Larval Midges (Diptera: Chironomidae) from Northeastern Oklahoma

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Surveys of the aquatic insects of Oklahoma have focused on the central and southern portions of the state. Faunas there are moderately species-rich, but chironomid diversity varies. Taxonomic richness of larval midges may be lower than 15 taxa (1, 2), moderate with 20-30 taxa (3, 4), or high with more than 30 taxa (5, 6). Chironomids are poorly known from the Ozark region of Oklahoma, however, an area of considerable interest to aquatic ecologists because of the taxonomic richness of other groups such as fishes (7). During the period 22 April-26 May 1986, I surveyed larval midges from waters in the northeast part of the state.

Thirty sites representing a variety of aquatic habitats were sampled in Adair, Cherokee, and Delaware counties. Locations included Luna Branch, Fourteen Mile Creek, Peacheater Creek, Flint Creek, Spring and Double Spring Creeks, and several springs. Stream width ranged from < 1 m to 50 m. Chironomids were sampled by dipnetting and kicknetting in all microhabitats and by picking from overturned rocks and logs for 30 min. Depth of capture ranged from 10 cm to 150 cm. Specimens were preserved in 70% ethanol with 5% glycerin, and subsequently mounted on slides and cleared with CMC-10. Standard taxonomic references were used for identification (8-10). Since most North American genera contain species which are undescribed or for which distinguishing larval characteristics are unknown, many identifications are to genus, subgenus, or species group level (10).

Thirty-three taxa were identified (Table 1), over a third of which had not been listed in previous surveys within the state (1-6, 11, 12). Several taxa were abundant and/or frequent and might be considered characteristic for this region. A tanypodine of the *Thienemannimyia* group appeared monospecific and keyed out to the genus *Conchapelopia* (10). It was the most frequently encountered and second most abundant midge collected, with larger numbers found in deeper water. *Dicrotendipes neomodestus* was the most abundant and a frequently collected taxon. Species of *Dicrotendipes* typically inhabit lakes (4, 10, 12, 13), but in this study *D. neomodestus* was numerous in shallow water of small streams.

TABLE 1. Larval midges collected from 30 sites in northeast Oklahoma, April–May 1986.

Taxon	Number of Sites	Number of IM#
Tanypodinae		
Ablabesmyia cinctipes *	1	1
Ablabesmyia mallochi	2	2
Ablabesmyia peleensis *	1	4
Larsia sp.	2	7
Natarsia baltimoreus *	2	2
Procladius (*Holotanypus*) sp.	1	3
Psectrotanypus sp. *	2	7
Tanypus carinatus *	1	1
Thienemannimyia grp.	16	88
Zavrelimyia sp. *	1	3
Orthocladinae		
Brillia flavifrons *	1	1
Cricotopus bicinctus grp.	5	15
Cricotopus fuscus grp.	1	1
Cricotopus (*Isocladius*) sp.	1	2
Cricotopus or *Orthocladius* sp.	9	52
Eukiefferiella bavarica grp. *	5	21
Paratrichocladius sp. *	3	19
Rheocricotopus atripes grp. *	1	1
Thienemanniella sp. *	7	13
Chironomini		
Chironomus staegeri *	1	85
Chironomus spp.	9	71
Cryptochironomus fulvus grp.	7	24
Dicrotendipes neomodestus	7	159
Glyptotendipes nr. *lobiferus*	1	1
Microtendipes pedellus grp.	4	14
Paratendipes spp.	7	24
Polypedilum aviceps *	6	28
Polypedilum convictum *	9	18
Polypedilum tritum *	1	1
Polypedilum sp.	1	1
Stictochironomus sp.	8	71
Tanytarsini		
Micropsectra sp.	6	27
Tanytarsus sp.	4	9

Individual midges
* Taxon not previously recorded in Oklahoma (1–6, 11, 12).

Chironomus spp. were commonly encountered but usually in low numbers. A cut-off pool at the confluence of Flint Creek and the Illinois River, however, contained large numbers of a species conforming to *C. staegeri* (14). The pool was silty, turbid, and probably hypoxic since the stoneroller minnows (*Campostoma anomalum*) trapped in it were skimming the surface film. The genus *Polypedilum* was common and was dominated by two species, *P. convictum* and *P. aviceps,* the latter of which was most abundant in small streams. The genera *Stictochironomus, Cryptochironomus, Eukiefferiella, Cricotopus,* and *Paratendipes* were common. All five genera contain a large number of undescribed species (10) but in this study, only the last two were obviously polyspecific.

The chironomid fauna of northeast Oklahoma is distinctive from that of previously surveyed systems in the state, including that of an adjacent county (11). In other studies of Oklahoma midges, Chironomini averaged 62% of the taxa, compared with 36% in this study. Many taxa that I collected were not reported in previous studies. Distinctiveness of the Ozark fauna may be attributed to the habitats and areas sampled in earlier studies. Previous work focused on larger streams (1-3, 5, 6) and reservoirs (4, 11, 12), rather than smaller, headwater streams where Orthocladinae and Tanypodinae would be more likely to codominate with Chironomini. Also, previous studies were not conducted within the Ozark uplift, a geologically stable area that has remained above sea level since the late Palaeozoic (15) and which represents the western limits of distribution for many eastern species (7, 16).

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