

# CARYOPHYLLID CESTODE RESEARCH AT THE UNIVERSITY OF OKLAHOMA BIOLOGICAL STATION, 1963-1966: A SUMMARY

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At the invitation of Professor Self I began in 1963 the first of four summers at the University of Oklahoma Biological Station studying the caryophyllid cestode fauna of fish from Lake Texoma and the eastern part of Oklahoma. With the encouragement, keen interest and generous assistance of Dr. Self, to whom this issue of the Proceedings is dedicated, I was able to record 16 species of caryophyllid tapeworms, that included five new species and the new genera *Promonobotrium* and *Penarcbigetes*. This work is in large measure a tribute to the leadership in parasitological research and teaching shown by Dr. Self. A summary of research activities is given below.

During the summers of 1963 to 1966 I examined 424 fish of 10 species (1 Cyprinidae; 9 Catostomidae) known or suspected to harbor caryophyllids. The fish are as follows (numbers examined in parentheses): *Cyprinus carpio* (24), *Carpiodes carpio* (115), *Carpiodes velifer* (4), *Cycleptus elongatus* (15), *Hypentelium nigricans* (14), *Ictiobus bubalus* (107), *Ictiobus cyprinellus* (9), *Ictiobus niger* (6), *Minytrema melanops* (52) and *Moxostoma erythrum* (78). Only *C. elongatus* was uninfected, perhaps because they were collected from the turbine tunnels of Denison Dam and thus were unable to feed for a period of time.

In addition to Lake Texoma and the spillway area (Texas: Grayson Co., Red River), Oklahoma localities from which collections were made are: Bryan Co., Rock Creek; Cherokee Co., Baron Fork of Illinois River above Tenkiller Reservoir, Illinois River and an oxbow lake at Northeastern Outing Club, 22 km NE Tahlequah; Johnston Co., Pennington Creek, Little Blue River; Marshall Co., Buncombe Creek; and Muskogee Co., Greenleaf Lake.

The following new species have already been described as a result of this work (1, 2, 3): *Biacetabulum banghamsi*, *B. carpiodi*,

*Promonobotrium minytrema*, *Penarcbigetes olkensis* and *Monobotrium ulmeri*. Other species found include: *Atractolytocyctus buronensis*, *B. infrequens* (sens. lat.), *Capingens singularis*, *Glaridacris confusus*, *G. laruei*-complex, *Isoglaridacris folius*, *Kbawia iowensis* and *Monobotrium ingens*. Other species believed to be new and still under study are in the genera *Monobotrium*, *Isoglaridacris* and *Biacetabulum*. It is my great pleasure to name one of these tapeworms for Professor Self; the description will be published elsewhere. Except for *A. buronensis* and *Kbawia iowensis*, recovered from *Cyprinus carpio*, all of the other species were in catostomid fish. *G. confusus*, generally found in *I. bubalus*, was the most common species.

Numerous problems related to the systematics of caryophyllid cestodes from Oklahoma fish remain unresolved. For example, there is a small undescribed species, related to *M. ingens* but of slightly different morphology and not occurring in mucosal pits. From *Hypentelium*, there is an *Isoglaridacris* species that unlike any others in the genus, has median vitellaria. Another, from *Ictiobus*, is a single large specimen that lacks postovarian vitellaria, but otherwise fits the description of *Biacetabulum*. From *M. erythrum* of Greenleaf Lake there is an unknown species, designated as *G. laruei*-complex, that is particularly puzzling because it resembles *G. laruei*, a species normally found in *Catostomus commersoni* in the eastern United States. The solution of these and other problems related to the systematics of caryophyllids from Oklahoma fish must await a thorough analysis of the systematic value of various morphological features.

In view of these problems and the recent discoveries of parthenogenesis (4) and easily demonstrated chromosomes (5, 6) in caryophyllid tapeworms, the diversity of the caryophyllid fauna of Oklahoma fish offers

excellent and unusual opportunities for a cytological and biological approach to the study of cestode speciation and evolution.

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