

TAXONOMIC NOTES ON EPHYDRIDAE (DIPTERA)

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Abstract.—Several zoological and nomenclatural items concerning Nearctic Ephydridae, which will be modified in a forthcoming checklist of North American Diptera, are presented and explained. Usage of the family-group names Gymnomyzinae and Gymnomyzini is discussed; *Athyroglossa* (*Parathyroglossa*) *dinorata*, a new species, is described (= *A. ordinata* of American authors, not Becker); the synonymy of the genus *Gymnomyza* Fallén with *Mosillus* Latreille is explained; the tribe Ochtherini is transferred to the subfamily Gymnomyzinae where character evidence allies it with the tribe Gymnomyzini; the tribe Lipochaetini is recognized and Nearctic genera assigned; *Pelignellus* is synonymized with *Atissa*; *Pelignus salinus* Cresson is transferred to *Schema* Becker; *Hecamedoides glaucellus unispinosus* is given species status (= *H. glaucellus* of American authors, not Stenhammar); *Nesopsilopa* Mathis & Wirth is relegated to subgeneric status under *Guttipsilopa* Wirth; the subfamily Hyadininae Phillips et al. is given precedence over Gastropinae Cresson by our present action as first revisors; three subspecies in the genus *Pelina* (*bispinosa*, *latiforma*, and *prospinosa*) are given species status; possible relationships of the tribe Parydrini are discussed; *Parydra parasocia* Clausen is synonymized with *Ephydra fossarum* Haliday; *Parydra halteralis joaquinensis* Clausen is given species status; the tribe *Philygriini* is diagnosed for the first time; *Philygris opposita* Loew, 1861 is synonymized with *Notiphila puantatonervosa* 1813; *Ephydra lata* Walker, 1858 is synonymized with *Ephydra ripara* Fallén, 1813; *Ephydra oscitans* Walker is discussed; and *Ephydra gracilis* Packard, 1871 is given precedence over *Ephydra cinerea* Jones, 1906.

While preparing material for a catalog on the dipterous family Ephydridae, more commonly known as shore flies, we noted several zoological and nomenclatural changes that should be explained in greater detail than the format of a catalog normally permits. The changes that pertain to the Nearctic fauna are explained here, as that fauna will soon be treated in a checklist of Diptera to be published by the United States Department of Agriculture. Some of the problems concern only nomenclature; others entail both zoological and nomenclatural matters.

Methods.—As a framework for this paper and to be explicit about the classification that results from changes made herein, we

have arranged each taxon being treated by its subfamily. If taxa being treated within a subfamily belong to different tribes, then tribes are also cited. The general methodology used in this study was explained previously (Mathis 1986). The descriptive terminology, with the exceptions noted (Mathis 1986), follows that published in the recent Manual of Nearctic Diptera, Vol. 1 (McAlpine 1981). One head and two venational ratios are used commonly in the descriptions and are defined here for the convenience of the user (all ratios are averages of three specimens, the largest and smallest available and one other).

Eye-to-cheek ratio: genal height (immediately below eye)/eye height.

Costal vein ratio is the straight line distance between the apices of R_{2+3} and R_{4+5} /distance between the apices of R_1 and R_{2+3} .

M vein ratio: straight line distance along vein M between crossveins r-m and dm-cu/distance apical of crossvein dm-cu.

The illustrations of the male terminalia were first drawn in pencil by the second author (TZ) and then inked by Elaine R. S. Hodges.

Most specimens we examined are in the National Museum of Natural History, Smithsonian Institution (USNM). Numerous others were borrowed from the following collections: Academy of Natural Sciences of Philadelphia (ANSP); Museum of Comparative Zoology, Harvard (MCZ); National Museum of Ireland (NMI); Naturhistoriska Riksmuseet, Stockholm, Sweden (NRS); Hope Entomological Collection, Oxford University, England.

Subfamily Gymnomyzinae

Gymnomyzides Latreille, 1829:535. Type genus: *Gymnomyza* Fallén, 1810 (= *Mosillus* Latreille, 1804).

Tribe Gymnomyzini

Gymnomyzides Latreille, 1829:535. See subfamilial listing.

Gymnopini Cresson, 1922:326. Type genus: *Gymnopa* Fallén, 1820 (= *Mosillus* Latreille, 1804).

Remarks.—The family-group names Gymnomyzinae and Gymnomyzini are both based on the genus *Gymnomyza* Fallén (see treatment of this genus under *Mosillus*). At the subfamilial and tribal levels, these names are nearly 100 years older and clearly have precedence over Psilopinae (Cresson, 1925) or Gymnopini (Cresson, 1922), the family-group names used at the subfamilial and tribal levels in recent catalogs (Wirth 1965, 1968; Cogan & Wirth 1977; Cogan 1980, 1984; Mathis 1989). We are advocating use of Gymnomyzinae and Gymnomyzini rather

than requesting their suppression because priority will promote stability at these categorical levels. For example, two other family-group names, Lipochaetinae Becker (1896) and Discocerini Cresson (1925), are also older than Psilopinae, and they would also have precedence over the latter. Thus to promote stability, we are using Gymnomyzinae and Gymnomyzini, as both are the oldest family-group names in Ephydriidae and are unlikely to be replaced with still older names.

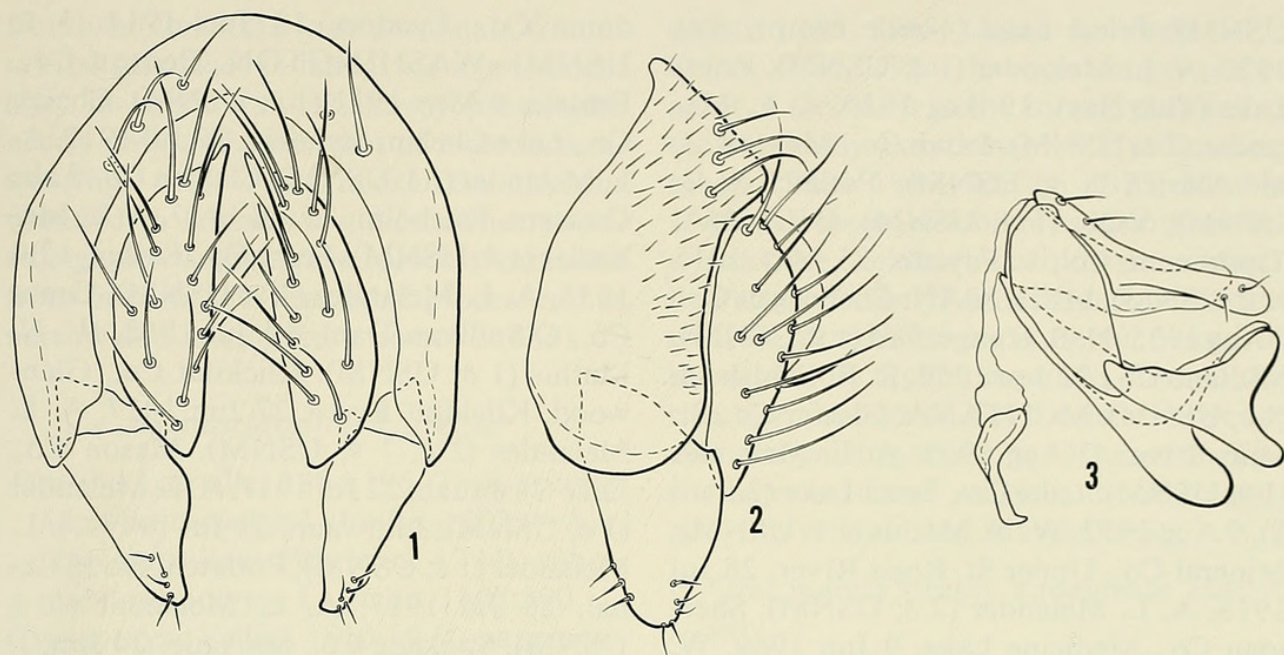
The priority of Gymnomyzidae does pose a problem, however. As a family-group name, Gymnomyzidae is also older than Ephydriidae Zetterstedt (1837). Because Ephydriidae has and remains the commonly used name for the family, we have requested that the ICZN use its plenary powers to give precedence to Ephydriidae over Gymnomyzidae when the two are considered to be synonyms (Mathis & Zatwarnicki, 1990b).

Athyroglossa (*Parathyroglossa*) *dinorata*,
new species
Figs. 1–3

Athyroglossa ordinata of various American authors, not Becker, 1896.—Wirth, 1965: 735 [Nearctic catalog].

Diagnosis.—Small to moderately small shore flies, length 1.65 to 2.50 mm.

Head: Two proclinate fronto-orbital setae, anterior seta subequal in size to reclinate seta, posterior seta about $\frac{1}{3}$ length of anterior seta; frons mostly uniformly smooth, shiny; pseudopostocellar setae well developed, about $\frac{1}{2}$ length of ocellar setae; ocelli arranged to form an isosceles triangle, distance between posterior pair greater; antenna blackish; arista with 5–8 dorsal rays, length of longer dorsal rays about $\frac{2}{3}$ width of 1st flagellomere; antennal groove bare ventrally to invested with distinctly whitish microtomentum dorsally; face pointed, transversely grooved; parafacials bare of microtomentum; eye-to-cheek ratio 0.45.



Figs. 1–3. Male terminalia of *Athyroglossa dinorata*: 1, Epandrium, cerci, and surstyli, posterior view; 2, Epandrium, cercus, and surstylus, lateral view; 3, Internal male genitalia, lateral view.

Thorax: Mesonotum mostly bare, shiny, microtomentum only along posterior margin of scutum and anterior margin of scutellum; acrostichal setae conspicuous in 4 rows. Halter blackish. Wing unicolorous, nearly hyaline; venation unicolorous, brownish black; costal vein ratio 0.33; M vein ratio 0.48. Legs concolorous, each with coxae, femora, tibiae, and apical 2–3 tarsomeres black, basitarsomeres yellowish to whitish; fore femur unarmed.

Abdomen: Dorsum of tergum 1, most of 2, anterior margin of 3, and most of 5 microtomentose, otherwise bare and shiny. Male terminalia (Figs. 1–3) as follows: width of epandrium in posterior view about as wide as high (Fig. 1); surstylus in lateral view roughly conical, ventral apex broadly rounded, bearing a few setulae apicad (Figs. 1, 2); gonite (postgonite) in lateral view clavate (Fig. 3); hypandrium in lateral view broadly Y-shaped (Fig. 3).

Type material. — The holotype male is labeled “[USA] COLORADO. Rio Grande Co. [,] 8000’ [,] South Fork [,] 20 June 1972 [,] W. W. Wirth [,] Malaise trap.” The allotype female and one male paratype bear the same

locality label as the holotype. The holotype is double mounted (minute nadel in poly-porus block), is in excellent condition, and is deposited in the USNM.

Other specimens examined. — CANADA. ALBERTA. Banff, 20 Aug 1925, O. Bryant (1 ♂; USNM). Okotoks, Sheep River, 27 Jun 1968, W. W. Wirth (4 ♂, 2 ♀; USNM). NOVA SCOTIA. Truro, 16 Aug 1913, R. Matheson (1 ♀; USNM). ONTARIO. Hearst (75 mi W), 5 Jul 1954, A. H. Sturtevant (1 ♀; USNM).

UNITED STATES. ARIZONA. Maricopa Co., Wickenburg, 16–18 May 1950, A. H. Sturtevant (3 ♂; USNM). CALIFORNIA. Monterey Co., Lucia, 28 Jul 1940, A. L. Melander (1 ♂; USNM). “Toumey Park,” 19 Jun 1935, A. L. Melander (1 ♂; USNM). COLORADO. Gunnison Co., Crested Butte (8300 ft), 9 Jul–5 Aug, 1957, A. H. Sturtevant (1 ♂, 1 ♀; USNM). Rio Grande Co., South Fork (8000 ft, Malaise trap), 20 Jun 1972, W. W. Wirth (2 ♂, 1 ♀; USNM). CONNECTICUT. Litchfield Co., Woodbury, 8 Jun 1931, A. L. Melander (1 ♀; USNM). IDAHO. Bonner Co., Priest Lake, 1–22 Aug 1916, 1920, A. L. Melander (1 ♂, 1 ♀;

USNM); Priest Lake (4-mile camp), Aug 1920, A. L. Melander (1 ♂; USNM); Priest Lake (Tule Bay), 19 Aug 1919, A. L. Melander (2 ♂; USNM). Latah Co., Moscow, J. M. Aldrich (1 ♀; USNM); Potlatch (1 ♂; USNM); Viola (1 ♂; USNM). INDIANA. Tippecanoe Co., LaFayette, 25 May 1915 (1 ♀; USNM). MICHIGAN. Cheboygan Co., 2 Aug 1935, H. B. Hungerford (1 ♀; USNM). Midland Co., 22 Jun 1953, R. R. Dreisbach (1 ♀; USNM). MONTANA. Glacier Co., St. Mary River, 2 Aug 1935, A. L. Melander (1 ♀; USNM). Lake Co., Swan Lake (2.5 mi S), 9 Aug 1972, W. N. Mathis (1 ♀; USNM). Mineral Co., Upper St. Regis River, 28 Jul 1918, A. L. Melander (2 ♂; USNM). Sheridan Co., Medicine Lake, 9 Jun 1969, W. W. Wirth (2 ♀; USNM). NEW YORK. Genesee Co., Portageville, Genesee River, 13 Jun 1963, W. W. Wirth (1 ♂; USNM). Tompkins Co., Ithaca, 15 Aug 1928, A. L. Melander (1 ♂; USNM). Wyoming Co., Warsaw, Oatka Creek, 11 Jun 1963, W. W. Wirth (1 ♂; USNM). Fish Creek Pond, 13 Aug 1941, A. L. Melander (1 ♀; USNM). OHIO. Ashtabula Co., Pymatuning Lake State Park, 13 Sep 1976, B. A. Steinly (7 ♀; USNM). Erie Co., Huron River, 17 Jul 1976, B. A. Steinly (1 ♀; USNM). Lorain Co., Amherst, Beaver Creek, 24 Aug 1977, B. A. Steinly (2 ♀; USNM); Mill Hollow C. P., Vermillion River, 22 Sep 1976, B. A. Steinly (1 ♂; USNM). Mercer Co., Grand Lake, Montezuma, 26 May 1977, B. A. Steinly (1 ♂, 1 ♀; USNM); St. Marys, Windy Point, Grand Lake, near Montezuma, 11 Oct 1976, B. A. Steinly (1 ♀; USNM). OREGON. Benton Co., Cary's Grove, 2 Sep 1974, W. N. Mathis (1 ♂; USNM); Rock Creek (4 mi SW Philomath), 29 May 1972, W. N. Mathis (1 ♀; USNM). Curry Co., Gold Beach (30 mi E), 2 Sep 1965, K. Goeden (1 ♀; USNM). Linn Co., Waterloo, 24 Jul 1974, W. N. Mathis (1 ♀; USNM). Polk Co., Helmick State Park, 20 Mar 1972, W. N. Mathis (1 ♀; USNM). UTAH. Duchesne Co., Mountain Home (20 mi N), 7 Jul 1968, W. N. Mathis (1 ♂; USNM). VERMONT. Cale-

donia Co., Lyndon, 13 Jun 1914 (1 ♀; USNM). WASHINGTON. Benton Co., Prosser, 4 May 1911 (1 ♀; USNM). Chelan Co., Lake Chelan, Stehekin, 30 Jul 1919, A. L. Melander (1 ♂; USNM). Clallam Co., Lake Crescent, Fairholm, 26 Jul 1917, A. L. Melander (1 ♀; USNM). Ferry Co., Keller, 4 Jul 1935, A. L. Melander (1 ♀; USNM). Grant Co., O'Sullivan Dam, 13 Jul 1968, W. N. Mathis (1 ♂; USNM). Klickitat Co., Glenwood, Klickitat River, 27 Jun 1917, A. L. Melander (2 ♂, 1 ♀; USNM). Mason Co., Lake Cushman, 22 Jul 1917, A. L. Melander (1 ♂; USNM); Lilliwaup, 23 Jul 1917, A. L. Melander (1 ♂; USNM); Potlatch, Hood Canal, 28 Jul 1917, A. L. Melander (1 ♂; USNM). Spokane Co., Spokane, 24 Jun, J. M. Aldrich (1 ♂; USNM). Walla Walla Co., Walla Walla, Mill Creek, 2-6 Jul 1922, A. L. Melander (1 ♂; USNM). Whitman Co., Wawawai, 7 Apr 1954, M. T. James, J. Quist (1 ♀; USNM). WYOMING. Park Co., Yellowstone National Park, Old Faithful, 14 Jul 1923, A. L. Melander (1 ♀; USNM); Yellowstone Lake, 9 Aug 1916, A. L. Melander (1 ♂; USNM). State unknown: "Pipestone Pass," 3 Jul 1923, A. L. Melander (1 ♂; USNM; this could be a pass associated with Pipestone Canyon, Okenagan Co., Washington).

Distribution.—Nearctic: British Columbia to Nova Scotia, south to Arizona and Maryland.

Remarks.—This species was confused with and usually misidentified as *Athyroglossa ordinata* Becker, a species from the Old World. We are revising the species of *Athyroglossa* from the western Palearctic Region (Mathis & Zatwarnicki, 1990a), and as part of that study, we compared European material of *A. ordinata* with those that were labeled as such from North America. Although very similar, the North American species differs as follows (for comparisons, characters of *A. ordinata* are cited in parenthesis): arisal rays comparatively short, length up to $1.5 \times$ width of arisal base ($3 \times$ basal arisal width); three to four proclinate

fronto-orbital setae (one proclinate fronto-orbital seta); face in lateral view prominent (face in lateral view shallowly prominent, nearly flat); and structures of male terminalia (Figs. 1–3): ventral apex of the surstylus rounded in lateral view (somewhat pointed); gonite with narrow process extended from near middle (extended process not as narrow and arising from posterior end).

Genus *Mosillus* Latreille

Mosillus Latreille, 1804:196. Type species: *Mosillus arcuatus* Latreille, 1805 (= *Syrphus subsultans* Fabricius, 1794), subsequent monotypy, Latreille, 1805:390.

Gymnomyza Fallén, 1810:19. Type species: *Syrphus subsultans* Fabricius, 1794, by present designation.

Remarks.—With designation of *Syrphus subsultans* as the type species of *Gymnomyza*, this generic name becomes an objective, junior synonym of *Mosillus*. *Gymnomyza* is an available name and is the type genus for the oldest family-group name in the family (see “Remarks” section under our treatment of Gymnomyzinae and Gymnomyzini).

Tribe Ochtherini

Ochtherinae Dahl, 1959:105. Type genus: *Ochthera* Latreille, 1802.

Genus *Ochthera* Latreille

Ochthera Latreille, [1802]:462. Type species: *Musca manicata* Fabricius, 1794, subsequent designation, Latreille, 1810:444.

Remarks.—Members of this genus and monobasic tribe are among the most easily recognized shore flies, largely because of their raptorial forelegs and triangular-shaped head. Although easily recognized, the phylogenetic status of the genus and tribe remains unresolved. Most recent authors

(Wirth 1965, 1968; Cogan & Wirth 1977; Cogan 1980, 1984) have preferred placement of *Ochthera* in the tribe Hyadinini of the subfamily Parydrinae (= Hyadininae); others (Dahl 1959, Miyagi 1977, Mathis 1989) as a separate subfamily, Ochtherinae, or as a tribe, Ochtherini, within the subfamily Parydrinae (= Hyadininae). Our studies indicate that *Ochthera* is better placed in the subfamily Gymnomyzinae, close to the tribe Gymnomyzini. For the present, we are also recognizing the tribe Ochtherini. The character evidence we have found to support this relationship is as follows:

1. Oral margin deeply emarginate anteriorly.
2. Clypeus button-shaped and exposed through deeply emarginate oral margin.
3. Arista and branching rays typical of gymnomyzine type (3–4 rays inserted toward base).
4. Mesonotum lacking well developed setae anterior of transverse suture.
5. Surstyli well developed, posteroventral margin extended under anterior margin of epandrium.

Apomorphies that indicate the monophyly of the genus and tribe are:

1. Head triangular-shaped from an anterior view.
2. Face in profile with distinct protuberance near middle.
3. Eyes relatively large, characteristic of predators.
4. Foreleg raptorial, with coxa and femur greatly enlarged and tibial apex projected as a ventroapical spinelike process.
5. Fronto-orbital setae greatly reduced or lacking.
6. Surstyli undulate ventrally, apices recurved medially.
7. Gonial arch fused distally with gonites.

Tribe Lipochaetini

Lipochaetini Becker, 1896:275. Type genus: *Lipochaeta* Coquillett, 1896.

Remarks.—In the most recent catalog of Nearctic Diptera (Wirth 1965), the tribe Lipochaetini was placed in the subfamily Parvdrinae (= Hyadininae). We suggest, however, that the character evidence of this tribe indicates a closer relationship to members of the subfamily Gymnomyzinae, especially those of the tribe Atissini, as was indicated by Mathis (1984). We are tentatively leaving Lipochaetini and Atissini as distinct tribes, although other studies now in progress may alter this status. Genera of this tribe that occur in the Nearctic Region are the following: *Glenanthe* Haliday and *Lipochaeta* Coquillett.

Tribe Atissini

Atissini Cresson, 1942:102. Type genus: *Atissa* Haliday, 1837.

Genus *Atissa* Haliday

Atissa Haliday in Curtis, 1837:281. (Published in synonymy, first used for a taxon by Haliday, 1839:401.) Type species: *Ephydra pygmaea* Haliday, 1833, monotypy.

Pelignellus Sturtevant & Wheeler, 1954:252. Type species: *Pelignellus subnudus* Sturtevant & Wheeler, 1954, original designation. New synonymy.

Remarks.—Sturtevant & Wheeler (1954:252) noted that *Pelignellus* resembled *Atissa* and *Pelignus* Cresson (= *Schema* Becker), and further, that J. E. Collin, to whom they submitted a paratype for examination, recommended that *P. subnudus* would be "... best considered an aberrant *Atissa*."

To resolve whether *Pelignellus* should be recognized as separate or a part of *Atissa*, we re-examined characters, external as well as those of the male terminalia. We found that the position of the interfrontal setae (anterior in *Pelignellus*, and posterior to median ocellus in *Atissa*) is of trivial value at the generic level. This observation, moreover, is corroborated by the close similarity

in the shape of the male terminalia. Although the exact shape differs slightly (see Figs. 4–5 of *A. subnuda*), the differences are but variations on the theme of *Atissa*, hence our synonymy.

Atissa subnuda (Sturtevant & Wheeler),
new combination
Figs. 4–5

Pelignellus subnudus Sturtevant & Wheeler, 1954:252.—Wirth, 1965:737 [Nearctic catalog].

Distribution.—California.

Remarks.—The structures of the male terminalia are as illustrated in Figs. 4–5. Also see our remarks under the generic synonymy.

Genus *Schema* Becker

Schema Becker, 1907:302. Type species: *Schema minutum* Becker, 1907, monotypy.

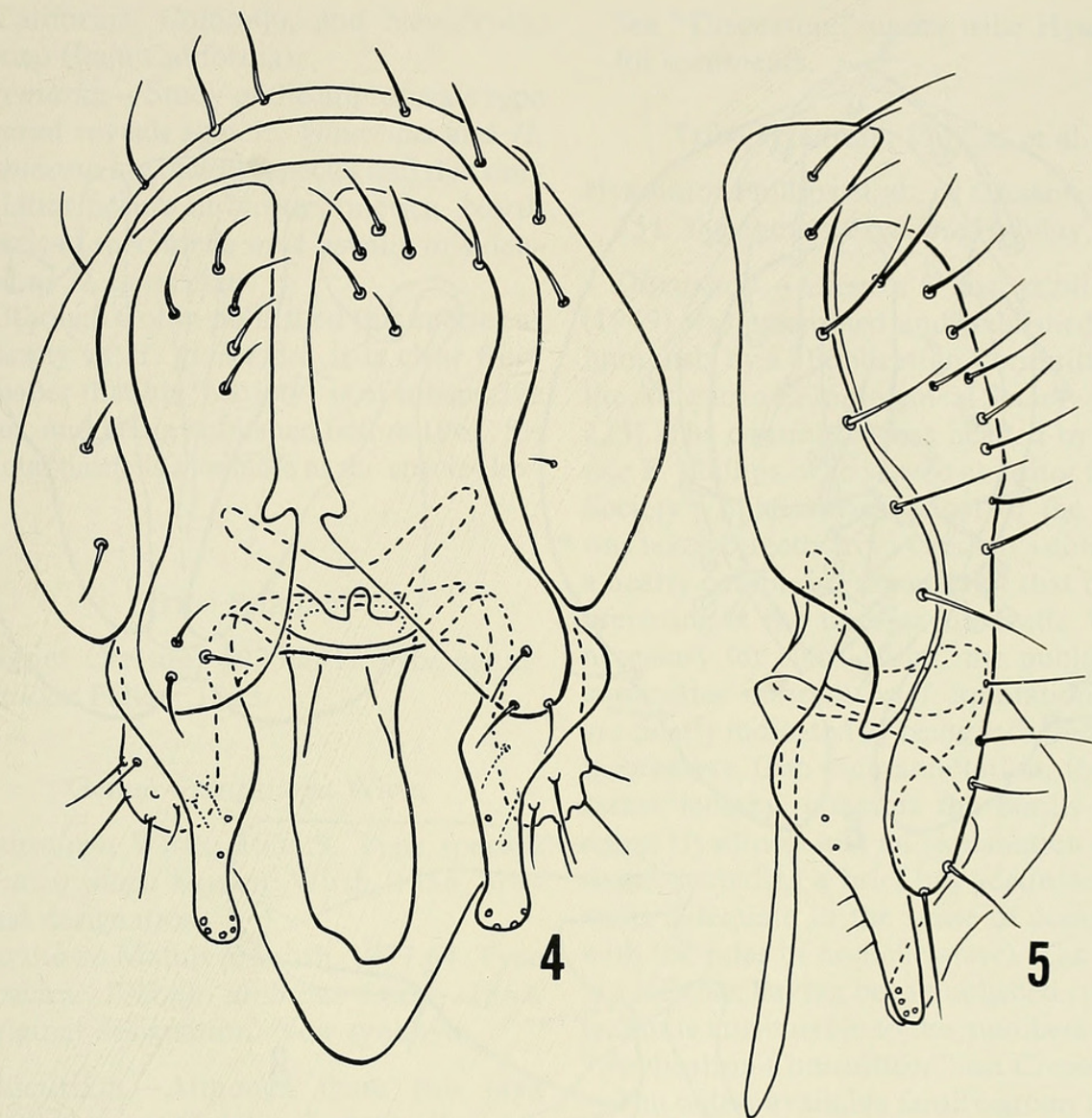
Pelignus Cresson, 1926:254. Type species: *Atissa durrenbergensis* Loew, 1864, original designation.—Cogan, 1984:130 [synonymy].

Discussion.—In the recent catalog of Palearctic Ephydridae, Cogan (1984) listed *Pelignus* as a junior synonym of *Schema*. Until then, *Schema* and its type species, *S. minutum*, had been obscure and for the most part forgotten names. Now that the status of these taxa and their names have been clarified, we are adhering to that precedent (Cogan 1984) and are here transferring *P. salinus* Cresson to the genus *Schema*, which is neuter in gender.

Schema salinum (Cresson),
new combination

Pelignus durrenbergensis of Cresson (in part), 1926:254, not Loew.

Pelignus salinus Cresson, 1942:109.—Wirth, 1965:737 [Nearctic catalog].



Figs. 4, 5. Male terminalia of *Atissa subnuda*: 4, Epandrium, cerci, surstyli, and aedeagus, posterior view; 5, Epandrium, cercus, surstylus, aedeagus, and hypandrium, lateral view.

Tribe Discocerinini

Discocerini Cresson, 1925:228. Type genus:
Discocerina Macquart, 1835.

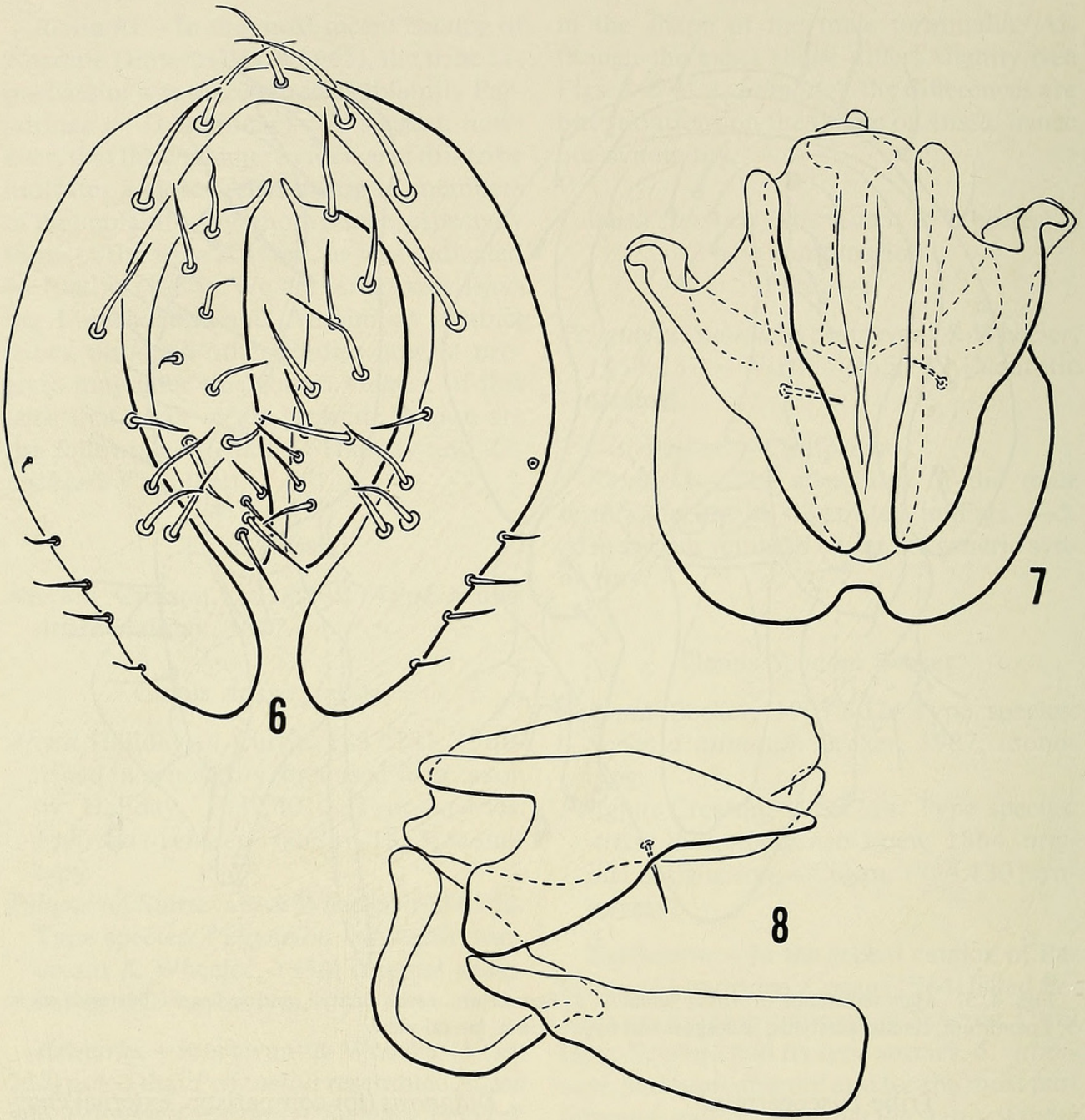
Hecamedoides unispinosus (Collin),
new status
Figs. 6–8

Discocerina (*Hecamedoides*) *glaucella* var.
unispinosa Collin, 1943:148.

Hecamedoides glaucella var. *unispinosa*. —
Cogan, 1976:83 [generic combination].

Hecamedoides glauceus of American au-
thors, not Stenhammar, 1844.

Diagnosis (for comparison, external char-
acters of *H. glauceus* are cited in paren-
thesis).—Length 2.05–2.20 mm (2.75–3.0
mm); eye-to-cheek ratio 3.0–3.2 (2.1–2.4);
fore femur with 1 posteroventral, spinelike
seta (5 setae); general coloration brownish
gray (light gray); costal vein ratio 1.8–2.1
(2.4–3.0); aedeagus elongate in dorsal view,
slightly narrower anteriorly, rounded api-
cally and with cleft in lateral view, generally
conical in shape (divided into 2 elongate
parts, these united basally); aedeagal apo-
dome semicircular in lateral view with dor-
sal margin straight (spoonlike, rounded ba-



Figs. 6–8. Male terminalia of *Hecamedoides unispinosus*: 6, Epandrium and cerci, posterior view; 7, Internal genitalia (gonites, aedeagus, and hypandrium), dorsal view; 8, Internal genitalia (gonite, aedeagus, aedeagal apodeme, and hypandrium), lateral view.

sally). The following characters of the male terminalia (Figs. 6–8) also distinguish *H. unispinosus*: anterior margin of hypandrium with medial cleft (Fig. 7); gonite with 1 ventromedial seta (Figs. 7–8); gonite wide at base, thereafter tapered and elbowed to moderately pointed apex (Figs. 7–8).

Type material.—Lectotype male, here designated, is labeled “Monnow Valley, 10.

7. 09 [10 Jul 1909]/LECTOTYPE *Disocerina* (*Hecamedoides*) *glaucella* var. *unispinosa* Collin.” There is also a paralectotype female that is labeled “Monnow Valley, 15. 8. 34 [15 Aug 1934].” The lectotype and paralectotype are preserved in the Hope Entomological Collection (Oxford).

Distribution.—Holarctic. Palearctic: Great Britain. Nearctic: Alberta to Ontario, south

to California, Colorado, and New York; Mexico (Baja California).

Remarks.—Study of the appropriate type material reveals that *H. glaucellus* and *H. unispinosus* are distinct species and that only the latter occurs in North America. North American specimens were usually misidentified as *H. glaucellus*.

Although Collin published this species as a variety of *H. glaucellus*, it is clear from his paper that his "variety" is of subspecific status, and being published before 1961, his varietal name is available at the species level.

Tribe Psilopini

Psilopini Cresson, 1925:241. Type genus: *Psilopa* Fallén, 1823.

Genus *Guttipsilopa* Wirth

Guttipsilopa Wirth, 1956:9. Type species: *Guttipsilopa haydeni* Wirth, 1956, original designation.

Nesopsilopa Mathis & Wirth, 1977:64. Type species: *Psilopa umbrosa* Loew, 1862, original designation. New synonym.

Discussion.—Although these two taxa represent monophyletic lineages, they are sister groups and are sufficiently similar that recognition of them as separate genera is unwarranted. *Nesopsilopa* will be used at the subgeneric level, however. In accordance with this change, the following species names are transferred from *Nesopsilopa* to *Guttipsilopa* as new combinations: *Guttipsilopa* (*Nesopsilopa*) *bahamaensis* (Mathis & Wirth), *G. (N.) caeruleiventris* (Loew), *G. (N.) stonei* (Mathis & Wirth), *G. (N.) umbrosa* (Loew), and *G. (N.) wirthi* (Mathis & Freidberg).

Subfamily Hyadininae Phillips et al., revised status

Hyadinini Phillips et al., in Cresson, 1949: 251. Type genus: *Hyadina* Haliday, 1837.

See "Discussion" under tribe Hyadinini for comments.

Tribe Hyadinini Phillips et al.

Hyadinini Phillips et al., in Cresson, 1949: 251. Type genus: *Hyadina* Haliday, 1837.

Discussion.—Cresson's last publication (1949) was assembled and published posthumously by a "Publication Committee" of the American Entomological Society (1949: 225). The committee was headed by Maurice E. Phillips, who served as editor for the Society's publications. Most of the paper was taken directly from Cresson's notes and a nearly completed manuscript that he was preparing at the time of his death. Where necessary for clarification, the publication committee inserted brief annotations that are clearly indicated by being included within brackets. One such annotation, this one rather lengthy, contains the family-group name Hyadinini and an explanation of the name, including a brief but adequate diagnosis (adequate in the sense of complying with the rules of nomenclature). The name is available, having been published correctly, but is attributable to the members of the "Publication Committee," not Cresson.

The oldest available family-group names for this subfamily, Gastropinae and Hyadininae, were both published in the same paper (Cresson 1949). As first revisors, we elect to use Hyadininae for the subfamilial name because its type genus, *Hyadina*, is a better known taxon that is also more widespread. *Gastrops* Williston, the type genus for Gastropinae, is known only from the New World.

The relationships among the genera and tribes of this subfamily are being studied by Edmiston & Mathis, and it would be premature to cite their results, which are still inconclusive.

Pelina bispinosa Clausen, new status

Pelina truncatula bispinosa Clausen, 1973: 139.

Pelina latiforma Clausen, new status

Pelina truncatula latiforma Clausen, 1973: 141.

Pelina prospinosa Clausen, new status

Pelina truncatula prospinosa Clausen, 1973: 143.

Remarks.—Clausen (1973:137) described these three taxa as subspecies of *P. truncatula* Loew because of an "... apparent tendency toward intergradation." He noted, however, that (p. 137) "All groups show overlaps in distribution" and further, that "... two groups are often found in the same collections but in these collections no intergradation can be found." After publication of Clausen's revision, more field work, especially in western US, was conducted, and in more than one locality, two or more of these taxa were found occurring together, often collected in the same sweep of an aerial net. The available evidence now suggests that these taxa represent independent populations that can be consistently distinguished by characters of the male terminalia and that ought to be recognized as full species.

Tribe Parydrini

Parydrini Wirth & Stone, 1956:464. Type genus: *Parydra* Stenhammar, 1844.

Remarks.—This tribe may be the sister group to the subfamily Ephydrinae. If evidence corroborates this relationship, the concept of Ephydrinae would need to be broadened to include most genera that were previously placed under Parydrini. Ephydrinae would thus include four tribes, viz., Ephydrini, Dagini, Parydrini, and Scatellini. At present, we have not opted to recognize Ephydrinae in this sense (Ephydrinae + Parydrini), preferring to accumulate additional and more convincing evidence. As a preliminary step toward better resolution of these relationships, we have iden-

tified the following characters that may be synapomorphies and that would confirm the monophyly of this lineage and the sister-group relationship:

1. Fronto-orbital setae laterocline. These setae are well developed in most but not all species of the subfamily, but even when weakly developed, they are laterocline. Elsewhere in the family, these setae are procline and/or recline.
2. Face broadly projected anteriorly, shieldlike. This condition may have evolved more than once within the Ephydridae, where a projected, shieldlike face appears in the Hydrelliinae, i.e., *Paralimna* and related genera, and in the Ephydrinae. In both cases, it is probably a synapomorphy. Other shore flies usually have the face slightly convex or flat.
3. Oral opening large, gaping. See number 2.
4. Clypeus broadly developed, commensurate with the gaping oral opening.
5. Anterior spiracle of larvae protrusile, mostly with 3–7 digitiform papillae (in a few cases with 2–18).

For the Nearctic Region the tribe Parydrini includes: *Callinapaea* Sturtevant & Wheeler, *Eutaenionotum* Oldenberg, *Parydra* Stenhammar, and *Rhinonapaea* Wirth.

Parydra (*Chaetoapnaea*) *fossarum*
Haliday

Ephydra fossarum Haliday, 1833:175.

Parydra fossarum.—Loew, 1860:32 [generic combination].

Parydra (*Chaetoapnaea*) *parasocia* Clausen, in Clausen & Cook, 1971:83, new synonym.

Type material.—The lectotype female of *Ephydra fossarum*, here designated, is labeled "Ireland [Northern Ireland, Downshire, Holywood; green]/Haliday 20. 2. '82 [NMI's registration number]/fossarum [handwritten, apparently by J. E. Collin]/Named by J. E. Collin/LECTOTYPE ♀ *Ephydra fossarum* Haliday by Mathis &

Zatwarnicki [gender symbol, name and author, designators all handwritten]." The lectotype is in poor condition (pointed to paper triangle), and is deposited in NMI. There are two additional female syntypes (NMI) that bear the same label data as the lectotype except they lack the handwritten, determination label; these two specimens are designated as paralectotypes.

The holotype male of *Parydra parasocia* was collected in Sidney, Fremont County, Iowa, and is deposited in the collection at Iowa State University.

Distribution.—Holarctic. Nearctic: British Columbia and Northern Territories to Nova Scotia, south to California, Arkansas, and Michigan. Palearctic: Austria, Great Britain, Hungary, Italy, Finland, Germany (FRG), Netherlands, Poland, Sweden.

Remarks.—We compared European and North American specimens, especially characters of the male genitalia, and consider the specimens to be conspecific. For figures of the male terminalia of *P. fossarum*, please refer to those (fig. 100) in Clausen & Cook (1971:132).

Parydra (Chaetoapnaea) joaquinensis
Clausen, new status

Parydra halteralis joaquinensis Clausen, in Clausen & Cook, 1971:79.

Remarks.—This taxon was described as a subspecies of *P. halteralis* (Cresson). Although the two "subspecies" are similar, especially externally, they can be distinguished by the shape of the aedeagus, and there is no apparent intergradation. The populations of the two taxa are allopatric, and as the only available evidence suggests that they are independent, both are given species status.

Philygriini, new tribe

Philygriini of authors (Nomen nudum, lacking a diagnosis).—Wirth, 1965:745; Wirth, 1968:16.—Cole, 1969:400.—Cogan & Wirth, 1977:335.—Cogan, 1980:666; Cogan, 1984:149.—Ferrari, 1987:169.

Diagnosis.—A tribe of Hyadininae that is distinguished from others of this subfamily by the following characters: Head: Ocellar setae weakly developed or lacking; face narrow, slightly to distinctly convex, most prominent at mid facial height and with receding lower facial margin; eye microsetulose; subcranial cavity small to moderately large; clypeus not prominent. Thorax: Posterior notopleural seta inserted distinctly dorsad from level of anterior seta; katepisternal seta lacking or greatly reduced. Costa extended to vein M. Abdomen: Tergum 4 at most twice length of 5. Male terminalia: Cerci connected anterodorsally with epandrium; gonites united with hypandrium and bearing long setae anterodorsally.

Remarks.—Although Philygriini has been widely used in the literature for the last few decades, it is a nomen nudum, lacking a diagnosis. The North American genera that are included in this tribe are *Philygria* Stenhammar and *Nostima* Coquillett. *Lemnaphila* Cresson, which was included in Philygriini (Wirth 1965, and elsewhere, see synonymy listed above), is better placed in the tribe Hydrelliini (subfamily Hydrelliinae) near the genus *Hydrellia* Robineau-Desvoidy based on characters of the male terminalia and larvae (Johannsen 1935, Hennig 1943, Lizarralde de Grosso 1978, and Edmiston & Foote, pers. comm.).

Philygria punctatonervosa (Fallén)

Figs. 9–13

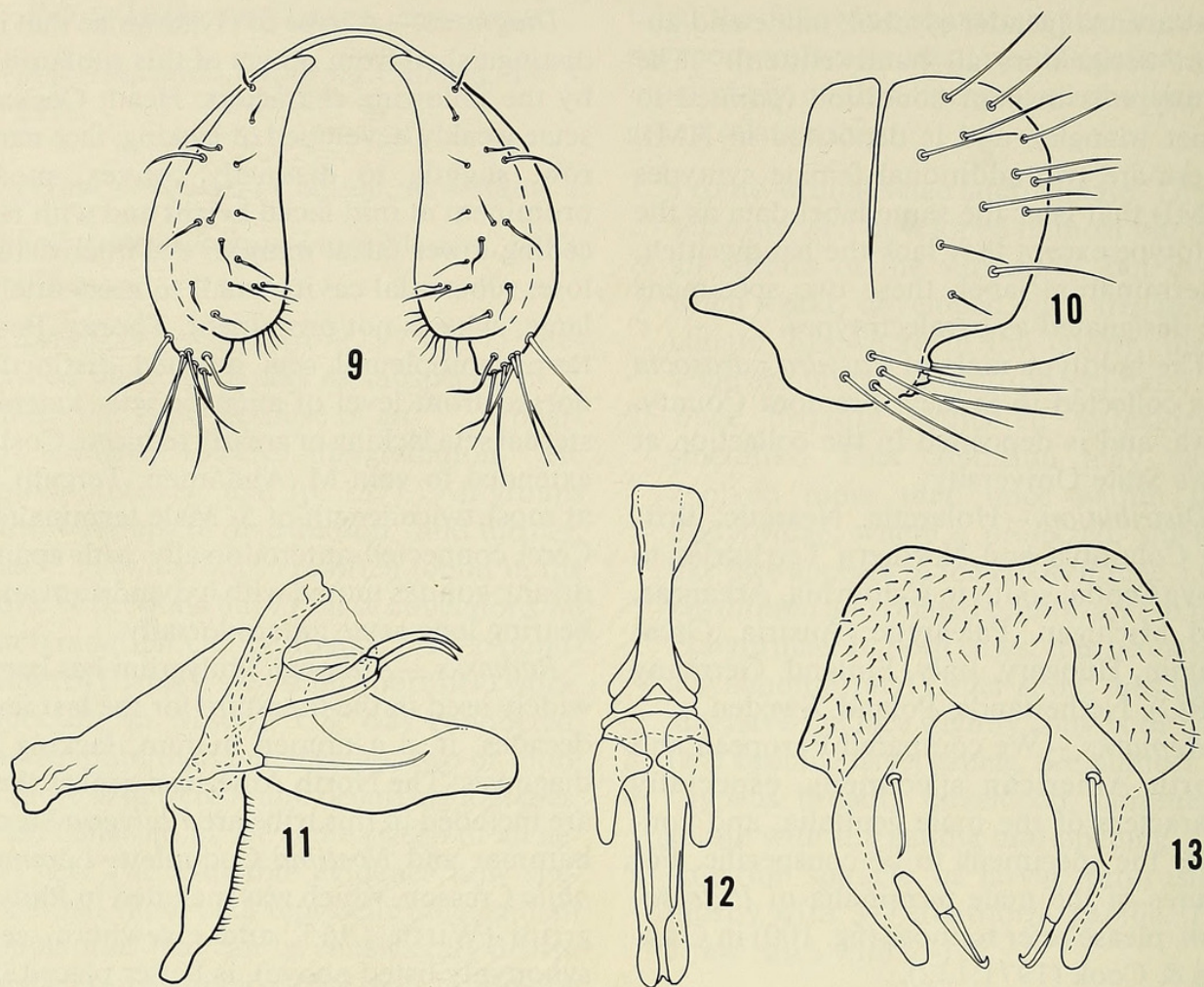
Notiphila punctatonervosa Fallén, 1813:254.

Philygria punctatonervosa.—Loew, 1860:25 [generic combination].

Hydrina punctatonervosa.—Becker, 1926:57 [generic combination].

Philygria opposita Loew, 1861:356, new synonym.

Diagnosis.—Specimens with short stump veins on veins R_{2+3} , R_{4+5} , and M. Male terminalia (Figs. 9–13): Cerci semicircular and broad, fused anteroventrally with narrow epandrium (Figs. 9, 10); anteroventral



Figs. 9–13. Male terminalia of *Philygria punctatonervosa*: 9, Epandrium and cerci, posterior view; 10, Epandrium and cercus, lateral view; 11, Gonite, hypandrium, aedeagal apodeme, and aedeagus, lateral view; 12, Aedeagal apodeme and aedeagus, dorsal view; 13, Hypandrium and gonite, ventral view.

margin of epandrium with 6–7 long setae (Figs. 9, 10); gonite with 1 anterodorsal long seta and 2 short apical spinulae (Fig. 11); aedeagal apodeme triangular in lateral view (Fig. 11); aedeagus curved upwards, C-shaped, basal part with 2 laterodorsal processes (Figs. 11, 12); hypandrium flat, U-shaped, closely associated with gonites (Fig. 13).

Type material.—The lectotype ♂ of *Notiphila punctatonervosa*, here designated, is labeled “N. puncta-to-nervosa ♂ [handwritten, apparently by Fallén; species name underlined]/355 90[pink; “90” handwritten]/Riksmuseum Stockholm [green]/LECTO-TYPE ♂ *Notiphila punctatonervosa* Fallén By Mathis & Zatwarnicki [black subborder;

gender, name, author and designators handwritten].” Six other specimens (1♂, 2♀, 3?) from the Fallén collection, all in poor condition (mouldy, missing structures), are designated as paralectotypes. The lectotype is in poor condition (mouldy, left wing stuck to pin), is pinned directly, and is deposited in the NRS.

The lectotype male of *Philygria opposita*, here designated, is labeled “Penn./Loew Coll./opposita/Type 11161 [red]/*Philygria opposita* Lw det. W. Wirth ’61.” Two paralectotype males bear labels as follows “Penn./Loew Coll./Type 11161.” The lectotype and paralectotypes are deposited in the MCZ.

Distribution.—Holarctic. Palearctic: Bel-

gium, Denmark, Germany (GDR), USSR. Nearctic: British Columbia to Quebec, south to California, Illinois, and Maryland.

Remarks.—Loew (1861) characterized *P. opposita* as being very similar to *P. punctatonevosa*, differing mainly by the darker coloration and fewer number of wing spots. The number of wing spots is unstable in populations occurring in the Holarctic Region, and in specimens from both the Palearctic and Nearctic Regions there is only very slight variation in the shape of the male terminalia, hence our synonymy. The shape of the male terminalia appears to provide good characters for recognition of species in *Philygria*.

Subfamily Ephydrinae

Ephydrinae Zetterstedt, 1837:48. Type genus: *Ephydra* Fallén, 1810.

Ephydra (Ephydra) riparia Fallén

Ephydra riparia Fallén, 1813:246.

Ephydra lata Walker, 1858:233, new synonym.

Remarks.—The primary type of *E. lata* is apparently lost, but the description is adequate to identify this species as being conspecific with *E. riparia*.

Ephydra oscitans Walker

Ephydra oscitans Walker, 1858:253, preoccupied, Walker, 1849:1106.

Remarks.—Walker's 1858 name is a homonym and, therefore, is unavailable, being preoccupied by *E. oscitans* Walker, 1849:1106. As the primary type of the species described in 1858 is apparently lost and unrecognizable from the description, the species will not be renamed.

Ephydra (Halephadra) gracilis Packard, revised status

Ephydra gracilis Packard, 1871:105.—Aldrich, 1912:78 [biology, description].

Ephydra cinerea Jones, 1906:159.—Sturtevant & Wheeler, 1954:168 [distribution, notes, synonymy].—Wirth, 1956:19 [distribution in Bahamas]; 1968:22 [Neotropical catalog].

Ephydra (Halephadra) cinerea.—Wirth, 1971:371 [revision].—Simpson, 1976:264 [description and figures of larva and puparium].

Remarks.—Our usage of *Ephydra gracilis* as the senior synonym for this species reverses the precedent of Sturtevant & Wheeler (1954:168–169) who cited *Ephydra cinerea* Jones as the valid name for this species and listed *Ephydra gracilis* as a questionable synonym. Sturtevant & Wheeler's (1954) argument, in part, is a misleading paraphrase of Aldrich (1912), i.e., that Packard's description of the "larva [sic, Packard described the puparium] does not agree with the present species—a point that we can confirm." We reexamined the characters and have concluded that *Ephydra gracilis* can indeed be recognized. The evidence is as follows. Packard's description of the puparium, although brief, does mention a few salient characters that are unique to this species (1871:78). The respiratory tube is much longer than that of any other species, "being as long as the body," the body is generally smaller and more slender, and the "feet" (prolegs) are more prominent. In addition, as Packard also noted, this species occurs abundantly around the Great Salt Lake. This combination of characters is unique to and clearly identifies *E. gracilis*, which is the most abundant species around Great Salt Lake.

Aldrich (1912:79), contrary to Sturtevant & Wheeler's (1954) incorrect paraphrase, did not say that Packard's description "does not agree with the present species." Instead, Aldrich (1912) noted the brevity of Packard's description, which, according to Aldrich, was "scarcely" recognizable and unsatisfactory by the omission of a striking distinction (the basal filaments of the "anal" tube).

Nevertheless, Aldrich (1912) went on to conclude that "... it is certain that Packard was describing a strikingly small *Ephydra* common in Great Salt Lake, and there is but one species [*E. gracilis*], whether he [Packard] described it well or not."

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