

FIVE ADDITIONAL EPHEMEROPTERA GENERA FROM KANSAS

by

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Five genera included herein are reported for the Kansas Ephemeroptera fauna for the first time: Baetidae, Apobaetis and Dactylobaetis; Heptageniidae, Anepeorus; Ephemerellidae, Ephemerella and Eurylophella. Although species identification was not possible for all genera represented, it is felt that the rarity of some genera and additional distributional information presented is worthy of reporting at this time.

Generic determinations were made using the key and descriptions contained in Edmunds, Jensen and Berner (1976). For those species determined, keys and descriptions are noted under the discussion of that species given below. Topotype specimens of Apobaetis loaned by the California Academy of Sciences were used for confirmation of determination. For all genera but Dactylobaetis determinations are based on nymphal material. Nymphs and reared subimagos of Dactylobaetis were used for its determination. All specimens cited are housed in the collection of the State Biological Survey of Kansas. Collections designated KDHE were made by staff members of the Kansas Department of Health and Environment - Water Quality Section.

BAETIDAE

APOBAETIS Day

Nymphs: DOUGLAS Co.: Kansas River at Eudora, ne 1/4, sec 5, T13S, R21E, 21 & 24 Aug 1978, P. M. Liechti & D. G. Huggins. JOHNSON Co.: Kansas River, sec 5, T12S, R23E & sec 31, T11S, R23E, Sep 1981, F. B. Cross, et al.

This is the first record of Apobaetis since its collection in 1954 at the type locality in the Tuolumne River near Modesto, California. The Kansas River appears similar in general water quality and available substrate as described by Day (1955) for the Tuolumne River. Maturity of the nymphs taken in September indicate adult emergence is probably in late September or October.

At present it is not possible to identify our specimens to the species level, however, comparison of Kansas nymphs with Apobaetis indepressus

Day from the type locality shows little morphological variation. A series of associated specimens will be needed before correct taxonomic placement can be made. The difficulty incurred collecting specimens has delayed the rearing of individuals and may be the reason why the genus has not been discovered in other areas of the United States.

DACTYLOBAETIS Traver and Edmunds

Nymphs: CHEROKEE Co.: Neosho River, 0.6 mi S & 3.3 mi W Hallowell, sw 1/4, sec 13, T33S, R21E, 2 Aug 1976, S. W. Hamilton; Neosho River at Chetopa, se 1/4, sec 35, T34S, R21E, 21 Sep 1978, D. G. Huggins. COFFEY Co.: Neosho River at Burlington, sw 1/4, sec 26, T21S, R15E, 16 Jun 1976, P. M. Liechti & D. G. Huggins. COWLEY Co.: Walnut River, 1 mi S Winfield, ne 1/4, sec 33, T32S, R4E, 8 Jun 1979, KDHE. LYON Co.: Cottonwood River, 2 mi S & 1.5 mi E Emporia, nw 1/4, sec 25, T19S, R11E, 5 Jul 1977, KDHE. MONTGOMERY Co.: Verdigris River, 2 mi S & 2 mi E Coffeyville, se 1/4, sec 13, T35S, R16E, 9 Jun 1979, KDHE. NEOSHO Co.: Neosho River, 2.3 mi W St. Paul, nw 1/4, sec 22, T29S, R20E, 20 Sep 1978, D. G. Huggins & 1 Oct 1978, P. M. Liechti (reared subimagoes).

Dactylobaetis has been reported from northeastern Oklahoma but the specimens were not determined as to species. In Kansas the genus appears to be restricted to the southeastern quarter of the state and most commonly in the Neosho River drainage. The Kansas specimens have been tentatively determined as D. mexicanus Traver, following the descriptions given by Traver and Edmunds (1968) and Allen and Chao (1978). The nearest documented accounts of this species are from Palo Pinto County, Texas and Colfax County, New Mexico. If the Kansas specimens are in fact D. mexicanus, their occurrence here would represent a substantial range extension for the species.

HEPTAGENIIDAE

ANEPEORUS McDunnough

Nymphs: MARSHALL Co.: Big Blue River, 0.5 mi S & 0.5 mi W Oketo, se 1/4, sec 14, T1S, R7E, 13 Jun 1978, KDHE.

Adults of Anepeorus are rarely taken (Edmunds et al., 1976) and the above collection includes only two nearly mature nymphs. Neither of the two known species have been associated, therefore, determination of these two nymphs is not possible. A. simplex (Walsh) is known from Illinois, Iowa, and Georgia and seems to be a good candidate for the Kansas species but either rearing or collection of adults will be necessary before correct taxonomic placement can be made.

It is not known what microhabitat the nymphs were taken from in the Big Blue River. However, the river is of moderate size with a general substrate of a mixture of sand overlaid with silt that is quite thick in depositional zones. Larger substrate material includes a few scattered

rocks but mainly debris of limbs and logs with leaf packs during fall and winter months. Estimating from the maturity of the nymphs taken adult emergence is probably in late June or July.

EPHEMERELLIDAE

The Ephemerellidae are abundant and widespread in North America with representatives known from Alaska to Baja California across Canada and south to Florida. Although diverse and widespread these are the first records of the family in Kansas with one collection from extreme northwestern Kansas and the other from the extreme southeast. Kansas appears to be transitional in Ephemerellidae distribution with a more western species in the northwest and an eastern species in the southeast. The changing physiographic nature of the land and varying aquatic habitats of the state from east to west is probably a limiting factor in Ephemerellidae distributions as has been seen previously with other genera and species (Liechti, 1978 & 1981). Continued collecting may reveal more occurrences but the localities will probably be in peripheral counties along the Colorado-Kansas-Nebraska and Kansas-Missouri borders.

The following genera records follow Allen's (1980) elevation of the previously recognized subgeneric classifications.

EPHEMERELLA Walsh

Nymphs: CHEYENNE Co.: South Fork Republican River, 7 mi S & 11 mi W St. Francis, sw 1/4, sec 26, T4S, R42W, 13 Jun 1974, D. G. Huggins & 5 Jun 1979, D. G. Huggins & P. M. Liechti.

The Ephemerella are widespread in distribution with representatives known from Alaska to Florida. The Kansas nymphs collected are probably E. inermis Eaton but adults are needed for confirmation. This species and E. lacustris Allen and Edmunds are nearly inseparable as nymphs and both species are known from Colorado; E. inermis, however, is apparently more common and widespread (Allen & Edmunds, 1965). The Cheyenne County collection site is two miles from Colorado and the South Fork Republican River drainage starts approximately 60 miles west of the Kansas-Colorado border making the occurrence of the genus in Kansas plausible.

Judging from the maturity of the nymphs collected adult emergence in Kansas occurs in late June or early July.

EURYLOPHELLA Tiensuu

Nymph: CHEROKEE Co.: Spring River, 0.7 mi N & 3.5 mi E Crestline, se 1/4, sec 11, T33S, R25E, 12 Apr 1977, T. W. Oldham.

This genus is primarily eastern in distribution with at least four of its twelve known species occurring in Missouri (Allen & Edmunds, 1963). An additional two species have been found in Arkansas (McCafferty & Provonsha, 1978). Only a single nymph has been found in Kansas to date. Its immaturity only allows identification to near Eurylophella lutulenta or E. versimilis. This genus is most likely restricted to the "Ozarkian type" waters of the southeastern corner of Kansas such as the Spring River and its major tributary, Shoal Creek.

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