piceous, the flagellum dull testaceous beneath; mesothorax nude, subopaque, disk with a well impressed longitudinal line, and a short one over tegulæ; prothorax piceous, prominently transversely constricted; scutellum with short black pubescence; the pubescence on sides of metathorax and pleura silvery-white in certain lights; tegulæ piceous; wings dark fuliginous, the apex pale yellowish-fuscous, nervures yellow; legs rufo-piceous, clothed with black pubescence, simple, basal joint of tarsi flat, dilated, fringed behind with long black pubescence, tips of posterior tibiæ with a patch of white pubescence; abdomen smooth and polished, the sides and apex fringed with long black pubescence, that at apex mixed with whitish; ventral segments fringed with black pubescence; a dot on each extreme sides of fourth and fifth dorsal segments, and the third or fourth ventral segments pale testaceous. Length .40 inch.

*Hab.*—Mexico, (Sumichrast). Two specimens. This has much the general appearance of *maura*, but the legs are simple and not deformed as in the ♂ of that species.

***Tetrapedia moesta.***—♀.—Black, shining, the pubescence black; face and cheeks silvery-sericeous, labrum fringed with golden pubescence, clypeus with shallow sparse punctures, the face above antennæ flat, smooth and polished, impunctured; antennæ piceous, flagellum dull testaceous beneath; mesothorax opaque, a well impressed longitudinal line on anterior middle and a very short one on each side over tegulæ; sides of scutellum with a patch of short black pubescence; tegulæ piceous; wings fuliginous, apex beyond third submarginal cell subhyaline, second submarginal cell receiving the recurrent nervure between middle and apex, the third submarginal narrowed nearly one-half towards marginal; legs rufo-piceous, the pubescence entirely black, basal joint of anterior tarsi short and broad, spurs of intermediate tibiæ long and simple, hooked at tip, those of posterior tibiæ long, slender and white; abdomen piceous or black, smooth and polished, apex clothed with black pubescence, ventral segments 2—4 fringed with long white hair. Length .30 inch.

♂.—Triangular mark on sides of face, clypeus, spot above, labrum, mandibles except tips and scape beneath, yellowish-white; tips of tarsi fulvo-testaceous, spurs of posterior tibiæ more or less pale, sometimes brown, basal joint of four posterior tarsi short, broad and fringed behind with long black hair. Length .35 inch.



*Hab.*—Mexico, (Sumichrast). Six specimens. The pubescence of the legs is entirely black.

***Tetrapedia apicalis.***—♀.—Very much like *mæsta* ♀, but differs as follows: the face above antennæ is slightly prominent medially and punctured; the mesothorax has three finely impressed longitudinal lines on anterior middle; the pubescence on sides of metathorax is more or less pale; the wings are more broadly whitish-hyaline at tip, the second submarginal cell receiving the recurrent nervure at the tip; the spurs of posterior tibiæ are black; the abdomen is sometimes rufo-testaceous at base, and the fringe at apex of fifth dorsal segment is tipped with cinereous. Length .30 inch.

*Hab.*—Mexico, (Sumichrast). Three specimens.

***Tetrapedia terminalis.***—♀.—Very much like *apicalis* but differs as follows: the wings are whitish-hyaline beyond the second submarginal cell, the third more narrowed towards the marginal, the abdomen shorter and broader, fulvo-testaceous at base, the two apical segments above and beneath fringed with fulvous pubescence. Length .30 inch.

*Hab.*—Mexico, (Sumichrast). One specimen.

***Tetrapedia fraterna.***—♂.—Black, shining, the pubescence black, that on the face, labrum and cheeks silvery-white; narrow orbital line on face, one on lower posterior orbits, clypeus, transverse line above, labrum, mandibles except tips, scape beneath, line on collar, dot on tegulæ anteriorly, dot on four anterior knees, and tips of tarsi, all yellowish-white; face above antennæ somewhat prominent medially and punctured, clypeus and middle of face beneath antennæ with large, rather deep punctures; flagellum dull testaceous beneath; mesothorax smooth and shining; wings fuscous, apex broadly hyaline, second submarginal cell receiving the recurrent nervure between middle and apex; legs clothed with black pubescence, basal joint of tarsi broad and fringed behind with rather long dense black pubescence, tibial spurs slender, black; abdomen piceous, smooth and polished, the pubescence at apex more or less intermixed with pale; venter with pubescence pale, the second and third segments more or less marked with whitish. Length .30 inch.

*Hab.*—Mexico, (Sumichrast). Two specimens.

***Tetrapedia calcarata.***—♀.—Black, the abdomen flavo-testaceous, shining; head and thorax sometimes more or less varied with brown; sides of face and cheeks covered with a rather dense silvery sericeous pile; antennæ dull ferruginous beneath; metathorax and pleura with a fine silvery sericeous pile; on each extreme side of base of scutellum a small pale spot; tegulæ piceous; wings yellowish subhyaline, nervures and stigma pale brown, second submarginal cell receiving the recurrent nervure near the tip; legs rufo-fuscous, the pubescence black, tibial spurs slender, white; abdomen sometimes slightly obfuscated or discolored towards apex, the pubescence pale, with a slight admixture of black on apical segments. Length .35 inch.

♂.—Sides of face, more or less, narrow posterior orbits, clypeus except sometimes the base, generally a dot above, labrum, mandibles except tips, and line on scape beneath, yellowish-white; legs pale brown, simple, the pubescence black, tibial spurs white; abdomen colored as in ♀. Length .30—.35 inch.

*Hab.*—Mexico, (Sumichrast). Ten specimens.