

NEW MICROCADDISFLIES (TRICHOPTERA: HYDROPTILIDAE) FROM ALABAMA

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Abstract.—Ten new species of Hydroptilidae (Trichoptera) from Alabama are described and illustrated: *Hydroptila circangula*, *H. paralatosa*, *H. choccolocco*, *H. fusina*, *H. cretosa*, *H. oakmulgeensis*, *H. talladega*, *H. paramoena*, *H. oneili*, and *Stactobiella cahaba*.

The Hydroptilidae, or microcaddisflies, include the smallest species of Trichoptera, ranging in size from 2 to 6 mm. In North America, there are 14 genera with approximately 200 species. The larvae are unusual because, unlike other case-making caddisflies, the first four larval instars are free living. The genera considered in this paper build a purse case consisting of two silken valves joined at the dorsal and ventral edges and open at each end. Hydroptilid larvae occur in a variety of lotic and lentic habitats and most are thought to feed on algae, either filamentous or periphytic. Most microcaddisflies have a life cycle of one year or less.

The rivers and streams of Alabama support a great diversity of microcaddisflies. In a recent paper, Harris (1985) reported a total of 79 species from Alabama, more than twice as many as neighboring states. The new species described herein, plus new records for the state, increase this total to 97 species.

Terminology and species groupings follow that of Marshall (1979). Types will be deposited at the National Museum of Natural History (USNM), Illinois Natural History Survey (INHS), University of Alabama (UA), and collection of the author.

Hydroptila circangula Harris, NEW SPECIES

Fig. 1

This species, a member of the *H. consimilis* group, has similarities with *H. quinola* Ross and *H. carolae* Holzenthal and Kelley. The new species can be distinguished on the appearance of the subgenital plate and structure of the phallus.

Male.—Length 2.2–2.6 mm. Antennae 30-segmented. Color brown in alcohol. Venter of abdominal segment VII with short, apico-mesal process. Segment VIII quadrate in lateral view. Segment IX approximately half width of VIII and extending anteriorly into that segment, with several short setae on ventral posterior margin. Segment X largely membranous; in dorsal view, broadly cleft with diverging apico-lateral extensions; in lateral view dome-shaped. Subgenital plate as long as inferior appendages; in ventral view evenly rounded baso-laterally, tapering to narrow, apical point bearing two divergent, subapical setae. Inferior appendages

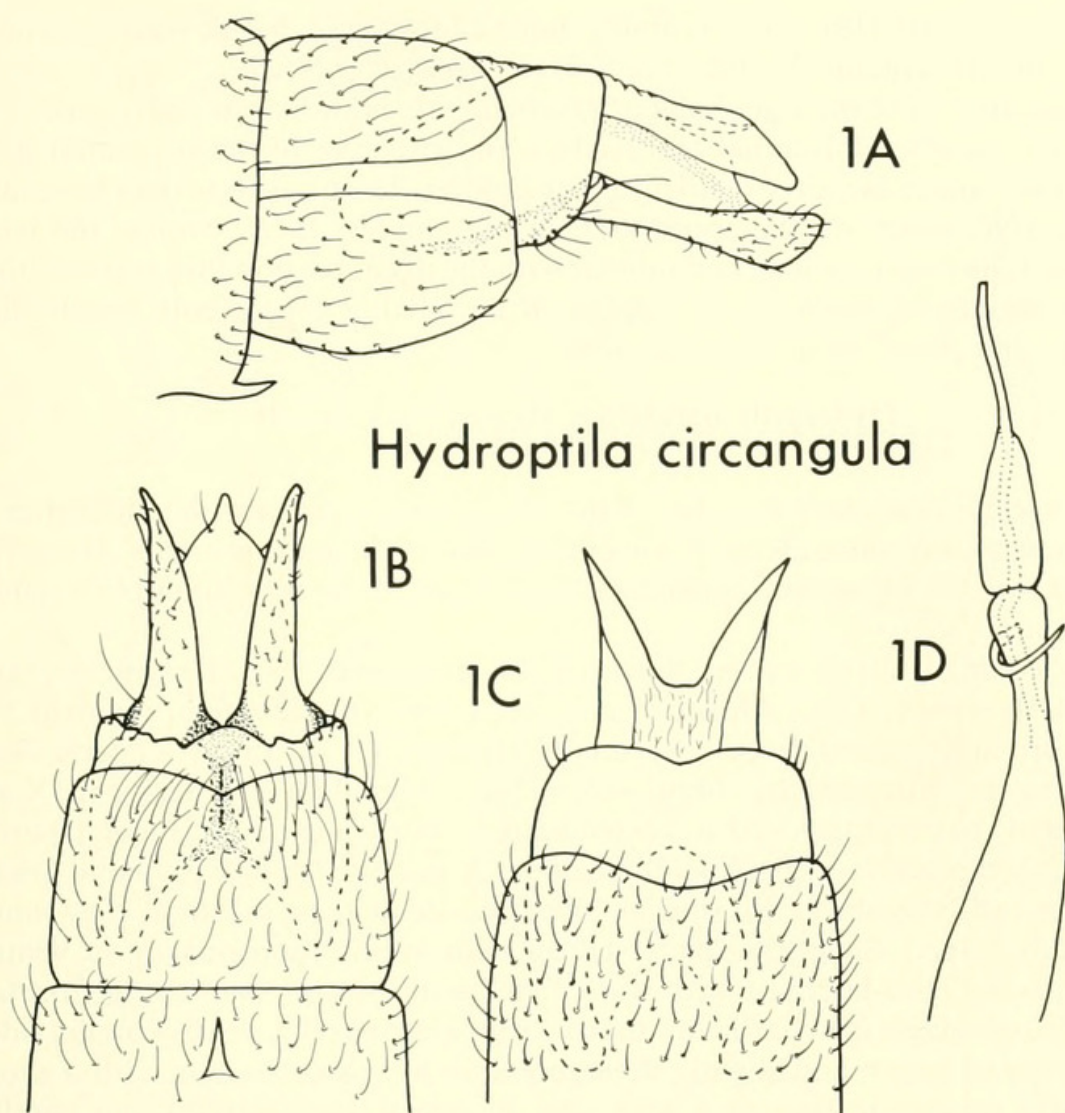


Fig. 1. *Hydroptila circangula* n. sp., male genitalia. 1A, lateral view. 1B, ventral view. 1C, dorsal view. 1D, phallus.

in ventral view narrowly separate basally, tapering and diverging apically, each bearing a long dorso-lateral seta basally; in lateral view somewhat club-shaped, narrowest in middle, apico-dorsal corner rounded. Phallus with basal portion tapering to bulblike apex, bearing short paramere; distal portion triangular basally with ejaculatory duct protruding apically.

Female.—Unknown.

Etymology.—Latin “around the bay,” referring to the species occurrence around Mobile Bay.

Holotype.—Alabama, Baldwin County, Pine Log Creek at Hwy. 59, 11 May 1982, S. C. Harris (USNM).

Paratypes.—Alabama, same as above, 6 ♂ (INHS); Nelson Branch, 3 mile east Gateswood, 23 June 1982, 2 ♂, S. Harris and P. O’Neil (UA); Sandy Creek, at Hwy. 98, 23 June 1982, 22 ♂, S. Harris and P. O’Neil (USNM); Mobile County, Indian Grave Creek, 7 mile east Citronelle, 24 June 1982, 6 ♂, S. Harris and P. O’Neil; Little Creek, 4 mile southeast Citronelle, 31 March 1982, 11 ♂, P. O’Neil

and M. Mettee (INHS); same as above, but 12 May 1982, 6 ♂, S. Harris; same as above, but 20 September 1982, 5 ♂, S. Harris and P. O'Neil.

Discussion.—The male genitalia of *H. circangula* is similar in many aspects to that of *H. carolae* Holzenthal and Kelley. The structure of the subgenital plate and inferior appendages are similar in both species. The two species can be readily separated, however, on the appearance of the phallus. In *H. carolae* the basal portion of the phallus is long and tubular with the distal portion thin and styletlike with no paramere, while in *H. circangula* the phallus tapers both basally and dorsally, and possesses a short paramere.

***Hydroptila paralatosa* Harris, NEW SPECIES**

Fig. 2

This species is another member of the *H. consimilis* group with similarities to *H. quinola* and *H. latosa* Ross in the overall plan of the male genitalia. However, the structure of the inferior appendages and shape of the subgenital plate render it distinct.

Male.—Length 2.1–2.5 mm. Antennae 24-segmented, last 11 segments light, particularly 14–16. Color brown in alcohol. Venter of abdominal segment VII with short, apico-mesal process. Segment VIII generally quadrate in lateral view, narrowing postero-mesally, clump of long hairs dorso-laterally. Segment IX approximately half width of VIII and extending anteriorly into that segment, tapering to a rounded postero-ventral point. Segment X in dorsal view with flared lateral extensions and membranous median lobe rounded at apex; in lateral view somewhat club-shaped. Subgenital plate shorter than inferior appendages; in ventral view rounded baso-laterally, with wide distal point bearing two divergent setae. Inferior appendages in ventral view narrowly separate basally, nearly parallel sided over much of length and slightly diverging apically, baso-laterally with a short, thumblike projection bearing a long seta; in lateral view straight and parallel sided, rounded distally, basal projection less than $\frac{1}{4}$ length of appendage. Phallus long and slender, basal portion gently tapering to bulblike apex; distal portion gently curved to sharp apex.

Female.—Unknown.

Etymology.—Latin, referring to the similarity with *H. latosa*.

Holotype.—Alabama, Tuscaloosa County, Hurricane Creek at Old Mill Trace, 1 mile south Cottdale, 11 August 1983, S. Harris and P. O'Neil (USNM).

Paratypes.—Same as above, 44 ♂ (USNM, INHS); same as above, but 18 August 1982, 2 ♂, S. Harris (UA); Turkey Creek at Hwy. 69, 26 July 1984, 8 ♂, S. Harris and P. O'Neil; same, but 11 August 1981, 1 ♂; Keeple Creek at mouth, 3 miles south Coaling, 6 August 1984, 1 ♂, P. O'Neil and R. Smith; same, but 7 June 1984, 5 ♂.

Discussion.—Many of the genitalic structures of *H. paralatosa* appear to be intermediate in character between those of *H. quinola* and *H. latosa*. The inferior appendages, particularly in ventral view, are similar to those of *H. quinola*, in being divergent apically, although not to the extent seen in *H. quinola*, and in the possession of a short baso-lateral thumb. In contrast, the inferior appendages of *H. latosa* are convergent apically with a long, fingerlike, baso-lateral process. In lateral view, the inferior appendages of *H. quinola* and *H. paralatosa* are straight, while in *H. latosa* they curve ventrally. In common with *H. latosa*, *H. paralatosa*

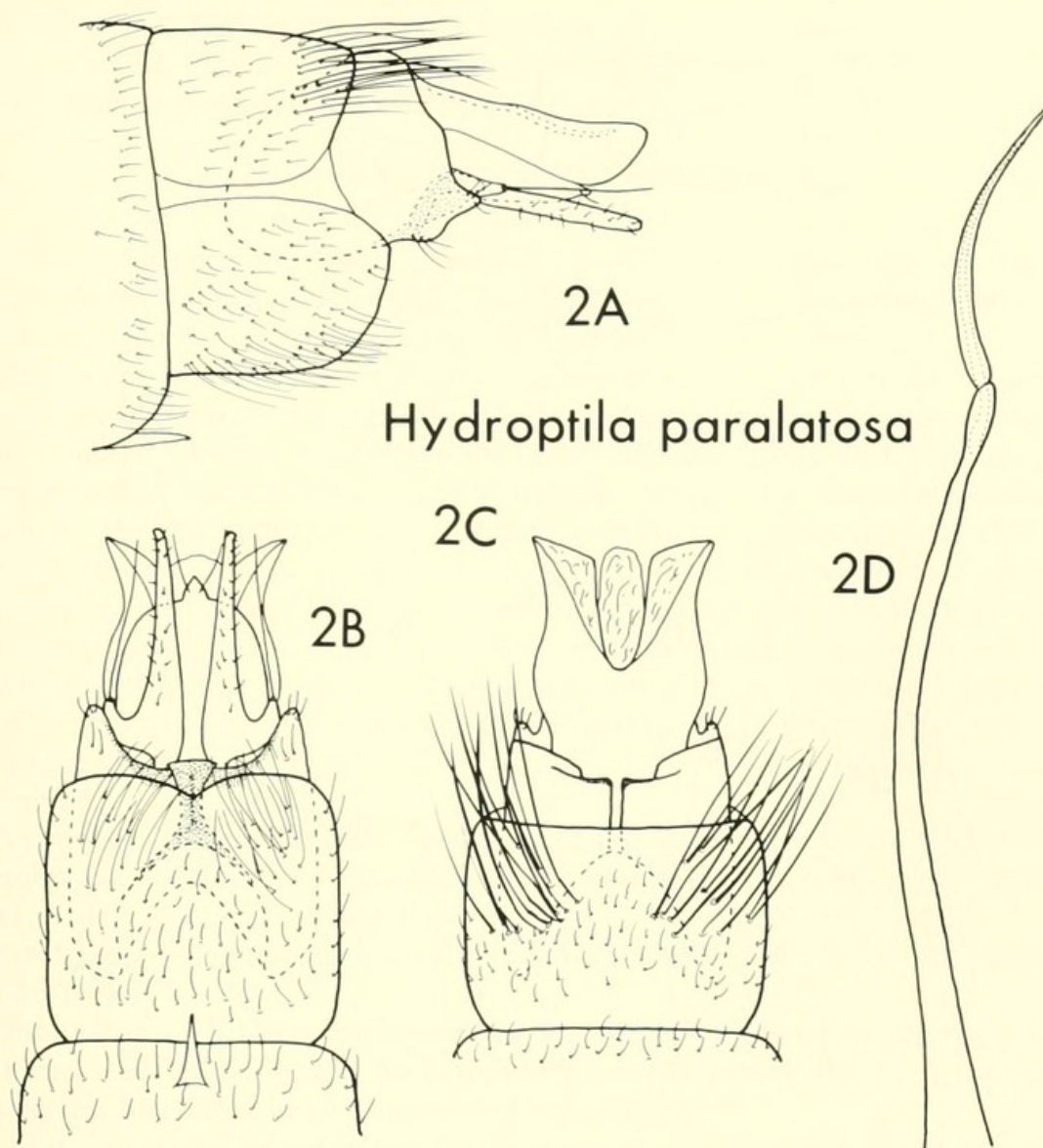


Fig. 2. *Hydroptila paralatosa* n. sp., male genitalia. 2A, lateral view. 2B, ventral view. 2C, dorsal view. 2D, phallus.

has a rounded, distally pointed subgenital plate. By contrast, the subgenital plate of *H. quinola* is triangular in shape. *Hydroptila latosa* is a coastal plain endemic, restricted to sand bottom streams and rivers on the lower coastal plain in Alabama, while *H. quinola* is widespread in the state. *Hydroptila paralatosa* is presently only known from several streams on the lower Cumberland Plateau.

***Hydroptila choccolocco* Harris, NEW SPECIES**

Fig. 3

This is a third new species to be placed in the *H. consimilis* group. The distinctive, sinuate inferior appendages, however, render it unique.

Male.—Length 2.8–3.0 mm. Antennae 26-segmented. Color brown in alcohol. Venter of abdominal segment VII with short, apico-mesal process. Segment VIII generally quadrate in lateral view; clumps of long setae laterally both dorsally and ventrally. Segment IX equal in width to segment VIII and extending anteriorly

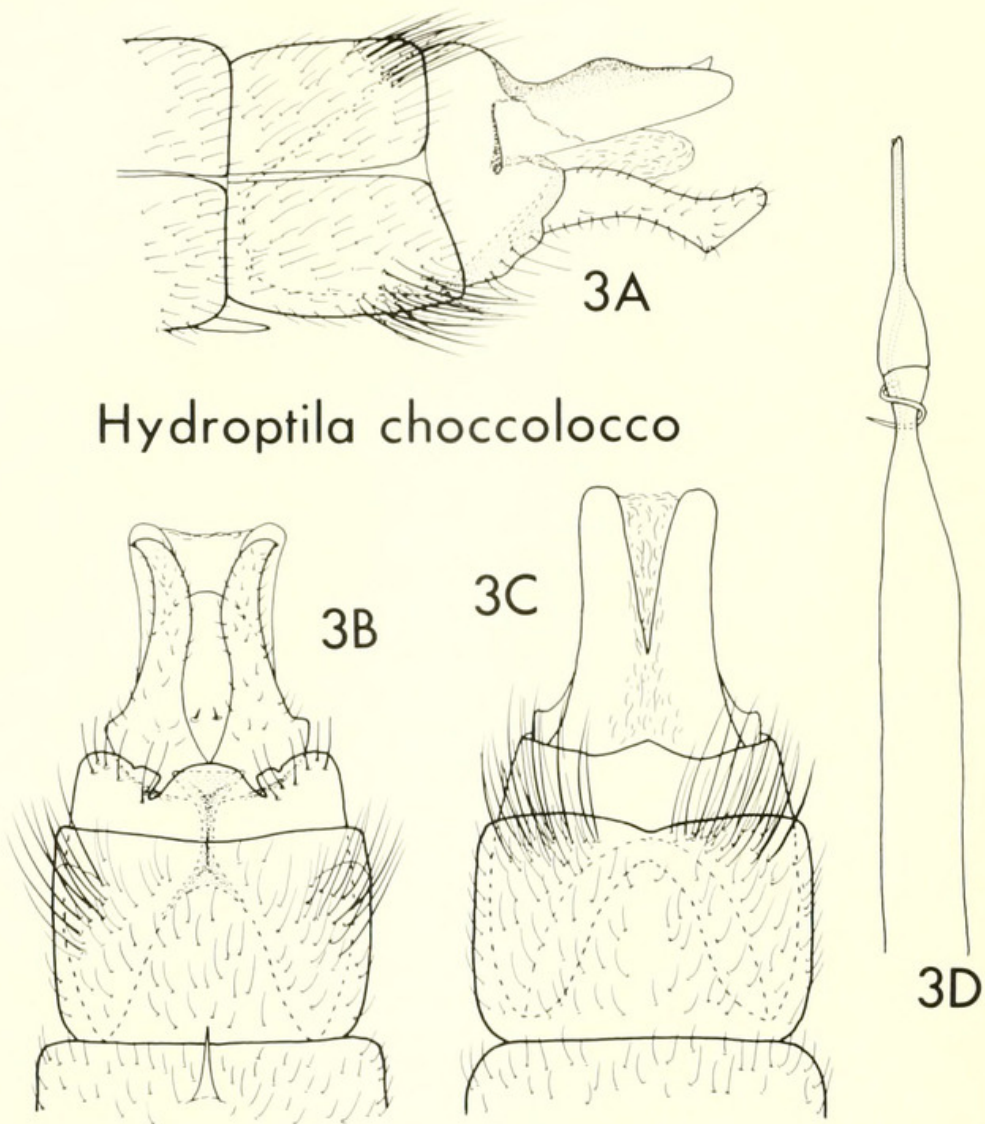


Fig. 3. *Hydroptila chocolocco*. n. sp., male genitalia. 3A, lateral view. 3B, ventral view. 3C, dorsal view. 3D, phallus.

into that segment, fused with segment X. Segment X in dorsal view truncate apically, lateral sclerotization forming two, long diverging lobes, lightly membranous between lobes; in lateral view dome shaped, lightly sclerotized dorsally. Subgenital plate in ventral view rounded with pair of peglike setae baso-mesally; tonguelike in lateral view. Inferior appendages in ventral view narrowly separate basally, sinuate, tapering and diverging apically, with slightly hooked, sclerotized apex; boot shaped in lateral view, wide basally, upturned apically. Phallus with basal portion long and tubular, narrowing apically and bearing long paramere encircling shaft; distal portion triangular at base, thin and parallel sided apically with ejaculatory duct slightly protruding.

Female.—Unknown.

Etymology.—Named for Chocolocco Creek.

Holotype.—Alabama, Calhoun County, Chocolocco Creek, unmarked county road, 1.5 miles east Jenkins, 23 May 1981, S. Harris and P. O'Neil (USNM).

Paratypes.—Alabama, same as above, 229 ♂ (USNM, INHS, UA).

Discussion.—This species is only known from the headwaters of Choccolocco Creek, a small, gravel bottom Piedmont stream. Collections in nearby streams and in other sections of Choccolocco Creek have yielded no additional specimens.

Hydroptila fuscina Harris, NEW SPECIES

Fig. 4

This species appears to be a member of the *H. waubesiana* group on the basis of the elongate tenth tergum. The short, angled inferior appendages and trifold nature of tergum X serve to distinguish the species.

Male.—Length 2.0–2.4 mm. Antennae 26-segmented. Color brown in alcohol. Venter of abdominal segment VII with short, apico-mesal process. Segment VIII deeply incised dorsally, bearing several thick setae intermixed with long thin setae along posterior margin; ventro-lateral margin with several thickened setae. Segment IX rounded in lateral view, completely retracted within segment VIII. Segment X in dorsal view, three pronged, the lateral prongs with acute apex, the inner prong rounded at apex; in lateral view scissor shaped, with lateral prongs projecting ventrally. Inferior appendages in ventral view short and angled laterally, in lateral view gently bending ventrad and tapering to apex. Phallus tubular, wide basally, and thickened in midsection; ejaculatory duct protruding at apex; thin paramere encircling shaft.

Female.—Unknown.

Etymology.—Latin “trident,” referring to the appearance of the tenth tergum.

Holotype.—Alabama, Tuscaloosa County, Turkey Creek at Hwy. 69, 11 August 1981, S. Harris and P. O’Neil (USNM).

Paratypes.—Alabama, same as above, 17 ♂ (USNM, INHS, UA); same as above, but 26 July 1984, 4 ♂.

Discussion.—This species is only known from Turkey Creek, a small, rocky bottom stream of the lower Cumberland Plateau. Extensive collecting throughout this region has failed to yield additional specimens.

Hydroptila cretosa Harris, NEW SPECIES

Fig. 5

In overall appearance, this species is similar to *H. tridentata* Holzenthal and Kelley and *H. lonchera* Bickel and Morse. However, details of the genitalia, including the appearance of the tenth tergum, serve to differentiate the two species.

Male.—Length 2.3–2.5 mm. Antennae 25-segmented. Color brown in alcohol. Venter of abdominal segment VII with short, apico-mesal process. Segment VIII incised dorsally about one-half length, quadrate ventrally. Segment IX short and completely retracted within segment VIII. Segment X in dorsal view deeply cleft, each side rounded posteriorly, apex twisted forming a small lobe, in lateral view gently tapering posteriorly to upturned apex. Inferior appendages nearly contiguous in ventral view, tapering gently distally, bearing sclerotized point apically and subapically, in lateral view nearly straight and parallel sided over length, with sclerotized points apically and subapically on ventral surface. Phallus long and narrow, widest at base and center, thin paramere encircling the shaft at midlength.

Female.—Unknown.

Etymology.—Latin “abounding in chalk,” referring to the geology of the region of Alabama where the species occurs.

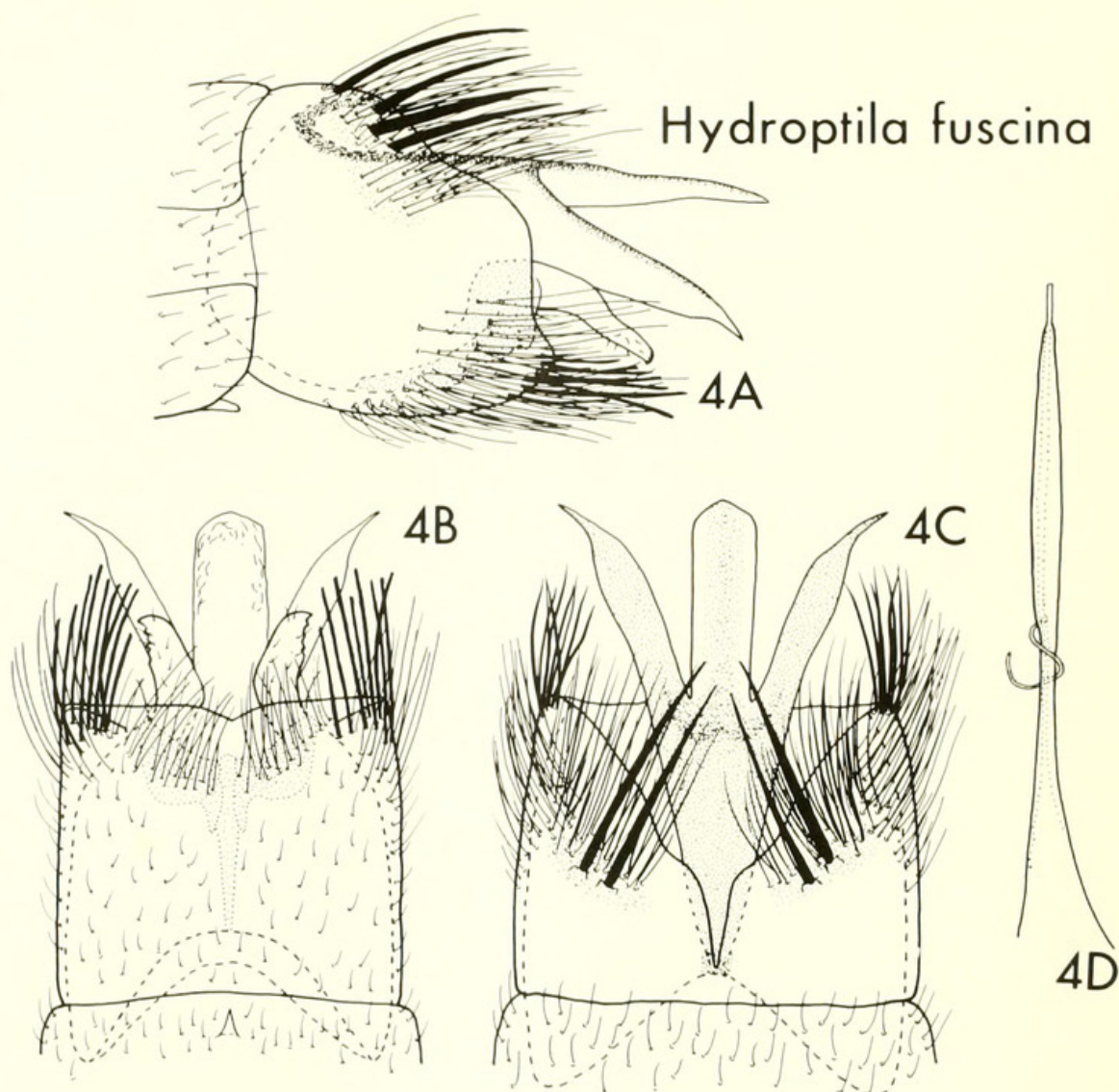


Fig. 4. *Hydroptila fuscina* n. sp., male genitalia. 4A, lateral view. 4B, ventral view. 4C, dorsal view. 4D, phallus.

Holotype.—Alabama, Greene County, Trussels Creek at Co. Hwy. 23, 22 June 1983, S. Harris and P. O'Neil (USNM).

Paratypes.—Alabama, same as above, 1 ♂ (INHS); Brush Creek at Co. Hwy. 14, 22 June 1983, S. Harris and P. O'Neil, 4 ♂ (USNM, INHS, UA).

Discussion.—In many respects *H. cretosa* resembles *H. lonchera*, particularly in the appearance of segment X and the inferior appendages. However, *H. cretosa* lacks the prominent dorso-lateral spines on segment IX of *H. lonchera*. *Hydroptila cretosa* is only known from several small, sand bottom streams in west-central Alabama. This region is characterized by extensive outcropping of the Selma Chalk formation.

Hydroptila oakmulgeensis Harris, NEW SPECIES

Fig. 6

Although closely resembling *H. poirrieri* Holzenthal and Kelley, of the *H. wau-besiana* group, this species is distinguished by the structure of the tenth tergum, and by the truncate distal end of the inferior appendages.

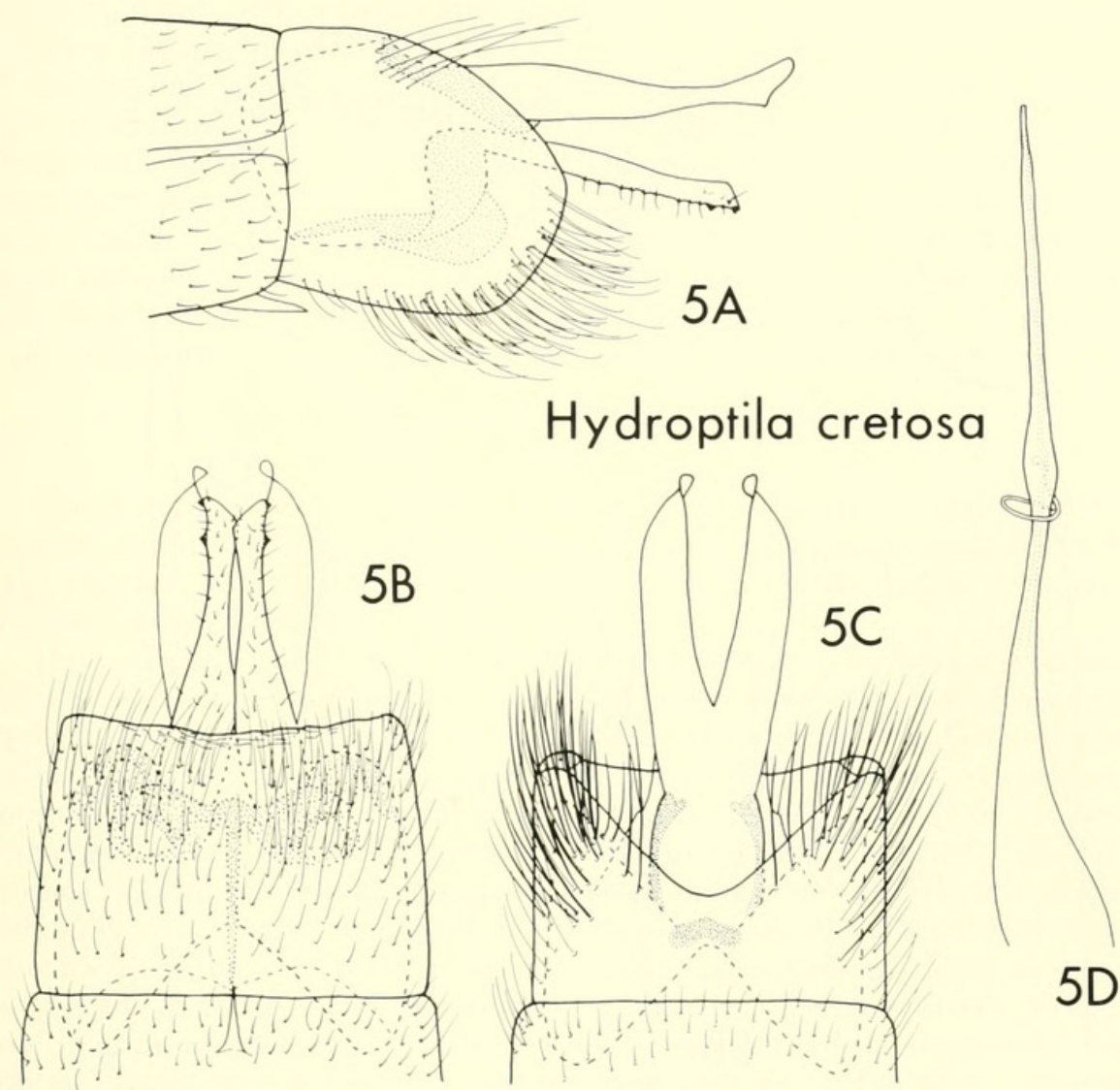


Fig. 5. *Hydroptila cretosa* n. sp., male genitalia. 5A, lateral view. 5B, ventral view. 5C, dorsal view. 5D, phallus.

Male.—Length 2.2–3.0 mm. Antennae 26-segmented. Brown in alcohol. Venter of abdominal segment VII with short, apico-mesal process. Segment VIII generally trapezoidal in lateral view with posterior margin about half width of anterior margin, dorsally with rounded, mesal excision, ventrally with square mesal excision on posterior margin. Segment IX short and completely retracted within VII and VIII, generally hexagonal in ventral view, with a narrow meso-dorsal excision anteriorly, and meso-ventral apodeme. Segment X in dorsal view narrowly rounded at base, deeply forked to midlength, each arm narrowing to a laterally rounded apex; intermediate appendages sclerotized and narrow, arising from venter of segment and extending beyond posterior margin of segment VIII; in dorsal view curving dextrally in preserved specimens, apex acute and slightly angled. Inferior appendages in ventral view narrowly separated, and roughly rectangular in shape, truncate at apex, lateral fingerlike projection basally; in lateral view mostly enclosed by segment VIII, parallel sided, rounded distally with sclerotized ventral point subapically. Phallus long and generally tubular; basal portion

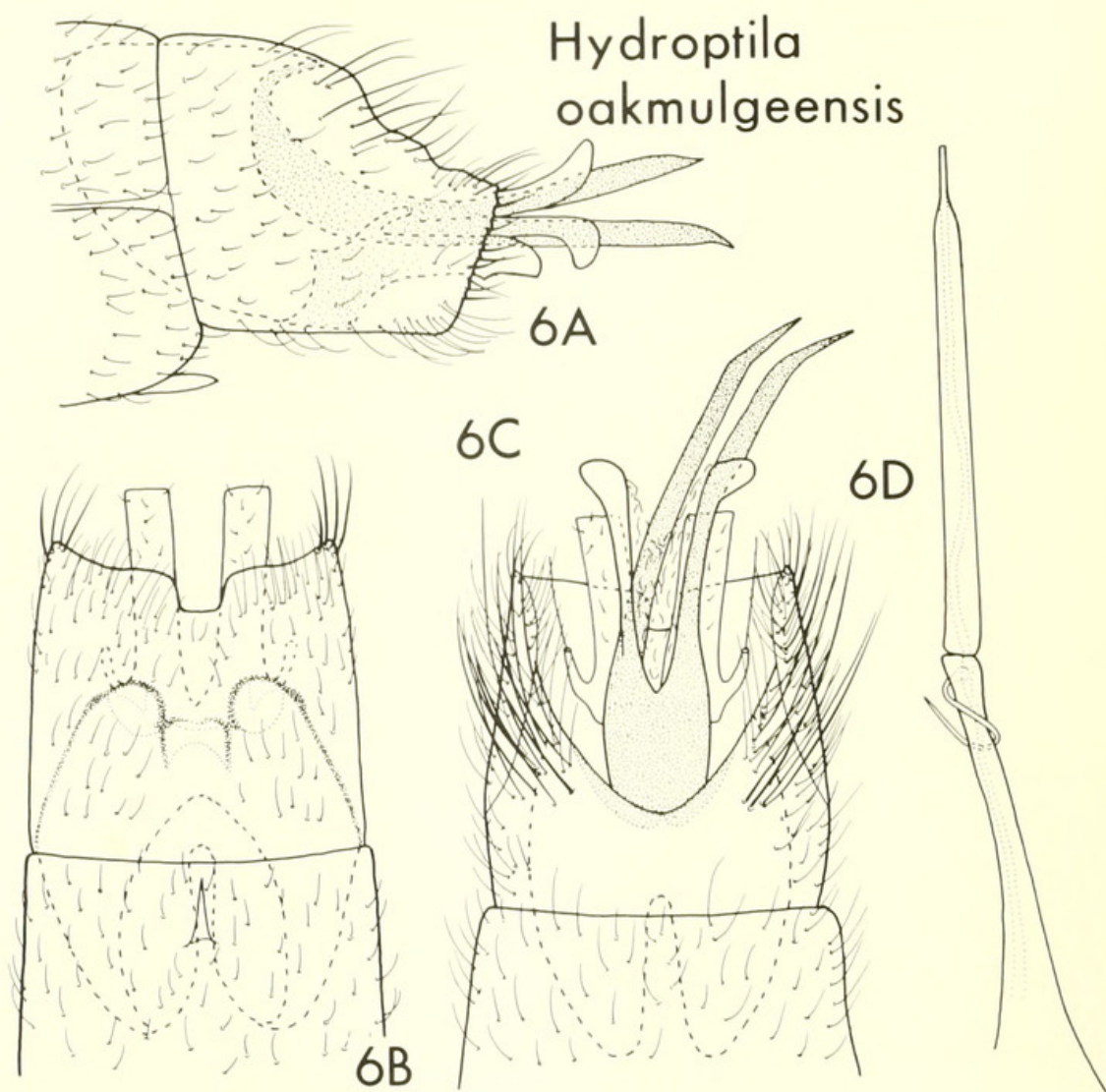


Fig. 6. *Hydroptila oakmulgeensis* n. sp., male genitalia. 6A, lateral view. 6B, ventral view. 6C, dorsal view. 6D, phallus.

tapering, bearing thin paramere encircling shaft; distal portion parallel sided with ejaculatory duct protruding at apex.

Female.—Unknown.

Etymology.—Named for Oakmulgee Creek where the species is common.

Holotype.—Alabama, Choctaw County, Tallawampa Creek at Co. Hwy. 23, 16 May 1982, S. Harris (USNM).

Paratypes.—Alabama, same as above, 8 ♂ (USNM), Bogueloosa Creek at Co. Hwy. 9 near Toxey, 16 May 1982, S. Harris, 3 ♂ (INHS); Perry County, Oakmulgee Creek at Hwy. 219, 5 June 1981, S. Harris and P. O'Neil, 198 ♂ (USNM, INHS, UA); same as above, but 4 April 1982, 24 ♂ (UA); Little Oakmulgee Creek at Co. Hwy. 30, 4 April 1982, S. Harris and P. O'Neil, 6 ♂; Marion County, Buttahatchee River off Hwy. 278, 9 miles east of Hamilton, 29 May 1983, S. Harris, 2 ♂; same as above, but 28 June 1983, 28 ♂ (USNM, INHS); Monroe County, Beaver Creek at Hwy. 41, 15 May 1982, S. Harris, 1 ♂; Tuscaloosa County, Wallace Branch, 5 miles southeast of Berry, 15 June 1982, S. Harris and P. O'Neil, 1 ♂; Winston

County, Sipsey Fork at Sipsey Fork Recreation Area, Bankhead National Forest, 23 May 1983, S. Harris, 1 ♂.

Discussion.—*Hydroptila oakmulgeensis* might be confused with *H. poirrieri* on overall appearance. However, in *H. poirrieri*, segment X is reduced to a pair of long, sickle shaped intermediate appendages, while in *H. oakmulgeensis* segment X is more complex with a long, forked dorsal portion and ventral intermediate appendages. The two species also differ in the appearance of the inferior appendages, particularly in ventral view. In *H. oakmulgeensis*, the inferior appendages are thinly rectangular and truncate at apex, while in *H. poirrieri*, the posterior end of the inferior appendages are acute with a large subapical spine.

***Hydroptila talladega* Harris, NEW SPECIES**

Fig. 7

This species, a member of the *H. tineoides* group, closely resembles *H. spinata* Blickle and Morse in the presence of ventral spines on abdominal segment VIII. The structure of the phallus and appearance of the tenth tergum, however, serve to distinguish *H. talladega*.

Male.—Length 2.6–3.0 mm. Antennae 26-segmented. Color brown in alcohol. Venter of abdominal segment VII with short, apico-mesal process. Segment VIII quadrate in lateral view, with ventral sclerite extending posteriorly to an acute point bearing several heavy spines; in ventral view this sclerite appearing sinuate posteriorly, and bearing numerous mesal spines. Segment IX square in dorsal view; in ventral view, incised deeply anteriorly and slightly posteriorly, internally with a bilobed process; laterally with narrow lobe bearing setal clusters both ventrally and dorsally, narrowing anteriorly and extending to midlength of segment VIII. Segment X in dorsal view emarginate posteriorly and fused anteriorly with segment IX, in lateral view slightly upturned with lightly sclerotized ventral lip. Inferior appendages short and sharply curved ventrad in lateral view, with dorsal tubular process bearing a long seta near apex; in ventral view contiguous along meson, fused basally with tubular arm arising midlaterally. Phallus tubular basally, posteriorly divided into two processes of equal length; one flaplike, the other narrowing to a rattlelike apex, with protruding ejaculatory duct; bearing short paramere at midlength making half revolution of shaft.

Female.—Unknown.

Etymology.—Named for Talladega National Forest.

Holotype.—Alabama, Cleburne County, unnamed tributary to Coleman Lake, ¾ mile northeast of Choccolocco Ranger Station (R10E, T14S, S27), Talladega National Forest, 25 May 1984, S. Harris and P. Lago (USNM).

Paratypes.—Alabama, same as above, 5 ♂ (USNM, INHS); same, but 21 May 1984, 1 ♂; Calhoun County, unnamed tributary to Choccolocco Creek along Bain Gap Road, ¾ mile east of Bain Gap Gate on Ft. McClellan Military Reservation, 26 June 1984, 1 ♂, S. Harris and P. O'Neil (UA).

Discussion.—While *H. talladega* generally resembles *H. spinata*, it can be distinguished on the basis of several characters of the genitalia. The phallus of *H. talladega* is divided into two apical processes, while in *H. spinata* the phallus has three apical processes. Segment IX in *H. talladega* narrows anteriorly and extends to the middle of segment VII, while in *H. spinata* the anterior portion of segment IX is truncate, and only extends anteriorly to the middle of segment VIII. In

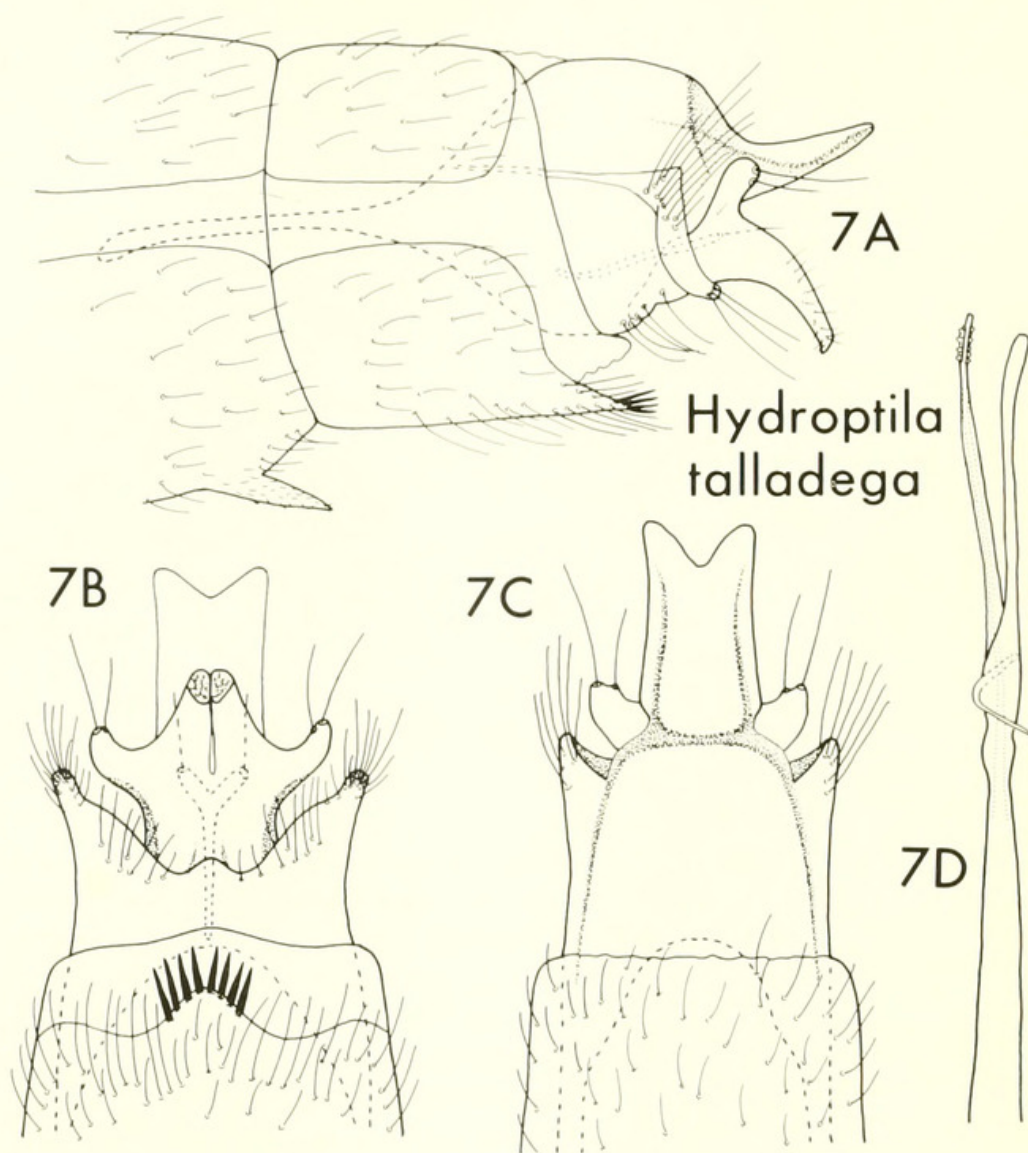


Fig. 7. *Hydroptila talladega* n. sp., male genitalia. 7A, lateral view. 7B, ventral view. 7C, dorsal view. 7D, phallus.

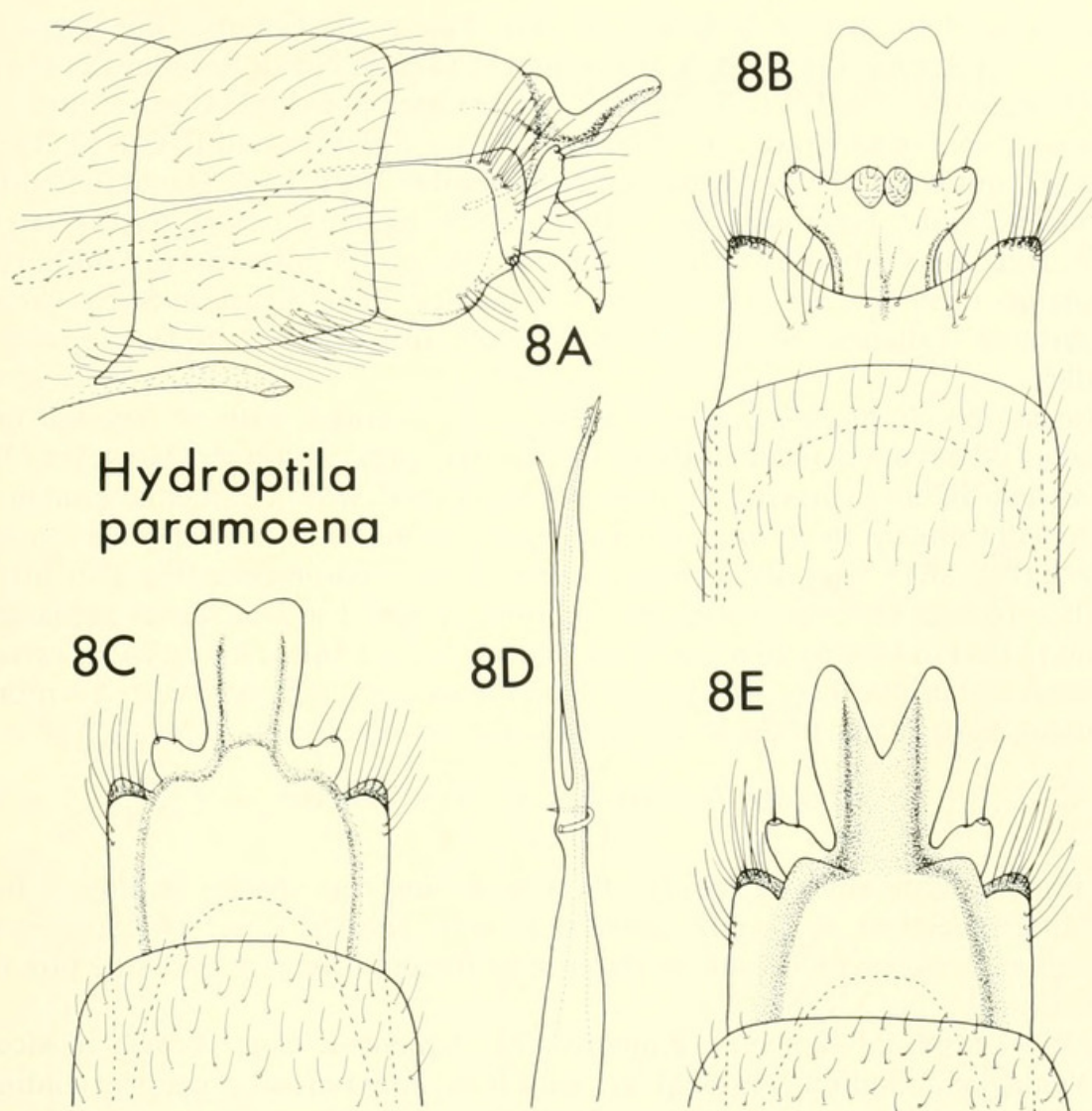
dorsal aspect, segment X in *H. spinata* is deeply cleft apically while in *H. talladega* segment X is emarginate at apex. In Alabama, *H. talladega* has only been collected in small, headwater tributaries, while *H. spinata* seems to occur in larger streams of the Appalachian Plateau.

Hydroptila paramoena Harris, NEW SPECIES

Fig. 8

This species, another member of the *H. tineoides* group, is similar to *H. amoena* Ross, but is easily differentiated on the basis of segment X in dorsal profile and the structure of the phallus.

Male.—Length 2.0–2.5 mm. Antennae 27-segmented. Color brown in alcohol. Venter of abdominal segment VII with long, apico-mesal process extending to middle of segment VIII. Segment VIII generally quadrate in lateral view. Segment IX square in dorsal view; incised deeply anteriorly and gently posteriorly in ventral view, internally with short forked process; laterally with narrow lobe bearing dorsal



**Hydroptila
paramoena**

Fig. 8. *Hydroptila paramoena* n. sp., male genitalia. 8A, lateral view. 8B, ventral view. 8C, dorsal view. 8D, phallus. 8E, *H. amoena* Ross, dorsal view (redrawn from paratype).

and ventral setal clusters, narrowing anteriorly and extending into segment VIII. Segment X slightly emarginate posteriorly in dorsal view, fused anteriorly with segment IX; in lateral view sharply upturned with lightly sclerotized ventral ridge. Inferior appendages short and sharply curved ventrad in lateral view, with dorsal thumblike projection bearing long setae at apex; in ventral view inferior appendages fused along meson, with winglike lateral extensions. Phallus wide at base, split into two processes apically; one slender and acuminate; the other thick and sinuate, rattlelike at apex with protruding ejaculatory duct; short paramere below division making half revolution of shaft.

Female.—Unknown.

Etymology.—Latin, referring to the similarity with *H. amoena*.

Holotype.—Alabama, Bibb County, Six Mile Creek at Hwy. 25, 29 October 1982, S. Harris (USNM).

Paratypes.—Alabama, same as above, but 13 May 1982, 1 ♂; same, but 25 August 1981, 17 ♂ (USNM, INHS, UA); Schultz Creek, 4 miles north of Centre-

ville, 13 April 1982, 11 ♂, S. Harris (INHS); Tuscaloosa County, Blue Creek at Hwy. 69, 11 August 1981, 2 ♂, S. Harris and P. O'Neil; North River at Co. Hwy. 38, 25 September 1981, 1 ♂, S. Harris; Cripple Creek at Cripple Creek Church, 3 miles northeast of Samantha, 11 August 1981, 1 ♂, S. Harris and P. O'Neil; Tyro Creek, 4.5 miles east of New Lexington, 25 September 1981, 1 ♂, S. Harris (USNM); Cherokee County, Terrapin Creek at Hwy. 278, 6 September 1981, 6 ♂, S. Harris and R. Handley; Cleburne County, Tallapoosa River, 3.5 miles east of Fruithurst, 6 September 1981, 1 ♂, S. Harris and R. Handley; Shoal Creek at Shoal Creek campground, Talladega National Forest, 6 September 1981, 4 ♂, S. Harris and R. Handley.

Discussion.—*Hydroptila paramoena* shares in common with *H. amoena* the character of having a phallus divided into two apical processes. However, *H. paramoena* differs in having the one process tipped with a rattlelike structure which is not present in *H. amoena*. The tenth tergum which is deeply cleft in *H. amoena* (Fig. 8E) while only slightly emarginate in *H. paramoena* (Fig. 8C), most readily separates the two species. In addition, *H. amoena* is a somewhat larger species (3 mm in length) than is *H. paramoena*. In Alabama, *H. amoena* is rarely collected, and primarily on the Appalachian Plateau, while *H. paramoena* is more abundant, particularly in the lower Appalachian mountains.

Hydroptila oneili Harris, NEW SPECIES

Fig. 9

A third new member of the *H. tineoides* group, this species resembles the preceding species as well as *H. amoena* and *H. hamata* Ross. The species is differentiated, however, on the appearance of the tenth tergum and structure of the phallus.

Male.—Length 2.0–2.4 mm. Antennae 27-segmented. Color brown in alcohol. Venter of abdominal segment VII with long, apico-mesal process extending to near posterior margin of segment VIII. Segment VIII generally quadrate in lateral view. Segment IX square dorsally; incised slightly posteriorly and deeply anteriorly in ventral view, internally with bilobed process; laterally with narrow lobe bearing dorsal and ventral setal clusters, narrowing anteriorly and extending to near anterior edge segment VIII. Segment X in dorsal view slightly emarginate at apex, flaring subapically before narrowing basally; in lateral view only slightly upturned with lightly sclerotized ventral ridge. Inferior appendages short and sharply curved ventrad in lateral view, with thick tubular process dorsally bearing long setae subapically; in ventral view contiguous along meson, fused basally with small winglike extensions baso-laterally. Phallus wide at base, divided into two processes apically; one thin and filamentlike; the other thicker and bearing ejaculatory duct, which protrudes and bends at apex.

Female.—Unknown.

Etymology.—Named for Patrick O'Neil for his assistance in many of the Alabama collections.

Holotype.—Alabama, Bibb County, spring at Schutlz Creek Church, 2.5 miles southwest of West Blocton, 12 September 1982, S. Harris (USNM).

Paratypes.—Alabama, same as above, 5 ♂ (USNM); same, but 12 May 1982, 1 ♂; Little Ugly Creek, upstream crossing Co. Hwy. 24, 4 April 1982, 1 ♂, S. Harris (USNM, INHS); Calhoun County, Ohatchee Creek at Co. Hwy. 23, 7 September

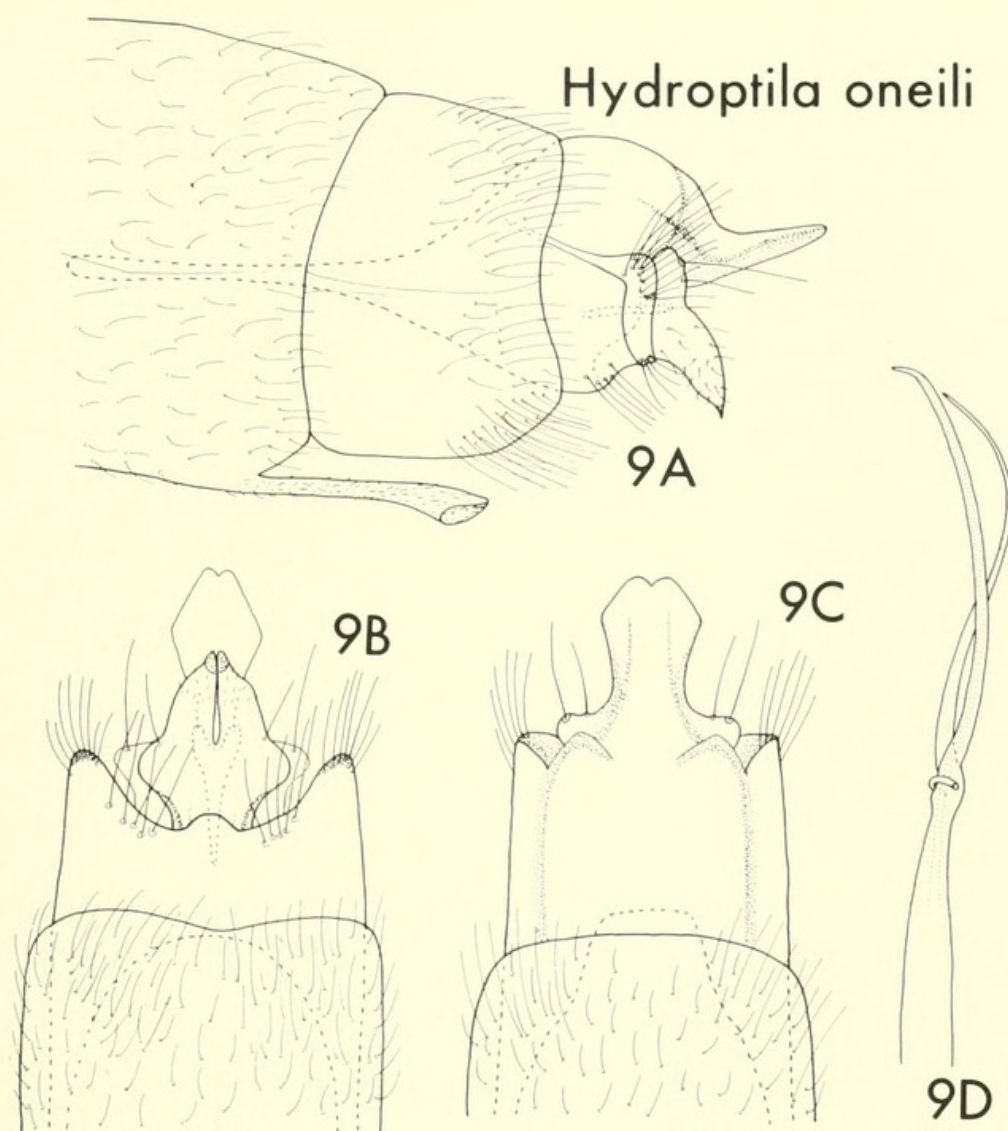


Fig. 9. *Hydroptila oneili* n. sp., male genitalia. 9A, lateral view. 9B, ventral view. 9C, dorsal view. 9D, phallus.

1981, 2 ♂, S. Harris and R. Handley; Cleburne County, Shoal Creek at Shoal Creek campground, Talladega National Forest, 6 September 1981, 2 ♂, S. Harris and R. Handley; Etowah County, Line Creek at Egypt Road, 1 mile west of Rockledge, 17 July 1982, 3 ♂, S. Harris; Little Canoe Creek at Rocky Hollow Road, 3 miles northeast of Steele, 9 July 1982, 35 ♂, S. Harris; Fayette County, Tyro Creek, 2.5 miles southeast of Berry, 25 September 1981, 8 ♂, S. Harris (INHS); same, but 25 July 1983, 1 ♂; same, but 24 August 1983, 2 ♂ (USNM); Jackson County, Little Coon Creek off Hwy. 54 at Cave Spring Church, 21 June 1981, 2 ♂, S. Harris; Jefferson County, Cahaba River at Trussville, Co. Hwy. 132, 25 July 1981, 4 ♂, S. Harris and P. O'Neil; same, but 13 September 1981, 2 ♂; Tuscaloosa County, Tyro Creek, 4.5 miles east of New Lexington, 20 June 1983, 4 ♂, S. Harris and P. O'Neil (USNM); Tyro Creek, 3.5 miles southeast of Berry, 26 May 1983, 1 ♂, S. Harris and P. O'Neil; same, but 20 June 1983, 4 ♂ (INHS); same, but 25 July 1983, 13 ♂; same, but 23 August 1983, 72 ♂; same, but 27 September 1983, 27 ♂; Wallace Branch, 5 miles southeast of Berry, 23 August

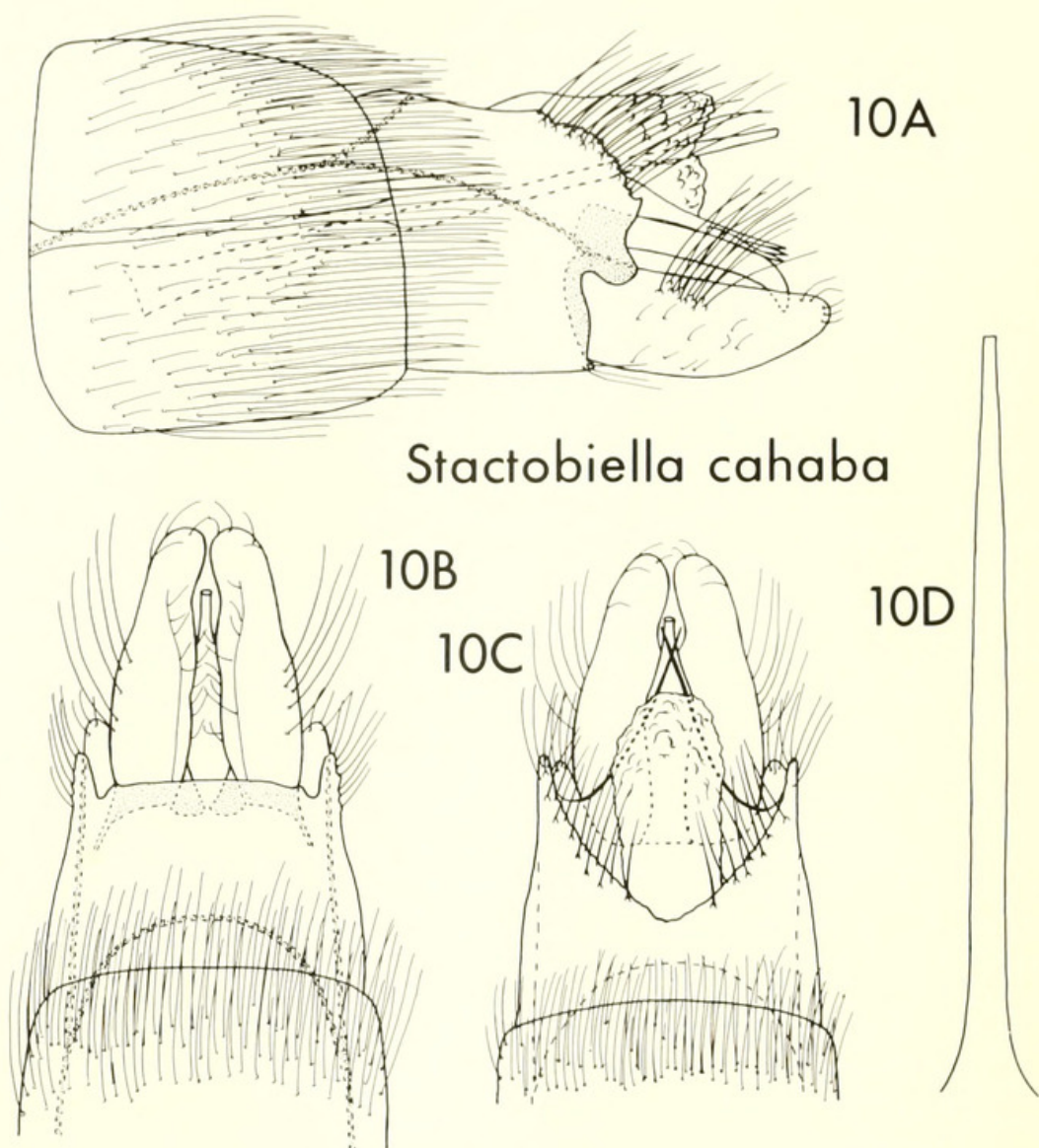


Fig. 10. *Stactobiella cahaba* n. sp., male genitalia. 10A, lateral view. 10B, ventral view. 10C, dorsal view. 10D, phallus.

1983, 5 ♂, S. Harris and P. O'Neil; Turkey Creek at Hwy. 69, 19 October 1982, 1 ♂, S. Harris; Mill Creek at Gristmill, Tannehill State Park, 9 May 1982, 16 ♂, S. Harris.

Discussion.—As with *H. amoena*, *H. paramoena*, and *H. hamata*, *H. oneili* shares the character of the phallus being divided into two apical processes. The tenth tergum of *H. oneili* is similar in appearance to *H. hamata*, but while the phallic process in *H. hamata* is sharply angled at apex, in *H. oneili* the apex of this process is only slightly bent.

***Stactobiella cahaba* Harris, NEW SPECIES**

Fig. 10

In many respects, this species resembles *S. delira* Ross. It differs in the structure and shape of the inferior appendages, in the possession of dorsal rods associated with the intermediate appendage, and in the simple phallus.

Male.—Length 1.9–2.0 mm. Antennae 16-segmented. Color brown in alcohol. Segment VIII quadrate in lateral and dorsal views. Segment IX deeply incised dorsally, the margins serrate and bearing numerous long setae; ventrally with distal margin square and lacking setae, with apical lobes laterally; in lateral view with mesal excision posteriorly, serrate dorsally; long apodemes extending anteriorly. Segment X membraneous; in dorsal view narrow and short, rounded apically; in lateral view appearing generally truncate apically. Inferior appendages in lateral view boat shaped, wide basally, gently tapering to rounded apex, cluster of setae dorsally near midlength; in ventral view widest at base, slightly tapering to rounded apex, mesal margins sinuate and nearly contiguous. Intermediate appendage in dorsal view wide basally and at midlength, apically narrow and tubular; thin, sclerotized rodlike apparatus arising laterally and crossing intermediate appendage dorsally; in lateral view intermediate appendage tubular over much of length, curving ventrally apically, dorsal sclerotized apparatus with three apical spines. Phallus simple and generally tubular, wide basally, generally parallel sided over much of length, tapering to a truncated apex.

Female.—Unknown.

Etymology.—Named for the Cahaba River of which Schultz Creek is a tributary.

Holotype.—Alabama, Bibb County, Schultz Creek, 4 miles north of Centreville, 13 April 1982, S. Harris (USNM).

Paratypes.—Alabama, same as above, 3 ♂ (USNM, INHS).

Discussion.—This species is only known from Schultz Creek, a swift, rocky bottom stream situated on the fall line at the boundary of the lower Appalachian Mountains and the coastal plain. Extensive collecting throughout the Cahaba River basin, has failed to yield additional specimens. Also collected at this locality were *S. delira* Ross, *S. martynovi* Blickle and Denning, and *Dibusa angata* Ross.

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