

NEW RECORDS OF STONEFLIES (PLECOPTERA) WITH AN ANNOTATED CHECKLIST OF THE SPECIES FOR PENNSYLVANIA

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ABSTRACT

Original collections now record 134 species in nine families and 42 genera. Seventeen new state records include, *Allocapnia wrayi*, *Alloperla caudata*, *Leuctra maria*, *Soyedina carolinensis*, *Tallaperla elisa*, *Perlesta decipiens*, *P. placida*, *Neoperla catharae*, *N. occipitalis*, *N. stewarti*, *Cultus decusus decusus*, *Isoperla francesca*, *I. frisoni*, *I. lata*, *I. nana*, *I. slossonae*, *Malirekus hastatus*. Five species are removed from the list of species for Pennsylvania.

Surdick and Kim (1976) originally recorded 90 species of stoneflies in nine families and 32 genera from Pennsylvania. Since that time, Stark et al. (1986) reported 94 species, Stewart and Stark (1988) listed 95 species, and Earle (1994) added 14 species and deleted four species as misidentifications. Grubbs (1996) reported three new state records bringing the total species for Pennsylvania to 117. One-hundred-thirty-four species of stoneflies are now confirmed for Pennsylvania (Masteller, 1996). This includes 16 species of Capniidae, 13 species of Leuctridae, 16 species of Nemouridae and 10 species of Taeniopterygidae in the Euhlognatha. In the Systellognatha, the Chloroperlidae are represented by 15 species, Peltoperlidae four species, Perlidae 25 species, Perlodidae 30 species, and the Pteronarcyidae five species. The county records for all Pennsylvania stonefly species can be found on the WWW at Penn State Erie, The Behrend College's site (<http://www.pserie.psu.edu/>), biology faculty under my name.

Pennsylvania, with 67 counties (Figure 1) covers an area of 117,412 square kilometers (Guilday, 1985). The eastern border is located at approximately 74°43' W longitude and extends to 80°31' W on the western border. The southern border is located at 39° 43' latitude and approximately 42° N on the northern border. Fenneman (1938) divided the land surface of North America into 20 physiographic provinces. Berg et al. (1989) have developed a physiographic province map for Pennsylvania with seven major physiographic provinces: (1) Central Lowland (2) Atlantic Coastal Plain (3) Blue Ridge (4) New England (5) Ridge and Valley (with 2 subdivisions) (6) Piedmont Province (with 3 subdivisions) and (7) Appalachian Plateaus (with 7 subdivisions). The seven major physiographic units are dominated by the Appalachian Plateau which include glaciated and montane sections. There are over 100 water drainage subbasins in six major basins: Delaware River, Susquehanna River, Ohio River, Lake Erie, Genesee River, and Potomac River. Due to the great diversity of habitats throughout Pennsylvania, it is likely additional species will be collected in the future.

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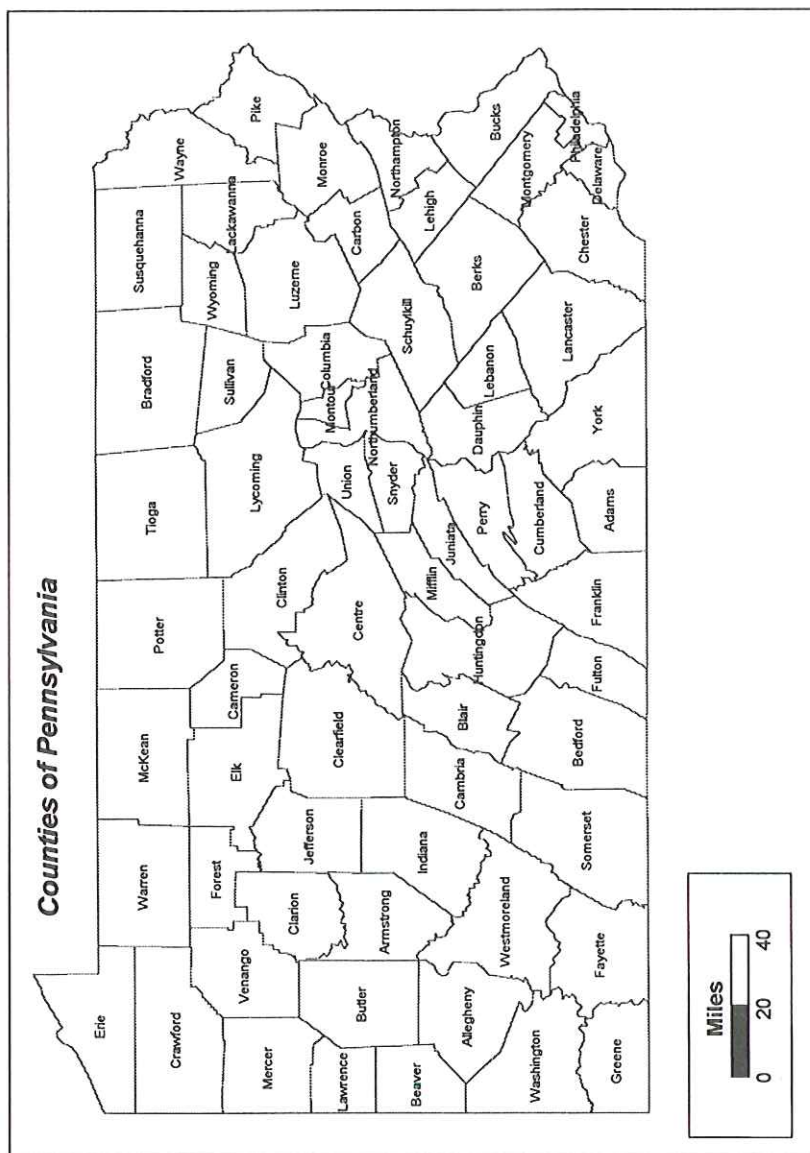


Figure 1. Map of Pennsylvania, showing the counties.

These seven physiographic provinces provide an abundant range of habitats. The mountain streams at higher elevations provided some of the most diverse populations. More than 90 species inhabit the Appalachian Mountain Section of the Ridge and Valley Province in central Pennsylvania. Three sections of the Appalachian Plateaus Province, all mountainous have the next most diverse fauna with approximately 60 species in each section- Allegheny Mountain, High Plateau, and Mountainous High Plateau. Close to 40 species were present at lower elevations in the Central Lowland Province, Pittsburgh Low Plateau, Glaciated Low Plateau, and the Piedmont Upland. Areas with rare species occurred in the north central counties and in the Pocono area of eastern Pennsylvania.

I began collecting stoneflies in the early 1960's in Erie county and continued with collections in northwest Pennsylvania (Masteller 1983, Dionisi and Masteller 1988). Additional records for Pennsylvania can be found in Bobak & Lawrence (1991), Grubbs (1996), Hitchcock (1974), Kondratieff & Nelson (1995), Kondratieff, et al. (1988) Ricker (1949), Ricker & Ross (1968), Ross (1971), Stanger & Baumann (1993), Stark (1983, 1986, 1989), Stark & Gaufin (1974, 1976), Stark & Szczytko (1988), Stark & Ray (1983), Stark, et al. (1988), Surdick (1985), and Szczytko & Stewart (1981).

The new state records and a current list of stoneflies of Pennsylvania follows.

NEW STATE RECORDS OF STONEFLIES IN PENNSYLVANIA

CAPNIIDAE

Allocapnia wrayi Ross – 3♂ CHESTER Co., East Branch White Clay Creek, 1 Mar 1980, C. F. Burgoon & C. E. Dunn. 2♂-1♀ GREENE Co., Ryerson Station St. Pk., 16 Feb. 1995, Mark A. Lethaby. 2♂ MIFFLIN Co., Station 10 U.S. Rt. 522 Atkinson Mills, 19 Feb 1956, J. F. Hanson.

CHLOROPERLIDAE

Alloperla caudata Frison – 1♂ BRADFORD Co., Susquehanna River, Towanda, 8 Jun 1994, E. C. Masteller. 7♂-6♀ PIKE Co. Dingmans Ferry, 29 May 1996, B. C. Kondratieff. 6♂-2♀ PIKE Co. Dingmans Falls, 29 May 1996, B. C. Kondratieff. 6♂-1♀ TIOGA Co. U.S. Rt. 15, South of Blossburg, 14 Jun 1991, R. M. Duffield.

LEUCTRIDAE

Leuctra maria Hanson – 1♂ PIKE Co., Kleinhans Creek, 28 May 1996, B. C. Kondratieff. WAYNE Co. Tanners Falls, trib. East Dyberry Creek, 30 May 1996, B. C. Kondratieff.

NEMOURIDAE

Soyedina carolinensis (Claassen) – CHESTER Co. East Branch White Clay Creek, 2♂ 27 Feb-17 Mar 1978, 13♂-4♀ 21 Feb-11 Apr 1980, 1♂ 27 Feb 1981, David H. Funk. 1♂ PHILADELPHIA Co. Roxborough, 26 Apr 1910, G. M. Greene.

PELTOPERLIDAE

Tallaperla elisa Stark – 1♂ POTTER Co., Lyman Run, 28 May 1988, R. M. Duffield.

PERLIDAE

Perlesta decipiens (Walsh) – 1♀ CAMERON Co., Sinnemahoning Creek, Driftwood, 27 Jul 1989, E. C. Masteller. 7♀ CRAWFORD Co., French Creek, 22 Jun 1994, E. C. Masteller. 4♂-2♀ LAWRENCE Co. Neshannock Creek, 3 Jul 1992, Jack Williams. 1♀ MERCER Co. Neshannock Creek, 30 Jul 1994, E. C. Masteller.

Perlesta placida (Hagen) – 9♂ CRAWFORD Co., French Creek, Saegertown & Venango, 29 Jun 1995. E. C. Masteller. 3♂-2♀ ERIE Co., Penn State Univ. Behrend Campus, 30 Jul 1973, 17 Jul 1977, E. C. Masteller & Karl Miller.

Neoperla catharae Stark & Baumann – 1♂ PERRY Co., Juniata River, 22 Jul 1993, Andrew Shiels. 1♂ WYOMING Co. Meshoppen Creek, 10 Sep 1989, E. C. Masteller.

Neoperla occipitalis (Pictet) – 1♀ BRADFORD Co., Susquehanna River, Riverside Campground, 18 Jul 1989, Mark Lethaby. 3♂-3♀ ERIE Co., West Branch, French Creek, 29 Jun 1995. E. C. Masteller.

Neoperla stewarti Stark & Baumann – 1♂ ERIE Co., West Branch, French Creek, 29 Jun 1995, E. C. Masteller. 3♀ JUNIATA Co., Juniata River, 30 Jun 1990, E. C. Masteller.

PERLODIDAE

Cultus decisus decisus (Walker) – 12♂-14♀ PIKE Co., Dingmans Ferry, 29 May 1996, B. C. Kondratieff. 1♂ WAYNE Co., Beach Lake, 27 May 1994, W. C. Wheeler.

Isoperla francesca Harper – 1♂ CAMERON Co., Sinnemahoning Creek, Driftwood, 27 Jul 1989, E. C. Masteller.

Isoperla frisoni Illies – 1♂ HUNTINGDON Co., Colerain St. Pk. 22 Jun 1952, S. W. Frost. 1♀ MONROE Co., Kistler Run, 9 Jun 1994, E. C. Masteller.

Isoperla lata Frison 1♀ POTTER Co., Kettle Creek, Oleona, 4 May 1996. E. C. Masteller.

Isoperla nana (Walsh) – Fourmile Creek, Penn State Univ. Behrend Campus, 18♂-20♀ 20 May-26 Jun 1980, 4♂-4♀ 19 May-4 Jun 1981, 14♂-19♀ 17 May-6 Jun 1983, 8♂-8♀ 21 May-6 Jun 1983, 1♂-1♀ 25-29 May 1990, E. C. Masteller. 1♂ LAWRENCE Co. Slippery Rock Creek, 30 Jun 1994, E. C. Masteller. 1♂ VENANGO Co. Mill Creek, trib. French Creek, 29 Jun 1994. E. C. Masteller.

Isoperla slossonae (Banks) – 1♂ CLINTON Co. Fishing Creek, Lamar National Fish Hatchery, 29 Apr 1995, S. R. Moulton.

Malirekus hastatus (Banks) – 1♂ CHESTER Co. East Branch White Clay Creek, 8 May 1980, D. H. Funk.

An annotated list of the Plecoptera of Pennsylvania. The range of adult collection dates is followed by the list of counties thus far recorded for each species.

Euholognatha CAPNIIDAE

Capniinae

Allocapnia aurora Ricker – 23 Jan - 19 Mar: Adams, Blair, Chester, Cumberland, Dauphin, Huntingdon, Perry, York

A. curiosa Frison – 19 Feb - 8 Apr: Blair, Cambria, Clinton, Somerset

A. frisoni Ross & Ricker – 15 Nov - 14 Feb: Erie, Westmoreland

A. granulata (Claassen) – 22 Nov - 20 Apr: Adams, Bedford, Berks, Bucks, Centre, Chester, Crawford, Cumberland, Dauphin, Erie, Forest, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lehigh, McKean, Mercer, Mifflin, Montgomery, Northumberland, Perry, Venango, Warren, York

A. harperi Kirchner – 29 Jan - 4 Apr: Westmoreland

A. maria Hanson – 4 Feb - 1 Apr: Adams, Carbon, Columbia, Cumberland, Dauphin, Fulton, Lycoming, McKean, Perry, Sullivan, Venango, Warren

A. nivicola (Fitch) – 29 Dec - 23 Apr: Blair, Cambria, Carbon, Chester, Clinton, Columbia, Crawford, Cumberland, Dauphin, Erie, Forest, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lycoming, McKean, Northampton, Potter, Somerset, Venango, Warren, Westmoreland

A. pechumani Ross & Ricker – 16 - 17 Feb: Erie, Warren

A. pygmaea (Burmeister) – 3 Feb - 14 Apr: Adams, Clinton, Columbia, Crawford, Cumberland, Dauphin, Erie, Forest, Franklin, Fulton, Huntingdon, Juniata, Lycoming, McKean, Mifflin, Northumberland, Perry, Pike, Potter, Somerset, Sullivan, Warren, York

A. recta (Claassen) – 1 Dec - 7 Mar: Berks, Chester, Columbia, Cumberland, Dauphin, Indiana, Lycoming, Mifflin, Montgomery, Schuylkill, Somerset, Venango, Warren, Westmoreland

A. rickeri Frison – 18 Nov - 13 Apr: Beaver, Bucks, Chester, CF, Crawford, Cumberland, Dauphin, Delaware, Fulton, Greene, Huntingdon, Juniata, Lancaster, Mifflin, Northumberland, Perry, Somerset, Union, Venango, Warren, Washington

A. simmonsii Kondratieff & Voshell – 8 - 24 Mar: Cumberland, Dauphin

A. vivipara (Claassen) – 3 Jan - 26 Apr: Armstrong, Bucks, Crawford, Erie, Greene, Venango

A. wrayi Ross – [NEW RECORD] 16 Feb - 1 Mar: Chester, Greene, Mifflin

A. zola Ricker – 27 Jan - 27 Feb: Carbon, Perry, Westmoreland

Paracapnia angulata Hanson – 20 Mar - 4 May: Beaver, Cameron, Carbon, Centre, Clearfield, Clinton, Cumberland, Elk, Erie, Forest, Huntingdon, McKean, Mifflin, Perry, Potter, Somerset, Susquehanna, Union, Warren, Westmoreland

LEUCTRIDAE

Leuctrinae

Leuctra alexanderi Hanson – 30 May - 19 Jul: Forest, Warren, Wayne, Westmoreland

L. carolinensis Claassen – 22 May - 14 Jun: Lackawana, Tioga

L. duplicata Claassen – 8 May - 15 Jul: Centre, Clearfield, Clinton, Erie, Huntingdon, Lackawana, Monroe, Pike, Potter, Somerset, Tioga, Warren, Westmoreland

L. ferruginea (Walker) – 21 May - 30 Oct: Cameron, Carbon, Centre, Chester, Clinton, Cumberland, Delaware, Elk, Erie, Fayette, Forest, Franklin, Lawrence, Luzerne, McKean, Pike, Potter, Snyder, Sullivan, Tioga, Venango, Warren, Wayne, Westmoreland

L. grandis Banks – 8 May - 13 Jul: Centre, Lackawana, Luzerne, Potter, Sullivan, Westmoreland

L. maria Hanson – [NEW RECORD] 28 - 30 May: Pike, Wayne

L. sibleyi Claassen – 2 May - 23 Jul: Cambria, Centre, Chester, Clinton, Columbia, Elk, Erie, Forest, Huntingdon, Lackawana, Luzerne, McKean, Mifflin, Pike, Potter, Sullivan, Warren, Wayne, Westmoreland

L. tenella Provancher – 8 May - 12 Aug: Carbon, Chester, Fayette, Huntingdon, McKean, Potter, Susquehanna, Warren, Wayne, Westmoreland

L. tenuis (Pictet) – 5 May - 15 Sep: Allegheny, Cameron, Carbon, Centre, Dauphin, Elk, Erie, Fayette, Forest, Huntingdon, Lawrence, Luzerne, McKean, Monroe, Sullivan, Susquehanna, Tioga, Venango, Warren, Westmoreland

L. truncata Claassen – 16 Jun - 3 Sep: Centre, Fayette, Potter, Warren

L. variabilis Hanson – 18 Aug - 10 Sep: Chester, Susquehanna, Wyoming

Paraleuctra sara (Claassen) – 27 Mar - 12 May: Cambria, Cameron, Carbon, Centre, Chester, Clinton, Columbia, Fayette, Huntingdon, Jefferson, Lawrence, Luzerne, Lycoming, McKean, Perry, Potter, Sullivan, Union, Warren, Westmoreland, Wyoming

Megaleuctrinae

Megaleuctra flinti Baumann – 20 Apr - 18 Jul: Cambria, Somerset, Westmoreland

NEMOURIDAE

Amphinemurinae

Amphinemura appalachia Baumann – 3 May: Carbon, Monroe

A. delosa (Ricker) – 14 Apr - 10 Sep: Centre, Crawford, Elk, Erie, Forest, Huntingdon, Lawrence, Luzerne, Potter, Tioga, Westmoreland, Wyoming

A. linda (Ricker) – 13 Jun - 6 Jul: Columbia, Erie

A. nigrutta (Provancher) – 21 Apr - 25 Sep: Berks, Blair, Cambria, Cameron, Centre, Chester, Clearfield, Clinton, Columbia, Crawford, Erie, Forest, Huntingdon, Juniata, Lawrence, Lycoming, McKean, Mifflin, Perry, Pike, Potter, Somerset, Sullivan, Warren, Wayne, Westmoreland

A. wui (Claassen) – 12 May - 30 Oct: Blair, Bradford, Cambria, Carbon, Centre, Chester, Clearfield, Clinton, Crawford, Cumberland, Elk, Fayette, Forest, Luzerne, McKean, Mifflin, Monroe, Philadelphia, Pike, Potter, Snyder, Somerset, Tioga, Warren, Westmoreland

Nemourinae

Ostrocerca albidipennis (Walker) – 4 May - 29 Jun: Cumberland, Dauphin, Lackawana, Pike, Potter, Somerset, Warren, Westmoreland

O. complexa (Claassen) – 23 May: Lackawana

O. prolongata (Claassen) – 20 May: Tioga

O. truncata (Claassen) – 26 Apr - 20 May: Bucks, Fayette, Lycoming, Potter, Westmoreland, York

Paranemoura perfecta (Walker) – 22 Mar - 8 May: Centre, Forest, Huntingdon, Lebanon, Sullivan, Union, Westmoreland

Prostoia completa (Walker) – 20 Feb - 8 Jun: Cameron, Chester, Clinton, Dauphin, Delaware, Elk, Erie, Lancaster, Lycoming, Montgomery, Potter, Tioga, Venango Warren, Wayne, Wyoming

P. similis (Hagen) – 9 Mar - 15 May: Cumberland, Delaware, Erie, Forest, Fulton, Huntingdon, Juniata, McKean, Perry, Potter, Snyder, Westmoreland

Soyedina carolinensis (Claassen) – [NEW RECORD] 24 Feb - 11 Apr: Chester, Philadelphia

S. merritti Baumann & Grubbs – 1 Apr - 11 May: Westmoreland

S. vallicularia (Wu) – 14 Mar - 13 May: Beaver, Blair, Centre, Chester, Erie, Huntingdon, McKean, Philadelphia, Sullivan, Venango, Warren, York

S. washingtoni (Claassen) – 28 Mar - 20 Jun: Centre, Erie, Lackawana, Lycoming, McKean, Philadelphia Warren

TAENIOPTERYGIDAE

Brachypteryginae

Bolotoperla rossi (Frison) – 3 Apr - 8 May: Dauphin, Sullivan, Union

Oemopteryx contorta (Needham & Claassen) – 28 Feb - 3 May: Cumberland, Mifflin, Union, Westmoreland

Strophopteryx fasciata (Burmeister) – 14 Feb - 8 May: Bedford, Berks, Bradford, Cameron, Centre, Chester, Clinton, Crawford, Cumberland, Dauphin, Erie, Fayette, Fulton, Huntingdon, Lancaster, Luzerne, Lycoming, McKean, Pike, Potter, Snyder, Sullivan, Susquehanna, Union, Venango, Warren, Westmoreland, Wyoming, York

Taenionema atlanticum Ricker & Ross – 24 Mar - 27 May: Cambria, Cameron, Centre, Clinton, Delaware, Lackawana, Luzerne, McKean, Potter, Sullivan, Susquehanna, Tioga, Union, Warren, Wayne, Wyoming

Taeniopteryginae

Taeniopteryx burksi Ricker & Ross – 14 Jan - 14 Apr: Adams, Beaver, Cameron, Carbon, Chester, Clinton, Cumberland, Dauphin, Elk, Forest, Franklin, Huntingdon, Lawrence, Mercer, Montgomery, Northumberland, Perry, Pike, Potter, Somerset, Venango, Warren, Washington, Wyoming, York

T. maura (Pictet) – 27 Jan - 15 Apr: Bradford, Carbon, Centre, Chester, Clinton, Cumberland, Dauphin, Elk, Fayette, Forest, Huntingdon, Lycoming, Mifflin, Perry, Philadelphia, Potter, Susquehanna, Union, Washington, Westmoreland, Wyoming

T. metequi Ricker & Ross – Jan - 14 Mar 29: Bedford, Fulton, Snyder, Washington

T. nivalis (Fitch) – 28 Jan - 20 Apr: Bucks, Carbon, Chester, Crawford, Cumberland, Dauphin, Delaware, Erie, Forest, Franklin, Huntingdon, Lancaster, Mifflin, Northumberland, Snyder, Susquehanna, Tioga, Warren, Wyoming

T. parvula Banks – 10 Feb - 7 Mar: Cameron, Carbon, Cumberland, Dauphin, Luzerne, McKean, Mifflin, Perry, Tioga, Wyoming

T. ugola Ricker & Ross – 14 Feb - 7 Apr: Cambria, Cumberland

Systellognatha
CHLOROPERLIDAE

Chloroperlinae

Alloperla aracomia Harper & Kirchner – 2 Jun - 11 Jul: Westmoreland

A. atlantica Baumann – 20 May - 4 Jul: Chester, Cumberland, Huntingdon, Monroe, Sullivan

A. caudata Frison – [NEW RECORD] 29 May - 14 Jun: Bradford, Pike, Tioga

A. chloris Frison – 18 May - 10 Jul: Crawford, Erie, Sullivan, Warren

A. concolor Ricker – 26 May: Luzerne, Monroe

A. imbecilla (Say) – 23 May - 5 Jul: Beaver, Cameron, Forest, Northampton, Wayne, Westmoreland

A. usa Ricker – 8 Jun - 23 Jul: Cambria, Warren, Westmoreland

A. vostoki Ricker – 18 Jun: Erie

Haploperla brevis (Banks) – 6 May - 25 Jul: Allegheny, Armstrong, Beaver, Butler, Centre, Chester, Clearfield, Crawford, Cumberland, Dauphin, Erie, Forest, Huntingdon, Lancaster, Luzerne, McKean, Monroe, Montgomery, Northampton, Warren, Westmoreland

Rasvena terna (Frison) – 3 Jun - 19 Jul: Lycoming

Suwallia marginata (Banks) – 29 May - 5 Aug: Erie, Jefferson, Luzerne, Lycoming, Somerset, Tioga, Warren, Westmoreland

Sweltsa lateralis (Banks) – 11 May - 22 Jul: Cambria, Cameron, Centre, Clearfield, Clinton, Elk, Erie, Fayette, Forest, Fulton, Huntingdon, Lackawana, Lebanon, Luzerne, McKean, Mifflin, Pike, Sullivan, Tioga, Union, Venango, Warren, Westmoreland

S. naica (Provancher) – 10 May - 26 Jun: Blair, Monroe, Potter, Warren, Westmoreland

S. onkos (Ricker) – 8 May - 10 Aug: Beaver, Cameron, Centre, Chester, Erie, Fayette, Huntingdon, Lackawana, Lycoming, Luzerne, McKean, Mifflin, Monroe, Northampton, Pike, Potter, Tioga, Warren, Wayne, Westmoreland, Wyoming

Paraperlinae

Utaperla gaspesiana Harper & Roy – 9 - 20 May: Clinton, Westmoreland

PELTOPERLIDAE

Peltoperlinae

Peltoperla arcuata Needham – 16 May - 24 Aug: Centre, Chester, Clinton, Crawford, Erie, Fayette, Forest, Lawrence, Lehigh, Lycoming, McKean, Monroe, Northampton, Schuylkill, Union, Venango, Warren, Westmoreland

Tallaperla anna (Needham & Smith) – 3 Jun: Luzerne

T. elisa Stark – [NEW RECORD] 28 May: Potter

T. maria (Needham & Smith) – 12 May - 15 Jun: Centre, Chester, Lackawana, Mifflin, Monroe, Pike, Potter, Sullivan, Tioga, Union, Warren, Westmoreland

PERLIDAE

Acroneuriinae

Acroneuriini

Acroneuria abnormis (Newman) - 1 Jun - 10 Aug: Allegheny, Armstrong, Cameron, Carbon, Centre, Chester, Clearfield, Clinton, Cumberland, Dauphin, Fayette, Franklin, Huntingdon, Indiana, Juniata, Lawrence, Luzerne, Lycoming, McKean, Mercer, Monroe, Perry, Pike, Potter, Susquehanna, Tioga, Venango, Warren, Wayne, Westmoreland, Wyoming, York

A. arenosa (Pictet) - 3 Jun - 27 Jul: Allegheny, Centre, Cumberland, Dauphin, Montgomery, Perry, Philadelphia, Washington, York

A. arida (Hagen) - 6 - 11 Jun: Chester, Dauphin, Delaware, Erie, Lancaster, Philadelphia

A. carolinensis (Banks) - 28 May - 10 Jul: Armstrong, Centre, Clinton, Crawford, Cumberland, Erie, Fayette, Lawrence, Lycoming, Monroe, Pike, Potter, Snyder, Susquehanna, Tioga, Union, Warren, Westmoreland

A. evoluta Klapalek - 30 May - 6 Jul: Allegheny, Beaver, Greene, Lancaster, Lawrence, Washington

A. filicis Frison - 26 - 30 Jun: Dauphin, Juniata

A. frisoni Stark & Brown - 16 Jun - 22 Jul: Allegheny, Erie, Greene, Lawrence

A. lycorias (Newman) - 1 - 9 Jun: Allegheny, Chester, Clearfield, Monroe, Snyder, Sullivan, Tioga, Washington, Wayne, Wyoming

Attaneuria ruralis (Hagen) - 1 - 8 Jul: Chester, Cumberland, Dauphin, Fayette, Lancaster, Lebanon, Potter, Tioga, Wyoming

Eccopectura xanthenes (Newman) - 2 Jun - 31 Jul: Centre, Chester, Cumberland, Montgomery, Northumberland, York

Hansonoperla appalachia Nelson - 23 Jul: Cambria, Cameron, Monroe, Tioga

Perlesta decipiens (Walsh) - [NEW RECORD] 22 Jun - 30 Jul: Cameron, Crawford, Lawrence, Mercer

P. nitida Banks - 1 May - 30 Jun: Lawrence, Mercer, Philadelphia

P. placida (Hagen) - [NEW RECORD] 17 - 30 Jul: Crawford, Erie

Perlina drymo (Newman) - 12 May - 9 Aug: Cumberland, Northampton

P. ephyre (Newman) - 6 Jun: Columbia, Cumberland

Perlinae

Neoperlini

Neoperla catharae Stark & Baumann - [NEW RECORD] 22 Jul - 10 Sep: Perry, Wyoming

N. clymene (Newman) - 23 - 30 Jun: Centre, Clinton, Dauphin, Erie, Fayette, Huntingdon, York

N. occipitalis (Pictet) - [NEW RECORD] 29 Jun - 18 Jul: Bradford, Erie

N. stewarti Stark & Baumann - [NEW RECORD] 29 - 30 Jun: Erie, Juniata

Perlina

Agnetina annulipes (Hagen) - 4 Jun - 16 Jul: Dauphin, Juniata, Pike

A. capitata (Pictet) - 23 May - 30 Jul: Blair, Cameron, Clinton, Cumberland, Dauphin, Erie, Huntingdon, Sullivan, Tioga, Warren, Wayne, Wyoming

A. flavescens (Walsh) - 31 May - 27 Jul: Dauphin, Huntingdon, Lehigh

Paragnetina immarginata (Say) - 20 Jul - 28 Oct: Centre, Columbia,

Fayette, Huntingdon, Indiana, Luzerne, Lycoming, Monroe, Potter, Sullivan, Tioga, Warren, Wyoming

***P. media* (Walker)** – 19 May - 5 Jul: Bedford, Cameron, Carbon, Centre, Chester, Clinton, Crawford, Fayette, Huntingdon, Lancaster, Lycoming, Mercer, Monroe, Potter, Somerset, Sullivan, Tioga, Union, Venango, Wayne

PERLODIDAE

Isoperlinae

***Clioperla clio* (Newman)** – 15 Apr - 8 May: Armstrong, Beaver, Chester, Crawford, Huntingdon, Westmoreland

***Isoperla bilineata* (Say)** – 8 - 27 Jun: Allegheny, Centre, Chester, Huntingdon, Monroe, Potter

***I. dicala* Frison** – 23 May - 10 Jul: Bedford, Blair, Clinton, Cumberland, Dauphin, Erie, Huntingdon, Pike, Potter, Sullivan, Tioga

***I. francesca* Harper** – [NEW RECORD] 27 Jul: Cameron

***I. frisoni* Illies** – [NEW RECORD] 9 - 22 Jun: Huntingdon, Monroe

***I. holochlora* (Klapalek)** – 28 May - 31 Aug: Centre, Chester, Cumberland, Fayette, Monroe, Pike, Somerset, Tioga, Union, Warren, Westmoreland

***I. lata* Frison** – [NEW RECORD] 4 May: Potter

***I. marlynia* (Needham & Claassen)** – 4 - 6 Jun: Huntingdon, Sullivan

***I. montana* (Banks)** – 17 Apr - 8 Jul: Cameron, Centre, Chester, Clinton, Crawford, Fayette, Huntingdon, Lycoming, Luzerne, Mifflin, Monroe, Pike, Potter, Sullivan, Union, Warren

***I. namata* Frison** – 1 - 10 May: Centre, Potter

***I. nana* (Walsh)** – [NEW RECORD] 5 May - 30 Jun: Erie, Lawrence, Venango

***I. orata* Frison** – 8 May - 14 Jun: Armstrong, Chester, Huntingdon, Luzerne, Monroe, Sullivan

***I. richardsoni* Frison** – 7- 8 May: Centre, Dauphin

***I. signata* (Banks)** – 4 Jun: Centre, Fayette, Lancaster, Sullivan

***I. similis* (Hagen)** – 1 May - 6 Jun: Centre, Chester, Fayette, Monroe, Pike, Potter, Somerset, Venango, Westmoreland

***I. slossonae* (Banks)** – [NEW RECORD] 29 Apr: Clinton

***I. transmarina* (Newman)** – 16 May - 3 Jun: Erie, Luzerne

I. sp. j – 5 Jul: Forest

I. sp. m – 27 May - 4 Jun: Cameron, Clinton

I. sp. n – 29 Apr: Clinton

Perlodinae

Diploperlinae

***Cultus decisus decisus* (Walker)** – [NEW RECORD] 23 Apr - 1 Jun: Allegheny, Chester, Fayette, Pike, Potter, Venango, Wayne

***C. verticalis* (Banks)** – 18 Mar - 23 Jun: Columbia, Lycoming, Venango, Warren, Westmoreland

***Diploperla duplicata* (Banks)** – 18 May - 2 Jun: Armstrong, Chester, Cumberland, Dauphin, Lycoming, Pike

***D. robusta* Stark & Gaufin** – 11 May - 25 Jun: Cambria, Erie, Lancaster

***Remenus bilobatus* (Needham & Claassen)** – 17 May - 19 Jul: Adams, Cambria, Centre, Chester, Fayette, Warren, Westmoreland

Perlodini

Helopicus subvarians (Banks) – 28 Apr–19 May: Carbon, Dauphin, Huntingdon, Lycoming, Union

Isogenoides hansonii (Ricker) – 15 Apr - 10 May: Forest, Huntingdon, McKean, Monroe, Potter, Somerset, Warren

Malirekus hastatus (Banks) – [NEW RECORD] 8 May: Chester

M. iroquois Stark & Szczytko – 20 May - 16 Jun: Blair, Dauphin, Elk, Erie, Fayette, Pike, Warren, Wayne, Westmoreland

Yugus bulbosus (Frison) – 14 May - 11 Jun: Potter, Somerset, Westmoreland

PTERONARCYIDAE

Pteronarcyinae

Pteronarcyini

Pteronarcys biloba Newman – 23 May - 6 Jun: Centre, Clinton, Huntingdon, Luzerne, Lycoming, McKean, Monroe, Pike, Potter, Tioga, Union, Warren, Westmoreland

P. comstocki Smith – nymphs only: Clinton, Huntingdon, Pike

P. dorsata (Say) – 12 Apr - 19 May: Allegheny, Crawford, Dauphin, Huntingdon, Philadelphia, Union, Wayne

P. pictetii Hagen – 20 May: Huntingdon, Philadelphia

P. proteus Newman – 6 May - 20 Jun: Berks, Centre, Clinton, Franklin, Lycoming, Monroe, Potter, Somerset, Sullivan, Susquehanna, Tioga, Warren, Westmoreland

Several species of *Isoperla* that have only a letter designation will be described by Stanley Szczytko. Baumann and Grubbs (1996) have recently described *Soyedina merritti* from Pennsylvania. Baumann (1996) described *Amphinemura appalachia* with the type locality in Pennsylvania.

Five species are being deleted from the Pennsylvania list. These species have been removed because they were misidentified or their known occurrence was well outside the range of Pennsylvania. These are *Paracapnia opis* (Newman) reported in Frison (1942), *Sweltsa mediana* (Banks) reported in Surdick and Kim (1976), *Amphinemura varshava* (Ricker) reported in Surdick and Kim (1976), *Isoperla mohri* Frison reported in Surdick and Kim (1976), *Pteronarcys scotti* Ricker reported in Robertson (1980) as *Allonarcys scotti*.

An additional 39 species that have been reported from the neighboring states of New York, Ohio, Maryland, West Virginia, and Ontario, Canada are listed as potentially occurring in Pennsylvania (Appendix 1).

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Kondratieff, G. A. Hoover and S. R. Moulton. The following institutions provided material; The Academy of Natural Sciences in Philadelphia, Stroud Water Research Center, National Museum of Natural History Washington D. C., Bureau of Plant Industry, Harrisburg, PA, Monte Bean Museum, Provo, UT, Frost Entomological Museum, University Park, PA and the Royal Ontario Museum, Toronto, Canada. This project would not have been possible without funding from the Wild Resource Conservation Fund which I gratefully acknowledge.

Voucher specimens will be deposited at the Smithsonian Institution, National Museum of Natural History, Washington, DC, and the C. P. Gillette Museum of Arthropod Diversity, Colorado State University, Fort Collins, CO.

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Appendix 1

The following species of stoneflies are not on the Pennsylvania list. Because of their proximity of records and types of habitat, they may be found in Pennsylvania. I have included them so that future workers will be alert to their possible presence in the state.

CAPNIIDAE

Allocapnia forbesi Frison (OH, WV); *Allocapnia frumi* Kirchner (WV); *Allocapnia illinoensis* Frison (NY, OH, ON); *Allocapnia indianae* Ricker (NY, OH); *Allocapnia loshada* Ricker (WV); *Allocapnia minima* (Newport) (NY, ON); *Allocapnia mystica* Frison (OH, WV); *Allocapnia ohioensis* Ross & Ricker (NY, OH, WV); *Allocapnia smithi* Ross & Ricker (OH); *Capnia vernalis* (Newport) (OH, ON); *Capnura manitoba* Claassen (ON)

LEUCTRIDAE

Leuctra biloba Claassen (ON); *Leuctra rickeri* James (OH, WV); *Leuctra triloba* Claassen (NY); *Zealeuctra fraxina* Ricker & Ross (OH, WV)

NEMOURIDAE

Nemoura trispinosa Claassen (NY, OH, ON); *Shipsa rotunda* (Claassen) (MD, ON)

TAENIOPTERYGIDAE

Oemopteryx glacialis (Newport) (NY, ON); *Strophopteryx appalachia* Ricker & Ross (WV); *Taeniopteryx lonicera* Ricker & Ross (MD);

CHLOROPERLIDAE

Alloperla banksi Frison (NY, ON); *Alloperla ideii* (Ricker) (OH); *Alloperla nanina* Banks (NY); *Alloperla voinae* Ricker (NY); *Haploperla orpha* (Frison) (ON); *Sweltsa pocahontas* Kirchner & Kondratieff (WV)

PELTOPERLIDAE

Peltoperla tarteri Stark & Kondratieff (WV)

PERLIDAE

Acroneuria internata (Walker) (WV); *Perlesta adena* Stark (OH) (in PA but not confirmed); *Perlesta cinctipes* (Banks) (OH); *Neoperla gaufini* Stark & Baumann (OH); *Neoperla mainensis* Banks (OH, ON); *Claassenia sabulosa* (Banks) (ON)

PERLODIDAE

Isogenoides frontalis (Newman) (NY); *Isoperla burksi* Frison (OH, WV); *Isoperla cotta* Ricker (ON, WV); *Isoperla decepta* Frison (OH, ON); *Isoperla gibbsae* Harper (NY, WV); *Diploperla kanawholensis* Kirchner & Kondratieff (WV)

THE TRICHOPTERA (CADDISFLIES) OF PENNSYLVANIA: AN ANNOTATED CHECKLIST*

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ABSTRACT

A total of 312 species of caddisflies (Trichoptera) in 20 families and 60 genera were found to occur in Pennsylvania. These records were the results of collections from light trapping adults during 1989-91, reviewing major collections and extensive collections in the Erie area over the past twenty years. Ninety-two species are new records for Pennsylvania. This paper is a synopsis of the report entitled "Trichoptera Biodiversity of Pennsylvania" submitted to the Pennsylvania Fish Commission and the Wild Resource Conservation Fund that contained county distribution maps for each species along with annotated collection data. [J PA Acad Sci 66(2):68-78, 1992]

INTRODUCTION

The caddisflies of Pennsylvania have been studied by numerous individuals since the 1800's beginning with Thomas Say (1828) and followed by Hyland (1948), Sykora et al. (1976), Sykora (1989), Weaver and Sykora (1979), Weaver (1988), and Swegman et al. (1981). The later studies provided comprehensive reports at specific sites or with specific families; the Rhyacophilidae and Lepidostomatidae being collected extensively by Sykora and Weaver. Swegman et al. (1981) collected 85 species from Linesville Creek from 1972-77 at the Pymatuning Laboratory of Ecology in Crawford County, University of Pittsburgh, and Seward and Swegman (unpublished) at the Bear Run Nature Reserve in Fayette County during 1976-77 collecting 47 species. Sykora (1989) completed a survey of Trichoptera of U.S. Army Corps of Engineers supervised reservoir outflows in western Pennsylvania.

Other monographs on caddisflies with numerous collections from Pennsylvania provided records; Brachycentridae (Flint, 1984), Uenoidae (Vineyard, personal comm.), Odonotoceridae (Parker and Wiggins, 1985), Molannidae (Fuller, personal comm.), the genus *Cheumatopsyche* (Gordon, 1974), the genus *Ceraclea* (Morse, 1975), the genus *Pycnopsyche* (Wojtowicz, 1982), and the genus *Rhyacophila* (Weaver and Sykora, 1979).

Since one of the authors, E.C. Masteller, had extensive collections from northwest Pennsylvania taken over the past twenty years, it was decided to bring together this data with those studies referred to above from Pennsylvania. Collections from the different physiographic provinces of Pennsylvania were then completed to provide a comprehensive list of caddisflies from Pennsylvania with their locations of occurrence throughout the Commonwealth.

Regional North American records of species numbers in particular states or provinces are: New York - 170 (Betten, 1934), New Hampshire - 251 (Morse and Bickle, 1953 and 1957), Massachusetts - 181 (Neves, 1979), Maine - at least 220 (Bickle and Morse, 1964 and 1966), Virginia - 239 (Parker and Voshell, 1981), Alabama - 342 (Harris et al., 1991), Arkansas - 153 (Unziker et al., 1970), Illinois - 183 (Ross, 1944), Michigan - 181 (Leonard and Leonard, 1949), Wisconsin - 208 (Longridge and Hilsenhoff, 1973), Kentucky - 181 (Resh, 1975), and Tennessee - 298 (Etnier and Schuster, 1979).

METHODS

A grant was obtained from the Wild Resource Conservation Fund to support this study. A literature search was conducted to locate references for Pennsylvania species of caddisflies. Then the collection at the Frost Museum of The Pennsylvania State University was checked for records and all unidentified material curated. Collections were reviewed at the Royal Ontario Museum in Toronto, Canada, The Pennsylvania Department of Agriculture collection in Harrisburg, PA, Stroud Water Research Center, Avondale,

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PA, The Philadelphia Academy of Natural Science and the National Museum of Natural History, Smithsonian Institution, Washington, D.C. as well as the personal collection of John Weaver at the University of New Hampshire. This study involved over 130 black light trap collections from 14 of the 15 physiographic provinces in Pennsylvania during 1990-91.

RESULTS

In this paper, the species list for Pennsylvania is presented (Table 1) and new records in the literature indicated by "*". There are 57 species in Pennsylvania that are considered uncommon which had five or fewer occurrences. Seven species indicated by "h" (Table 1) are considered historic records, which have no occurrence in the past forty years. Collection for ninety-two species not previously recorded in the literature along with eleven historic records are presented in Table II. County maps with species occurrences were developed in the original report (Masteller and Flint, 1992) to the sponsor. Figure 1 indicates the collection sites with physiographic provinces of Pennsylvania (Rizza and Hughes, 1982). Figure 2 indicates the counties in Pennsylvania where collections were made by the senior author.

Records are for adults except when noted otherwise. Voucher specimens were preserved in 70% ethyl alcohol or pinned as adults and placed at the National Museum of Natural History, Smithsonian Institution, The Pennsylvania Department of Agriculture, Bureau of Plant Industry, and the Academy of Natural Sciences of Philadelphia.

TABLE 1. Trichoptera list of species occurring in Pennsylvania.

PENNSYLVANIA TRICHOPTERA

BERAEIDAE

Beraea fontana Wiggins

* *B. nigrilla* Banks

BRACHYCENTRIDAE

Adicropheps hitchcocki Flint

Brachycentrus appalachia Flint

h *B. incanus* Hagen

h *B. lateralis* (Say)

h *B. nigrosoma* (Banks)

h *B. numerosus* (Say)

B. solomoni Flint

Micrasema charonis Banks

* *M. rusticum* McLachlan

* *M. wataga* Ross

CALAMOCERATIDAE

Heteroplectron americanum (Walker)

GLOSSOSOMATIDAE

Agapetus minutus Sibley

A. pinatus Ross

* *A. rossi* Denning

* *A. tomus* Ross

Glossosoma intermedium (Klapalek)

G. nigrior Banks

Protoptila maculata (Hagen)

P. palina Ross

TABLE 1. continued

GOERIDAE

Goera calcarata Banks

* *G. fuscata* Banks

G. stylata Ross

Goerita betteni Ross

HELICOPSYCHIDAE

Helicopsyche borealis (Hagen)

HYDROPSYCHIDAE

Cheumatopsyche aphanota Ross

C. campyla Ross

* *C. ela* Denning

* *C. geora* Denning

C. gracilis Banks

* *C. gyra* Ross

C. halima Denning

* *C. harwoodi enigma* Ross & Gordon

C. harwoodi harwoodi Denning

* *C. helma* Ross

* *C. miniscula* Banks

C. oxa Ross

C. pasella Ross

C. pettiti Banks

C. pinaca Ross

C. sordida Hagen

C. speciosa Banks

C. vannotei Gordon

* *C. wrighti* Ross

* *Dipletrona metaqui* Ross

D. modesta Banks

Homoplectra monticola Flint

Hydropsyche alhedra Ross

H. alternans (Walker)

H. betteni Ross

H. bifida Banks

H. bronta Ross

* *H. brunneipennis* Flint & Butler

* *H. cheilonis* Ross

H. confusa (Walker)

H. dicantha Ross

* *H. hageni* Banks

* *H. impula* Denning

* *H. leonardi* Ross

H. morosa (Hagen)

* *H. opthalmica* Flint

H. orris Ross

H. phalerata Hagen

* *H. placoda* Ross

H. scalaris Hagen

H. slossonae Banks

H. sparna Ross

* *H. valanis* Ross

H. ventura Ross

* *H. venularis* Banks

* *H. walkeri* Betten & Mosely

Macrostemum zebratum (Hagen)

Parapsyche apicalis (Banks)

Potamyia flava (Hagen)

HYDROPTILIDAE

Agraylea multipunctata Curtis

Dibusa angata Ross

* *Hydroptila ajax* Ross

* *H. alabama* Harris & Kelley

* *H. amoena* Ross

* *H. ampoda* Ross

* *H. angusta* Ross

* *H. armata* Ross

* *H. callia* Denning

TABLE I. *continued*

* <i>H. chattanooga</i> Frazer & Harris
<i>H. consimilis</i> Morton
* <i>H. delineata</i> Morton
* <i>H. dentata</i> Ross
* <i>H. fiskei</i> Blickle & Morse
* <i>H. grandiosa</i> Ross
* <i>H. gunda</i> Milne
<i>H. hamata</i> Morton
<i>H. jackmanni</i> Blickle
* <i>H. metoeca</i> Blickle & Morse
<i>H. perdita</i> Morton
* <i>H. quinola</i> Ross
* <i>H. remita</i> Blickle & Morse
<i>H. rono</i> Ross
<i>H. spatulata</i> Morton
<i>H. spinata</i> Blickle & Morse
<i>H. strepha</i> Ross
* <i>H. talladega</i> Harris
* <i>H. waskesia</i> Ross
<i>H. waubesiana</i> Betten
<i>Ithytrichia clavata</i> Morton
* <i>Leucotrichia pictipes</i> (Banks)
h <i>Mayatrichia ayama</i> Mosely
<i>Neotrichia okopa</i> Ross
<i>Ochrotrichia confusa</i> (Morton)
* <i>O. denningi</i> Blickle & Morse
* <i>O. graysoni</i> Parker & Voshell
* <i>O. shawnee</i> (Ross)
<i>O. spinosa</i> (Ross)
* <i>O. tarsalis</i> (Hagen)
<i>O. wojcickyi</i> Blickle
<i>Orthotrichia aegerfasciella</i> (Chambers)
<i>O. cristata</i> Morton
* <i>Oxyethira aeola</i> Ross
* <i>O. dualis</i> Morton
<i>O. forcipata</i> Mosely
<i>O. grisea</i> Betten
* <i>O. michiganensis</i> Mosely
* <i>O. pallida</i> (Banks)
* <i>O. rivicola</i> Blickle & Morse
* <i>O. sida</i> Blickle & Morse
* <i>O. zeronia</i> Ross
<i>Palaeagapetus celsus</i> (Ross)
<i>Stactobiella delira</i> (Ross)
<i>S. martynovi</i> Blickle & Denning
* <i>S. palmata</i> (Ross)
LEPIDOSTOMATIDAE
<i>Lepidostoma americanum</i> (Banks)
<i>L. bryanti</i> (Banks)
<i>L. carrolli</i> Flint
<i>L. costale</i> (Banks)
<i>L. frosti</i> (Milne)
<i>L. griseum</i> (Banks)
<i>L. latipenne</i> (Banks)
<i>L. lydia</i> Ross
<i>L. ontario</i> Ross
* <i>L. pictile</i> (Banks)
<i>L. sackeni</i> (Banks)
* <i>L. serratum</i> Flint & Wiggins
<i>L. sommermanae</i> Ross
<i>L. togatum</i> (Hagen)
<i>L. vernale</i> (Banks)
<i>Theliopsyche grisea</i> (Hagen)
LEPTOCERIDAE
* <i>Ceraclea alabamae</i> Harris
<i>C. alagma</i> (Ross)
<i>C. albosticta</i> (Hagen)

TABLE I. *continued*

<i>C. ancyla</i> (Vorhies)
<i>C. cancellata</i> (Betten)
<i>C. diluta</i> (Hagen)
<i>C. flava</i> (Banks)
<i>C. maculata</i> (Banks)
h* <i>C. mentiea</i> (Walker)
* <i>C. punctata</i> (Banks)
<i>C. resurgens</i> (Walker)
<i>C. ruthae</i> (Flint)
<i>C. slossonae</i> (Banks)
<i>C. tarsipunctata</i> (Vorhies)
<i>C. transversa</i> (Hagen)
<i>C. wetzeli</i> (Ross)
<i>Leptocerus americanus</i> (Banks)
<i>Mystacides interjecta</i> Banks
<i>M. sepulchralis</i> (Walker)
<i>Nectopsyche albida</i> (Walker)
<i>N. candida</i> (Hagen)
<i>N. exquisita</i> (Walker)
<i>Oecetis avara</i> (Banks)
<i>O. cinerascens</i> (Hagen)
<i>O. ditissa</i> Ross
h* <i>O. eddlestoni</i> (Ross)
<i>O. immobilis</i> (Hagen)
<i>O. inconspicua</i> (Walker)
<i>O. nocturna</i> Ross
<i>O. osteni</i> Milne
<i>O. persimilis</i> (Walker)
<i>O. scala</i> Milne
h <i>Setodes guttatus</i> (Banks)
<i>S. incertus</i> (Walker)
<i>S. oligius</i> (Ross)
<i>S. oxapius</i> (Ross)
h* <i>Triaenodes abus</i> Milne
<i>T. baris</i> Ross
<i>T. dipsius</i> Ross
<i>T. flavescens</i> Banks
* <i>T. ignitus</i> (Walker)
<i>T. injustus</i> (Hagen)
* <i>T. marginatus</i> Sibley
<i>T. nox</i> Ross
* <i>T. pernus</i> Ross
<i>T. tardus</i> Milne
LIMNEPHILIDAE
* <i>Anabolia bimaculata</i> (Walker)
<i>A. consocia</i> (Walker)
<i>Apatania blacki</i> Sykora & Weaver
* <i>A. incerta</i> (Banks)
* <i>A. nigra</i> (Walker)
<i>Frenesia difficilis</i> (Walker)
<i>F. missa</i> (Milne)
<i>Glyphopsyche irrorata</i> (Fabricius)
<i>Hesperophylax designatus</i> (Walker)
<i>Hydatophylax argus</i> (Harris)
<i>Ironoquia lyrata</i> (Ross)
<i>I. parvula</i> (Banks)
<i>I. punctatissima</i> (Walker)
<i>Limnephilus indivisus</i> Walker
<i>L. moestus</i> Banks
<i>L. ornatus</i> Banks
<i>L. rhombicus</i> (Linnaeus)
<i>L. sericeus</i> (Say)
<i>L. submonilifer</i> Walker
<i>Nemotaulius hostilis</i> (Hagen)
<i>Platycentropus radiatus</i> (Say)
* <i>Pseudostenophylax sparsus</i> (Banks)
<i>P. uniformis</i> (Betten)

TABLE I. continued

<i>Psychoglypha subborealis</i> (Banks)
<i>Pycnopsyche circularis</i> (Provancher)
<i>P. conspersa</i> Banks
<i>P. divergens</i> (Walker)
<i>P. gentilis</i> (McLachlan)
<i>P. guttifer</i> (Walker)
<i>P. lepida</i> (Hagen)
<i>P. luculenta</i> (Betten)
<i>P. scabripennis</i> (Rambur)
<i>P. subfasciata</i> (Say)
MOLANNIDAE
<i>Molanna blenda</i> Sibley
h* <i>M. flavicornis</i> Banks
<i>M. tryphena</i> Betten
* <i>M. ulmerina</i> Navas
<i>M. uniophila</i> Vorhies
ODONTOCERIDAE
<i>Psilotreta frontalis</i> Banks
<i>P. indecisa</i> (Walker)
<i>P. labida</i> Ross
<i>P. rufa</i> (Hagen)
PHILOPOTAMIDAE
<i>Chimarra aterrima</i> Hagen
<i>C. obscura</i> (Walker)
<i>C. socia</i> Hagen
<i>Dolophilodes distinctus</i> (Walker)
<i>Wormaldia moesta</i> (Banks)
<i>W. shawnee</i> (Ross)
PHRYGANEIDAE
<i>Agrypnia vestita</i> (Walker)
<i>Banksiola crotchii</i> Banks
<i>B. dossuaria</i> (Say)
* <i>Oligostomis ocelligera</i> (Walker)
h* <i>O. pardalis</i> (Walker)
<i>Phryganea cinerea</i> Walker
<i>P. sayi</i> Milne
<i>Ptilostomis ocellifera</i> (Walker)
<i>P. postica</i> (Walker)
<i>P. semifasciata</i> (Say)
POLYCENTROPODIDAE
<i>Cyrnellus fraternus</i> (Banks)
* <i>Neureclipsis bimaculata</i> (Linnaeus)
<i>N. crepuscularis</i> (Walker)
<i>Nyctiophylax affinis</i> (Banks)
* <i>N. banksi</i> Morse
* <i>N. celta</i> Denning
* <i>N. denningi</i> Morse
<i>N. moestus</i> Banks
* <i>N. nephophilus</i> Flint
* <i>N. unicus</i> Ross
<i>Phylocentropus lucidus</i> (Hagen)
<i>P. placidus</i> (Banks)
* <i>Polycentropus barri</i> Ross & Yamamoto
<i>P. blicklei</i> Ross & Yamamoto
<i>P. carolinensis</i> Banks
<i>P. centralis</i> Banks
* <i>P. chenoides</i> Ross & Yamamoto
<i>P. cinereus</i> Hagen
<i>P. clinei</i> (Milne)
* <i>P. colei</i> Ross
<i>P. confusus</i> Hagen
<i>P. crassicornis</i> Walker
<i>P. elarus</i> (Ross)
<i>P. flavus</i> (Banks)
<i>P. interruptus</i> (Banks)
<i>P. maculatus</i> Banks
<i>P. nascotius</i> Ross

TABLE I. continued

<i>P. pentus</i> Ross
<i>P. pixi</i> Ross
<i>P. remotus</i> Banks
* <i>P. rickeri</i> Yamamoto
PSYCHOMYIIDAE
<i>Lype diversa</i> (Banks)
<i>Psychomyia flavida</i> Hagen
* <i>P. nomada</i> (Ross)
RHYACOPHILIDAE
<i>Rhyacophila atrata</i> Banks
<i>R. banksi</i> Ross
* <i>R. brunnea</i> Banks
<i>R. carolina</i> Banks
<i>R. carpenteri</i> Milne
<i>R. formosa</i> Banks
<i>R. fuscula</i> (Walker)
<i>R. glaberrima</i> Ulmer
<i>R. invaria</i> (Walker)
<i>R. ledra</i> Ross
<i>R. lobifera</i> Betten
* <i>R. mainensis</i> Banks
<i>R. manistee</i> Ross
<i>R. minora</i> Banks
<i>R. nigrata</i> Banks
<i>R. otica</i> Etnier & Way
<i>R. torva</i> Hagen
<i>R. vibox</i> Milne
SERICOSTOMATIDAE
* <i>Agarodes grisea</i> Banks
UENOIDAE
<i>Neophylax aniqua</i> Ross
<i>N. concinnus</i> McLachlan
<i>N. consimilis</i> Betten
* <i>N. fuscus</i> Banks
* <i>N. mitchelli</i> Carpenter
<i>N. oligius</i> Ross
<i>N. ornatus</i> Banks
* <i>N. stolidus</i> Ross
<i>N. wigginsi</i> Sykora & Weaver

* = New state record. h = Historic record.

Records Reported in Error from Pennsylvania but Persisting in Literature

HYDROPSYCHIDAE

Hydropsyche simulans Ross, [misidentified in literature, Hoffman, et al. 1946]

HYDROPTILIDAE

Ochrotrichia potomus Denning & Blickle (1972-1977), [possible mis-identification (Blickle, R.L., 1979)]

RHYACOPHILIDAE

Rhyacophila parantra Ross, [previously reported by M&F 1979 should be *R. banksi* Ross]

TABLE II. PENNSYLVANIA TRICHOPTERA. New records - Annotated List of Species (99 indicates missing data)

BERAEIDAE

Beraea nigrata Banks

Chester Co., White Clay Creek, 3 ♂ - 2 ♀, 20 June 1978, DHF.

BRACHYCENTRIDAE

Micrasema rusticum McLachlan

Centre Co., Slab Cabin Run, 9 ♂ - 2 ♀, 17 June 1982, PHA.

Warren Co., Allegheny River, 1 ♂, 14 June 1988, JLS.

Micrasema wataga Ross

Cameron Co., Sinnemahoning River, 4 ♂ - 6 ♀, 2 July 1988, ECM.

Carbon Co., Tobyhanna Creek, 3 ♂, 29 June 1991, ECM-MPP.

TABLE II. (continued)

Centre Co., Roaring Run, 1 ♂, 13 August 1981, PHA.
Clinton Co., Kettle Creek, 3 ♂, 12 July 1989, ECM-MAL.
Forest Co., Tionesta Creek, 1 ♂ - 2 ♀, 18 June 1987, ECM.
Pike Co., Adams Creek, 1 ♂, 8 July 1989, ECM
Warren Co., Tanbark Trail, 1 ♂, 27 June 1989, ECM-CAD.
GLOSSOSOMATIDAE
<i>Agapetus rossi</i> Denning
Cameron Co., Sinnemahoning, 5 ♂ - 39 ♀, 2 July 1988, ECM.
Tioga Co., Pine Creek, 1 ♂, 6 July 1989, ECM.
<i>Agapetus tomus</i> Ross
Somerset Co., Whites Creek, 3 ♂ - 2 ♀, 15 August 1990, ECM.
Westmoreland Co., Powder Mill Run, 3 spec., 26 August 1975, JLS.
GOERIDAE
<i>Goera fuscata</i> Banks
Franklin Co., Trout Run, btwn. Blue & Kittany Mt., 99 larvae, 12 April 1977, JSW.
HYDROPSYCHIDAE
<i>Cheumatopsyche ela</i> Denning
Clarion Co., Clarion River, 4 ♂, 20 July 1989, ECM.
Dauphin Co., Susquehanna River, 99 spec., 1 July 1977, JSW.
Forest Co., Hunters Creek, 99 spec., 5 June 1976, JSW.
Juniata Co., Juniata River, 1 ♂, 30 June 1990, ECM-JMS.
Pike Co., Dingmans Creek, 1 ♂, 8 July 1989, ECM.
<i>Cheumatopsyche geora</i> Denning
Centre Co., Slab Cabin Run, 5 ♂ - 5 ♀, 6 June 1982, PHA.
<i>Cheumatopsyche gyra</i> Ross
Indiana Co., Yellow Creek, 2 ♂, 17 July 1989, ECM.
Leasure Run, 3 ♂, 2 August 1989, ECM-MAL.
Venango Co., Muskrat Creek, 2 ♂, 18 July 1987, ECM-TB.
<i>Cheumatopsyche harwoodi</i> enigma Ross & Gordon
Montour Co., Chillisquaqua Creek, 1 ♂, 17 June 1990, ECM-JMS.
<i>Cheumatopsyche helma</i> Ross
Wyoming Co., Meshoppen Creek, 3 ♂, 20 July 1989, ECM-MAL.
<i>Cheumatopsyche miniscula</i> Banks
Cameron Co., Sinnemahoning River, 28 ♂ - 3 ♀, 2 July 1988, ECM.
ibid. 1 ♂, 27 July 1989, ECM.
Clinton Co., Bush Dam, 43 ♂, 12 July 1989, ECM-MAL.
Columbia Co., Fishing Creek, 1 ♂, 17 June 1990, ECM-JMS.
Cumberland Co., Conodoguinet Creek, 1 ♂, 31 July 1990, ECM-JMS.
Juanita Co., Juanita River, 3 ♂, 30 June 1990, ECM-JMS.
Lycoming Co., Williamsport, 1 ♂, 26 June 1946, PSU.
Monroe Co., Bushkill Creek, 6 ♂, 8 June 1990, ECM-JMS.
Pike Co., Dingmans Creek, 5 ♂ - 2 ♀, 6 June 1988, ECM.
Potter Co., Kettle Creek, 1 ♂, 12 July 1989, ECM-MAL.
Tioga Co., Pine Creek, 32 ♂ - 1 ♀, 6 July 1989, ECM.
ibid. 9 ♂, 8 June 1990, ECM-JMS.
Union Co., Cherry Run, 12 ♂, 19 July 1989, ECM.
Wyoming Co., Meshoppen Creek, 12 ♂, 20 July 1989, ECM-MAL.
<i>Cheumatopsyche pinaca</i> Ross
Adams Co., Biglerville, 99 ♂, 9 July 1980 S & Q.
Cumberland Co., Mountain Creek, 1 ♂, 30 July 1990, ECM-JMS.
<i>Cheumatopsyche wrighti</i> Ross
Center Co., State College, 1 ♂, 23 June 1956, PSU.
Howard, 2 ♂, 16 June - 22 July 1975, VH.
ibid. 2 ♂, 30 May 1977, VH.
ibid. 1 ♂, 6 July 1978, VH.
Crawford Co., West Branch Caldwell Creek, 3 ♂, 16 June 1989, ECM-JEC.
Huntingdon Co., Colerain Park, 4 ♂, 14 July 1952, PSU.
Warriors Mark Run, 2 ♂, 1 August 1989, ECM-MAL.
Mercer Co., Deer Creek, 10 ♂, 23 June 1989, ECM.
Mifflin Co., Reedsville Gap, 1 ♂, 19 May 1975, MAF.
Potter Co., Kettle Creek, 6 ♂, 19 June 1990, ECM-JMS.
Somerset Co., Whites Creek, 1 ♂, 15 August 1990, ECM.
Union Co., Penns Creek, 2 ♂, 19 July 1989, ECM.
Venango Co., Sugar Creek, 1 ♂, 18 June 1989, ECM-JEC.
Warren Co., Hemlock Run, 1 ♂, 19 July 1987, ECM.

TABLE II. (continued)

Wyoming Co., Meshoppen Creek, 3 ♂, 10 September 1989, ECM-MAL.
<i>Diplectrona metaqui</i> Ross
Fayette Co., Bear Run, 1 larvae, 11 March 1977, RMS.
Lancaster Co., Steelsville, 99 larvae, 2 March 1978, JSW.
<i>Hydropsyche brunneipennis</i> Flint & Butler
Venango Co., Muskrat Creek, 1 ♂, 18 July 1987, ECM-TB.
Allegheny River, 1 ♂, 27 July 1990, ECM.
<i>Hydropsyche cheilonis</i> Ross
Beaver Co., Raccoon Creek State Park, 13 ♂, 29 July 1989, ECM-MAL.
Indiana Co., Leasure Run, 1 ♂, 2 August 1989, ECM-MAL.
Juniata Co., Tuscarora Creek, 1 ♂, 30 June 1990, ECM-JMS.
<i>Hydropsyche hageni</i> Banks
Berks Co., Tulpehocken Creek, 4 ♂, 7 June 1990, ECM-JMS.
Cumberland Co., Brandtsville, 99 undet, 2 May 1948, CF.
Conodoguinet Creek, 12 ♂, 31 July 1990, ECM-JMS.
Dauphin Co., At Arcs, Harrisburg, 1 ♂, 17 August 1905, PDA.
Juniata Co., Juniata River, 3 ♂, 30 June 1990, ECM-JMS.
Montgomery Co., Perkiomen Creek, 1 ♂, 8 August 1989, ECM-CAD.
Venango Co., French Creek, 25 ♂, 27 July 1990, ECM.
Wyoming Co., Meshoppen Creek, 1 ♂, 10 September 1989, ECM-MAL.
<i>Hydropsyche impula</i> Denning
Adams Co., Biglerville, 1 ♂, 3 July 1980, S & Q.
Dauphin Co., At Arcs, Harrisburg, 1 ♂, 17 August 1980, PDA.
York Co., Davidsburg, 1 ♂, 7 July 1962, PJS.
<i>Hydropsyche leonardi</i> Ross
Bucks Co., Delaware River, 4 ♂, 9 July 1989, ECM.
Huntington Co., Little Juniata River, 1 ♂, 1 August 1989, ECM-MAL.
Union Co., New Berlin, 1 ♂, 99 April 1954, EMC.
Penns Creek, 1 ♂, 19 July 1989, ECM.
Warren Co., Allegheny Rvr., Allegheny Nat. For., 1 ♂, 14 August 1987, ECM-USNM.
<i>Hydropsyche ophthalmica</i> Flint
Bucks Co., Delaware River, 10 ♂, 9 July 1989, ECM.
Cumberland Co., Conodoguinet Creek, 75 ♂ - 2 ♀, 31 July 1990, ECM-JMS.
Dauphin Co., Harrisburg, 1 ♂, 20 July 1967, PDA.
Montgomery Co., Perkiomen Creek, 1 ♂, 8 August 1989, ECM-CAD.
Tioga Co., Pine Creek, 4 ♂ - 1 ♀, 6 July 1989, ECM.
<i>Hydropsyche orris</i> Ross
Mercer Co., Shenango River Lake, 33 ♂, 17 June 1987, JLS.
ibid. 28 ♂, 17 July 1987, JLS.
ibid. 34 ♂, 12 August 1987, JLS.
<i>Hydropsyche placoda</i> Ross
Dauphin Co., Harrisburg, 1 ♂, 12 May 1905, PDA.
Mercer Co., Deer Creek, 1 ♂, 23 June 1989, ECM.
<i>Hydropsyche valanis</i> Ross
Dauphin Co., Susquehanna River, Hwy. 322, 99 undet, 1 July 1977, JSW.
Fulton Co., Cowan's Gap State Park at USNM, 1 ♂, 1 August 1968, TJS.
Montgomery Co., King of Prussia at INHS, 1 ♂, 1 July 1963, SSR.
<i>Hydropsyche venularis</i> Banks
Bucks Co., Delaware River, 1 ♂, 9 July 1989, ECM.
Pike Co., Adams Creek, 1 ♂, 8 July 1989, ECM.
Dingmans Creek, 1 ♂, 9 September 1989, ECM.
Tioga Co., Pine Creek, 2 ♂, 6 July 1989, ECM.
<i>Hydropsyche walkeri</i> Betten & Mosely
Armstrong Co., Mahoning Creek Lake, 1 ♂, 16 June 1987, JLS.
Bedford Co., Bedford, 99 Undet, 20 July 1980, CM.
Bucks Co., Delaware River, 45 ♂, 9 July 1989, ECM.
Cameron Co., Hunts Run of Sinnemahoning, 1 ♂, 2 July 1988, ECM.
Carbon Co., Tobyhanna Creek, 1 ♂, 29 June 1991, ECM-JMS.
Centre Co., State College, 2 ♂, 23 June 1956, PSU.
Benner Springs, 1 ♂, 10 June 1966, PSU.
State College, 1 ♂, 9 August 1983, VH.
Clarion Co., Clarion River, 66 ♂, 20 July 1989, ECM.

TABLE II. (continued)

Clarion River Spring, Hwy. Route 36, 1 ♂, 20 July 1989, ECM.
Clinton Co., Kettle Creek, 2 ♂, 12 July 1989, ECM.
Dauphin Co., Harrisburg, 99 spec., 22 June - 7 September 1967, PDA.
ibid. 99 spec., 1 July 1977, JSW.
Erie Co., PSU-Behrend College, 4 ♂, 10 June - 1 July 1974, ECM.
Forest Co., Tionesta Dam, 3 ♂, 18 June 1987, ECM-JMS.
Otter Creek, 3 ♂, 1 July 1990, ECM-JMS.
Jefferson Co., Sandy Lick Creek, 3 ♂, 15 July 1989, ECM-MAL.
Lawrence Co., Slippery Rock Creek, 11 ♂ - 2 ♀, 22 June 1989, ECM.
Mercer Co., Deer Creek, 1 ♂, 23 June 1989, ECM.
Northumberland Co., Susquehanna River, 1 ♂, 17 June 1990, ECM-JMS.
Tioga Co., Pine Creek, 1 ♂, 8 June 1990, ECM.
Union Co., Cherry Run, 4 ♂, 19 July 1989, ECM.
Venango Co., Muskrat Creek, 117 ♂, 18 July 1987, ECM-TB.
Sugar Creek, 1 ♂, 18 June 1989, ECM-CAD.
Muskrat Creek, 7 ♂, 25 June 1989, ECM-CAD.
French Creek, 6 ♂, 27 July 1990, ECM.
Warren Co., 2 miles S Warren, 19 ♂, 25 June 1987, OSF.
Hemlock Run, 35 ♂, 19 July 1987, ECM.
Hedgehog Run, 3 ♂, 1 August 1987, ECM-TB.
Allegheny River, Kinzua Dam, 2 ♂, 14 June-12 July 1988, JLS.
Tionesta Creek, 99 larvae, 6 June 1976, JSW.
Westmoreland Co., New Alexandria, 2 spec., 19 June 1963, PDA.
ibid. 2 spec., 21 June - 10 August 1964, PDA.
York Co., 5 mi. NW Davidsburg, 1 ♂, 25 June 1966, PJS.
HYDROPTILIDAE
<i>Hydroptila ajax</i> Ross
Armstrong Co., Crooked Creek Lake, 51 ♂, 13 June and 16 August 1988, JLS.
Beaver Co., Raccoon Creek State Park, 99 undet., 18 June 1976, JLS.
ibid. 99 ♂, 29 July 1989, ECM-MAL.
Indiana Co., Leasure Run, 6 ♂, 2 August 1989, ECM-MAL.
Warren Co., Allegheny River, 1 ♂, 14 August 1981, ECM.
Westmoreland Co., Loyalhanna Lake, 4 ♂, 16 July - 19 August 1988, JLS.
<i>Hydroptila alabama</i> Harris & Kelley
Carbon Co., Tobyhanna Creek, 1 ♂, 6 June 1990, ECM-JMS.
ibid. 1 ♂, 29 June 1991, ECM-MPP.
<i>Hydroptila amoena</i> Ross
Centre Co., Big spring, 5 ♂, 19 June 1976, JSW.
Cumberland Co., Yellow Breeches Creek, 25 ♂ - 16 ♀, 1 July 1977, JSW.
Erie Co., Fourmile Creek, 1 ♂, 11 July 1983, ECM.
Wyoming Co., Meshoppen Creek, 1 ♂, 20 July 1989, ECM-MAL.
<i>Hydroptila ampoda</i> Ross
Clearfield Co., Birch Run, S.B. Elliott State Park, 2 ♂, 2 June 1990, ECM.
Pike Co., Dingmans Creek, 1 ♂, 6 June 1988, ECM.
Somerset Co., Jones Mill Run, Laurel State Forest, 4 ♂, 23 June 1976, JSW.
Warren Co., Allegheny River, Allegheny National Forest, 1 ♂, 1 August 1987, ECM.
<i>Hydroptila angusta</i> Ross
Armstrong Co., Mahoning Creek Lake, 1 ♂, 12 August 1987, JLS.
Indiana Co., Leasure Run, 1 ♂, 2 August 1989, ECM.
<i>Hydroptila armata</i> Ross
Berks Co., Schuylkill River, 5 ♂, 3 September 1990, ECM-JMS.
Crawford Co., French Creek, Saegertown, 1 ♂, 5 June 1990, ECM.
Erie Co., North East Exp. Sta., PSU, 99 spec., 13 August 1976, GLJ.
Greene Co., Dunkard Creek, 30 ♂, 29 June 1990, ECM-MPP.
Montgomery Co., Perkiomen Creek, 4 ♂, 8 August 1989, ECM-CAD.
Washington Co., Cherry Creek, 1 ♂, 30 June 1990, ECM-MPP.
York Co., 5 m. NW Davidsburg, 1 ♂ - 1 ♀, 22 September 1962, PJS.
<i>Hydroptila callia</i> Denning
Carbon Co., Tobyhanna Creek, 1 ♂, 29 June 1991, ECM-MPP.
Centre Co., State College, 1 ♂, 30 June 1953, PSU.

TABLE II. (continued)

<i>Hydroptila chattanooga</i> Frazer & Harris
Wyoming Co., Meshoppen Creek, 1 ♂, 10 September 1989, ECM-MAL.
<i>Hydroptila delineata</i> Morton
Armstrong Co., Mahoning Creek, 7 ♂, 16 June - 12 August 1987, JLS.
Crooked Creek Lake, 1 ♂, 16 August 1988, JLS.
Clarion Co., Clarion River, 1 ♂, 20 July 1989, ECM.
Clinton Co., Bush Dam, 1 ♂, 12 July 1989, ECM.
Columbia Co., Fishing Creek, 1 ♂, 17 July 1989, ECM.
Indiana Co., Leasure Run, 2 ♂, 2 August 1989, ECM-MAL.
Monroe Co., Bushkill Creek, 1 ♂, 4 September 1990, ECM-JMS.
Pike Co., Dingmans Creek, 1 ♂, 6 June 1988, ECM.
Warren Co., 2 mi. S Warren, 4 ♂, 25 June 1987, OSF.
Hedgehog Run, 1 ♂, 1 August 1987, ECM.
<i>Hydroptila dentata</i> Ross
Centre Co., State College, 2 ♂, 99 August 1957, PSU.
Clarion Co., Clarion River, 4 ♂, 20 July 1989, ECM.
Clinton Co., Hyner Run State Park, 1 ♂, 10 July 1989, ECM.
Crawford Co., Woodcock Creek Lake, 1 ♂, 13 August 1987, JLS.
Sugar Creek, 1 ♂, 14 October 1989, ECM-MAL.
Caldwell Creek, 2 ♂, 21 September 1989, ECM-MAL.
Forest Co., Tionesta Dam, 16 ♂, 18 June - 12 August 1987, JLS.
Fulton Co., Cowan's Gap St. Pk. at USNM, 2 spec., 1 August 1968, TJS.
Tioga Co., Pine Creek, 11 ♂, 11 September 1989, ECM-MAL.
Venango Co., Muskrat Run, 3 ♂ - 22 ♀, 18 July 1987, ECM-TB.
ibid. 1 ♂, 25 June 1989, ECM-CAD.
Allegheny River, Franklin, 1 ♂, 27 July 1990, ECM.
Warren Co., Allegheny Rvr., Allegheny Nat. For., 15 spec., 1 August 1987, ECM-USNM.
Hedgehog Run, 1 ♂, 1 August 1987, ECM-TB.
Tanbark Trail, 1 ♂, 14 August 1987, ECM-TB.
East Branch Tionesta Creek, 1 ♂, 10 August 1989, ECM.
<i>Hydroptila fiskei</i> Blickle & Morse
Indiana Co., Little Mahoning Creek, 1 ♂, 2 August 1989, ECM-MAL.
Lancaster Co., Pine Creek, Christiana, 2 ♂, 19 September 1976, JSW.
Warren Co., Tionesta Creek, 1 ♂, 10 August 1989, ECM.
Westmoreland Co., Furnace Run, 99 spec., 16 May 1976, JSW.
<i>Hydroptila grandiosa</i> Ross
Armstrong Co., Crooked Creek Lake, 3 ♂, 16 August 1988, JLS.
Beaver Co., Raccoon Creek State Park, 2 ♂, 29 July 1989, ECM-MAL.
Berks Co., Schuylkill River, 1 ♂, 3 September 1990, ECM-JMS.
Crawford Co., Woodcock Creek Lake, 4 ♂, 13 August 1987, JLS.
Greene Co., Dunkard Creek, 86 ♂, 29 June 1990, ECM-MPP.
Indiana Co., Leasure Run, 24 ♂, 2 August 1989, ECM-MAL.
Lawrence Co., Slippery Rock Creek, 32 ♂, 22 June 1989, ECM.
Venango Co., Sugar Creek, 1 ♂, 18 June 1989, ECM-JEC.
Washington Co., Cherry Creek, 2 ♂, 30 June 1990, ECM-MPP.
Westmoreland Co., Loyalhanna Lake, 8 ♂, 12 June, 16 July 1988, JLS.
<i>Hydroptila gunda</i> Milne
Berks Co., Schuylkill River, 1 ♂, 3 September 1990, ECM-JMS.
Cameron Co., Driftwood Branch, Sinnemahoning River, 1 ♂, 27 July 1989, ECM.
Chester Co., White Clay Creek, 5 spec., 4 Nov. 1968, JWR-USNM.
Glen Run, Atglen, 5 ♂, 3 June 1977, JSW.
Clinton Co., Kettle Creek, Bush Dam, 1 ♂, 12 July 1989, ECM.
Columbia Co., Fishing Creek, 4 ♂, 17 June 1990, ECM-JMS.
Cumberland Co., Mt. Creek, Pine Grove Furnace St. Pk., 1 ♂, 30 July 1990, ECM-JMS.
Lancaster Co., Pine Creek, Christiana, 2 ♂, 19 September 1976, JSW.
Susquehanna Co., East Branch Wyalusing Creek, 12 spec., 4 May 1969, DHE.
Snake Creek, 1 ♂, 5 September 1990, ECM-JMS.
Tioga Co., Pine Creek, 11 ♂, 6 July 1989, ECM.
ibid. 13 ♂, 11 September 1989, ECM-MAL.
ibid. 1 ♂, 6 September 1990, ECM-JMS.
Wyoming Co., Meshoppen Creek, 10 ♂, 10 September 1989, ECM-MAL.

TABLE II. (continued)

- York Co., 5 mi. NW. Davidsburg, 1 ♂, 20 July 1962, **PJS.**
Hydroptila metoeca Bickel & Morse
 Chester Co., Octorara Creek, 9 ♂ - 23 ♀, 18 May 1977, **JWS.**
 Clarion Co., Clarion River, Gravel Lick Road, 1 ♂, 20 July 1989, **ECM.**
 Fulton Co., Cowan's Gap State Park, 8 spec., 1 August 1968, **TJS.**
 Indiana Co., Yellow Creek, 2 ♂, 17 July 1989, **ECM.**
 Pike Co., Dingmans Creek, 3 spec., 6 June 1988, **ECM.**
 Adams Creek, 1 ♂, 8 July 1989, **ECM.**
 Warren Co., Allegheny Rvr., Allegheny Nat. For., 1 ♂, 1 August 1987, **ECM-USNM.**
 Hedgehog Run, 1 ♂, 1 August 1987, **ECM-TB.**
 Wyoming Co., Meshoppen Creek, 1 ♂, 10 September 1989, **ECM-MAL.**
Hydroptila quinola Ross
 Warren Co., East Branch Tionesta Creek, 1 ♂, 10 August 1989, **ECM.**
Hydroptila remita Bickel & Morse
 Fayette Co., Bear Run, 6 spec., 28 May 1978, **BGS-USNM.**
 Bear Run, 48 ♂ - 7 ♀, 28 May 1978, **RMS.**
Hydroptila talladega Harris
 Armstrong Co., Mahoning Creek Lake, 1 ♂, 24 May 1987, **JLS.**
 Warren Co., New Berlin, 1 ♂, 25 June 1987, **OSF.**
 2 mi. S. Warren, 1 ♂, 25 June 1987, **OSF.**
Hydroptila waskesia Ross
 Greene Co., Dunkard Creek, 3 ♂, 29 June 1990, **ECM-MPP.**
Leucotrichia pictipes Banks
 Lancaster Co., Octorara Creek, 99 spec., 17 May 1977, **JSW.**
 Lawrence Co., Shenango River Lake, 1 ♂, 12 August 1987, **JLS.**
 Mifflin Co., Kishacoquillas Creek Trib., 1 ♂ - 1 ♀, 7 August 1982, **PHA.**
 Susquehanna Co., East Branch Wyalusing Creek, 35 spec., 28 May - 1 June 1969, **DHF.**
 Tioga Co., Pine Creek, 1 ♂ - 9 ♀, 1 July 1978, **JSW.**
Ochrotrichia denningi Bickel & Morse
 Forest Co., Tionesta Dam, 3 ♂, 18 June 1987, **JLS.**
 Warren Co., Allegheny River, Kinzua Dam, 9 ♂ - 2 ♀, 18 July 1981, **ECM.**
 ibid. 25 ♂, 12 July 1988, **JLS.**
 ibid. 4 ♂ - 8 ♀, 19 July 1987, **ECM.**
 Farnsworth Creek, 2 ♂, 25 July 1989, **ECM-MAL.**
Ochrotrichia graysoni Parker & Voshell
 Clarion Co., Clarion River, Gravel Lick Road, 1 ♂, 20 July 1989, **ECM.**
 Union Co., Cherry Run, 25 ♂ - 1 ♀, 19 July 1989, **ECM.**
 Penns Creek, Weikert, 4 ♂, 19 July 1989, **ECM.**
Ochrotrichia shawnee (Ross)
 Forest Co., Otter Creek, 1 ♂, 1 July 1990, **ECM-JMS.**
 Potter Co., Genesee River, Harraumontown, 25 ♂ - 1 ♀, 2 July 1978, **JSW.**
Ochrotrichia tarsalis (Hagen)
 Armstrong Co., Crooked Creek Lake, 62 ♂, 13 June and 16 August 1988, **JLS.**
 Mahoning Creek, 2 ♂ - 1 ♀, 12 August and 26 September 1987, **JLS.**
 Cumberland Co., Yellow Breeches Creek, 1 ♂, 18 September 1976, **JSW.**
 Westmoreland Co., Loyalhanna Lake, 20 ♂, 16 July, 12 August 1988, **JLS.**
Oxyethira aeola Ross
 Luzerne Co., Lake Jean, Ricketts Glenn State Park, 2 ♂, 14 August 1989, **ECM.**
Oxyethira dualis Morton
 Forest Co., Tionesta Dam, 1 ♂, 12 August 1987, **JLS.**
Oxyethira grisea Betten
 Carbon Co., Hayes Creek on Lehigh River, 1 ♂, 1 June 1990, **ECM.**
Oxyethira michiganensis Mosely
 Cumberland Co., Mt. Crk., Pine Grove Furnace St. Pk., 8 ♂ - 2 ♀, 30 July 1990, **ECM-JMS.**

TABLE II. (continued)

- Elk Co., East Branch Clarion River, 2 ♂ - 3 ♀, 7 August 1987, **JLS.**
 Fayette Co., Bear Run, 46 ♂ - 1 ♀, 28 May and 6 July 1978, **RMS & BGS.**
 Pike Co., Dingmans Creek, 1 ♂ - 1 ♀, 9 September 1989, **ECM-MAL.**
 Potter Co., Little Kettle Creek, 1 ♂, 19 July 1990, **ECM-JMS.**
 Susquehanna Co., Elk Lake Creek, 6 ♂, 18 June 1990, **ECM-JMS.**
 Venango Co., Muskrat Run, 5 ♂, 25 June 1989, **ECM-CAD.**
 Westmoreland Co., Maul Springs, 2 ♂, 20 July 1977, **JSW.**
Oxyethira pallida (Banks)
 Armstrong Co., Crooked Creek Lake, 2 ♂, 16 August 1988, **JLS.**
 Centre Co., State College, 1 ♂, 22 September 1953, **PSU.**
 Cumberland Co., Conodoguinet Creek, 1 ♂, 31 July 1990, **ECM-JMS.**
 Huntingdon Co., Warriors Mark River, 1 ♂, 1 August 1989, **ECM-MAL.**
 Indiana Co., Leasure Run, 13 ♂ - 99 ♀, 2 August 1989, **ECM-MAL.**
 Wyoming Co., Meshoppen Creek, 8 ♂, 10 September 1989, **ECM-MAL.**
Oxyethira rivicola Bickel & Morse
 Carbon Co., Tobyhanna Creek, 1 ♂, 6 June 1990, **ECM-JMS.**
Oxyethira sida Bickel & Morse
 Carbon Co., Tobyhanna Creek, 1 ♂, 6 June 1990, **ECM-JMS.**
Oxyethira zeronia Ross
 Luzerne Co., Lake Jean, Ricketts Glenn State Park, 1 ♂, 14 August 1989, **ECM.**
Stactobiella palmata (Ross)
 Armstrong Co., Mahoning Creek Lake, 44 ♂, 16 June 1987, **JLS.**
 Carbon Co., Tobyhanna Creek, 113 ♂, 6 June 1990, **ECM-JMS.**
 Columbia Co., Fishing Creek, 1 ♂, 17 June 1990, **ECM-JMS.**
 Crawford Co., French Creek, Saegertown, 2 ♂ - 2 ♀, 5 June 1990, **ECM.**
 Forest Co., Tionesta Dam, 6 ♂, 18 June 1987, **JLS.**
 Greene Co., Dunkard Creek, 1 ♂, 29 June 1990, **ECM-MPP.**
 Somerset Co., Jones Mill Run, Laurel State Forest, 1 ♂ - 2 ♀, 23 June 1976, **JLS.**
 Warren Co., Allegheny River, Kinzua Dam, 1 ♂, 18 July 1981, **ECM.**
 2 m. S. Warren, 12 ♂ - 22 ♀, 25 June 1987, **OSF.**
 Allegheny River, Kinzua Dam, 3 ♂, 12 July 1988, **JLS.**
LEPIDOSTOMATIDAE
Lepidostoma pictile (Banks)
 Clinton Co., Lamar, 1 ♂, 2 June 1978, **DJS.**
 Pike Co., Dingmans Creek, 2 ♂ - 17 ♀, 6 June 1988, **ECM.**
Lepidostoma serratum Flint & Wiggins
 Chester Co., Stroud Water Research Center, 5 ♂, 13 - 21 September 1981, **DHF.**
LEPTOCERIDAE
Ceraclea alabamiae Harris
 Carbon Co., Tobyhanna Creek, 8 ♂ - 2 ♀, 29 June 1991, **ECM-MP.**
Ceraclea punctata (Banks)
 Dauphin Co., At Arcs, Harrisburg, 1 spec., 17 August 1905, **PDA.**
 Erie Co., PSU Behrend College, 2 ♀, 17 July 1974, **ECM.**
Triaenodes ignitus (Walker)
 Butler Co., 2 spec., 26 June 1967, **KM.**
 Cumberland Co., Mt. Creek, Pine Grove Furnace St. Pk., 1 ♂, 30 July 1990, **ECM-JMS.**
 Shippensburg Reservoir, 1 ♂, 31 July 1990, **ECM-JMS.**
 Dauphin Co., Harrisburg, 6 spec., 22 June - 14 July 1967, **PDA.**
Triaenodes marginatus Sibley
 Bedford Co., Bedford, 1 ♂, 27 July 1980, **KM.**
 Centre Co., Benner Springs, 1 ♂, 10 June 1966, **PSU.**
 Howard, 99 ♂ & ♀, 20 June - 1 August 1980, **VH.**
 Slab Cabin Run, Pine Grove Mills, 1 ♂, 6 June 1982, **PHA.**
 Howard, 99 ♂, 13 - 27 June 1983, **VH.**
 Chester Co., East Branch White Clay Creek, 1 ♂, 7 August 1971, **DHF.**
 Cumberland Co., Letort Spring, 1 ♂ - 2 ♀, 18 July 1989, **ECM.**
 Mt. Creek, Pine Grove Furnace State Park, 1 ♂, 30 July 1990, **ECM.**
 Erie Co., Presque Isle, Erie, 1 ♂, 99 999 9999, **PSU.**
 Lawrence Co., Slippery Rock Creek, 1 ♂, 22 June 1989, **ECM.**
 Tioga Co., Pine Creek, 1 ♂, 11 September 1989, **ECM.**

TABLE II. (continued)

<i>Triaenodes pernus</i> Ross
Cumberland Co., Conodoguinet Creek, 12 ♂, 31 July 1990, ECM-JMS.
LIMNephilidae
<i>Anabolia bimaculata</i> (Walker)
Centre Co., Black Moshannon, 1 spec., 25 July 1974, PSU.
<i>Apatania incerta</i> (Banks)
Cameron Co., 2 mi. N Emporium, 15 spec., 23 April 1979, OSF.
Lycoming Co., Trout Run, 1 ♀, 9 May 1982, PHA.
<i>Apatania nigra</i> (Walker)
Wayne Co., Delaware River, 8 ♂ - 1 ♀, 21 April 1982, DHF.
<i>Pseudostenophylax sparsus</i> (Banks)
Berks Co., 1/4 mi. S. Eckville, 1 spec., 23 May 1968, PDA.
Centre Co., Cluster Spring, Haines Twp., 1 ♂, 20 July 1974, PSU.
State College, 4 ♂, 26 May 1977, PSU.
Howard, 1 ♀, 31 May 1978, PSU.
Fayette Co., Bear Run, 4 ♂, 28 May - 6 July 1978, RMS.
ibid. 1 larva, 11 March 1977, RMS.
Fulton Co., Aughwick Creek, 99 spec., 30 June 1989, JSW.
Lackawanna Co., Lackawanna, 1 ♂, 30 June 1975, PSU.
Pike Co., Dingmans Creek, 1 ♂, 8 July 1989, ECM-MPP.
Somerset Co., Kooser Run, 8 ♂ - 5 ♀, 8 - 23 June 1976, JSW.
Wayne Co., Dyberry Creek, 1 ♂, 9 June 1990, ECM-MPP.
Westmoreland Co., Maul Spring, 7 ♂, 21 May - 15 June 1976, JSW.
MOLANNIDAE
<i>Molanna ulmerina</i> Navas
Cameron Co., Driftwood Branch of Sinnemahoning River, 1 ♂, 27 July 1989, ECM.
Cumberland Co., Mt. Creek, Pine Grove Furnace St. Pk., 1 ♀, 30 July 1990, ECM-JMS.
Conodoguinet Creek, 27 ♂, 31 July 1990, ECM-JMS.
Monroe Co., Pocono Creek, 1 ♀, 1 August 1989, ECM-CAD.
Potter Co., Cross Fork, 3 ♂ - 15 ♀, 18 August 1989, ECM-JMS.
Little Kettle Creek, 3 ♂ - 1 ♀, 18 August 1989, ECM.
PHRYGANEIDAE
<i>Oligostomis ocelligera</i> (Walker)
Fayette Co., Bear Run, 2 larvae, 24 September - 19 November 1976, RMS.
Bear Run, 7 larvae, 26 June - 31 July 1977, RMS.
POLYCENTROPODIDAE
<i>Neureclipsis bimaculata</i> (Linnaeus)
Westmoreland Co., Loyalhanna Lake, 1 ♂ - 2 ♀, 16 July 1988, JLS.
<i>Nyctiophylax banksi</i> Morse
Forest Co., Tionesta Dam, 1 ♂, 17 July 1987, JLS.
<i>Nyctiophylax celta</i> Denning
Carbon Co., Tobyhanna Creek, 6 ♂ - 2 ♀, 29 June 1991, ECM-MPP.
Clinton Co., Kettle Creek, Bush Dam, 1 ♂, 12 July 1989, ECM.
Fayette Co., Ohiopyle, 5 ♀, 28 June 1949, CB.
Forest Co., South Branch Tionesta Creek, 1 ♂, 10 August 1989, ECM.
Huntingdon Co., Camp Barree, 99 ♂, 30 June 1944, CB.
Monroe Co., Bushkill Creek, 1 ♂, 8 June 1990, ECM-JMS.
Tioga Co., Pine Creek at Blackwell, 99 spec., 1 July 1921, CB.
Wyoming Co., Meshoppen Creek, 1 ♂, 20 July 1989, ECM-MAL.
<i>Nyctiophylax denningi</i> Morse
Chester Co., East Branch White Clay Creek, 4 ♂, 9 - 19 June 1972, DHF.
ibid. 2 ♂ - 3 ♀ - 1 spec., 27 - 29 June 1973, DHF.
East Branch White Clay Creek, London Grove, 1 ♂, 21 June 1978, DHF.
ibid. 1 ♂, 23 June 1979, DHF.
<i>Nyctiophylax nephophilus</i> Flint
Clinton Co., Lamar, 1 spec., 22 June 1978, PSU.
Union Co., Cherry Run, 9 ♂ - 1 ♀, 19 July 1989, ECM.
<i>Nyctiophylax unicus</i> Ross
Fayette Co., Ohiopyle, 1 ♂, 28 June 1948, CB.
Sullivan Co., Loyalsock Creek, 1 ♂, 7 July 1989, ECM.
Tioga Co., Pine Creek, 1 ♂, 8 June 1990, ECM-MPP.
<i>Polycentropus barri</i> Ross & Yamamoto
Chester Co., Glen Run, Atglen, 1 ♂, 18 June 1977, JSW.
<i>Polycentropus chenoides</i> Ross & Yamamoto

TABLE II. (continued)

Erie Co., Fourmile Creek, 2 ♂, 30 May 1980, ECM.
ibid. 1 ♂, 11 September 1980, ECM.
<i>Polycentropus coleii</i> Ross
Westmoreland Co., Maul Spring, 99 spec., 9 July 1975, JSW-JLS.
<i>Polycentropus rickeri</i> Yamamoto
Erie Co., North East Experiment Station, PSU, 2 ♂, 16 July 1979, GLJ.
PSYCHOMYIIDAE
<i>Psychomyia nomada</i> (Ross)
Delaware Co., Westchester Pike, 2 spec., 8 June 1959, PAS.
Franklin Co., Caledonia, 3 ♂, 21 June 1948, CB.
ibid. 1 ♂, 30 June 1949, CB.
Potter Co., Genesee River, 1 ♂ - 3 ♀, 2 July 1978, JSW.
Little Kettle Creek, 1 ♂ - 99 ♀, 12 July 1989, ECM.
ibid. 7 ♂ - 1 ♀, 18 August 1989, ECM.
Tioga Co., Pine Creek, Ansonia, 3 ♂ - 5 ♀, 6 July 1989, ECM.
ibid. 4 ♂ - 6 ♀, 11 September 1989, ECM-MAL.
Pine Creek, 19 ♂, 8 June 1990, ECM-MPP.
ibid. 7 ♂, 6 September 1990, ECM-JMS.
Wayne Co., Delaware River, Dillontown, 20 spec., 14 July 1982, DHF.
Wyoming Co., Susquehanna River, Meshoppen, 1 spec., 29 August 1974, PAS.
Meshoppen Creek, 1 ♂, 10 September 1989, ECM-MAL.
RHYACOPHILIDAE
<i>Rhyacophila brunnea</i> Banks
Chester Co., East Branch White Clay Creek, 1 larva, 2 June 1980, SWR.
<i>Rhyacophila mainensis</i> Banks
Centre Co., The Rock, 1 ♂, 27 May 1941, CB.
Clinton Co., Fishing Creek, Lamar, 1 ♂, 28 May 1973, PSU.
Cumberland Co., Shippensburg Reservoir, 1 ♂ - 1 ♀, 31 July 1990, ECM-JMS.
Dauphin Co., Harrisburg, 1 spec., 1 June 1949, EMC at PDA.
Venango Co., Sugar Creek, 99 Larvae, 23 November 1982, JB.
SERICOSTOMATIDAE
<i>Agarodes grisea</i> Banks
Chester Co., Woods Branch, 2 ♀ - 2 spec., 10 - 27 June 1978, DHF.
UENOIDAE
<i>Neophylax fuscus</i> Banks
Crawford Co., Woodcock Creek Lake, 1 ♂, 16 October 1987, JLS.
Erie Co., PSU Behrend College, 5 ♂ - 1 ♀, 27 August 1973, ECM.
Huntingdon Co., Colerain Park, 1 ♂, 15 October 1944, SWF.
Perry Co., Buffalo Ridge, 1 ♂, 9 October 1965, JWA.
Sullivan Co., Lick Creek, Millview, 2 ♂ - 13 ♀, 27 September 1979, ACG.
Wyoming Co., Meshoppen Creek, Meshoppen, 3 ♂, 8 - 22 October 1979, DHF.
ibid. 24 ♂ - 12 ♀, 3 - 15 October 1980, DHF.
<i>Neophylax mitchelli</i> Carpenter
Carbon Co., Swamp Run, 1 larva, 20 April 1968, Y&O.
Centre Co., Maddisonburg, 7 larva, 16 April 1968, Y&O.
Nittany, 4 Larvae, 16 April 1968, Y&O.
Chester Co., Bog Hollow Creek, 1 pupa, 12 April 1978, DHF at ROM.
ibid. 1 ♂, 1 September 1978, DHF at ROM.
Bog Hollow Creek, Unionville, 2 ♂, 4 October 1978, DHF at ROM.
London Grove, 11 ♂ - 5 ♀, 23 September - 13 October 1980, DHF at ROM.
West Branch McCorkles Rock Creek, 9 ♂, 14 September 1981, ROM.
Dauphin Co., Clarks Valley, 1 ♂, 12 October 1950, AC.
Lancaster Co., New Holland, 99 spec., 6 October 1977, JSW at ROM.
McKean Co., 4 mi. S Betula, 1 larva, 23 April 1979, PJS.
Northampton Co., Portland, 2 pupae, 19 September 1958, F&W.
Philadelphia Co., Roxborough, 1 ♂, 17 September 1928, FH.
Somerset Co., Kooser State Park, 2 larvae, 19 March 1975, B&F.
Westmoreland Co., Maul Spring, 7 larvae, 19 March 1975, B&F.
<i>Neophylax stollus</i> Ross
Crawford Co., Caldwell Creek, 29 ♂ - 2 ♀, 24 August - 21 September 1989, ECM-MAL.

TABLE II. (continued)

French Creek, Saegertown, 1 ♂, 6 October 1990, ECM.
 Mercer Co., Deer Creek, 1 ♂, 6 October 1989, ECM.
 Tioga Co., Pine Creek, 1 ♂ - 1 ♀, 11 September 1989, ECM-MAL.
 Warren Co., Caldwell Creek, 1 ♂ - 3 ♀, 21 September 1989,
 ECM-MAL.
 Wyoming Co., Meshoppen Creek, 14 ♂ - 2 ♀, 10 September 1989,
 ECM-MAL.

Historic collections

BRACHYCENTRIDAE

Brachycentrus incanus (Hagen)

Dauphin Co., Susquehanna River, 2 ♂ - 4 ♀, 30 April 1905, PDA.

Dauphin Co., Harrisburg, 1 ♂, 8 May 1907, PDA.

Brachycentrus lateralis (Say)

Centre Co., Poe Paddy, 1 ♂, 2 May 1948, PSU.

Brachycentrus nigrosoma (Banks)

Bucks Co., Ralph Stover Park, 7 ♂ - 1 ♀, 1 May 1937, JWHR at INHS.

Brachycentrus numerosus (Say)

Centre Co., Poe Paddy, 9 ♀, 2 May 1948, PSU.

Huntington Co., Colerain Park, 3 ♀, 4 May 1952, PSU.

Lancaster Co., Octoraro Creek, 7 spec., 7 September 1943, USNM.

HYDROPTILIDAE

Mayatrichia ayama Mosely, listed in Ross, H.H., 1944.

LEPTOCERIDAE

Ceraclea mentiea (Walker)

Dauphin Co., At Arcs, Harrisburg, 8 spec., 12 June - 24 August 1905, PDA.

Oecetis eddlestoni (Ross)

Bradford Co., Susquehanna River, Sayre, 1 ♂, 29 July 1937, JHD at INHS.

Setodes guttatus (Banks)

Cumberland Co., Camphill, 1 Undet., 28 May 1905, PDA.

Dauphin Co., At Arcs, Harrisburg, 3 spec., 3 August 1905, PDA.

Triaenodes abus Milne

Lancaster Co., Ltl. Conestoga Ck., E. Petersburg, 10 spec., 10 June 1943, JWP at USNM.

MOLANNIDAE

Molanna flavicornis Banks

Erie Co., Presque Isle, 6 ♂, 8 August 1949, EF at ROM.

PHRYGANEIDAE

Oligostomis pardalis (Walker)

Perry Co., South Fork Camp, 1 ♂, 8 June 1938, K&C at PDA.

I - Central Lowland Province
 Eastern Lake Section
 II - Appalachian Plateau Province
 A - Glaciated Plateau Section
 B - Pittsburgh Low Plateau Section
 C - Allegheny Mountain Section
 D - High Plateau Section
 E - Mountainous High Plateau Section
 F - Glaciated Plateau Section
 III - Ridge and Valley Province
 A - Appalachian Mountain Section
 B - Great Valley Section
 IV - Blue Ridge Province
 South Mountain Section
 V - New England Province
 Reading Prong Section
 VI - Piedmont Province
 A - Gettysburg-Newark Lowland Section
 B - Piedmont Lowland Section
 C - Piedmont Upland Section
 VII - Atlantic Coastal Plain Province
 Lowland and Intermediate Upland Section

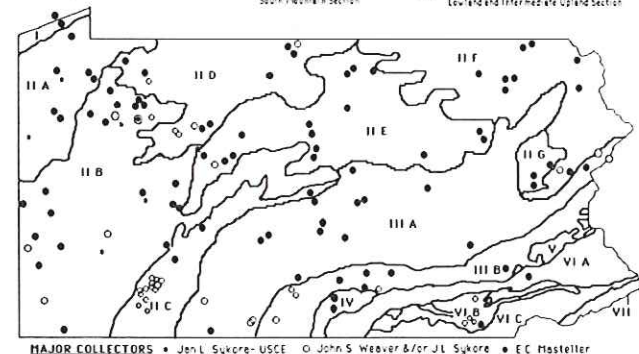


FIGURE 1. A physiographic province map adapted from Berg et al. 1989 for collection sites of the major studies of Pennsylvania Trichoptera.

COLLECTION SITES
 E. C. Masteller, 1987-90

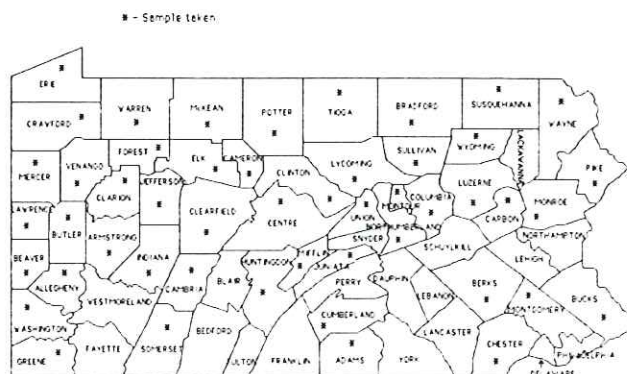


FIGURE 2. Collection sites of E.C. Masteller in Pennsylvania indicated by county.

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Code	Collector	Location or Source of Specimens or Records
AC	A. Champlain	PA Dept. of Ag., Bur. Plant Ind. (PDA)
ACG	A.C. Graham	Royal Ontario Museum (ROM)
B&F	R. Baumann & O.S. Flint Jr.	U.S. National Museum (USNM)
BGS	B.G. Swegman	Univ. Pittsburgh (1977-81) (U. Pitt.)
CB	C. Betten	Cornell - Comstock Entomol. Museum
CF	C. Fox	PDA
CM	C. McGinnet	PA Insect Survey - Bedford
DHF	D.H. Funk	Stroud Water Research, Avondale
DJS	Dave Shetlar	Pennsylvania State Univ. (PSU)
ECM	E.C. Masteller	Penn State Erie, Behrend College
ECM-CAD	Caren A. Dionisi	"
ECM-JEC	Jon E. Carey	"
ECM-MAL	Mark A. Lethaby	"
ECM-MPP	M.P. Plociniak	"
ECM-TB	Todd Bills	"
ECM-JMS	James Samuels	"
EF	Ed Fuller	ROM
EMC	E.M. Craighead	USNM
F&W	O.S. Flint Jr. & G. Wiggins	ROM
FH	F. Haimbach	Illinois Natural History Survey
GLJ	G.L. Jubb	North East Exp. Sta. PSU (VPI&SU)
JB	Jack Busch	Erie, PA at USNM
JHE	J.H. Eddleston	at Ill. Nat. Hist. Sur.
JLS	J.L. Sykora	U. Pitt. and U.S. Army Corp Engineers
JSW	J.S. Weaver	Univ. New Hampshire (PA 1975-77)
JWA	J.W. Adams	PA Dept. of Agriculture
JWHR	J.W.H. Rehn	PSU
JWP	J.W. Price	USNM

Code	Collector	Location or Source of Specimens or Records
JWR	J.W. Richardson Jr.	Stroud Water Res. at Phil. Acad. Nat. Sci.
K&C	Kirk & A. Champlain	PA Dept of Agriculture
KM	Ken Manuel	Duke Power Co.
MAF	M.A. Farrel	PSU-Frost Entomol. Museum
OSF	O.S. Flint Jr.	USNM
PHA	Peter H. Adler	PSU 1981-1983
PJS	P.J. Spangler	USNM
RMS	R.M. Seward	Unit Pitt.-manuscript
S&Q	Starnes & Quinn	PA Ins. Survey - Biglerville Exp. Sta. PSU
SSR	S.S. Roback	Phil. Acad. Nat. Sci. at Ill. Nat. Hist. Sur.
SWF	Stuart W. Frost	PSU
TJS	T.J. Spilman	USNM
VH	Verda Hass	PA Insect Survey - PSU
Y&O	Yamamoto & Odum	ROM
Code	Collection	Location of Specimens
PAS	The Academy of Natural Sciences of Philadelphia	Philadelphia
PDA	Pennsylvania Dept. of Agriculture, Bureau of Plant Ind.	Harrisburg, PA
PSU	Pennsylvania State Univ.	Frost Entomol. Mus., Univ. Park, PA
ROM	Royal Ontario Museum	Toronto, Canada
SWR	Stroud Water Research Center	Avondale, PA
USNM	National Museum of Natural History, Smithsonian Institution	Washington, D.C.
INHS	Illinois Natural History Survey	Urbana, IL

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