Ischnura verticalis Say.

1 ♂. Differs from typical Eastern examples by the lateral basal black stripe on 8 being reduced to a very small spot. Quebec to Georgia, west to Missouri and Louisiana.

Æschna clepsydra Say.

1 ♂. Eastern N. Amer. from Labrador to Maryland and Illinois; Dakota, Saskatchewan, Alaska; Irkutsk, Siberia; Finland.

Æschna multicolor Hag.

1 ♂. Indiana? Dakota to Pacific-Mexico and Brit. Columbia.

Ophiogomphus severus Hag.

1 ♂, 2 ♀. Previously known from New Mexico, ranging north to Washington.

Sympetrum corruptum Hag.

1 ♀. Illinois to California, Montana to Mexico; Ochotsk. Pennsylvania, New York, N. Jersey.

Neuropteroid Insects.

Raphidia bicolor Alb.

Det. by N. Banks. Coll. by T. D. A. Cockerell. August 13.

Micromus montanus Hag.

Det. by N. Banks. Coll. by T. D. A. Cockerell. August 16.

Chrysopa oculata Say.

Det. by N. Banks. Coll. by T. D. A. Cockerell. July 25.

Tomocerus niger Bourl., *var.* **americanus** Schott.

Det. by J. W. Folsom. Coll. by T. D. A. Cockerell. It is also found in Alaska, California and Oregon (Folsom).

HYMENOPTERA of Beulah, New Mexico.

BY HENRY L. VIERECK.

Unless otherwise mentioned, the collector is Dr. Henry Skinner. The species preceded by * are taken in their entirety from Prof. Cockerell's published records. I wish to heartily thank Prof. Cockerell for his active interest and liberal aid in the preparation of this paper.

APOIDEA.

APIDÆ.

***Apis mellifera** L.

"Only arrived at Beulah two or three years ago."

BOMBIDÆ.

Bombus fervidus Fabr.

One ♂.

Bombus ternarius Say, *var.* **bifarius** Cress.

One ♀. By the wider band of black pubescence on dorsulum, continued back on scutellum where it divides the yellow, the black pubescence at base of second abdominal segment and brownish hairs on tibiæ, this resembles *bifarius*. One ☿ on flowers of *Jamesia americana* June 30, 1902 (Viereck).

***Bombus ternarius** Say.

May 30, at *Iris missouriensis* and wild plum flowers; August 10–18 (W. P. Cockerell). "Not so abundant as *juxtus*."

Bombus juxtus Cress.

Three ☿ ☿. May 30, at *Iris missouriensis* and wild plum; August 16–23 (W. P. Cockerell). "A very abundant species at 8,000 9,000 feet" (T. D. A. Cockerell).

Bombus appositus Cress.

One ♀. June 29, 1902 (Viereck); August 16, at *Polemonium cœruleum* (W. Porter). This specimen varies from the type in the lighter color of all the pale pubescence, that of the abdomen being of a lemon color compared with the ochraceous color in the type from Colorado. August 16, at *Polemonium cœruleum*, rather common (W. P. Cockerell).

Bombus consimilis Cress.

One ♀. June 29, 1902 (Viereck). This is apparently a species new to New Mexico. In the type the abdomen has ochraceous pubescence on first two segments, the rest black. The specimen here recorded has the pale pubescence on first segment very sparse, the segment almost bare as though the hair were rubbed off, in fact the hairs that do exist on the middle of the segment are largely black, the yellowish ones only prominent at the sides of the segment

where they form the ends of a curved band of rather sparce yellow hairs, which line the anterior portion of the second abdominal segment. There is a yellow band of hair on the fourth segment and some yellow hairs on the extreme sides of the fifth segment, fifth and sixth with black hairs. In the abdominal arrangement of pubescence it agrees more with a specimen in the Society's collection marked "Canada," but that has the ochreous pubescence on first and second abdominal segments very abundant. The hairs on the thorax are slightly paler than in the type.

Bombus nevadensis Cress.

One ♀.

***Bombus nevadensis,** *race* **aztecus** Ckll.

May 30, at *Verbena bipinnatifida* (W. P. Cockerell).

***Bombus iridis** Ckll.

Type locality, Beaulah, May 30, 1899, at flowers of *Iris missouriensis* (W. P. Cockerell).

***Bombus howardi** Cress.

May 30, August 16, rather common (W. P. Cockerell).

***Bombus rufocinctus** Cress.

August 25, ♂ and hill near Beulah, August 23, ♂ (W. P. Cockerell).

***Bombus prunellæ** Ckll.

Type locally in part. One ♀, May 30, two ☿, August 18 (W. P. Cockerell).

***Bombus proximus** Cress.

***Bombus monardæ** C. and P.

July 18, 1900, at flowers of *Rudbeckia*.

PSITHYRIDÆ.

Psithyrus insularis Sm.

Two ♂♂, one ♀. One ♂ W, of Beulah, August 23 (W. P. Cockerell). The ♀, July 18 (T. D. A. Cockerell).

ANTHOPHORIDÆ.

Clisodon terminalis Cress.

One ♂. (H. Skinner.) August 18, at flowers of *Polemonium*. Also Sapello Canon, August 31 (W. P. Cockerell). Two ♀ ♀, June 30, 1902, (Viereck), Crew's Mesa just above Beulah, same zone, June 29, 1902 (B. Chapman).

Melissodes confusa Cress.

Two ♂. August 12, 1900, at flowers of *Erigeron* (T. D. A. Cockerell). One specimen has the pubescence paler than in the types from Colorado, the other is normal. Males of this species range from 8 to 12 mm. in length. One ♂, July (W. P. Cockerell). One ♂, July 11, 1902, on Helianthoid compositæ (W. P. Cockerell).

Anthophora nubiterræ n. sp.—First joint of flagellum a little longer than second and third joints united. Apical abdominal plate broadly emarginate Related to *A.* syringæ Ckll.

♂ Length 10 mm. Frontal foveæ indistinctly punctured, front and vertex opaque, roughened, clypeus and lateral areas coarsely almost confluently punctured, labrum with shallow poorly defined separated punctures, depressed in the middle. Cheeks partly shining, finely roughened. Thorax almost uniformly sculptured like cheeks but duller. Dorsulum with a fine central line running back to the middle where the mesonotum is shining. A shining longitudinal line about two millimeters in length in the middle of each side. Tarsal claws long, cleft down from the apex for about one-fourth the length of the claw. Wings hyaline, costal and radial nervure dark brown, the other nervures slightly paler, wing textures brownish along the nervures. Second submarginal cell narrowed about one-half on the radius. Abdomen subopaque, finely indistinctly sculptured, margins of segments testaceous. Head, thorax, abdomen, coxæ and femora with pale pubescence, that of dorsulum brownish. Anterior tibiæ partly bare, median tibiæ with white appressed pubescence and a patch of brownish pubescence. Posterior tibiæ like median one externally, the inner surface with a deep brown pubescence. Tarsi with whitish pubescence externally, bright brown internally.

Black. Clypeus yellow, small dot at base of scape, supraclypeal emarginate band and V shaped lateral marks more ochreous, labrum lemon yellow, notched at sides and apex with black. Smaller tarsal joints pale brownish.

Type.—Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., (W. P. Cockerell). One ♂.

***Anthophora bomboides,** *var.* **neomexicana** Ckll.

May 30. 1 ♀ (W. Porter).

NOMADIDÆ.

Epeolus occidentalis Ckll.

Length, 8mm. Besides the small size, the specimen has the follow-

ing peculiarities: Antennæ and anterior femora black. First and second transverse cubiti meeting on the radial nervure. One ♂.

Nomada zebrata Cress.

♀. This specimen is more conspicuously colored than the type, and has the following pattern: Greater part of head above insertion of antennæ, median belt on the dorsulum, narrow before, as broad as the scutellum behind, the metathoracic enclosure entirely and belt from wing insertion to posterior and median coxæ black. Antennæ above from honey yellow to subfuscous, beneath subfuscous on the basal half, black on the apical half with exception of the terminal joint, which is orange color. Maxillary palpi five jointed. Trans verse medial nervure interstitial with the basal nervure. One specimen.

MEGACHILIDÆ.

Trypetes carinatum Cress.

One ♀. August 28, 1899 (W. P. Cockerell).

Ashmeadiella cactorum Ckll.

One ♀, August 18, (W. P. Cockerell). One ♀, June 29, 1902, (Viereck).

Ashmeadiella bucconis Say.

One ♀. August 10, on *Senecio douglasii* (W. P. Cockerell).

Osmia megacephala Cress.

One ♀, head Dailey Canon, June 26 (T. D. A. Cockerell).

***Osmia fulgida** Cress.

July 16, 1900 (W. P. and T. D. A. Cockerell).

***Osmia armaticeps** *var.* **sapellonis** Ckll.

Hill above Beulah, August 19 (T. D. A. Cockerell).

***Osmia (Chalcosmia) faceta** Cress.

May 30, at flowers of *Salix*, two ♂ (W. P. Cockerell). One ♂ (Helen Blake).

***Osmia (Chalcosmia) densa** Cress.

August 18. One ♀ (W. P. Cockerell).

***Osmia (Melanosmia) nigrifrons** *var.* **subaustralis** Ckll.

Beulah, type locally. July 26, one ♀ (W. P. Cockerell).

Osmia juxta Cress.

One ♀, June 29, 1902 (Viereck).

Osmia nigrifrons Cress.

Two ♀. June 29, 1902 (Viereck); one specimen has some white pubescence on the face, other is typical.

Monumetha borealis Cress.

One ♂, June 29 (Viereck).

Megachile sapellonis Ckll.

Megachile bucephala Cress., not of Sm. Syn. Hym., 1887, p. 302, ♀.
Megachile sapellonis Ckll., Ann. Nat. Hist., July, 1900, p. 7, ♀.

One ♀. Sapello Canon, July 26, two ♀, one at flowers of thistle (W. P. Cockerell). Two ♀, August 18 (T. D. A. Cockerell). Hill W. of Beulah (Crew's Mesa), August 23 (T. D. A. Cockerell). Two ♀, one ♂, June 29, 30, 1902 (Viereck).

Megachile relativa Cress.

One ♂. In addition to the characters given in the original description, the species has the distance between the posterior ocelli less than the distance between them and the nearest eye margin. This character at once seperates *relativa* from *brevis*. July 26, August 18 and 25, ♀ ♀, one at flowers of *Polemonium filicinum* (T. D. A. Cockerell). Another ♂ on *Salix*, May 30 (W. Porter).

Megachile pugnata Say.

Two ♀, hill near Beulah, August 19 (W. P. Cockerell). Three ♀, July 26 (W. P. Cockerell). Five ♀, two ♂, June 29, 30, 1902 (Viereck). One ♂ on Helianthoid compositæ July 11, 1902 (W. P. Cockerell).

Megachile vidua Sm.

Megachile monardarum Ckll., Ann. Nat. Hist., 1900, p. 11.

One ♀ with the pubescence white, examples from New Hampshire; Custer, South Dakota; Nevada and California almost agree in this respect, while others from Canada, Connecticut, New York, Pennsylvania and Deleware have a decided ochraceous tendency. This observation refers to ♀ ♀ alone, the ♂ ♂ appear to be more constant in the color of the pubescence.

Type locality in part of *monardarum*. Hill near Beulah, August 19 (W. P. Cockerell). Two ♂, one July 16, the other head of Dailey Canon, June 26 (T. D. A. Cockerell). One ♀, June 29, 1902

(Viereck). No specific difference has been noticed between authentic specimens of *monardarum* from Prof. Cockerell, and the specimens identified by Mr. Cresson as *vidua*, and which tally with Smith's description.

Megachile wootoni Ckll.

Two ♂, June 29, 1902 (Viereck). One ♀, John's Canon, above 10,000 feet. June 29, two ♂, head of Daily Canon, June 26 (T. D. A. Cockerell).

Megachile fidelis Cress.

July 26, one ♀, two ♀ on Helianthoid compositæ July 11, 1902 (W. P. Cockerell).

Megachile montivaga Cress.

Three ♂. June 29, 1902, on *Geum trifidum* and *Roripa nasturtium* (Viereck).

***Megachile fortis** Cress.

One ♀, end of August (T. D. A. Cockerell).

***Megachile pollicaris** *var.* **pereximia** Ckll.

Type locality May 30, at flowers of wild plum (W. P. Cockerell).

Anthidium occidentale Cress.

Two ♂. Three ♂, one ♀, Sapello Canon, August 31 (W. P. Cockerell). One ♀, June 30, 1902 (Viereck).

STELIDIDÆ.

Cœlioxys mœsta Cress.

End of August (T. D. A. Cockerell).

Cœlioxys alternata Say.

One ♂, June 29, 1902. This specimen has the lateral dorsal processes of the apical segment trifid.

PANURGIDÆ.

Halictoides (Parahalictoides) oryx n. sp.—♂ Length 6.5 mm.—Face and head rather closely and coarsely punctured, covered with long brownish hair, heavier on the front and clypeus than on the vertex and cheeks where it is sparser. Ocelli arranged on a curved line, space between the posterior pair a little less than that between them and nearest eye margin. Maxillary palpi six jointed, first joint about two-thirds the length of the second, the second about equal to

three, four and five united, sixth a little longer than fifth. Antennæ longer than the head and thorax, the sutures especially at base of flagellum indistinct, joints of flagellum nodose beneath, first joint of flagellum half the length of the second, terminal joint truncate, the end flat and shining. Dorsulum with well marked punctures, closer in front than behind, punctuation of scutellum similar to that of dorsulum, dorsulum with hair of the same kind and color as that on occiput, a fringe of hair bounding the scutellum similar to that on the front. Pleuræ sparsely pitted, shining, covered with sparse pale hair. Metathorax above longitudinally striato-punctate, the sides coriaceous, posterior face more shining with a central area. Metathorax covered with sparse pale hairs, the sides almost bare. Wings faintly clouded, transverse median nervure oblique practically interstitial with the basal nervure. First submarginal cell longer than the second. First recurrent nervure received by the second submarginal cell a little beyond the first transverse cubitus, the second recurrent nervure received the same distance before the second transverse cubitus, as the first is received beyond the first. Abdomen smooth and shining, indistinctly punctured, sparsely ciliate, segments two, three, four and five with a sparse fringe of brownish hairs, apical segments more thickly covered with longer brownish hairs. The borders of the segments somewhat testaceous, almost black, highly polished. Last ventral segment flattened not impressed basally, apical longitudinal keel abbreviated, almost obscured by the hairs.

Black. Head, dorsulum, scutellum and pleuræ somewhat steel color.

Type, Coll. Acad. Nat. Sciences Phila. Type locality, Beulah, N. M., August 17, 1901 (H. Skinner). One male specimen. This may prove to be the ♂ of *H. tinsleyi* Ckll. The antennæ put one in mind of the horns of the Oryx, hence the name. Two ♂. August 10–18 (T. D. A. Cockerell).

Halictoides marginatus Cress.

One ♀, August 28, 1899 (W. P. Cockerell).

Panurginus porteræ Ckll.

One ♀, July 24 (T. D. A. Cockerell). Both sexes on *Helenium hoopesii* Gray, the ♂ ♂ common. June 29, 30, 1902 (Viereck).

Panurginus verus Ckll.

♂.—Length 6.5 mm.—Very similar to the ♀. Yellow, all confined to the clypeus, a dot on apex of anterior pair of femora, a stripe on inner side of anterior pair of tibiæ and the basal joints of tarsi on four anteior legs yellowish. This is similar to *bakeri* in having yellow of face, confined to clypeus, but *bakeri* is a smaller species with punctures on clypeus closer and those on dorsulum finer.

Three ♀ ♀. Two others, one August 18th, another at hill above Beulah, August 15, 1900 (T. D. A. and W. P. Cockerell). One ♀

and four ♂ ♂, Crew's Mesa, at Beulah, same zone, June 29, 1902 (B. Chapman). Beulah, June 29, 1902, on *Helenium hoopesii* Gray (Viereck).

Panurginus atricomis Cress.

Two ♂ ♂.

Panurginus bakeri Ckll. ♂

Three males, agreeing with the description of *bakeri*, the sculpture of the metathorax is variable, the enclosure at best poorly defined, in two specimens not at all, the metathorax being uniformly rugulose. In one the lower angles of the face adjoining the clypeus bear a small yellow spot, in another there is a short yellowish line on anterior tibiæ. This species is closely related to *P. californicus* Cress., from which it differs in sculpture, stature and color, *bakeri* being black while *californicus* is more brownish. In *californicus* the punctuation on dorsulum is sparse and the metathorax has a smooth spot on each side. Among eight specimens (type and cotypes ♂) all but one has the clypeus entirely yellow, the individual with but a median spot is marked "*var.*," some have a small supraclypeal spot and one has well defined lateral face marks.

Panurginus nigrinus n. sp.—Related to *P. pauper* Cress., from which it differs in the coarser punctuation of face and dorsulum. Metathorax entirely opaque granular to finely rugulose, disk only slghtly impressed.

♀ Length 6 mm.—Face roughly punctured almost confluently, vertex with the punctures more distinctly separated, sculpture of cheeks indistinct, clypeus with large, close deep punctures. Labrum subtruncate anteriorly, concave, shining. Mesopleuræ rugulose. Dorsulum very closely punctured slightly impressed medially and anteriorly, scutellum punctured much the same. Metathorax opaque finely granularly rugulose. Wings hyaline, with a dark cast, stigma and nervures dark brown, first recurrent nervure received by the second submarginal cell about as far beyond the first transverse cubitus as the length of the first abcissa of the radius, second recurrent nervure received by the second cubital cell, a short distance before the second transverse cubitus. Base of first abdominal segment polished with very sparse minute punctures, the segments with the raised half indistinctly finely sculptured. Entire insect more or less covered with short whitish to yellowish pubescence.

Entirely black.

Type.—Coll. Acad. Nat. Sciences, Phila. Type locality.—Beulah, N. M., August 17, 1901 (H. Skinner) One ♀.

Two Colorado specimens belonging to this species were included under *pauper* in the original description, but they are constantly distinct in the characters pointed out.

Panurginus citrinifrons n. sp.—Clypeus with a longitudinal impressed line medially, dorsulum slightly impressed medially coarsely punctured, metathorax without a defined area.

♂ Length 6 mm.—Front closely rugulosely punctured, space between ocelli and eye margin with deep crude punctures, cheeks indistinctly punctured shining, clypeus, space above and aside sparsely deeply punctured, first joint of flagellum a little shorter than joints two and three united. Labrum shining concave, truncate, trapezoidal. Dorsulum with parapsidal grooves and deep, close, large punctures, mesopleuræ punctured but not so strongly. Metathorax with the disk slightly impressed, entirely almost uniformly rugulose, shining. Wings slightly fuscous, stigma and nervures dark brown, distance between the first recurrent nervure where it joins the second submarginal cell and the first transverse cubitus, a little shorter than the first abcissa of the radius, the second recurrent nervure received a little before the second transverse cubitus. First abdominal segment smooth and polished at base and apex, punctured across the middle, most of the other segments finely sculptured, punctured and polished.

Black. Clypeus, a triangular supraclypeal mark, a somewhat triangular mark between eyes and clypeus, the longest side of which borders the eye, the upper point extending to the height of the supraclypeal mark, all femora at apex, tibiæ at base entirely, anterior tibiæ in front and all tarsi except apical ones yellow.

Type.—Coll. Acad. Nat. Sci., Phila. Type locality.—Beulah, N. M., August 17, 1901 (H. Skinner). One ♂.

***Panurginus porteræ** Ckll.

Beulah. Type locality ♂ ♀.—The ♂ was taken August 25, 1899 (W. P. Cockerell).

***Panurginus cressoniellus** Ckll.

Three ♀, near Beulah, August 23, 1899. One ♂, three ♀ ♀, all by W. Cockerell.

***Perdita zebrata** Cress. *var.*

One ♂. Prof. Cockerell has kindly submitted the following description of this interesting find.

"**Perdita zebrata** Cresson (variety).—♂ Length 4 mm.—Head and thorax dark olive green, sparsely clothed with erect white hairs; thorax, especially mesothorax, shining; front and vertex dull and granular; mandibles sharp and simple, white with black tips, the junction of the black and white suffused with ferruginous; labial palpi with the basal joint black, longer than the other three (which are pallid) united; maxillary palpi six-jointed, basal joint black, the others whitish; face-marks cream color, including clypeus (except the usual black dots), long narrow pointed lateral marks, reaching a short distance above the level of the antennæ, a large quadrate supraclypeal mark, notched above, and large dog-ear marks; antennæ black above, pale yellow beneath, including scape; prothorax entirely margined with very pale yellow; pleura dark; legs pale yellow, all the femora with a large black patch above, and the tibiæ with a large black stripe

behind; wings hyaline, iridescent, nervures and margin of stigma sepia-brown; third discoidal cell indistinct; marginal cell broadly and very slightly obliquely truncate, the substigmatal portion about as long as the post-stigmatal; dorsal surface of abdomen with the first segment entirely black; the second to fourth black with a broad basal yellow stripe, not reaching the lateral margins, and more or less interrupted in the middle; fifth segment yellow with two widely separated subapical black spots; apex yellow; ventral surface yellow, with a triangular black mark on each side of the first segment.

"Beulah, N. M., about 8000 feet, August 5, 1902, one at flowers of *Cicuta*, but doubtless accidental on that plant, as I could not find any more. There was plenty of *Solidago canadensis* close by, but it was only just coming into bloom. The locality is about a quarter of a mile down the canon from the Blake house.

"This insect agrees with *P. zebrata* rather than with *bakeræ*, but there is no *Cleome* within a distance of several miles."—(T. D. A. COCKERRLL.)

ANDRENIDÆ.

Andrena beulahensis n. sp. Allied to *salicis* from Pennsylvania. Head broader, front distinctly striate, clypeus convex, apex of pygidial area broad, rounded.

♀ Length 9 mm.—Clypeus impunctate and shining medially, punctured on the sides, most of the punctures strong and separated, process of labrum broadly truncate. Cheeks punctured partly shining. Dorsulum dull uniformly finely roughened, pleura and metathorax much the same, the enclosed space poorly defined, almost bare. Pubescence of thorax, top of head and cheeks dull fulvous, that of the face paler. Wings with a brownish cast, stigma pale brown, nervures dark brown. Second submarginal cell quadrate, the first recurrent nervure received distinctly beyond its middle. Abdomen opaque, finely roughened. The fasciæ not heavy, from ochraceous to whitish. Apex of abdomen with brownish pubescence. Femora and tibiæ with rather pale pubescence, that on the tarsi brownish.

Black. Apical half of mandibles brownish.

Type.—Coll. Acad. Nat. Sciences Phila. Type locality.—Beulah, N. M., August 17, 1901 (H. Skinner).

Andrena apacheorum Ckll.

Var. *a* and *b* (det. Ckll.), at hill above Beulah, August 19, 1899 (W. P. Cockerell). One on flowers of *Jamesia americana*, June 30, 1902 (Viereck).

Andrena platyparia Rob.

July 26, 1899, one ♂ (W. P. Cockerell). One ♂, August 24, (W. Porter).

Andrena truncata n. sp. Superficially like *beulahensis*, from which it differs, by the still broader head, the heavier, parallel, obliquely truncate mandibles, the inner tooth only indicated by a faint dent on the truncation.

♀ Length 10 mm.—Clypeus impressed along anterior margin, shining, with a small central area to each side of which the punctures are well defined and sparse, on the lateral margins, the clypeus is opaque with shallow closer punctures, front finely striate, vertex dull. Entire thorax opaque impunctate, enclosure hardly indicated. Metapleuræ shining. Wings subfuscous, apex faintly clouded, nervures dark brown, stigma slightly paler, the margin concolorous with nervures, first recurrent nervure received by the second submarginal cell just beyond the middle, space between second recurrent nervure and third transverse cubitus on the cubitus, a little shorter than space between first recurrent nervure and second transverse cubitus on the cubitus. Abdomen mostly subopaque, pygidial area narrowly rounded at apex. Pubescence of head whitish of thorax pale ochraceous, of four anterior tibiæ above and all tarsi brown, four anterior tibiæ beneath, the posterior tibiæ entirely, pale brownish, of all femora paler concolorous with fringes of ventral abdominal segments. The hair bands of dorsal segments sparse, whitish on sides, the apex of abdomen brownish, dark.

Black. Tarsi and mandibles somewhat ferruginous.

Type.—Coll. Acad. Nat. Sciences, Phila. Type locality.—Beulah, N. M., August 17, 1901 (H. Skinner).

One ♀. Another ♀ 8.5 mm. long (W. P. Cockerell).

Andrena birtwelli Ckll.

One ♀, July 26, on *Heracleum lanatum*, another ♀, July 26 (T. D. A. Cockerell). Hill above Beulah, August 15, 1900 (T. D. A. and W. P. Cockerell). One ♀, June 29, 1902, one ♂, June 27 (T. D. A. Cockerell). These specimens have an ochraceous tint to the pubescence of head and thorax, all other specimens so far seen by me have these parts covered with whitish pubescence. The ♂ now first recorded has the pubescence tinted like the female commented upon, otherwise it is the same, barring the usual sexual characters; it could not be taken for anything else than the ♂ of *birtwelli*.

Andrena sapellonis Ckll.

Type locality.—Four ♀ ♀, one ♂ at flowers of Salix, two ♀ ♀ at flowers of wild plum, May 20, 1899 (W. Porter). One ♀ on flowers of *Thlaspi fendleri* (T. D. A. and W. P. Cockerell).

Andrena carlini Ckll.

May 30, one ♀ on wild plum (W. P. Cockerell).

Andrena pacta n. sp. Pubescence fulvous, process of labrum truncate, slightly emarginate. No median impunctate line on clypeus. Dorsulum with small punctures. Enclosure of metathorax uniformly, finely roughened. Related to *albovirgata*.

♀ Length 9 mm.—Clypeus shining, deeply and strongly punctured on the disc,

the sides more opaque closely finely punctured, no median impunctate line, process of labrum not so broad, slightly emarginate. Front dull, finely roughened, the cheeks more shining. First joint of flagellum as long as 2 + 3. Pubescence across the face at insertion of antennæ and on mandibles fulvous, that on clypeus and lower parts of cheek paler, tending to whitish. Dorsulum shining, deeply rather sparsely punctured, except on the sides where it is more finely and closely punctured and dull. Pleuræ and metathorax almost uniformly, finely roughened, dull, the enclosure distinguishable chiefly by the abscence of pubescence. Dorsum of thorax dark fulvous, heaviest near the margins of the segments. Pubescence on sides of metathorax more ochraceous, below the pubescence of thorax is whitish. Wings slightly yellowish, stigma and nervures largely testaceous, second submarginal cell not regularly quadrate, the first recurrent nervure received beyond the middle. Legs with the pubescence ranging from silvery on the anterior to golden on the posterior pair. Abdomen rather shining, the second, third and fourth segments with a thick fascia of ochraceous pubescence, interrupted on the second, slightly so on the third. Pubescence on apex of abdomen of much the same color as the fasciæ but tinged with brownish.

Black. The mandibles brownish on the apical half. ♂ Length 7.5 mm. Pubescence pale tinted with brown, that on the face darkest, a collection of black hairs on each side of face extending almost to the middle. Clypeus shining, covered with deep, separated punctures. Process of labrum truncate, front very finely roughened. Dorsulum subopaque, indistinctly punctured. Metathorax finely roughened opaque, the enclosure hardly defined. Abdomen subopaque, finely roughened,

Type.—Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M.

One ♀, one ♂, June 29, 30, 1902 (Viereck).

Trachandrena grandior Ckll.

July 26, one ♀, another ♀ August 18 (T. D. A. and W. P. Cockerell). Two ♀ ♀, June 29, 1902, on flowers of *Ceanothus fendleri* (W. P. Cockerell). One ♀, June 29, 1902, on flowers of *Potentilla* (*pucherimum*?).

***Andrena segregans** Ckll.

Beulah, type locality, July 26, 1899 (W. P. Cockerell).

***Andrena americana** D. T.

***Andrena argemonis** Ckll.

(Oslar) 1902. Beginning of August 1902 (T. D. A. Cockerell).

Andrena atala n. sp. Process of labrum broad, truncate, mandibles broad, slightly indented within the blunt apex. In greater part dull granular.

♀ Length 8 mm.—Process of labrum and clypeus shining, the latter with separated well defined punctures, evenly distributed, no indication of a central

impunctate belt. Front dull, indistinctly granularly striate. Vertex opaque. Third joint of antennæ longer than the fourth and fifth united. Dorsulum sculptured much like the vertex, a shining median line extending back to the middle, a short longitudinal shining line in the middle of each side. Scutellum more shining, longitudinally impressed medially. Metathorax uniformly dull, finely granular. The enclosed space faintly outlined. Wings yellowish, nervures and stigma dark brown, first recurrent nervure received by the second submarginal cell a little beyond the middle. Abdomen shining, finely, indistinctly sculptured. Pygidial area broad. Dorsal segments excepting first, with a sparse interrupted fringe of white hairs Anal fimbria brownish. Head and thorax with fine white hair, except dorsally, frontal foveæ brownish sericeous. Tibiæ and tarsi with brownish hairs.

Type.—Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., August 18 (W. P. Cockerell).

Two ♀ ♀, comes nearest to *Andrena birtwelli* Ckll.

Andrena delta n. sp. Head and thorax dull granular, mandibles broad, process of labrum indistinct, emarginate.

♀ Length 9 mm.—Front striate shining, clypeus duller, with separated punctures, the punctuation interrupted longitudinally in the middle. Occiput and cheeks finely roughened. The third joint of the antennæ fully as long as the fourth and fifth joints together. Hairs of the head long and white, faintly yellowish around the mouth, the frontal foveæ deep brown, sericeous. Dorsulum dull, sculptured much like vertex, a longitudinal impressed line extending to the middle, a poorly defined short longitudinal shining line in middle of each side. Enclosure of metathorax noticeable by its being slightly depressed, and by the somewhat coarser sculpture of the integument behind it. Hairs of the thorax white, as plentiful as those on head, dorsally almost bare. Wings yellowish, the first recurrent nervure received by the second submarginal cell, one-third its length on the cubitus from the second transverse cubitus. Pubescence of tibiæ and tarsi brownish. Abdomen globose, shining, almost bare, the base of the segments faintly roughened. Anal fimbria brownish.

Type.—Coll. Acad. Nat. Sciences, Phila. Type locality. West of Beulah, N. M. One ♀, August 23 (W. P. Cockerell).

Halictus aquilæ Ckll.

One ♀, fourteen ♂ ♂. One ♀ near Beulah (W. P. and T. D. A. Cockerell). One ♀, July 26, head of Dailey Canon, July 26 (T. D. A. Cockerell). Two ♀ ♀, on flowers of *Roripa nasturtium*, June 29, 1902 (Viereck).

Halictus ruidosensis Ckll.

Seven ♀ ♀, three ♂ ♂. Three ♀ ♀, July 28, August 17–25 (T. D. A. and W. P. Cockerell). Three ♀ ♀, July 16, one ♀, July 24, on flowers of *Heracleum lanatum*, one ♀, August 25, 1899 (W. P. Cockerell). One ♀, Dailey Canon, August 10 (T. D. A. and W.

P. Cockerell). June 29, 1902, on flowers of *Ceanothus fendleri* (W. P. Cockerell). *Solidago canadensis* var. August 7 (T. D. A. Cockerell). *Geum trifidum* and *Roripa nasturtium*, June 29, 1902, common (Viereck).

Halictus lerouxii St. Farg.

One ♀, July 16 (T. D. Cockerell).

Halictus similis Sm.

One ♀, Dailey Canon, August 10 (T. D. A. and W. P. Cockerell).

Halictus sisymbrii Ckll.

One ♀, June 30, 1902 (Viereck).

Halictus parallelus Say.

Two ♂♂, June 29, 1902, *Potentilla* (*pulcherimum*)? (Viereck.)

***Halictus bardus** Cress.

May 30, at flowers of Salix. One ♀ (W. P. Cockerell).

***Halictus coriaceus** Sm.

May 30, at flowers of Salix (W. P. Cockerell).

Halictus niger n. sp.—Head minutely roughened dull, dorsulum closely punctured, dull, disk of metathorax quadrate, rugulose. Entirely black.

♀ Length 7.5 mm.—Clypeus convex, shining, with sparse large punctures, face below antennæ sparsely punctured, between the insertion of antennæ is a faint longitudinal raised line, front minutely roughened, dull, closely punctured to the sides, behind ocelli more distinctly roughened, cheeks somewhat shining, sculptured nearly like the front, space between posterior ocelli a litle less than space between them and nearest eye margin, antennæ short, joints of the flagellum subequal, head covered more or less with a brownish pubescence. Dorsulum closely and finely punctured, dull, impressed medially and longitudinally, an indistinct longitudinal line on each side. Pleuræ roughened, somewhat shining. Scutellum partly shining, more sparsely punctured than dorsulum, metathorax truncate, disk quadrate rugulose, posterior face satiny. Dorsulum, scutellum and post-scutellum sparsely pubescent. Wings with the transverse median nervure uniting with the median nervure before the basal nervure, first recurrent nervure joining the cubitus a little before the second transverse cubitus, the second recurrent nervure joining the third cubital cell beyond the middle. Faintly fuscous, stigma pale brown, nervures darker. Legs with golden pubescence especially the tarsi, anterior legs palest. Abdomen shining apparently impunctate, edges of the segments narrowly testaceous, dorsal segments, two, three and four, obscurely hoary, more apparent, but still faint at base, apex of the abdomen with golden pubescence, ventral aspect with pale hair.

♂ Length 6.5 mm.—Flagellum pale brown beneath, clypeus covered with ap-

pressed white hairs, with a yellow mark extending across the anterior margin. Pubescence on cheeks, pleuræ and femora long and fine, whitish. Apex of tibiæ, the tarsi entirely, ochreous to yellow, apical tarsal joint and claws brownish. The sculpture finer, closer more rugulose.

Types.--Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., (H. Skinner). One ♀, ten ♂♂. Appears to be related to *H. nelumbonus* Robt., the ♀ is more slender and especially distinguished by the difference in disc of metathorax. Two ♀♀, 6.5 mm. and 7 mm., and one ♂, June 29, 1902, on flowers of *Roripa nasturtium*, June 29, 1902 (Viereck).

COLLETIDÆ.

Colletes simulans Cress.

August 18 (T. D. A. Cockerell). August 18, 1900 (W. P. and T. D. A. Cockerell). Three ♂♂. August 17, 1899 (Martin Cockerell), one ♂.

Colletes skinneri n. sp. Prothoracic spines short, labrum with a pronounced median, longitudinal, elevation,

♀ Length 11.5 mm.—Labrum with smaller, lateral, elevated lines. Clypeus robust, margin entire, slightly incurved. Surface coarsely sculptured with large punctures and longitudinal striæ. Front closely, coarsely punctured. Antennæ with first joint of the flagellum longer than the second. Pubescence on cheeks white, on face grayish white, hairs on occiput with dark tips. Dorsulum coarsely punctured, closely anteriorly, more separated posteriorly, pleuræ also coarsely punctured. Pubescence on the ventral aspect of thorax, concolorous with that on cheeks, pubescence on the dorsulum sparse, partly the color of that on face, partly black. Scutellum coarsely punctured with a fringe of black hairs posteriorly. A fringe from insertion of wings, post-scutellum and sides of metathorax with long pale hairs. Metathorax abruptly truncate the narrow dorsal exposure shining, with large rugæ. Enclosure of posterior face of metathorax infundibuliform, the upper half transversely rugose, with a median longitudinal imperfect line, below smooth and polished, entering an almost smooth area at base of metathorax, sides of metathorax amd space around enclosure coriaceous. Anterior coxæ simple, claws with one prominent tooth, legs with white pubescence, tibiæ and tarsi fringed with pale golden pubescence. Wings hyaline, nervures dark brown, marginal cell appendiculate, second submarginal cell trapezoidal larger than the third, transverse median nervure elbowed outwardly. First recurrent nervure received by the second cubital cell a little before the middle, second recurrent nervure received by the third cubital cell beyond the middle. Abdomen polished, first segment distinctly punctured, with a smooth median longitudinal line, to each side of which the punctures are sparse, becoming closer on the sides, on the succeding segments the punctures become less defined. Fasciæ white, interrupted on first segment, entire on 2, 3 and 4, only a fringe on 5. Pygidium roughened, covered with black appressed pubescence.

Black. Claws, apical tarsal joints and tibial spurs more or less fuscous,

♂ Length 9.5 mm.—Quite similar to the female in appearance, sculpture and wing structure, the central elevation of labrum is not so pronounced. The dorsal hairs paler, the punctuation of abdomenal segments coarser.

Types.—Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M. One ♀, 1901 (H. Skinner). One ♀ and one ♂, August 18 (T. D. A. Cockerell). The female shows a relation to *C. inæqualis*. Also closely related to *C. kincaidii* Ckll., from which it differs by the smaller size, different sculpture and black hairs of dorsum. The male answers the description of *C. wootoni* Ckll., but differs in the labrum, color of hair on dorsum, sculpture of post-scutellum, and metathorax and size.

Colletes spurcus n. sp. Labrum convex shining, space between eye and base of mandible a little less than width of the latter at base, coxæ apparently without spine, prothoracic spines very short, pointed.

♀ Length 8 mm.—Clypeus shining, moderately coarsely punctured almost confluently, sparsely pubescent. The rest of the head more or less punctured, dullish except around ocelli where the surface is shining, face and back to occipital region covered with pale brownish hair, the cheeks with almost white hair. Labrum polished, with a small dent at base medially. Dorsulum with distinct close punctures and a dull surface on anterior half, the posterior half more sparsely punctured, almost impunctate on a median highly polished area. The dorsulum with an abundant brown pubescence which is continued on the scutellum, the metathorax and sides with pale pubescence. Superior disc of metathorax separated from the posterior face by a ridge, the disc divided into narrow shining pits. Funnel shaped enclosure defined, the broad part rugose and much like the sculpture of the sides next the enclosure, the narrow part smooth and shining. Wings brownish, nervures and stigma almost black. Abdomen shining, finely punctured, the segments excepting the apical one, with apical transverse bands of white appressed pubescence.

♂ Length 7 mm.—Facial sculpture almost hidden by a heavy whitish pubescence, clypeus with rather sparse, deep punctures. Surface above antennæ and on occiput closely, indistinctly punctured, dullish. Cheeks more shining indistinctly punctured. Dorsulum with distinct punctures on a shining surface, sparse in the middle, closer near the margins, a fine longitudinal, median, impressed line extending back from the anterior margin. Punctuation of mesopleuræ more moderate than on the dorsum. The pubescence of thorax sparser and darker on dorsum than that of face, on sides and beneath paler. Superior disc of metathorax sharply defined by a transverse ridge, the space between with a series of longitudinal narrow pits, their cavities polished. Posterior face of metathorax with small triangular enclosure, with two short foveæ on its apical middle defining a central elevation. The adjoining surface rather coarsely indistinctly roughened. Wings clear, nervures and stigma very dark brown, first recurrent nervure received by the second submarginal cells distinctly before the middle. Basal segment of abdomen shining, with well separated fine punctures, pilose much like thorax. The remainiug segments becoming more and more

closely punctured, bearing dark hairs. All the segments, the apical one excepted with a pure white, narrow band of appressed pubescence on the apical margins.

Black. Apex of mandibles, claws and apical tarsal joint brownish.

Types.—Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., August 27, 1901 (H. Skinner). July 28, Dailey Canon, August 10, 3 ♂, 1 ♀ (T. D. A. and W. P. Cockerell. Related to *C. americanus* Cress., which, however, has the distance between eyes and base of mandibles shorter. The sculpture of metathorax coarser, the yellowish pubescence and heavier build. The paratypes have a small round dent at base of labrum. The ♀ is also smaller than *americanus* and conspicuous by the brown pubescence dorsally, not ochraceous as in the species cited. One ♀, June 30, 1902 and one ♂, June 29, 1902, *Roripa nasturtium* (Viereck). One ♂, August 7, 1902, *Solidago canadensis* var. (T. D. A. Cockerell).

Colletes nigrifrons Titus.

One ♀, Crew's Mesa, near Beulah, June 29, 1902 (B. Chapman).

Colletes zonatus n. sp. Labrum convex, polished, with a round dent at base, coxæ apparently without spines, spines of prothorax if present, hidden by pubescence. Distance between eye and base of mandibles about one-half width of the latter at base.

♂ Length 11 mm.—Front and vertex with distinct close punctures, partly dull, partly shining, with a tuft of pale pubescence along the insertion of antennaæ, clypeus closely almost confluently punctured on the anterior margin coarsely. Cheeks indistinctly punctured, with fine pubescence, darker than that on front where it is whitish. Dorsulum shining, punctures almost uniformly, closely arranged. Mesopleuræ more finely and closely punctured than the dorsulum. Thorax rather densely clothed especially on the dorsulum, with pale grayish pubescence, faintly tinted with ochraceous. Superior face of metathorax hardly defined, rather shining, but with no distinct longitudinal foveæ. The funnel shaped enclosure dullish, the lateral planes dull, roughened. Wings clear, nervures and stigma dark brown, first recurrent nervure received by the second submarginal cell at about the middle. First two basal segments with fine whitish pubescence finely indistinctly punctured, shining, the following segments similarly sculptured, bearing sparse black hairs. The segments with an apical margin of white appressed pubescence.

Black. Apex of mandibles and apical joints brownish, these same tarsal joints with bright brownish appressed hairs.

Type.—Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., May 30 (W. P. Cockerell). On wild plum. One ♂. Reminds one of the preceding species to which it is nearly related.

Colletes delodontus n sp. Labrum with a round dent at base in the middle with a pair of faint impressions laterally. Space between eyes and base

of mandibles apparently less than half the width of the latter at base. Prothoracic spines rudimentary.

♀ Length 10 mm.—Front with coarse, closely arranged punctures, on vertex they are much finer and sparse. Cheeks indistinctly punctured, shining like rest of the head. Clypeus with coarse, large elongated punctures creating a longitudinal appearance. Dorsulum with deep, large punctures, as closely arranged as possible on the anterior half which is dull. On the posterior half the punctures are scattered on a polished area. Scutellum punctured much like anterior half of dorsulum, sculpture of postscutellum hidden by the pubescence. Mesopleuræ shining, with close deep punctures. Superior disc of metathorax bounded by distinct ridge. The longitudinal divisions defined by strong ridges the spaces longer than wide, polished. The enclosure funnel shape with a broad neck, smooth and shining. The rest of metathorax roughened subopaque. Pubescence of face, cheeks, pleuræ, legs, to the tarsi and basal segment of abdomen pale, grayish. Head and thorax dorsally rather thickly covered with a dull pubescenee, tinged with ochreous. Wings clear, nervures dark brown, costal, subcostal and stigma almost black. First recurrent nervure received by the second submarginal cell at the middle. First abdominal with fine well separated punctures on a smooth shining surface, on the second segment the surface is the same as on the preceeding, the punctures closer, the rest of the segments duller, having no distinct punctuation. Apex of abdomen with brownish hairs.

Black. Claws very dark brown.

Type.—Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., August 25, 1899 (W. P. Cockerell). Paratype.—End of August 1899 (T. D. A. Cockerell), two ♀♀. Two ♀♀, *Roripa nasturtium*, June 29, 1902 (Viereck). These specimens have the pubescence paler, whitish and appressed pubescence at bases of second and third abdominal segments. One is 8 mm. long and has the labrum dull instead of shining.

Colletes paniscus n. sp. Antennæ thickened, the third joint almost twice as broad at apex as at base, longer than the fourth. Labrum convex polished with no impression medially. Sides of posterior face of metathorax finely roughened. In appearance much like *spurcus*.

♂ Length 8 mm.—Anterior margin of clypeus slightly curved in, the surface almost hidden by the long whitish pubescence, punctured rather coarsely, transversely impressed near the apical margin. Space between eye and base of mandibles a little less than the length of the fourth antennal joint. Front and top of head with rather closely arranged small strong punctures. Checks roughened. Punctures of dorsulum strong more separated on the disc than near the margins, but not so widely as usual. The surface rather shining. Mesopleuræ shining, the punctures thereon close together, shallow. The superior transverse area of metathorax indistinctly divided, the striæ irregular. Enclosure of posterior face funnel shaped, the neck broad, polished, above the area is closely regulose. Thorax covered with whitish pubescence, the enclosure of metathorax bare, pubescence nowhere thick, almost uniformly distributed. Wings hyaline, somewhat brownish. Stigma and nervures almost black, second submarginal cell almost twice as

long on the cubitus as on the radius, the first recurrent nervure received by the cell distinctly beyond the middle. The legs all covered with a whitish pubescence, that on the inner side of tarsi golden. Abdomen shining with no definite sculpture, the segments covered with a thin whitish pubescence, the fasciæ white, not heavy, that on first interrupted medially.

Type.—Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M. One ♂, June 30, 1902 (Viereck).

Colletes oromontis n. sp. Front of face and sides of thorax with white pubescence, labrum shining with a median tubercle bearing a small dent, about two striæ to each side of the tubercle, sides of posterior face of metathorax minutely roughened. Abdomen smooth. Nearest to *nigrifons*.

♀ Length 8 mm. Clypeus shining closely punctured except on the lateral and apical border where it is more longitudinally striate, apical margin truncate, a slight transverse impression near to the apical margin. Hardly any space between eye and mandible, top of the head and cheeks roughened, somewhat shining. Pubescence of face below insertion of antennæ largely black. First joint of flagellum almost as long as 2 + 3. Greater part of dorsulum shining. The punctures strong, finer and closer near the margins, larger and sparser near the middle. A fine median impressed line extends to the middle. Thorax covered with a pale, grayish pubescence, most abundant dorsally. The superior transverse area of metathorax dull, divided into narrow divisions by longitudinal striæ. Enclosure funnel shaped, the neck narrow shining, above the neck it is less shining, rugose. The enclosure bare. Wings hyaline, slightly darkened, nervures and stigma almost black, second submarginal cell almost half again as long on the cubitus as on the radius, the first recurrent nervure received distinctly before the middle. Anterior legs with a whitish pubescence, on the posterior four the pubescence is blackish, femora excepted. Abdomen shining, first segment polished, almost impunctate, second segment with fine punctures, the other segment indistinctly punctured, covered with black pubescence, the first and second segments with pale pubescence, segments with a white fascia on the apical border, beneath the abdomen has black pubescence.

Type.—Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M. One ♀, June 30, 1902 (Viereck).

Colletes brevispinosus n. sp. Labrum convex, subopaque, with a central and lateral indistinct impressions near the base. Space between eye and base of mandible less than one-half width of latter at that point. Prothoracic spines distinct.

♀ Length 11 mm.—Front with coarse almost confluent punctures, those on occiput much finer and not so closely arranged. Cheeks subopaque, roughened. Clypeus slightly impressed medially, coarsely, confluently punctures, the punctures lengthened longitudinally giving the surface a crude striate appearance. Dorsulum with a faint median impressed line, on the middle of the sides a polished line of about one-third the length of dorsulum. Punctuation on anterior half coarse and close, the surface dull, along the sides the punctures are more separated, the surface shining. From middle of mesothorax back the punctures are very sparse, the surface shining. Pleuræ closely puuctured, punctures as coarse as on

dorsulum. Scutellum shining, sparsely punctured along the middle. Superior disc of metathorax defined by a strong ridge, the pits quadrate, shining. Enclosure funnel shaped, the bowl irregularly roughened and produced, the neck perfectly smooth, highly polished. The rest of posterior face somewhat reticulately roughened, subopaque. Wings tinged with brownish, nervures and stigma dark brown almost black. Tegulæ black. Face, cheeks, pleuræ and legs in greater part with pale whitish pubescence. Thorax and head dorsally covered with dark ochreous pubescence mixed with stronger black hairs. First abdominal segment with a tuft of ochreous hairs on the sides and a few delicate whitish hairs on the convexity. The surface polished, punctures small, distinct, closely arranged. Apically the punctuation is finer and closer. Punctuation of second segment uniformly like that of apical margin of the preceding. The rest of the segments indistinctly finely sculptured. Pygidium with appressed dark brown hair. A border of fine white appressed pubescence on suture of first abdominal segment and apical margins of rest of the segments excepting pygidium.

Type, Coll. Acad. Nat. Sciences, Phila. Type, locality, Beulah, N. M. Two ♀ ♀, Aug. 25, 1899 (W. P. Cockerell), paratype end of Aug. 1899 (T. D. A. Cockerell). In sculpture and structure much like preceding species.

***Colletes bigeloviæ** Ckll. (W. P. Cockerell).

PROSOPIDÆ.

Prosopis antennata Cress.

One ♂. One ♂, June 29, 1902, *Roripa nasturtium* (Viereck).

Prosopis basalis Sm.

One ♂, July 28 (T. D. A. Cockerell). Three ♀ ♀, hill above Beulah, Aug. 19 (W. P. Cockerell), June 29, 1902, *Ceanothus fendleri* (W. P. Cockerell), Aug. 13, 1900 (W. P. and T. D. A. Cockerell).

***Prosopis rudbeckiæ** subsp. **ruidosensis** Ckll.

July 28, Aug. 18 (T. D. A. Cockerell).

***Prosopis tridens** Ckll.

Two ♂ ♂, July 28 (T. D. A. Cockerell).

Prosopis varifrons Cress.

Five ♂ ♂, Beulah and Dailey Canon, Aug. 10 (T. D. A. and W. P. Cockerell). W. of Beulah, Aug. 23 (W. P. Cockerell). End of Aug. (T. D. A. Cockerell). Aug. 17, 1901 (H. Skinner).

Prosopis rugosula Ckll.

One ♂, June 29, 1902, *Roripa nasturtium* (Viereck). The length of this specimen is 5.5 mm., and the markings are lemon color.

Prosopis digitata Ckll.

One ♂, June 29, 1902, *Potentilla* (*pulcherimum*)? (Viereck).

Prosopis nucleolus n. sp. Disc of metathorax rugose, with no large shining pits, abdomen impunctate.

♀ Length 6 mm.—Clypeus, sides of face and supraclypeal area sericeous in certain lights, opaque. The clypeus finely roughened and with sparse indistinct punctures. Sides of the face and supraclypeal area very finely striate. Front dull, finely rugulose except on the extreme sides where it is more shining, sparsely indistinctly punctured. The median line not well marked. The narrow frontal foveæ starting on a line with top of the eye, extend half way down the front, parallel with and close to the eye margin. Occipital region and cheeks dullish, indistinctly punctured. First front of flagellum distinctly longer than the second, a little longer than the third. Dorsulum covered with close shallow punctures, opaque, the median line extending half way back. The lateral lines short and indistinct. Sides of the mesothorax opaque, the shallow punctures more separated than those on dorsulum. Tegulæ with a few punctures on the anterior half. Metathorax with a well defined area, its surface rugose somewhat shining, the lower third opaque, finely roughened like the adjoining areas. Metapleuræ delicately pitted. Wings hyaline with a grayish tinge, second transverse cubitus curved, the second submarginal cell a little longer on the radius than it is broad on the first transverse cubitus. Abdomen shining, apparently impunctate, the first segment polished.

Black. A narrow bow shaped yellow mark on each side of face separated from the clypeus, extending along the eye margin, the lower point almost on a line with the lower margin of the eye, the upper point slightly directed away from the eye margin and on a line with insertion of antennæ. A well marked line on each side of pronotum, greater part of tubercles and basal third of posterior tibiæ yellow, the maculation is of a lemon yellow color.

Type, Coll. Acad. Nat. Sciences Phila. Type locality, Beulah, N. M., May 30, on *Salix* (W. P. Cockerell). In Cockerell's tables, "Entomologist," 1898, this runs to 12 a. sp. from Colorado.

Prosopis ænigmus n. sp.—Disc of metathorax rugose, with no large shining pits as in *episcopalis* to which it is related in the face marks, abdomen punctured.

♂ Length 4 mm.—Clypeus dullish and with shallow well separated punctures, the lateral face marks with closely arranged indistinct punctures. The supraclypeal mark with smaller deeper punctures than on the margins of the clypeus. Front almost uniformly closely punctured. Clypeus twice as long as broad at apex. The vertex punctured like the front, the cheeks not so strongly punctured, shining. First joint of flagellum distinctly shorter than the second. The lateral foveæ of front indistinct, close to the eye margin. Mesonotum with closely arranged distinct punctures, those of scutellum larger more separated. Mesopleuræ not so closely punctured as dorsulum. Enclosure of metathorax not so distinct, the adjoining areas rugulose. Metapleuræ shining, indistinctly sculptured. Wings tinged with gray, second transverse cubitus almost straight, the second cubital cell a little shorter on the radius than it is broad on the first transverse cubitus.

Abdomen shining and with small moderately separated punctures, sericeous on the sides and apex.

Black. Supraclypeal mark a little higher than broad at base, the lateral face marks broad bow shaped, contiguous with the lower half of the supraclypeal mark, the side of the clypeus and the eye margin, aside from the slight emargination caused by the insertion of antennæ the upper half is of the same shape as the lower half and of the same length. The clypeus is spotless concolorous with the other face marks, a pale lemon yellow. A line on each side of pronotum, a spot on the tegulæ, and the tubercles are about the same in color as the face marks. Anterior tarsi in front, middle tarsi at base, posterior tarsi on basal third yellow, apical half of tarsi brown, basal half brownish white. Flagellum beneath pale brown above dark brown.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., June 29, 1902 (Viereck).

Prosopis clandestinus n. sp.—First abdominal segment polished, apparently impunctate. "Supraclypeal mark not or hardly longer than broad."

♂ Length 5.5 mm.—Clypeus sericeous, only in certain lights, about one-half again as long as broad, dullish, punctures obscure, sparse. Sides of the face below antennæ very finely striated, and with a few obscure punctures. Front dull, closely punctured, almost rugulose, occipital region and cheeks more shining, the former with separated punctures. Scape curved outwardly, parallel, almost twice as long as broad. First joint of flagellum as long as the second, shorter than the third. Dorsulum closely punctured, dull. Pleuræ and scutellum shining, the punctures thereon separated. Postscutellum opaque, finely rugulose. Enclosure of metathorax uniformly rugose, sides of the metathorax indistinctly sculptured and smooth, opaque. Second submarginal cell a little longer on the cubitus than it is broad on the first transverse cubitus. Second transverse cubitus bent. Thorax covered with a short silvery pubescence. Abdomen shining, first segment highly polished, apparently impunctate, the other segments indistinctly punctured.

Black. Clypeus entirely, lateral face marks and supraclypeal mark a pale orange color. The lateral face marks are contiguous with the clypeus, orbits and half-way upon the supraclypeal mark, slightly notched by the insertion of antennæ, extending a short distance above the insertion of the antennæ as an acute angled mark; supraclypeal mark hardly longer than wide, notched in the middle of the upper border; a short line on each side of pronotum, part of tubercles, anterior tibiæ in front, basal third and apex of middle tibiæ, basal half (almost), and apex of posterior tibiæ and tarsi in greater part; yellow.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., June 29, 1902 (Viereck). Three ♂ ♂.

Prosopis tridentula Ckll.

One ♂, June 29, 1902, *Roripa nasturtium*, 6.5 mm. long, the type 5 mm., it differs in having the wings brownish, hind tibiæ with basal half yellow the rest immaculate, otherwise the specimen agrees very well with the description.

Prosopis citrinifrons Ckll.

One ♂, June 29, 1902 (Viereck), with face marks lemon yellow, in an authentic specimen from Vancouver the markings are a shade darker.

Prosopis wootoni Ckll.

One ♀, Aug. 7, 1902, at flowers *Solidago canadensis*, var. (Ckll.) runs to *wootoni* in the table of females, the wings of this specimen are tinged with brownish.

SPHEGOIDEA.

CRABRONIDÆ.

Xestocrabro sexmaculatus Say.

One ♂ on flowers of *Heracleum lanatum*, July 24 (T. D. A. Cockerell).

Blepharipus ater Fox.

One ♂, 5.5 mm. in length, the smallest specimen on record.

PEMPHREDONIDÆ.

Passalecus mandibularis Cress.

Two ♀♀.

Mimesa alticola n. sp.—Head above and dorsulum sparsely punctured, enclosed space on metathorax large, broad, truncate. Abdomen slender.

♀ Length 7 mm.—Clypeus somewhat produced, slightly emarginate, practically impunctate as is space beneath antennæ, shining, median raised line not extending to middle of space between anterior ocellus and insertion of antennæ, a short lateral raised line extending from each side of base of median line to base of antennæ, the triangular elevation distinct, before the anterior ocellus the sculpture is almost striato-punctate, to the side the punctuation becomes stronger and sparser, especially so in space between ocelli and eye margins, head posteriorly punctured and minutely transversely striate, cheeks obliquely striate, space between posterior ocelli less than that between them and nearest eye margin, space beneath antennæ and clypeus covered with gold tinted, appressed pubescence, though not thickly, the rest of the head with short sparse hairs, antennæ with the first joint of flagellum distinctly longer than the second. Dorsulum sparsely punctured, with a few longitudinal median striæ. Mesopleuræ finely sculptured, with sparse silvery pubescence, scutellum sparsely punctured, enclosed space on metathorax triangular, apex truncated, irregularly radiately ridged, shining, the rest of the metathorax roughly reticulated. Wings brownish, nervures and stigma fuscous, second submarginal cell narrowed at least one-half on the radial nervure, receiving both recurrent nervures, the

first recurrent nervure received one-fourth the length of the second submarginal beyond the first transverse cubitus, the second recurrent nervure received a little more than one-fourth before the second transverse cubitus. Petiole distinctly trisulcate, median sulcus deep, hardly broader at apex than at base, curved, with a few fine hairs, abdomen slender, smooth, polished, minutely pubescent, almost bare, pygidial area not pointed, with a few sparse, ill-formed punctures.

Black. Tegulæ, tarsi and claws more or less fuscous, calcariæ more or less whitish.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., Aug. 17, 1901 (H. Skinner). Belongs to group *niger*, it is related to *M. cylindricus* Fox. Described from one ♀.

Mimesa basirufus Pack.

One ♀, July 27 (T. D. A. Cockerell). One ♂, Aug. 8, 1900 (T. D. A. and W. P. Cockerell).

Mimesa punctatus Fox.

Psen punctatus Fox, ♀, Trans. Am. Ent. Soc., xxv, 9, 1898.

One ♂ specimen, Aug. 8, 1900 (T. D. A. and W. P. Cockerell). This sex was heretofore unknown. Has the same appearance in general as the female. More slender, head above antennæ with fine brownish hairs, joints two to eight inclusive of flagellum with a weak point beneath, enclosure of metathorax, duller, the striæ stronger. Length 10.5 mm.

BEMBECIDÆ.

Bembex spinolæ Lep.

Two ♀ ♀.

Bembex rubilipennis Cress.

Two ♂ ♂.

LARRIDÆ.

Tachysphex dubius Fox.

One ♂.

PHILANTHIDÆ.

Anthophilus albifrons Cress.

Philanthus albifrons Cress., Proc. Ent. Soc. Phila., v, 101, ♂ ♀.
Philanthus henricus Dunn., Can. Ent. Lond., Ont., xxx, 153, ♀.

One ♂, Aug. 16, 1900 (T. D. A. and W. P. Cockerell). The specimen was at first identified as ♂ of *henricus*, but upon comparison with types of *A. albifrons*, no specific difference could be found.

SPHEGIDÆ.

Ammophila varipes Cress

One ♀, having the apical abdominal segment black instead of red as in the type. The fifth dorsal abdominal segment is distended by a pupa case, presumably that of a species of Stylopidæ.

Ammophila strenua Cress.

One ♀, one ♂. The ♀ is 17 mm. long, length of type 22 mm. The three apical abdominal segments have a dull metallic greenish lustre, in the type the same segments have a deep blue metallic lustre. No other difference was noticed after a careful examination. The male is smaller by about 1 mm., differs only in the sexual characters. First record of the male of this species.

Ammophila extremitata Cress.

One ♂, also the first record of male of this species, head and thorax totally black, without any silvery pubescence, sculpture like that of ♀, second, third, and base of fourth abdominal segments ochreous.

Ammophila vulgaris Cress.

Two ♀, two ♂, one of the males has a black stripe dorsally on the pale segments, the specimen mentioned was collected July 28 (T. D. A. Cockerell).

Psammophila luctuosa Cress.

Ammophila luctuosa Sm., Brit. Mus. Cat. Hym., iv, 224, ♀, 1856.

Two ♀ ♀.

Psammophila cementaria Sm.

Ammophila cementaria Sm., Brit. Mus. Cat. Hym., iv, 223, ♀, 1856.
Ammophila robusta Cress., Proc. Ent. Soc. Phila., iv, 461, ♀, 1865.
Ammophila communis Cress., id., 462, ♂, 1865.

One ♀, three ♂ ♂. The ♀ and ♂, July 29, Aug. 13, respectively (T. D. A. and W. P. Cockerell).

Chalybion cæruleum L.

One ♂.

VESPOIDEA.

CEROPALIDÆ.

Anoplius æthiops Cress.

One ♀.

Anoplius scelestus Cress.

One ♀, one ♂.

Anoplius luctuosus Cress.

One ♀ (H. Skinner). One ♂ on flowers of *Heracleum lanatum*, July 24 (T. D. A. Cockerell).

Anoplius marginatus Say.

Pompilus marginatus Say, Keating's Narrat. Exped., ii, 1824, App., p. 333, n. 2, ♀.

Pompilus (*Miscus*) *petiolatus* Say, Bost. Jour. Nat. Hist., i, p. 3, 1836, p. 305, n. 8, ♀.

Pompilus tenebrosus Cress., Proc. Ent. Soc. Phila., iv, 1865, p. 453, n, 5, ♀.

One ♀, July 27 (T. D. A. Cockerell).

Agenia architectus Say.

One ♀, Aug. 8, 1900 (T. D. A. and W. P. Cockerell).

VESPIDÆ.

* **Vespa maculata** L.

May 30, on wild plum (W. P. Cockerell).

* **Vespa diabolica** Sauss.

One ☿. Hill above Beulah, Aug. 19 (W. P. Cockerell).

* **Vespa diabolica** var. **fernaldi** Lewis.

May 30, on *Ribes* (W. P. Cockerell).

Polybia flavitarsis Sauss.

One ♂. Early part of September (H. Skinner).

EUMENIDÆ.

Symmorphus meridionalis n. sp.—Compared with a topotype of *S. walshianus* Sauss'. ♀, the major differences are parapsidal furrows deeper, first abdominal segment with an indistinct transverse ridge, the space behind transverse ridge with a short raised line at base medially terminating in a groove apically, posterior margins of second, third and fourth abdominal segments roughly punctured.

Clypeus finely punctured, emargination semicircular, eyes almost contiguous with base of mandibles, margin of head continuous and distinct, a short ridge between antennæ extends from superior margin of clypeus up to a level with insertion of antennæ. Front somewhat roughly longitudinally rugose, occiput and cheeks subopaque, sparsely punctured, space between posterior ocelli equal to or a little greater than space between them and nearest eye margin. Prothorax distinctly margined, the corners prominent, the sculpture similar to that

of occipital region, dorsulum opaque, somewhat closely punctured anteriorly, an indistinct longitudinal raised line medially. The pleuræ more shining, covered with silvery hair, apparent in certain lights. Scutellum punctured, with a slight longitudinal median impression. Metathorax subopaque, the pleuræ very finely striate, having a satiny lustre. Wings yellowish subhyaline, the marginal cell brownish fuscous on margins internally, nervures dark brown, stigma paler. Abdomen sericeous, first abdominal segment behind the transverse ridge, closely, roughly punctured, basal three-fourths of second segment shining, with sparse separated punctures, apical segment almost impunctate.

Black. Clypeus and line on scape yellow, line on mandibles, spot between antennæ, spot behind the eyes, spot on each side of prothorax, spot beneath wings, an interrupted band on scutellum, apex of femora, tibiæ entirely, excepting four anterior ones, having a dark line internally, greater part of tarsi, apical margin of first abdominal segment, a broader band at apical margin of second, third and fourth and fifth abdominal segments, sixth segment with two marks; almost concolorous, of a more ochraceous color than the clypeus. Tegulæ brownish testaceous, apical tarsal joints brownish.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., Aug. 8, 1900 (T. D. A. and W. P. Cockerell).

Ancistrocerus albophaleratus Sauss.

Four ♂♂. One ♀. Three males, July 31 and Aug. 18 (T. D. A. Cockerell). One female, Aug. 16 (W. P. Cockerell).

MASARIDÆ.

Masaris marginalis Cress.

One ♀, June 30, 1902 (Viereck).

CHRYSIDIDÆ.

Olochrysis semicuprea n. s.—Head and thorax metallic green, abdomen cupreous.

♂ Length 7 mm.—Clypeus with a black shining margin slightly rounded out disc of the clypeus sparsely distinctly punctured. Face, front, occiput and cheeks with an almost uniform granular sculpture. Space between posterior pair of ocelli a little greater than that between them and anterior ocellus, also distinctly less than space between them and nearest eye margin. First joint of flagellum as long or slightly longer than two following joints united. Length of prothorax distinctly less than the length of the head, slightly impressed in a longitudinal direction medially, the sculpture coarser than that on head, mesothorax with visible parapsidal grooves, extending the whole length of dorsulum, sculpture similar to that of head. Tegulæ closely punctured. Scutellum and metanotum more coarsely pitted than pronotum, the lateral spines of metathorax flattened, blunt. First segment of abdomen granular, with sparse, well defined punctures. Second segment finely granular, with a faint longitudinal elevation. Third abdominal segment more finely granular than the preceding, broad, its apical margin semicircular, sixteen punctures in a furrow close to the margin.

Head and thorax metallic green, somewhat bluish along the sutures, legs mostly black, with metallic green reflections. Flagellum and mandibles black. Abdomen deep cupreous, with purple, greenish and yellowish reflections.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M. One specimen, July 18 (T. D. A. Cockerell). In sculpture and size this comes nearest to *optima* which, however, differs in having the length of pronotum almost equal to the length of the head, and in the uniformly different sculpture.

Tetrachysis cærulans Fabr.

Two ♂♂, one July 27 (T. D. A. Cockerell).

Tetrachrysis nortoni Aar.

One ♂, July 24, *Heracleum lanatum* (T. D. A. Cockerell).

TIPHIIDÆ.

Tiphia odontogaster n. sp.—Third, fourth and fifth ventral abdominal segments with a short tooth near the lateral margin.

♂ Length 8 mm.—Clypeus closely punctured, front with shallow punctures almost confluent, a triangular polished space directed down from the anterior ocellus. Punctures behind ocelli, smaller and more imperfect than those on front. Third joint of antennæ distinctly shorter than the fourth, the rest subequal. Prothorax margined. Punctures on pronotum like those of front, but more separated, the posterior margin, smooth, polished. Dorsulum still more sparsely punctured, scutellum with two smooth areas of small size and large punctures. Postscutellum more finely and uniformly punctured. Propleuræ on upper half almost smooth, on lower half from finely to coarsely striate. Mesopleuræ with a strong ridge, behind which the surface is regularly punctured with rather large shallow punctures. Disc of metathorax with a longitudinal enclosure, about one-half again as wide where it joins the postscutellum, which will be called the base, length of the enclosure about twice width at apex. The area strongly defined, a distinct longitudinal raised line extending along its whole length in the middle. The transverse ridge distinct, joining the lateral longitudinal ridges, making a bounded petiolarea, which is roughened, finer and more opaque on the lower half than above. Metapleura with striæ curved forward from the lateral carina to near the middle of the metapleuræ, the surface beyond roughened opaque. Wings clear, nervures very dark brown, stigma black. Basal nervure bent and thickened near the intersection of the cubital nervure. First abdominal segment strongly convex, at base with a node on each side. Polished above, the punctures rather sparse, the punctuation on the sides much closer. Second abdominal segment with well separated punctures, the rest of the segments have the punctuation closer and closer. The entire insect covered more or less with fine silvery pubescence.

Black entirely.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., Aug. 17, 1901 (H. Skinner). One ♂.

FORMICOIDEA.

MYRMICIDÆ.

Leptothorax canadensis obscurus n. subsp.—Length 2–3 mm. ☿. Clypeus longitudinally impressed medially, the impression rather broad, somewhat smooth and shining, to each side there are longitudinal well-marked striæ. Head longitudinally rugulosely striate, appearing finely dull striate under a low-power lens, hairs very sparse, mandibles striate, five toothed, apical tooth longest. Antennæ eleven jointed, scape and flagellum covered with appressed pubescence. Prothorax reticulately striate, mesothorax rather rugulosely striate closer, metathorax imperfectly reticulate, the teeth of metathorax diverging and extending a little beyond the posterior border of the metathorax, the thorax dorsally bears a few scattered, thickened hairs, sides of the thorax more closely sculptured, the mesonotum has the finest sculpture, that of the metanotum coarsest, this distinction is apparent when viewed by a hand lens. Suture between meso- and metanotum distinct though not deep. Legs very sparsely ciliate, first joint of petiole, as long as high, second joint wider than long, both dull, finely sculptured. Abdomen shining, with sparse short hairs. Head black, thorax and petiole not exactly black brownish black, abdomen black, apex of segments testaceous, Mandibles, antennæ and legs more or less dark ferruginous, part of femora and apical joints of flagellum darker than other parts.

Differs from the European *L. acervorum* by the impressed clypeus, finer sculpture and more distinct thoracic structure. This has not been compared with a specimen of *L. canadensis*, it may be specifically distinct.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., Aug. 17, 1901 (H. Skinner). Thirteen ☿.

Myrmica rubra var. **schencki** Em.

One ♂, two ♀♀, two ☿☿. The males and females are almost entirely black, in the workers the head and abdomen are darkest.

DOLICHODERIDÆ.

* **Tapinomo sessile** Say.

(Det. André) (T. D. A. Cockerell).

Liometopum apiculatum Mayr.—♀ Length 14 mm.—Mandibles sparsely punctate, flagellum with one joint longer than the following joint, apical joint excepted. Head and thorax practically impunctate, smooth and shining, sericeous, in addition the head is less and thorax more thickly covered with a yellowish brown erect pubescence. Wings missing. Scale higher than wide, width above one-half width of the scale in the middle, deeply emarginate. Abdomen shining, minutely, closely punctate, sericeous and pubescent, fifth ventral abdominal segment keeled and emarginate.

Black. Mandibles, antennæ, tegulæ, coxæ and tarsi inclining more or less to ferruginous, apical edge of abdomen partly testaceous.

FOMICIDÆ.

Camponotus herculeanus var, **pennsylvanicus** De Geer.

One ♀, twenty ☿.

Lasius niger var. **neoniger** Em.

Eight ♀♀, six ☿☿. One ♀, July 27 (T. D. A. Cockerell). The females are more robust than those of the eastern forms of *americana* Em., though approximately equal in length (8.5 mm. , the wings are more ample, extending beyond apex of abdomen for one-half their length.

Lasius umbratus subumbratus n. subsp.—Length 7.5 mm.—Head and thorax sparsely, petiole and abdomen more thickly covered with erect slender hairs, legs practically nonpilose, pale ferruginous legs, testaceous, mandibles edged internally with black, basal half of wings clouded blackish brown, nervures at base of the wing dark.

Described from one ♀, more nearly related to typical *umbratus* than either of the other known varieties.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., Aug. 17, 1901 (H. Skinner). Another ♀, July 27 (T. D. A. Cockerell).

Formica rufa var. **obscuriventris** Mayr.

Thirteen workers. The largest specimens measure 7 mm. in length, they have a darker head and thorax than New Jersey specimens, and with the erect hairs shorter and more plentiful on dorsal aspect of thorax and on head above and below. One ♀, July 27 (T. D. A. Cockerell), with wings clouded on basal half by a line on apical half.

Formica rufa var. **integra** Nyl.

Sixteen ☿☿, the largest 6 mm. in length, head and thorax, as a rule, somewhat paler than Pennsylvania specimens.

Formica pallida-fulva Latr.

One ☿ agreeing with Emery's interpretation.

Formica fusca subsericea Say.

Eight ☿☿.

Formica fusca var. **neoclara** Em.

Eight ☿☿.

Formica fusca var. **neogagates** Em.

Two ☿ ☿.

Formica fusca var. **densiventris** n. subsp.—Length 4.5–5 mm.—Underside of head without erect hairs. Head dull, dark fuscous above, paler below, scape same color as cheeks, head and thorax above with sparse few hairs, flagellum darker, especially near apex, thorax dull, dark above like head, along the suture a lateral irregular stripe and metathorax posteriorly paler, coxæ, femora and tibiæ dark like thorax above, anterior tibiæ slightly paler, but faintly shining, apexes, trochanters and tarsi paler, tarsi with sparse hairs, scale not broadened as in *subsericea*, fuscous. Abdomen dull sericeous, dorsal segments with sparse short hairs.

Black. Apical segments pale. Two ☿ ☿.

Type, Coll. Acad. Nat. Sciences, Phila, Type locality, Beulah, N. M., Aug. 17, 1901 (H. Skinner). Two ☿ ☿, head of Dailey Canon, June 26 (T. D. A. Cockerell).

The following is submitted by Prof. Cockerell:

List of ants collected at Beulah. Sapello Canon, N. M., May 3, 1902, by T. D. A. and W. P. Cockerell, and determined by Prof. W. M. Wheeler.

1. *Camponotus pennsylvanicus* DeGeer (small var.).
2. *Myrmica rubra* L., sub sp. *scabrinodis* (small dark var.).
3. *Myrmica rubra* L., sub sp. *sulcinodoides* Em. (dark var.).
4. *Formica sanguinea* L., var. *subnuda* Emery, (originally described from British America).
5. *Formica fusca* L., var. *subsericea*.
6. *Formica fusca* L., sub sp. *subpolita* Mayr, var. *neogagates* Em.
7. *Formica rufa* L., var.
8. *Lasius niger* var. *neoniger* Em.
9. *Leptothorax canadensis* Provancher.
10. *Tapinoma sessile* Say. (small var.).

PROCTOTRYPOIDEA.

SCELIONIDÆ.

Scelio ashmeadi n. sp.—Black (legs excepted), wings hyaline, faintly milky.

♂ Length 4 mm.—Head striate anterolaterally, above the middle the head is rugoso-punctate, with sparse appressed pubescence, joints of flagellum dull sculptured. Pronotum, mesonotum and dorsolum rugoso-punctate, pubescent like head, furrows on mesonotum distinct, originating near anterior margin, terminating on posterior margin. Metanotum distinctly angled laterally, impressed medially, posterior half of impression ridged longitudinally, sides of the

metanotum covered with erect, short silvery pubescence. Wings hyaline, appearing milky to the naked eye, stigma directed downward into a short oblique narrow-jointed appendage, stigma not well defined, whitish, radial nervure obsolete. Posterior border of posterior wings ciliate, the cilia longest near base, diminishing in length beyond. First dorsal abdominal segment strongly margined anteriorly, angled antero-laterally, dorsal segments longitudinally striate, space between striæ rugulose, sculpture on first segment strongest, the succeeding ones becoming less so, two apical ones rather rugose, segments four and five somewhat smoothed medially, second segment deeply impressed anteriorly, the third less so.

Black. Femora brown, base of femora, trochanters, tibiæ and tarsi pale brown, claws dark.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., Aug. 17, 1901 (H. Skinner). One ♂.

CHALCIDOIDEA.

CHALCIDIDÆ.

Chalcis ovata Say.

Three ♀♀. One July 16 (T. D. A. Cockerell).

PERILAMPIDÆ.

Perilampus sp.

One ♂.

PTEROMALIDÆ.

Trigonoderus varipes n. sp.—♀ Length 4 mm.—Face finely reticulated, the areolæ shining, metallic vari-colored, chamelion fashion, the sculpture gives the face a scaly appearance under a low power lens, clypeus longitudinally finely striate, occiput finely transversely striate. Mandibles broad, armed with four teeth on the truncate apex, the three innermost teeth close together, the outermost tooth separated from the others. Flagellum sericeous. Dorsal aspect of the thorax sculptured much like the face, finer laterally than medially, duller and darker. Mesonotal furrows originating antero-laterally curved inward, hardly reaching to the middle of one-half of the dorsulum. Wings hyaline, submarginal nervure with stiff bristles as long as the distance between one and another, stigmal vein clubbed, the knob with a small appendage, the vein itself nearly as long as the prolongation of the marginal vein on the border of the wing beyond the insertion of the stigmal vein. Abdomen acuminate, elongate, smooth and shining above, dark metallic minutely sculptured ventrally, and keeled at base, ventral slit fringed with black hair, the apical segment sparsely ciliate.

Mandibles, scape, trochanters, apex of femora, tibiæ and tarsi, more or less testaceous.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., Aug. 17, 1901 (H. Skinner). One ♀.

ICHNEUMONOIDEA.

EVANIIDÆ.

Gasteruption incertus Cress.

One ♀.

Pristaulacus occidentalis Cress.

(Det. Bradley) 2 ♂♂, June 29, 1902 (Viereck).

ICHNEUMONIDÆ.

Hoplismenus morulus var. **flavitarsis** Cress.

Trogus flavitarsis Cress., Proc. Ent. Soc. Phila., iv, p. 264. ♂ Colorado.

♀ Length 17 mm. Differs from the male by the pale annulus to antennæ, entirely black face and darker wings, in sculpture there is no distinguishable difference.

Beulah, N. M. Aug. 17, 1901 (H. Skinner). One female specimen, it is quite evident that *H. flavitarsis*, is only the western representative of *H. morulus*.

Cratichneumon acerbus Cress.

Beulah, N. M., Aug. 17, 1901 (H. Skinner). Two males.

Cratichneumon pedalis Cress.

(T. D. A. Cockerell). Beulah, N. M. One male, July 26, on flowers of *Heracleum lanatum*. Aug. 17, 1901 (H. Skinner). One female. A typical specimen having the wings fuscous as in the type of the male.

This specimen also has a trace of annulus, which is quite distinct in a Montana specimen in the collection, but liable to be entirely wanting.

Cratichneumon lætus Brullé.

Ichneumon lætus Brullé, Hym., p. 303. ♀.

Ichneumon lætus Cress., Tr. Am. Ent. Soc., i, p. 300.

Beulah, N. M., Aug. 17, 1901 (H. Skinner). One female. In this specimen the antennæ and metathorax are entirely black.

Cratichneumon cockerelli n. sp.—Much like *C. lætus*, prothorax uniformly rugoso-punctate, metathorax black, apical segments of abdomen ferruginous to testaceous in part.

♂ Length 13 mm.—Face deeply and closely punctured, especially medially, cheeks almost confluently. First joint of flagellum distinctly longer than the second, the sutures of flagellum distinct, sides of the prothorax uniformly confluently punctured, almost striate, parapsidal grooves obsolete, dorsulum closely

punctured, opaque anteriorly, mesopleuræ closely punctured, becoming confluent, on the superior and posterior margin finer and almost striate. Scutellum shining, punctures well separated. Areola of metathorax well defind, rugulose, shining, the lateral areas distinct, the areas all rugoso-punctate, post-petiole medially longitudinally striate. Second, third and fourth dorsal abdominal segments closely and finely sculptured, opaque. The apical segments shining.

Black. Face below antennæ, a line upon eye margins, a dot on scape, a dot on posterior angle of prothorax, tegulæ, a dot on pleuræ below tegulæ, scutellum, greater part of four anterior legs, tarsi excepted, basal two-thirds of posterior tibiæ, yellow. Tarsi of anterior legs reddened, tarsi of posterior legs dark. Abdomen dorsally black; greater part of second segment basally, basal half and a border laterally on the third, lateral and apical margins of fourth, fifth, yellow. Base of fourth, all but a large spot on fifth and a small spot on sixth dorsal segments ferruginous.

Related to *C. lætus* Brullé. Type, Coll. Acad. Nat. Sci. Phila. Type locality, Beulah, N. M., Aug. 8, 1900 (T. D. A. and W. P. Cockerell). One male specimen.

Cratichneumon restrictus var. **subrestrictus** n. var.—♂ Length 14 mm. Distinguished from the typical species by the darker wings, the black of abdomen confined to the petiole and the three dorsal apical segments, and the well marked, broad, black, annulus on apex of posterior femora and tibiæ.

Type, Coll. Acad. Nat. Sci., Phila. Type locality, Beulah, N. M., Aug. 17, 1901 (H. Skinner). Two male specimens.

Cratichneumon adonis n. sp.—Enclosures of metathorax not strongly defined. Face, greater part of thorax laterally and ventrally excepting sutures, and metathorax dorsally, yellow. The abdomen excepting apical segments mostly pale.

Length 15 mm.—Face closely punctured, especially medially, more sparsely on sides and on clypeus. First joint of flagellum distinctly longer than the second. Sides of the prothorax deeply concave, with distinct separated punctures, becoming closer on the border, rather striate at base. Dorsulum dull anteriorly where the punctures are very close and smaller, posteriorly the punctures become larger and well separated, the surface shining, origin of parapsidal grooves distinct. Mesopleura well rounded, the anterior ridge rather delicate though distinct. Mesopleuræ with distinct separated punctures above the middle, closer on the borders. Scutellum polished rounded, with separated punctures sparser before than behind. Margins of metathoracic areas not strongly defined, the enclosed spaces rugulose, areola large, roughened, metapleuræ punctured. Enclosed space of petiole not so strongly defined posteriorly, indistinctly sculptured, fainty striate. Dorsal abdominal segments closely, finely punctured, basal segments rather opaque, apical ones shining.

Black. Face, a band bordering the eyes a little more than half way to opex on cheeks, a band along eyes to apex internally, front of the scape, greater part of pro- and mesopleuræ excepting sutures, greater part of coxæ and trochanters, yellow, metanotum darker. Four lines on dorsulum, median ones longest,

laterals short, brownish to ochre yellow. Greater part of four anterior legs and posterior femora and tarsi ochre yellow. Posterior tibiæ yellow, apex brown. Wings subhyaline, nervrues brown, stigma testaceous. First, second and third abdominal segments ochre yellow, a pale brown band at base of third dorsal segment, fourth and fifth dorsal segments dark, with almost black to black base, apical half of sixth dorsal segment dark brown, basal half black, apex of abdomen dark brown.

Related to *C. creperis* Cress. Type, Coll. Acad. Nat. Sci., Phila. Type locality, Beulah, N. M., Aug. 17, 1901 (H. Skinner). One specimen.

Cratichneumon skinneri n. sp.—Dorsulum closely punctured, areola nearly quadrate, the posterior border not distinctly curved. Face, legs and scutellum mostly yellow. Abdomen variegated with black, yellow and ferruginous.

♂ 13 mm.—Face indistinctly rugoso-punctate medially, finely and closely punctured on the borders, clypeus more strongly punctured and sparser. Cheeks deeply confluently punctured, parts of flagellum indistinctly articulated, first joint longer than second, sides of the prothorax closely punctured above the middle, rugose below. Dorsulum closely, almost rugosely punctate, opaque, punctures distinct posteriorly, parapsidal grooves only faintly indicated. Mesopleuræ not strongly margined, anteriorly well developed, closely punctured, somewhat confluently, especially posteriorly. Scutellum closely punctured, punctures separated. Areola truncate anteriorly, the enclosed space shining, sparsely rugose. The other enclosures roughly margined, rugose shining, metapleuræ rugose punctate. Enclosed space of petiole not strongly margined, striate posteriorly. Dorsal segments two, three and four, indistinctly sculptured, rough opaque, the apical segments finely roughened, shining.

Black. Clypeus, face, a line next to margin of eyes internally, to near apex; greater part of four anterior coxæ, trochanters, femora and tibiæ, posterior tibiæ excepting a broad black annulus, a dot on posterior angles of prothorax, tegulæ, a dot below scutellum, basal half of second and third, a narrow border laterally and apically on fourth, fifth and sixth dorsal segments, yellow. Mandibles except base, all tarsi, basal half of posterior femora in part, a band on second and third, greater part of fourth, fifth and sixth dorsal segments basally, more or less ferruginous, apex of abdomen ochreous.

Related to *C. variegatus* Cr. Type, Coll. Acad. Nat. Sci., Phila. Type locality, Beulah, N. M., Aug. 17, 1901 (H. Skinner). Two specimens.

Cratichneumon patroclus n. sp.—Dorsulum finely punctured, areola broad, well defined. Greater part of legs and second and third abdominal segments ferruginous, otherwise mostly black.

♂ Length 8 mm. Clypeus sparsely punctured, punctures on face small, but separated and distinct, quite uniformly arranged, cheeks and occiput rather closely, not so distinctly punctured. First joint of flagellum distinctly longer than the second, the sutures apparent especially near apex. Propleuræ with

separated punctures, punctuation of dorsulum fine and distinct, close yet visibly separated. Anterior margin of mesopleuræ feebly defined, the mesopleuræ punctured closely below the middle, more separately above. Scutellum with fine, well separated punctures. Areola wider than long, anterior margin truncate, surface with a few rugæ, shining, the other enclosures of metathorax well defined, the areas rugose, shining, metapleuræ rugulose. Wings pale, subhyaline, nervures brown, stigma testaceous. Head, thorax and legs more or less sericeous. Area on petiole striate posteriorly. Abdomen dorsally rather opaque, second and third dorsal segments closely and minutely punctured, the other segments indistinctly sculptured, becoming smoother toward the apex.

Black. A spot on each side of clypeus, yellow, four anterior legs except coxæ and trochanters, and posterior tarsi, brownish testaceous, basal joint of posterior femora pale, basal two-thirds of posterior tibiæ ochreous. Apex of petiole, segments two, three and part of fourth ferruginous, edge of fourth segment pale.

Related to *C. cervulus* Prov. Type, Coll. Acad. Nat. Sci., Phila. Type locality, Beulah, N. M. (H. Skinner). One male.

Cratichneumon compar Cress.

John's Canon, above 10,000 ft., June 29 (T. D. A. Cockerell). One ♀.

Cratichneumon pluto n. sp.—Face and dorsulum closely punctured, metathorax distinctly areolated. Almost totally black, scutellum and part of two apical segments white.

♂ Length 9 mm.—Face produced, closely punctured and opaque medially, punctures on sides of face and clypeus more separated, the surface shining, punctures shallow and separated, dorsulum very closely punctured, especially anteriorly, mesopleuræ shining, punctures deep and well separated, areas of metathorax strongly margined, the areola about as broad as long, roughened, shining, the other areas rugoso-punctate, the superior latera area divided transversely by a distinct raised line, metapleuræ coarsely and closely punctured. Wings subfuscous, nervures and stigma dark brown. Medial area of petiole smooth and shining, with three or four punctures. Dorsal abdominal segments very closely, but distinctly punctured.

Black. A small yellow mark bordering apex of eyes. Part of anterior femora and tibiæ yellow to brown. All tarsi more or less deeply brown. Scutellum yellow, a dot on tegulæ, a mark on apex of penultimate dorsal segment and greater part of apical dorsal segment white.

Related to *C. brevicinctor* Say. Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., Aug. 17, 1901 (H. Skinner). One male.

Cratichneumon gracilicornis n. sp.—Antennæ slender, basal joint of flagellum the longest, more than four times longer than thick. Parapsides only indicated by a depression on anterior margin of dorsulum. Ridges on sides of metathorax not so distinct. Areola about as long as broad, it and the petiolar area distinctly outlined by the raised lines.

♀ Length 7 mm. Face, front and occiput finely, closely punctured, partly shining, clypeus polished, sparsely punctured. Dorsulum and mesopleuræ punctured much like face, scutellum polished, apparently impunctate. Metathorax similarly sculptured, abdomen finely punctured, apical segments highly polished. Wings subfuscous, nervures and stigma dark brown, tegulæ almost testaceous. Disco cubital nervure with a short distinct stump of a vein, areolet sessile, rhomboidal.

Ferruginous, some black sutures. Flagellum practically black, with an ochreous annulus just beyond the middle.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Head of Dailey Canon, N. M., June 26 (T. D. A. Cockerell). Might be taken for *C. petulcus* on account of ornamentation.

Barichneumon vescus Prov.

Ichneumon vescus Prov. Nat. Can. ix, 9. ♂.

Ichneumon vescus Cress. Trans. Am. Ent. Soc. vi, 163. ♂.

Beulah, N. M., Aug. 17, 1901 (H. Skinner).

Pseudamblyteles montanus Cress.

One female, having the antennæ entirely black, in a series of specimens the annulus is seen to merge gradually from prominence to obscurity.

Phæogenes beulahensis n. sp.—Greater part of insect black, legs and abdomen varied with dark ferruginous, wings subfuscous.

♂ Length 7 mm.—Clypeus polished very sparsely punctured, face somewhat convex, and closely, finely punctured medially, the punctures larger and more separated laterally. Antennæ about two-thirds as long as the entire insect, first, second and third joints of flagellum about equal in length and about twice as long as thick. Punctures separated around ocelli and on cheeks, the latter shining. Dorsulum finely sculptured anteriorly, opaque, with close, distinct punctures and shining posteriorly, lateral, longitudinal, slightly raised lines on dorsulum, highly polished. Mesopleuræ closely punctured, the impressed line distinct and extending about half-way from the anterior margin of the mesothorax. Scutellum punctured, metathorax distinctly areolated, the areola elongate, pointed above and with a base narrower than its width in the middle. The margins all well defined the areas roughened. Wings striate, though not clearly, dorsal abdominal segments more or less microscopically sculptured, with scattered small punctures, second segment dull, the others becoming more shining, apical one polished.

Black. Greater part of mandibles and base of wings yellow, border of clypeus ochreous. Scape, anterior trochanters in front, greater part of femora, tibiæ and tarsi; base and apex of femora, tibiæ and tarsi of middle legs; joint between trochanters and posterior femora, tibiæ and tarsi (more or less), base and apex of second, third, fourth and fifth abdominal segments more or less, mahogany color.

Hill above Beulah, N. M., Aug. 9 (T. D. A. and W. P. Cockerell), One female.

Type, Coll. Acad. Nat. Sci., Phila. Type locality, Beulah, N. M., Aug. 17, 1901 (H. Skinner). Six specimens, one specimen varies in having greater part of second and fifth, and all of third and fourth abdominal segments ferruginous, two other specimens show a gradation between these extremes.

Spilocryptus exareolatus n. sp.—Face opaque, dorsulum opaque and shining, metathorax indistinctly areolated, head and thorax black, legs and abdomen more or legs ferruginous.

♂ Length 7.5 mm. Clypeus indistinctly sculptured, somewhat shining, face minutely roughened, opaque, head behind ocelli and cheeks finely, indistinctly sculptured, shining. Antennæ as long as from the head to the apex of third abdominal segment, first joint of flagellum distinctly longer than the second, the second longer than the third. Head covered with fine silvery, indistinct hair. Parapsidal grooves distinct disappearing in a rugulose area on the posterior third of dorsulum, the area formed by them opaque, the space to each side indistinctly sculptured, shining. Mesopleuræ roughened, furrow indistinct, crenulate. Scutellum convex, shining. Metathorax rugulose, only the curved transverse ridge behind spiracles distinct, other ridges hardly discernable Dorsulum covered with very short, fine pubescence, that on sternum and metathorax longer. Wings subhyaline, stigma and nervures dark brown, transverse median nervure broken just above the middle, areolet large, first transverse cubitus longer than the second, abdomen finely sculptured, shining, especially near apex, with indistinct very short pubescence.

Black. Four anterior legs excepting coxæ and basal trochanter, more or less testaceous, the posterior femora and apical trochanters darker. Posterior tibiæ brown at apex paler at base. Basal tarsal joint of posterior legs brown, second, third and fourth almost white, the remaining one and claws black or almost. Apex of petiole, second, third and all but apex of fourth abdominal segments, fuscous.

Related to *S. canadensis* Prov. Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., Aug. 17, 1901 (H. Skinner).

Spilocryptus neomexicana n. sp.—Basal joints of flagellum separated by distinct sutures. Parapsidal grooves distinct, transverse raised line on metanotum distinct in middle, faint on the sides. No distinct punctuation on head or thorax. Related to *lophyri* Nort., which differs in the characters cited.

♂ Length 8 mm. Face and thorax dorsally, uniformly finely roughened, opaque. Occipital region, pleuræ and abdominal segments indistinctly, finely sculptured, more shining. Wings subfuscous, nervures dark brown, stigma paler. Areolet pentagonal, space between first and second transverse cubiti on the radial about equal to space between recurrent nervure and second submarginal cell on the cubitus.

Black. An almost continuous ring around eyes; clypeus except apical margin, base of labrum, line on superior lateral margin and inferior lateral margin of prothorax, tegulæ, base of wings, spot below, spot on epimerium, scutellum, spot on postscutellum, posterior face of metathorax, spots on coxæ, trochanters of

four anterior legs, and second, third and fourth joints of tarsi, apical margin of first abdominal; pale yellowish. Annulus of flagellum ochreous, involving about four joints, removed nearly one-third of the length of flagellum from the apex. Rest of flagellum nearly black. Part of coxæ, all of femora, tibiæ and tarsi of four anterior pairs of limbs, nearly testaceous. Part of scape, greater part of posterior limbs, and the abdomen, except black on apical margin of antipenultimate and all of two apical segments of abdomen, ferruginous. Part of trochanters, apex of tibiæ, basal and apical segments of posterior legs more or less deep fuscous to almost black.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., Aug. 8, 1900 (T. D. A. and W. P. Cockerell).

Plesiognathus fragilis n. sp.—Front polished, dorsulum polished, parapsidal grooves distinct. Mostly black, legs and a mark on abdomen pale.

♂ Length 3 mm. Face bolow antennæ hairy. Front polished with a faint indication of a median impressed line, the rest of the head apparently impunctate, polished. Cheeks with fine, short pale pubescence. Dorsulum polished, practically impunctate, the grooves strongly impressed, terminating before the posterior margin. Mesopleuræ indistinctly sculptured shining, the pleuræ separated from the sterum by a rugulose impression, narrower and more distinct posteriorly. Scutellum strongly convex. Metathorax areolated, not at all angled, the areas roughened, slightly shining. The areola rather shining, tolerably well defined, the transverse carina separating the metanotum from the posterior face distinct. The thorax almost entirely covered with pubescence much like that on cheeks. Wings hyaline, stigma triangular pale brown, nervures darker. Areolet, pentagonal, recurrent nervure received by the areolet a little beyond the middle, the disco-cubital nervure and transverse medium nervure in posterior wings not broken. Petiole almost as long as posterior femora, about twice as broad at apex as at base, shining, longitudinally sculptured, second segment about twice as broad at apex as at base, and nearly as long as broad at apex, third segment broader than long, nearly quadrate, the exposure of the rest of the segments narrow.

Black. Base of the wings and tegulæ pale brown, the four anterior legs pale almost testaceous, the trochanters and femora behind brown, posterior legs mostly brown, second dorsal segment on posterior half medially, the apical border and the third, the entire length medially rather tawny.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., Aug. 17, 1901 (H. Skinner). One male specimen.

Phygadeuon polita n. sp.—Clypeus with a few punctures, head, dorsulum and abdomen polished, areola and petiolar area confluent.

♂ Length 6 mm. Clypeus and mandibles with a few distinct punctures, face distinctly convex, medially not polished like clypeus, and with separated fine punctures, cheeks polished, sparsely punctured. Scape closely punctured, first joint of flagellum a little longer than the second. Dorsulum polished, sparsely punctured, closest anteriorly, parapsidal grooves starting strong, but short, metapleuræ sculptured much like dorsulum, the groove deep and distinct. Areola and petiolar areas confluent, bounded by a distinct carina, basally shining, apically

finely apparently transversely striate. Wings subhyaline, almost clear, stigma and nervures dark brown, base of the wings yellow. Abdomen polished, petiole about as long as posterior femora with a small oval impression near the apex.

Black. Greater part of mandibles, tegulæ, greater part of trochanters, the femora and tibiæ ferruginous, tarsi dark brown.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., August 17, 1901 (H. Skinner).

Chirotica inermis n. sp.—Head and thorax chiefly microscopically sculptured, pedicel, scape and legs, pale, almost unicolorous, otherwise mostly black. Wings ample, stigma large, triangular.

♂ Length 4.5 mm. Clypeus microscopically sculptured, somewhat shining, anterior part of face much like clypeus, the posterior part more closely sculptured, opaque. Cheeks like clypeus, head around the ocelli and front, opaque. Mandibles short and heavy, bidentate, the teeth short and equal. Sutures of flagellum indistinct. Dorsulum microscopically sculptured, dull, shining, parapsidal grooves not deep nor extending halfway back. Mesopleuræ almost smooth, shining. Metathorax gently convex, indistinctly punctured, rather opaque and with a median impression on the superior face, shining near the base. The spiracles small, round. The metapleuræ separated from the metanotum by a salient rim. Wings subhyaline, the second recurrent nervure almost at right angles with the short vein beyond its juncture with the cubitus, transverse median nervure of anterior wings interstitial with basal nervure; abcissa of discocubital nervure curved and about as long as first transverse cubitus. Stigma longer than wide, brown, the corner on the costa and near the basal nervure yellow, from here a hyaline belt extends across the cubito-discoidal cell. The cubito-discoidal nervure between the abcissa and transverse cubitus, the second recurrent nervure in the middle and at apex, with short hyaline breaks, otherwise the nervures are brown, base of the anterior wings yellow. Petiole and second and third abdominal segments minutely sculptured subopaque, the remaining segments shining. Scape, pedicel and tegulæ, testaceous. Mandibles, except basal half and teeth, the legs with the exception of coxæ, more or less ferruginous. Coxæ with an inconspicuous white spot on apex. The second entirely and the third abdominal segment, except apical margin, semi-transparent, with two parallel longitudinal brown lines in the middle and lateral pale brown blotches.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., August 17, 1901 (H. Skinner). One male specimen.

Lissonota fenella n. sp.—Head and dorsulum finely punctured, subopaque, mesopleuræ anteriorly gently convex, not divided by a longitudinal raised line; transverse carina on metanotum obscurely indicated; raised line separating metanotum from metapleura, distinct, curved, approaching close to the spiracles.

♀ Length 5.5 mm. Clypeus distinctly convex, about one and a half times broader than long, sparsely punctured; face somewhat shining on median elevation, otherwise rather opaque and indistinctly punctured. Front finely indistinctly punctured, cheeks more shining, punctured. Malar space large. Dorsu-

lum very closely, finely punctured. Scutellum convex, a little more distinctly punctured than dorsulum. Meso- and metapleuræ punctured more distinctly than dorsulum. Metanotum opaque, minutely roughened. Wings hyaline; nervures dark brown; stigma much paler, almost transparent; areolet pentagonal; second recurrent nervure received a little beyond the middle. Submedian cell much longer than the median; transverse median nervure in hind wings broken distinctly below the middle. First dorsal segment roughened somewhat like metanotum, the remaining segments less so, the apical ones polished. Ovipositor distinctly shorter than the length of the insect.

Black. Clypeus, mandibles excepting apex, a spot on each side of the head bordering apex of the eye, a line extending from the anterior margin of dorsulum to tegulæ, the tegulæ, base of wings, a spot aside and below, and the coxæ and trochanters of the four anterior legs (more or less); white. All the femora and tibiæ rufous, the tarsi, especially those of posterior legs, brownish.

Type, Coll. Acad. Nat. Sci. Phila. Type locality, Beulah, N.M., Aug. 17, 1901 (H. Skinner). One female specimen.

Lissinota electra n. sp.—Face and dorsulum almost uniformly, rather distinctly punctured. Mesopleuræ anteriorly partially divided by a longitudinal raised line; transverse carina on metanotum distinct, especially medially; raised line separating metanotum from metapleuræ indistinct.

♀ Length 6 mm. Face with close, fine indistinctly separated punctures, opaque as is also the front, cheeks more shining indistinctly sculptured; clypeus not strongly convex, moderately shining, about twice or more than twice as broad as long, with few punctures. Dorsulum sculptured much like face. Propleuræ shining, distinctly punctured. Mesopleura indistinctly shining, in greater part finely and distinctly punctured. Metapleuræ more opaque and not so distinctly punctured. Metanotum opaque, coriaceous, with a median, longitudinal impression extending almost to the transverse carina. Wings hyaline; nervures and stigma a dark brown, the cellular arrangement much like in *fenella*, the first and second transverse cubiti almost joining on the radius. First four dorsal segments opaquely sculptured, almost obscurely punctate, the apical segments shining. Ovipositor almost as long as insect.

Black. Clypeus, mandibles, except apex, spot on malar space, a line from face to, and a spot opposite, lateral ocelli, bordering on the eye, a band on margin of dorsulum, with an internal point. The tegulæ, a spot aside and below, base of anterior wings, coxæ and trochanters of four anterior legs (more or less) and a streak on mesopleuræ posteriorly; white. Otherwise the legs are (with exception of posterior tibiæ and tarsi, which are brown) rufous to ferruginous. Apex of second and third dorsal segments distinctly bordered with a narrow, pale band.

Type, Coll. Acad. Nat. Sci. Phila. Type locality, Beulah, N. M., Aug. 17, 1901 (H. Skinner). One female specimen, related to the preceding but manifestly distinct.

Meniscus occidentalis n. sp.—Face opaque, closely punctured; dorsulum shining, with separated punctures; mesopleural carina delicate; transverse carina on metathorax prominent; metanotal and metapleural carina distinct.

♀ Length 9.5 mm. Face opaque, indistinctly punctured; malar space large,

more finely sculptured than face; front opaque, more distinctly punctured. Cheek more shining, with fine separated punctures, especially above. Clypeus shining, with a few distinct punctures. Dorsulum closely, distinctly punctured and subopaque anteriorly, posteriorly the punctures are more separated, the surface shining. Punctures on mesopleuræ well separated above, close below. Scutellum distinctly punctured; metapleuræ, finely, closely and uniformly punctured. Metapleuræ with large separated punctures on a shining surface, on each side the margins rugulose, medially rugose. Wings hyaline with a dark cast. Nervures and stigma dark brown. Transverse median and basal nervures interstitial, second recurrent nervure received by the areolet far beyond the middle, areolet almost a right-angled triangle. First dorsal segment somewhat coarsely, longitudinally sculptured, subopaque, the remaining segments subopaque, more moderately sculptured, apical segments almost polished.

Black. Clypeus dirty yellow, a spot on mandibles, a line from face to front bordering the eyes; yellow. Femora, tibiæ, and all dorsal segments except basal part of the first, and a short black lateral line on apical half of one, two and three; ferriginous. The tarsi, especially those on posterior legs, brownish.

Type, Coll. Acad, Nat. Sciences, Phila. Type locality, Beulah, N. M., Aug, 17, 1901 (H. Skinner).

Bathycetes nidia n. sp.—Face and thorax finely punctured, metanotum coriaceous and uniform, ridge separating it from the metapleuræ prominent.

♀ Length 10 mm. Face and clypeus fused, the former convex, medially separated from the clypeus by a kind of excavation; clypeus with a few distinct punctures, the face with very small punctures, larger and wider apart on the borders, but so close on the elevation as to give an opaque appearance; front shining, sparsely punctured. Cheek almost polished, indistinctly punctured. Dorsulum faintly impressed anteriorly, more distinctly raised longitudinally, closely punctured, subopaque. Mesopleuræ with the anterior corner formed by a distinct though slender longitudinal carina, with close small punctures almost uniformly arranged over the whole surface, which is shining. Metanotum opaquely sculptured laterally, obscurely, transversely, stiate and shining, medially. The raised line separating the metapleuræ from the metanotum curved, not gently angulate near the spiracles, the metapleuræ sculptured much like the mesopleuræ. Wings hyaline with a brownish cast, nervures chiefly brown, stigma paler. First dorsal segment somewhat shining, microscopically sculptured, more roughened on the sides, spiracles somewhat raised. The rest of the dorsal segments uniformly finely sculptured, the apical ones especially shining. Ovipositor about as long as distance from scutellum to apex of abdomen.

Black. Border on clypeus, madibles except apex, a line on anterior lateral margin of dorsulum, tegulæ, a spot aside and a line below base of the wings, part of four anterior coxæ and trochanters and extreme base of posterior tibiæ; yellow. Anterior pair of legs (excepting apical tarsal joint and claws which are brownish), middle pair of legs (excepting all tarsal joints, which are more or less brown), posterior coxæ and trochanters entirely, and the femora interiorly; more or less rufous. The posterior tibiæ and tarsi are deep brown. The flagellum especially near the apex brownish.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah. N. M., Aug. 17, 1901 (H. Skinner). Aug. 8, 1900 (T. D. A. and W. P. Cockerell). Closely related to *Bathycetes scutellaris* Cress. (*Lampronata*) from which it is superficially separated by the comparative, paucity of yellow markings, especially by the abscence of yellow on mesopleuræ, and on the face, also by the darker antennæ and the abscence of scutellar mark, though one of the specimens of this species has the scutellum and base of mesoplurae somewhat dark ferruguous. Structurally this species is different by the curved carina on metathorax, which in *scutellaris* in appreciably angular near the spiracle, and by the more uniform and moderate sculpture of the metanotum, which in *scutellaris* has a medial longitudinal area rather coarsely rugulose.

Harrimaniella ariel n. sp.—Head indistinctly punctured, opaque; dorsulum shining, punctures separated, metathorax regulose, transverse carina strong, median longitudinal carinæ indistinct.

♂ Length 10 mm. Clypeus with a few strong punctures, somewhat shining. Face closely punctured almost shining, front more closely punctured, opaque. Cheeks impunctate on the eye margins, distinctly punctured posteriorly; malar space finely punctured, opaque. Mandibles shining, punctured. Dorsulum shining, distinctly punctured, and closely, on the anterior and posterior margin the punctures are closer and smaller making the surface opaque. Metapleuræ closely and distinctly punctured above, regulose below. Punctures on metapleuræ distinct, somewhat finer and closer than on dorsulum, especially so near the borders. The longitudinal carina on mesopleuræ, strong, terminating abruptly about half way up. Scutellum uniformly punctured. Metanotum rugulose somewhat shining, the median longitudinal carinæ crude and poorly defined. The transverse carina strong, raised line separating metanotum from the pleuræ distinct though slender. Metapleuræ closely punctured, subopaque. Wings hyaline with a dark cast. The basal half of the side of the areolet nearest the apex of the wing, a short distance on the discocubital nervure beyond the middle, and the second recurrent nervure hyaline; nervures dark brown, stigma paler. The costa and other nervures near base of the wing pale to testaceous, the extreme base yellow. First dorsal segment coriaceous, distinctly punctured near apex, laterally. The spiracles not strongly produced the other dorsal segments almost smooth.

Black. Mandibles excepting apex, clypeus, a bifurcate mark on each side of face, a triangular mark on each side of dorsulum anteriorly, greater part of coxæ and trochanters, excepting posterior pair; yellow. Femora, tibiæ and tarsi of four anterior legs; more or less ochraceous. Greater part of posterior femora and and tibiæ ferruginous. Apex of the first, the second, third, fourth entirely and almost all of fifth dorsal segments; brownish red.

Type, Coll. Acad. Nat. Sciences. Phila. Type locality, Beulah, N. M., Aug. 17, 1901 (H. Skinner). Described from one male. Related to *Harrimaniella varia* (Cress).

Harrimaniella minor n. sp.—Face opaque, finely punctured, dorsulum with poorly defined parapsidal grooves, not extending to the middle, more shining than face and more distinctly punctured, metanotum rugulose, transverse carina distinct, the longitudinal carinæ imperfect.

♂ Length 5 mm. Face indistinctly punctured, cheeks obscurely sculptured, shining, clypeus somewhat shining. Dorsulum punctured, the space between the parapsidal grooves more opaque and closely punctured than the rest of the mesonotum. Mesopleuræ closely and distinctly punctured, especially in the middle, the anterior longitudinal carina poorly defined, almost obsolete. Metanotum with two crude longitudinal carinæ, the space beneath the transverse carinæ somewhat coarsely radiate stiate, metapleuræ opaque, finely sculptured, separated from the metanotum by a distinct curved carina which falls a little below the spiracles. Wings hyaline with a dark cast, nervures dark brown, stigma pale brown, areolet petiolate, the second recurrent nervure joining it beyond the middle. First abdominal segment (excepting at apex where it is comparatively smooth), opaque and somewhat longitudinally rugulose, the following segments becoming more finely sculptured and shining, the apical ones being practically impunctate and polished.

Black. Clypeus, mandibles (excepting apex), a triangular spot on face extending upward opposite the middle of the eyes, a somewhat similar mark pointed inwardly on the anterior lateral border of the dorsulum, tegulæ, a spot aside of and below base of wings, a line on inferior margin of propleuræ, coxæ and trochanters of four anterior legs; yellow. Posterior coxæ and part of trochanters black, the legs are otherwise rufous to ferruginous, excepting a black line on posterior femora, and the brown to brown-black color of the tarsi of posterior legs and claws of four anterior ones. Apex of first basal, apex of second and third, and apex of fourth abdominal segments ochreous to ferruginous.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., Aug. 17, 1801 (H. Skinner). One male specimen. This species is related to *Harrimaniella pleuralis*, from which it is distinct, by its smaller size and rugulose metathorax.

Rhyssa skinneri n. sp.—Face rugulose; mesonotum almost uniformly transversely stiate, the striæ not appreciably gibbose. Raised line separating metanotum and pleuræ, poorly defined, becoming obsolete below the spiracles

♀ Length 23 mm. Face somewhat elevated medially, the elevation rather longitudinally rugulose, sides and anterior margin of the face polished and moderately sparsely punctured. Clypeus highly polished, distinctly produced into a point medially, and with a row of deep punctures. Cheeks polished, sparsely punctured. Propleuræ polished almost impunctate. Dorsulum transversely stiate, the stiæ delicate but well defined posteriorly. Carina on anterior half of mesopleuræ becoming indistinct half way up on the pleuræ, strongly striato-punctate before the carina; the inferior half of the pleura rather rugoso-punctate, the superior half, highly polished. Scutellum flattened, transversely striate. Metanotum with a slight median longitudinal impression, delicately transversely sculptured, laterally shining, rugulose; metapleuræ polished, sparsely punctured, rugulose on the superior margin. Wings hyaline with a brown cast, nervures

and stigma dark brown, second recurrent nervure interstitial with the second transverse cubitus. Dorsal abdominal segments finely transversely sculptured, having a satiny lustre. Ovipositor about 29 mm. in length.

Black. A line from malar space to apex of the eye, a band on the superior border of the propleuræ, a spot below on the tubercle, a spot on anterior coxæ, greater part of tegulæ, a large spot beneath, a small spot on mesopleuræ, a spot on medial coxæ, a short line to the side and apex of first, second, third, fourth, fifth and sixth, and a lateral line on seventh dorsal segments; white. Greater part of four anterior legs (excluding coxæ) ochraceous. Apex of first, all of the second trochanters and the femora of posterior pair of legs ferruginous; the tibiæ and tarsi dark brown.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., Aug. 17, 1901 (H. Skinner). One female specimen, closely related to *R. persuasoria L.*, but distinguished by the difference in sculpture, very distinct in coloration.

Theronia fulvescens var. **mellipennis** n. var.

♀ Length 10 mm. Face shining, finely rugulose medially. Wings strongly yellowish.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., Aug. 17, 1901 (H. Skinner). One ♀.

* **Pimpla atrocoxalis** Cress.

(Det. Ashm.) (T. D. A. Cockerell).

Pimpla neomexicana n. sp.—Clypeus distinctly impressed; parapsidal grooves almost obsolete, metanotum not areolated, truncate behind, the rim not salient. Ovipositor equal to the length of the insect.

♀ Length 8.5 mm. Face convex, with distinct, separated punctures, becoming smaller and obsolete on the margins. Cheeks shining, apparently impunctate. Dorsulum with sparse, minute, indistinct punctures, polished especially near the posterior margin. Parapsidal furrows not strongly defined, more like a narrow longitudinal depression, not extending to the middle of the dorsulum. Mesopleuræ almost impunctate, polished; the anterior longitudinal carina delicate. Scutellum polished. Metanotum polished, sparsely punctured, with a longitudinal median impression, not extending to the transverse carina. Metapleuræ, posterior wings, a transverse line on scutellum, postscutellum and metanotum, like mesopleuræ, separated from metanotum by an imbedded carina. Wings hyaline, with a dark cast; nervures dark brown; stigma paler; areolet sessile; the cubiti almost uniting on the radial nervure. First abdominal segment with a distinct longitudinal carina laterally, extending almost to the apex, polished and sparsely punctate, with rather small punctures. Second dorsal segment impressed, polished and bearing large sparse punctures; the following dorsal segments (the apical ones excepted) all polished, impressed, more finely and closely punctured; the apical segments practically impunctate, shining.

Black. Greater part of mandibles, a narrow interrupted line on inner orbits, the superior margin of pleuræ, tegulæ, a spot beside and beneath, a spot beneath

also the apical border of all but basal and two or three apical dorsal segments (more or less interrupted laterally), white. Part of the two apical segments pale. Dorsulum partly brownish; scutellum, mesopleuræ and ovipositor more ferruginous. Four anterior legs excepting tibiæ and tarsi testaceous, marked with white; the tibiæ whitish with a brown stripe; tarsi whitish, more or less marked with brownish. Posterior legs darker testaceous, excepting tibiæ, which are almost wholly brown, with a white stripe; tarsi brown.

Type, Coll. Acad. Nat. Sciences. Phila. Type locality, Beulah, N. M., Aug. 17, 1901 (H. Skinner). One specimen, related to *Pimpla notanda* and *petulca*.

Pimpla pterelas (Say ?) Walsh.

Pimpla [*pterelas*] Walsh, Tr. St. Louis Ac., iii, 133, ♀.

Pimpla pterelas Say (*Ichneumon*) Cress., Syn. Hym., p. 217.

There are specimens of both sexes in the Coll. Am. Ent. Society from Pennsylvania, New Jersey, Illinois, Massachusetts. Two specimens from Pennsylvania vary in maculation of posterior legs, the tibiæ and tarsi in one specimen being almost unicolorous, rufous, in the other annulate with dark brown and white, in this respect the Beulah ♀ specimen agrees with the latter, though the antennæ are entirely black, however in the male specimen from Beulah the antennæ are inclined to brownish. The male of this species is readily assigned, having practically the same scheme of sculpture and coloration as the ♀. One ♀ and one ♂.

Glypta areolata n. sp.—Face shining; parapsidal grooves distinct anteriorly, disappearing among punctures near the middle of the dorsulum; metathorax with the areola and petiolar area united, somewhat diamond shaped.

♀ Length 6.5 mm. Face sparsely punctured, longitudinally elevated in the middle, a short carina extending down from the antennal socket, cheeks shining, indistinctly sculptured, clypeus subopaque. Dorsulum closely and distinctly punctured, opaque medially in the posterior half of the mesonotum, otherwise the surface is sparsely to finely punctured and shining, pro- and mesopleuræ polished, the latter sparsely punctured, the longitudinal carina of mesopleura distinct, the space in front excavated. Metanotum shining and covered with fine sparse punctures, the carinæ well formed, a transverse lateral carina extending from middle corner of the diamond to a poorly-defined carina on the side of the metathorax, above the spiracles the metapleuræ are more closely punctured, the separating carina curved and distinct. Wings hyaline, with a dark cast, nervures dark brown, stigma very pale brown. First dorsal segment with two longitudinal carinæ, extending a little beyond the middle, sides strongly punctured, confluently on posterior half, polished at or near the middle, with a transverse punctured impression before the apex, the second, third and fourth dorsal segments similarly sculptured, and with diagonal impressions,

forming a triangular space, the greater part of which is polished, otherwise closely punctured, subopaque, the apical segments almost impunctate, polished; ovipositor somewhat longer than abdomen.

Black. Clypeus, mandibles excepting apex and apical margin of third dorsal segment, cream color. Margin of propleuræ, tegulæ, base of wings, a spot on scutellum behind, a spot on postscutellum, edge of apical dorsal segments and apex of hypopygium, white. Dorsulum, greater part of mesopleuræ, scutellum, metapleuræ and metanotum, more or less ferruginous; anterior coxæ whitish, middle coxæ pale testaceous, posterior coxæ darker testaceous. Legs beneath whitish, above and tarsi entirely brownish.

Type, Coll. Acad. Nat. Sci., Phila. Type locality, Beulah, N. M., Aug. 17, 1901 (H. Skinner). Described from one female specimen.

Ophion bilunatus Say.

John's Canon above 10,000 feet. June 29 (T. D. A. Cockerell).

Nototrachys reticulatus Cress.

One ♂.

Exochilum varicolor n. sp.—Parapsidal grooves only indicated by a slight depression, thickly punctured; the longitudinal carina on the anterior part of mesopleura short, somewhat distant from the pro-mesopleural suture; metathorax distinctly excavated between the neck and insertion of coxæ.

♂ Length 15 mm. Face with coarse, close and confluent punctures, shining; clypeus shining, with a few large deep punctures, anterior margin with a row of fine separated punctures. Cheeks finely, closely punctured. Dorsulum anteriorly and posteriorly medially more or less closely, coarsely punctured, the sides polished, with smaller, regular, well-separated punctures, mesopleuræ almost uniformly, closely, coarsely punctured. Metathorax dorsally distinctly reticulate, somewhat concave, with curved, poorly-defined transverse carinæ near the neck, the raised sides with irregular, crude, longitudinal carinæ, the sides of the mesonotum not so distinctly reticulate, the mesopleuræ opaque, rugulose, the suture hidden. Wing transparent, faintly yellowish fuscous. Stigma and costa yellowish, nervures brown. Head and thorax covered with fine greyish pile, sparsest and longer on metathorax and on pleuræ. First two segments of abdomen polished, the remaining segments dullish sericeous.

Black. Antennæ somewhat ferruginous. Face, clypeus, labrum, part of scape, scutellum, and four anterior legs, excepting coxæ above, almost entirely yellow. Trochanters, base of femora, about two-thirds of tibiæ basally and tarsi; yellow, ochreous, rufous and ferruginous. First, second, third, fourth and part of fifth abdominal segments ferruginous, the second with a black line dorsally; the meso- and metapleuræ are liable to have ferruginous spots.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., Aug. 17, 1901 (H. Skinner). Evidently related to *E. occidentale* Cress., from which it differs in size, structure and coloration. Two male specimens.

Limnerium obscuripes n. sp.—Face and dorsulum opaque; longitudinal ridge on mesopleuræ distinct; parapsidal furrows absent; metathorax imperfectly areolated. Areola and petiolar area not separated by a carina.

♀ Length 7 mm. Face finely indistinctly sculptured, the tegument mostly obscured by silver pubescence, cheeks more shining. Dorsulum medially anteriorly, finely, obscurely sculptured, posteriorly rugoso-punctate sides, somewhat shining, finely, closely punctured. Mesopleura more or less shining, more closely punctured below than above the middle. Metathorax with the basal area narrow, much longer than wide, the areola longer than wide, the petiolar area widening promptly. Lateral area not divided, separated from the pleural area by a distinct carina, mesonotal mesopleural carina distinct, areas all opaque, minutely granular. Wings transparent, with a dark cast, nervures dark brown, stigma paler, cubiti uniting on the radial nervure, second recurrent nervure received beyond the middle of the areolet. Abdomen opaque to subopaque, apical segments considerably inflated; ovipositor exerted, hardly one mm. in length.

Black. Mandibles a dirty yellow, trochanters of four anterior legs much the same color; anterior femora, tibiæ and tarsi, median and posterior tibiæ and tarsi obscurely colored, from dark ferruginous to brown. Greater part of the third segment ferruginous; part of the fourth segment ferruginous to testaceous.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., August 17, 1901 (H. Skinner). Two female specimens.

Limnerium australis n. sp.—Face and dorsulum opaque, the latter with a median longitudinal impressed line, the longitudinal carina on mesopleura prominent. Metathorax almost without raised lines

♀ Length 5 mm. Face indistinctly punctured, clypeus more shining, cheeks dull shining. Dorsulum finely obscurely sculptured, parapsidal grooves absent. Mesopleuræ shining on the upper half, obscurely sculptured and opaque on the lower half, a short impressed line extending backwards from the longitudinal carina. Metathorax with a broad basal area, an oblique line directed from each posterior corner, an indistinct line running from the end of this line to the imperfect lateral longitudinal line, the apex of the metanotum with a lateral short line, mesopleura separated from the mesonotum by a moderate raised line. Metathorax opaque, indistinctly and finely sculptured. Wings transparent, with a dark cast, nervures dark brown, stigma pale brown, areolet distinctly petiolate, the petiole shorter than either cubitus, recurrent nervure received by the areolet before the middle. Petiole of abdomen narrow and smooth, suddenly dilated beyond the middle. Ovipositor about one-third the length of the abdomen.

Black. Mandibles (excepting apex, which is brownish), second trochanter of anterior and middle legs, base of wings and part of tegulæ, greater part of abdomen ventrally, yellow. Anterior femora except base, tibiæ, tarsi, middle femora except base, more or less dark ferruginous; middle and posterior tibiæ dirty whitish above, excepting at base and apex.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., August 17, 1901 (H. Skinner). One female.

Limnerium tæniolata n. sp.—Head and dorsulum opaque; parapsidal furrows well impressed; areola almost quadrate, a little wider than long; areolet petiolate.

♂ Length 5 mm. Face indistinctly, finely sculptured, the silvery pubescence not heavy, sculpture of front coarser, cheeks more shining. Parapsidal grooves not clearly marked, more like a roughened impressed line, disappearing near the middle of the dorsulum among the coarsest sculpture thereof, the sculpture of the sides similar to that of the anterior one-third of the dorsulum, fine, indistinct. Mesopleuræ finely closely roughened, opaque on the lower half, less closely sculptured and more shining above. Areola well defined, comparatively small; the lateral area divided by a distinct transverse carina extending across from below the middle of the areola. The petiolar area extending from side to side at the base. The surface of the metathorax rugulose. Wings transparent, with a dark cast, nervures darker than the stigma, which is pale brown, second recurrent nervure received by the areolet at about the middle. The posterior half of the petiole about twice as wide as the anterior half.

Black. Trochanters of four anterior legs, part of anterior coxæ and mandibles, yellow, otherwise the four anterior legs are rufous; second trochanter of posterior legs yellow, the femora ferruginous, apex of the second, a wide band on apex of third, a wider band extending along the lateral margin of the third dorsal segment somewhat orange-rufous; the fifth dorsal segment at apex, and especially to the sides, brownish. The venter yellowish.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., August 17, 1901 (H. Skinner). One male. This might be taken to be identical with the description of *L. flavicincta* Ashm. as far as it goes, it does not mention the sculpture of metathorax which furnishes important and reliable characters. However, it does differ in size and some slight color marking, and I believe it to be distinct.

Cidaphurus spinosus Cress.

One male.

Cidaphurus borealis Cress.

One male, July 27 (Ckll.).

Mesochorus agilis Cress.

One female.

Mesochorus areolatus n. sp.—Face longitudinally raised medially; mesonotum with deep parapsidal furrows. Metathorax with the areola and basal area united, almost quadrate, large Petiolar area large, almost as broad as long.

♀ Length 3.5 mm. Head, dorsulum and mesopleuræ polished. Metathorax uneven, but shining, the carinæ forming the lateral and posterior boundaries of

the areola and those defining petiolar area strong. Wings transparent, with a dark cast, nervures dark brown, stigma large, pale brown, areolet sessile, narrow, almost a perfect oblong. Petiole sculptured, subopaqe, the spiracular region distended, at apex not twice width of base, the rest of the segments becoming impunctate and polished. Ovipositor almost half the length of the abdomen. The entire insect is covered more or less with sparse white hairs.

Black. Tegulæ and four anterior legs testaceous, posterior legs darker than the anterior ones, coxæ and femora partly, tarsi entirely, brownish. Second and third segments somewhat brownish, apex of second segment testaceous, venter mostly testaceous.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., August 17, 1901 (H. Skinner).

Porizon canaliculatus n. sp.—Parapsidal furrows indicated by moderate opaque depressions; mesopleuræ with a curved impressed line; metathorax with a channel (in place of basal and superior areas), which is connected with the petiolar area.

♂ Length 5 mm. Clypeus shining, with separated punctures, face more opaque, very finely, closely punctured, space between lateral ocelli and eyes and cheeks polished, punctured. Dorsulum opaque, finely sculptured, a space in the middle of posterior half, more coarsely sculptured, on the lateral border of posterior half shining and distinctly punctured. Scutellum with lateral margins Mesopleuræ with a curved impressed line extending from near insertion of median coxæ to the middle of the anterior margin, mostly shining, somewhat indistinctly punctured. Wings transparent, faintly infuscated, stigma dark brown, nervures paler, areolet open, pentagonal. Metathorax with a narrow channel, defined by two parallel coarse ridges extending halfway down, where it unites with the petiolar area, which broadens out to the width of the metathorax at base, the channel with a few transverse rugæ, metanotum rugose, shining. Mesopleuræ separated from metanotum by a raised opaque line, the sculpture finely rugulose, opaque, abdomen polished. Petiole slender, not much broader at apex than at base, abdomen about twice as long as petiole.

Black. Posterior tibiæ, second trochanter and part of second and third abdominal segments more or less ferruginous, anterior legs excepting coxæ and trochanters, femora and tibiæ of median legs paler, median and posterior tarsi brownish.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., August 17, 1901 (H. Skinner). The paratype has the face more shining and the metathorax more coarsely rugose, the ridges less perfect.

BRACONIDÆ.

Anarcha micans n. sp.—Face below insertion of antennæ raised longitudinally into a rounded carina. Mesothorax not sculptured, with a longitudinal median sulcus posteriorly.

♀ Length 3.5 mm. Most of the head highly polished, face shining, obscurely

sculptured. Dorsulum polished, parapsidal furrows deep, terminating a little before the middle, the longitudial sulcus which originates near the centre of the dorsulum extends backwards, becoming narrower and entering a transverse excavation on the posterior border of the mesonotum, this excavation has a longitudinal raised line medially. A few small punctures are scattered around the border of the sulcus. Mesopleuræ shining, with a wide transversely wrinkled channel which terminates as a line near the posterior border of the mesopleuræ; metathorax shining, coarsely rugose, with a longitudinal, median, opaque, poorly-defined, fingerlike impression on the basal half. Wings transparent, infuscated, stigma and nervures unicolorous, dark brown, second submarginal cell on the cubitus longer than the first, on the radius shorter than the first cubitus, but longer than the second. First joint of abdomen dorsally, longitudinally striate, satiny, the rest of the segments polished.

Black. Femora ferruginous, more or less brown at apex, the tibiæ brownish-ferruginous, tarsi brown.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., August 17, 1901 (H. Skinner). One specimen. This coincides with *Alysia fossulata* Prov. in regard to the remarkable impression on mesonotum.

Meteorus agilis n. sp.—Parapsidal grooves deep, converging, disappearing in a rugulose area a little behind the middle of dorsulum. Metathorax rugose.

♀ Length 4 mm. Ovipositor 2.5 mm. Clypeus convex, impressed within, anterior margin shining, face somewhat shining, indistinctly punctured, front and cheeks apparently impunctate, polished. Dorsulum apparently finely punctured, shining. Mesopleuræ somewhat rugulose above and below the middle, where they are polished, a finely rugulose track extending from a little below the anterior middle to the posterior border near medial coxæ, this is not clearly defined. Metathorax rugulose, though not coarsely, with a faintly defined line on the superior half, medially. The metapleuræ not separated from the metanotum. Wings hyaline, stigma dark brown, with one corner pale, the nervures about the same color as stigma. Submedian cell longer than median, but not as much as the length of the transverse median nervure. Second abcissa of radius a little longer than twice the length of the first abcissa, the first transverse cubitus about as long as the first and second abcissaa of radius united, the second cubital cell on the cubital nervure as long as first transverse cubitus, the second transverse cubitus as long as the second abcissa of radius. Petiole finely rugulose, the rest of the segments polished.

Black. Scape, clypeus, base of propleuræ, tegulæ and base of wings somewhat ochraceous-rufous, mandibles, excepting apex, four anterior legs, and all all the coxæ brownish testaceous, the posterior femora and tibiæ darker, at apex brown, tarsi dark brown. Second abdominal segment somewhat brownish.

♂ A little smaller than the female, almost identical in structure and coloration, differing chiefly in the less close sculpture of metathorax and in the more plainly defined longitudinal raised line.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah,

N. M., August 17, 1901 (H. Skinner), Three females, one male. The metathorax is subject to slight structural variation, in the paratypes the sculpture is somewhat coarser and the raised line absent.

Meteorus mellinervus n. sp.—Face subopaque; parapsidal grooves almost obsolete; metathorax with a delicate median raised line. First abdominal segment polished.

♀ Length 3 mm. Ovipositor somewhat shorter than the abdomen. Face and clypeus indistinctly sculptured. Cheeks polished. Dorsulum shining on the borders, a quadrate space in the centre rugulose-opaque. Mesopleuræ mostly polished, almost impunctate, with an oblique, delicately defined, rugulose impressed track. Metathorax moderately rugulose, the raised line extending from apex to base. Mesopleura visibly separated from metanotum, less coarsely sculptured. Wings hyaline, faintly yellowish, stigma pale testaceous, nervures darker, transverse median nervure received a little beyond the basal nervure, almost interstitial. Second abcissa of radius hardly twice the length of the first abcissa, the first cubital nervure about as long as the first and second abcissa united, the second cubitus a little longer than the second abcissa of radius, the second abcissa of cubitus a little shorter than the first cubital nervure. First abdominal segment obscurely, finely, longitudinally striate, all the segments polished.

Head more or less dark ochraceous-rufous, apex of mandibles, spot between ocelli, dark brown. Mesonotum colored almost like head, except laterally, where it is almost black, pleuræ various shades of brown, metapleuræ partly dark brown, metanotum entirely, almost black. Segments two and three more or less dark testaceous to brownish. Apex of abdomen pale, before the apex brown. Coxæ, trochanters, femora and tibiæ pale, somewhat testaceous, tarsi darker.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., August 17, 1901 (H. Skinner). One specimen.

Chelonus sericeus Say, ♀.

Nine specimens, one July 27 (T. D. A. Cockerell).

Chelonus filicornis Cam.

One ♀.

Chelonus australis n. sp.—Clypeus and scutellum shining, otherwise opaque. Spines of metathorax short, blunt.

♂ Length 4 mm. Clypeus closely punctured, slightly impressed medially. Face transversely rugose. Cheeks indistinctly sculptured. Head transverse. Dorsulum rugoso-punctate, somewhat smooth on the sides posteriorly. Mesopleura more finely sculptured. Mesothorax rugose, with two widely separated, crude, longitudinal carinæ. Metapleuræ more distinctly punctate than mesopleuræ. Wings subhyaline, stigma almost black, basal nervures pale, otherwise the nervure are light brown. Space between the basal and transverse median nervures on the medial nervure greater than the length of the first abcissa of

the radius. Abdomen about twice as long as broad across the middle, rugulose from striate on basal half to finely rugulose on apical half.

Black. Anterior femora, excepting base, apex of median femora, the four anterior tibiæ entirely, and posterior tibiæ with a broad annulus rufous to ferruginous. Tarsi dark brown to black. Abdomen with a yellowish spot bordering on the lateral edge not far from the base.

Related to *iridescens*. One specimen. Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., August 17, 1901 (H. Skinner).

Cremnops hæmatoides Brullé.

Two ♀♀. One July 29 (T. D. A. Cockerell).

Agathis parvus n. sp.—Metathorax with two longitudinal carinæ, the space between narrow and rugulose. Second abdominal segment with a semicircular disk at base, defined by impressions.

♀ Length 3.5 mm. Head entirely polished, apparently impunctate, length of clypeus less than length of malar space. Antennæ covered with a very short pubescence, the joints not easily distinguished. Dorsulum polished. Mesopleuræ polished, with a deep oblique fovea. Metathorax on disc laterally with a polished space, otherwise rugulose. Areolet poorly triangular, the cubiti not exactly contiguous on the radius. Space between basal and transverse medial nervure on the medial nervure a little greater than the length of first abcissa of radius. Wings subhyaline, stigma and costal nervure almost black, nervures pale brown, those on basal half of wing testaceous. Abdomen polished, basal segment indistinctly sculptured, ovipositor one-half again as long as abdomen.

Black. Apical half of anterior femora, apex of median femora and the four anterior tibiæ entirely, varied from brownish-rufous to brown, posterior femora partly dark brown, the tibiæ with a brownish annulus medially.

♂ Length 3.5 mm. Differs only in the less defined longitudinal area of metathorax, the more truly triangular areolet and lighter markings of legs.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., Aug. 17, 1901 (H. Skinner). Six specimens, two ♀♀, four ♂♂. From the series at hand this appears to be a constant species in structure and coloration.

Microdus meridionalis n. sp.—Metathorax with all ill-defined longitudinal, narrow area; second and third abdominal segments with impressed lines.

♂ Length 3.5 mm. Head polished, face indistinctly sculptured. Parapsidal groove only defined anteriorly for a short distance, a short longitudinal impression extending back from the centre forming a deep dent. Metathorax with two poorly-defined longitudinal lines, space between above the middle very narrow, below diverging until twice broader at base than at apex. The space between the carinæ rugulose, a small smooth area to each side, otherwise rugulose. Wings hyaline, with a dark cast, areolet triangular, space between basal and trans-

verse medial nervure on the median nervure less than the first abcissa of radius. First abdominal segment almost longitudinally rugulose. The second segment with oblique impression, making an almost triangular enclosed space on base of the segment. Third segment with a curved impressed line, making a crescent shaped enclosed space at base of the segment, beyond the last-mentioned segment the abdomen is polished.

Black. All femora excepting at base, brownish-rufous, the four anterior tibiæ in greater part of a similar color, the tarsi all darker, the posterior ones brown, posterior tibiæ brown at base and apex, yellowish between.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., August 17, 1901 (H. Skinner). Described from one male specimen.

Microplitis sp.

Urogaster sp.

* **Melanobracon apicus** Cress.

(Det. Ashm.) (D. T. A. Cockerell).

Rhogas nigricoxis n. s.—Dorsulum with slightly impressed parapsidal grooves; metathorax with a delicate longitudinal carina. First and second abdominal segments with a median longitudinal carina.

♂ Length 6.5 mm. Head almost entirely rugulose-opaque, cheeks shining, indistinctly punctured. Antennæ fifty-two jointed. Dorsulum shining, indistinctly closely punctured, the parapsidal grooves terminating in a rugulose-opaque area on posterior half of mesonotum medially. Prothorax rugulose, mesopleura more finely rugulose above and below, shining along the middle. Metathorax opaque, rather finely rugulose the longitudinal carina not strong, opaque. First abdominal segment indistinctly, longitudinally sculptured, the carina distinct, the shining dent at extreme base of the segment almost quadrate, second segment more finely sculptured, the carina almost disappearing, third segment very finely striate anteriorly, polished posteriorly like the rest of the apical segments. Wings subhyaline, with a dark cast. Stigma very dark brown, nervures paler, space between the transverse median nervure and the basal nervure on the median nervure about equal to the length of the second cubital nervure, the transverse median nervure not joining near the middle of the first discoidal cell.

Black. Anterior femora and tibiæ, median and posterior femora and tibiæ, except dark apices and darkened apical half of posterior tibiæ, first, second and base of third abdominal segments, ferruginous; the abdominal segments darkest.

Type, Coll. Acad. Nat. Sciences, Phila. Type locality, Beulah, N. M., Aug. 17, 1901 (H. Skinner). One male, related to *R. terminalis*, from which it is distinguished by the shining dorsulum, uniformly different sculpture and color.

SIRICOIDEA.

SIRICIDÆ.

Sirex flavicornis Fabr.

One ♀, Aug. (T. D. A. Cockerell).

Paururus cyaneus Fabr.

One ♀, July 31 (T. D. A. Cockerell).

CEPHIDÆ.

Cephus cinctus Nort.

Cephus occidentalis Ril. Marl. Ins. Life, iv, 1891, p. 177. ♀ ♂.

One ♀, July 16 (T. D. A. Cockerell). From the description there can be no question as to the identity of the *occidentalis* and *cinctus*. The type is one male specimen in Coll. Am. Ent. Society, Colorado, and a series of both sexes from Salt Lake City, Utah, June, 13, 1891 (Browning), Nevada, California and Montana.

HYLOTOMIDÆ.

Hylotoma macleayi Leach.

One ♀, July 15 (T. D. A. Cockerell), the specimen has the antennæ and femora entirely black, the anterior and median knees, the anterior tibiæ and tarsi in front brownish, whitish, posterior tibiæ with a white streak behind. The wings practically hyaline, fuscous on each side of abcissa of radius, and on about one half of second submarginal cell which has an almost black dot in the middle.

Hylotoma clavicornis Fabr.

One ♀, July 24 (T. D. A. Cockerell). Antennæ, femora and wing colored like the preceding, anterior and median knees brownish white, posterior tibiæ paler, whitish except the brown apex. Otherwise the tibiæ and tarsi are almost entirely dark brown.

TENTHREDINIDÆ.

Tenthredo flavomarginis Nort.

Two ♀ ♀, having the cheeks immaculate, one specimen July 24, on flowers of *Heracleum lanatum* (T. D. A. Cockerell).

Tenthredo nupera Cress.

Two ♂ ♂, one July 24, on flowers of *Heracleum lanatum* (T. D.

A. Cockerell). Both specimens have the black stripe above on femora very prominent. This species is probably identical with *T. signata* Nort. of the eastern States.

Tenthredo luteipes Cress.

One ♀, Aug. 8 (T. D. A. and W. P. Cockerell). Differs from the type specimens (Nevada), in having a supraclypeal yellow dot, a brownish area at base of cheeks, the anterior and median femora black above, brownish testaceous below, the tibiæ and tarsi of four anterior legs entirely dull testaceous. Posterior femora black, tibiæ ferruginous, dark brown above on apical half, the tarsi rufotestaceous, second, third and fourth abdominal segments entirely black.

Tenthredo xanthus Nort.

One ♀, July 24, on flowers of *Heracleum lanatum* (T. D. A. Cockerell). This specimen has the head, thorax and abdomen more truly ferruginous than the types from Colorado, they being yellowish ferruginous.

Allantus unicinctus Nort.

Two ♂♂, one Aug. 13 (T. D. A. and W. P. Cockerell). One specimen has the antennæ almost black, in the other we have the next step to the yellow, joints five, six, seven, eight and nine being a dark yellowish brown beneath.

CIMBICIDÆ.

Trichiosoma triangulum Kby.

One ♂. Differs from the description in having antennæ black, except joints four and five, which are brownish and by black of abdomen being confined to first and second segments. John's Canon, June 25 (T. D. A. Cockerell).

Zaræa americana Cress.

Two, May 30, 1902 (T. D. A. and W. P. Cockerell).

The following description of a new bee of the genus *Sphecodes*, is contributed by T. D. A. Cockerell:

Sphecodes fragariæ Ckll., n. sp.—Length about 6 mm.; black, including legs; abdomen red, black at apex; mandibles strongly bidentate. Closely related to *S. mandibularis* Cresson (an Illinos specimen from Mr. Robertson compared), but differs as follows:

S. fragariæ.	*S. mandibularis.*
Mandibles black, extreme tip reddish.	Mandibles ferruginous.
Antennæ longer, reaching considerably beyond tegulæ.	Antennæ short, only reaching tegulæ.
Tegulæ piceous.	Tegulæ dark brown.
Wings more or less dusky, especially on apical margin; stigma and nervures black.	Wings clear; stigma and nervures dark brown.
Ridges of metathoracic enclosure weaker.	Ridges of metathoracic enclosure very strong.
Sides of metathorax coarsely rugose.	Sides of metathorax cancellate.
Apex of abdomen black, the black well defined from the red; a black spot on base of third segment.	Apex of abdomen suffusedly blackish.

S. fragariæ was taken at Beulah, N. M., May 3, 1902 (T. D. A. and W. P. Cockerell), visiting flowers of *Fragaria* (wild strawberry).

Viereck, Henry Lorenz. 1903. "Hymenoptera of Beulah, New Mexico."
Transactions of the American Entomological Society 29, 43–100.

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