

NEW SPECIES OF SOUTHWESTERN NEARCTIC MICROCADDISFLIES  
(TRICHOPTERA: HYDROPTILIDAE)

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*Abstract.*—Four new species of Hydroptilidae are described and illustrated. *Hydroptila abbotti* n. sp. and *Ochrotrichia boquillas* n. sp. are known from the Austroriparian and Chihuahuan biotic provinces of Texas, respectively. *Oxyethira garifosa* n. sp. and *Oxyethira desadorna* n. sp. are described from northern Mexico. The new species are diagnosed with closely related congeners.

*Key Words:* Trichoptera, Hydroptilidae, microcaddisflies, Texas, Mexico, new species

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Southwestern Nearctic caddisflies are poorly known. With recent concentrated survey efforts in Texas by Moulton and Stewart (in press) and sporadic collections in northern Mexico, species new to science continue to be discovered. This is especially apparent for the family Hydroptilidae. This paper describes four new species of microcaddisflies, one each in the genera *Hydroptila* and *Ochrotrichia*, and two in the genus *Oxyethira*. In North America *Hydroptila* is the most diverse hydroptilid genus with 110 species; *Ochrotrichia* and *Oxyethira* contain 72 and 40 species, respectively (Morse 1993). This family includes the smallest species of caddisflies, ranging from 1.5 to 5 mm. All of the material examined in this study was collected with an ultraviolet light trap.

Length is measured from the top of the head to the tip of the forewing. Holotypes are deposited in the National Museum of Natural History, Smithsonian Institution (NMNH). Paratypes are deposited in the NMNH, the Academy of Natural Sciences of Philadelphia (ANSP), the Illinois Natural History Survey (INHS), and the collections of the authors (SRM, SCH).

*Hydroptila abbotti* Moulton and Harris,  
new species  
(Fig. 1)

*Hydroptila* n. sp.: Moulton and Stewart, in press.

*Description.*—Length 2.0 mm. Brown in alcohol. 25 antennal segments. Segment VII with short ventromesal process, apex rounded in lateral view, triangular in ventral view. In lateral view, segment VIII somewhat triangular; in dorsal view, posterior margin incised. Segment IX short, retracted within segment VIII; in lateral view, anterior margin broadly rounded, narrowing posterad. Inferior appendages long, reaching to upturned portion of X; in lateral view, angled ventrad, ventral margin crenulate with apex pointed and heavily sclerotized; in ventral view, mesal margin ridge-like bearing four dark, stout points apically, several smaller dark points basally, broadest basally and narrowing towards shoulder-like apex. Segment X lightly sclerotized, approximately three times longer than wide; in dorsal view, widest in middle, apical one-third deeply bifurcate, tips of bifurca-

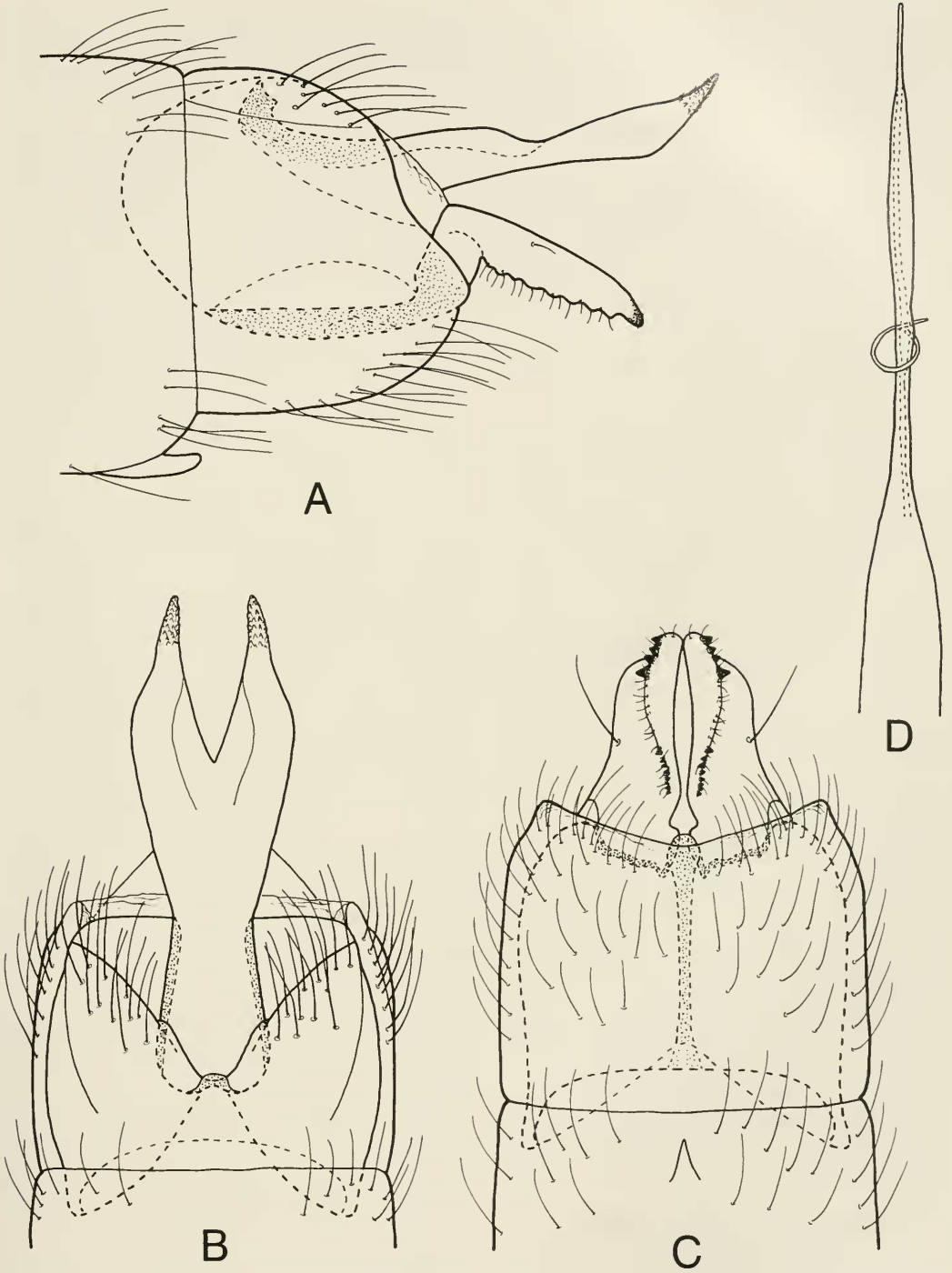


Fig. 1. *Hydropstila abbotti*, male genitalia. A. Left lateral view. B. Dorsal view. C. Ventral view. D. Phallus.

tions darkly pigmented and serrate; in lateral view, concave in middle, apices acute and angled dorsad. Phallus needle-like, basal one-quarter broadest; spiraled paramere making one revolution around shaft at mid-length.

Immature stages and female.—Unknown.

Holotype male.—U.S.A.; TEXAS, Anderson Co., Skeet Branch, Engeling Wildlife Management Area, 3.2 km W Blackfoot, 12 June 1994, J. Abbott, J. Chirhart, M. Pasanante (NMNH).

Etymology.—Named for John C. Abbott, collector of the holotype.

Diagnosis.—This species belongs to the *H. waubesiana* group of Marshall (1979) and is most closely related to the recently described *H. homochitta* Harris and Sykora (Harris and Sykora 1996). *Hydroptila abbotti* is distinguished from the latter by the upturned, acutely tapered apex of tergum X in lateral view (club shaped in *H. homochitta*); the narrower base of tergum X in dorsal view, and the more developed apicolateral shoulder of each inferior appendage in ventral view. Additionally, unlike *H. homochitta*, *H. abbotti* does not possess a pair of long, thin intermediate appendages beneath tergum X.

Distribution.—Known only from the type locality in the east Texas Gulf Coastal Plain. This location is a first order, spring-fed, sand-bottomed stream. *Hydroptila abbotti* was collected along with *H. ouachita* Holzenthal and Kelley, a species previously known only from Schoolhouse Spring, Jackson Parish, Louisiana (Holzenthal and Kelley 1983), approximately 480 km east of the Texas collection locality. Both of these locations have similar habitat characteristics.

***Ochrotrichia boquillas* Moulton and Harris, new species**

(Fig. 2)

*Ochrotrichia* n. sp.: Moulton and Stewart, in press.

Description.—Length 2.5 mm. Brown in alcohol. 29 antennal segments. Segment VII

with short, acute ventromesal process. Segment VIII rectangular in dorsal and lateral views. Segment IX in lateral view with posterior margin broadly rounded; anteroventral margin produced slightly into segment VIII. In lateral view, inferior appendages lobate, curving dorsad; in ventral view, bases broad, ventromesal surfaces shoulder-like in middle, diverging towards apices, each lined with comb-like row of erect, stout setae; apices with row of longer, hair-like setae. In dorsal view, segment X spatulate, rounded on apex; wedge-shaped in lateral view; basodorsal area bearing two sclerotized processes, left process V-shaped, right process ventrolaterally hooked. Phallobase flared, tapering towards middle; apical one-half nearly parallel sided; apex with prominent ejaculatory duct emerging from middle, encircled preapically by acute, sclerotized process.

Immature stages and female.—Unknown.

Holotype male.—U.S.A.; TEXAS, Brewster Co., Glenn Spring, Big Bend National Park, 18 April 1993, R. Garano (NMNH).

Paratypes.—Same as holotype, but Rio Grande Village Campground, 2 April 1993, J. Gelhaus and D. Koenig, 4 ♂ (ANSP); Val Verde Co., Dolan Creek at Penstemon Cliff Springs above confluence Devils River, 27-28 July 1995, G. Easley, 1 ♂ (NMNH).

Etymology.—Named for Boquillas Canyon, through which the Rio Grande flows near the Big Bend area of Texas and Mexico.

Diagnosis.—*Ochrotrichia boquillas* is a member of the *O. xena* group (Flint 1972) and is most closely related to *O. flagellata* Flint and *O. pectinata* Flint. *Ochrotrichia boquillas* differs from these species by the lobate structure of the inferior appendages in lateral view and the configuration of spinous processes on tergum X.

Distribution.—Known only from the localities of the type material.

***Oxyethira garifosa* Moulton and Harris, new species**

(Fig. 3)

Description.—Length 2.8 mm. Brown in alcohol. 40 antennal segments. Segment VII

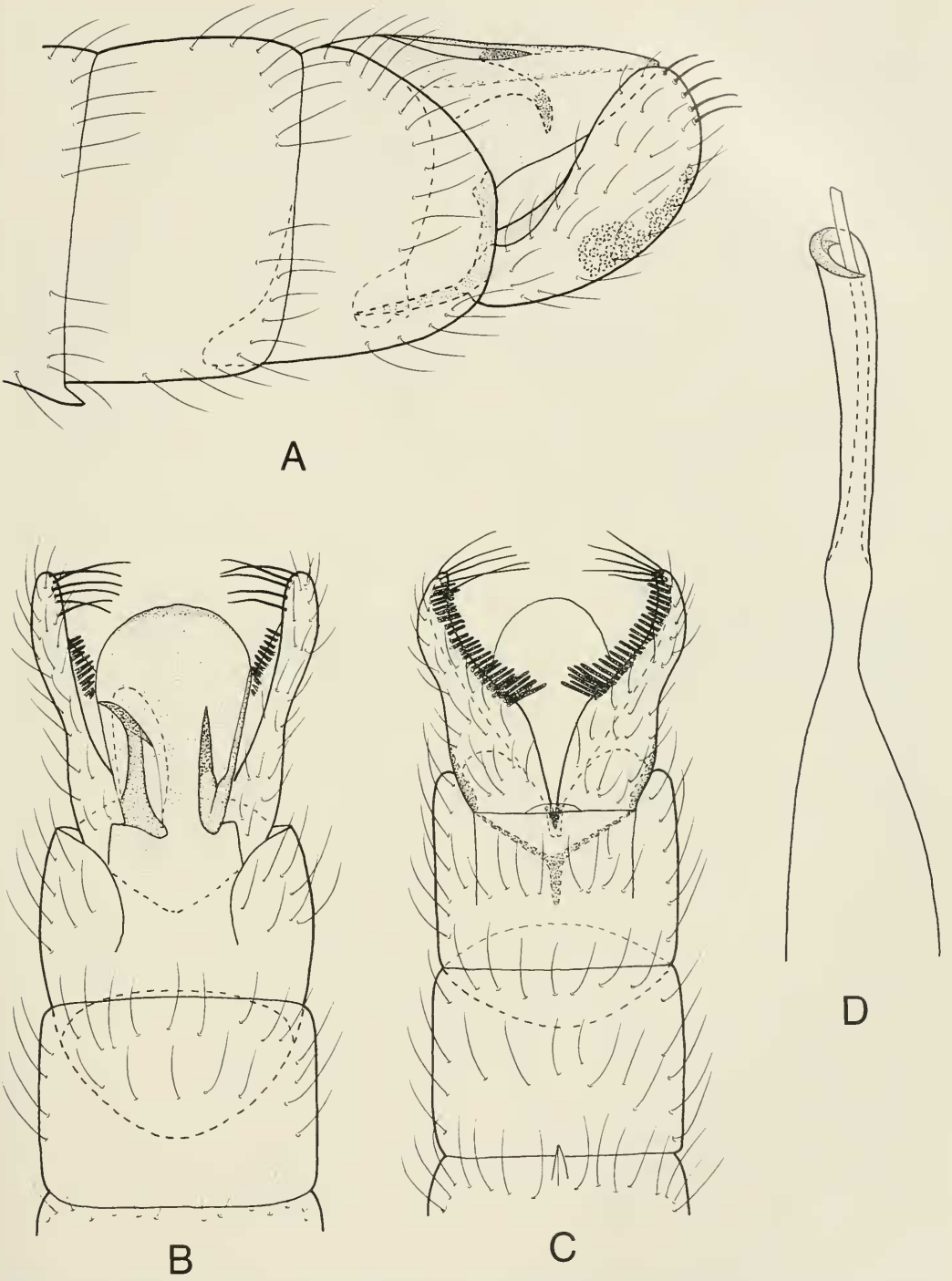


Fig. 2. *Ochrotrichia boquillas*, male genitalia. A, Left lateral view. B, Dorsal view. C, Ventral view. D, Phallus.

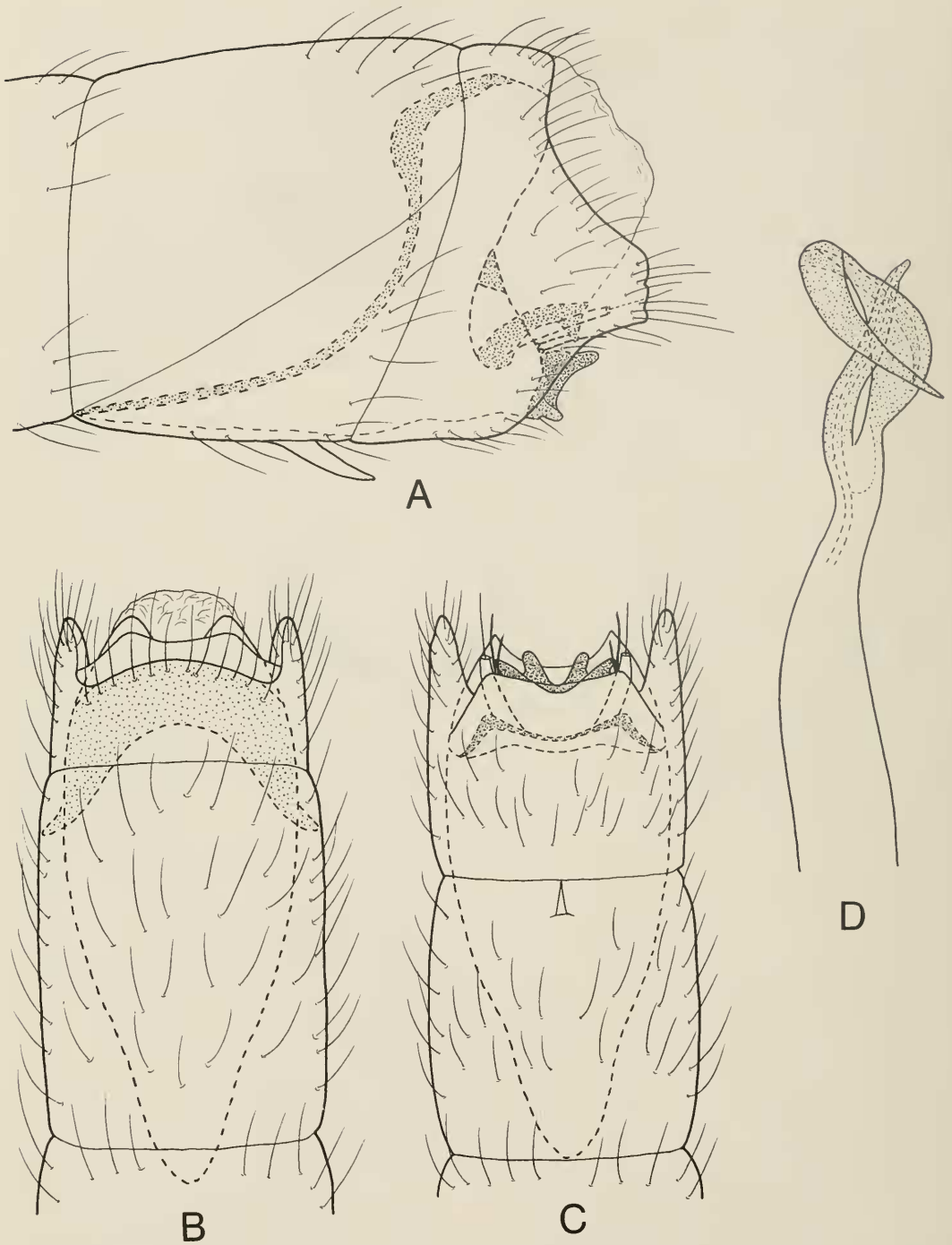


Fig. 3. *Oxyethira garifosa*, male genitalia. A, Left lateral view. B, Dorsal view. C, Ventral view. D, Phallus.

with short, acute ventromesal process. Segment VIII with lateral margins produced posterad, apex truncate, slightly scalloped; dorsal and ventral margins broadly emarginate. Segment IX complete dorsally and concealed within segments VII and VIII, anterior one-half extending to posterior margin of segment VI, posterior margin sinuate with broad lobe ventrally bearing several stout setae. Tergum X membranous in lateral view; rectangular in dorsal view. Inferior appendages fused: in lateral view, dorsal margin twice as long as ventral margin, concave on posterior margin; in ventral view, appearing as four lobate processes. Subgenital plate narrow in lateral view, distally with acute ventral tooth; narrowing mesally in ventral view, sclerotized along posterior margin. Bilobed processes widely separated in ventral view. Phallobase tubular, tapering in middle; apical one-half divided into two sclerotized processes, shorter process sinuate, apically acute, longer process broadest basally, constricted and twisted in middle, recurving to an acute apex.

Immature stages and female.—Unknown.

Holotype male.—MEXICO; TAMAU-LIPAS, Municipio de Ciudad Victoria, Arroyo los Troncones, Ejido La Libertad, ca. 10 km NW Victoria, 14 May 1989, S. Harris, A. Contreras, and A. Moreno (NMNH).

Etymology.—Spanish; hook-like, referring to the distinctive phallic structure.

Diagnosis.—This species fits within the *Damphitrichia* subgenus in the *pallida* group as established by Kelley (1984) based upon the complete dorsum of segment IX and the absence of a spiraled paramere on the phallus. The new species is most similar to *O. arizona* Ross and *O. verna* Ross in overall appearance. From the former, *O. garifosa* is distinguished by the absence of dorsolateral processes on segment VIII, and from the latter, the new species is distinguished by the hooked phallus and lobate processes of the inferior appendages.

Distribution.—This species is known

only from the type locality in northern Mexico.

**Oxyethira desadorna Moulton and  
Harris, new species**  
(Fig. 4)

Description.—Length 2.0 mm. Brown in alcohol. 28 antennal segments. Segment VII with short, acute, ventromesal process. Segment VIII subrectangular in lateral view, posterior margin convex in middle; dorsal margin with shallow, wide emargination; ventral margin with deep, V-shaped excision. Segment IX complete dorsally and concealed within segments VII and VIII; in lateral view, anterior three-quarters wedge-shaped, extending to middle of segment VII. Tergum X fused with IX; nearly circular in dorsal view, posterior margin with wide concavity. Subgenital plate thin and elongate in lateral view, strongly curved ventrad; in ventral view plate-like with emarginate posterior margin, bearing pair of setae posterolaterally. Inferior appendages fused; triangular in lateral view with pair of internal processes, lower process heavily sclerotized and upper process tubular, bearing setae distally; posterior margin with broad, emargination in ventral view, pair of setal bearing processes projecting from dorsal surface. Phallus tubular; apex semimembranous and club-like, bearing single, curved sclerotized process.

Immature stages and female.—Unknown.

Holotype male.—MEXICO; NUEVO LEON, Municipio de Santiago, spring along road above Cola de Caballo, 27 May 1991, S. Harris and A. Contreras (NMNH).

Paratypes.—NUEVO LEON, Municipio de Sanchez, Arroyo San Juan on road to Laguna de Sanchez, 3.5 km W La Cienegra, 13 May 1989, S. Harris and A. Contreras, 56 ♂ (NMNH, INHS, SRM, SCH); TAMAU-LIPAS, Municipio de Gomez Farias, Rio Frio at La Poza Azul, 6 km S Gomez Farias, 7 August 1988, A. Contreras and A. Moreno, 1 ♂ (NMNH).

Etymology.—Spanish; unadorned, referring to the simple appearance of the male

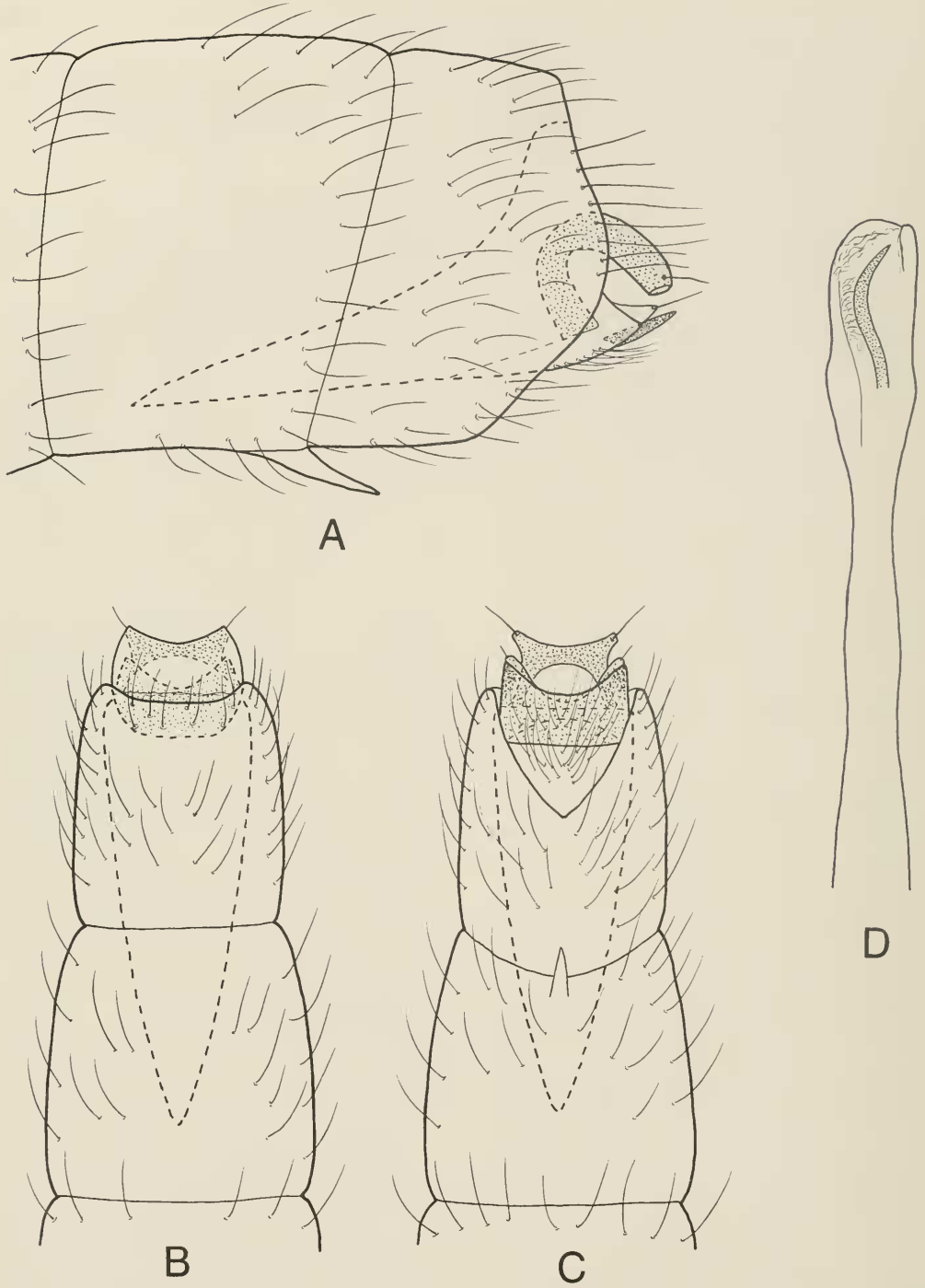


Fig. 4. *Oxyethira desadorna*, male genitalia. A, Left lateral view. B, Dorsal view. C, Ventral view. D, Phallus.

genitalia and the absence of distinctive accessories.

**Diagnosis.**—This species appears to be most similar to *O. unispina* Flint and other members of the *Oxytrichia* subgenus as defined by Kelley (1984). As in *O. unispina*, the phallus of *O. desadoma* has a narrow, sinuate spine. However, the new species is distinguished by its concave subgenital plate and the absence of lateral extensions from IX in lateral view.

**Distribution.**—Known only from the localities of the type material in northern Mexico.

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