
Branchiura Sowerbyi (Tubificidae, Annelida) in Oklahoma

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In various Oklahoma limnological surveys the occurrence of *Branchiura sowerbyi* Beddard has been noted in a number of bottom samples. This worm is a unique tubificid which has dorsal and ventral gills along its posterior end.

Brinkhust (1963) gives the known sporadic, cosmopolitan range of this species as the Gold Coast, China, Burma, Japan, and India and a number of European countries and the United States of America, where it was probably introduced. It was first reported in this country by Spencer (1932). Pennak (1953) lists the following states where it has been taken from a variety of habitats: Illinois, Iowa, Michigan, Ohio, Tennessee and Wisconsin. Causey (1959) gives a photograph and mentions the rarity of this species. Oklahoma's first report of *B. sowerbyi* was by Evans (1959). He reported the occurrence of one specimen taken from a stock tank at Madill, Marshall County, in 1957. Hornuff's (1957) survey of four streams does not report this species nor do Brown and McDaniel (1954). With their means of sampling, the latter investigators in their survey of seden-

TABLE I. DISTRIBUTION OF *BRANCHIURA SOWERBYI* IN OKLAHOMA

Location	Dates	Habitat	Stream Order	Density Per Sq. Ft.
Payne County, R2E-T20N S21	20 Oct. 1964	Turbid Pond		4-76
....., R2E-T20N S21	20 Oct. 1964	Clear Pond		0-4
....., Boomer Lake, Stillwater Coll. J. Carrol	7 Nov. 1964	Margin		
Logan County, Skeleton Creek, R3W-T18N Sec. 26, Coll. J. Wilhm (1964)	March— Oct. 1963	Riffles and Margins	6	1-6
....., Otter Creek, R4W-T19N Sec. 7	June— Nov. 1964	Pools Spring Fed	3	0-1
Garfield County, Otter Creek R3W-T20N Sec. 4 and 31	June— Nov. 1964	Pools	Middle 5	0-2
Logan County, Otter Creek R3W-T19N Sec. 7	June— Nov. 1964	Pools	Upper 6	0-2
R3W-T18N Sec. 18	June— Nov. 1964	Pools	Middle 6	1-11
R3W-T18N Sec. 31	June— Nov. 1964	Pools	Lower 6	1-28
Pawnee County, Camp Creek R5E-T21N Sec. 13	June— Aug. 1964	Riffles and Pools	5	0-18
R6E-T21N Sec. 6	June— Aug. 1964	Pools	5	0-8
....., Black Bear Creek R4E-T21N Sec. 1	Oct. 1963— Oct. 1964	Riffles and Pools	5	0-11.3
Noble County, Black Bear Creek R3E-T21N Sec. 1	Oct. 1963— Oct. 1964	Riffles and Pools	5	0-16.3
R2E-T21N Sec. 2	Oct. 1963— Oct. 1964	Riffles and Pools	5	0-11.3

tary pond forms, would not likely have encountered it. New distribution records of *B. sowerbyi* for Oklahoma are listed in Table I. Quantitative collections were made with a Surber one ft² sampler or a 6 in² Ekman dredge. In the pond habitat it was collected at depths ranging from one to ten feet in both clear and turbid waters. In stream habitats it was encountered in riffles, margins and pools. Following Horton's (1954) stream order classification system, collections were made in third, fourth, fifth and sixth order streams. The worm occurred principally in higher order sites downstream probably because of the presence of greater amounts of organic matter. The higher densities generally occurred during June, July and August.

In Table I, collectors other than the authors are named.

LITERATURE CITED

- Brinkhurst, Ralph O. 1963. Taxonomical studies on the Tubificidae (Annelida, Oligochaeta). Intl. Rev. Ges. Hydrobiol. 2:1-89.
- Brown, Harley P. and Harriet C. McDaniel. 1954. Preliminary survey of sedentary invertebrates in an Oklahoma Pond. Proc. Okla. Acad. Sci. 33:115-121.
- Causey, David. 1959. Vermicelli. The Educa. Focus. 30(2):16-20.
- Evans, Kenneth. 1959. A record of the oligochaete *Branchiura sowerbyi* from Oklahoma. Southwestern Nat. 3:223-224.
- Hornuff, Lothar E. 1957. A survey of four Oklahoma streams with reference to production. Okla. Fish. Res. Lab. Rept. 63:1-22.
- Horton, Robert E. 1945. Erosional development of streams and their drainage basins. Bull. Geol. Soc. Am. 56:275-370.
- Pennak, Robert W. 1953. *Fresh-water invertebrates in the United States*. Ronald Press, New York.
- Spencer, W. P. 1932. A gilled oligochaete *Branchiura sowerbyi* new to America. Trans. Amer. Micros. Soc. 51:267-272.
- Wilhm, Jerry L. 1964. Species diversity of benthic macroinvertebrates in a stream receiving domestic and oil refinery effluents. Unpublished Ph. D. thesis, Okla. State Univ.
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