

AMERICABAETIS (EPHEMEROPTERA: BAETIDAE) FROM TEXAS: FIRST USA RECORD AND ADULT DESCRIPTION OF *A. PLETURUS*¹

N. A. Wiersema², W. P. McCafferty³

ABSTRACT: *Americabaetis pleturus* was collected and reared from south Texas. This represents the first known occurrence of the Neotropical genus *Americabaetis* north of Mexico. The first adult description of *A. pleturus* is provided, based on both males and females. Adult characterization is compared to that of other species of *Americabaetis* known as adults. *Americabaetis pleturus* co-occurs with the parthenogenetic *A. lugoi* in Central America; however, the two species are clearly distinguishable as both larvae and adults.

Eleven species have been considered in the Neotropical small minnow mayfly genus *Americabaetis* Kluge (Lugo-Ortiz and McCafferty 1996a, Waltz and McCafferty 1998). The known northern limits of the genus have been represented by the occurrence of the Central American and Mexican species *A. pleturus* (Lugo-Ortiz and McCafferty) in the northeastern Mexican states of Nuevo León and Tamaulipas (Lugo-Ortiz and McCafferty 1994, 1996b).

During the summer of 1997 one of us (NAW) collected and reared *A. pleturus* from the Guadalupe River in the coastal plains of south Texas. This significant new record is given here, and the adults of *A. pleturus* are described and compared for the first time. The materials upon which this report is based are held in the private collection of NAW (Houston, TX), or deposited in the Purdue Entomological Research Collection (PERC) (West Lafayette, IN) as indicated.

Americabaetis pleturus (Lugo-Ortiz and McCafferty)

Male adult. Lengths: body 4.2-5.0 mm, forewings 4.0-4.5 mm, cerci 8.0-10.0 mm. Head: Coloration dark brown, often with a distinct V-shaped darker patterning between lateral ocelli (Fig. 4). Turbinate eyes large, widely divergent anteriorly, and almost touching posteriorly (Fig. 4), in some contiguous posteriorly; upper surface orange-red; lower portion of stalks distinctly darkened (Fig. 3). Antennae with scapes, pedicels and flagella light brown; length at least 0.5x head width. Thorax: Notum medium to dark brown with darker and lighter areas around sutures; anterior half of metanotum distinctly white. Pleura and sterna slightly paler. Narrow-anterior portion of mesocutum rounded in lateral view, as in Figure 3. Forewings with paired marginal intercalaries posterior to R₂; wing veins pale; base of wings with small stain of light reddish brown; marginal intercalaries longer in anterior half of wing. Legs: Forelegs with light brown femora, slightly paler distally; mid- and hindlegs paler. Abdomen: Segments 1-5 somewhat translucent with faint orange-red shading; posterior half of terga 6 and 7-10 orange-red in freshly preserved specimens; terga 7-10 opaque; segments 1-7 with branching spiracular lines laterally and extending dorsally, darker in anterior half of segments. Genitalia as in Figure 1, with basal segment large and cylindrical with distinct medioapical constriction. Cerci pale.

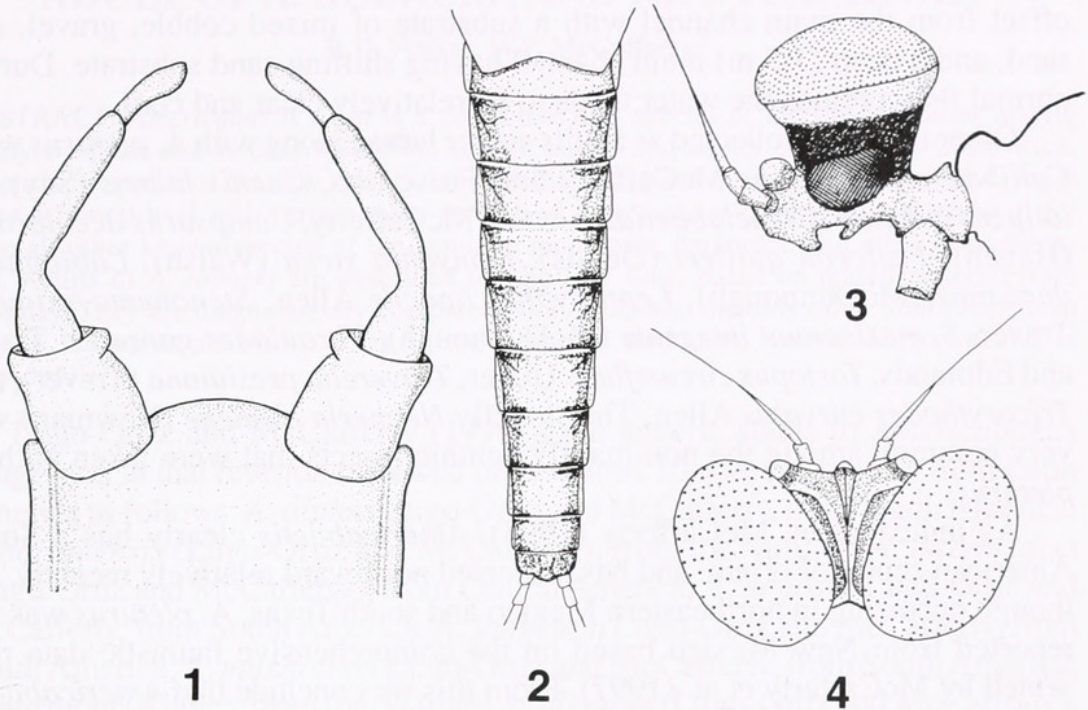
Female adult. Lengths: body 4.5-5.0 mm, forewings 4.2-4.5 mm, cerci 6.0-7.0 mm. Body reddish brown. Forelegs with femora reddish brown, tibiae and tarsi slightly paler; mid- and hindlegs paler than forelegs. Forewings with light brown venation and very small pale brown stain basally on membrane. Abdomen (Fig. 2) distinctly darker laterally than dorsally and ventrally (with broad, median pale longitudinal area both dorsally and ventrally). Prominent dark, branching tracheation lines laterally and dorsally. Cerci light brown.

¹ Received March 11, 1998. Accepted April 6, 1998.

² 4857 Briar bend, Houston, TX 77035.

³ Dept. Entomology, Purdue University, West Lafayette, IN 47907.

Material examined. Four larvae, one male adult, and one female adult, TEXAS, Victoria Co., Guadalupe River at Riverside Park in Victoria, 28°48'32"N, 97°01'45"W, VIII-20-1997, N. A. Wiersema; 33 larvae, 22 adult males (12 reared), and 20 female adults (4 reared), same data as above, except VIII-24-1997 (15 larvae, eight male adults, and six female adults deposited in PERC).



Figs. 1-4. *Americabaetis pleturus* adult. 1. Male genital forceps (ventral view). 2. Female abdomen (dorsal). 3. Male head and partial thorax (lateral view). 4. Male head (dorsal view).

DISCUSSION

All nominal species of *Americabaetis* are known in the larval stage, and a comprehensive identification key was provided by Waltz and McCafferty (1998). However, only *A. alphas* Lugo-Ortiz and McCafferty, *A. lugoi* Waltz and McCafferty, *A. naranjoi* (Kluge), *A. pleturus*, and *A. robacki* (Lugo-Ortiz and McCafferty) are known as adults. *Americabaetis naranjoi* is known only from Cuba. We have not seen material of this species and cannot comment on its characterization; however, it is highly unlikely to be found outside of the Antilles. *Americabaetis alphas* and *A. robacki* are known only from tropical South America and were extensively compared to each other by Waltz and McCafferty (1998). Male adults of *A. alphas* can be distinguished from those of *A. pleturus* by their widely separated, ellipsoidal turbinate eyes and their genitalia, which lack a distinct medioapical constriction on forceps segment 1. Although the turbinate eyes are quite similar in *A. pleturus* and *A. robacki*, the latter lacks the basal wing staining and the medioapical constriction of the forceps segment 1, in addition to having a much different abdominal color pattern. The parthenogenetic species *A. lugoi* (Waltz and McCafferty 1998) is present in Costa Rica along with *A. pleturus*. Female adults of *A. lugoi* are distinguishable from female adults of *A. pleturus* by the former's deeper and darker red-brown body coloration; abdominal segments which have only a narrow light longitudinal line dorsally and which lack prominent dark branching tracheation lines laterally; distinctly contrasting pale yellowish legs; and a much darker and more extensive staining of the membrane of the forewing basally.

The larvae of *A. pleturus* were collected from the lower reaches of the Guadalupe River, where they were found clinging to cobble heavily covered with periphyton in a relatively shallow (20-40 cm), swiftly flowing riffle. This region of the river is characterized by high clay banks, shallow flat riffle areas offset from the main channel with a substrate of mixed cobble, gravel, and sand, and a deep (3-5 m) main channel having shifting sand substrate. During normal flow periods the water tends to be relatively clear and cool.

Other mayflies collected as adults and or larvae along with *A. pleturus* were *Callibaetis punctilusus* McCafferty and Provonsha, *Caenis hilaris* (Say), *C. latipennis* Banks, *Camelobaetidius waltzi* McCafferty, *Campsurus decoloratus* (Hagen), *Fallceon quilleri* (Dodds), *Isonychia sicca* (Walsh), *Labiobaetis dardanus* (McDunnough), *Leptohyphes apache* Allen, *Stenonema exiguum* Traver, *S. mexicanum integrum* (McDunnough), *Thraulodes gonzalesi* Traver and Edmunds, *Tortopus circumfluus* Ulmer, *Traverella presidiana* (Traver), and *Tricorythodes curvatus* Allen. The stonefly *Neoperla clymene* (Newman) was very common among the non-mayfly benthic insects that were taken with *A. pleturus*.

As indicated by McCafferty (1998), *Americabaetis* clearly has a South American center of origin, and has dispersed northward relatively recently. Although occurring in northeastern Mexico and south Texas, *A. pleturus* was not reported from New Mexico based on the comprehensive faunistic data presented by McCafferty et al. (1997). From this we conclude that *Americabaetis* is highly limited in the Nearctic, where it is apparently warm-water sublimited and humid restricted (see McCafferty et al. 1992).

ACKNOWLEDGMENTS

We thank Carlos Lugo-Ortiz and Pat Randolph (both West Lafayette, IN) for critically reading the manuscript. This paper has been assigned Purdue Agricultural Research Journal Number 15656.

LITERATURE CITED

- Lugo-Ortiz, C. R. and W. P. McCafferty.** 1994. The mayfly genus *Acerpenna* (Insecta: Ephemeroptera: Baetidae) in Latin America. *Stud. Neotrop. Fauna Environ.* 29: 65-74.
- Lugo-Ortiz, C. R. and W. P. McCafferty.** 1996a. Taxonomy of the Neotropical genus *Americabaetis*, new status (Insecta: Ephemeroptera: Baetidae). *Stud. Neotrop. Fauna Environ.* 31: 156-169.
- Lugo-Ortiz, C. R. and W. P. McCafferty.** 1996b. New Central American and Mexican records of Ephemeroptera species. *Entomol. News* 107: 303-310.
- McCafferty, W. P.** 1998. Ephemeroptera and the great American interchange. *J. N. A. Benthol. Soc.*
- McCafferty, W. P., R. W. Flowers, and R. D. Waltz.** 1992. The biogeography of Mesoamerican mayflies. Pages 173-193 In *Biogeography of Mesoamerica: proceedings of a symposium*. S. P. Darwin and A. L. Weldon (eds.). Tulane Stud. Zool. Bot., Suppl. Publ. No. 1, New Orleans.
- McCafferty, W. P., C. R. Lugo-Ortiz and G. Z. Jacobi.** 1997. Mayfly Fauna of New Mexico. *Great Basin Natural.* 57: 283-314.
- Waltz, R. D. and W. P. McCafferty.** 1998. Additions to the taxonomy of *Americabaetis* (Ephemeroptera: Baetidae): *A. lugo* n. sp., adult of *A. robacki*, and keys to larvae. *Entomol. News* 110: 39-44.



Wiersema, N. A. and Mccafferty, W P. 1999. "Americabaetis (Ephemeroptera : Baetidae) From Texas: First Usa Record And Adult Description Of A-Pleturus." *Entomological news* 110, 36–38.

View This Item Online: <https://www.biodiversitylibrary.org/item/21695>

Permalink: <https://www.biodiversitylibrary.org/partpdf/19473>

Holding Institution

Smithsonian Libraries and Archives

Sponsored by

Smithsonian

Copyright & Reuse

Copyright Status: In copyright. Digitized with the permission of the rights holder.

Rights Holder: American Entomological Society

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.