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# The Great Basin Naturalist

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## UNDESCRIBED SPECIES OF NEARCTIC TIPULIDAE (DIPTERA), IX

Charles P. Alexander<sup>1</sup>

The novelties considered herewith are chiefly from Alaska and the Canadian Northwest, a few from Oregon and Washington, and a small series from the Ozark Mountains, Missouri. The specimens were captured by the writer and by various friends who are named in the text under the different species. Except where indicated to the contrary the types of the new forms are preserved in the author's personal collection of these flies.

### LIMONIINI

#### *Limonia (Dicranomyia) acinomeca*, n.sp.

Allied to *gladiator* and *omissinerva*; general coloration of thorax yellow, praescutum and scutal lobes blackened, pleura patterned with dark brown; rostrum yellow; wings subhyaline, stigma pale; male hypopygium with tergal lobes conspicuous, rostral spines far distal in position, very long and slender, only narrowly separated; mesal-apical lobe of gonapophysis very slender, smooth, gently curved.

MALE.— Length about 5.5-6 mm.; wing 5.5-6.5 mm.

FEMALE.— Length about 6.5 mm.; wing 7 mm.

Rostrum yellow; basal segment of palpus yellow, remainder dark brown. Antennae with scape obscure yellow, apex and remainder of organ black; proximal flagellar segments oval, outer ones more elongate, especially the terminal segment which is stout and about one-half longer than the penultimate; verticils conspicuous. Head brownish gray, paler beneath; anterior vertex broad.

Pronotal scutum dark brown, sides yellowed, scutellum yellow. Mesonotal praescutum yellow laterally, disk with three nearly confluent blackened stripes, the lateral pair crossing the suture to include the scutal lobes; central region and posterior callosities of scutum yellowed; scutellum light brown, narrowly paler medially, parascutella yellow; mediotergite dark brown, the narrow lateral borders and the pleurotergite yellow. Pleura yellow, anepisternum and

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especially the sternopleurite conspicuously darkened. Halteres with stem yellow, knob infuscated. Legs with coxae and trochanters yellow; remainder brownish yellow, tips of femora and tibiae vaguely darker, outer tarsal segments dark brown. Wings subhyaline, prearcular field light yellow; stigma very pale, scarcely differentiated from the ground; veins light brown, prearcular veins and  $Sc$  more yellowed. Venation:  $Sc_1$  ending opposite origin of  $Rs$ ,  $Sc_2$  far retracted,  $Sc_1$  alone nearly equal to  $Rs$ ; cell  $M_2$  open by atrophy of  $m$ ,  $m-cu$  shortly beyond fork of  $M$ .

Abdominal tergites dark brown, basal sternites paler, genitalia yellow; hypovalvae of ovipositor blackened basally. Male hypopygium with tergite transverse, narrowed outwardly, posterior border with a broad U-shaped emargination to form conspicuous lobes that bear numerous relatively short pale setae; marginal thickening including the lobes. Basistyle with ventromesal lobe small. Dorsal dististyle a curved sickle, narrowed outwardly into a slender point; ventral style subequal in area or slightly smaller than the basistyle, narrowed into a moderately stout prolongation, the two spines nearly straight, very long, especially the outer which is fully twice the prolongation; spines separated by a distance only slightly greater than their basal puncture. Gonapophysis with mesal-apical lobe very slender, smooth, curved gently to the subacute tip. Aedeagus slender, the obtuse apex simple.

HABITAT.— Alaska.

HOLOTYPE, ♂, Taylor Highway, Mile 49, along west fork of Dennison River, August 13, 1954 (C. P. Alexander). ALLOTOPOTYPE, ♀, pinned with type. PARATOPOTYPES, ♂♂, August 13-15, 1954.

Among the Nearctic species the present fly is most like *Limonia* (*Dicranomyia*) *gladiator* (Osten Sacken), differing in the extensive brownish black coloration of the thoracic notum and especially in the very different hypopygium, including the rostral spines. The European *L. (D.) omissinerva* (de Meijere) (Tijds. Ent., 61:129, 1918; 62:83-84, fig. 16- ♂ hypopygium; 1919) is more closely allied, differing from de Meijere's descriptions in the conspicuous dark pattern of the thoracic pleura and in the details of the male hypopygium, including the conspicuous tergal lobes and the longer rostral spines, as described.

*Limonia (Dicranomyia) apiceglabra*, n.sp.

Allied to *mitis*; general coloration of thoracic dorsum brownish gray, praescutum darker medially, pleura light gray; femora brownish yellow, tips brown; wings whitened, very restrictedly patterned with pale brown,  $Sc_1$  long, subequal to  $Rs$ ; male hypopygium with tergal lobes conspicuous, their apices rounded, broadly glabrous; dorsal dististyle a gently curved sickle that narrows gradually to the slender apex; ventral style subequal in area to the basistyle, rostral prolongation slender, the two spines placed close together near apex.

MALE.— Length about 5.5-6 mm.; wing 6-6.8 mm.; antenna about 1.1-1.2 mm.



Rostrum and palpi dark brown. Antennae dark brown; flagellar segments short-oval with short verticils, terminal segment about one-half longer than the penultimate. Head brown.

Pronotum brownish gray, scutellum more yellowed. Mesonotal praescutum gray laterally, disk with three confluent brown stripes, the median one darker brown; posterior sclerites of notum gray, scutal lobes darker. Pleura light gray, dorsopleural region and metapleura light yellow. Halteres with stem pale yellow, knob infuscated. Legs with coxae and trochanters yellow; femora brownish yellow, tips brown, tibiae similar, the tips more narrowly darkened; basitarsi brownish yellow, outer segments dark brown. Wings whitened, very restrictedly patterned with pale brown, including the stigma; narrower to scarcely indicated darkenings at origin of *Rs*, cord, outer end of cell *1st M*<sub>2</sub> and along vein *Cu*, the areas indicated chiefly by the darkened veins; prearcular and costal fields more yellowed, including the veins. Venation: *Sc*<sub>1</sub> ending opposite or shortly before origin of *Rs*, *Sc*<sub>2</sub> far retracted, *Sc*<sub>1</sub> alone nearly equal to *Rs*; cell *1st M*<sub>2</sub> subequal to or slightly longer than vein *M*<sub>3</sub>; *m-cu* before fork of *M*.

Abdomen brown, including the hypopygium. Male hypopygium with posterior border or tergite deeply emarginate, lateral lobes large, their setae subterminal, there being a broad glabrous outer portion. Basistyle and ventral dististyle subequal in area, the ventromesal lobe oval, relatively small. Dorsal dististyle a strongly curved sickle, broad at base, narrowed gradually to the slender apex; ventral style oval, the rostral prolongation slender, the two straight spines placed close together shortly before the obtuse apex; spines slightly unequal, the shorter one about twice as long as the apex of prolongation beyond its insertion. Gonapophysis with mesal-apical lobe slender, very slightly curved.

HABITAT.— Alaska, Yukon.

HOLOTYPE, ♂, Alaska Highway at Mile 1152, Yukon, along Lake Creek, July 7, 1952 (C. P. Alexander). PARATYPE, ♂, Teklanika River, McKinley National Park, Alaska, July 15, 1952 (D. L. Carson).

The most similar species include the European *Limonia* (*Dicranomyia*) *mitis* (Meigen) and *L. (D.) zernyi* (Lackschewitz) which differ in hypopygial structure. The latter species is known to me from the original description and figure by Lackschewitz (Naturh. Mus. Wien, Ann. 42:217, pl. 6, fig. 14 (♂ hypopygium); 1928). This shows the tergite deeply emarginate but with the apices of the lobes setiferous and with the rostral prolongation of the ventral dististyle and its spines quite different.

*Limonia (Dicranomyia) chillcotti*, n.sp.

General coloration gray, praescutum with a brown central stripe, lateral areas obsolete; antennae brownish black, flagellar segments subglobular; wings whitened, very restrictedly darkened, especially over cord and outer end of cell *1st M*<sub>2</sub>, stigma yellowed; vein *Sc*<sub>1</sub>



long, subequal to *Rs*, *m-cu* shortly before fork of *M*; male hypopygium with posterior border of tergite having a V-shaped emargination, lobes conspicuous, apices without setae; basistyle and ventral dististyle subequal in area; rostral prolongation of ventral style small, with two long straight spines that are longer than the prolongation.

MALE.— Length about 5.5 mm.; wing 6 mm.; antenna about 1.0 mm.

FEMALE.— Length about 6-7.5 mm.; wing 6.5-8 mm.

Rostrum brownish gray, darker beneath, mouthparts and palpi conspicuously dark brown. Antennae brownish black throughout; flagellar segments beyond the first subglobular, outer segments passing into short-oval, all segments with very short apical pedicels, verticils shorter than the segments. Head light gray; anterior vertex about twice the diameter of scape.

Pronotal scutum brownish gray, scutellum and pretergites obscure yellow. Mesonotum clear gray, praescutum with a brown central stripe that is darker anteriorly, lateral stripes obsolete; posterior sclerites brownish gray, central area of scutum clear light gray. Pleura light gray. Halteres with stem pale yellow, knob brown. Legs with fore and middle coxae yellowish brown, posterior pair clearer yellow; trochanters yellow; femora brownish yellow, clearer yellow basally, tips narrowly dark brown; tibiae and tarsi brown. Wings whitened, especially the milky base, with a very restricted darkened pattern that chiefly is evident by the darkened veins, including the cord and outer end of cell *1st M*<sub>2</sub> and less evidently the origin of *Rs* and *R*<sub>2</sub>, vein *Cu* similarly darkened; stigma pale yellow to very pale brownish yellow, scarcely darker than the ground; veins brown. Venation: *Sc*<sub>1</sub> ending opposite origin of *Rs*, *Sc*<sub>2</sub> far retracted, *Sc*<sub>1</sub> about equal in length to *Rs*, the latter in cases angulated and weakly spurred near origin; *m-cu* shortly before fork of *M*.

Abdominal tergites dark brown, proximal sternites paler brown. Ovipositor with genital segment and valves fulvous; cerci very slender, upcurved to the acute tips, hypovalvae long and powerful, nearly straight. Male hypopygium with tergite slightly narrowed outwardly, posterior margin with a deep V-shaped notch, lobes conspicuous, each with about 20 long setae on base and central part, lacking on the broad ends. Ninth sternite a small transversely oval plate with relatively few setae. Basistyle and ventral dististyle subequal in area. Dorsal dististyle a strong curved sickle that narrows gradually to an acute point; ventral style with setae relatively short; rostral prolongation small, with two slightly separated long straight spines that are longer than the prolongation and about five times as long as the latter beyond the point of origin of the outer spine. Gonapophysis with mesal-apical lobe slender, slightly curved. Aedeagus terminating in a single compressed lobe.

HABITAT.— Manitoba.

HOLOTYPE, ♂, Farnworth Lake, near Churchill, June 26, 1952 (J. G. T. Chillcott); Canadian National Collection. ALLOTOPOTYPE,



♀, with the type. PARATOPOTYPES, 2 ♀ ♀, June 26-28, 1952. Ecological data, Nos. F-B, F-C, F.D. 18.

The species is named for the collector, the late Dr. J. G. T. Chillcott, of the Entomology Division, Ottawa, Canada, authority on the Nearctic Empididae and related families. Dr. Chillcott died unexpectedly in Nepal on April 20, 1967, at the early age of 37, while engaged in collecting Himalayan insects. In its general appearance the species is most like *Limonia* (*Dicranomyia*) *liberta* (Osten Sacken), *L. (D.) halterata* (Osten Sacken), and similar dark colored species, differing evidently in the pattern and venation of the wings and in hypopygial structure.

*Limonia* (*Dicranomyia*) *involuta*, n.sp.

General coloration gray, pronotum and praescutum more darkened medially; antennae black; wings narrow, yellowed, stigma scarcely indicated; ovipositor with cerci unusually short and stout; male hypopygium complex in structure, including the basistyle and ventral dististyle, the latter divided into two unequal lobes; rostral spines separate, the outer placed on a small basal tubercle; gonapophysis with mesal-apical lobe long and slender, curved near outer end.

MALE.— Length about 6-6.5 mm.; wing 5.2-6 mm.

FEMALE.— Length about 5.5-6.2 mm.; wing 5.5-6.5 mm.

Rostrum yellowish brown; palpi black. Antennae black; proximal flagellar segments beyond the first short, gradually passing into oval. Head gray; anterior vertex broad, more yellowish gray.

Pronotum blackened medially, sides brownish gray. Mesonotum brownish gray, praescutum with a central darker stripe, scutellum more yellow pollinose. Pleura gray pruinose, dorsopleural region brownish yellow. Halteres yellowed. Legs with coxae and trochanters yellow; remainder of legs light brown, femoral bases slightly more yellowed. Wings narrow, yellow, prearcular and costal fields more saturated yellow, stigma scarcely indicated; veins light brown, more yellowed in brightened fields. Venation: *Sc* short, *Sc*<sub>1</sub> ending opposite to just beyond origin of *Rs*, *Sc*<sub>2</sub> only slightly removed from tip; *m-cu* shortly before fork of *M*, in cases to about two-thirds its length.

Abdomen stout, brownish gray, hypopygium more fulvous brown. Ovipositor with cerci unusually short and stout, gently up-curved to the acute apex, hypovalvae elongate, terminating opposite ends of cerci. Male hypopygium with tergite transverse, posterior border shallowly emarginate to form low lobes with relatively few long yellow setae. Basistyle with ventromesal lobe very large and modified, including a more posterior arm from its base, slightly expanded to weakly bilobed at apex, provided with long coarse setae; body of lobe on outer margin with a stout appendage that narrows farther into a slender arm with blackened setae, at base of latter the lobe with five or six spinoid setae; mesal face of basistyle at apex with a small slender lobe, its apex with several long setae. Dorsal



dististyle a strong rod, outer end curved and narrowed into a straight spine; ventral style with body pale, on outer margin at base with a small accessory lobule, near apex with a group of delicate yellow setae; body of style oval, its area much less than that of the basistyle; rostral prolongation unique, stout and more sclerotized, beak with several setae; outer margin with two spines, the outer placed on side of a small tubercle. Gonapophysis with mesal-apical lobe long and slender, curved near outer end.

HABITAT.— Canadian Northwest Territories and Yukon.

HOLOTYPE, ♂, Good Hope, Mackenzie River, Northwest Territory, August 22, 1929 (Owen Bryant); Lot 75. ALLOTOPOTYPE, ♀, with type. PARATOPOTYPES, several ♂ ♀; PARATYPES, 3 ♂ ♂, 7 ♀ ♀, Gravel Lake, 58 miles east of Dawson, Yukon, altitude 2,050 feet, August 10, 1962 (P. J. Skitsko and R. E. Leech); Canadian National Collection; some specimens labelled 'ex *Carex*'.

*Limonia (Dicranomyia) involuta* is still another of the numerous Holarctic members of the subgenus that have the male hypopygium very complicated in structure. It is readily told from other species by the small yellow wings and the details of structure of the male hypopygium, particularly the unequally bilobed ventral dististyle, the rostral prolongation, and the conformation of the lobes of the basistyle. As is the case with many others in this category the species is adult late in the season. Other somewhat similar but not closely related species include *L. (D.) intricata* Alexander and *L. (D.) melleicauda* (Alexander).

*Limonia (Dicranomyia) ozarkensis*, n.sp.

Size medium (wing about 6.5 mm.); mesothorax chiefly dark brown, restrictedly patterned with obscure yellow; rostrum obscure yellow; antennae brownish black; legs obscure yellow; wings faintly grayish yellow, stigma pale brown,  $Sc_1$  ending opposite to shortly beyond origin of  $Rs$ ; male hypopygium with posterior border of tergite convexly rounded, with a small median emargination; dorsal dististyle a strongly curved slender hook, ventral style having rostral prolongation with two long straight black spines; mesal-apical lobe of gonapophysis black, flattened, narrowed to a small apical point.

MALE.— Length about 6.5-7 mm.; wing 6.8-7 mm.; antenna about 1.5 mm.

FEMALE.— Length about 6.5-7 mm.; wing 7.5-8 mm.

Rostrum and mouthparts obscure yellow; palpi dark brown. Antennae brownish black, in cases with scape obscure yellow; flagellar segments oval. Head dark brown; anterior vertex about twice the diameter of scape.

Pronotal scutum brown, the borders and the scutellum yellowed. Mesonotal praescutum almost covered by three confluent dark brown sparsely pruinose stripes, humeral region and narrow lateral margins brownish yellow; scutal lobes dark brown, central area and scutellum obscure yellow; mediotergite brownish gray, pleurotergite



more brownish yellow. Pleura chiefly dark brown, sparsely pruinose, posterior sclerites paler, in cases less distinctly infuscated. Halteres with stem yellow, the small knob dark brown. Legs with coxae yellowed, fore pair darkened basally; trochanters yellow; remainder of legs obscure yellow to brownish yellow, outer segments infuscated. Wings faintly grayish yellow, prearcular and costal regions clearer yellow, stigma pale brown; veins brown. Macrotrichia on longitudinal veins beyond general level of origin of  $R_s$ , on Anals only at extreme outer ends. Venation:  $Sc_1$  ending opposite or shortly beyond origin of  $R_s$ ,  $Sc_2$  slightly removed,  $Sc_1$  alone subequal to  $R_2$ ;  $m-cu$  at or close to fork of  $M$ ; inner end of cell  $1st M_2$  not arcuated.

Abdomen dark brown, basal sternites more yellowed. Male hypopygium with tergite large, posterior border convexly rounded, with a shallow median emargination, the thickened borders narrow. Basistyle in area nearly twice the ventral dististyle, ventromesal lobe relatively small. Dorsal dististyle a slender strongly curved hook, narrowed to a spine; ventral style small, the prolongation narrowed into a beak; rostral spines two, black, long and straight, placed close together near base of prolongation, strongly divergent, each spine about one-third to one-half longer than the prolongation beyond it. Gonapophysis with mesal-apical lobe blackened, elongate flattened, narrowed to the small apical point, in cases the lower margin microscopically roughened. Aedeagus relatively slender, outer end decurved.

HABITAT.— Missouri (Ozark Mountains).

HOLOTYPE, ♂, Roaring River State Park, Barry County, May 24, 1942 (C. P. Alexander). ALLOTYPE, ♀, Hazlegreen, Laclede County, May 22, 1942 (C. P. Alexander). PARATOPOTYPES, several of both sexes, on six pins, collected with the holotype, May 23-24, 1942.

*Limonia (Dicranomyia) ozarkensis* is quite distinct from other Nearctic species, especially in details of the male hypopygium, particularly the ventral dististyle and gonapophyses. In its general appearance it suggests various western North American species, such as *L. (D.) libertoides* (Alexander) and *L. (D.) stigmata* (Doane). By my key to the northeastern American species (Diptera of Connecticut, 1942, pp. 310-312; 1942; reprinted 1966) the fly runs to the quite different *L. (D.) stulta* (Osten Sacken) with which it was associated in nature.

*Limonia (Geranomyia) innoxia*, n.sp.

Rostrum slightly more than one-half the remainder of body; pleura uniformly brownish yellow; femora light brown, tips conspicuously darker brown; wings pale brown, stigma darker;  $Sc$  long,  $Sc_1$  ending about opposite three-fourths  $R_s$ ; abdominal tergites bicolored, brownish yellow, apices broadly darker brown; male hypopygium with tergal lobes small, widely separated; rostral prolongation of ventral dististyle small, the two spines placed on a single tubercle, one at summit, the second at near two-thirds the length; gonapophysis with mesal-apical lobe long and slender, tip acute.



MALE.— Length, excluding rostrum, about 7.0-7.5 mm.; wing 7.5-7.8 mm.; rostrum alone about 4.0-4.2 mm.

Rostrum light brown, slightly more than one-half the remainder of body; maxillary palpi black. Antennae with scape and pedicel brownish black, flagellum black; flagellar segments oval, the more proximal ones more truncated. Anterior vertex restrictedly light gray, remainder of head dark gray.

Pronotum light brown. Mesonotal praescutum with three pale brown stripes, the central one more reddened, lateral and humeral regions yellowed; posterior sclerites of notum dark brown, median region of scutum gray, posterior border of scutellum yellowed. Pleura and pleurotergite uniformly brownish yellow. Halteres with stem brownish yellow, base clearer, knob brown. Legs with coxae yellowed, fore pair darker; trochanters brownish yellow; femora light brown, tips narrowly but conspicuously dark brown; tibiae light brown, tips narrowly darkened; tarsi brownish black, proximal ends of basitarsi slightly paler. Wings very pale brown, stigma oval, darker brown; veins brown. Longitudinal veins beyond general level of origin of *Rs* with macrotrichia. Venation: *Sc* long, *Sc*<sub>1</sub> ending about opposite three-fourths *Rs*, *Sc*<sub>2</sub> slightly removed; super-numerary crossvein in cell *Sc* distinct; *m-cu* close to fork of *M*.

Abdominal tergites bicolored, brownish yellow, their apices broadly darker brown; proximal sternites more uniformly brownish yellow, outer segments darker; hypopygium brown. Male hypopygium with tergite transverse, posterior border very shallowly emarginate, the relatively small widely separated lateral lobes provided with numerous black setae. Basistyle with ventromesal lobe large, about one-half the body of style. Dorsal dististyle a strongly curved rod, the tip acute; ventral style large, its area more than three times the basistyle; rostral prolongation small, with two subequal spines, placed on a common basal tubercle, one spine terminal, the second at near two-thirds the length of the tubercle which is subequal in length to the prolongation itself. Gonapophysis with mesal-apical lobe long and slender, tip acute.

HABITAT.— Missouri (Ozark Mountains).

HOLOTYPE, ♂, Roaring River State Park, Barry County, May 24, 1942 (C. P. Alexander). PARATOPOTYPE, ♂, pinned with type.

The most similar regional species include *Limonia* (*Geranomyia*) *canadensis* (Westwood) and allies, all differing from the present fly in hypopygial structure. The bicolored nature of the abdominal tergites of the present fly should be emphasized.

*Limonia* (*Metalimnobia*) *californica decreta*, n. subsp.

Generally similar to *californica*, differing most evidently in the more restricted darkened wing pattern. Wings with the pale ground extensive, including broad marginal areas in cells *R*<sub>3</sub> to *M*<sub>3</sub>; darkest areas on anterior half of wing very small, the arcular mark oval, restricted to cell *R*, separated from the area at origin of *Rs* by a distance approximately three times the width of the latter; yellow center



of stigma extensive, the enclosed veins scarcely bordered by brown. Legs with blackened femoral tip subequal to the yellow subterminal ring. Abdomen of type male yellowed, posterior borders of segments brown, becoming more extensive on outer segments, on segment seven including the outer half. Male hypopygium with apical lobe of gonapophysis relatively long and slender, generally parallel-sided, tip obtuse, without setae, with a very small sublateral knob.

MALE.— Length about 15-18 mm.; wing 14.5-23 mm.

FEMALE.— Length about 18 mm.; wing 21 mm.

HABITAT.— Western North America.

HOLOTYPE, ♂, Auke Bay, Juneau, Alaska, July 26, 1952 (William Frohne). ALLOTYPE, ♀, Boyer, Oregon, July 13, 1933 (J. Macnab). PARATYPES, 1 ♂, Wellington, Vancouver Island, British Columbia, June 2, 1957 (Richard Guppy); 1 ♀, Vancouver, British Columbia, August 18, 1931 (H. B. Leech); 1 ♀, Forest Grove, Oregon, April 20, 1918 (F. R. Cole); 1 ♂, Odell Lake, Oregon, August 6, 1948 (K. M. Fender); 1 ♂, Boulder Lake Trail, Olympic National Park, Washington, 3,600 feet, July 19, 1948 (C. P. Alexander); 1 ♂, Washington, without further data.

The various specimens had been placed with typical *Limonia* (*Metalimnobia*) *californica* (Osten Sacken) but evidently should be considered as distinct. In the typical form the major darkened areas in cell *R* of the wings are only slightly smaller than the ground pattern. It may be noted concerning the gonapophyses of the male hypopygium that other Nearctic species have a brush or scattered setae at or near their tips, such being found in *L. (M.) cinctipes* (Say), *L. (M.) dietziana* Alexander, *L. (M.) hudsonica* (Osten Sacken), *L. (M.) immatura* (Osten Sacken), *L. (M.) quadrimaculata* (Meigen), and some others.

## PEDICIINI

### Genus *Pedicia* Latreille

#### Subgenus *Pentacyphona*, n. subgenus

Differs from the subgenus *Tricyphona* Zetterstedt chiefly in the structure of the male hypopygium, especially the five-parted dististyle.

Antennae 16-segmented; short in most species, longest in *huffae*.

Wings with branches of *Rs* bifurcate,  $R_{2+3}$  very long,  $R_{4+5}$  shorter; cell *1st M*<sub>2</sub> commonly closed, open in *huffae*.

Male hypopygium with apex of the united basistyle and inner dististyle distinctive, terminating in five unequal fingerlike lobes. Outer dististyle a small oval lobe, provided with conspicuous setae, the longest exceeding the style.

TYPE SPECIES.— *Pedica* (*Pentacyphona*) *ampla* (Doane)— Western Nearctic.

Other included species are *P. (P.) aspidoptera* (Coquillett) and subspecies *convexa* Alexander; *P. (P.) autumnalis* (Alexander); *P. (P.) cinereicolor* Alexander; *P. (P.) euryptera* Alexander; *P. (P.)*



*huffae* Alexander; *P. (P.) perangusta* Alexander; *P. (P.) smithae* Alexander; *P. (P.) subaptera* (Alexander), with *steensensis* Alexander, synonym; and *P. (P.) truncata* Alexander.

All species are Nearctic and chiefly from Western North America, only *autumnalis* and *huffae* being from Eastern North America, as far south as Tennessee.

*Dicranota (Dicranota) diacantha*, n.sp.

MALE.— Length about 5.5 mm.; wing 6 mm.

Characters generally as in *Dicranota (Dicranota) astigma* Alexander. Wings slightly darker. Macrotrichia of veins more abundant, occurring on all longitudinal veins basad to the arculus, on both Anals numbering approximately 75 to 100 on either vein. Veins in cell  $R_1$  more approximated, the distance between them about three times the length of  $R_2$ .

Male hypopygium with posterior border of tergite broadly emarginate, lateral arms slightly basal in position, long and slender, the apex strongly dilated into a suboval head that is produced laterad into a point. Basistyle with apical lobes stout, tips broadly obtuse, inner lobe with abundant stout setae; interbase a stout nearly straight rod, slightly dilated at apex, with two small acute spines, one in alignment with the stem, the terminal point subequal in size, directed strongly laterad. Dististyle unusually long, subequal to the interbase, appearing as a gently curved blade that widens gradually into a long-oval head with sparse setae, the apex obtuse.

HABITAT.— Oregon.

HOLOTYPE, ♂, on slide, Cloverdale, Tillamook County, July 28, 1950 (Noël Crickmer).

The most similar species are *Dicranota (Dicranota) astigma* Alexander and *D. (D.) rainierensis*, n.sp., which are distinguished by the more sparse trichia of the wing veins and by hypopygial structure, especially the interbase and dististyle. In both species the interbase at tip is obtusely rounded, without spinous points as in the present fly.

*Dicranota (Dicranota) rainierensis*, n.sp.

Size relatively small (wing of male to 6 mm.); antennae short; wings slightly tinged with gray, stigma very faintly indicated, vein  $R_2$  far distad, cell  $R_3$  sessile, vein  $R_{4+5}$  preserved; male hypopygium with posterior border of tergite shallowly concave, the lateral arms some distance basad of the margin to form a narrow U-shaped emargination; interbase with outer end enlarged, oval; dististyle relatively slender, not or only slightly expanded outwardly.

MALE.— Length about 4.5-5 mm.; wing 5-6.5 mm.; antenna about 0.7-0.8 mm.

FEMALE.— Length about 6.5 mm.; wing 6.5 mm.

Described from alcoholic material. Rostrum brown, palpi darker. Antennae short, brown; proximal two flagellar segments more or



less united to form a single elongate article, the faint suture at near two-thirds the length, succeeding segments short-oval. Head brown.

Pronotum brown. Mesonotum dark brown medially, sides of praescutum broadly yellow, the lateral praescutal stripes much paler brown; posterior border of scutellum, parascutella and sides of medio-tergite paler. Pleura and pleurotergite light brown, sternopleurite darker. Halteres long and slender, stem yellow, the small knob light brown. Legs with coxae and trochanters yellow, darker in female; remainder of legs brown. Wings slightly tinged with gray, stigma very faintly indicated, occupying the area between vein  $R_2$  and the supernumerary crossvein in cell  $R_1$ ;  $R_2$  far distad,  $R_{1+2}$  short, cell  $R_3$  sessile,  $R_{4+5}$  preserved, cell *2nd A* relatively narrow.

Abdomen medium to dark brown, hypopygium brownish yellow. Ovipositor with valves horn-yellow, cerci upcurved to the acute tips.

Male hypopygium with posterior border of tergite shallowly emarginate or concave, the relatively short lateral arms some distance basad of the border, forming a narrow U-shaped emargination. Outer lobes of basistyle subequal, the lateral one with delicate setae, inner lobe with setae slightly spinoid; interbase large, at near mid-length strongly curved, outer end enlarged oval, tip obtuse. Dististyle relatively slender, not or only slightly expanded outwardly, tip obtuse.

HABITAT.— Washington.

HOLOTYPE, alcoholic ♂, White River, Mount Rainier, Pierce County, July 27, 1966 (Hynes and Wilson). ALLOTOPOTYPE, ♀, PARATOPOTYPES, 3 ♂♂, July 27-28, 1966 (Hynes and Wilson). Hynes Nos. 1.1, 1.3, 1.7 and 1.16, reared. Types in Alexander collection through Dr. C. Dennis Hynes.

*Dicranota (Dicranota) rainierensis* is generally similar to *D. (D.) astigma* Alexander, differing especially in the venation and in hypopygial structure, especially the tergite and interbase.