

NOTES ON *BRACHYDEUTERA* LOEW (DIPTERA: EPHYDRIDAE) FROM NORTH AMERICA¹

Wayne N. Mathis²

ABSTRACT: The type series of *Brachydeutera argentata* (Walker) and its junior synonym, *B. dimidiata* Loew, are reviewed, to include lectotype designations for both. *B. argentata* is now known to occur only in eastern North America, and in southeastern United States its distribution overlaps that of *B. neotropica*. A few paratypes of *B. neotropica* were discovered to be misidentified, thus altering slightly the distribution of that species. A revised key and illustrations of North American species of *Brachydeutera* are presented.

As part of a research project on the genus *Brachydeutera* Loew from the Oriental, Australian, and Oceanian regions (Mathis and Ghorpade, in preparation), we needed to know the identity of *B. argentata*, which had been reported from these regions in addition to North America (eastern United States) and the Palearctic Region (Canary Islands, eastward through the Mediterranean and Middle Eastern countries to Japan) (Wirth, 1964). Clarification of the status of *B. argentata* has resulted in this publication, which also includes illustrations of the male terminalia and a key to the three species known from the Western Hemisphere.

Walker (1853) described *argentata*, but in the genus *Notiphila*. Less than a decade later, Loew (1862) erected the genus *Brachydeutera* for *B. dimidiata*, a species that he newly described in the same paper. The specimens Walker and Loew studied are from North America, "United States" and "Washington [D.C.]" respectively. Becker (1896) recognized that Walker and Loew were dealing with the same species and cited *B. argentata* as the widespread, holarctic species, with *B. dimidiata* as the junior synonym. Not until Wirth's revision (1964) of *Brachydeutera* was the status of *B. argentata* changed. Wirth's studies, particularly of the male terminalia, indicated that several species were included under *B. argentata* of authors. For the most part Wirth (1964) described these species, although he still followed his predecessors in recognizing *B. argentata* as a widespread, holarctic species. My studies have revealed that specimens of "*B. argentata*" from the Old World represent another species, for which *B. ibari* Ninomiya (1929) appears to be an available name. Details concerning the latter species will be presented elsewhere (Mathis and Ghorpade, in preparation).

In quoting information on labels, I have cited data as they appear, with clarifying or interpretive remarks in brackets. A double set of quotation

¹Received June 16, 1982. Accepted July 23, 1983.

²Department of Entomology, Smithsonian Institution, Washington, D.C. 20560.

marks is used to distinguish data occurring on one label from those on another.

Key to North American species of *Brachydeutera* Loew

1. Facial carina low, bluntly rounded, especially ventrally; male terminalia as in Figs. 3, 6 (Texas to California, south into Mexico) *B. sturtevantii* Wirth
Facial carina high, sharply defined, especially ventrally 2
2. Merger of fused surstyli with epandrium, in lateral view, indicated by an angulate emargination (Fig. 5); gonite spatulate apically (Fig. 5) (Florida to Texas, southward throughout most of the Neotropics) *B. neotropica* Wirth
Merger of fused surstyli with epandrium, in lateral view, broadly rounded (Fig. 4); gonite digitiform apically, narrowly rounded (Fig. 4) (eastern North America; Michigan to Maine, south to Texas and Florida) *B. argentata* (Walker)

Brachydeutera argentata (Walker)

(Figs. 1, 4)

Notiphila argentata Walker, 1853: 407.

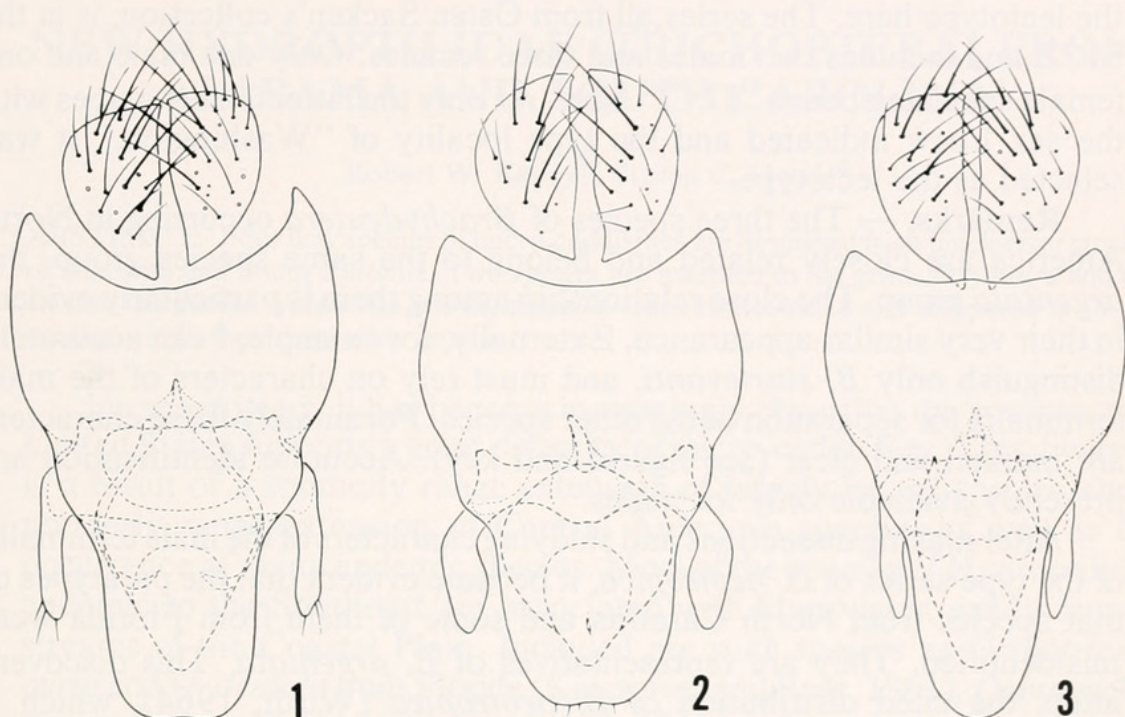
Brachydeutera dimidiata Loew, 1862: 163 [synonymy according to Becker, 1896: 201].

Brachydeutera argentata: Becker, 1896: 201; Wirth, 1964: 5 [revision].

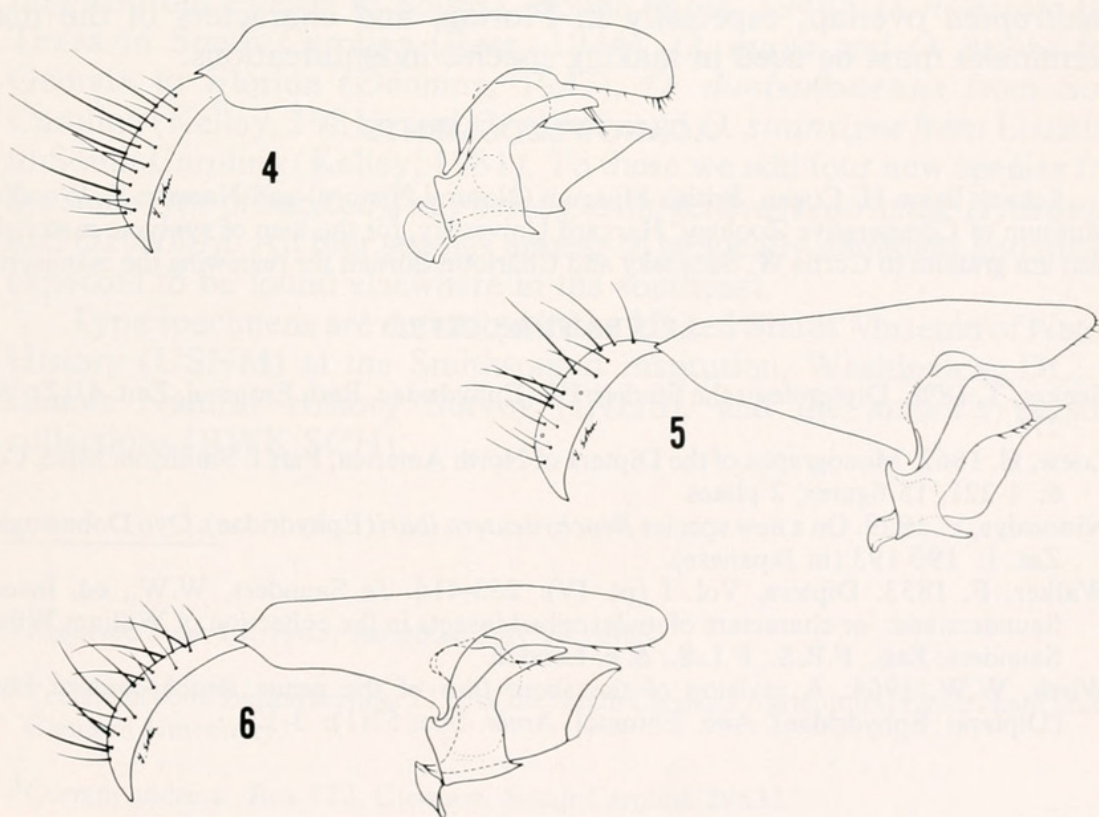
Brachydeutera neotropica Wirth, 1964: 8 [paratype series partially misidentified, see remarks section below].

Primary Type Material. — Lectotype specimen of *Notiphila argentata* (herein designated), in the British Museum (Natural History), is labeled "Notiphila type argentata Walk. [name handwritten on a disk with a green sub-border]" "N. America. Ex coll. Saunders. 68.4 [handwritten]" "VB [?, handwritten on underside of label]" "argentata [folded, handwritten]" "68.4." "LECTOTYPE *Notiphila dimidiata* Walker By W.N. Mathis [name and designator handwritten; black sub-border]." The Lectotype is double mounted (pin in paper rectangle) and is in poor condition (wings, abdomen, and two legs missing). It is not clearly evident whether Walker described this species from a single specimen or a series, hence the lectotype designation.

Lectotype female of *B. dimidiata* (herein designated), in the Museum of Comparative Zoology, is labeled "D.C. [Washington, D.C.]" "Osten Sacken Coll." "LECTOTYPE ♀ *Brachydeutera dimidiata* Loew by W.N. Mathis [sex, name, and designator handwritten; black sub-border]." The lectotype is double mounted (minuten nadel in polyporus rectangular block), is in fair condition (the abdomen is twisted, some setae broken or misoriented). Loew, in the original description, gave only the female sex symbol, but mentioned "specimens" in the description and gave measurements as a range. Evidently he had before him a syntypic series. As no specimen was designated specifically as the holotype, I am designating



Figs. 1-3. Male terminalia, posterior view. Fig. 1. *Brachydeutera argentata*. Fig. 2. *B. neotropica*. Fig. 3. *B. sturtevantii*.



Figs. 4-6. Male terminalia, lateral view. Fig. 4. *Brachydeutera argentata*. Fig. 5. *B. neotropica*. Fig. 6. *B. sturtevantii*.

the lectotype here. The series, all from Osten Sacken's collection, is at the MCZ and includes two males and three females. Only one male and one female specimen bear a "D.C." label. As only the latter female agrees with the sex Loew indicated and the type locality of "Washington," it was selected as the lectotype.

Remarks. — The three species of *Brachydeutera* occurring in North America are closely related and belong to the same species group, the *argentata* group. The close relationship among them is particularly evident in their very similar appearance. Externally, for example, I can accurately distinguish only *B. sturtevanti*, and must rely on characters of the male terminalia for separation of the other species. Fortunately these characters are marked and clear (see figures and key). Accurate identification are presently available only for males.

After making dissections and studying characters of the male terminalia of the type series of *B. neotropica*, it became evident that the paratypes of that species from North Carolina and some of them from Florida were misidentified. They are representatives of *B. argentata*. This discovery alters the cited distribution of *B. neotropica* (Wirth, 1964), which is corrected as follows: Southeastern United States (Florida to Texas, southward through Mexico and Central America to most of South America. In southeastern United States, the distributions of *B. argentata* and *B. neotropica* overlap, especially in Florida, and characters of the male terminalia must be used in making species indentifications.

ACKNOWLEDGMENTS

I thank Brian H. Cogan, British Museum (Natural History) and Norman E. Woodley, Museum of Comparative Zoology, Harvard University, for the loan of syntypic material. I also am grateful to Curtis W. Sabrosky and Charlotte Burnett for reviewing the manuscript.

LITERATURE CITED

- Becker, T. 1896. Dipterologische Studien IV: Ephydridae. Berl. Entomol. Zeit. 41(2): 91-276.
- Loew, H. 1862. Monographs of the Diptera of North America, Part I. Smithson. Misc. Coll. 6: 1-221, 15 figures, 2 plates.
- Ninomiya, E. 1929. On a new species *Brachydeutera ibari* (Ephydridae). Oyo Dobutsugaku Zasshi 1: 190-193 (in Japanese).
- Walker, F. 1853. Diptera. Vol. I (pt. IV): 253-414. In Saunders, W.W., ed. Insecta Saundersiana: or characters of undescribed insects in the collection of William Wilson Saunders, Esq., F.R.S., F.L.S., & c. London.
- Wirth, W.W. 1964. A revision of the shore flies of the genus *Brachydeutera* Loew (Diptera: Ephydridae). Ann. Entomol. Amer. Soc. 57(1): 3-12.



Mathis, Wayne N. 1983. "Notes On Brachydeutera Loew (Diptera, Ephydriidae) From North america." *Entomological news* 94, 177–180.

View This Item Online: <https://www.biodiversitylibrary.org/item/20617>

Permalink: <https://www.biodiversitylibrary.org/partpdf/22559>

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>.