

KANSAS MAYFLY RECORDS FOR THE GENERA
POTAMANTHUS, PENTAGENIA, EPHEMERA, EPHORON, AND TORTOPUS

by

Paul M. Liechti

Reported herein are additional county records for the mayfly genera Potamanthus, Pentagenia, Ephoron, and Tortopus which have been previously reported for Kansas by various authors (Banks, 1894; Needham, Traver & Hsu, 1935; Hamilton, 1959; McCafferty, 1975). These records delineate more completely the Kansas distribution of these mayflies. Ephemera simulans (Walker) is here reported as occurring in Kansas for the first time, representing a genus new to the State.

The majority of the specimens cited are housed in the collection of the State Biological Survey of Kansas (SBSK), with a few adult collections in the Snow Museum of the University of Kansas (KU). Where a species was found in more than 10 counties only the counties are listed; if the species were collected in 10 counties or less, complete locality data is provided.

POTAMANTHIDAE

POTAMANTHUS Pictet

The majority of Potamanthus in the United States are eastern in distribution with no records of the genus west of the Great Plains. In Kansas the genus is represented by the common species P. myops and less common P. rufous. The later species is only represented by adult specimens housed in the Snow Museum at the University of Kansas. Potamanthus nymphs are "sprawlers" and in Kansas are most frequently found in permanent small streams and rivers. They can be found sitting on substrates of silt, sand, or gravel.

Potamanthus myops (Walsh)

Adults: Chase, Chautauqua (reared), Cherokee, Coffey, Cowley, Ellsworth, Linn, Montgomery, Morris (reared), and Neosho counties.

Nymphs: Allen, Chase, Chautauqua, Cherokee, Elk, Franklin, Geary, Greenwood, Labette, Lyon, Mitchell, Montgomery, Morris, Sumner, Wabaunsee, Wilson, and Woodson counties.

Potamanthus myops is relatively common in Kansas and may be the only species of the genus present (see discussion under P. rufous).

Thus far its distribution is limited to the eastern half of the state which may also be the extent of its western U. S. distribution since no records exist for west of the Great Plains.

Potamanthus rufous Argo

Adults: DOUGLAS Co.: June 1892, at light, 1 female, E. S. Tucker; July 1892, at light, 3 males, E. S. Tucker (KU).

The above listed specimens are the only record for Potamanthus rufous in Kansas. Initial identifications were made by E. W. Hamilton and listed in his 1959 publication as being possibly determined in error. The author examined these specimens and agree there is a moderate difference in abdominal color markings between the specimens determined to be P. rufous and the typical P. myops found throughout the rest of the state. These color differences are very subtle and probably represent only a color variation of P. myops but having not been able to examine type material or verified specimens of P. rufous the author is allowing the record of P. rufous for Kansas to continue.

EPHEMERIDAE

EPHEMERA Linnaeus

Although being one of the largest genera of burrowing mayflies in the world there are only seven species known to occur in North America. The following record represents the first report for the genus in Kansas.

Ephemera simulans Walker

Nymphs: CHEROKEE Co.: Spring River, 3.4 mi E Crestline at K-96 hwy bridge (SE 1/4 of SW 1/4, sec 11, T33S, R25E), 12 Apr 1977, S. W. Hamilton & T. W. Oldham.

Ephemera simulans is the most widespread species of the genus and this record fills a gap in its distribution within the United States. The species appears to be restricted to the extreme southeast corner of the state. The Spring River originates in the ozarkian area of southwest Missouri and is of somewhat different character than most other rivers in Kansas, thus, E. simulans is of doubtful occurrence elsewhere in the state.

PALINGENIIDAE

PENTAGENIA (Walsh)

The genus contains only two known species which are restricted to North America. Pentagenia has been listed as a member of various families at different times. Most recently it has been placed with the Palingeniidae (McCafferty & Edmunds, 1976). Within North America the genus is of eastern distribution with no accounts west of the Great

Plains.

Pentagenia vittigera (Walsh)

Adults: BARTON Co.: Arkansas River, 1 mi S. Dundee (sec 21, T20S, R14W), UV light, 14 Jul 1976, D. G. Huggins & P. M. Liechti.

Nymphs: DOUGLAS Co.: Kansas River at Lecompton bridge (sec 34, T11S, R18E), 9 Oct 1975, D. G. Huggins. JEFFERSON Co.: Kansas River at Lecompton bridge (sec 35, T11S, R18E), 11 Sep 1975, D. G. Huggins & J. Wagner. JOHNSON Co.: Kansas River, 2 mi W & 2.2 mi N Sunflower (sec 23, T12S, R21E), 29 Aug & 9 Sep 1975, D. G. Huggins. LEAVENWORTH Co.: Kansas River 3.6 mi W & 0.6 mi S Fall Leaf (sec 34, T12S, R20E) 9 Sep 1975, D. G. Huggins. LYON Co.: Cottonwood River 9 mi W Emporia (sec 18, T19S, R10E), 19 Jun 1978, M. B. DuBois & A. Slater. MARSHALL Co.: Big Blue River 0.5 mi NE Blue Rapids upstream from K-9 hwy bridge (sec 20, T4S, R7E), 19 Dec 1979, D. G. Huggins. OTTAWA Co.: Solomon River 0.6 W Niles (sec 31, T12S, R1W), 7 Oct 1980, P. M. Liechti & L. C. Ferrington. SHAWNEE Co.: Kansas River 0.5 mi N & 1.3 mi W Valencia (sec 19, T11S, R14E), 13 Oct 1975, D. G. Huggins.

Pentagenia vittigera was originally reported from Kansas by Banks (1894) with another accounting by Hamilton (1959). Their records were from Riley (Manhattan) and Douglas counties, respectively. The species is found in larger rivers from the Great Plains east and south to Florida, excluding the northeastern areas of the U. S.

POLYMITARCYIDAE

This family of burrowing mayflies is found throughout the world except Australia with various members of its genera distributed in the United States. Species usually inhabit larger streams and rivers where the nymphs burrow characteristic "C" shaped burrows in clay/silt or similar consistency substrates.

EPHORON Williamson

Ephoron is represented by two species in North America Ephoron leukon is an eastern species and E. album ranges from the midwest to the west coast. Much ecological information is available for E. album that indicates it has a broad range of environmental tolerance, whereas, biological and habitat data for E. lenkon is lacking. Ephoron leukon appears, however, to be more restricted in its occurrence to rocky riffles of streams.

Ephoron album (Say)

Adults: Bourbon, Chase, and Douglas counties.

Nymphs: Allen, Cherokee, Coffey, Doniphan, Douglas, Ellis, Kingman, Labette, Montgomery, Neosho, Osborne, Russell, Sumner, Wilson, and Woodson counties.

The original Kansas record for Ephoron album was reported by Banks (1894) and later by Hamilton (1959) from specimens collected in Douglas and Ellis counties (KU). Although known to occur in impounded waters or lakes, Kansas specimens have been collected in or around medium to large rivers. This species is most often taken with nymphs of Hexagenia spp. In Kansas E. album will probably not be found much further west of the Ellis county collection due primarily to a decrease in adequate habitat.

TORTOPUS Needham and Murphy

This genus has three described species known to occur in the United States. One is found in the southeast, one in Texas and the south central U. S. and the other from the midwest north to Canada. There are no reports of Tortopus occurring west of the Rocky Mountains. The genus is only found in the Western Hemisphere along with its sister genus Campsurus.

Tortopus primus (McDunnough)

Adults: CHASE Co.: Cottonwood River at Cottonwood Falls (sec 29, T19S, R8E), UV light, 31 Aug 1977, D. G. Huggins & S. W. Hamilton. DOUGLAS Co.: Kansas River at Eudora (sec 5, T13S, R21E), UV light, 3 Aug 1976, D. G. Huggins & P. M. Liechti; Wakarusa River at US 59 hwy bridge (sec 24, T13S, R19E), UV light, 7 Aug 1978. ELLSWORTH Co.: Kanopolis Reservoir outlet (sec 34, T16S, R6W), UV light, 3 Aug 1977, S. Roth. MONTGOMERY Co.: Elk River below Elk City Reservoir (sec 9, T32S, R15E), UV light, 25 Jul 1978, M. B. DuBois & F. C. Gilbert. OSBORNE Co.: Osborne (KU). OTTAWA Co.: Solomon River 1.0 mi W & 1.0 mi S Bennington (sec 14, T12S, R3W), UV light, 14 Sep 1977, P. M. Liechti.

Nymphs: LYON Co.: Cottonwood River 9 mi W Emporia (sec 18, T19S, R10E), 19 June 1978, M. B. DuBois & A. Slater.

Tortopus primus has a distribution that extends from the lower midwest north to Manitoba. Nymphs frequently burrow along the banks of larger rivers near the water line and thus far our sampling techniques have yielded but one collection of nymphs. The species distribution will probably not extend further west than the Ellsworth County collection due to increasingly sandy, unstable burrowing sites for nymphs.

LITERATURE CITED

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