

A LIST OF NEUROPTEROID INSECTS FROM MEXICO.

BY NATHAN BANKS.

In the following pages are included a list of the Neuropteroid insects (except Odonata) collected in Mexico during the past few years by Mr. O. F. Barrett. Some of the new species have been previously described and descriptions of several are included here. There are altogether fifty species, distributed among the three orders as follows:

Pseudoneuroptera	11
Neuroptera	20
Trichoptera	19
Total	<u>50</u>

In the Neuroptera and Trichoptera there are but few other species known from Mexico, but in the Pseudoneuroptera there are a considerable number of described species, particularly Perlidæ and Ephemeridæ, that do not figure in this list. About seventeen species are described as new.

In the Neuroptera especially noticeable is the absence of the Hemerobiidæ, a family so well represented in temperate regions. Two species, however, of this family have been described from Mexico by Hagen. On the other hand, the Chrysopidæ seem to be as numerous in species as in the more northern regions. Of particular interest is the tiny ant-lion fly, *Microleon apicalis*, one of the smallest and most handsome of the family. Although no Panorpidæ are in this list, two Panorpas and a Bittacus have been described from Mexico.

In the Trichoptera the majority of the species belong to the Lep-toceridæ and Hydropsychidæ; a fact true of all tropical regions. It is here where we find most of the new species.

Of the localities mentioned in the list, the following are in the State of Vera Cruz: Jalapa, Chavarillo, Teocelo, Xico and Presidio. In Morelos is Cuernavaca. In the Federal District-(D. F.) are Thalpan, Tacubaya and Esclave. Tomellin is in Oaxaca; Santa Maria in Pueblo; Durango in Durango State; Amecameca in State of Mexico; and Iguala in Guerrero.

PSEUDONEUROPTERA.

TERMITIDÆ.

Calotermes marginipennis Latr.

Winged specimens from Tacubaya, D. F., September.

PERLIDÆ.

Pseudoperla dilaticollis Burm.

Specimens from Cuernavaca, Morelos, June; and Jalapa, Vera Cruz, August. The one from Cuernavaca is much smaller than the others.

Pseudoperla nigrocincta Pictet.

Many specimens from Jalapa, August, and Orizaba and Cuernavaca in June. Varying much in size and distinctness of markings.

PSOCIDÆ.

Pterodela pedicularis Linn.

One from Tacubaya, D. F.

Psocus barretti Banks.

Several from the Federal District.

EPHEMERIDÆ.

Callibaetis montanus Eaton.

Several specimens from near Tacubaya.

Callibaetis undatus Pict.

A few examples from Tacubaya.

Baetis sp.

A small and pretty species from Cuernavaca, April. Related apparently to *B. salvinii*.

Baetis sp.

One of a rather large species from Xico.

Baetis sp.

A small species from Xico.

Tricorythus explicatus Eaton.

Several specimens from Jalapa. It has the general appearance of our species of *Cænis*.

NEUROPTERA.

MEGALOPTERA.

SIALIDÆ.

Corydalis lutea Hagen.

Many specimens of various sizes from Jalapa and Cuernavaca in June. The mandibles of the male vary in development as in our common *C. cornuta*.

Corydalis soror Hagen.

One example of this handsome species from Cuernavaca, June. It is very easily recognized by the inflated sides of the head.

Neuromus hieroglyphicus Rambr.

Several specimens of this striking species from Cuernavaca, June. I have seen another specimen of this species from Mexico under a manuscript name. The dried specimens are yellowish or whitish, but Mr. Barrett says they are bright green when alive.

Sialis mexicana n. sp.—Head reddish yellow, black each side behind the eyes, basal joints of antennæ yellow, rest dark brown. Pronotum reddish, thorax dark brown; legs rather paler brown; abdomen black; wings nearly black, veins jet black, some pale spaces in some of the larger cells. Antennæ very hairy, rather larger in the middle than at base, tip fine. Wings plainly narrower than in *S. infumata*, venation similar to that species, but with fewer costal cross-veinlets. Length 16 mm.

One specimen from Jalapa, Vera Cruz, August. Distinct by the bright color of the head and prothorax.

STEGOPTERA.

HEMEROBOIDEA.

CONIOPTERYGIDÆ.

Coniopteryx barretti Banks.

Several specimens from Amecameca, June. Larger than our species.

MANTISPIDÆ.

Mantispa varia Erich.

One example from Cuernavaca. It is very close to our common *M. brunnea*.

CHRYSOPIDÆ.

Chrysopa mexicana n. sp.—Face pale yellow, sometimes with reddish below; a black point each side by clypeus, a black streak on each cheek from eye, a broad undulate black band under antennæ, continued above between them in the shape of a Y, vertex with two black points, a larger spot each side behind the eye; palpi marked with black; first joint of antennæ with a red band above, second joint black, rest pale yellowish, darker on tips; thorax green, a few indistinct dark spots each side on pronotum; legs greenish, tarsi yellowish; wings green, venation green, ends of costal cross-veins and bases of radial cross-veins black; in hindwings the costal cross-veins wholly black. Wings rather broad, rounded at tips. Length 19 mm.

Six specimens from Thalpan, D. F., July. Closely related to *C. chlorophana*.

Chrysopa lateralis Guérin.

One example from Jalapa, Vera Cruz, August. The gradate veinlets and the radial and costal cross-veins are mostly black.

Chrysopa tolteca n. sp.—Face pale yellowish, vertex green, two indistinct reddish spots above; antennæ pale yellowish (not black), basal joint with a red line above; pronotum green, with a red stripe each side; thorax and abdomen green; legs pale greenish; wings green, cross-veins mostly black. Antennæ scarcely longer than the wings; wings rather narrow, acute at tips. Length 14 mm.

One specimen from Tomellin, Oaxaca, June.

Chrysopa rufilabris Burm.

One specimen, apparently not different from our forms, from Cuernavaca, Morelos, May.

Chrysopa externa Hagen.

One example from Tehachapi. Probably the same as Hagen had from Mexico, but Hagen's specimen from D. C. was probably *C. harrisii* Fitch. The species of this group are extremely close, and the character given for *C. externa* is sometimes present in various species.

Leucochrysa mexicana Banks.

One example from Charvarillo, Vera Cruz.

Meleoma innovata Hagen.

M. mexicana Banks.

One male from Amecameca, June. Described by Hagen as a *Chrysopa*, and I had overlooked the fact that in the description are the characters that place it in *Meleoma*.

MYRMELEONOIDEA.**MYRMELEONIDÆ.*****Acanthaclisis fallax*** Rambur.

A male from Cuernavaca, June. Widely distributed throughout the tropical regions of America.

Myrmeleon immaculatus De Geer.

Specimens from Cuernavaca, June, and Teocelo, Vera Cruz, August, do not differ much from our forms.

Brachynemurus versutus Walker.

B. mexicana Banks.

I think my species must be the same as Walker's, but several of his statements are considerably at variance with all my specimens. Several specimens from Cuernavaca, Durango and Esclava in September and October.

MICROLEON gen. nov.

No spurs; legs short; first tarsal joint of leg 1 as long as next three. Three cross-veins before the origin of radial sector; anal vein ends near middle of hind margin, about over the origin of the first fork of the radial sector; radial sector with but three or four branches; between anal and cubital veins but one series of cells (in this respect resembling *Cryptoleon* and its allies); sometimes a few of the costal veinlets forked; in hind wings the cubitus does not fork till end of the anal. Antennæ short, capitate.

Type *M. apicalis*.

Readily separated from all other genera on account of the simplicity of its venation. From *Maracauda* it is distinguished by the fact that the cubital fork of hindwings does not run parallel to the anal. It is probably closely related to Hagen's *Myrmeleon pygmæus*.

Microleon apicalis n. sp.—Face brown; two median pale spots and one each side from the lower part of eye; vertex black; a white mark each side above the eye, and sometimes four pale dots near the middle; antennæ annulate, club yellowish; pronotum brown, a median pale stripe on anterior part, and sometimes a pale spot on each side; thorax brown, a few pale spots, mostly on the lateral lobes; abdomen brown, the basal segment rather reddish; legs and palpi pale yellow, with many black bands. Wings hyaline, the apical third brown; the pterostigma large, snow-white; venation dark brown and margined with brown, some of the longitudinal veins interrupted with white; around the tip, between each pair of veinlets, is a minute white dot. Hind wings marked like the front pair. Length 15 mm., expanse 29 mm.

Three specimens from Durango, Mexico [Barrett]. This is undoubtedly the most handsome Myrmeleonid yet known from North America; the snow-white pterostigma shows too much advantage on the rich brown of the apical part of wings. It shares with *Myrmeleon pygmaeus* the honors of being the smallest Myrmeleonid.

EREMOLEON gen. nov.

Eight cross-veins before origin of radial sector, first branch of radial sector arising considerably beyond end of anal vein, radial sector with eight branches, between cubitus and anal but one series of cells, wing broad before the pterostigma, several of the costal cross-veins forked before pterostigma, in hindwings but one cross-vein before origin of the radial sector. Pronotum narrow; antennæ slender; legs long and slender, not lineate with black; spurs slender, as long as first two or three basal joints, the first basal joint very long.

Type *Myrmeleon macer* Hagen.

By position of radial sector in fore and hindwings, this genus is allied to *Psammoleon*, but readily separated by broad wings, slender legs and narrow pronotum, as well as by minor characters. From *Glenurus* it is readily separated by narrower hindwings, fewer branches of radial sector and by unhooked spurs.

Eremoleon macer Hagen.

Two females from Cuernavaca, July.

ASCALAPHIDÆ.

Ulula tuberculata n. sp.—Face black below antennæ, labrum pale yellow, both clothed with white hair; above antennæ dark gray or black hair; antennæ annulate at tips of joints, club brown; thorax light brown, clothed with white hair below, and above with gray and black hair; legs pale, tips of femora blackish, basal tarsal joints annulated with black; abdomen black, mottled with brown and some yellowish. Wings hyaline, pterostigma black, in hind wings a brown cloud just below the pterostigma, venation mostly black, subcosta yellow, interrupted with black. Antennæ about equal to length of wings; mesothorax with the anterior lobes plainly elevated in form of large rounded tubercles; wings longer than in *U. hyalina*, less acute at tip, sixteen radial cross-veins. Length 22 mm., wing 29 mm.

One specimen from Iguala, in September. None of the other species known to me (*U. hyalina*, *4-punctata*, *mexicana*, *bicolor* and *albifrons*) have elevations on the mesothorax.

Haploglenius flavicornis McLachlan.

One specimen from Cuernavaca, September; the type locality. It is a very handsome species.

TRICHOPTERA.

LIMNOPHILIDÆ.

Platyphylax discolor n. sp.—Head black, with black bristles, antennæ dull yellowish brown, thorax dark brown, a black stripe each side; abdomen yellowish beneath, brown above; legs dull yellow, hind pairs densely spined on tibiæ and tarsi, front pair with very few spines, a black stripe under anterior femora; spurs 0-2-2. Wings hyaline, densely and evenly clothed with short black hair, giving them a grayish appearance; veins pale, with black bristles; hind wings gray-hyaline. Forewings rather narrow, rounded at tip, discal cell longer than pedicel, first apical but a short distance on discal cell, second, third and fourth subequal at base, fifth acute at base and not on thyridial; cubitals broken at posterior anastomosis. In hindwings the third apical indents the anastomosis considerably, and contains a dark dot near base, fourth apical wide at base, fifth short-petiolate. Length 16 mm.

One from Tacubaya, D. F., September. Hardly a true *Platyphylax*, but placed temporarily in this genus until it is divided as it should be.

SERICOSTOMATIDÆ.

EREMOPSYCHE gen. nov.

Spurs 2-4-4; basal joint of antennæ long, densely hairy; maxillary palpi of male long, recurved, densely hairy, labial palpi slender, pendulous; no groove in hindwings; costal margin of forewings thickly hairy, with the appearance of being recurved, discal cell closed in both wings, in forewings rather long, in hindwings short.

Type *E. frontalis*.

Probably closely related to *Lasiocephala*, but no cilia on antennæ, and the basal joint simple.

Eremopsyche frontalis n. sp.—Maxillary palpi and basal joint of antennæ densely clothed with long, shining black hair, rest of antennæ pale yellow; thorax brown above, with black hair; legs and spurs pale yellow, the anterior and middle tibiæ and tarsi blackish outside. Wings thickly clothed with short, partly scale-like hairs, very dense along costal margin, fringe black, hind wings with fewer black hairs, fringe black. Length 9 mm.

One specimen from Jalapa, Vera Cruz, September.

Olemira mexicana n. sp.—Head blackish, basal joint of antennæ long, sparsely clothed with long erect hair, rest of antennæ pale yellowish, with some brown hair, thorax and abdomen brown, legs and spurs pale yellow, spurs 2-4-4.

Wings gray, with black and some golden hairs, fringe dark gray, with a patch of white on hind margin before the arculus; hindwings gray especially toward tips, fringe dark gray. Wings quite broad, discal cells closed in both pairs, discal cell of forewings quite long, the first apical cell but a short distance upon it; from lower branch of cubitus back to anal vein is a short cross-vein parallel to and near hind margin of wings; discal cell of hindwing rather short, the cubitus is forked considerably before the margin. Length 12 mm.

One specimen from Tacubaya, November.

Helicopsyche mexicana n. sp.—Head black, with some black bristles above and on the face; maxillary palpi black, clothed with long black hair; labial palpi paler; basal joint of antennæ grayish, with long black hair, beyond yellowish to middle, after which they are blackish; thorax and abdomen black, with black hair, the latter yellowish at tip; wings clothed with black hair and a sparse sprinkling of yellow dots; fringe long, black, with some yellow patches, a prominent one at the arculus; hind wings with black hair and long black fringe; legs with black coxæ, femora pale, tibiæ and basal article of tarsi black, rest of tarsi yellow, the joints tipped with black. Of the general structure of the genus; no prominent warts on head, maxillary palpi of male long, upcurved; the labial palpi dependent; antennæ shorter than wings, curved, their basal joint longer than head; no ocelli; spurs 0-2-4, at least there are no distinct spurs on the anterior tibiæ in this specimen, subapical pair on hind tibiæ close to apical pair; seventh ventral segment with a long spatulate appendage. Length 6.8 mm.

One male from Cuernavaca in May. Larger than the other species of the genus known to me.

LEPTOCERIDÆ.

Leptocerus mexicanus n. sp.—Head brown, sparsely clothed with short white hair; antennæ yellowish, basal part annulate with brown, first joint clothed with white hair; thorax brown, with scattered white hair, longest on the prothorax; abdomen brown, legs yellowish brown, first pair quite dark, except on base, fine black spines on tarsi; wings gray, clothed with brown and black hair, some yellow hair intermixed, near the middle a darker oblong patch; much white hair on the basal part; veins brown, fringe gray; hind wings gray, with gray fringe and brown veins. Length 14 mm.

One male from Cuernavaca, Morelos, June.

Leptocella dorsalis n. sp.—Head yellow, clothed above with white hair; antennæ yellowish, annulate with brown on basal part, dark beyond, less than twice as long as body; thorax yellowish, clothed above with white hair; abdomen brown, greenish on base; legs yellowish, with mostly yellow hair; wings hyaline, veins yellowish, membrane clothed with yellowish brown hair, quite dark brown on basal part before the cubital vein, the anal area snow-white, quite broad at base and tapering to a point at arculus. When the wings are closed these white stripes with the white of head and thorax form a broad dorsal stripe. The apical fringe is golden brown, but just beyond the arculus is a patch of white; hind wings rather dusky near tips, fringe gray. Length 10 mm.

Three specimens from Jalapa, Vera Cruz, August.

Leptocella gracilis n. sp.—Head yellowish, clothed above with long white hair; apical part of antennæ blackish, basal part yellowish, the joints broadly annulate with brown; thorax yellowish, with white hair, abdomen yellowish on base, beyond greenish; legs yellowish, clothed with white scales; wings hyaline, veins yellowish, membrane clothed with yellowish white hairs, more brownish patches scattered along on the veins, the apical fringe yellowish brown, on apical margin on anterior part are two black dots; hind wings hyaline, veins white, fringe gray; structure similar to the other white species. Length 9.5 mm.

One male from Cuernavaca, Morelos, June.

Heteroplectron mexicanum Banks.

Two specimens from Cuernavaca, June. It has somewhat the appearance of certain sawflies.

Heteroplectron nigripennis Banks.

Several specimens from Santa Maria, Pueblo, May; and Cuernavaca, June. Smaller than the preceding, but closely related to it.

Heteroplectron maculatum n. sp.—Head reddish yellow, vertex dark brown, antennæ reddish yellowish, dorsum of rest of thorax dark brown; abdomen dull yellowish on base, brown beyond; legs yellowish, the tibiæ and tarsi, except the basal joint of anterior and middle pairs, thickly clothed with black hair, spurs blackish; wings black, with black hair, some yellowish hair near base, before the middle a narrow, curved transverse band of white hair, not attaining the anterior margin; at end of cell is another shorter, nearly straight white band, not reaching either margin; hind wings shining black. Structure similar to *H. mexicanum*. Length 14 mm.

One specimen from Presidio, Vera Cruz, June.

The three species of *Heteroplectron* may be tabulated as follows:

- | | |
|--|---------------------|
| 1. Wings banded with pale, femora mostly yellow..... | maculatum. |
| Wings unmarked, femora mostly black..... | 2. |
| 2. Head mostly yellowish above..... | nigripennis. |
| Head black above..... | mexicanum. |

HYDROPSYCHIDÆ.

Hydropsyche mexicana n. sp.—Head clothed with black hair, some golden hair at base of antennæ; latter yellowish, with indistinct spiral lines; thorax black, with short black hair; abdomen brown; legs pale dull yellowish; spurs same color; wings dark, irrorate with yellow, margins interruptedly yellow and black, on the costal margin black patches are quite long, much shorter on apical margins, where the black is at the ends of veins and the yellow between them; fringe dark gray; hind wings gray, fringe darker gray. Antennæ about equal to length of wings. Length 11.5 mm.

One specimen from Tacubaya, D. F., May.

Polycentropus sp.

One example of a small species from Cuernavaca, June.

Philopotamus barrettæ Banks.

Many specimens from Jalapa in April, and Teocelo in September. There is but little variation in markings.

Philopotamns mexicanus n. sp.—Head with black hair, not very dense, ocelli distinct; first joint of antennæ brown, basal joints yellow, annulate with brown, most of antennæ from before the middle black; thorax brown, with black and few golden hairs; legs pale yellow, with yellow spurs. Wings dark, veins black, clothed with golden and black hair, the golden most prominent near tip; several patches of erect black hair; a long patch on anal region at base, one at and one before the arculus, and one near fork of the cubitus, hairs on many veins erect, fringe black; hindwings grayish, fringe dark gray. Length 10 mm.

One specimen from Jalapa, Vera Cruz, April.

Philopotamus bicolor n. sp.—Head bright yellow, clothed with bright yellow hair; palpi brown, basal joint yellow; antennæ black, except yellow first joint; ocelli distinct; thorax and abdomen yellow, with yellow hair; legs yellow, anterior tibiæ and tarsi black; middle and hind tarsi, except basal part of first joint, black; spurs 0-4-4 black. Wings jet black, with short black hair and black fringe; hind pair dull blackish. Length 8 mm.

One specimen of this striking species from Cuernavaca, May.

These three species of *Philopotamus* may be easily separated as below; *P. bicolor* will probably form a new genus:

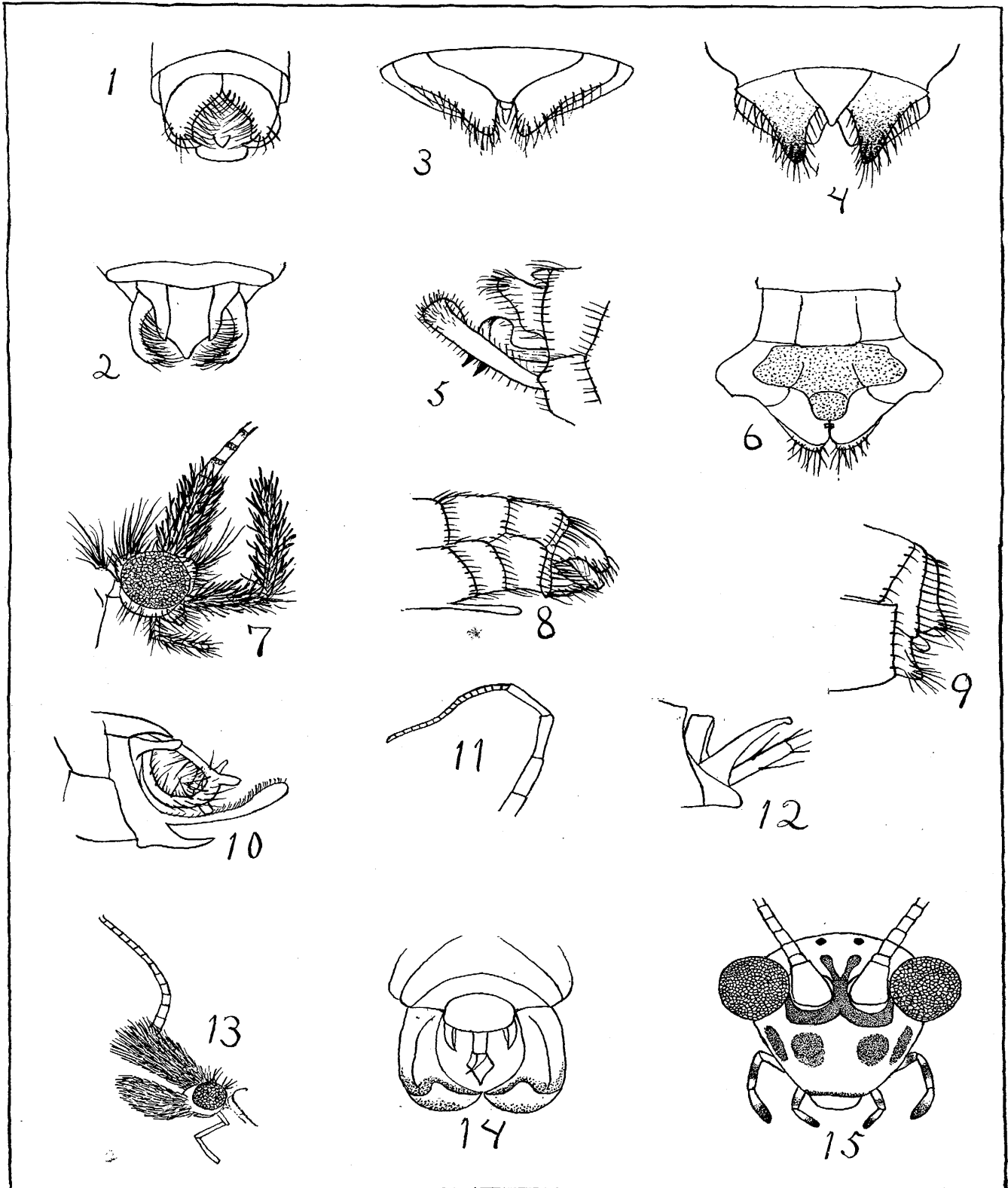
1. Head and thorax yellowish, wings uniform black **bicolor.**
Head and thorax brown, wings mottled with yellow 2.
2. Wings with patches of erect hair, not much yellow above.... **mexicanus.**
Wings without erect hair, much spotted with yellow..... **barrettæ.**

Diplectrona unicolor n. sp.—Black throughout, the wings of course more clear, especially the hind pair. Head rather broad, no ocelli, two large posterior warts, no curved transverse ones. Antennæ scarcely as long as wings, slightly serrulate beneath, the first four joints as long and simple, those beyond apparently much shorter; maxillary palpi with joints two and three subequal, the fourth rather longer, the fifth nearly equal to the preceding, curved and multiarticulate. The mesoscutellum of the thorax is elevated. Venation similar to *Tinodes*. Spurs 2-4-4; hind tibiæ sparsely clothed with erect hair above, yet scarcely forming a fringe. No filiform appendage visible on sides of abdomen. Wings densely clothed with rather long black hairs; there is a dark dot in the base of third apical cell; the fringes very long. Length to tip of wings 6.5 mm.

Several specimens from Cuernavaca in June.

Leptonema pallida Guérin.

Many specimens from Jalapa, August; from Cuernavaca in May,



June; and from Teocelo in August. Some specimens are faintly brownish and have an indistinct dark cloud obliquely below the pterostigma of the forewings.

Macronema cupreum Walker.

One example from Tacubaya, October; a very pretty insect.

RHYACOPHILIDÆ.

Rhyacophila mexicana Banks.

Two specimens from Xico and Jalapa, September.

EXPLANATION OF PLATE XII.

- Fig. 1. *Hydropsyche mexicana*, genitalia, below.
 " 2. " " " above.
 " 3. *Heteroplectron nigripennis*, genitalia, above.
 " 4. " *mexicanum*, " "
 " 5. *Leptonema pallida*, genitalia, side.
 " 6. *Leptocerus mexicanus*, genitalia, above.
 " 7. *Helicopsyche mexicana*, head, side.
 " 8. " " genitalia, side.
 " 9. *Platyphylax discolor*, genitalia, side.
 " 10. *Leptocella gracilis*, genitalia, side.
 " 11. *Diplectrona unicolor*, palpus.
 " 12. " " genitalia, side.
 " 13. *Eremopsyche frontalis*, head, side.
 " 14. " " genitalia, below.
 " 15. *Chrysopa mexicana*, face, front.