

## REPRINTS FROM AMU NEWS BULLETIN AND ANNUAL REPORT

COMPARISON OF THE MOLLUSKS IN ADJACENT OHIO RIVER AND LAKE ERIE DRAINAGE SYSTEMS.  
 -- BY R. W. DEXTER, L. H. SWART, and A. F. DAVIS. Kent State University, Kent, Ohio. (Reprinted from American Malacological Union News Bulletin and Annual Report, 1951, pp. 2-3).

An ecological survey of the mollusks inhabiting adjacent watersheds was made by two graduate students working under the direction of the senior writer. Swart collected between August 1939 and August 1940 from 11 stations in the West Branch of the Mahoning River, some 30 miles long with a 300 ft. gradient and which empties into the Mahoning of the Ohio River (page 3) system. Specimens were identified by W. J. Clench and Calvin Goodrich. Additional collections were made by Dexter and Swart in August of 1951. Davis collected from 43 stations in the Cuyahoga River drainage from June to December, 1950. This watershed is over 80 miles long with a gradient of 727 ft. and flows into Lake Erie. Specimens were identified by H. van der Schalie. Pollution is more serious in the Cuyahoga River, especially in the lower half of the stream, but otherwise the habitats of the two are comparable. Seven habitats were investigated -- rock, rubble, gravel, sand, mud, submerged and floating vegetation, and emergent vegetation.

In both drainage systems 11 spp. of gastropods, 2 spp. of river clams, and the three genera of finger-nail clams were found as follows: *Physa gyrina*, *P. integra*, *Amnicola integra*, *Goniobasis livescens*, *Ferrissia parallela*, *Helisoma trivolvis*, *H. anceps*, *Gyraulus parvus*, *Valvata tricarinata*, *Campeloma integrum*, *Succinea russa*; *Anodontoides ferussacianus*, *Anodonata grandis*; *Sphaerium*, *Pisidium*, and *Musculium*. For the most part these were the abundant and widely distributed spp. of the two rivers and their tributaries.

The West Branch of the Mahoning had in addition one common snail, *Lymnaea humilis modicella* on mud banks, and two of local distribution, *Ferrissia diaphana* at one station on rubble and *Gyraulus cristus* at one station on vegetation. Four bivalves, two of them common and widely distributed (*Lampsilis siliquioidea* and *Obovaria subrotunda*), and two less common spp. (*Quadrula undulata* and *Proptera alata*), were also collected only from this stream. The greater degree of pollution in the Cuyahoga River is probably responsible for the dearth of unionids in that stream. It was also noted that the bivalves that were present there were less abundant in comparison with the Mahoning.

In the Cuyahoga River 10 spp. of gastropods and 1 clam were found that were not collected from the West Branch of the Mahoning. However, only three of these were common. *Lymnaea obovaria*, abundant and widely distributed, took the place on mud banks in the Cuyahoga River of *L. humilis modicella* found in the West Branch of the Mahoning. *Amnicola limosa* and *Pseudosuccinea columella* were also common in the Cuyahoga but not found in the other drainage. In addition the following six spp. were rarely found, some of them but once: *Gyraulus hirsutum*, *G. deflectus*, *Planorbula armigera*, *Menetus exacuus*, *Amnicola lustrica*, and *Campeloma decisum*. *Viviparus malleatus* has been introduced into one short section of the Cuyahoga and a single specimen of the clam *Alasmidonta calceolus* has been collected there.

In general the common and widely distributed spp. were the same in both drainage systems. Pollution has apparently extirpated some mollusks, especially bivalves. Further collecting may possibly prove that most of the spp. inhabit both rivers. Deevey (Bull. Geol. Soc. Amer. 60: 1393, 1949) has pointed out that the fauna of the Great Lakes was derived from the Mississippi waterways. There is also some evidence (personal communication of C. N. Savage, Dept. of Geog. and Geol.,

Kent State Univ.) that possibly an ice lobe had caused a cross-over between the Cuyahoga and West Branch of the Mahoning Rivers before the retreat of the late Wisconsin glacier. Thus the similarity of the molluscan fauna of the now separate drainage systems would be expected.

Dr. Dexter illustrated his remarks with a map of the area under discussion, and with a list of the molluscan fauna from both sources. As he concluded, Dr. Paul Bartsch reminded him that molluscan distribution is not always due to water connections, and that birds are often instrumental in transplanting small mollusks.

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COMPARISON OF THE GASTROPOD FAUNA IN THE DRAINAGE SYSTEMS OF CHAMPAIGN COUNTY, ILLINOIS. - - BY RALPH W. DEXTER, Kent State University, Kent, Ohio. (Reprinted from American Malacological Union News Bulletin and Annual Report, 1954, pp. 1-2).

Champaign County in east-central Illinois is a nearly level upland plain which contains exclusively the headwaters of six streams - the Salt Fork and Middle Fork of the Big Vermilion River, the Sangamon, Kaskaskia, Embarrass, and Little Vermilion Rivers. While the headwaters are in close juxtaposition, the mouths of these rivers are widely separated. Gastropods were collected in the fall of 1934, spring of 1935, spring of 1945 and 1946, fall of 1951, spring of 1952 and 1953. Identifications of early collections were made by Frank Collins Baker and N. T. Mattox. Twelve species (page 2) were collected as follows: *Physa gyrina*, *P. anatina*, *Fossaria humilis modicella*, *Ferrissia tarda*, *Helisoma trivolvis*, *Goniobasis livescens*, *Lymnaea obrus-sa*, *Campeloma rufum*, *Pleurocera acuta*, *Amnicola limosa*, *Gyraulus par-vus*, *Pseudosuccinea columella*. The common species were widely distributed and for the most part found in all drainages. The only notable exception was *P. anatina*, identified by W. J. Clench, which had presumably been introduced into the drainage of a sewage disposal plant. Dispersal factors other than stream connections, which are far apart in this case, are possible aquatic birds and mammals.

Slides which accompanied Dr. Dexter's paper presented maps of the area under discussion. Pills-bry: "I think that you would have found greater differences in distribution if the Unionidae had been considered; the gastropods are always more widely dispersed." Jacobson: "You mention *Campeloma rufum*; is that not now considered to be *C. decisum*?" Morrison: "Those species are entirely distinct; they both live in the James River and cannot interbreed since all of both species are parthenogenic females. However, I question that *C. rufum* lives in the Illinois area." Dexter: "F. C. Baker and others at the University of Illinois collected extensively there and he was firmly convinced that all of them were *C. rufum*."

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