

OCURRENCE OF *CLOEON COGNATUM* STEPHENS
IN THE UNITED STATES
(EPHEMEROPTERA, BAETIDAE)¹

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ABSTRACT: The presence of the European mayfly *Cloeon cognatum* Stephens in the United States is reported. Characters distinguishing this species from other North American *Cloeon* are given.

DESCRIPTORS: Ephemeroptera; Baetidae; *Cloeon cognatum*; *C. dipterum*.

Recently a collection of interesting *Cloeon*, collected in two small ponds near Pottstown, Pennsylvania, by William S. Ettinger, was sent to the Laboratory of Aquatic Entomology for identification. The specimens, adults and associated nymphs, were tentatively identified as *Cloeon dipterum* (L.) which is common and widely distributed in Europe but has been reported only twice from the United States. Specimens have been collected from Illinois in 1939 (Burks 1953) and Ohio in 1960 (Traver 1962). Sowa (1975) showed that *C. dipterum* of various authors includes three sympatric species: *Cloeon dipterum* (L.), *Cloeon cognatum* Stephens and *Cloeon inscriptum* Bengtsson. Much of the European data on "*C. dipterum*" reported over the years in fact applies to one or more of these species.

A series of the Pennsylvania *Cloeon*, including nymphs and adults, was sent to Dr. Sowa for identification. They were identified as *C. cognatum* which also occurs in continental Europe and the British Isles. This species differs from *C. dipterum* and *C. inscriptum* chiefly in color patterns of adult and nymph and also in minor morphological characters. Sowa's paper should be consulted for details. Adult male *C. cognatum* can be distinguished from other North American *Cloeon* by the following combination of characters: abdominal segments 2-6 with extensive dark reddish-brown maculae on tergites and sternites; caudal filaments white with dark red-brown annulation on articulations. The only other Nearctic *Cloeon* likely to be confused with *C. cognatum* are *C. mendax* (Walsh), *C. ingens* McDunnough and *C. implicatum* McDunnough, all of which lack the dark annulations on the caudal filaments. The nymph of *C. cognatum* differs from that of *C. ingens* in lacking a ventral lobe on the seventh gill and from *C. mendax* by its larger body size. The nymphs of American *Cloeon* are poorly known and further

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differentiation of *C. cognatum* nymphs is impossible at this time.

Comparison of Burks' and Traver's descriptions of Illinois and Ohio "*C. dipterum*" with Sowa's descriptions indicates that these specimens should also be placed in *C. cognatum*. Traver found that the Ohio forms corresponded with Eaton's (1885) Variation I of *C. dipterum*, which has been synonymized with *C. cognatum* by Sowa. In spite of the scarcity of reports, *C. cognatum* may be widely distributed from the mid-Atlantic to the midwestern states.

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LITERATURE CITED

- Burks, B.D. 1953. The mayflies, or Ephemeroptera of Illinois. Bull. Ill. Nat. Hist. Surv. 26(1). 216p.
- Eaton, A.E. 1885 (1883-1888). A revisional monograph of recent Ephemeridae or mayflies. Trans. Linn. Soc. Lond., Sec. Ser., Zool., 3: 1-352, 65 pl.
- Sowa, R. 1975. What is *Cloeon dipterum* (Linnaeus, 1761)? Entomol. Scand. 6: 215-223.
- Traver, J.R. 1962. *Cloeon dipterum* (L.) in Ohio (Ephemeroptera: Baetidae). Bull. Brooklyn Entomol. Soc. 57: 47-50.