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## SOME NORTH AMERICAN DIPTERA

# By C. H. CURRAN

In this paper, descriptions are given of four apparently undescribed species, together with keys to genera and new synonymy. The types are in The American Museum of Natural History.

## **Dolichopidæ**

## GYMNOPTERNUS LOEW

During recent years this genus has been considered a synonym of *Hercostomus* Loew or at most a subgenus. Originally it was based upon the non-convergence of the third and fourth longitudinal veins, a character that has been found to be unsatisfactory in some instances, since some of the species are difficult to place. However, there is a supplementary character found in the presence of short, fine hairs on the hypopleura above the hind coxae, and I now regard *Gymnopternus* as quite distinct from *Hercostomus*, which lacks these hairs. Previously I had accepted the synonymy of the two genera.

No satisfactory key for the separation of the species exists, and this is considered sufficient justification for the publication of the one that follows. In its preparation I have had available a large number of species determined by Mr. Van Duzee, and I have every reason to suppose that the identifications are correct since he has examined the Loew types. A few of the described species are not available, and it is possible that more satisfactory characters could be found for the separation of some species. The matter is further complicated because the females of some forms are unknown, so that in many cases only the males can be identified with any degree of certainty.

During the preparation of the key, the synonymy of three species came to light, as follows.

# Gymnopternus nigribarbus Loew

LOEW, 1861, 'Neue Beitr.,' VIII, p. 35.

G. phyllophorus Loew, 1866, Berl. Ent. Zeitschr., X, p. 45.

There can be no doubt that these two names represent the two sexes of one species. G. nigribarbus was described from the female and phyllo-

phorus from the male. The species is common and widely distributed in the eastern United States and Canada.

## Gymnopternus californicus Van Duzee

Van Duzee, 1920, Proc. Calif. Acad. Sci., X, p. 48. Hercostomus vanduzeei Curran, 1930, Can. Ent., LXII, p. 287.

A comparison of specimens of *californicus* from Colorado, determined by Van Duzee, with the types of *vanduzeei* proves that the two names apply to the same species.

# Gymnopternus scotias Loew

Loew, 1861, 'Neue Beitr.,' VIII, p. 29.

Hercostomus (Gymnopternus) browni Van Duzee, 1933, Amer. Mus. Novit., No. 599, p. 18.

Types of browni agree exactly with specimens of scotias Loew. Van Duzee compared browni with tristis Loew, but failed to connect the long pubescence on the third antennal segment with the similar condition prevailing in scotias. G. scotias is widely distributed in the north from Manitoba eastward and is recorded from as far south as New Jersey.

### TABLE OF SPECIES

1.—Antennae wholly black	
Antennae partly yellowish or reddish	
2.—Mesonotum luteous	
Mesonotum metallic green	
3.—Abdominal venter mostly yellow	
Abdominal venter brown on basal half or more	6 <b>.</b>
4.—Anterior coxae with scarcely evident short hairs	minutus Loew.
Anterior coxae with quite conspicuous fine hairs under high	magnification5.
5.—The hairs on the anterior coxae are black; male genitalia sho	rt and enlarged.
	crassicauda Loew.
The hairs on the anterior coxae are almost all yellow; male	genitalia long and
moderately slender	ventralis Loew.
6.—Males	
Females	16 <b>.</b>
7.—Genital lamellae reddish or yellowish	<sub>.</sub>
Genital lamellae black; legs yellow, the tarsi mostly blackish	
8.—Arista lamellate	
Arista simple	10.
9.—Hypopygium almost so long as the abdomen (phyllophorus	Loew).
	nigribarbus Loew.
Hypopygium not half as long as the abdomen	nirificus Melander.
10.—Posterior femora with a brownish apical spot above	exilis Loew.
Posterior femora wholly yellowish	

11.—Third antennal segment almost or quite twice as long as wide
Third antennal segment little longer than wide
Arista situated beyond the middle of the third segment
13.—Coxae entirely yellow
Middle coxae brownish on the outer surface
13a.—Third antennal segment pointed at apex
Third antennal segment rounded at apexpallidiciliatus Van Duzee.
14.—Posterior tarsi blackened from the tip of the first segmentlaevigatus Loew.
Posterior tarsi but little darkened, becoming reddish brown apically15.
15.—Scutellum without short hairs
Scutellum with short hairs
16.—Posterior femora with a brown apical spot aboveexilis Loew.
Posterior femora wholly yellow
17.—Face with short hairs below
Face without hairs below
18.—Face narrow; front white with bluish color showing throughpolitus Loew.
Face wide; front grayish white
18a.–Squamal cilia black
Squamal cilia yellowpallidiciliatus Van Duzee.
19.—Middle coxae wholly pale yellow
Middle coxae brownish on the outer side20.
20.—Wings smoky; length, about 5 mmalbiceps Loew.
Wings cinereous hyaline; length less than 4 mm
21.—Arista arising at the middle of the third antennal segmentopacus Loew.
Arista arising at the apical third of the third antennal segmentsubulatus Loew.
22.—At least one pair of femora wholly black or nearly so
Femora reddish, the posterior pair sometimes darkened apically23.
23.—Anterior coxae wholly yellow or with very small black spot at base29.
Anterior coxae at least broadly blackish basally
24.—Anterior coxae almost wholly blackish
25.—Apical segment of anterior tarsi moderately broadened in male.
25.—Apical segment of anterior tarsi moderately broadened in male.  subdilatatus Loew.
Anterior tarsi simple in both sexes
26.—Mesonotum violaceous
Mesonotum not violaceous
27.—Lamellae of male genitalia black or brownish
Lamellae of male genitalia yellow
28.—Basal segment of posterior tarsi yellowish on basal half
Posterior tarsi wholly blackanarmostus Melander.
29.—Posterior tarsi entirely blackish; genital lamellae yellowishhumilis Loew.
Posterior tarsi broadly reddish basally or the genital lamellae black 30.
30.—Front densely pollinose, the ground color not bluish
Front moderately white pollinose, the blue ground color visible beneath the
pollen; genital lamellae yellowish

31.—Face whitish
Face yellowish pollinose; tarsi wholly yellowexiguus Loew.
32.—Male genital lamellae black48.
Male genital lamellae yellowish
33.—Posterior tarsi blackish from the tip of the basal segmentcurrani Van Duzee.
Posterior tarsi brownish red from the tip of the first segment or gradually be-
coming reddish brown apically
34.—Posterior tarsi entirely yellow in ground color
Destruite terri desleve det le et le et en le et le et en le et le et en le en
Posterior tarsi darkened at least apically
35.—Mesonotum, from anterior view, with grayish pollenlunifer Loew.
Mesonotum with brownish pollen
36.—Posterior tarsi reddish brown from tip of first segmentdespicatus Loew.
Posterior tarsi darkened apically
37.—Posterior tibiae black on apical half or more
Posterior tibiae yellowish on basal three-fourths or more
38.—Face with black, rather coarse hairs below
Face of male without, of female with fine, pale hairs below40.
39.—Face with stout bristly hairs below; legs wholly black (vanduzeei Curran).
californicus Van Duzee.
Face with stout, short hairs below; anterior four tibiae yellow.
tibialis Van Duzee.
40.—Face of male black, of female with fine pale hairs below nigrifacies Van Duzee.
Face whitish pollinose (females unknown)
41.—Tarsi wholly blackish from tip of first segment; posterior tibiae wholly black
except on the basal third above (Colorado)brevipes Van Duzee.
Tarsi paler, the posterior tibiae more extensively reddish (North Carolina).
tenuicauda Van Duzee.
42.—Third antennal segment elongate (in the female short) and with long pubescence
(browni Van Duzee) scotias Loew.
Third antennal segment short and with inconspicuous pubescence in both
sexes
Sexes
43.—Face with short black hairs below; genital lamellae mostly black
barbatulus Loew.
Face of male without black hairs below44.
44.—Face of male black or brown45.
Face of male whitish46.
45.—Genital lamellae yellow
Genital lamellae black; posterior tarsi wholly blacktristis Loew.
46.—Genital lamellae black; length about 4 mm
Genital lamellae mostly yellowish; length about 3 mm ovaticornis Van Duzee.
47.—Hair and bristles black; male genitalia and ovipositor black; third antennal
segment of male rounded apically maculiventris Van Duzee.
Hair yellow, the bristles black; male genitalia and ovipositor yellow; third
antennal segment of male sharply pointed
7 77 75
48.—Posterior femora with black apical band
rosterior iemora whonly yenowish
49.—Posterior tarsi wholly black singularis Van Duzee.
Posterior tarsi yellow, becoming dark apicallyflavitarsis Van Duzee.

50.—Genital lamellae crescent-shaped with a truncate protuberance at the middle.  robustus Van Duzee.  Genital lamellae crescent-shaped, without protuberancenigricoxa Van Duzee.  51.—Posterior tarsi usually brownish almost to their base; the genital lamellae crescent-shaped; face of female with whitish hairs below.  obtusicauda Van Duzee.  Posterior tarsi only slightly darkening apically in ground color; genital lamellae strongly convex apically; face of female bare, without hairs below.  frequens Loew.  52.—Face of male brownish, of female brown above				
Campsignemus Walker				
KEY TO MALES				
1.—Middle tibiae not or scarcely swollen				
Key to Females <sup>1</sup>				
1.—Legs wholly blackish. 2. Femora or tibiae mostly reddish. 3. 2.—(California). nigripes Van Duzee.² (Hudson Bay) vanduzeei, n. sp.²				

 <sup>&</sup>lt;sup>1</sup>C. arcuatus Van Duzee is omitted.
 <sup>2</sup>Females of these species are unknown.

3.—All the femora blackish, with the apices broadly reddish; last section of fourth
vein with conspicuous brown spotoedipus Wheeler.
Femora mostly reddish, at least one pair almost entirely reddish or the last
section of the fourth vein without strong brown spot4.
4.—Antennae wholly black
Basal antennal segment broadly yellow belowamericanus Van Duzee.
5.—Last section of fourth vein with scarcely a trace of brown spot near basal
fourth6.
Last section of fourth vein with distinct brownish spot near basal fourth7.
6.—Front coxae wholly yellowish
Front coxae at least broadly blackish basally on outer surface10.
7.—Hair and bristles of front coxae yellowdegener Wheeler.
Bristles of front coxae black8.
8.—Front coxae wholly yellow
Front coxae broadly black basally, at least on the outer surface9.
9.—Mesonotum with violaceous reflections; spot on fourth vein strong.
wheeleri Van Duzee.
Mesonotum without violaceous reflections; spot on fourth vein weak.
philoctetes Wheeler.
10.—Front coxae all blackish
Front coxae mostly reddish, at least on the inner halfphiloctetes Wheeler.

## Campsicnemus vanduzeei, new species

Similar to philoctetes Wheeler but with wholly blackish legs. Length, 2 mm.

Male.—Front shining blackish green, bluish below; occipital hair black. Face very narrow, brown pollinose, shining green immediately below the antennae. Palpi dark brown, with black hair. Antennae brown; third segment small, subcordate, the arista sub-basal.

Thorax bronze-black, in some lights strongly metallic, the dorsum thinly brown pollinose; pleura brownish gray. Scutellum with bluish reflections.

Legs blackish, the middle tibiae green. Anterior and posterior legs simple, the middle tibiae enormously enlarged. Middle femora with a row of numerous, short black bristles on either edge of the lower surface. Middle tibiae very broad, widest at the basal third, toward the posterior edge with a row of four erect bristles on the apical two-thirds, the bristle nearest the apex weak; behind the upper bristle with a weaker one and on the apical fourth of the posterior edge with a row of quite short, weak bristles: beyond the middle close to the anterior edge with a low swelling bearing a cluster of very short bristles and in front of these on the median third with three or four fine bristles; beyond the setose swelling the tibia is rather deeply excavated and a flat, apically rounded process projects forward at the apical end of the concavity, while the apex of the tibia is angularly produced in front. The color of the tibia changes near the middle to bronze and near the apex to brown, the anterior and apical lobes being brown; the basal third is convex and hairy above, the dorsal surface beyond this more or less concave and glabrous except as noted. First segment of the middle tarsi rather strongly concave above, at the base with a small shining black tubercle, the apex produced as a shining black lobe to beyond the middle of the second segment; along the upper surface just in front of the middle with a thin, moderately high ridge extending from the basal third of the segment almost to the apex of the lobe, and in front of this on a much lower level a row of short, contiguous hairs; behind, the segment bears a row of six or seven moderately long, fine bristles. Second segment practically simple, perhaps slightly shorter than the third.

Wings with brown tinge. Knob of halteres yellow.

Abdomen dark greenish, thinly brown pollinose, the venter more grayish. Genitalia small, the appendages with short white hair.

Types.—Holotype, male, and paratype, male, Churchill, Manitoba, August, 1932 (V. E. Shelford).

# Campsicnemus crassitibia Van Duzee

VAN DUZEE, 1930, Amer. Mus. Novit., No. 439, p. 1.

The type of this species is before me and an examination proves that it is not a *Campsicnemus* but belongs to *Peleropeodes* Wheeler and is a synonym of the species described by Van Duzee as *Kophosoma brevis*.

## **E**phydridae

## Diclasiopa frontalis, new species

Front opaque black; face and lunule silvery white, the orbits brownish and cinereous. Length, 2.5 to 3 mm.

Female.—Front opaque black, the middle broadly brownish in some lights; two pairs of frontals, the upper pair strong and divergent, the anterior pair weaker and proclinate; occllars of moderate length, the postocellars long; verticals and outer verticals long. Occiput brownish pollinose; cheeks grayish, with a strong bristle behind. Face with a row of bristles on either side and a row of hairs immediately outside, the hairs not easily seen in some views; about four of the bristles strong. Proboscis and palpi brown; antennae black.

Thorax black, moderately brown pollinose, the pleura and metanotum with gray shading; three pairs of dorsocentrals, one situated in front of the suture; two pairs of scutellars and a hair on either side; one sternopleural.

Legs blackish; trochanters and immediate knees rather dull reddish; apices of the tibiae and the tarsi reddish, the apical tarsal segment brownish. Middle femora with an incomplete row of short bristles above.

Wings cinereous hyaline, the veins pale brownish; posterior cross-vein slightly recurrent, almost straight. Squamae brownish red. Halteres sulphur yellow.

Abdomen black, rather shining, thinly brownish pollinose, the venter with more evident, paler pollen.

Types.—Holotype, female, Natashquan, Quebec, August 1, 1929. Paratypes: two females, Thunder River, Quebec, August 19, 1930, all collected by W. J. Brown. The holotype is in the Canadian National Collection.

Superficially this species is remarkably like *Hydrellia formosa* Loew, but the presence of the spine on the second antennal segment distinguishes it and it evidently belongs to *Diclasciopa*. However, the known species of *Diclasciopa* evidently have only two pairs of dorsocentrals,

so the species may differ generically. The face is quite as in *Hydrellia* except for the secondary row of hairs on the sides.

#### EPHYDRA Fallén

A key to the Nearctic species of this genus is given herewith in the hope that it may assist in the determination of the species. It is by no means certain that the number of species included in the key should be recognized, since it is possible that some of them represent color varieties. Some of the species possess very distinct genital characters in the males, while others show less evident differences. The males of salina Curran and hians Say have very similar genitalia but there are some small differences that are apparently constant, and these, together with color differences, and other structural characters of more or less importance appear to indicate that two species are involved. This same condition apparently exists in the case of millbrae Jones, pectinulata Cresson, and niveiceps Cresson, although there is always the possibility that the male genitalia will prove to be quite distinct in these species. The color of the legs is fairly constant, but not always so, as Aldrich has found specimens of millbrae with wholly reddish legs. The front tarsi of the males are usually somewhat modified, in some cases having an elongate, shallow groove posteriorly near the base, in others being shortened or bearing distinctive groups of hairs.

#### TABLE OF SPECIES

1.—Five pairs of dorsocentrals
Six pairs of dorsocentrals2.
2.—Face deep cinnamon-brownsalina Curran.
Face grayish or brownish yellow
3.—Femora blackish or green with at most the apices or bases reddish4.
Femora much more extensively reddishsubopaca Loew.
4.—Posterior cross-vein directed at least slightly toward the apex of the wing, the
discal cell longer in front
Posterior cross-vein recurrent, the discal cell shortest in front gracilis Packard.
5.—Tibiae more than half yellowish or reddish9.
Tibiae more or less reddish basally, but blackish or greenish on apical two-thirds
or more6.
6.—Tarsi bright yellow
Tarsi blackish, brownish, or with reddish bases
7.—Posterior cross-vein very oblique and sinuate
Posterior cross-vein slightly oblique and almost straight
8.—Front, from anterior view, wholly brown pollinoseobscuripes Loew.
Front, from anterior view, with only the sides and a median vitta brownish.
austrina Coquillett.

9.—Face rich, brownish yellow
Tetanoceridae
Renocera Hendel
The following key separates the Nearctic species.
Table of Species
1.—Front with two pairs of bristles
Third antennal segment oval, twice as long as wide; posterior cross-vein transverse
4.—Arista loosely plumose or pubescent
5.—Arista short pubescent; no shining stripe along the line of the frontal bristle.  brevis Cresson.
Arista short plumose; front with shining stripes laterally

## Renocera pacifica, new species

Differs from both quadrilineata Melander and johnsoni Cresson in having only the apical segment of the front tarsi black and much narrower cheeks. Length, 6 mm.

Female.—Head yellowish, the face, lower half of the cheeks and narrow frontal orbits white pollinose, the occiput, ocellar triangle and lateral frontal stripes with dull ochreous pollen. Front, measured from the base of the verticals to the anterior margin, wider than long, the sides gently converging anteriorly; lateral and median frontal stripes brownish in ground color, the median one narrow and extending almost to the anterior margin, slightly wider near the ocelli and with a slight whitish sheen, the front dull; two frontal bristles on either side, the hair rather sparse; ocellars, post-ocellars and the verticals and outer verticals strong. Occiput with a white spot on either side above the neck; hair black; a row of three fine bristles below running from a point near the neck to the oral margin. Cheeks half as wide as the eye-height, with short hairs on the lower half. Proboscis reddish; palpi yellowish, with fine hairs

basally and bristly hairs on the apical half, the hair sparse except basally. Antennae dark orange; third segment mostly brownish on the outer side, oval, about one-half longer than wide; arista black, short plumose to the tip.

Thorax luteous, the mesonotum with six narrow brown vittae, the median pair abbreviated in front and widening posteriorly, the sublateral pair abbreviated in front and behind and interrupted at the suture, the lateral pair lying above the root of the wings and extending narrowly above the notopleura almost to the humeri. Mesonotum with luteous or dull ochraceous pollen, the pleura with cinereous pollen on the lower half, rather ferruginous above. Two pairs of dorsocentrals; sternopleura haired but without bristles; mesopleura and pteropleura bare. Scutellum brownish red, with pale border, the disc with fine hairs; four marginal bristles.

Legs reddish, the apical segment of the tarsi black; anterior femora with a row of four anterodorsal bristles on the apical third, the posterior pair with a row of two or three on the apical fourth; middle femora with only the single anterior bristle near the apical third.

Wings rather luteous, becoming grayish posteriorly, the cross-veins bordered with brown. Squamae cinereous white, with pale yellow fringe. Halteres yellow.

Abdomen rusty reddish, the disc somewhat darkened, moderately shining and thinly reddish-brown pollinose; fifth segment with two or three bristles apically on the sides.

HOLOTYPE.—Female, Boiler Bay, Oregon, May 18, 1930 (J. Wilcox).

### Muscidae

# Megaphthalma Becker

BECKER, 1894, Berl. Ent. Zeitschr., XXXIX, p. 105.

In North America there are three species belonging to this genus. The genotype is *Cordylura pallida* Fallén.

## TABLE OF SPECIES

1.—Scutellum with four strong marginals	
Scutellum with a single pair of marginal bristles	
2.—Mesonotum with four strong, brown vittae	
3.—Face opaque blackish, the front usually of the same color in	the male; first vein
setulose apically	
Face yellowish in ground color; first vein wholly bare un	ilineata Zetterstedt.

## Megaphthalma pallida Fallén

Cordylura pallida Fallén, 1819, 'Dipt. Suec.,' Scatomyzidae, p. 8.

This species agrees well with americana Malloch, but the mesonotum is mostly black, the dark vittae sometimes being fused. I know of no American records.

## Megaphthalma americana Malloch

Malloch, 1924, Pan-Pac. Ent., I, p. 14.

Originally described from Oregon, Washington, Idaho, and Pennsylvania, I have examined specimens from the following localities: Megantic, Quebec, June (Curran); Keremeos, British Columbia, June (C. Garrett); Bashbish Falls, Mass., June, Chester, Mass., August, and Glen House, New Hampshire, July (C. W. Johnson); and Electric Lake, Colorado, June 28–30, 1919 (F. E. Lutz).

## Megaphthalma unilineata Zetterstedt

Cordylura unilineata Zetterstedt, 1838, 'Ins. Lappon.,' p. 727.

Male and female, Low Bush, Ontario, August (N. K. Bigelow); female, Flinsberg, Germany. I have also seen specimens from Alaska.

## Megapthalma wilcoxi, new species

A very striking species in the male sex owing to the deep black face and front, although the front is rarely but little darkened. Distinguished in both sexes by the presence of two pairs of scutellar bristles and the setulose first vein. Length, 4.25 to 5.5 mm.

Male.—Reddish yellow except parts of the head. Front normally opaque black, except along the orbits above, the parafrontals whitish, the whole front with a whitish sheen when seen from in front; five pairs of frontals, the anterior two convergent, middle pair proclinate, the upper two divergent; occllars long, the outer verticals about half as long as the verticals; occiput with black bristly hair above and fine pale hair below. Cheeks one-third as wide as the eye-height, mostly dull black, with whitish sheen. Face dull black, with whitish sheen from some views. Proboscis yellowish, more or less brown apically; palpi yellow, with some short, coarse black hairs apically. Antennae dull black, the basal segments reddish; arista short pubescent. In one specimen the face and front are brownish instead of black, the color becoming brownish red on the upper part of the front.

Mesonotum with yellowish, the pleura with whitish pollen; four to six dorso-centrals, the acrostical hairs in two or three irregular rows. Scutellum with two pairs of hairs in addition to the four bristles. Propleura haired; a single strong sterno-pleural; prothoracic and stigmatic bristles present.

Legs wholly pale, the hair yellow except on the tarsi, the bristles black.

Wings cinereous hyaline, the veins luteous, becoming yellow basally. Squamae and fringe pale yellowish. Halteres yellow.

Abdomen shining, with rather long, whitish hair. Genitalia large, the outer forceps with a very large, hemicircular emargination on the inner side.

FEMALE.—Face, front, and cheeks wholly pale in ground color. Apices of the abdominal segments narrowly blackish except on the middle of the dorsum, the tip of the ovipositor black.

Types.—Holotype, male, allotype, female, and six paratypes (males), Aneroid Lake, Blue Mts., Oregon, 7500 ft., July 23, 1929 (H. A. Scullen), received from Mr. J. Wilcox.