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A CHECKLIST OF THE STONEFLIES, OR PLECOPTERA, OF INDIANA¹

Andrew F. Bednarik and W. P. McCafferty²

ABSTRACT

Examination of specimens and published records has indicated the presence of 61 species of Plecoptera in Indiana. Annotations include the recognition of another 14 species which should eventually be taken within the state, references to species keys and descriptions, and comments concerning doubtfully recorded species.

This checklist of Indiana Plecoptera represents, in part, results of an ongoing study of the aquatic fauna of the state and provides a baseline for entomologists and aquatic biologists working regionally with this important order. Since Ricker's (1945) preliminary list of 38 species for Indiana, there has been voluminous literature on the group, including many taxonomic changes and a significant increase in the number of species.

To now, specific identification by the non-specialist has been hampered by the lack of a single source of up-to-date data at the species level for this area, which includes elements of the fauna of several surrounding regions. This checklist should enable workers to determine more efficiently the applicability of available keys. For example, the fauna of the unglaciated area of southern Indiana includes elements not considered in studies of Plecoptera for states of the northern tier. Conversely, some species records for the northern United States represent southernmost range limits of Canadian species not occurring in Indiana. Also, many of the New England species for which there are keys do not reach west to Indiana.

In addition to species previously reported or those listed herein for the first time for the state, this checklist includes species which should eventually be taken in Indiana. These are listed if they are known from at least two of the four states surrounding Indiana (Ohio, Kentucky, Illinois, and Michigan). For such species not yet reported from Indiana, parentheses follow with letters (O = Ohio; K = Kentucky; I = Illinois; M = Michigan) indicating the applicable states for which published records exist. The higher classification and ordering is after Baumann (1976). A total of 8 families, 28 genera, and 75 species are included.

Three species need some clarification. *Isoperla longiseta* Banks is not included in the list although a record for Indiana was included in Needham and Claassen (1925). We consider this a probable error since no records exist in the more recent literature, and this species is generally more western in distribution. *Paracapnia opis* (Newman) is not listed although records have been reported for midwestern states. Present distributional data indicate that *P. opis* is a more northern species, and as Zwick (1973) indicated, many earlier records for *P. opis* were actually assignable to *Paracapnia angulata* Hanson which had not been described until 1961. Finally, a tentative record for *Sweltsa naica* (Provancher) is based on the examination of only one poorly preserved specimen.

Specimens were examined for this study from the collections of Purdue University, Indiana University, and the Illinois Natural History Survey. Literature sources for distributional records (in alphabetical order) were Finni (1973), Frison (1935), Hitchcock

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(1974), Illies (1966), Ricker (1945 and 1952), Ricker and Ross (1969), Ross and Ricker (1971), and Zwick (1973).

The most comprehensive source of species keys and descriptions of stoneflies found in Indiana is Hitchcock (1974). Some other particularly useful species keys may be found in Harden and Mickel (1952), Harper and Hynes (1971 a, b, c, d), Ricker (1952), Ricker and Ross (1969), Ross and Ricker (1971), and Surdick and Kim (1976). In addition to the above, other works such as Baumann (1974), Claassen (1931), Frison (1935), Needham and Claassen (1925), and Stark and Gaufin (1974, 1976a) are sources of species descriptions. Baumann (1975), Hilsenhoff (1975), and Stark and Gaufin (1976b) are useful for identification above the species level.

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Order PLECOPTERA

Suborder ARCTOPERLARIA
Group EUHOLOGNATHA
Superfamily NEMOUROIDEA
Family NEMOURIDAE
Subfamily AMPHINEMURINAE

Amphinemura delosa (Ricker)
A. nigritta (Provancher)

A. varshava (Ricker)

Subfamily NEMOURINAE

Prostoia completa (Walker) (I,M)
P. similis (Hagen)

Soyedina vallicularia (Wu)

Family TAENIOPTERYGIDAE
Subfamily BRACHYPTERINAE

Strophopteryx fasciata (Burmeister)

Subfamily TAENIOPTERYGINAE

Taeniopteryx burksi Ross and Ricker
T. lita Frison
T. maura (Pictet)

T. metequi Ross and Ricker
T. nivalis (Fitch)
T. parvula Banks

Family CAPNIIDAE

Allocapnia forbesi Frison
A. frisoni Ross and Ricker (K,O)
A. granulata (Claassen)
A. illinoensis Frison
A. indianae Ricker
A. minima (Newport) (I,M)
A. mystica Frison
A. nivicola (Fitch)
A. ohioensis Ross and Ricker

A. pygmaea (Burmeister)
A. recta (Claassen)
A. rickeri Frison
A. smithi Ross and Ricker (I,K,O)
A. vivipara (Claassen)
A. zola Ricker (O,K)
Nemocapnia carolina Banks
Paracapnia angulata Hanson (I,M,O)

Family LEUCTRIDAE
Subfamily LEUCTRINAE

- | | |
|--|--------------------------------------|
| <i>Leuctra ferruginea</i> (Walker) (I,O) | <i>Zealeuctra claasseni</i> (Frison) |
| <i>L. tenella</i> Provancher | <i>Z. fraxina</i> Ricker (I,K,O) |
| <i>L. tenuis</i> (Pictet) (I,O) | |

Group SYSTELLOGNATHA
Superfamily PTERONARCYOIDEA
Family PTERONARCYIDAE

- | | |
|--|--------------------------|
| <i>Pteronarcys dorsata</i> (Say) (I,O) | <i>P. pictetii</i> Hagen |
|--|--------------------------|

Superfamily PERLOIDEA
Family PERLODIDAE
Subfamily ISOPERLINAE

- | | |
|-------------------------------|---|
| <i>Isoperla bilineata</i> Say | <i>I. frisoni</i> Illies |
| <i>I. burksi</i> Frison | <i>I. martynia</i> Needham and Claassen |
| <i>I. clio</i> Newman | <i>I. namata</i> Frison |
| <i>I. decepta</i> Frison | <i>I. nana</i> (Walsh) |
| <i>I. dicala</i> Frison | <i>I. signata</i> (Banks) (M,O) |

Subfamily PERLODINAE

- | | |
|---|--|
| <i>Cultus decisus</i> (Walker) | <i>Hydroperla crosbyi</i> (Needham and Claassen) |
| <i>Diploperla robusta</i> Stark and Gauffin | <i>H. fugitans</i> (Needham and Claassen) |
| <i>Helopicus nalatus</i> (Frison) | <i>Isogenoides varians</i> (Walsh) |

Family CHLOROPERLIDAE
Subfamily CHLOROPERLINAE

- | | |
|------------------------------------|-----------------------------------|
| <i>Alloperla atlantica</i> Baumann | <i>A. imbecilla</i> (Say) |
| <i>A. banksi</i> Frison (I,M) | <i>Hastaperla brevis</i> (Banks) |
| <i>A. caudata</i> Frison | <i>Swelsta naica</i> (Provancher) |

Family PERLIDAE
Subfamily ACRONEURINAE

- | | |
|-------------------------------------|---|
| <i>Acroneuria abnormis</i> (Newman) | <i>A. perplexa</i> Frison |
| <i>A. evoluta</i> Klapálek | <i>Attaneuria ruralis</i> (Hagen) |
| <i>A. filicis</i> Frison | <i>Eccoptura xanthenes</i> (Newman) (K,O) |
| <i>A. internata</i> (Walker) | <i>Perlesta placida</i> (Hagen) |
| <i>A. lycorias</i> (Newman) (M,O,I) | <i>Perlinella drymo</i> (Newman) |
| <i>A. mela</i> Frison | <i>P. ephyre</i> (Newman) |

Subfamily PERLINAE

- | | |
|--------------------------------------|--|
| <i>Neoperla clymene</i> (Newman) | <i>P. media</i> (Walker) |
| <i>Paragnetina kansensis</i> (Banks) | <i>Phasganophora capitata</i> (Pictet) |

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