

NEW STATE AND PROVINCIAL RECORDS FOR NORTH AMERICAN SMALL MINNOW MAYFLIES (EPHEMEROPTERA: BAETIDAE)¹

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ABSTRACT: New record data are contributed for 49 species of baetid mayflies from North America north of Mexico. A total of 209 newly documented locales constitute 115 new state or provincial records involving 30 USA states and five Canadian provinces.

KEY WORDS: New state, new provincial records, North America, small minnow mayflies, Ephemeroptera, Baetidae

As part of the mayflies of North America project, we are attempting to document complete ranges of the nearly 700 species in the region. Most species of the family Baetidae, or small minnow mayflies, have been especially poorly documented during the approximately 200 years of taxonomic and faunistic work on the mayflies in North America (see McCafferty 2001), and yet they are one of the most common and important groups of mayflies in both lotic and lentic aquatic habitats (e.g., Edmunds et al. 1976, McCafferty 1981). This is due mainly to the fact that these particular mayflies have been historically difficult if not impossible to identify. For example, it was not until 1979 that a number of species began to be identifiable in the more commonly collected aquatic, larval stage (Moriwaka and McCafferty 1979). The purpose of the present study has been to begin to shore up this shortcoming in distributional data, and thereby make these species more accessible for biogeographic studies as well as studies of biodiversity and conservation biology. As such, we are able to contribute 209 new locale records involving 49 of the 122 baetid species currently known to occur in North America north of Mexico. In all, 115 new state and provincial records are provided.

Species for which new data are documented are listed alphabetically. States and provinces are given in upper case. Most collection materials associated with the distributional data reside in the Purdue Entomological Research Collection; any other collection sources are indicated within brackets at the end of a data citation. Other collection sources include Arkansas State University [ASU], Louisiana State University [LSU], Illinois Natural History Survey [INHS], University of Iowa Hygienic Laboratory [UIHL], Massachusetts Audubon Society [MAS], and the J. M. Webb personal collection [WC]. Life stages associated with the data are given as (L) for larvae and (A) for adults.

RECORD DATA

Acentrella ampla Traver

New data. MASSACHUSETTS, Franklin Co, Colrain Township, Green R, XI-17-1994, B Colburn (L) [MAS]. SOUTH CAROLINA, McCormick Co, Cedar Springs Cr at Rt 138, II-17-1984, BC Kondratieff (A). TENNESSEE, Blount Co, Red Cr, ca 2 mi E Walland, IV-11-1977, AR Brigham,

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J Unzicker (L); Cooke Co, Cosby Cr at Cosby entrance to GSNP, V-17-2001, CD & RP Randolph, LM Jacobus (L). WEST VIRGINIA, Pocahontas Co, West Fork Greenbrier R at Olive Jct nr Durbin, IX-03-1979, SM Shields (L).

Acentrella insignificans (McDunnough)

New data. MONTANA, Blaine Co, Milk R 16 mi W Havre at US Hwy 2, 48/35/45 N, 109/21/48 W, and Chouteau Co, Eagle Cr 16 mi SE Big Sandy, 48/03/26 N, 109/48/25 W, and Big Sandy Cr, 2 mi SE Big Sandy, 48/09/04 N, 110/04/56 W, VI-14-2000, and Judith Basin Co, Arrow Cr, 4 mi N Geyser, 47/18/52 N, 110/29/11 W, VI-12-2000, and Judith R, 3 mi W Hobson at C M Russel Mem Hwy, 46/59/51 N, 109/55/34 W, VI-11-2000, and Liberty Co, Breed Cr W Whitlash at Bold Butte Rd, 48/54/28 N, 111/15/28 W, and creek crossing at Black Jack Rd, 2 mi N Mount Lebanon, 48/53/24 N, 111/02/01 W, VI-13-2000, WP McCafferty et al. (L); McCone Co, Missouri R at Lewis & Clark Rec Area, 8 mi SE Wolf Point at St Rd 13, 48/04/02 N, 105/32/18 W, VII-27-2002, WP McCafferty, LM Jacobus (L); Yellowstone Co, Pryor Cr at 1990, 45/47/56 N, 108/17/36 W, VI-09-2000, WP McCafferty et al. (L).

Acentrella parvula (McDunnough)

New data. MAINE, Hancock Co, Ellsworth, VI-18-1976, WP McCafferty, AV Provonsha, M Minno (A). MONTANA, Blaine Co, Milk R 16 mi W Havre at US Hwy 2, 48/35/45 N, 109/21/48 W, and Chouteau Co, Marias R, at US Hwy 87, S Loma, 47/55/48 N 110/30/35 W, VII-27-2002, WP McCafferty, LM Jacobus (L). NORTH CAROLINA, Swain Co, Confluence of the Oconoluftee R and Raven's Fork, VIII-28-2001, at light (A). OKLAHOMA, Pushmataha Co, Panther Cr at Hwy 2, 3.1 mi N Hwy 2-3 jct, IV-17-1993, DE Baumgardner (L). SOUTH CAROLINA, Barnwell Co, Steel Cr, nr confl Meyers Br, III-14-1984, BC Kondratieff (L). VIRGINIA, Carroll Co, New R at Rt 721 Bridge, in drift, VIII-02-1976, JH Kennedy (L).

Remarks. North Carolina data for this species are given here because the only other published record of that species in North Carolina (Pescador et al. 1999) lacked locale data.

Acentrella turbida (McDunnough)

New data. ILLINOIS, McHenry Co, Spring Grove, VI-04-1938, Mohr, Burks (A) [INHS]. LOUISIANA, Livingston Par, Little Nutalbany R, Albany, VI-27-1973, B Stark (A). MONTANA, Judith Basin Co, Arrow Cr 4 mi N Geyser, 47/18/52 N, 110/29/11 W, WP McCafferty et al. (L); Liberty Co, creek crossing at Black Jack Rd, 2 mi N Mount Lebanon, 48/53/24 N, 111/02/01 W, WP McCafferty et al. (L,A). VERMONT, Windhams Co, North Br, at W edge of Wilmington, VI-20-1976, WP McCafferty, AV Provonsha, M Minno (A). YUKON, Moose Cr, VII-31-2001, DW Parker (L) [WC].

Acerpenna macdunnoughi (Ide)

New data. ARKANSAS, Franklin Co, Prairie Cr at St Hwy 217, 2.2 mi N Charleston, VIII-15-1981, J Huggins (L). MASSACHUSETTS, Berkshire Co, Savoy Township, Black Br, III-25-1995, B Colburn (A) [MAS]. MISSISSIPPI, Itawamba Co, Briar Cr, at Hartsell Rd, 34/19/44 N, 88/12/34 W, and unnamed stream at New Temple Rd, 34/20/47 N, 88/15/14 W, and Tishomingo Co, Little Cripple Deer Cr, at Co Rd 957, 34/44/01 N, 88/11/47 W, and Perrywinkle Cr at Co Rd 995, 34/44/29 N, 88/09/18 W, and Indian Cr at Co Rd 241 N Iuka, 34/51/25 N, 88/11/26 W, III-18, 19-2004, JM Webb (L). PENNSYLVANIA, Carbon Co, Hayes Cr, VIII-30-1993, J Munro (L).

Acerpenna pygmaea (Hagen)

New data. MASSACHUSETTS, Hampshire Co, South Hadley Township, Bachelor Cr, IX-30-1993, B Colburn (A) [MAS].

***Baetis brunneicolor* McDunnough**

New data. MASSACHUSETTS, Franklin Co, Whately Township, Jimmy Nolan Br, X-07-1992, B Colburn (L) [MAS]. MONTANA, Big Horn Co, Indian Cr, at BIA Rd 88, NW Rosebud Battlefield St Prk, 45/16/08/ N, 107/ 02/43 W, VI-08-2000, and Liberty Co, Breed Cr W Whitlash at Gold Butte Rd, 48/54/28 N, 111/15/28 W, VI-13-2000, WP McCafferty et al. (L). NEW HAMPSHIRE, Crafton Co, Hale Br at For Serv Rd nr Sugarloaf Campsite, VI-16-1976, WP McCafferty, AV Provonsha, M Minno (L). OHIO, Hamilton Co, Miami R at New Baltimore, IX-18-1952 (L).

***Baetis flavistriga* McDunnough**

New data. GEORGIA, Cherokee Co, Town Cr, Canton, VI-18-1973, B Stark, G Vaught (L); Rabun Co, Betty's Cr, 5 mi W Dillard, VI-20-1973, B Stark (L). MONTANA, Chouteau Co, Boxelder Cr on BIA Rd 8, 7 mi W Boxelder, 48/18/06 N, 109/53/10 W, VI-14-2000, and Liberty Co, Breed Cr, W Whitlash at Gold Butte Rd, 48/54/28 N, 111/15/28 W, VI-13-2000, WP McCafferty et al. (L,A). NEW HAMPSHIRE, Crafton Co, Hale Br at For Serv Rd nr Sugarloaf Campsite, VI-16-1976, WP McCafferty, AV Provonsha, M Minno (L). VIRGINIA, Rappahannock Co, Thornton R, Hwy 2, VI-22-1975, Baumann, Stark, Pine (L). VERMONT, Windhams Co, Bill Br, nr Molly Stark St Prk on St Rd 9, VI-20-1976, WP McCafferty, AV Provonsha, M. Minno (L). YUKON, Moose Cr, VII-31-2001, DW Parker (L) [WC].

***Baetis intercalaris* McDunnough**

New data. MASSACHUSETTS, Hampshire Co, North Amherst VI-05-1965, MC Miller (A), Amherst, V-30-1941, LM Bartlett (A). SOUTH CAROLINA, Barnwell Co, Meyers Br, XII-01-1984, and Steel Cr, nr confl of Meyers Br, II-17-1984, III-19-1984, and Pen Br, XII-01-1984, and Steel Cr at Cypress Bridge, X-11-1984, BC Kondratieff (L, A).

***Baetis notos* Allen and Murvosh**

New data. OKLAHOMA, Cherokee Co, Spring Cr, Teresita, VII-14-15-1995, RK Heth (L).

***Baetis pluto* McDunnough**

New data. MASSACHUSETTS, Essex Co, Pye Br, below Rt 97 bridge at Topsfield, VI-04-1979, D Berysten (L). NEW HAMPSHIRE, Sullivan Co, Croydon Br N Grantham, IX-13-1975, KCS (L). TENNESSEE, Blount Co, Forge Cr at Parsons Br Rd, V-18-2001, CD & RP Randolph, LM Jacobus (L).

***Baetis rusticans* McDunnough**

New data. MASSACHUSETTS, Berkshire Co, Florida Township, Smith Br, XII-22-1994, and Franklin Co, Sunderland Township, Mohawk Br, V-20-1992, B Colburn (L) [MAS].

***Baetis tricaudatus* Dodds**

New data. ARKANSAS, Fulton Co, Spring R, V-07-1977, GL Harp (L) [ASU]. GEORGIA, Union Co, Nottely R, 7 mi S Blairsville, VI-20-1973, B Stark (L).

***Callibaetis californicus* Banks**

New data. OKLAHOMA: Garfield Co (L) (no other data).

***Callibaetis ferrugineus* (Walsh)**

New data. MASSACHUSETTS, Hamden Co, Springfield, VI-09-1965, RW Koss (A); Hampshire Co, Cushman Pond, X-29-1938, JR Traver (L), and Amherst, VI-11-1956, IV-17-1957, VI-21-1957, VIII-01-1960, JR Traver (A). MONTANA, Powder River Co, on For Rd 92 (Ten Mile Rd), 45/25/53 N, 106/08/59 W, VI-08-2000, WP McCafferty et al. (A). VERMONT, Waterbury Stiles Pond, VI-20-1948, LM Bartlett (A).

***Callibaetis floridanus* Banks**

New data. ARKANSAS, Crittenden Co, Wapanocca L nr observation platform, Wapanocca Natl Wildlife Ref, IX-09-1978, and Mississippi Co. Big L nr shore, Big Lake Nat. Wildlife Ref, IX-02-1978, J Rettig (L) [ASU]. KENTUCKY, Hopkins Co, Flat Cr, 5.2 km E Pennyrile Pkwy, 6.8 km S Anton, VIII-06-1980 (L). MARYLAND, Frederick Co, Potamac R, point of rocks, 1 mi above Rt 15, VIII-24-1965, and Montgomery Co, Potamac R, 4 mi below mouth of Monocacy R, and Potamac R at Whites Ferry, VIII-26-1965, JW Richardson (L).

***Callibaetis fluctuans* (Walsh)**

New data. ARKANSAS, Craighead Co, rice field nr Cache R, 4 mi W Bono, VIII-13-1980 (A). OKLAHOMA, Garfield Co, X-10-1964, and II-18-1965, RC Harrel (L).

***Callibaetis pallidus* Banks**

New data. MINNESOTA, Polk Co, Crookston, VIII-27-1956, GF Edmunds (A). MONTANA, Chouteau Co, cattle tank 1 mi NE Big Lake, 47/40 N, 110/24 W, VI-12-2000, WP McCafferty et al. (L). WISCONSIN, Dane Co, Madison, VII-08-1912, and VII-01-1916, and V-1941, and IV-30-1949, and VI-30-1952, and VI-1956 (A). YUKON, Alaska Hwy, Mile Post 660, VII-01-1952 (A).

***Callibaetis pretiosus* Banks**

New data. ARKANSAS, Calhoun Co, Locust Bayou at St Hwy 4, 12 mi W Hampton, IV-25-1977, HW Robison, and Lafayette Co, small pond behind brick residence, 1 mi E Stamps at St Hwy 82, I-26-1991, J Nichols (L) [ASU]. INDIANA, Bartholemew Co, farm pond 1.5 mi E Waymansville, VII-02-1999, LM Jacobus (L). LOUISIANA, Calcasieu Par, Sam Houston St Prk, Lake Charles, VIII-14-1963 (A).

***Callibaetis skokianus* Needham**

New data. WISCONSIN, Dane Co, Madison, VII-08-1916, JG Sanders, and VI-03-1929, MH Doner (A); Door Co, Sturgeon Bay, VII-29-1957, RL Giese (A).

***Centroptilum alamance* (Traver)**

New data. ILLINOIS, Pope Co, Lusk Cr, 1.82 km NE Waltersburg, VI-26-1997, and Golconda, IV-03-1946, and Herod, III-14-1946 [INHS].

***Centroptilum album* McDunnough**

New data. OKLAHOMA, Cherokee Co, Spring Cr, Timberlake Ranch, V-01-1997, RK Heth (L).

***Centroptilum bifurcatum* McDunnough**

New data. INDIANA, Bartholemew Co, White Cr, S Rd 930S, V-19-2000, LM Jacobus (L). IOWA, Winnesheik Co, Canoe Cr, Decorah, IX-09-2003, T Hubbard (L) [UIHL]. KANSAS, Douglas Co, Kansas R, at Eudora bridge, VIII-24-1978, P Liechti (L) [KU]. MONTANA, Chouteau Co, Shonkin Cr, .5 mi W Shonkin, 47/37/35 N, 110/34/53 W, VI-12-2000, WP McCafferty et al. (L); Hill Co, Milk R at St. John's bridge, VII-31-1999, JM Webb (L) [WC]; Wheatland Co, Musselshell R, at US Hwy 191 Harlowton, 46/25/44 N, 109/50/30 W, VI-10-2000, WP McCafferty et al. (L).

***Centroptilum conturbatum* McDunnough**

New data. MONTANA, Blaine Co, Milk R, 16 mi W Havre at US Hwy 2, 48/35/45 N, 109/21/48 W, VI-14-2000, and Chouteau Co, Highwood Cr, 3 mi S Highwood, 47/33/04 N 110/46/38 W, VI-12-2000, WP McCafferty et al. (L); Richland Co, Missouri R at St Rd 16, SE Culbertson, 48/07/21 N, 104/28/32 W, VII-27-2002, WP McCafferty, LM Jacobus (L). WISCONSIN, Trempealeau Co, Black R, above Hwy 35, VII-16-1991, RA Lillie (L).

***Centroptilum minor* McDunnough**

New data. MAINE, Franklin Co, Carr R, at Rt 16, W North Anson, VI-21-1986 (L).

***Centroptilum rufrostrigatum* (McDunnough)**

New data. OHIO, Geauga Co, Kirtland, VIII-31-1942, and Lake Co, Willoughby, IX-04-1942, JR Traver (A).

***Centroptilum triangulifer* (McDunnough)**

New data. INDIANA, Perry Co, Poison Cr, ca 5 mi NW Derby, V-19-1977, M Minno, S Yocum (L). KENTUCKY, Breathitt Co, Canoe Cr, 3.7 km S KY 30 at mouth, and Carter Co, Tygarts Cr at jct KY 1662 & US 60, IV-17-1978, and Elliot Co, Little Fork Little Sandy R at jct KY 486 & Wallow Hole Cr Rd, .6 km NE Culver, VI-26-1978, and Fleming Co, Fox Cr at Big Run Rd bridge, .2 km NW Big Run Rd-KY 1013 jct, VII-20-1983, and Knott Co, Laurel Fork, 0.9 mi SE on KY 1098 from jct with KY 160, VI-20-1978, and Lewis Co, Kinniconick Cr 67 m up stream from Indian Cr confluence, .4 km ESE KY 344-377 jct, VII-22-1983, and Morgan Co, Caney Cr, 2.9 km N KY 2498 from jct with US 460, VI-29-1978, and Rowan Co, North Fork Triplett Cr, 5.7 km NNE on KY 377 from jct with KY 32 (L). OHIO, Lake Co, Kirtland IX-02-1942, JR Traver (A). WISCONSIN, Burnett Co, St. Croix R, Norway Point Landing, VI-11-1991, RA Lillie (L); Monroe Co, Squaw Lake, Fort McCoy, VIII-06-1981, AV Provonsha (L).

***Centroptilum victoriae* McDunnough**

New data. ALBERTA, Pembino R, 53/39 N, 115/00 W, IX-18-no year, J Ciborowski (L,A). MONTANA, Big Horn Co, Indian Cr, at B1A 88, NW Rosebud Battlefield St Prk, 45/16/08 N, 107/02/43 W, VI-08-2000, and Blaine Co, Milk R, 16 mi W Havre at US Hwy 2, 48/35/45 N, 109/21/48 W, VI-14-2000, and Chouteau Co, Shonkin Cr .5 mi W Shonkin, 47/37/35 N, 110/34/53 W, VI-12-2000, and Eagle Cr, 16 mi SE Big Sandy, 48/03/26 N, 109/48/25 W, VI-14-2000, and Judith Basin Co, Judith R, 3 mi W Hobson at C. M. Russel Mem Hwy, 46/59/51 N, 109/55/34 W, WP McCafferty et al. (L). WISCONSIN, Dunn Co, Chippewa R, Pature Island access, VI-03-1993, and Marathon Co, Eau Claire R, Dells Prk, VI-10-1992, and Rusk Co, Jump R, at Sheldon, VI-17-1992, RA Lillie (L).

***Cloeon dipterum* (Linnaeus)**

New data. ALASKA, Valdez-Cordova Co, Lake Mentasta, Glen Hwy MP 282, VIII-12-1954, CP Alexander (A). MICHIGAN, Oakland Co, 7 km SW Milford, IV-03-1988 (L,A).

***Dipheter hageni* (Eaton)**

New data. NEW HAMPSHIRE, Sullivan Co, Grantham at light, V-10-1980 (A).

***Fallceon quilleri* (Dodds)**

New data. MONTANA, Richland Co, Missouri R at St Rd 16, SE Culbertson, 48/07/21 N, 104/28/32 W, VII-27-2002, WP McCafferty, LM Jacobus (L); Yellowstone Co, Perry Cr at 190, 45/47/56 N, 108/17/36 W, VI-09-2000, WP McCafferty et al. (L).

***Heterocloeon anoka* (Daggy)**

New data. IOWA, Mitchell Co, Deer Cr, 43/25/32 N, 93/01/27 W, and Rock Cr at Rock Creek, VIII-21-2001, and Worth Co, Willow Cr nr Hanlontown, IX-04-2001 (L) [UIHL]. MANITOBA, Valley R at Hwy 5, and Wilson R at Hwy 10, VI-08-2000, JM Webb (L) [WC]. OKLAHOMA, Pushmataha Co, Kiamichi R at Hwy 2, 16.3 mi N Hwy 2-3 jct, 16 mi N Antlers, VII-16-1993, DE Baumgardner (L). PENNSYLVANIA, Lacawanna Co, Scranton, Summer 1945, HK Townes (L). SASKATCHEWAN, Montreal R, at Hwy 2, VIII-08-2000, and Overflowing R at Hwy 9, VII-09-2000, and Red Deer R at Hudson Bay Reg Prk, VII-19-2000, and South Saskatchewan R at Clarkboro

Ferry, VII-16-2000, and at Lemsford Ferry, IX-16-2000, and at Queen Elizabeth Power Stat VI-02-2000, and Wakesiu R at Hwy 2, VII-06-2000, and Weyakwin R at Hwy 2, VII-07-2000, JM Webb (L) [WC]; Torch R at Hwy 35, and Whitefox R, at Hwy 35, VII-02-1986, V Keeler (L) [WC]; Battle R, bridge S Washburn, VIII-27-1972, DH Smith (L) [WC].

Remarks. The present recognition and generic disposition of this species is being elaborated elsewhere by R. D. Waltz and WPM; however, it first appeared as given here in Webb and McCafferty (2004).

***Paracloeodes minutus* (Daggy)**

New data. LOUISIANA, Lasalle Par, Trout Cr at White Sulphur Springs, VIII-25-1973 (L) [LSU].

***Plauditus bimaculatus* (Berner)**

New data. LOUISIANA, Washington Par, Silver Cr, 6 mi NE Franklinton, V-05-1974 (A) [LSU].

***Plauditus cestus* (Provonsha and McCafferty)**

New data. GEORGIA, Rabun Co, Betty's Cr, 5 mi W Dillard, VI-20-1973, B Stark (L). MANITOBA, Valley R at Hwy 5, VI-08-2000, and Shell R, at Hwy 5, VI-09-2000, JM Webb (L) [WC].

***Plauditus dubius* (Walsh)**

New data. MONTANA, Teton Co, Teton R, 300M E overpass on I15, 32 mi N Great Falls, 47/55/27 N 111/43/38 W, VI-13-2000, WP McCafferty et al. (L).

***Plauditus gloveri* McCafferty and Waltz**

New data. MANITOBA, Shell R at Hwy 5, VI-09-2000, and Valley R at Hwy 5, VI-08-2000, JM Webb (L) [WC]. MONTANA, Blaine Co, Milk R, 16 mi W Havre at US Hwy 2, 48/35/45 N, 109/21/48 W, VI-14-2000, and Chouteau Co, Big Sandy Cr, 2 mi SE Big Sandy, 48/09/04 N, 110/04/56 W, VI-14-2000, and Liberty Co, Breed Cr, W Whitlash at Gold Butte Rd, 48/54/28 N, 111/15/28 W, VI-13-2000, WP McCafferty et al. (L).

***Plauditus punctiventris* (McDunnough)**

New data. NEW JERSEY, Monmouth Co, Shark Cr, Shark Cr County Park, V-17-2001, MD Meyer (L).

***Plauditus texanus* Wiersema**

New data. OKLAHOMA, Pushmataha Co, Panther Cr, at Hwy 2, 3.1 mi N Hwy 2-3 jct, IV-17-1993, DE Baumgardner (L), and Terrapin Cr, III-17-1994 (L).

***Plauditus virilis* (McDunnough)**

New data. MANITOBA, Pine R at Hwy 10, and Valley R at Hwy 5, VI-08-2000, JM Webb (L) [WC]. MONTANA, Judith Basin Co, Judith R, 3 mi W Hobsonat C. M. Russel Mem Hwy, 46/59/51 N, 109/55/34 W, VI-11-2000. WP McCafferty (L). NORTH CAROLINA, Swain Co, Confluence Oconaluftee R and Raven's Fork, VI-18-, VII-16-, VIII-16,28-2001, and Oconaluftee R under Blue Ridge Parkway overpass, at light (A). OKLAHOMA, McCurtain Co, Silver Cr, III-18-1994 (L). PENNSYLVANIA, Mifflin Co, Mifflin Co, Reedsville, VI-18-1948 [INHS].

***Procloeon fragile* (McDunnough)**

New data. CONNECTICUT, New Haven Co, Mt. Carmel, X-20-1947, RM & AH Sommerman (A) [INHS]. MAINE, Franklin Co, Oquossoc, VII-15,27-no year, N Banks (A).

***Procloeon pennulatum* (Eaton)**

New data. MONTANA, Hill Co, Milk R at St. John's bridge, VII-31-1999, JM Webb (L) [WC]. NEVADA, Elko Co, Humbolt R, Elko, VIII-29-1965, SL Jensen (L). WISCONSIN, Oconto Co, Oconto R, Hwy 88, VII-15-1992, and Sauk Co, Otter Cr, turnaround, VII-21-1993, slow run, VI-22-1992, RA Lillie (L).

***Procloeon quaesitum* (McDunnough)**

New data. NOVA SCOTIA: Annapolis R, VI-25-1950 (L).

***Procloeon rubropictum* (McDunnough)**

New data. NEW HAMPSHIRE, Windhams Co, Whetstone Br, nr Battleboro, VI-19-1976, WP McCafferty, AV Provonsha, M. Minnow (L). PENNSYLVANIA, Carbon Co, Hayes Cr, VIII-30-1993, J Munro (L).

***Procloeon rufrostrigatum* (McDunnough)**

New data. ILLINOIS, Kankakee Co, Kankakee, VII-10-1925 [INHS]; Vermilion Co, Oakwood, VII-30-1939 [INHS]. OHIO, Lake Co, Willoughby, VII-10-1939, and VII-22-1942, JR Traver (A). WISCONSIN, Burnett Co, St Croix R, VI-16-1992, and Marathon Co, Eau Claire R, VI-10-1992, and Oconto Co, Oconto R, Hwy BB, VII-15-1992, and Waupaca Co, Embarrass R, Behnke Rd, VII-14-1992, RA Lillie (L); Washburn Co, Totogatic R at Minong, IX-03-1939 [INHS].

***Procloeon simplex* (McDunnough)**

New data. ARKANSAS, Independence Co, West Lafferty Cr, 4 mi W Cushman, X-21-1978 (L) [ASU]. WISCONSIN, Burnett Co, St. Croix R, Norway Point Landing, VI-11-1991, RA Lillie (L); Washburn Co, Kimball Lake at Minong, VIII-25-1945 [INHS].

***Procloeon viridoculare* (Berner)**

New data. LOUISIANA, Catahoula Par, Grant Par, Fish Cr, Pollock, VI-28-1973, B Stark (L). MONTANA, Powder River Co, Little Powder R at US Hwy 212, 45/22/26 N, 105/18/07 W, VI-08-2000, WP McCafferty et al. (L). OKLAHOMA, Garfield Co, Otter Cr, VIII-04-1964, RC Harrel (L), and Latimer Co, Red Oak Cr, 5 mi SE Red Oak, VI-08-1973, B Stark (L).

Remarks. The Oklahoma records for *P. viridoculare* are given here because no detailed locale data appeared with the only other published record of this species from Oklahoma (Wiersema and McCafferty 2004).

***Pseudocentropiloides usa* Waltz and McCafferty**

New data. WISCONSIN, Burnett Co, St. Croix R, Hwy 70, VI-16-1992, Seven Island area, VII-17-1991, and Columbia Co, Wisconsin R, below Portage, VII-12-1991, and Grant Co, Wisconsin R, Millerville, VII-11-1991, and Green Co, Sugar R, Hwy 11-81, VI-06-1992, and Rock Co, Sugar R, Nelson Rd, VI-06-1992, and Sauk Co, Honey Cr, above Hsy 60, VII-20-1991, and Shawano Co, Wolf R, Hwy CCC, VII-15-1992, and Waupaca Co, Embarrass R, Behnke Rd, VII-14-1992, and Wolf R, above Rey Rd, VI-09-1992, RA Lillie (L).

***Pseudocloeon dardanum* (McDunnough)**

New data. MINNESOTA, Grant Co, Mustinka R at St Rd 9, 1 mi NW Norcross, 45/53/13 N, 96/12/49 W, VII-25-2002, WP McCafferty, LM Jacobus (L,A). MONTANA, Blaine Co, Milk R, 16 mi W Havre at US Hwy 2, 48/35/48 N, 109/21/48 W, VI-14-2000, WP McCafferty et al. (L,A); Milk R at Fort Belknap at US 2, 48/29/18 N, 108/45/40 W, and McCone Co, Missouri R at Lewis & Clark Rec Area, 8 mi SE Wolf Point at ST Rd 13, 48/04/02 N, 105/32/18 W, and Richland Co, Missouri R at St Rd 16, SE Culbertson, 48/07/21 N, 104/28/32 W, VII-27-2002, WP McCafferty, LM Jacobus

(L); Hill Co, Milk R at St. John's bridge, VII-31-1999, JM Webb (L) [WC]. SOUTH CAROLINA, Kershaw Co, Wateree R, 100 ft S U.S #1 at bridge, IX-04-1966, JW Richardson (L).

Remarks. The South Carolina record is significant in that it extends the known range of this species into the southeastern region of North America. Larvae of this species were described by Soluk (1981), at which time the species was thought to be primarily western. Thus, the much-used larval key to species of North American baetinae mayflies (Moriyama and McCafferty 1979) did not include the species, and any larvae of *P. dardanus* would have been keyed to *P. ephippiatum* (Traver) prior to the appearance of the McCafferty and Waltz (1995) key, which incorporated *P. dardanus* larvae for the first time. Since 1995, several records of *P. dardanus* have been confirmed from the Midwest (Randolph and McCafferty 1998), and larval records of *P. ephippiatum* from the East must now be reevaluated using the McCafferty and Waltz (1995) key.

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LITERATURE CITED

- Edmunds, G. F., S. L. Jensen, and L. Berner.** 1976. The mayflies of North and Central America. University of Minnesota Press. Minneapolis, Minnesota, U.S.A. 330 pp.
- McCafferty, W. P.** 1981. Aquatic Entomology. Science Books International. Boston, Massachusetts, U.S.A., 448 pp.
- McCafferty, W. P.** 2001. The gentle quest: 200 years in search of North American mayflies. pp. 21-35. In: E. Dominguez (Editor). Trends in research in Ephemeroptera and Plecoptera. Kluwer Academic/Plenum Publisher, New York, NY, U.S.A. 478 pp.
- McCafferty, W. P. and R. D. Waltz.** 1995. *Labiobaetis* (Ephemeroptera: Baetidae): new status, new North American species, and related new genus. Entomological News 106: 19-28.
- Moriyama, D. K. and W. P. McCafferty.** 1979. The *Baetis* larvae of North America (Ephemeroptera: Baetidae). Transactions of the American Entomological Society 105: 139-221.
- Pescador, M. L., D. R. Lenat, and M. D. Hubbard.** 1999. Mayflies (Ephemeroptera) of North Carolina and South Carolina: an update. Florida Entomologist 82: 316-332.
- Randolph, R. P. and W. P. McCafferty.** 1998. Diversity and distribution of the mayflies (Ephemeroptera) of Illinois, Indiana, Kentucky, Michigan, Ohio, and Wisconsin. Ohio Biological Survey Bulletin, New Series 13 (1):vii + 1-188.
- Soluk, D. A.** 1981. The larva of *Baetis dardanus* McDunnough (Ephemeroptera: Baetidae). Entomological News 92: 147-151.
- Webb, J. M. and W. P. McCafferty.** 2004. New records of mayflies (Ephemeroptera) from Alberta, Canada, Entomological News 114(4): 230-232.
- Wiersema, N. A. and W. P. McCafferty.** 2004. New specific synonyms and records of North American *Centroptilum* and *Procloeon* (Ephemeroptera: Baetidae). Entomological News 115(3), in press.