

**DESCRIPTIONS OF NEW NORTH AMERICAN
NEUROPTEROID INSECTS.**

BY NATHAN BANKS.

In the following pages I have brought together descriptions of various new species which have come to my notice, together with some synoptic work on certain genera and one family. The final determination of species must rest on sexual characters, but these ought not to be used until the forms have been thoroughly studied in all of their parts for the detection of other characters. So I have not as yet studied and figured the genitalia, but will leave such work for a future revision of the various families, which I hope abundant material may soon justify.

PERLIDÆ.

Chloroperla coloradensis n. sp.—Head yellowish, eyes connected by a black line and a black W mark in front, side spots black; antennæ blackish base yellow, basal joint blackish above; thorax yellowish, margin (except median portion in front) black, the elevated ridges on sides also black, thorax once and one-half broader than long, front margin but little convex; sides much rounded, and hind angles rounded; legs yellowish, tarsi and a mark on knees brown; abdomen dark brown or black, setæ yellowish brown; wings gray hyaline, veins mostly brown, radial sector forked but once, its pedicel about one-half the length of the fork, lower branch of cubital fork simple, five transversals in cubital area. Expanse 20 mm.

Colorado (C. F. Baker).

Chloroperla montana n. sp.—Head rather greenish yellow, quite broad in front, ocelli connected by a black V-shaped mark; basal part of antennæ yellowish, rest fuscous, basal joint above brown; thorax yellow, brownish each side, once and one-half broader than long, sides straight, and front margin nearly straight; legs yellowish, tarsi brownish and a brown mark on knees; abdomen rather brownish, darker above than below; setæ brownish, paler on the bases; wings hyaline, veins mostly brown, costal ones yellow, radial sector forked once, its pedicel being two-thirds the length of fork, lower branch of cubital fork is forked again at anastomosis or near it, six transversals in cubital area, hind wings with radical sector forked once. Expanse 18 mm.

Mt. Washington and Franconia, N. H. (Mrs. Slosson).

Chloroperla virginica n. sp.—Head pale yellow, hind ocelli connected by a transverse black band, from the middle of which arises a narrower black stripe reaching to the front ocellus, the whole forming a T mark; basal part of antennæ pale yellowish, rest brownish, basal joint scarcely infuscate above;

of virginica & several coloradensis
* One in the coll. named by Banks has no such
mark at all.

palpi brown; thorax pale brownish, paler on middle, once and a fourth broader than long, sides nearly straight, surface much rugulose; legs yellowish, tarsi darker; abdomen pale yellowish (without darker median stripe), setæ pale; wings gray hyaline, veins mostly yellowish, basal transversals and cubitals rather brownish, radial sector forks at anastomosis, and the upper branch forks again, its pedicel being two-thirds the length of the fork, six transversals in cubital area, lower branch of cubital fork simple, hind wing has radial sector twice forked as in fore wing. Expanse 22 mm.

Harper's Ferry, Virginia, August.

The species of *Chloroperla* known to me may be separated as below. I have been unable to identify a number of the species of older authors, and they are omitted from the table.

1. Head without dark marks, except the ocelli and lines connecting them.....4.
 Head with some other dark marks.....2.
2. Ocelli are on a solid black triangle and a black spot on front margin of head,
 a median black stripe on prothorax.....**signata**.
 Head marks different, no median black stripe on prothorax.....3.
3. Larger, the side spots on head transverse, middle of head infusate.
 borealis.
 Smaller, the side spots nearly round, middle of head not infusate.
 coloradensis.
4. The two upper ocelli connected to each other by a black line, from which
 arises a line to the front ocellus, the whole a T mark....**virginica**.
 No such T mark.....5.
5. Hind ocelli connected to front ocellus by a V mark.....6.
 Hind ocelli not connected to front ocellus.....7.
6. Veins mostly pale yellowish.....**bilineata**.
 Veins mostly dark brownish.....**montana**.
7. Thorax more or less margined with brown or black, wings yellowish.....8.
 Thorax not margined, wings greenish.....**imbecilla**.
8. Thorax faintly (but plainly) margined with brown, sides small....**brveis**.
 Thorax plainly margined by jet black, size larger.....9.
9. Thorax broader, sides more straight, and front margin nearly straight, dorsum
 of abdomen with black stripe.....**pacifica**.
 Thorax much more rounded on sides and in front, abdomen with black stripe
 above.....**marginata**.

Nemoura depressa n. sp.—Head and thorax reddish brown, abdomen brighter reddish, antennæ black; prothorax marked somewhat with black, especially on the sides; legs uniform, dull yellowish; wings faintly tinged with yellowish, costal veins and the X black, other veins paler, pterostigma clouded. Head scarcely broader than prothorax; antennæ reaching to middle of wings; prothorax slightly broader than long, sides straight, about parallel, angles square, surface faintly rugulose; subcosta of fore wings nearly touches costa before running into the radius, radial sector geniculate at base, cubital sector arising from cubitus, slightly bent down at tip. Length 9 mm.

Cottage Grove and Divide, Oreg., September (Morse).

Easily recognized by reddish color and rather more depressed form than is common in the genus.

Little has been done to elucidate the sternal characters of the Perlidæ; yet I think that a close study of them will serve to better define the characters of the genera in this family. There are two groups of genera according to the position of the anterior coxæ—one group where these coxæ are approximate and directed more downwards; the other group where the coxæ are widely separated and directed more laterally. To the former group belong *Pteronarcys*, *Leuctra*, *Nemoura*, *Teniopteryx* and *Arsapnia*. To the latter group are the genera *Perla*, *Chloroperla*, *Dictyopteryx*, *Acroneuria* and *Isopteryx*. *Capnia* has the fore coxæ separated, but not as far as in *Perla*, but the hind coxæ are widely separated.

Pteronarcys has the hind coxæ well separated, and between them is a transverse depression with a hole at each end; between the middle coxæ is a triangular depression.

Perla has no such depressions, but there are slits near the coxæ; the hind coxæ are widely separate. I am inclined to think this large genus can be divided on sternal characters into two or more genera.

In *Leuctra*, *Nemoura* and *Teniopteryx* the hind coxæ are much closer than in other genera; I think these will form a tribe. In *Chloroperla* and *Isopteryx* the hind coxæ are well separated.

CHRYSOPIDÆ

Meleoma mexicana n. sp.—Head pale greenish, a black dot each side of mouth and a black line under the eyes; palpi lineate with black; antennæ pale yellowish throughout; thorax green, a broad median yellowish stripe, a black dot at each anterior angle of prothorax; legs pale yellowish; abdomen greenish, brownish towards tip; wings hyaline, veins pale green, many of the transversals, especially on basal part of wing, marked with black in the middle, pterostigma scarcely visible. A horn between antennæ of ♂, longer than broad, broader at the tip than in the middle, tip broadly emarginate, each corner pointed, the median part bent at right angle and extending to surface of head, basal joint of antennæ concave on inner margin, second and third joints not curved as in *M. slossonæ*; wings rather long, scarcely pointed at the tip, venation similar to that of other species. Length 20 mm.

One ♂ from Amecameca, Mexico, June (Barrett).

Differs from *M. signoretti* Fitch, in pale antennæ and smaller horn, etc.; from *M. slossonæ* Bks., in pale dorsal stripe, simple antennæ, etc.

Chrysopa erythrocephala n. sp.—Pale yellowish; head reddish, a black dot each side near base of labrum; abdomen blackish, legs and antennæ pale; wings greenish, veins mostly greenish, brownish on middle of costal cross-veins, on the gradate veinlets, and on some veinlets toward base of wing, ptero-

stigma scarcely distinct. Basal joints of antennæ close together, a transverse depression on middle of vertex; prothorax short and broad, a transverse furrow beyond the middle; fore wings moderately broad, scarcely pointed at tip, hind pair narrower and more acute at tip: the third cubital cell plainly wider at tip than base, no longer than second, its divisory veinlet ending about half-way to tip, but beyond the connecting veinlet to the radius, six cross-veins in the series beyond third cubital cell. Expanse 34 mm.

One specimen, San Bernardino, California, July (Morse).

Chrysopa assimilis n. sp.—Green; head reddish yellow, a red-brown or black crescent under each antennæ and a spot between their bases, from the crescent there extends a little line to the black stripe on the cheek, above are two dots above base of antennæ, and two dots on vertex, forming a square with the others (but no dots behind the eyes as in *C. oculata*); antennæ pale, a black ring on second joint and a red mark above on basal joint; prothorax green, with a black spot on the anterior side-margin; thorax and abdomen green; legs pale greenish; wings greenish, veins green, the costals black at each end, the gradate veinlets mostly black, a few postcubital cross-veins at base black, and many of the other cross-veinlets black at one or both ends, pterostigma green. Basal joints of antennæ close together, vertex smooth, shining, prothorax narrowed in front; wings short and broad, fore pair rounded at tip, hind pair slightly acute, third cubital cell scarcely as long as second, broader at tip than base, the divisory veinlet ending beyond the middle and beyond the veinlet connecting to the radius, four or five cross-veins in series beyond the third cubital cell. Expanse 27 mm.

Ashland, Oregon, September; Hood River, Oregon, September (Morse).

CONIOPTERYGIDÆ.

Coniopteryx barretti n. sp.—Head pale yellowish; antennæ brownish; thorax brownish, with a pale yellow median triangular spot, pleura with a few pale spots; legs brownish yellow; abdomen yellowish, with dark spots each side; wings rather dusky, veins black; antennæ fully one-half the length of wings, pubescent; venation as in *C. vicina*, but rather stronger and the veins more prominent, seven or eight cross-veins in the fore wings, the cross-veins connecting second radial sector to radius, and former to first radial sector opposite to each other, the fork of second sector but slightly indenting; hind tibiæ curved. Length 4 mm.

Amecameca, Mexico, June (Barrett).

Differs from *C. vicina* in slightly larger size, paler head, spots on the mesothorax, etc.

MYRMELEONIDÆ.

The characters previously relied upon for the separation of the genera *Brachynemurus* and *Myrmeleon* are not constant and of little importance. The genera are, however, well known by a certain habitus. I have discovered that there is a good generic character in the origin

of the radial sector of the fore wings. In the genus *Brachynemurus* the sector arises much nearer to the base, and there are but three (rarely four) cross-veins between it and the base of the wing; in *Myrmeleon* there are six (or more) cross veins between it and base of wing. The hind tibiæ of *Myrmeleon* (our species) are lineate with black.

Brachynemurus ferox Walk.—Head pale yellowish, a large transverse dark spot at base of antennæ, a transverse spot on vertex giving off an extension each side behind, antennæ dark brown, in ♂ rather longer than the thorax, in ♀ about as long; palpi short, last joint dark; prothorax pale, with four dark stripes, each side-pair united in front and behind, leaving only a narrow median line between them, lower side with a stripe extending on mesothorax; anterior lobe of mesothorax mostly dark, a pale median line, side lobes with irregular dark spot, median lobe with a stripe each side; metathorax mostly dark, a pale spot on each side lobe; pleura mostly dark, and a dark spot on the coxæ; legs pale, femora usually infuscated above and some black on tarsi; abdomen with three dark stripes above run together at apex; venter dark, with pale at base of third and fourth segments in the ♂; wings moderately broad, acute at tip, venation mostly dark, but little marked with pale; median vein broadly marked with dark to beyond middle of wing; a large spot at base of pale pterostigma, the three cross-veins basad of radial sector mostly dark, one or two of the cells often crossed. Male appendages cylindrical, moderately short, slightly divaricate and clothed with black bristly hairs. Length ♂, 50 mm.: ♀, 34 mm. Expanse 70 mm.

San Bernardino, California (A. P. Morse).

Brachynemurus 4-punctatus Currie.—Pale yellowish, a black spot between antennæ, usually divided, vertex with a transverse row of four black dots; antennæ light brownish below, darker above, a little shorter than thorax; palpi short, pale, last joint with a brown spot. Prothorax with four black lines, the outer one often broken into spots, the middle pair not extending on posterior lobe, a brown line on each lower side and extending back on the mesothorax; latter pale, with two short stripes above, and a large spot (containing a pale spot) on lateral lobe; metathorax with a median X mark and a stripe each side; coxæ with a dark spot, rest of legs wholly pale; abdomen with three dark stripes running together at tip; venter dark, base and tip of segments pale. Wings moderately broad, acute at tip, main veins marked with fuscous and white, most of venation dark, the median vein broadly colored; pterostigma white, a dark spot beyond; three cross-veins basad of the radial fork mostly or wholly pale, none crossed. Male appendages short, stout, yellow, divaricate, thickly clothed with long black hairs. Length ♂, 36 mm.; ♀ 30 mm. Expanse 54 mm.

Lancaster, California (A. P. Morse).

This species has much resemblance to *B. peregrinus*, but differs in narrower wings, wholly pale legs no transverse lines on vertex, etc.

Brachynemurus minusculus n. sp.—Similar in most respects to *B. 4-punctatus*, but smaller, the antennal spot larger and extends to the eyes each side, rarely divided, a transverse line on vertex, as well as the row of spots; antennæ

darker, apex rather pale; last joint of palpi black; the median stripes on the mesothorax run together; coxæ I with two black spots on outside; femora with a dark line above, and some black on tarsi; abdominal stripes run together at base as well as at the tip; venation of wings more maculose, the three cross-veins basad of radial sector are mostly dark, and the dark on median vein is mostly grouped in elongate spots; many small V marks on veinlets near tip of wing. Male appendages pale, short, more divaricate than in *B. sabulosus*. Length ♂, 28 mm.; ♀, 21 mm. Expanse 40 mm.

Lancaster, California (A. P. Morse).

Brachynemurus centralis n. sp.—Face pale yellowish, a brown spot enclosing antennæ, two dark transverse lines on vertex, the hind one often interrupted in the middle, and a median dot behind; tips of palpi dark, antennæ pale brown: prothorax with two broad submedian dark stripes, leaving a narrow yellowish line, which in the males has a projection in the middle, each stripe has in its front part a distinct pale dot, sides with a shorter dark stripe, and the side margin brown, rest of thorax mostly dark, with scattered pale dots, spots and lines; legs pale, dotted with brown, often quite densely; abdomen dark, in the ♂ with an interrupted pale stripe on each side of the basal segments, last three segments with a transverse pale spot in middle of each, and sometimes a dot at tip; wings hyaline, veins mostly dark, interrupted with pale, some large clouds along the median, at base of pterostigma and forming an oblique line (sometimes indistinct) at end of anal and at end of median vein; hind wings with veins mostly dark, subcosta and radius interrupted with pale. Spurs as long as two tarsal joints, wings moderately narrow, quite a number of costals forked; three cross-veins basad of radial sector, six or more cross-veins connect anal to median sector. Male appendages scarcely one-fourth as long as last segment, cylindrical, divaricate, bristly. Length ♂, 43 mm.; ♀, 27 mm. Expanse 60 mm.

Mesilla, New Mexico, June (Morse); Estes Park, Colorado, August (Snow).

Brachynemurus tenuis n. sp.—Face pale yellowish, a large brown spot between and enclosing antennæ, and extending above from eye to eye, its upper margin indented in the middle, vertex pale yellowish, with two depressed dark dots near the middle; antennæ pale reddish brown, darker at tip; prothorax pale yellowish, with a brown stripe on each side reaching to the transverse furrow, and the side margin brown, rest of thorax pale, with an interrupted brown stripe each side, and a narrower one in the middle, sides pale, with several dark spots near the coxæ; legs pale, tarsi with brown at joints, and a few brown dots on hind femora; abdomen paler at base, darker towards tip, basal joints indistinctly trilineate, a pale spot on middle of last three segments; wings hyaline, forks of veinlets in hind part of fore wings marked with fuscous, median vein with about 22 quite large fuscous clouds, radius with a series of regular semicircular clouds to the pterostigma, not as large as those of median vein; basal part of radial sector wholly pale, costal veinlets clouded at tip, and many forks in apical part of wing clouded; hind wings with small dark clouds along the radius, and the median vein interrupted with dark, pterostigma whitish. Spurs as long as two tarsal joints: wings moderately narrow, not very acute, only a few costals forked before pterostigma, three cross-veins basad of origin of radial sector (four in one specimen). Male appendages one-half as long as last segment, but slightly divaricate and upcurved, slender. Length ♂, 35 mm. Expanse 47 mm.

Mesilla, New Mexico, June (Morse).

A very pretty species, readily known by the pale radial sector.

Brachynemurus coquilletti Curriè.—Can. Entom., 1898, p. 93.

Two specimens from Coronado, California (July), agree with the description. It is readily known by the pale vein between radius and median. Distinguished from *B. tenuis* by broader wings at tips, absence of large spots on median, absence of spots on hind wings, different thoracic markings, shorter genital apparatus, etc.

The species of *Brachynemurus* known to me may be separated by the following table:

1. Labial palpi longer than head.....**longipalpi.**
 Labial palpi much shorter.....2.
2. Wings plainly yellowish, nearly evenly marked all over with small blackish points, hind femora scarcely, if at all, pointed with fuscous.
abdominalis.
- Wings not plainly yellowish, dark spots mostly along radial and median veins 3.
3. Abdomen plainly marked by large transverse pale spots.....**sackeni.**
 Abdomen not so marked.....4.
4. Two series of costal areolets almost to base of fore wings, none of fuscous points on wings very large, size medium.....**longicaudus.**
 Not two series of costals areolets as far to base of wings.....5.
5. No dark points at ends of cross-veins on hind part of fore wings, except at end of anal vein6.
 Many small points at ends of cross-veins in hind part of fore wings.....9.
6. Median vein without small cloud-like projections, labrum black.
nigrilabris.
- Median vein with dark projections.....7.
7. Larger, darker, no fuscous markings on the forks of veinlets beyond end of cubital vein.....**ferox.**
 Medium size, paler, some fuscous marks on forks of veinlets beyond end of cubitus8.
8. Cubitus faintly marked, there is a series of clouded gradate veinlets starting from end of cubitus.....**peregrinus.**
 More dark on cubitus, the cross-veins from end of cubitus do not form a gradate series, paler than preceding.....**4-punctatus.**
9. Vein between radius and median (just behind radial sector) for a considerable part of its length pale.....10.
 The above vein interrupted with black or brown throughout.....11.
10. Radial sector on basal part wholly yellow, dark dots in hind basal part of fore wing are on the margin.....**tenuis.**
 Radial sector dark, dots in hind basal part of fore wing are mostly near anal vein.....**coquilletti.**
11. A vertical line between bases of antennæ, pterostigma of hind wings without a dark mark interiorly, many costals of front wings forked before the pterostigma**pumilis.**

- A large transverse spot including the bases of antennæ, pterostigma of hind wings marked interiorly with black.....12.
12. Smaller size, scarcely any of the costals forked before pterostigma in fore wings, prothoracic stripes distinct.....**minusculus.** *(Hesperid)*
- Medium size, quite a number of the costals forked before pterostigma in fore wings, prothoracic stripes run together.....**centralis.** *(brunneus)*

Myrmeleon distans n. sp.—Black, head black, shining, mouth pale, some pale spots on vertex and a line close to the eyes; antennæ shining black, shorter than thorax; palpi short, last joint black; thorax yellow, with two submedian black stripes, and a broader stripe each side, which does not reach the anterior margin, lower sides with a black stripe, rest of thorax dark, with a few pale spots mostly on the sides; abdomen dull black; legs pale, the femora above on apical half black, tip of tibiæ and tarsi annulate with black; wings hyaline, veins dark, mostly interrupted with pale, no clouds, hind wings with subcosta, radius and median vein interrupted with pale, pterostigma of both pairs whitish, fore wings rather broad, hind pair much narrower, both acute at tips, eight cross-veins basad of radial sector in fore wings, two cross-veins connecting anal vein to fork of median. Expanse 60 mm. *(A. Distans)*

Coronado Beach, California, July (Morse).

Most of the species of *Myrmeleon* are rather closely related to each other and hard to separate; I have found no good characters to separate *immaculatus* and *mobilis*.

1. Two oblique dark lines on the fore wings, one at end of median vein, the other at end of anal vein.....**ingeniosus.** *(Sammis)*
- No such oblique dark marks.....2.
2. A pale stripe each side on thorax through the base of wings, size medium. **tectus.** ✓
- No such stripe on side of thorax.....3.
3. The anal vein and the sector of the median connected by three or four cross-veinlets, rather large species.....**immaculatus.** *(mobilis)*
- The anal vein and the sector of median connected by two (rarely three) cross-veins.....4.
4. Cross-veins basad of radial sector mostly dark, rather larger species. **distans.** ✓
- Cross-veins basad of radial sector mostly paler, rather smaller species. **rusticus.** *(Cru)*

LIMNEPHILIDÆ.

Limnephilus radiatus Say.—There is much variation in the extent of the dark markings of the wings in this species. I have seen but one specimen which agrees with Say's description, which seems to be an extreme in markings, usually most of fore wing, except the costal area, is mottled with dark brown, the anastomosis is always darker, there is a whitish spot on thyridium before the fork; the pale in base of fifth apical cell extends no farther out than on the fourth and third (which readily separates this species from *L. pacificus*), a semi-circular pale spot including apices of fourth and fifth apical and first and second subapical cells; apical part of first and second cells mostly pale, a whitish hyaline oblique spot across middle of thyridial and interclavial cells; pterostigma dark,

that of the hind wings quite distinct: in hind wings the subapical cells begin quite a distance beyond the base of discal cell. Body clothed with blackish hair, a few yellow ones on face and thorax. Expanse 34 mm.

Tacoma, Washington, September (Morse).

Limnephilus pacificus n. sp.—Head ferruginous, mostly with black hair, antennæ yellow-brown, thorax ferruginous, with black hair; abdomen fuscous; legs yellowish, with black spines; fore wings hyaline, with dark brown spots, mostly connate along lower edge of the radius; pterostigma and anastomosis dark brown, dark brown each side of thyridium, but interrupted obliquely in the middle by a whitish streak; hind portion of wing pale, except dark spots in sutural area; dark of thyridium is continued beyond anastomosis for half the length of the fifth apical cell; apicals and subapicals light yellow-brown, but large spots in base of apicals, that of the fifth apical extending outward nearly twice as far as the others, first and second apicals paler than others, the dark brown and light brown both contain whitish dots; there is a white spot in thyridium just before the fork; hind wings dusky at tip. Basal joints of antennæ twice as long as broad; wings not very long, obliquely truncate at tips; radius bent at pterostigma, anastomosis nearly straight, vein at base of subapicals plainly oblique, first subapical fully four times as far on thyridial as first apical on discal cell, seven spines basad of subapical spurs on hind legs; in hind wings the subapicals arise quite a distance beyond base of discal cell. Expanse 28 mm.

Tacoma, Washington; Temino, Washington; Portland, Oregon (Morse); Olympia, Washington (Kincaid).

Limnephilus luteolus n. sp.—Head yellowish, clothed with yellow hairs; antennæ rather darker; legs yellow, spines black; thorax yellowish, with yellow hair; abdomen fuscous; fore wings yellowish hyaline, darker yellowish on hinder portion of wing up to and in some points across the thyridium, indented on basal third by a curved, whitish hyaline streak; basal part of first subapical cell pale, a whitish spot on thyridium before the fork, apical cells beyond middle more or less mottled with dark; hind wings hyaline, slightly infuscated around tips. Basal joints of antennæ twice as long as broad, faintly tapering; fore wings rather long, apical margin slightly concave in middle, radius bent up just before pterostigma, first subapical cell more than three times as far on thyridial as first apical on discal cell; anastomosis nearly straight, vein at bases of subapical cells only slightly oblique; in hind wings the subapicals begin only a little way beyond the base of the discal cell; seven spines basad of subapical spurs on hind legs. Expanse 37 mm.

Tacoma, Washington, September (Morse).

In one specimen the fourth apical in hind wings is scarcely narrowed at base.

Limnephilus concolor n. sp.—Head yellowish, mostly with yellow hairs, some black bristles on vertex; thorax yellow, with black and yellow bristles; abdomen fuscous above, pale beneath; wings hyaline, mostly tinged with brown, space behind divisialis plainly darker; subapicals and apical two-thirds of apical cells darker, some dark dots behind radius and pterostigma brown, the brown everywhere dotted with many small irregular, hyaline spots; no sign of an oblique

pale streak across thyridium; a minute white dot on thyridium just before the fork as usual; tip of hind wing infuscated. Basal joint of antennæ about twice as long as broad; wings moderately long, apex not strongly truncate, anastomosis straight, vein at base of subapicals oblique, first subapical on thyridial fully four times as long as first apical on discal cell; the triangular cell in hind basal part of fore wings is fully three times as long as broad (longer than usual in the genus); subapicals in hind wings arise almost as far back as base of discal cell, fourth apical cell much narrowed at base; about five or six spines basad of subapical spurs on hind tibiæ. Expanse 28 mm.

Tacoma, Washington, September (Morse).

The species of the preceding genus may be arranged in groups about as follows:

1. Most of spines on tibiæ I yellow; the first branch of radius in hind wings is thickened in the middle (at least in ♂)...**hyalinus, indivisus.**
Most of tibial spines black, no such thickened vein in hind wings.....2.
2. Some dark spots along the hind edge of the radius.....3.
Without such spots.....**ornatus, luteolus.**
3. No oblique pale streak across the middle of thyridium.....**concolor.**
An oblique pale streak across middle of thyridium.....**combinatus, radiatus, pacificus, nebulosus, gravidus.**

L. gravidus may, perhaps, be more properly classed as an *Anabolia*, for in the hind wings the fourth apical is but little narrowed at base, and the fore wings are scarcely truncate at apex.

Goniotaulius coloradensis n. sp.—Black, antennæ and palpi black, femora black, extreme tips and rest of legs pale yellowish or whitish, a black spot on under side of tibiæ I, black spines on tibiæ, and two black bristles just before tip of fore femora, scattered yellowish hair on the head and thorax; wings pale hyaline, rather brownish along posterior margin and most of region beyond anastomosis, sometimes leaving a pale streak oblique upward and a narrower downward, sometimes mostly brownish, with a large pale area around anastomosis and some elongate basal dots; pterostigma darker brown; hind wings hyaline, rather obscure at tips. Antennæ much shorter than the wings, fore wings moderately narrow, obliquely truncate at tip, the anastomosis zigzag. Male appendages short, complicated, the superior pair short, straight, blunt-pointed. Expanse 18 mm.

Fort Collins, Colorado (Baker).

Anabolia decepta n. sp.—Head brown, with black hairs, some yellowish ones on face; antennæ brownish, basal joints rufous, with black hair; thorax brown; legs yellowish; femora brownish; abdomen brown; wings hyaline, suffused with light brown, a white streak from discal cell across thyridial and interclavial areas; bases of apical cells pale; anastomosis and pterostigma dark brown, and some dark brown spots along the radius and divisialis, the light brown of apical part of wings irrorate with hyaline, costal area immaculate, except toward pterostigma, a white dot on thyridium just before the fork. Wings rather long and narrow, discal cell but little longer than its pedicel, anastomosis nearly

straight, first subapical on thyridial fully three times as far as first apical on discal cell, vein at base of subapicals nearly straight, in hind wings the fourth apical is nearly as wide at base as the second apical cell; about eight spines basad of subapical spurs on hind tibiæ; male genitalia very peculiar, each side piece is two-forked, the both erect, the apical one larger and more pointed. Expanse 23 mm

Olympia, Washington (Kincaid).

Stenophylax brevipennis n. sp.—Black, clothed with scattered black bristles and yellowish hairs; mouth and palpi ferruginous; antennæ ferruginous, basal joints dark brown; posterior margin of vertex ferruginous; legs dirty yellowish, brown on femora and tips of hind tibiæ, black spines and yellow spurs, two black bristles just before tip on anterior femora, and underneath is a row of short black hairs; wings hyaline, marked with brown, some small spots along the subcosta, a few on discal area, hinder portion nearly filled with brown, leaving only small pale dots, apical cells slightly reticulate with brown in their tips, pterostigma of both pairs brown, rest of hind wings hyaline, sometimes the brown is spread over nearly all the wing, except costal area, fore wings short and broad, rounded at tips, anastomosis nearly straight. Male appendages yellowish, superior pair black at tips, large, truncate, seen above deeply cleft, below concave, inferior pair shorter, upturned, acute at tip. Expanse 20 mm.

Colorado (Baker).

Chilostigma pallida n. sp.—Head pale yellowish, with pale yellow and some scattered blackish hairs; thorax yellowish, with pale yellow hair; legs pale yellowish, spines black; abdomen brown; wings hyaline, hinder half of the apical part beyond anastomosis irrorate with pale yellow-brown markings, pterostigma very prominent, large, yellow-brown, veins yellow; hind wings hyaline; antennæ rather fine and short; spurs 1-2-2; wings moderately broad, truncate at tip, the pterostigma elevated, the radius strongly curved at that point, the first apical cell at base swollen above, and not extending along side of discal cell at all, the anastomosis being very straight, not indented by third apical, which is as broad at base as the fourth apical, fifth apical acute at base, not extending along thyridial cell, vein at base of subapicals nearly straight, the discal cell is slightly less than twice as long as its pedicel, in hind wings the fourth apical is scarcely narrowed at base. Expanse 32 mm.

Ithaca, New York.

Halesus magnifica n. sp.—Face reddish, with yellow hair, vertex darker, with pale yellow hair on hind margin; antennæ red-brown, basal joint nearly black; thorax dark, with long pale yellow hairs on base; legs yellowish, femora more rufous, spines black; abdomen ferruginous, fuscous at base; wings thickly marked with large dark brown spots, basal part of costal space mostly clear, extreme base of wing clear, and a large nearly clear space across middle of discal cell, thyridial and interclavial areas, several large spaces in the bases of the apical cells, the apical portion of third apical and first subapical cells mostly clear, elsewhere the brown is thickly broken up by hyaline roundish spots, often two or more are connate, a rather yellowish space before dark pterostigma; hind wings wholly hyaline, with long whitish fringe at anal margin,

fore wings rather long, the apical margin very oblique and quite long, discal cell nearly twice as long as its pedicel, anastomosis nearly straight, vein at bases of subapicals oblique, first subapical cell is fully three times as far on thyridial as first apical on discal cell, the third apical is narrow at base, but does not indent the anastomosis, in hind wings the third apical is narrow at base, but the fourth is about as wide as second; about ten spines basad of subapical spurs on hind legs. Expanse 50 mm.

Olympia, Washington (Kincaid).

SERICOSTOMATIDÆ.

Helicopsyche californica n. sp.—Head with mostly white hairs, a bunch of black ones over each eye; palpi mostly black haired; antennæ pale yellowish, basal joint with long whitish hair and some black; thorax with mostly whitish hair; abdomen brown, with gray hair; legs with short, almost scale-like hairs, first pair darker than others, the femora dark at base, and the tibiæ at tip, the tarsi black and white, the other tarsi less marked with black, the other femora mostly pale, the other tibiæ a little infuscated; fore wing rather densely clothed with black and yellowish hair, giving the surface a shining appearance, apical fringe jet black, quite long and prominent at lower apical angle, hind wings blackish, with long blackish fringe; antennæ short, stout, basal joint about as long as head, erect; fore wings moderately short (plainly shorter than in *H. borealis*), hind wings short, narrow (like *H. borealis*); venation similar to *H. borealis*. Expanse 10 mm.

Colton, California (Morse).

Oligoplectrum americanum n. sp.—Head and thorax brown, above on vertex long yellowish hair arising in groups; antennæ pale, annulate with brown; palpi with yellow and black hairs; legs yellowish, with short yellowish hair and short yellow spurs, 2-2-2; wings gray, with a pale spot at anal angle, and one in tip of first subapical cell, indistinct ones in tips of first and second apical cells, pterostigma darker than elsewhere, rather blackish basad of pale anal spot, hind wings uniform gray; abdomen blackish, with short whitish hairs in rings; antennæ rather shorter than wings, stout, basal joint stout, scarcely as long as head; face concave, with a median ridge; palpi of ♂ cylindrical, slender, upcurved and near the face; head rather broad; fore wings moderately broad, discal cell short, not one-third the length of its pedicel, radius bent suddenly at beginning of pterostigma, cross-veins at base of subapicals very oblique; hind wings about as broad, but much shorter than fore pair, discal cell open, not even narrowed; abdomen short; appendages short, a superior median emarginate plate covering them from above. Expanse 18 mm.

Franconia, New Hampshire (Mrs. A. T. Slosson).

Silo cinereus n. sp.—Head brown, with long black and white hair, not very dense; palpi slender, dark, with a few white hairs; basal joint of antennæ dark, with long white and a few black hairs, beyond pale, very distinctly annulate with brown, thorax black, with some gray hair; abdomen brown; legs yellowish, anterior femora rather darker in the middle; wings gray hyaline, scantily clothed with short yellowish and gray hairs, a dark dot in base of third apical cell. Spurs 2-4-4, subapical pairs of intermediate and hind legs beyond

the middle; antennæ much shorter than wings, basal joint much longer than head; fore wings long, slender, acute at tip, hind pair a little shorter, scarcely narrower, no anal area, long fringed toward the base; discal cell of fore wings slender, slightly shorter than its pedicel, and much shorter than apical cells, first apical cell on discal cell more than one-half as far as fifth apical on thyridial cell, third apical broader at base than the second or fourth, veinlet at base of subapicals very oblique, in hind wings the discal cell is plainly shorter than its pedicel, and scarcely one-half the length of the apical cells, second subapical pedicellate. Expanse 17 mm.

Gazelle, California, September (Morse).

Mormonia pictilis n. sp.—Head brown, with some black hairs on front and long yellow hair above; palpi pale, with yellowish pubescence; antennæ black, faintly annulate with pale, basal joint black haired; thorax dark, with yellow and black hair; abdomen brown, the ventral segments margined with pale; legs pale yellowish, with yellowish spines; wings gray, with yellowish and black hairs and a gray and black fringe, a dark cloud over anastomosis, hind border narrowly dark to the anal angle, where there is a whitish spot, apical margin with elongate whitish spots between the veins, darker on veins, hind wings uniform gray, with gray fringe. Antennæ short, fine, basal joint about as long as head, spurs 2-4-4, subapical pair on hind leg much beyond the middle; wings moderately long, apex rounded, hind pair but slightly shorter, discal cell in both pairs closed, in fore pair indistinctly, the cell (in both pairs) elongate, but much shorter than its pedicel. Expanse 15 mm.

Franconia, New Hampshire (Mrs. A. T. Slosson).

Differs from both described species (*M. togata* and *M. vernalis*) by darker antennæ, and more maculate wings, and from the former by shorter basal joint of antennæ.

Gœra calcarata n. sp.—Head yellowish, with yellowish hair, some black hair below eyes; palpi and antennæ pale yellowish; legs pale yellowish, the spines reddish brown, distinctly contrasting with the pale tibiæ; thorax and abdomen dark, former with pale yellowish hairs; wings hyaline, veins yellowish, with black hairs, shorter yellowish hairs on surface of the wings. Head broad; basal joints of antennæ longer than head, widely separated at base, between them and rather above is a double wart, and two large, broad, low warts on vertex near each eye, fore wings moderately long, rather pointed, hind pair much shorter, not broader than fore pair, and with a long fringe towards base, discal cell of fore wings short, indistinctly closed, fifth apical cell pedicellate, veinlet at base of subapicals very oblique, area interclavialis enlarged at tip (as in the European species), in hind wings the discal cell is open, not even constricted, fifth apical cell pedicellate. Expanse 20. mm.

Sea Cliff, New York, July.

NEROPHILUS n. gen.

Spurs 2-4-4; maxillary palpi rather long, second and third joints of ♀ very stout, rest shorter and more slender; basal joints of antennæ much longer than broad; wings rather broad, hind pair

but little shorter, discal cell of fore pair slender, closed, of hind pair shorter, closed, in each of the fore wings the veinlet behind the third apical cell is, for the most part of its middle, divided, forming a slender cell (possibly this is only an aberration).

Nerophilus oregonensis n. sp.—Black, head rather densely clothed with yellow hair; basal joints of antennæ black, with yellow hair, rest of antennæ with short yellow hair, and a pale brown ring at tip of each joint, basal joints of palpi pale, with yellow hair, apical joints darker; legs pale yellow, intermediate and hind femora fuscous on basal half; thorax black, with yellow hair; abdomen brown; fore wings rather blackish, the anal veins and the basal part of the radius black, elsewhere the veins are paler, surface with black hair and yellow or golden between the veins, most prominent on basal pair; hind wings quite black, with black fringe, wings rather broad, discal cell of fore pair slender, much longer than its pedicel, but shorter than the apical cells, fifth apical and first subapical are pedicellate, in hind wings the discal cell is shorter than its pedicel, and less than one-half the length of apicals, seven apical cells in hind wings, all narrow at base, and radiating from the ends of discal and thyridial cells; subapical spurs on hind and intermediate tibiæ are much beyond the middle. Expanse 26 mm.

Grant's Pass, Oregon, September (Morse).

PRISTOSILO n. gen.

Spurs 2-4-4; maxillary palpi of ♂ broad, upcurved, and masking the face, densely clothed outside with scale-like hairs; antennæ much shorter than wings, basal joint rather longer than head; fore wings quite narrow, hind pair a little shorter, scarcely broader than fore pair and without anal field, discal cell of fore wings long and closed, of hind wings much shorter and closed, hind wings and costal area of fore pair clothed with scale-like but rather slender hairs; size small.

Pristosilo canadensis n. sp.—Gray, palpi, face and basal joints of antennæ with yellowish gray scale-like hairs, and the latter with longer yellowish hair, rest of antennæ pale yellow; vertex and thorax with groups of long pale yellowish hairs; legs yellowish; abdomen fuscous, appendages yellowish; wings gray hyaline, with gray hairs and yellow-gray scale-like ones on costal area of fore pair and over whole of hind pair, fringe gray, interrupted with black; antennæ rather short and stout, basal joint longer than head; legs rather short, subapical spurs on hind and intermediate pairs much beyond the middle; wings rather narrow, discal cell long, narrowed at tip, about as the pedicel, apical cells about as long, first subapical much longer, discal cell of hind wings shorter, about as long as its pedicel, apical cells twice as long; inferior male appendages long, forcipate upcurved. Expanse 14 mm.

Sherbrooke, Canada, June (Bégin).

PSILOTRETA n. gen.

Spurs 2-4-4; subapical pair on intermediate tibiæ before the middle; palpi of male long, densely clothed with long hair in rather vertical rows, those on second joint mask the face; basal joint of antennæ as long as head; fore wings long and narrow, hind pair shorter and with a folded anal region, discal cell in both pairs very long, and open or indistinctly closed, third apical of fore wings short pedicellate, first apical very much longer than the second, third apical in hind wings pedicellate.

Psilotreta frontalis n. sp.—Head brown, with black hair; second joint of palpi with long and dense, black and gray hair on upper and inner sides, rest of palpi less pilose; antennæ yellowish; thorax and abdomen brown; legs yellowish; wings gray hyaline, with short gray and yellow hairs, basal joint of antennæ about as long as head, with short hair; fore wings long, slender, rounded at tip, discal cell very long, three times as long as its pedicel, scarcely closed, first apical cell extending nearly one-half way upon discal cell, third apical short pedicellate, veinlet at base of subapicals angulate, in hind wings there is a large folded anal region, the hind margin is long fringed, the discal cell is slightly narrowed at tip, but scarcely closed, twice as long as its pedicel, third apical cell short pedicellate. Expanse 23 mm.

Sea Cliff, New York, June.

LEPTOCERIDÆ.

The principal section of this family is that defined by having the spurs not more than 2 2-2. The genera of this section known to me may be separated as below :

1. Hind wings with fork five absent, thyridial cell absent, hind wings moderately narrow..... **Trienodes.**
Hind wings with fork five present.....2.
2. Fore wing bent transversely near tip, first apical cell long, hind wings quite broad, black species.....**Mystacides.**
Fore wings not so bent.....3.
3. Venation different in the sexes, in fore wings in the female the superior branch of upper cubitus is twice forked, making fourth and fifth apical cells both pedicellate, in male only fourth apical cell pedicellate, hind wings very broad, spurs 2-2-2..... **Leptocerus.**
Venation not different in the sexes, fourth and fifth apical cells never both pedicellate, spurs 1-2-2 or 0-2-2.....4.
4. Hind wings very broad, veins on costal portion of hind wings (before fork five) obsolete, in fore wings first and fourth apical cells both pedicellate, white or pale species..... **Leptocella.**
Hind wings not so broad, veins on costal portion distinct, not white species..5.
5. Superior branch of upper cubitus simple in fore wings, hind wings broader. **Æcetina.**
Superior branch of upper cubitus forked, wings very long and narrow, with acute tips..... **Setodes.**

The species of this section known to me are as follows :

Triænodes—*ignita*, *grisea*.

Mystacides—*nigra*, *atra*, *punctata*. *4-fasiata*.

Leptocerus—*indecisus*, *resurgens*, *mentiens*, *dilutus*, *transversus*, *flaveolatus*, *maculatus*.

Leptocella—*exquisita*, *uwarowii*, *albidus*, *piffardii*, *coloradensis*.

Ccetina—*incerta*, *parvula*, *fumosa*, *floridana*, *avara*, *flavida*.

Setodes—*americana*.

Triænodes grisea n. sp.—Head ferruginous, vertex rather blackish; palpi gray; antennæ pale yellowish, tips of joints blackish, basal joint ferruginous, some yellow hairs on head; thorax black, above with some yellow hairs; abdomen yellowish, slightly brownish above; legs yellowish gray, paler toward tips, joints of tarsi scarcely darker at tips; wings uniform yellowish gray, scantily clothed with grayish yellow hairs, with darker gray fringe on apical margin of fore pair and on posterior margin of hind pair, veins paler, fore wings moderately long, costal margin rounded, hind margin straight, discal cell closed, the upper branch forked nearer to cell than to tip of wing, the lower branch simple, terminating before tip of wing, hind wings with discal cell closed, the upper branch forked nearer to tip than to the cell. Expanse 23 mm.

Denver, Colo. (Baker, Cockerell).

Leptocerus maculatus n. sp.—Head with a bunch of black and white hairs under and one above each eye, some white hairs on middle of vertex; palpi brown and white; antennæ white, distinctly annulate with black; thorax with several groups of black and white hairs; abdomen green; legs white, tarsi all annulate with black, and the anterior tibiæ black on outside, and intermediate tibiæ rather blackish on outside also; fore wings clothed with black hair, with scattered white patches, most prominent on middle and basal part of wings, fringe long and black, hind wings gray, with long gray fringe; antennæ scarcely twice as long as wings; palpi long; abdomen short and large, spurs 2-2-2, fore pair short but distinct; fore wings short, rounded at the tip, discal cell about length of its pedicel, first apical cell twice as long as its pedicel, the fourth apical cell has a pedicel rather shorter than itself, while the third apical arises from the middle of the pedicel of the fourth; hind wings shorter and scarcely broader than the fore pair, first apical cell long pedicellate, fourth apical cell short pedicellate, all of the veins distinct. Expanse 15 mm.

Washington, District of Columbia, August.

LEPTOCELLA n. gen.

Venation alike in the sexes, fore wings long and narrow, hind wings very broad, veins of costal region of hind wings (before fork five) are obsolete, fork five present, spurs 1-2-2 or 0-2-2, first and fourth apical cells of all wings are pedicellate, second and third joints of palpi long, subequal, fourth smaller and rather shorter, fifth still shorter.

This genus is easily known by the obsolete veins in costal half of the hind wings.

Type *L. uwarowii*.

Leptocella coloradensis n. sp.—Head yellowish; basal joints of antennæ same color, other joints narrowly annulate with brown; thorax rather reddish; abdomen pale at base, darker toward tip; legs pale yellowish; wings hyaline, rather shining, very scantily clothed with short pale hairs, hind pair with rather short pale fringe; antennæ twice as long as wings, basal joints very large, swollen above; spurs 0-2-2, fore wings long and narrow, discal cell slender, but much shorter than its pedicel, longer than apical cells, first apical rather shorter than its pedicel, fourth apical short pedicellate, hind wings much shorter than fore pair, with a broad folded anal space, veins on anterior part indistinct. Expanse 24 mm.

Colorado (Baker).

Setodes americana n. sp.—Palpi with black hair; antennæ white beyond the basal joint, annulate with black; thorax dark, with white hairs; abdomen brownish; legs pale yellowish, anterior pair darker, fore wings with black hair and blackish veins, and a black fringe; in well-marked specimens some whitish dots on hind part of wing, a larger one at anal angle; hind wings gray, with long dark gray fringes; antennæ very long and slender, two and one-half times as long as wings; fore wings long and slender, acute at tip, no closed discal cell, first apical cell pedicellate, fourth apical cell acute at base, no fifth cell, hind wings rather narrow, and a little shorter than fore pair, acute at tip, three main veins, each forked, the upper branch of first forked again near tip, first and second connected just before the first fork. Expanse 13 mm.

Washington, District of Columbia, July.

ÆCETINA n. gen.

Differs from the typical *Æcetis* by having a much longer discal cell, and in the first apical reaching anastomosis, hind wings are not very broad.

Type *Æ. incerta*.

Æcetina incerta Walk. (*micans* Hag.).—Wings not densely clothed with hair, rather subnude. luteous, anastomosis brown, discal cell not extending much beyond thyridial cell, fifth apical cell does not extend along thyridial basad of anastomosis, thyridial cell less than one-third longer than discal cell. Expanse 17 mm.

Long Island, New York, July; Washington, D. C.

Æcetina parvula n. sp.—Head and thorax brown, with gray hair; palpi gray; antennæ pale, annulate with black; legs pale yellowish; abdomen greenish; wings with black hair and fringe, anastomosis brown, fore wings slender, acute at tip, discal cell projecting a little beyond thyridial cell, fifth apical not extending on thyridial cell, no distinct mark on base of discal cell, thyridial cell not much longer than discal cell. Expanse 11 mm.

Washington, District of Columbia.

Distinguished by its small size and short thyridial cell, smaller and more hairy than *Æ. incerta*,

Ceetina flavida n. sp.—Yellowish, head, thorax and palpi clothed with pale grayish hair; fore wings quite densely clothed with short yellow hair and with gray fringes, anastomosis only a little infuscated, fore wings long and acute, discal cell only a little way beyond thyridial cell, the anastomosis being almost continuous and oblique, thyridial cell almost one-half longer than discal cell, the fifth apical cell not extending upon the thyridial cell. Expanse 16 mm.

Kissimmee, Florida, November.

Separated from *Ce. incerta* by yellowish fore wings, with less distinct and more continuous anastomosis, and the longer thyridial cell.

Ceetina fumosa n. sp.—Head and thorax brown, with gray hair; antennæ pale, annulate with black; legs luteous, first pair darker; palpi brown, with gray hair; abdomen greenish; wings more densely clothed than other species with black hair, anastomosis black, and usually with three black spots, one at base of discal cell (always present), one at base of thyridial cell, and one in middle of hind margin of thyridial cell, the basal half of the radius is usually black, fringes gray; tip of hind wings slightly fumose. Fore wings not very acute at tip, the discal extends quite a little beyond the thyridial cell, but the latter is more than one-half longer than discal cell, the fifth apical extends quite a ways on the thyridial cell (much farther than in other species). Expanse 17 mm.

Washington, District of Columbia, July, August.

Ceetina floridana n. sp.—Grayish; antennæ rather paler, annulate with brown at tips of the joints, much more than twice the length of the wings, basal joint clothed with white hair; legs yellowish gray, spurs 1-2-2; fore wings very long and slender, acute at tips, hinder pair broader and much shorter, fore pair clothed with yellowish gray hair, and some white and black hairs along the veins, three indistinct whitish spots on the posterior apical margin, posterior margin with a fringe of yellowish gray and black hairs, all the apical cells reach the anastomosis, and are of subequal width at base, except the first which is acute, fifth apical extends a little way on thyridial, hind wings scantily clothed with yellowish hair, and a rather long yellowish gray fringe, fork five present in hind wings, as well as three in front of it, first apical cell extending back on the discal. In the ♂ genitalia there is a large median corneous piece, deflexed rather beyond its middle, and acute at tip. Expanse 19 mm.

Biscayne, Bay, Florida (Mrs. A. T. Slosson).

HYDROPSYCHIDÆ.

Hydropsyche gracilis n. sp.—Head blackish, face with whitish hair; basal joint of antennæ brown, rest pale yellowish, obliquely and faintly annulate with brown; palpi brown; legs pale yellowish; thorax and abdomen dark brown; wings gray hyaline, with gray hairs and gray and black fringe, the black mostly at ends of veins. Fore wings rather long and slender, apex rounded, venation as usual, the discal cell less than one-third the length of the apical cell beyond it; hind wings rather short, not very broad, but broader than fore pair, broadest in the middle, the first and second forks are near the outer

fourth of the wing, the next two forks are near the middle of the wing, the upper branch of radial sector being simple (not forked just before tip as in many species). Expanse 15 mm.

Fort Collins, Colorado (Baker).

Separated by its small size, unmarked and slender wings, etc.

Hydropsyche californica n. sp.—Head brown, with whitish hair, a cluster of black hairs over each eye, and another cluster on each anterior corner of the mesothorax, rest of thorax whitish haired; palpi dark at base, rest pale; antennæ pale, obliquely annulate with brown; abdomen rather pale, with a narrow dark stripe each side; legs pale yellowish, base of hind femora rather blackish; wings gray hyaline, more or less marked with black on costal area and along the cubitus, apical portion of wing marmorate with white and brown, anal region also sometimes mottled. Fore wings moderately short and broad, tip of wing rounded, venation as usual, discal cell about one-third the length of the apical cell beyond it, hind wings broader than fore wings, broadest in middle, upper branch of radial sector forked just before the tip. Expanse 18 mm.

Tehama, Cala., August; Gazelle, Cala., September (Morse).

Psychomyia pulchella n. sp.—Head, thorax and palpi dark brown; antennæ pale, annulate with brown; legs pale yellowish; wings gray hyaline, with short gray hair and a gray fringe. Head with a rounded wart on the vertex just above each eye; antennæ about one-half length of wings; pronotum with a small tubercle each side; mesonotum with a double depression, in each a rounded wart, and behind on mesoscutellum is a broader depression with a small triangular wart in each side; spurs 2-4-4, long; fore wings rather long and slender, subacute at tips, hind wings shorter, slender, and with a long fringe behind, in fore wings the radial sector has the upper branch short forked, the lower branch much longer forked, both ending before tip of wing; upper branch of the cubitus forked just beyond the cross-vein. Expanse 8 mm.

Fort Collins, Colorado (Baker).

RHYACOPHILIDÆ.

AGARODES n. gen.

Spurs 2-2-4, subapical pair on hind legs much beyond the middle, scarcely twice their length basad of apical pair; no ocelli; vertex with two prominent, oblong, oblique warts; antennæ shorter than wings, stout at base, basal joint short and stout, much shorter than head; pronotum with two warts; maxillary palpi rather long, hairy, last joint short but slender; fore wings not very narrow, hind wings shorter, but scarcely narrower, discoidal cell of both wings open, cross-veinlets few and indistinct, but the thyridial is closed in both wings, and the veinlet closing it gives off near the middle a vein to margin of wing; short black spines on all tibiæ, but mostly concealed by the pubescence; size moderate.

This genus would appear related to *Beræa*, but differs in much larger size, in small basal joint of antennæ, shorter antennæ, spines on tibiæ, etc.

Agarodes grisea n. sp.—Head pale brown, a small wart under each eye, a larger one just above and between bases of antennæ. a large, oblong, oblique one each side on vertex, with its fore end nearest the eye, and two transverse ones on the pronotum, all crowned with long yellowish hair; antennæ clothed with short black hair; thorax and abdomen fuscous; genitalia reddish; legs pale, clothed with short yellowish hairs; palpi with yellowish hair; wings grey, veins mostly yellowish, surface with yellowish hairs at base, more blackish hairs on apical part, veins with black hair, fringe grey, with some black at anal angle. Discal cell connected near middle to the radius by an indistinct veinlet, discal cell open (but microscopic examination shows traces of a cross-vein), where there is a whitish hyaline spot; hind wings grey, with yellowish hair and grey fringe, long on hind margin toward the base; male superior appendages slender, inferior stouter, toothed. Expanse 26 mm.

Sea Cliff, New York, June.



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