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SYNOPSIS OF THE DIPTEROUS FAMILY PSILIDÆ.¹

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The following keys are given to assist in the determination of the flies of the family Psilidæ as at present known from North America. The study is based entirely on my own collection, species before me being indicated by starring the localities represented. In the February (1920) issue of PSYCHE Mr. Charles W. Johnson gives tables of *Loxocera* and a new genus, *Pseudopsila*. With slight modifications these tables are incorporated in the present paper.

Table of Genera.

1. Antennæ greatly lengthened, longer than the head, the third joint very slender, more than four times the length of the second joint and distinctly longer than the arista; no fronto-orbital or postvertical bristles... *Loxocera* Meigen
Antennæ shorter, the arista longer than the third joint 2
2. Third antennal joint subcylindrical, about three times as long as the second; no fronto-orbitals, but postverticals present, one presutural dorsocentral present . . . *Pseudopsila* Johnson
Third antennal joint short, ovate, rounded 3
3. Face very strongly retreating; anal cell as long as second basal *Psila* Meigen
Face more nearly perpendicular, the head not triangular in profile 4
4. Robust; occiput flat, ocellar triangle small and placed well back; 4 scutellar bristles; pteropleuræ bare; first vein ending opposite anterior crossvein, second vein near wing-tip, anal cell shorter than second basal and truncate
Chyliza Fallen
Slender; head spherical, ocellar triangle placed forward;
2 scutellar bristles; pteropleuræ with hairs; first vein ending before anterior crossvein, second vein about midway

¹Contribution from the Zoölogy Laboratory of the State College of Washington.

between posterior crossvein and wing-tip, anal cell almost equalling second basal and with rounded apex

Strongylophthalmomyia Heller

Loxocera Meigen

- Eyes large, in profile attaining the front margin of the head, with the occiput one-tenth and the cheeks one-third their greatest diameter 2
- Eyes small, nearly round, not reaching the front of the head, the occiput one-third and the cheeks fully as wide as their greatest diameter. (Wash.*) *microps*, sp. nov.
2. Wings hyaline with the tip and posterior crossvein clouded. (*cylindrica* Say) 3
- Wings uniformly brownish hyaline 4
3. Anterior margin of the thorax, a dorsal line, humeri, and lateral lines, black. (N. H., Vt., Mass., Pa., Ill.,* Minn., Kans.)
 var. *cylindrica* Say
- Anterior margin very broad, covering at least one-third of the thorax, a dorsal line, short lateral lines and about one-third of the anterior of the pleura, black. (Me., N. H., Vt., Quebec,* Mass.,* Conn., N. Y.,* N. J., Mich., Kans.)
 var. *pleuritica* Loew
- Dorsal line, humeri, lateral margins and the upper half of the pleura, black (N. H., Vt., Mass., Pa., D. C., Va.)
 var. *pectoralis* Loew
- Dorsal and lateral lines (sometimes obsolete) and a spot above the yellow humeri, black. (Vt., Mass., Conn., N. J., Pa., D. C.,* Va., N. C., La.,* Tex.*) . . . var. *obsoleta* Johnson
4. Anterior third of the thorax black, dorsal and lateral lines wanting; abdomen, except the sides of the first segment, black. (Me., Mass.,* Conn., N. H., N. J., Va., Wis., Mont.,* Idaho,* Wash., Ore.) *collaris* Loew
- Anterior and lateral margins and a dorsal line on the thorax, black; abdomen except at the base red. (Kans., Tex., Colo.*) *fumipennis* Coquillett

Loxocera microps sp. nov.

Male. Length, 5 mm. Polished testaceous variegated with black. Head testaceous with a median frontal black stripe, ante-

rior orbits blackish; frontal triangle attaining suture and occupying half of the front at the ocelli; face greatly receding, antennal grooves white-velvety, center stripe wide and polished; eyes small, nearly round, not reaching front margin of profile by one-fifth their greatest diameter and the hind margin by about one-third, facets uniform, cheeks deeper than eye, orbits distinctly sunken; occiput flat, swollen in back of the cheeks, with fine yellow hairs; palpi tipped with brown; antennæ greatly lengthened, basal joints small, third joint twenty times as long as the second, arista yellow, the thickened basal part with brown tip, pubescence microscopic. Thorax testaceous, notum centrally broadly black in front, vestiture pale yellow, bristles weak and black, one dorsocentral and one pair scutellars; metanotum centrally blackened; mesopleuræ with white hairs below. Abdomen piceous, sides toward the base yellowish; genitalia minute. Legs yellowish. Halteres pale yellow. Wings nearly hyaline with a brownish tinge, veins firm and brown, sections of fourth vein proportioned 2: 5: 4, third and fourth veins apically parallel.

Two specimens. Paradise Valley, Mount Rainier, Wash., August, 1917.

Pseudopsila Johnson.

- Thorax entirely black (N. H., Mass., N. Y., Can.)... *fallax* Loew
 Thorax yellow, marked with black. 2
 2. Dorsum without lateral margins of black. 3
 Dorsum with lateral margins of black. 4
 3. Humeri and upper half of pleuræ black (Vt., N. Y.) (Proc.
 Acad. Nat. Sci. Phil., 1919, 193) (*Psila*)... *angustata* Cresson
 Anterior margin, pleuræ, metanotum and a narrow dorsal line
 black. (Me., N. H.) (PSYCHE, 1920, 18) . . . *perpolita* Johnson
 4. With broad lateral margins only, upper half of pleuræ black.
 (Conn., Me., N. J., Pa., Quebec) (*Psila*)... *bivittata* Loew
 With a broad anterior and lateral margins, upper half of pleuræ
 black. (N. H., Mass., Conn., Va.) (*Psila*)... *collaris* Loew

Psila Meigen.

- Mesonotum and pleuræ entirely yellow. 2
 Thorax more or less black; abdomen wholly black. 5

2. Entire insect yellow, except the black frontal or ocellar triangle; arista, and cephalic and thoracic bristles black. 3
 Head and thorax yellow, abdomen wholly black; arista and bristles yellow, the arista short-pubescent; tip of palpi black (*bicolor* Meigen) 4
3. Frontal triangle large, black, polished; arista, pubescent; antennæ half as long as the face. (N. H.)
frontalis Coquillett
 Only ocellar triangle black; arista bare; antennæ distinctly less than half the facial length. (Ore.) . . . *microcera*, sp. nov.
4. Metanotum wholly yellow (Europe, N. H., Can., Mont.,* Wyo.,* Wash., Alaska) var. *bicolor* Meigen
 Metanotum centrally black (Can., Colo.,* Wyo.)
 var. *dimidiata* Loew
5. Mesonotum yellow the humeri alone black; only upper pleuræ black; bristles of head and thorax black; third antennal joint dark. 6
 Mesonotum centrally black. 7
6. Head entirely yellow except the small ocellar spot; palpi yellow (Tex.)* *colorata*, sp. nov.
 Occiput bimaculate; palpi black (N. J., D. C., Wis.)
lateralis Loew
7. Bristles of head and thorax black; legs mostly black; antennæ, the nearly bare arista, and the palpi black; head and sternopleuræ black 8
 Bristles of head and thorax yellowish; coxæ and legs yellow; arista yellowish; head yellowish. 9
8. Base of arista thick; last section of fourth vein arched and shorter than the penultimate section. (Wash.)*
uashingtona sp. nov.
 Arista not thickened; last two sections of fourth vein equal; face greatly receding; two dorsocentrals. (Idaho*)
atrata, sp. nov.
9. Sternopleuræ black; at least tip of palpi blackened; third antennal joint mostly or wholly yellow. 10
 Sternopleuræ black; palpi and antennæ yellow; mesonotum with short white pilosity (Mex.) *exigua* Wulp
 Sternopleuræ yellow; palpi wholly yellow; third antennal joint black. (N. Y.,* N. J.,* Ill.,* Wis.) *sternalis* Loew

10. Palpi wholly black; third antennal joint round, wholly yellow (eastern) or upper edge dark (western); frontal triangle black. (N. H., Alaska*).....*levis* Loew
 Palpi with black tip; third antennal joint oval, tipped with black; only ocellar spot black. (Europe*; Can., N. Y., Colo., Wash.*).....*rosæ* Fabricius

***Psila microcera* sp. nov.**

Male. Length, 4 mm. Entirely yellow except for the black ocellar prominence and the black upper edge of the third antennal joint. Frontal triangle almost reaching the suture, periorbits distinct, one fronto-orbital, postverticals diverging and long, cephalic bristles black; antennæ short, third joint rounded, slightly longer than deep, arista bare and black. Eyes nearly round, equal to the longest diameter of the cheek. Thoracic bristles black, strong, two notopleural, one supra-alar, one dorso-central, two scutellars. Wings hyaline, with a yellowish tinge, veins yellow, sections of the fourth vein proportioned 2 : 7 : 5, of the fifth vein 12 : 1, posterior crossvein transverse.

A single specimen collected by Professor A. L. Lovett at Duffy Prairie, Ore., July 26, 1915, and presented by F. R. Cole. Three females collected by R. C. Shannon at Sprague, Ewan and Medical Lake, Wash.* The last mentioned specimen has the bristles yellow.

***Psila colorata* sp. nov.**

Male. Length, 4 mm. Head yellow, a small black spot between the ocelli; lower occiput swollen; third antennal joint twice as long as deep, black beyond the arista, which is yellow, and white-pilose; mouthparts yellow; cephalic bristles long and black, no fronto-orbitals. Mesonotum, scutellum, center of metanotum, and lower pleuræ yellow, humeri, mesopleuræ, pteropleuræ and sides of metanotum black, prothoracic spiracle yellow; thoracic bristles black, hairs yellow, one dorsocentral, pleural hairs sparse. Abdomen black. Legs wholly pale yellow, apical spurs small and yellow. Halteres whitish; calypteres luteous, the fringe blackish. Wings with yellow tinge becoming brownish apically, veins luteous, the third vein becoming brown, sections of fourth vein proportioned 1 : 1 : 2 : 2.1, the last section slightly arched, posterior

crossvein transverse, curved, twice as long as the last section of the fifth vein.

One specimen. Austin, Tex., April 20, 1900.

Psila washingtona sp. nov.

Female. Length, 4 mm. Head, thorax and abdomen entirely shining jet black, the fine pubescence pale. Face one-third longer than the front; cephalic bristles black, two minute fronto-orbitals; antennæ black, the third joint bluntly triangular, one-half longer than wide, the arista black, thick at the base then subulate, its pubescence very short; mouthparts black. Thoracic bristles black, two dorsocentrals, pleural hairs not abundant. Legs mostly blackish, coxæ jet black, the knees, front tibiæ, tips of posterior tibiæ and the tarsi brown. Halteres yellow. Wings with uniform yellow tinge, veins yellow, sections of fourth vein proportioned 1 : 1 : 2 : 0.8, the last section arched, posterior crossvein nearly transversely located, more than twice as long as the last section of fifth vein.

One specimen. Mount Constitution, Orcas Island, Wash., July 17, 1909.

The species comes nearest the European *P. nigra* Fallen, which usually has from two to four dorsocentrals, one to three fronto-orbitals and the last section of the fifth vein more than half the length of the posterior crossvein; its arista is not thickened basally. *P. morio* Zetterstedt is also similar, but has two distinct fronto-orbitals, four dorsocentrals, black tarsi and the anterior crossvein more basally located. *P. atra* Meigen has a more pubescent arista, two fronto-orbitals and four dorsocentrals well developed.

Psila atrata sp. nov.

Length, 3 mm. Head, thorax and abdomen entirely shining black, the fine pubescence yellow. Head conical, the face very greatly receding and nearly half longer than the front; cephalic bristles black, one minute fronto-orbital; antennæ blackish, the third joint elliptical, the arista blackish, not greatly thickened at base, its brown pubescence short but obvious; mouthparts black. Thoracic bristles black, two dorsocentrals, pleural hairs sparse. Coxæ black, femora blackish, knees narrowly brown, anterior tibiæ and all tarsi brown, hind tibiæ broadly blackish along the

middle. Halteres yellow. Wings with uniform slight yellow tinge, veins pale yellow, sections of fourth vein proportioned 1 : 1 : 2 : 2, the last section only slightly curved, posterior cross-vein nearly transverse, equal to the last section of fifth vein.

Twenty specimens. Type from Boville, Idaho, June 18, 1911; paratypes from same place (Melander), Troy (W. M. Mann) and Vollmer (J. M. Aldrich), all in Idaho; and Hood River, Ore. (F. R. Cole).

Chyliza Fallen

- Dorsum of thorax yellow.....2
 Dorsum of thorax mostly black, the humeri and scutellum usually red.....5
 2. Pleuræ more or less yellow.....3
 Pleuræ and pectus black, a quadrangular black prealar spot; abdomen black; all femora with apical black ring; palpi reddish (Mex.).....*enthea* Giglio-Tos
 3. Pleuræ entirely yellow; wings hyaline (Fla.)...*similis* Johnson
 Upper half of pleuræ with black vitta; apex of wings clouded.....4
 4. Apical cloud of wings following the margin, not widened behind, veins two, three and four ending in the cloud; pleuræ marked with only the vitta. (N. J., Pa., D. C., Kans.,* Colo., La., Mex.) (*Tetradiscus pictus* Bigot). *apicalis* Loew
 Apical cloud widening behind, apex of veins two, three and four not clouded. (Mex.) (*Tetradiscus notatus* Bigot, not *Chyliza notata* Loew).....*bigoti*, nom. nov.
 5. Front and hind femora blue-black but brownish at base, front tarsi black; palpi red; wings hyaline; thorax dark green, shining. (Can.).....*metallica* Walker
 Femora black except tips, tarsi yellow; palpi black; wings smoky; body black. (Ore.)*.....*leguminicola* sp. nov.
 Femora largely yellowish, sometimes with subapical dark ring.....6
 6. At least hind femora with well marked subapical black or brown band; wings with apical clouding, second and third sections of costa as three to one.....7
 Femora yellow, at most reddish apically; wings not clouded apically, second and third sections of costa of *robusta* proportioned two to one.....11

7. Femoral bands present on all legs; palpi brown (Europe; Mass., det. Hough) *annulipes* Macquart
Femoral bands weak or wanting on front and middle legs 8
8. Vertex narrower than depth of eye; head largely yellow, punctured; halteres yellow 9
Vertex much broader than depth of eye; head black except narrow stripe on lower occipital orbits, deeply pitted; halteres black. (Wash.,* Ore.) *scrobiculata* sp. nov.
9. Palpi entirely black 10
Palpi tipped with black; anterior femora apically dark; sides of thorax more or less yellow; first posterior cell basally shaded. (Mex.) *varipes* Wulp
10. Head, humeri, scutellum, posterior sides of mesonotum and at least sterno-mesopleural suture yellow. (N. H., D. C., N. J., Idaho,* Wash.*) *notata* Loew
Thorax entirely black, except a reddish scutellar spot, occiput and frontal orbits mostly black. (Mass.*) . . *erudita* sp. nov.
11. Black; antennæ, broad apices of femora, tibiæ and scutellum reddish; marginal cell dark gray, costal cell brownish. (Nev.) *robusta* Coquillett
Blackish-green; antennæ black; legs yellowish; wings hyaline. ("U. S.") *nigroviridis* Walker

Chyliza scrobiculata sp. nov.

Female. Length, 6 mm. Robust, deeply and closely punctured, with short dense woolly pale pubescence and short black bristles. Head large, eyes oblique, lower occiput deep, upper occiput flat, head coarsely punctured except the face and the shining vertical triangle which reaches half way to the antennæ, front opaque except the periorbital stripes; head black except for an orbital yellow stripe on lower occiput and a small orbital spot just below the antennal level; antennæ black above, yellow below, the third joint thumb-shaped, half longer than broad, arista brown on basal third, apically white; palpi broad, hairy and black. Thorax entirely black except the outer part of the scutellum, metathoracic callosities strong. Abdomen depressed, densely pubescent. Legs including the coxæ reddish yellow, the hind femora with a subapical incomplete black annulus. Halteres black. Wings smoky blackish throughout, darkest along the costa and at the tip, second

costal section three times the third, first vein ending near middle of the wing, third and fourth veins parallel.

Two specimens. Spokane, Wash., 30 August (Melander); Whitman National Forest, Ore., July (W. J. Chamberlin) in the collection of F. R. Cole.

Chyliza leguminicola sp. nov.

Length, 4–7 mm. Black, the anterior part of the front, the immaculate face, cheeks, occipital orbits, antennæ and scutellar margin luteous, the extremities of the femora, the tibiæ except distal half of hind pair, and the tarsi flavous, coxæ fuscous, halteres whitish. Front square, eyes large, palpi broad, frontal bristles black and inconspicuous, arista piceous, cephalic pubescence yellow. Thorax with strong piligerous punctures, the yellow hairs more or less whorled, bristles black, reduced in size and number to one pair each of supra-alar, intra-alar, dorsocentral and acrostichal, four scutellars. Abdomen sericeous with golden pubescence. Calypteres and fringe yellow, wings infumated, darker anteriorly, veins firm and black, costal sections proportioned 4 : 5 : 2, fourth vein 1.5 : 2 : 3, fifth vein 10 : 1, hind crossvein transverse.

Three specimens sent by L. P. Rockwood, who has swept this fly from the lupine, *Lupinus polyphyllus* Lindl., at Forest Grove, Ore., toward the end of April. He has also found puparia attached to the lower part of this plant during July, from which adults emerged the following March when wintered at room temperatures.

Chyliza erudita sp. nov.

Male. Length, 5 mm. Black, closely but not deeply punctured, the pale pubescence dense and appressed, bristles black. Head variegated black and yellow, the occiput black except the lower orbits, front subshining, centrally brownish, measuring in width seven-eighths the depth of the eye, frontal triangle narrow, reaching two-thirds the length of the front, two fronto-orbitals, face yellow, with two blackish subantennal spots, cheeks black except at the mouth-opening, mouthparts black, the palpi very broad; antennæ yellow, the upper edge darker, arista white and feathery pubescent. Thorax entirely black except the reddish tip of the scutellum. Legs including the coxæ pale yellow, the hind femora with prominent black subapical ring. Halteres pale yellow.

Wings with costal half infumated, second and third sections of the costa proportioned 3 : 1, third and fourth veins parallel.

One specimen. Boston, Mass., May, 1914.

Strongylophthalmyia Heller

Heller, Wien. ent. Ztg. xxi, 226 (1902) *Strongylophthalmus* Hendel, Wien. ent. Ztg. xxi, 179–181 (1902).

One species occurs on the Pacific slope, having slender body and long legs suggestive of the Micropezidæ or the Cordyluridæ. The short antennæ and little receding face suggest *Chyliza*, but the slender, impunctate and nearly glabrous body and narrow wings are distinct from that genus. The vestigial, straight and evanescent auxiliary vein, distinct break in the costa before the end of the first vein, relatively long basal cells, absence of oral vibrissæ, slightly divergent postvertical bristles, pubescent arista, absence of distinct pleural bristles, and widely open first posterior cell indicate the family Psilidæ. From *Chyliza* the genus stands out in having the posterior cheeks not swollen, the center of the face neither sunken nor concave, the palpi slender, the pubescence of the notum and pleuræ not dense, appressed or parted in the female, the sides of the metathorax not calloused, the calypteres long-ciliate, the first vein shortened and the anal crossvein incurved. Hendel further characterized his genus as differing from *Chyliza* in having long ocellar and postvertical bristles, the latter located far behind the ocelli, mesopleuræ with distinct prealar bristle, only two strong scutellar bristles, with which chaetotaxy the present species agrees. The pteropleural hairs are sparse.

Strongylophthalmyia angustipennis sp. nov.

Length, 3.5 to 5 mm. Head, thorax and abdomen polished black, impunctate, male with striking yellow pubescence, female with pubescence pale and sparse, bristles yellow. Head globose, the anterior part of the front, more extended in the male, the face, very narrow cheeks, and lower occipital orbits yellow, face short and narrow, half the length of the front; eyes large, lower facets larger than the upper ones; two fronto-orbital bristles, frontal triangle not polished; antennæ short, third joint orbicular, large and yellow in the male and brown and smaller in the female, arista brown, very briefly and closely pubescent; proboscis brownish,

palpi narrow, yellow in the male and brown in the female. Thorax slender, pectus yellowish, pleuræ nearly glabrous. Abdomen narrow, male genitalia with two small spoon-shaped end-valves and central short penis, female abdomen tapering. Legs including coxæ pale yellow, the tarsi a little brownish, apex of hind femora and middle of hind tibiæ usually dusky. Halteres pale yellow, calypteres yellow, with long fringe. Wings narrow, three times as long as wide, hyaline, veins brown, first vein ending at basal third of the wing, second and third sections of the costa proportioned 2 : 1, sections of fourth vein nearly 1 : 2 : 3, the last section arching forward but apically becoming parallel with the third vein, anal vein extending two-thirds the distance to the margin, anal crossvein recurved at tip.

Twelve specimens. Type from Potlatch, on Hood's Canal, Wash., July 28, 1917; others from Blaine, Lynden and Auburn, Wash., and Lake Coeur d'Alene, Idaho, July to September. Several of the specimens were found on windows.

ON CERTAIN SPECIES OF *HALTICA*, OLD AND NEW.

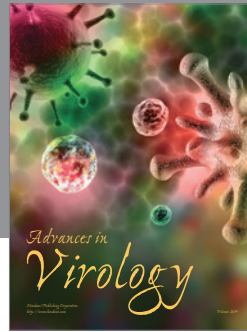
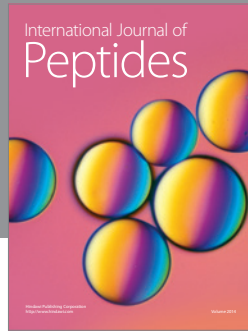
BY H. C. FALL,
Tyngsboro, Mass.

About a year ago, after reading the then recently published paper¹ by William Colcord Woods on the life histories of certain Maine *Halticas* previously regarded as varieties of *H. ignita* Illig., and having examined typical examples of all forms, kindly sent by Mr. Woods, some observations seemed pertinent to the writer, but the matter was allowed to go by default, and nothing was done beyond communicating one or two points to Mr. Woods by letter, chief of which, perhaps, was the fact that his *Haltica torquata* was not the *torquata* of Le Conte.

More recently comes Mr. Malloch's article,² in which he, too, alludes to the probable error in identifying the eastern blueberry flea beetle as Le Conte's *torquata*. Although Mr. Leng frankly admits his responsibility for the mistaken identification, he is by no means the first offender, as the *torquata* mix-up really dates back to Horn's Synopsis of the *Halticini* in 1889, in which he erroneously

¹ Maine Agric. Exp. Station Bull., 273; October, 1918.

² Bull. Brooklyn Ent. Soc. XIV, p. 123.



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