

The Great Lakes Entomologist

Volume 3
Number 4 -- Winter 1970 Number 4 -- Winter
1970

Article 1

July 2017

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Recommended Citation

Koss, Richard W. 2017. "A List of the Mayflies (Ephemeroptera) in the Michigan State University Entomology Museum," *The Great Lakes Entomologist*, vol 3 (4)

DOI: <https://doi.org/10.22543/0090-0222.1126>

Available at: <https://scholar.valpo.edu/tgle/vol3/iss4/1>

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**A LIST OF THE MAYFLIES (EPHEMEROPTERA) IN THE
MICHIGAN STATE UNIVERSITY ENTOMOLOGY MUSEUM**

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A fairly extensive collection of Ephemeroptera representing 35 genera, 112 determined species and subspecies is preserved in alcohol in the Entomology Museum at Michigan State University, East Lansing, Michigan 48823. Although most of the specimens were collected in Michigan, the collection also contains representatives of many of the common species found in New England and neighboring Canada. A small portion of the collection is not Northeast in origin.

This list is designed to aid those interested in the fauna of the Northeast and Great Lakes regions, especially if they need specimens for study. I have included the states or provinces in which specimens were collected, as well as the numbers of individuals; more complete collecting data may be obtained from the author or the museum. Many new state records occur in the collection, and some of these records extend the known range significantly.

With the exception of some Heptageniidae sent to Dr. Jay R. Traver, University of Massachusetts, and some *Stenonema* and the two species of *Potamanthus* sent to Dr. Fred P. Ide, University of Toronto, all determinations have been made by the author. A question mark following the scientific name means the determination of all specimens is questionable, whereas a question mark within parentheses means the determination of only those specimens listed within the parentheses is questionable.

The museum also possesses some pinned material determined by Nathan Banks and E. W. Hamilton. Many of Banks' determinations are incorrect and I have not attempted to rectify them. Holdings of pinned material are listed separately following the list of alcoholic specimens. The following abbreviations and symbols are used:

♀ = female imago, ♀s = female subimago, ♂ = male imago, ♂s = male subimago, n = nymph, * = new state record.

Family SIPHLONURIDAE

Isonychia bicolor (Walker). Michigan
(2♂, 1♀).

I. sadleri Traver? Massachusetts (1♀).

Parameletus columbiae McDunnough.
Alaska* (1♂).

Siphonurus alternatus (Say). Michigan
(2♀); Ontario (25♂, 7♀).

S. mirus Eaton. Maine* (23♀).

S. occidentalis Eaton. New Mexico (3♂);
Oregon (1♀).

S. quebecensis (Provancher). Maine
(many ♂ & ♀); Massachusetts* (1♂,
3♀); Michigan (8♂, 2♂s, 1♀).

S. rapidus McDonnough. (many ♂ & ♀),
Michigan (1♂s, 1♀).

S. typicus (Eaton). Michigan* (approx.
120♂).

Family BAETIDAE

Baetis bicaudatus Dodds? Oregon (12♂)

B. frondalis McDonnough. Ontario (3n).

B. harti McDonnough? Massachusetts*
(1♀).

B. intercalaris McDonnough. Massachu-
setts* (1♂, 2♀).

B. parvus Dodds. Oregon (1♂).

Callibaetis ferrugineus (Walsh). Michigan
(1♂, 1♀); New York (17♂, 15♂s, 10♀,
14♀s).

C. skokianus Needham. Michigan* (5♂,
1n).

Pseudocloeon anoka Daggy. Michigan
(1♂, 1♀s).

Family HEPTAGENIIDAE

- Arthroplea bipunctata* (McDonnough). Massachusetts* (20n).
Cinygmula subaequalis (Banks). Maine* (1♂, 1♀, 7n).
Epeorus (Iron) suffusus (McDonnough). Maine (1♀, 7n).
E. (Iron) vitrea (Walker). (3n).
Heptagenia aphrodite McDonnough. Ontario (21n).
H. diabasia Burks. Maine* (2n); Quebec* (1n).
H. hebe McDonnough. Maine* (1♀); Michigan (66♂, 28♀).
H. junco McDonnough. Ontario* (1n).
H. pulla (Clemens). Michigan (3♂); New York (13n).
H. rosea Traver. Oregon (many ♂ & ♀).
H. simpliciodes McDonnough. Oregon (1♂).
H. solitaria McDonnough. Alaska (14♂).
Rhithrogena impersonata McDonnough. Maine* (5♂, 1♀).
R. sanguinea Ide. Maine (1♀).
Stenonema bipunctatum (McDonnough). New York* (2n).
S. canadense (Walker). Kansas* (1♂); Maine (?1♀); Michigan (2♂, 3♀); Ohio (?4♀).
S. femoratum (Say). Oklahoma* (4♀).
S. frontale (Banks). Michigan (38♂, 26♀); Oklahoma* (1♂, 2♀).
S. fuscum (Clemens). Michigan (13♂, 3♀); New York (2♂, 15♀).
S. gildersleevei Traver? Michigan (1♀).
S. heterotarsale (McDonnough). Michigan (1♂); New York (10n); Ontario (53n).
S. interpunctatum (Say). Ohio (5♂, 4♂s, 9♀).
S. ithaca (Clemens & Leonard). Massachusetts (5n).
S. lepton Burks. Michigan* (92♂, 16♀).
S. minnetonka Daggy. Michigan* (8♂, 2♀).

Family HEPTAGENIIDAE (Continued)

- S. nepotellum* (McDonnough). Michigan (many ♂ & ♀).
S. pulchellum (Walsh). Ontario (11n).
S. rubromaculatum (Clemens). Massachusetts (many ♂ & ♀); Michigan* (1♂, 1♀, 1n).
S. rubrum (McDonnough). Massachusetts* (3♂, 3♂s, 1♀, 8♀s, 10n); Michigan (22♂).
S. tripunctatum (Banks). Michigan (7♂, 4♀).
S. varium Traver? Massachusetts* (2♂, 7♂s, 5♀s).
S. vicarium (Walker). Maine* (11♀).

Family AMETROPODIDAE

- Siphoptecton basale* (Walker). Michigan (1♂, 2♀, 5n).

Family LEPTOPHLEBIIDAE

- Habrophlebia vibrans* Needham? (New York (1♀).
Habrophlebiodes americana Banks. Maine (1n); Quebec (24n).
Leptophlebia cupida (Say). Michigan (many ♂ & ♀).
L. nebulosa (Walker). Michigan (15♂, 4♀).
Paraleptophlebia adoptiva (McDonnough). Michigan (23♂, 12♀).
P. debilis (Walker). Michigan (22♂, 1♀); Ohio (1♂s, 2♀).
P. memorialis (Eaton). Oregon (6♂).
P. mollis (Eaton). Maine (5♂, 4♂s, 5♀, 1♀s); Michigan (1♂, 1♀).
P. praepedita (Eaton). Michigan (5♂, 1♂s, 1n).
P. sculleni Traver. Oregon (2♂).

Family EPHEMERELLIDAE

- Ephemerella (Attenuatella) attenuata* McDonnough. Michigan* (1n).
E. (Dannella) simplex McDonnough. Massachusetts* (1n); Michigan (1n).

Family EPHEMERELLIDAE (Continued)

- E. (Drunella) coloradensis* Dodds. Oregon (1n).
E. (D.) cornuta Morgan. Maine (19n).
E. (D.) cornutella McDonnough. Quebec (7n).
E. (D.) doddsi Needham. Colorado (8n).
E. (D.) grandis Eaton. Oregon (1♀s, det. R.K. Allen).
E. (s.s.) dorothea Needham. Maine (1n); Massachusetts (6n).
E. (s.s.) infrequens McDonnough. Colorado (1n).
E. (s.s.) invaria (Walker)? Maine (1♂, 1♀).
E. (s.s.) needhami McDonnough. Michigan (1n).
E. (Eurylophella) bicolor Clemens. Michigan (2n).
E. (E.) funeralis McDonnough. Michigan (1n); New Hampshire (18n).
E. (E.) prudentalis McDonnough. Maine (2♂, 13♀).
E. (E.) temporalis McDonnough. Massachusetts (3n); Michigan (42n).
E. (Serratella) deficiens Morgan. Massachusetts (5n); Maine (8n); Michigan (1♂s, 1♀s, 2n); Ontario (4n).
E. (S.) tibialis McDonnough. Oregon (9n).
E. (Timpanoga) hecuba pacifica Allen & Edmunds. Oregon (2n).

Family TRICORYTHIDAE

- Tricorythodes allectus* (Needham). Ontario (1♂).
T. atratus McDonnough. Michigan (3♂, 1♀, 3n); Ontario (4♂, 2♀).
T. fallax Traver. Michigan* (?22♂); Oregon (3♂).

Family POTAMANTHIDAE

- Potamanthus myops* (Walsh). Illinois (6♂, 10♀); Kentucky* (6♀); Michigan (14♂, 16♀); Pennsylvania* (1♀).
P. neglectus Traver. Arkansas* (2♂, 4♀).

Family EPHEMERIDAE

- Ephemera guttulata* Pictet. Maine* (1♀).
E. simulans Walker. Maine (1♀); Michigan (50♂, 8♀); Ohio (2♂, 3♀); South Dakota (14♂, 16♀).
E. triplex Traver. West Virginia (1♀).
E. varia Eaton. Maine (3♀); Massachusetts (3♀).
Hexagenia atrocaudata McDonnough. Michigan (6n).
H. bilineata (Say)? Ohio (1♂).
H. limbata s.l. (Serv.). Kentucky (1♂, 10♀); Maine (1♂s); Michigan (14♂, 16♀, 29n).
H. limbata limbata (Serv.). Michigan (1♂).
H. limbata occulta (Walker). Michigan (many ♂ & ♀); Ohio (2♂).
H. limbata venusta Eaton. Oklahoma (1♀); Texas (1♀).
H. limbata viridescens (Walker). Michigan (12♂).
H. munda affiliata McDonnough. Ohio (1♂).
H. munda elegans Traver. Alabama (1♂); Arkansas* (16♂, 2♀).
H. munda munda Traver. Michigan* (4♂, 1♀).
H. recurvata Morgan. Michigan* (Kent Co., middle of lower peninsula, 1♂).
H. rigida McDonnough. Maine* (3♂s); Massachusetts* (?1♀); Michigan (♂3♀); North Carolina (?2♀); New York (3♂, 1♀).

Family POLYMITARCIDAE

- Ephoron album* (Say). Michigan* (19♀); Ohio (2n); Utah (2♂, 2♀).
E. leukon Williamson. Massachusetts (1♀); Michigan* (many ♂ & ♀); Ontario (39n); West Virginia (many ♀).

Family CAENIDAE

- Caenis anceps* Traver. Michigan* (2♂, 2♀).
C. forcipata McDonnough. Maine* (1♀); Michigan (17♂, 13♀).
C. hilaris (Say). Michigan (many ♂).
C. jocosa McDonnough. Massachusetts (1♂, 1♀); Maine (1♂).
C. simulans McDonnough. Many ♂ & ♀ from Michigan, Ontario, New York, Utah.
C. tardata McDonnough. Michigan (? many ♂ & ♀).

Family BAETISCIDAE

Baetisca obesa (Say). Michigan (13n).

Many undertermined specimens of *Ameletus*, *Isonychia*, *Siphonurus*, *Baetis*, *Callibaetis*; *Centroptilum*, *Cloeon*, *Pseudocloeon*, *Cinygmula*, *Epeorus* (Iron), *E. (Ironodes)*, *E. (Ironopsis)*, *Heptagenia*, *Rhithrogena*, *Stenonema*, *Leptophlebia*, *Paraleptophlebia*, *Ephemerella* (*Drunella*), *E. (s.s.)*, *E. (Eurylophella)*, *E. (Serratella)*, *Tricorythodes*, *Ephemera*, *Hexagenia*, *Tortopus*, and *Caenis*.

PINNED MATERIAL

- Siphylurus Alternata* Say. Michigan (2♂).
Siphylurus sp. Michigan (2♀).

PINNED MATERIAL

- Cloeon mandax* Walsh. Michigan (2♀).
Cloeon sp. Michigan (4♂s, 1♀).
Ecdyonurus canadensis Walker. Michigan (1♂).
Heptagenia flavescens Walsh. Minnesota (1♀).
H. interpunctata Say. Michigan (4♂); Minnesota (1♂).
H. pulchella Walsh. Michigan (1♀).
H. sp. Michigan (4♂s, 2♀, 7♀s).
Blasturus cupidus Say. Michigan (2♂, 2♀).
Potamanthus rufus Michigan (2♂, 7♀).
Ephemera luteola Walsh. Michigan (1♂, 1♀).
E. notata Walker. Michigan (4♂).
E. simulans Walker. Michigan (8♂).
Hexagenia bilineata (Say). Michigan (2♂, 1♀).
H. limbata limbata (Serv.) Michigan (2♂, 9♀).
H. limbata occulta (Walker). Michigan (22♂, 8♀).
H. limbata venusta Eaton. Michigan (16♀).
 35 undetermined ♂ & ♀ of *Siphonurus*, *Leptophlebia*, *Ephemera*, and *Hexagenia*.

BRIEF NOTICE

THE COLE LIBRARY OF EARLY MEDICINE AND ZOOLOGY: CATALOGUE OF BOOKS AND PAMPHLETS. Part I: 1472 to 1800. Nellie B. Eales. Oxford: The Alden Press, for the University of Reading Library, 1969. xvi, 425 pp. \$12.60.

The University of Reading has recently issued the first part of its catalogue of the library of the late zoologist F. J. Cole, purchased by the University after Cole's death. The small but select collection contains about 8000 volumes, and over 2000 of the earlier titles are described here. Many pertain to entomology and related subjects, and their bibliography is treated in more detail than in such sources as Hagen and Horn and Schenkling. There is a useful subject index, and this attractively produced series will undoubtedly be interesting to those concerned with the bibliography of entomology.

R. S. Wilkinson

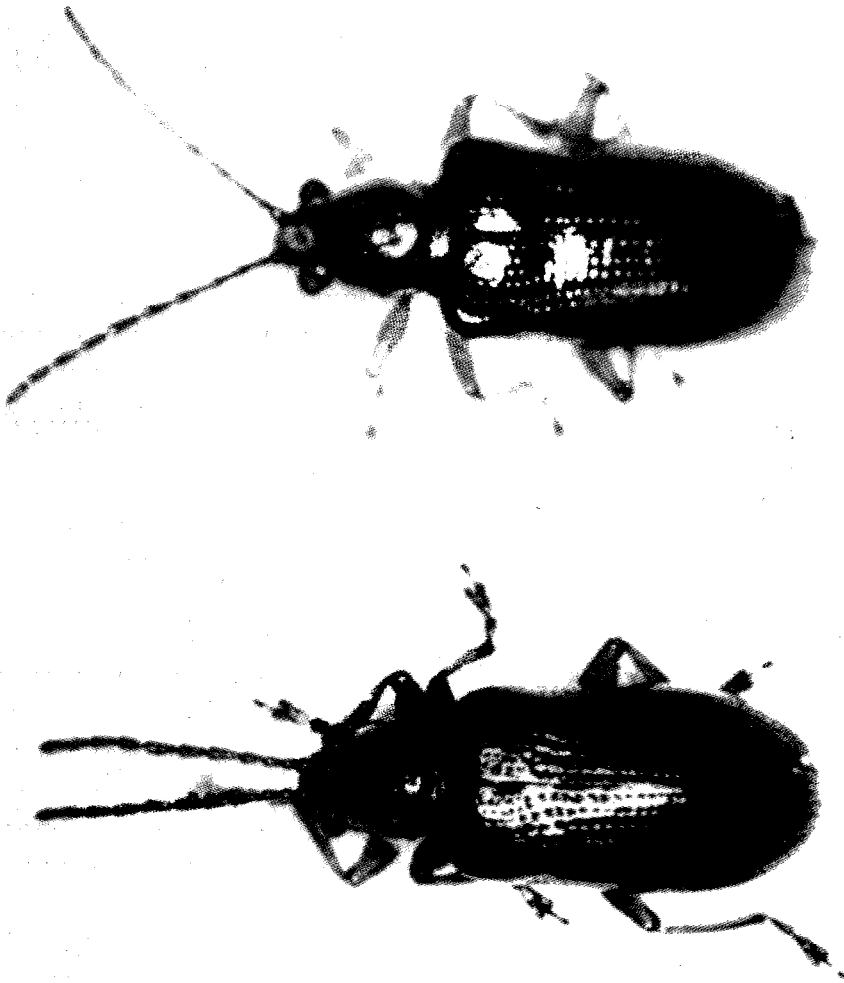


Fig. 1. An inactive cereal leaf beetle (left) maintains a 10° angle between its antennae while an active beetle usually displays an angle greater than 65° (right).