

DESCRIPTION OF THE FEMALE OF *PADUNIELLA NEARCTICA* (TRICHOPTERA: PSYCHOMYIIDAE)^{1,2}

David E. Bowles³, Robert T. Allen⁴

ABSTRACT: The female of *Paduniella nearctica* is described and the genitalia illustrated. This constitutes the first Nearctic record of a female of this species. Collection sites for the species are presented.

Paduniella nearctica Flint is the only representative of the subfamily Paduniellinae (Psychomyiidae) known from the Nearctic region (Flint 1967). However, females of this species were unknown until recently. To date, approximately 200 males have been collected from several localities in northwest Arkansas with collection dates ranging from May through September. On 7 June 1986, six adult females were collected with a UV-light placed on a white drop-cloth at ground level. Previous attempts to collect *P. nearctica* females were from a bridge approximately 4 m above the water surface. The bridge collecting site had not produced any females, suggesting that they may be weak or inactive fliers. No additional females have been collected, and the larvae and pupae remain unknown.

Records for females of the genus *Paduniella* are scarce (Fischer 1962), and descriptions have often been inadequate. Banks (1930) described the female of *P. borneensis* in written form but did not include any drawings. Moreover, his written description did not mention genitalia. Malicky (1983) depicted the female genitalia of *P. vandeli* Decamps with line drawings but did not include a written description. The present paper describes the female of *P. nearctica* Flint and lists collection sites for the species in Arkansas.

The morphology of the Psychomyiidae female genitalia was described in detail by Nielsen (1980). Nielsen's descriptions were based exclusively on the Psychomyiinae and did not include examinations of the Xiphocentroninae or Paduniellinae. Our investigation of *P. nearctica* female genitalia suggests a close relationship between the Paduniellinae and Psychomyiinae (e.g., Nielsen 1980; Schmid 1980, figs. 208-209, 213).

¹Received November 28, 1986. Accepted July 13, 1987.

²Published with the approval of the director of the Arkansas Agriculture Experimental Station, Fayetteville, AR, 72701.

³Graduate research assistant. Department of Entomology, University of Arkansas, Fayetteville, AR, 72701.

⁴Professor. Department of Entomology, University of Arkansas, Fayetteville, AR, 72701.

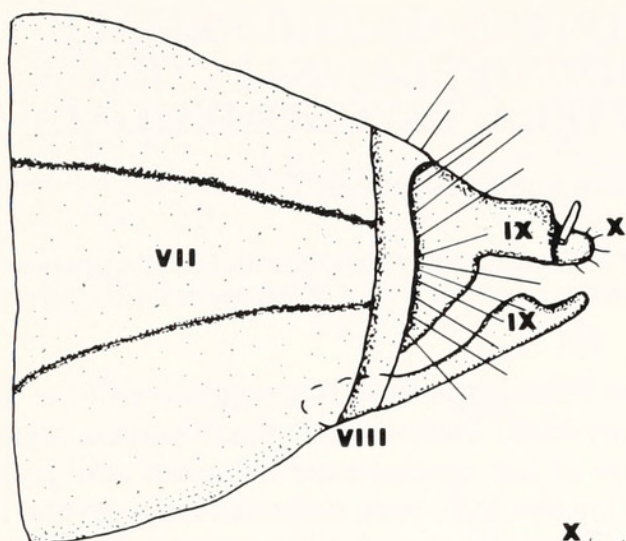


Fig. 1

Fig. 2

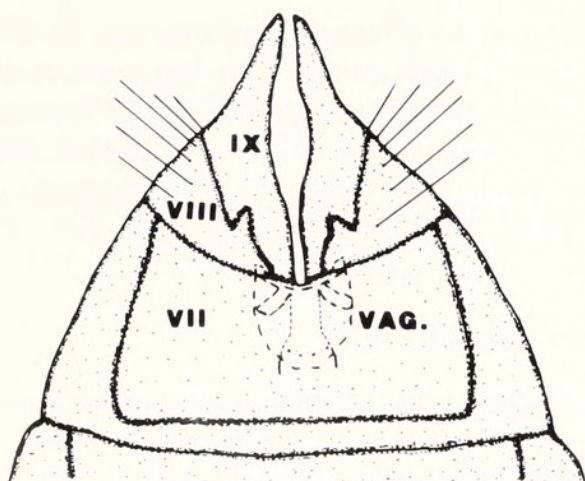
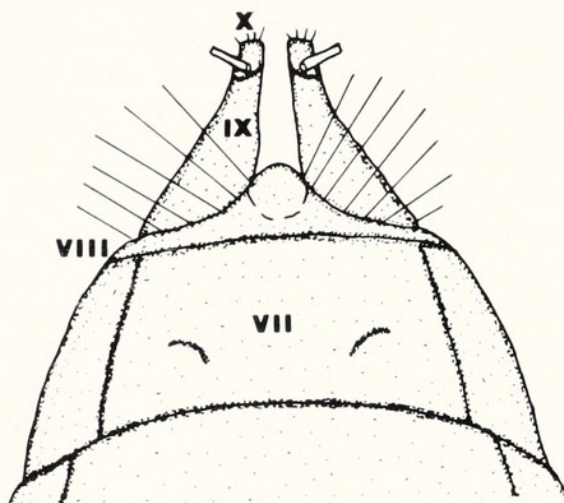


Fig. 3

Figs. 1-3. Lateral, dorsal and ventral views of *Paduniella nearctica* female genitalia showing abdominal segments 7-10, and the vagina.

However, no homologies are attempted in this paper. Enumeration of the genital segments depicted in this study follows that of Nielsen (1980).

Bernard (1940), in a generalized description of the genus *Paduniella*, stated that males have six segmented maxillary palpi and four segmented labial palpi while the females bear five segmented maxillary palpi and three segmented labial palpi. The females of *P. nearctica* differ from their eastern hemisphere counterparts in that the maxillary and labial palpi bear the same number of segments as those of the male. However, segmentation of the female palpi is difficult to observe because of their light color, and the female palpi are shorter than those of the male. It is not known if this is true of all species of the genus.

Description

Adult female (figs. 1-3): Forewing length 5.0 mm. Color straw to light brown. Antennae annulate with dark brown. Female genitalia: Eighth tergite narrow and produced posteriorly on dorsum. Ninth tergite and sternite deeply cleft on meson. Eighth tergite overlapping ninth sternite ventrally, with a row of long setae bordering posterior margin. Tenth tergite short with cerci implanted in small membranous areas. Vagina moderately sclerotized and saccular, extending one-half the distance of the anterior margin of segment seven. Vagina without a distinct boundary at common oviduct.

Collection sites for *P. nearctica*: Arkansas, Johnson Co., 5 mi. W. Oark; 1 mi. E. Yale; 2 mi. E Hagarville. Arkansas, Washington Co., 15 mi. S. Prairie Grove; Devils Den St. Park. The *P. nearctica* collected during this study are deposited in the University of Arkansas Entomology Museum.

LITERATURE CITED

- Banks, N. 1930. Some neuropteroid insects from North Borneo, particularly from Mt. Kinabalu, 13,445 ft. J. Fed. Malay St. Mus. 16: 411-429.
- Barnard, K.H. 1940. Additional records, and descriptions of new species, of South African alder-flies (Megaloptera), may-flies (Ephemeroptera), caddis-flies (Trichoptera), stone-flies (Perlaria), and dragon-flies (Odonata). Ann S. African Mus. 32: 609-661.
- Fischer, F.C.J. 1962. Trichoptera Catalogous, Vol. III. Polycentropodidae, Psychomyiidae. Amsterdam: Nederlandsche Entomologische Vereeniging. 236 pp.
- Flint, O.S. Jr. 1967. The first record of the Paduniellini in the new world (Trichoptera: Psychomyiidae). Proc. Ent. Soc. Wash. 69:310-311.
- Malicky, H. 1983. Atlas of European Trichoptera. Haque: Dr. Junk Publs. 298 pp.
- Nielsen, A. 1980. A comparative study of the genital segments and the genital chamber in female Trichoptera. Biol. Skr. (Kon. Danske Vid. Selsk.). 23: 1-200.
- Schmid, F. 1980. Genera des Trichopteres du Canada et des Etats adjacents. Les insectes et arachnides du Canada, Part. 7. Agric. Can. Publ. 1692. 296 pp.



Bowles, David E. and Allen, Robert T. 1988. "Description Of The Female Of *Paduniella nearctica* (Trichoptera, Psychomyiidae)." *Entomological news* 99, 7–9.

View This Item Online: <https://www.biodiversitylibrary.org/item/20715>

Permalink: <https://www.biodiversitylibrary.org/partpdf/38890>

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>.