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NEW FOSSORIAL HYMENOPTERA.

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No. 5.—*New Fossorial Hymenoptera.*

BY NATHAN BANKS.

THE following pages contain descriptions of some new fossorial Hymenoptera in the collections of the Museum, together with a table to the subgenera of *Psammochares* and a synopsis of the genus *Elis*. Most of the new species are from the western United States, and several were collected in Oregon and Washington during the Northern Transcontinental Survey, in 1882.

PSAMMOCHARIDAE.

APORINELLUS COMPLETUS, sp. nov.

Type.—M. C. Z. 10,004. Washington: Lone Tree, Yakima River, 30 June, 1882; Thorp, Kittitas Valley, 10 July, 1882. Samuel Henshaw. Two specimens.

♀ Very similar in structure to *A. fasciatus*, but the body (except apical two segments of the abdomen) is sericeous. The third and fourth segment of antennae are a little shorter than in *A. fasciatus*, but of about the same proportion to vertex width. The femora and tibia are sericeous, the hind tibia with the inner spur two thirds as long as the basitarsus. The wings are dark at apex, and venation as in *A. fasciatus*. The male is very slender, sericeous, the abdomen black, the basal segment and apical margin to next three segments sericeous; the apical segment is black (not sericeous as in *A. fasciatus*).

APORINELLUS MEDIANUS, sp. nov.

Type.—M. C. Z. 10,005. Calif.: El Cajon, 1 May. E. P. Van Duzee; Los Angeles, May. M. C. Van Duzee. Two specimens.

♀ Black; clypeus and basal part of the face white pollinose, the white extending part way up inner orbits, posterior orbits narrowly white pollinose, as also the basal third of the mandibles, middle third reddish, apical third black. Clypeus truncate in front; face as wide above as below, an impressed line from anterior ocellus to the antennae; second plus third joint of antenna hardly equal to vertex width, third

joint much longer than the fourth; vertex from in front nearly straight across; posterior ocelli closer to eyes than to each other. Pronotum with the posterior margin broadly rounded; metanotum sloping, with median groove, posterior angles acute, not silvery. The abdomen shows a large white pollinose spot in middle on posterior edge of first and second segment, barely showing on the third; last segment with few long hairs. Legs with the outer side of tibiae faintly gray pollinose; tarsi I with comb of six long spines as usual; inner spur of hind tibia two thirds of the metatarsus. Wings deep black on the apical fourth, rest much paler; marginal cell very short, more than twice its length from the apex (in one specimen the second submarginal is divided in both wings). Length 8 mm.

ALLOCHARES, gen. nov.

Type species.—*A. bruesi* Banks.

Wing with pocket in base of second discoidal cell; spiracles scarcely their length from base of the metanotum; labrum not visible; pronotum rather long, but convex; a distinct malar space; metanotum produced each side behind in a tooth; legs practically destitute of spines; the tarsal claws rather short, nearly straight, thickened below to near the slender tip, from the tip of the thickened part extends a hair toward the tip of the claw; third joint of antennae of female much longer than the first; clypeus rounded below. Related, I think, by shape of metanotum and the nature of tarsal claws to *Aporinellus*, but distinct by absence of spines on legs.

ALLOCHARES BRUESI, sp. nov.

Type.—M. C. Z. 10,006. Texas: Austin. C. T. Brues. Two specimens.

Blue-black, the thorax and abdomen especially showing the blue; antennae, legs, and wings black. Head swollen above the base of the antennae then sloping to vertex; face plainly longer than broad, slightly broader in the middle than above or below, vertex nearly straight across; clypeus rounded below, clypeal suture slightly sinuate each side, a median groove from antennae toward anterior ocellus, ocelli small, far apart, the lateral ones much nearer to eyes than to each other; antennae slender, but not very long, the third joint plainly longer than the fourth; pronotum moderately long,

almost angulate behind; metanotum short, bilobed at base, the posterior face forming a large pit, the lateral angles projecting behind into a stout tooth. Abdomen slightly compressed; entire body devoid of hairs. Legs moderately slender, without spines, except minute ones at tips of tarsal joints below, inner spur of hind tibia about two thirds of the basitarsus. Wings uniformly blackish; basal vein interstitial, marginal cell acute, second submarginal slightly longer than broad, third barely longer, slightly narrowed above, first recurrent near end of cell, second near middle; in hind wings the cubital fork arises beyond the cell. Length 8 to 9.5 mm.

PLANICEPS COMPRESSUS, sp. nov.

Type.—M. C. Z. 10,007. Va.: Alexandria Co., near Court House. Nathan Banks. One specimen.

♀ Similar in structure to *P. niger*, but larger, more plainly clothed throughout with dense russet pollen, and the abdomen beyond middle much more compressed. Venation about the same, but the second submarginal cell is hardly as long, and the second discoidal also shorter. Wings deep black throughout. The antennae are longer, the third, fourth, fifth, etc. joints being plainly proportionally longer than those joints in *P. niger*. The front margin of the clypeus is truncate, almost slightly concave (faintly convex in *P. niger*). Length 14 mm.

PLANICEPS HIRSUTUS, sp. nov.

Type.—M. C. Z. 10,008. Calif.: Pasadena, August. One specimen.

♀ Deep bluish, iridescent, rather purplish at tip of abdomen, head greenish in front; antennae and legs mostly black; wings black, deeply purplish iridescent. Head flat, more narrow than in *P. niger*, eyes reaching up to vertex, from in front vertex is straight across or almost concave; ocelli small; antennae short, second and third joints together not as long as the first; clypeal margin slightly rounded. Pronotum long, plainly longer than broad, rest of thorax and abdomen slender; metanotum without median groove. Legs stout, front pair short, hind tibia with inner spur equal to one half the basitarsus. Wings rather short; basal vein strongly convex, interstitial with cubital cross-vein; third discoidal cell very short, second recurrent ending a little beyond second submarginal cell,

latter a little longer than broad; in hind wings cubital ends a long way before the fork of median. Thorax, abdomen, and legs with long black hair, especially noticeable on the metanotum, femora, and coxae beneath; front with very short hair. Tibial spines numerous and stout. Length 11 mm.

PLANICEPS ASSIMILIS, sp. nov.

Type.—M. C. Z. 10,009. Brit. Columbia: Penicton. August. J. B. Wallis. One specimen.

♀ Related to *P. hirsutus*, but differs in having the pronotum fully as broad as long. Black, with blue or violaceous reflection; the antennae very short, the third joint as short as in *P. hirsutus*; face with erect bristles, vertex straight across; pronotum fully as broad as long, plainly angulate behind in middle, the metanotum with appearance of a median line which, however, is not present, abdomen moderately slender, subcompressed, hairy near tip, mid and hind tibia with stout spines as in *P. hirsutus*, the inner spur of hind tibia one half the length of basitarsus; thorax with hair plainly shorter than in *P. hirsutus* the legs also less hairy than in that species, but more hairy than most species of the genus. Venation as in *P. hirsutus*, except that the second submarginal and especially the second discoidal cells are longer than in *P. hirsutus*. Length, 11 mm.

PEDINASPIS ANOMALA, sp. nov.

Type.—M. C. Z. 10,010. Texas: Coryell Co. G. Birkinmann. One specimen.

♀ Black, with purple reflections on body, wings a uniform black. In general very similar to *P. vicina* Cress. The antennae shorter than in that species, the ocelli smaller and farther apart, the lower margin of clypeus truncate, almost concave, metanotum short, the posterior surface more declivous than in *P. vicina*; legs with spines rather smaller than in *P. vicina*, inner spur of hind tibia nearly one half the length of the basitarsus, all femora with fine, short hairs. Venation in the single specimen may be abnormal in having but two submarginal cells, the second long and receiving both recurrent veins; the third discoidal cell very short, more so than in *P. vicina*, and the basal vein at base of first discoidal cell is strongly bowed basally, and is interstitial with the cubital cross-vein. In *P. vicina* the basal vein shows an even curve. Length, 15 mm.

The two cells indicate a *Planiceps*, but the general structure is plainly that of a *Pedinaspis*, and *Planiceps* should be limited to species in which the second recurrent vein ends beyond the second submarginal cell.

PRIOCNEMUS.

Priocnemus nebulosus and *P. fulgifrons* differ from other species of the genus in having a stigma which is paler in the center than on the edges; only females are known. Taken at the same places and times with these are *Ageniella pulchrina* and *A. agilis*, all males. In these also the stigma is paler in the center than on the edges. Therefore I am inclined to consider *A. pulchrina* as the male of *P. nebulosus*, and *A. agilis* as the male of *P. fulgifrons*. It is possible therefore that other species of *Ageniella* of which the male only is known may belong to species of *Priocnemus* of which only the female is known, there are several such in each genus, but I am at present unable to present evidence in any particular case; moreover there are *Ageniellas* similar to the others in which both sexes are known, and several species known only in the female.

CRYPTOCHEILUS RUGOSUS, sp. nov.

Type.—M. C. Z. 10,011. Washington: Wawawai, June. W. M. Mann; Arizona: Oak Creek Canon, 6,000 ft. F. H. Snow. Two specimens.

♀ Black; black antennae, reddish yellow wings, slightly margined with black at tips. Metanotum coarsely transversely wrinkled above on the basal half, not on the posterior slope, densely hairy. Abdomen shining, hairy, especially at tip, segments slightly constricted at ends. Head densely hairy, clypeus truncate; anterior ocellus scarcely diameter from the laterals; vertex convex; antennae short, stout, second with third joint not nearly as long as vertex width; pronotum arcuate behind. Legs stout, spiny, and hairy; all femora hairy above and below, hind tibiae with many short bristles, nearly obscuring the teeth; inner spur not one half of the basitarsus. In hind wings the cubitus is interstitial with fork of median; in fore wings the marginal cell is hardly acute at tip, first recurrent at middle of second submarginal; second recurrent barely sinuate, meeting the third submarginal at the middle, latter extending much beyond the marginal. Length, 16 to 20 mm.

CRYPTOCHEILUS AUSTRINUS, sp. nov.

Type.—M. C. Z. 10,012. Texas. G. W. Belfrage. Coll. Peabody Academy Science, Salem. One specimen.

♀ Black; black antennae, yellowish wings darkened at tip, sparsely hairy, clypeus truncate. Antennae slender, second and third fully distance from eye to eye, eyes not reaching the vertex, latter convex, ocelli close together, pronotum almost angulate behind, metanotum coarsely transversely wrinkled above on basal part, sparsely long haired. All femora slender and smooth, the hind tibiae strongly serrate, the inner spur hardly one third of the basitarsus. In the hind wings the cubitus is interstitial with fork of median; in fore wings the marginal cell is slightly pointed, first recurrent ends at apical fourth of the second submarginal, the second recurrent strongly bent out near middle and ending before middle of the third submarginal, the latter extending plainly beyond the marginal. Length, 20 mm.

Cryptocheilus austrinus has a great resemblance to *C. texanus*, but the strongly wrinkled metanotum will distinguish it.

CRYPTOCHEILUS INAEQUALIS, sp. nov.

Type.—M. C. Z. 10,013. Washington: Camp Umatilla, 27 June, 1882. Samuel Henshaw. One specimen.

♂ Similar to *C. heiligbrodti*. Black with reddish yellow wings, slightly tipped with dark; as in male *C. heiligbrodti* there is a short pale line on inner orbits opposite antennae. Entire body densely black haired, front femur with short hairs below, and hind femur rather hairy on the basal part above, and very few below; metanotum densely hairy, not wrinkled, with median groove, most distinct behind. Wings with venation similar to *C. heiligbrodti*; first recurrent at middle of second submarginal cell; second recurrent little curved, and meets third submarginal cell a little before middle; the marginal cell is broad at tip, and the third submarginal reaches a long way beyond it. Length, 17 mm.

MYGNIMIA HESPERINA, sp. nov.

Type.—M. C. Z. 10,014. Calif.: Stanford University. R. W. Doane; San Diego. E. P. Van Duzee; N. Mex.: Jemez Mts. John Woodgate. Four specimens.

♀ and ♂. In general very similar to *M. ustulata*. Black; black

antennae, reddish wings, more red than in *M. ustulata*, with definite black tips. Metanotum densely haired, and transversely wrinkled. Legs spined as in that species; third and fourth antennal joints a little shorter than in *M. ustulata*. Wings with venation much like *M. ustulata*, but the second recurrent is practically straight and ends nearly at middle of the third submarginal cell; the first recurrent ends plainly before end of second submarginal cell; the third submarginal extends rather further beyond the marginal than in *M. ustulata*. Length, 15 to 20 mm.

MYGNIMIA USTULATA Dalbom.

Occurs in Texas, Kansas, and Arizona. Wings are black at base as well as at tips; the second recurrent vein sinuate, the marginal cell broad at tip, the metanotum hairy and transversely wrinkled above; the first recurrent ends practically at end of the second submarginal cell.

POMPILOIDES SUBCYLINDRICUS, sp. nov.

Type.—M. C. Z. 10,015. Va.: Falls Church, July, August. Nathan Banks. Thirty-two specimens.

Similar to *P. cylindricus*, but the pronotum in both sexes is arcuate behind.

Black; in female the wings very dark, male with lighter wings, dark at tips.

♀ Antennae rather shorter than in *P. cylindricus*, the third joint, however, elongate; hind legs also shorter than in that species. Face about as in that species; pronotum broadly arcuate behind; metanotum with median groove rather deeper than in *P. cylindricus*. Abdomen hairy at tip and on apex of ventral segments; venation as in *P. cylindricus*; third submarginal cell triangular or short petiolate.

♂ Similar to ♀, but very slender; the lower face and about base of antennae, part of pronotum, and much of the pleura silvery pubescent; venter without brushes.

Size as in *P. cylindricus*.

SOPHROPOMPILUS TUMIFRONS, sp. nov.

Type.—M. C. Z. 10,016. Calif.: San Diego Co., 14 June. E. P. Van Duzee. One specimen.

♂ Blue-black, densely hairy; clypeus rounded below; antennae

short, third joint shorter than fourth, face above antennae swollen and sloping to vertex, densely long-haired, vertex, seen from in front, almost conically produced in middle between the ocelli, more prominent than in other species; pronotum longer than usual, arcuate behind, densely long-haired; metanotum low and rather long, hairy, with a polished median line; abdomen rather depressed, hairy all over; legs moderately short, and strongly spined, all coxae and femora hairy; inner spur of the hind tibia nearly two thirds of basitarsus. Wings black, basal vein interstitial with the transverse, second submarginal cell plainly longer than broad, receiving the first recurrent vein at tip, third submarginal cell about as long as the second, narrowed above, receiving the second recurrent vein at middle; marginal cell rather long, acute; in the hind wings the cubital fork interstitial with end of the cell. Length, 10 mm.

Differs from allies in more raised area at ocelli, and the longer pronotum.

ANOPLIUS BOLLI, sp. nov.

Type.— M. C. Z. 10,017. Texas: Dallas. Jacob Boll. One specimen.

♂ Black, densely silvery pubescent, and white haired on head and posterior part of metanotum; posterior margin of pronotum white; silvery patch each side of the scutellum, postscutellum silvery above and silvery band across apex of metanotum; abdomen with silvery band on bases of first, second, and third segments, the fourth with a large oblique patch each side, the fifth and sixth wholly silvery above. In structure and proportions closely similar to *A. (Aphiloctenus) virginiensis*. The spines on the legs are rather longer, the inner spur of hind tibia is shorter, being less than three fourths of the basitarsus; wings and venation much like *A. virginiensis*, but the third submarginal is rather longer. The fourth ventral segment of the male has a dense tuft of black hair, much heavier than in *A. virginiensis*, and few hairs on the other segments. Length, 11 mm.

PSAMMOCHARES SCUDDERI, sp. nov.

Type.— M. C. Z. 10,018. Canada. Winnipeg: S. H. Scudder. One specimen.

♀ Small, black, with erect, long hair on head, thorax, abdomen

above and below, and on coxae, femora, tibiae and even one or two on the tarsi; those on tibia nearly as long as width of the joint. Wings blackish, but darker toward tip. Head very broad, clypeus broadly rounded below, impressed line on front, vertex convex, lateral ocelli much closer to each other than to the eyes. Antennae short, basal joint with a row of hairs on the outer edge; third and fourth joints subequal, neither longer than first joint. Pronotum broadly arcuate behind, but not long; metanotum short, no definite groove; abdomen shining, not very slender. Tibiae and tarsi strongly spinose, hind tibia with inner spur about two thirds of the basitarsus, claws with median tooth. Wings with rather short marginal cell, third sub-marginal larger than the second, narrowed above, each recurrent vein is received a little beyond middle of cell. Length, 6.5 mm.

Reminds one of *P. hyacinthinus*, but the densely, long-haired body is quite unique.

PSAMMOCHARES DIFFICILIS, sp. nov.

Type.—M. C. Z. 10,019. Va.: Falls Church, 5, 17 September. Nathan Banks. Two specimens.

♀ Black throughout, or with a slight violaceous reflection. Front and vertex with long, black hairs; antennae slender, third joint much longer than the fourth, second, and third together about equal to vertex width, basal joint without long hair below; vertex (from front view) nearly straight across; lateral ocelli as close to eyes as to each other; clypeus truncate; pronotum angulate behind, but not strongly so; metanotum with erect, black hair, no definite median groove. Coxae I black-haired; tarsus I with comb of long spines, but that at tip of the second joint is shorter, and not nearly as long as the third joint; hind tibiae with spines about one half the diameter of the joint, inner spur more than one half the basitarsus. Wings deep black, third cell nearly triangular, marginal cell short, basal veins interstitial. Length, 15 mm.

Related to *P. astur*, but larger, the apical comb-spine of second joint much shorter, the third cell and marginal cell also shorter.

PSAMMOCHARES CLEORA, sp. nov.

Type.—M. C. Z. 10,020. Calif.: Los Angeles, 3 May. M. C. Van Duzee. Two specimens.

♀ Moderate size; deep black. Clypeus plainly emarginate in middle, clypeus, face, vertex, basal joint of antennae, prothorax, coxae I, and metanotum with long black hair, fewer and shorter hairs elsewhere, but tip of abdomen bristly, and scattered, long hairs on venter. Antennae slender, third joint much longer than first; fourth shorter, but longer than first; a deeply impressed line from antennae to ocelli; hind ocelli about as close to eyes as to each other; vertex straight across, face barely narrower at upper than at lower end of eyes. Pronotum broadly arcuate behind. Metanotum with a median groove. Abdomen of moderate length, slightly depressed on basal segments. Legs slender, a few short hairs on femora of front and mid legs; tarsus of front legs with a comb of long curved spines, four on outer side of basal joint. Spur on hind tibia little more than one half as long as basitarsus, spines on hind tibia not as long as width of the joint. Wings deep black; second submarginal cell about one fourth longer than broad, third shorter, subtriangular, less than one half as long above as below, receiving second recurrent vein at middle, this recurrent arising much beyond the middle of apical cell; basal veins interstitial. Length, 12 mm.

PSAMMOCHARES PHILADELPHICUS var. FLORIDENSIS, var. nov.

Type.—M. C. Z. 10,021. Fla.: Gulfport, September. A. G. Reynolds. One specimen.

♀ Deep blue; the wings blue-black, beautifully iridescent; structure similar to *P. philadelphicus*. The clypeal margin perhaps not quite as deeply emarginate as in the typical form, and the vertex between the eyes a little broader, and the third antennal joint rather longer; the ventral segments less hairy, and the minute spines on the upper surface of the femora are more numerous, especially on the front femora.

More distinct from the type than the variety *P. p. sericatus*, and possibly a distinct species.

PSAMMOCHARES.

I prefer, for the present, to keep this genus in its broad sense and make the following subdivisions of it which may be considered as of subgeneric value. This arrangement is based on the female, but in some cases males can also be placed in it.

1. Third joint of antennae of female barely if at all longer than the first joint; spines under last joint of hind tarsi very weak; clypeus not emarginate; often bluish species. 2
 Third joint of antennae plainly longer than the first. 4
 2. No comb on front tarsi; legs very hairy. *Chalcochaeres*.
 A comb to front tarsi. 3
 3. Metanotum hairy. *Sophropompilus*.
 Metanotum not hairy. *Nannopompilus*.
 4. Third abdominal segment hairy above, as well as rest of body and femora.
Arachnophila.
 Third segment not hairy above. 5
 5. No spines under last joint of hind nor front tarsi; clypeus not emarginate; third submarginal cell not petiolate. 6
 Spines distinct under last joint of hind tarsi; no malar space. 9
 6. A distinct malar space between eye and base of mandibles. 7
 No distinct malar space. 8
 7. Comb to front tarsi; metanotum oblique; small, delicate species.
Agenoideus.
 No comb to tarsi; metanotum flat at base; larger, black species.
Alloocyphonyx.
 8. Fairly large species; metanotum hairy in the female at least; abdomen elongate. *Sericopompilus*.
 Small species; metanotum not hairy above; abdomen in female not so elongate. *Gymnochaeres*.
 9. Clypeus of female strongly emarginate in middle; front femora with minute spines above. 10
 Clypeus not plainly emarginate. 11
 10. Pronotum arcuate behind; metanotum very hairy above.
Lophopompilus.
 Pronotum angulate behind; metanotum scarcely hairy above.
Notiochaeres.
 11. A strong comb on front tarsi; metanotum hairy above. . *Psammochaeres*.
 No comb to front tarsi; that is the spines on basitarsus are subequal in length. 12
 12. Metanotum not hairy above; marginal cell much more than its length from the tip of wing. *Pompiloides*.
 Metanotum plainly hairy above, marginal cell more acute at tip.
Anoplius.
- Chalcochaeres*, gen. nov. contains *Psammochaeres hirsutifemur* Bks.
Sophropompilus includes *P. ingenuus*, *brevicornis*, and *hyacinthinus*.
Nannopompilus includes *N. argenteus*, *rufibasis*, *parvus*, *consimilis*, *padrinus*, and *minusculus*.
Arachnophila includes *P. scudleri* Bks., *divisa* Cr., and *pretiosa* Bks., which is possibly the male of *P. divisa*.
Agenoideus has but one species, *A. humilis* Cr.

Allocophonyx contains *A. maura* and *harpalyce*.

Sericopompilus based on *P. cinctipes*, which is known only in male, includes also *posticatus* and *plutonis*, males; and *fuscipennis*, *augustus*, *fulvopicalis* and *georgiana*, females.

Gymnochaeres, gen. nov. is based on *P. birkmanni* known in both sexes, and male *P. biedermani*, both described in *Sericopompilus*.

Lophopompilus contains *L. aethiops*, *ilione*, *cleora*, and *atrox*, latter marked with red.

Notiochaeres, gen. nov. is based on *P. philadelphicus*, and its two varieties.

Psammochaeres contains *P. difficilis*, *relativus*, *hesione*, *bellicosa*, *scelestus*, *astur*, *gracilicornis*, wholly black species, and *autumnalis*, *tropicus*, *atlantica*, *marginalis*, *castella* (?), and *arizonensis* marked with red.

Anoplus includes *A. illinoensis*, *tenebrosus*, *fulgidus* (Fla.), *virginiensis* (type of *Aphiloctenus*), *ithaca*, and *luctuosus*.

Pompiloides includes *P. cylindricus*, *rectus*, *albomarginatus*, *parvulus*, *subcylindricus*, *insolens*, *stenotus*, *solonus*, *minora*, *clystera*, *angularis*, *estellina*, *moestus*, all black species; and *americanus*, *marginatus*, *semirufus*, *reducta*, species marked with red.

PSEUDAGENIA SUBMETALLICA, sp. nov.

Type.—M. C. Z. 10,022. Texas: Austin, 12 March, 1900. C. T. Brues. One specimen.

♀ Black, with not very plain, bluish iridescence, legs and wings black, body black-haired, that on head fairly abundant, that on metanotum sparse, and much shorter than in *P. architecta*. Antennae long, third joint much longer than the fourth; face longer than broad, slightly narrowed above, vertex slightly convex; pronotum plainly, but not strongly angulate behind, metanotum without groove; abdomen hardly polished, hairy toward the tip and on the venter; tibia with small but distinct spines, inner spur of hind tibia not one third the length of the basitarsus; marginal cell acute at tip, third submarginal long, but little longer than the second, recurrent veins meeting cells at middle, basal vein strongly convex basally. Length, 8.5 mm.

AGENIELLA CRASSICORNIS, sp. nov.

Type.—M. C. Z. 10,023. Mass.: Forest Hills, 11 June; Woods Hole. C. T. Brues. Two specimens.

♂ Black, clothed with silvery pubescence; most of mandibles, lower edge of clypeus, and underside of scape yellow, pale on hind

border of pronotum, and slightly on sides of second abdominal segments; legs mostly yellow, coxae, mid tarsi, hind tibiae, and tarsi darker, spurs pale. Slender; clypeus very broad, truncate, face broad, wider above, vertex convex, pronotum arcuate behind, metanotum with a broad median groove, basal abdominal segment rather broad; legs slender, inner spur of hind tibia about two thirds as long as basitarsus. Wings nearly hyaline, not darker at tip, second submarginal hardly longer than broad, third not longer and narrowed above, recurrent veins received at middle of cells; basal vein strongly bowed at base, and almost interstitial with the transverse; in the hind wing the cubital fork arises much beyond cell. Length, 5 mm.

AGENIELLA FESTINA, sp. nov.

Type.—M. C. Z. 10,024. Va.: Falls Church, 6 August. Nathan Banks. One specimen.

♂ Black, with silvery pubescence, lower orbits and small spot each side on clypeus yellow; tip of mandibles reddish; basal part of abdomen reddish, tip white, front and mid spurs pale. Body slender, face rather narrow, narrowed above, clypeus truncate, vertex convex; pronotum with hind margin strongly arcuate; metanotum without definite furrow, but rather depressed in middle area, densely white pubescent, basal segment of abdomen slender at base, subpetiolate; hind pair of legs very long, inner spur of hind tibiae about one half the length of basitarsus; wings rather long, darkened throughout, marginal cell acute, second submarginal much longer than broad, third also elongate, narrowed above, recurrent veins received at middle of cells, basal vein slightly bowed at base, only a little before the transverse, in the hind wings the cubital fork arises a little beyond the cell. Length, 8 mm.

AGENIELLA FRATERNELLA, sp. nov.

Type.—M. C. Z. 10,025. Va.: Falls Church, 14 July. Nathan Banks. One specimen.

♂ Black, basal half of abdomen reddish, white spot at tip, spurs whitish, most noticeable on front pairs, wings nearly hyaline, tip not darkened; clothed with fine white pile; clypeus very broad, truncate, face barely narrowed above, vertex convex, pronotum arcuate behind,

metanotum without impressed line; abdomen fusiform, very much broader in middle than at ends; legs very long and slender, hind tibia with the inner spur not one half length of the basitarsus. Wings slightly fumose, third submarginal cell much longer than broad, but not much narrowed above, recurrent veins meeting cells at middle; basal vein slightly bowed at base and interstitial with the transverse. Length, 8 mm.

Resembles *A. birkmanni*, but differs in having a very distinct impressed line on the face from antennae up to ocellus, in the more fusiform abdomen, and in the shorter spur to hind tibia.

AGENIELLA MINUSCULA, sp. nov.

Type.—M. C. Z. 10,026. Texas: Dallas, 2 August. One specimen.

♂ Black, with silvery pubescence. Abdomen reddish on side of first segment, legs mostly pale, with whitish spurs; wings subhyaline. Body slender; head short and fairly broad, vertex high, convex, no line from antennae to ocelli; the pronotum rather long, arcuate behind, metanotum without groove; abdomen slender, not much enlarged in middle, polished; femora and tibiae mostly reddish, long spur of hind tibiae more than one half of the basitarsus. Wings short, slender; marginal cell acute, much beyond third submarginal cell; second submarginal short, third very short, outer side convex, recurrent veins meeting cells at middle, basal vein bowed near base, arising a little before the transverse. Length, 4 mm.

Agreeing in general with the northern *A. tenella* but it is much more slender and has a more arcuate margin of pronotum separating it.

SCOLIIDAE.

SYNOPSIS OF ELIS.

The females of the section *Dielis* can be separated as follows:—

1. Abdomen black, with four large yellowish spots; very large species.....*quadrinotata*.
- Abdomen otherwise marked.....2
2. Abdomen beyond base mostly reddish yellow; thorax and legs white-haired.....*dives*

- Abdomen more plainly banded.....3
3. Costal area of fore wings yellowish, legs, head and thorax with much fulvous or golden hair.....4
- Costal area of fore wings black; body more white- or gray-haired, or all black-haired.....5
4. Spurs of hind tibia pointed at tips; band on third segment much narrower than that on the second.....*limosa*.
- Spurs of hind tibia broad at tips as usual; band on third segment broad and shaped like that on second.....*fulvopilosa*.
5. Head and thorax black-haired; abdomen with two broad reddish bands on second and third segments, not emarginate.
ephippium.
- Head and thorax more white- or gray-haired; bands on abdomen more yellowish, and some emarginate in front.....6
6. Median posterior surface of metanotum punctured, and with long, erect hair.....*pilipes*.
- Median posterior surface of metanotum mostly smooth, and with appressed hair, mostly below.....7
7. Band on third segment broadly emarginate on sides; body more fulvous-haired.....*trifasciata*.
- Band on third segment scarcely emarginate on sides; body more gray-haired.....*plumipes*.

DIELIS PILIPES Saussure.

Saussure in the Revision of *Scolia* considers this the female of *Trielis texensis*. To this I dissent, for two males closely agree with the female in coloration and in venation. These males have a rather broad body; rather more densely white-haired than the female; the bands on the abdomen of the same shape as in the female, except that the one on the fourth segment is broader than in the female.

Specimens from Arizona, California, and Washington are at hand.

DIELIS LIMOSA Saussure.

I have specimens of both sexes from Palmerlee, Arizona.

DIELIS PLUMIPES Drury.

I use this name for our common form, although it is possible there are several species or varieties included, and Drury's name may not apply in this sense.

The males of the section of *Trielis* can be separated as follows:—

1. Legs black; abdomen black, with transverse yellow spots, usually connected.....*hermione*.
Legs mostly pale.....2
2. Abdomen with some fulvous or golden hair especially on sides at tip of the segments; fulvous hair between the antennae.
texensis.
Abdomen without fulvous or golden hair; white or gray, and black-haired.....3
3. Abdomen very slender, first segment very long; fore wing with apical dark cloud.....*octomaculata*.
Abdomen less slender, first segment rather broad; no cloud in apical part of fore wing.....*alcione*.

The females of the section *Trielis* can be separated as follows:—

1. Legs largely yellow; basal joints of antennae rufous.....3
Legs brown or black, antennae all black.....2
2. Legs black, no golden pubescence; spots on abdomen transverse.
hermione.
Legs brown, pubescence partly rufous or golden; abdomen with large; rounded spots.....*pollenifera*.
3. Abdomen with black hair on margin of segments above, transverse frontal suture sinuate.....*octomaculata*.
Abdomen with mostly or wholly fulvous hair on margins of segments above; frontal suture not sinuate.....*xantiana*.

TRIELIS *ALCIONE*, sp. nov.

Type.— M. C. Z. 10,027. Washington: Lone Tree, Yakima River, 18 July, 1882; Big Bend, Yakima River, 19 July, 1882; Ainsworth, 20 July, 1882. Samuel Henshaw. Three specimens.

♂ Black; long, white-haired. Clypeus, pronotum above, scutellum, postscutellum, six bands on abdomen above (basal three more or less interrupted) and apical bands on ventral segments, yellow. Legs yellowish, femora, especially of the front pair, more or less black at base. Margins of abdominal segments above with dark brown hair; no fulvous hair. Sometimes a spot on the pleura and a median one on the metanotum behind, are yellow. The hair is longer, and more dense than allied forms; the abdominal spots are transverse, not rounded behind. There is no dark cloud in the fore wing, and the marginal cell is longer than in *T. xantiana*, and the recurrent veins

farther apart at tips than in that species, and the abdomen far less slender. It is nearer to *T. texensis*, but has no fulvous hair. Length, 14 to 20 mm.

TRIELIS OCTOMACULATA Say.

I consider *T. lupina* Cresson the same as Say's species; the markings of the type agree closely with Say's figure.

TRIELIS XANTIANA Saussure.

Though normally this has a rather slender abdomen and the spots are well separated, I consider that the broader form with spots more connate, and with a pair of spots on the third ventral segment also belongs here; this is *T. regina* Cresson.

TRIELIS TEXENSIS Saussure.

This species agrees well with *T. zonaria* Cress., and I think it is the same.

PHILANTHIDAE.

CERCERIS DENTICULARIS, sp. nov.

Type.—M. C. Z. 10,028. Oregon: Umatilla, June, 1882; Washington: Lone Tree, Yakima River, 30 June, 1882. Samuel Henshaw. Nine specimens.

♀ Black, with white marks. Clypeus, except the anterior margin, lateral lobes, bases of the mandibles, supraclypeal spot, sides of face barely reaching above the antennae, spot under the scape, two spots or line on the pronotum, tegulae, postscutellum, sometimes small median spot on basal abdominal segment, others with apical band, broad on sides, narrowed in the middle, subequal in breadth, and the tibiae, yellow. Sometimes apex of front and middle femora pale beneath, tarsi rather dark. Wings mostly hyaline, darker beyond stigma, latter yellowish, veins dark. Venter black. Body densely and rather coarsely punctate; head very broad, clypeus not produced, lower margin emarginate in the middle, above with two minute teeth as in *C. grandis*, but farther apart than in that species; enclosure

obliquely striate, less noticeable on the middle; basal abdominal segment very narrow compared with the next. Pygidium long, narrowed to tip, and barely constricted a little before tip. Face with dense white hair, darker above and mostly brownish or gray on the rest of the body, but venter and legs with white hair. Length, 12 to 14 mm.

In some the face-marks are all connected and the supraclypeal mark elongate. The male is smaller (10 mm.), a clypeal and a supraclypeal spot, and one each side on face; there is no spot on the postscutellum (some females have a broken spot on the postscutellum), five bands on the abdomen, the first segment unmarked, and the last band less concave in front than the others; hind tibiae with dark spot near tip, hind femora wholly black. Clypeal hair-lobes narrow, remote; pygidium less narrowed, and not constricted near tip; the enclosure more polished in the middle than in the female.

CERCERIS BELFRAGEI, sp. nov.

Type.—M. C. Z. 10,029. Texas. G. W. Belfrage. Coll. Peabody Academy Science, Salem. Four specimens.

Close to *C. compacta*; the ♀ with the clypeus produced and with the two large lamellae below of the same shape; the ♂ with a pointed clypeal margin. Both sexes are more red than *C. compacta*, and of a size larger; in the female the clypeal process is much broader proportionally than in *C. compacta*, there are large reddish yellow spots on the sides of metathorax, and a median yellow spot behind on the first segment of abdomen; the apical band of the second segment is plainly angularly indented in middle, the pygidial area is proportionally broader, and broader near base than in *C. compacta*, basal ventral segment reddish; punctuation and other marks as in *C. compacta*. The male also has spots on metanotum and on middle of the first segment of abdomen.

The true *C. compacta* also occurs in Texas.

CERCERIS VANDUZEELI, sp. nov.

Type.—M. C. Z. 10,030. Calif.: San Diego, June. E. P. Van Duzee. One specimen.

♀ Similar to *C. finitima*, a small coarsely punctate species; lateral lobes of face black; clypeus, sides of face, supraclypeal mark, bases

of mandibles, spot back of eyes, and the scape, yellow; flagellum mostly rufous, but base black; two spots on pronotum, tegulae, tubercles, two spots on scutellum, postscutellum, two spots each side on metanotum, and apical band on abdominal segments, yellow; basal two thirds of femora and apex of hind tibiae black, rest of the legs yellow. Enclosure strongly transversely striate, not punctured as in *C. finitima*; the pygidium is slender and about equally narrowed at each end as in *C. finitima*. The narrowing or indentation of the abdominal bands is present in both specimens, but is uncommon in *C. finitima*. Length, 6.5 mm.

CERCERIS HESPERINA, sp. nov.

Type.—M. C. Z. 10,031. Washington: Yakima, July, 1882; Ainsworth, July, 1882. Samuel Henshaw. Four specimens.

♀ Similar to *C. finitima*; small, coarsely punctured, black species, with clypeus, spot on lateral lobes, sides of face, bases of mandibles, and scape beneath, yellow. Flagellum rufous beneath. Two spots on pronotum, tegulae, tubercles, two spots on scutellum, postscutellum, median spot on first segment, broad band on second segment, and narrow bands on other segments, that on the third sometimes broken into three transverse marks, yellow; most of femora, apical half of hind tibia, and mid and hind tarsi blackish. Face broad, rather densely clothed with short white hair below; enclosure smooth in middle, finely striate on sides; the pygidium broader than in *C. finitima*, but narrowed at each end.

The male is similar; the lateral lobes unmarked; the spot on basal segment may be lacking, the enclosure polished, but slightly punctate on the sides, the pygidium rather broader than in the male *C. finitima*, and barely if at all narrowed at base. Length, 6 to 8 mm.