

## Checklist of the Cladocera of Oklahoma

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### INTRODUCTION

Very little literature has been published relative to the taxonomy and ecology of the Cladocera of the state of Oklahoma, or the southwestern United States. Mackin (1930, 1931) published work of a taxonomic nature which was confined to the study of Cladocera of the southeastern part of the state of Oklahoma. The present paper is based on a seven year study of the taxonomy and ecology of the Cladocera of the entire state.

Cladocera are considered as an important link in the food chain of aquatic organisms and are an indirect concern of man when the biological productivity of aquatic habitats is studied. It is felt, therefore, that information of cladoceran taxonomy and ecology can contribute to the knowledge of biological productivity of certain aquatic habitats.

Faunal lists of Cladocera of the United States contain information relative to the wide distribution and common occurrence of certain Cladocera. After careful study it is revealed that some Cladocera considered as commonly widely distributed are in reality localized and restricted to certain narrow geographical areas. Other Cladocera reported as restricted and rare in occurrence are found to be widely distributed and common. The conclusion to this observation is that more intensive study of geographical distribution and taxonomy of Cladocera needs to be made.

The present study was undertaken in order to contribute knowledge concerning taxonomy, ecology and distribution of Cladocera of Oklahoma. The writer wishes to thank Dr. H. P. Clemens of the Department of Zoology, University of Oklahoma for suggestion and direction of the investigation. Also thanks are due Dr. H. P. Clemens, Phil Summers, Jack Kramer and the Biological Survey of the State of Oklahoma for furnishing some of the samples studied in the investigation; Professor R. W. Kiser of Centralia Junior College, Centralia, Washington and Dr. J. L. Brooks of Yale University for identification of some and confirmation of others of the Cladocera collected in the study.

### METHODS AND MATERIALS

A total of 3,000 samples was collected from 1,200 habitats designated as ponds, lakes, streams and rivers by means of a modified Birge cone net. Samples were taken from the various drainage systems of the state. Brief notes on the distribution and abundance of each species found in the state are given.

The taxonomic list of Cladocera of Oklahoma contains to date 60 forms (53 species) distributed among five families as follows: Sididae 5, Daphnidae 29, Bosminidae 3, Macrothricidae 3, and Chydoridae 20. Sixteen forms are designated as new records for the state. Mackin's 1931 list of Cladocera was revised according to the most recent system of classification of Cladocera and was found to contain 44 forms (38 species).

#### KEY TO FAMILIES OF THE ORDER CLADOCERA FOUND IN OKLAHOMA

1. (5) Antennules attached to the ventral side of the head, not covered by fornice. Antenna biramous in female, rami flattened the dorsal with numerous setae, both lateral and terminal. Sididae 2.
2. (1) Dorsal rami without numerous lateral and terminal setae. Antennule of female usually small to rudimentary; if large, never inserted at the anterior end of the ventral surface of head. Daphnidae 3.

3. Antennule of female large, fixed. Intestine simple without caeca. Bosminidae 4.
4. (3) Antennule of female long, freely movable, usually inserted at anterior end of ventral surface of head. Intestine simple or convoluted. Macrothricidae 5.
5. (1) Fornices extended so as to cover antennules in whole or in part and uniting with the rostrum into a beak, projecting ventrally in front of the antennule. Chydoridae.

#### Family Sidae Baird

- Sida crystallina* (O. F. Mueller) 1775. New for the state and found in only one southern county in the state.
- Diaphanosoma brachyurum* (Lieven) 1848. Widely distributed over the state in all seasons of the year.
- Diaphanosoma leuchtbergianum* (Fischer) 1850. Widely distributed over the state in all seasons of the year.
- Latonopsis occidentalis* (Birge) 1891. Found in only two southern counties of the state. New for the state.
- Pseudosida bidentata* (Herrick) 1884. Found seasonally in five southern counties of the state.

#### Family Daphnidae Straus

- Daphnia magna* (Straus) 1820. Found in only one county in the state.
- Daphnia clathrata* (Forbes) 1892. Found distributed in widely scattered counties in all seasons of the year.
- Daphnia ambigua* (Scourfield) 1941. Found in only one county located in southern part of the state.
- Daphnia parvula* (Fordyce) 1901. Found in only two counties located in the central part of the state.
- Daphnia pulex* (de Geer) 1778. The most frequently collected cladoceran of the genus *Daphnia*. Found in abundant numbers throughout the state and in all seasons of the year.
- Daphnia pulex* var. *obtusa* Kurz 1874. Found in several widely scattered counties of the state, but always in small numbers.
- Daphnia pulex* var. *pulicaria* Forbes 1893. Found in only one county in the southern part of the state.
- Daphnia pulex parapulex retrocurva* (Woltereck) 1932. Found in small numbers in five widely scattered counties of the state. New for the state.
- Daphnia pulex parapulex breviceps* (Woltereck) 1932. Found in small numbers in eight counties of the state. New for the state.
- Daphnia longispina* var. *hyalina* (Leydig) 1860. Found in only one county in the state.
- Daphnia longispina* var. *galeata* (Birge) 1918. Found in eight widely distributed counties of the state.
- Daphnia longispina* var. *mendota* (Birge) 1918. Found in only three counties of the state.
- Daphnia longispina* (O. F. Mueller) 1785. Found in small numbers in nine widely distributed counties of the state.
- Simocephalus vetulus* (O. F. Mueller) 1776. Found abundantly throughout the state in all seasons of the year.
- Simocephalus expinosus* (Koch) 1841. Found in small numbers in four counties in the state.
- Simocephalus serrulatus* (Koch) 1841. Found abundantly throughout the state in all seasons of the year.

- Scapholeberis mucronata* (O. F. Mueller) 1785. Found abundantly seasonally throughout the state.
- Ceriodaphnia laoustris* (Birge) 1893. One of the most frequently collected Cladocera in the state. Found abundantly throughout the state in all seasons of the year.
- Ceriodaphnia laticaudata* (P. E. Mueller) 1863. Found in small numbers in only three counties.
- Ceriodaphnia rigaudi* (Richard) 1894. Found abundantly seasonally in the state. New for the state.
- Ceriodaphnia cornuta* (Sars) 1861. Found in only one county in the state. New for the state.
- Ceriodaphnia reticulata* (Jurine) 1820. Found in three counties of the state.
- Ceriodaphnia pulchella* (Sars) 1862. Found in only one county in the southern part of the state.
- Ceriodaphnia quadrangula* (O. F. Mueller) 1785. Found in small numbers in widely distributed counties of the state.
- Moina micura* (Kurz) 1874. Found in small numbers in widely distributed counties in the state. New for the state.
- Moina brachiata* (Jurine) 1820. Found throughout the state in small numbers seasonally.
- Moina rectirostris* (Leydig) 1860. Found in only one county in the state. New for the state.
- Moina affinis* (Birge) 1893. Found abundantly seasonally throughout the state.
- Moina macrocopa* (Straus) 1820. Found abundantly throughout the state seasonally. New for the state.

#### Family Bosminidae Sars

- Bosmina longirostris* (O. F. Mueller) 1785. The most abundant Cladocera in the state. Found throughout the state in all seasons of the year.
- Bosmina coregoni* (Baird) 1845. Distributed widely in the state. Found in small numbers seasonally.
- Bosminopsis deitersi* (Richard) 1895. Found in only one county in the southern part of the state. New for the state.

#### Family Macrothricidae Norman and Brady

- Ilyocryptus sordidus* (Lieven) 1848. Found in small numbers throughout the state.
- Macrothrix laticornis* (Jurine) 1820. Found in small numbers throughout the state.
- Macrothrix rosea* (Jurine) 1820. Found in only one southern county in the state. New for the state.

#### Family Chydoridae Stebbings

- Camplocerous rectirostris* (Schoedler) 1862. Found in small numbers through the state.
- Camplocerous oklahomensis* (Mackin) 1890. Found in small numbers in the southern counties of the state.
- Kurzia latissima* (Kurz) 1874. Found in small numbers throughout the state.
- Ongyrella tenuicaudis* (Sars) 1862. Found in only one southern county of the state.
- Alonella diaphana* (King) 1853. Found in only one southern county of the state.

- Alonella karua* (King) 1853. Found in only one county in the southern part of the state.
- Leydigia quadrangularis* (Leydig) 1860. Found in small numbers throughout the state.
- Leydigia acanthocercoides* (Fischer) 1854. Found in small numbers in only four counties of the state.
- Alona quadrangularis* (O. F. Mueller) 1785. Found throughout the state, but always in small numbers. New for the state.
- Alona costata* (Sars) 1862. Found in small numbers throughout the state.
- Alona affinis* (Leydig) 1860. Found seasonally in small numbers in widely distributed counties in the state.
- Alona rectangula* (Sars) 1861. Found in small numbers throughout the state seasonally.
- Alona guttata* (Sars) 1861. Found in small numbers in two counties of the state.
- Dunhevedia setigera* (Birge) 1877. Found in only one southern county in the state.
- Pleurozus denticulatus* (Birge) 1877. Found throughout the state and in all seasons but never very abundant.
- Pleurozus hamulatus* (Birge) 1910. Found in small numbers throughout the state.
- Chydorus ovalis* (Kurz) 1874. Found in small numbers in only four counties in the state.
- Chydorus sphaericus* (O. F. Mueller) 1875. Found abundantly throughout the state in all seasons of the year.
- Chydorus globosus* (Baird) 1850. Found in two widely separated counties in the state. New for the state.
- Chydorus latus* (Sars) 1862. Found in only two widely separated counties of the state.

## LITERATURE CITED

1. Mackin, J. G. 1930. Studies on the Crustacea of Oklahoma. I. *Campocercus oklahomensis* n. sp. Trans. Amer. Micros. Soc. 49 (1): 46-53.
  2. .... 1931. Studies on the Crustacea of Oklahoma. Notes on the cladoceran fauna. Proc. Okla. Acad. Sci. 11:22-28.
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