

A SURVEY OF THE UNIONIDAE OF THE UPPER REACHES OF THE MACKINAW RIVER

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This survey attempted to ascertain the genera and species of Unionidae currently present in the upper two-thirds of the Mackinaw River, a relatively short river of Central Illinois pursuing generally an east to west course. Its source is in the vicinity of Anchor, McLean County, and it empties into the Illinois River just south of Pekin, Tazewell County.

The survey was made during the second, third, and fourth weeks of October 1948, under conditions of low water which greatly facilitated collecting. The mussels were collected by hand and stations were examined from the headwaters to a point where the stream had become considerably larger.

Station 1 was established about five miles southeast of Anchor, and the area of search was about one quarter of a mile. The stream bed varied from light to medium gravel with occasional muddy areas; the stream being one to eight feet wide and two to fourteen inches deep, with a velocity of one-half mile per hour. No mussels were found due to seasonal variance of water depth which discouraged a consistent fish population.

A second examination (Station 2), was made three miles farther downstream. River conditions were similar to those at the first station except for increases in depth and width. Here, living thin-shelled mussels,

of small size, were found in considerable abundance: *Alasmidonta calceolus* (48), *Anodontoides ferrussacianus* (15), *Micromya iris* (9), *Strophitus rugosus* (1). In the clear water, clam tracks were readily discernable, which facilitated the discovery of the mussels.

The third station was located one-half mile south of Anchor. No appreciable change in stream conditions from Station 2 was noted; however, the following additional genera and species were found: *Anodontoides ferrussacianus* (50), *Micromya iris* (25), *Strophitus rugosus* (17), and *Alasmidonta calceolus* (17). Clams appearing for the first time were *Anodonta grandis* (1), *Carunculina parva* (1), and *Lampsilis siliquoidea* (1). The last is a heavy-shelled mussel.

At the junction of the river and state route 165, immediately southwest of Colfax, the fourth station on the survey was established. In the intervening distance of approximately five miles from the station near Anchor, the river conditions had changed considerably. Primarily, there was an increase in width, averaging four to eighteen feet, while the stream bed became rocky in areas, in addition to being composed of light to medium gravel with occasional muddy regions. Live specimens of both the thin and heavy-shelled varieties were plentiful. In addition to previously lo-

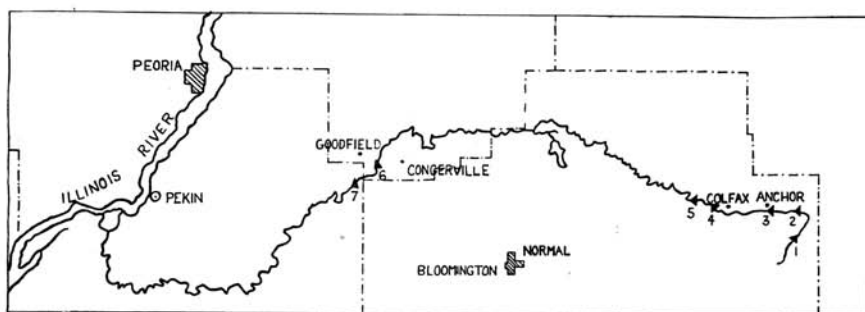


FIG. 1.—Mackinaw River and location of stations from which mussels were collected.

cated varieties, *Anodontoides ferrussacianus* (12), *Carunculina parva* (7), *Anodonta grandis* (5), *Micromya iris* (2), and *Strophitus rugosus* (2), excellent young and older living specimens of *Lasmigona complanata* (13), *Lasmigona compressa* (1) and *Leptodea fragilis* (1) were found.

Station 5 was established three miles farther downstream. River bottom conditions, except for slight increases in depth and width, were essentially similar to those of the previous station. Many of the foregoing living varieties were again found, *Anodonta grandis* (6), *Strophitus rugosus* (6), *Lasmigona complanata* (5), *Lampsilis siliquoidea* (4), *Anodontoides ferrussacianus* (3), *Micromya iris* (3), and *Lasmigona compressa* (1). However, two additional genera and species were revealed, i.e. *Amblema costata* (1) and *Fusconaia flava* (1). Prior to this station and Station 4, thin-shelled clams predominated, but at this point in the survey, now definitely showing larger stream characteristics, heavy-shelled mussels began to occur quite commonly. Van der

Schalie (1936, 1938a, 1938b) mentions several of the above-listed forms as being common to middle-sized rivers.

Station 6 was located at Mackinaw Dells, two miles northwest of Congerville, Illinois, and approximately thirty-five miles from Colfax. The river bed was medium-coarse sand with considerable rocks. Possibly due to pollution of the river in this area, no living mussels were located; but considerable numbers of dead valves were found. In addition to the previously attained Unionidae, the dead shells included the succeeding genera and species: *Lampsilis ventricosa* (9), *Quadrula pustulosa* (8), *Elliptio dilatatus* (6), *Prop-tera alata* (5), *Quadrula quadrula* (4), *Pleurobema coccineum* (2), *Lasmigona costata* (2), *Quadrula metanevra* (1), *Alasmidonta marginata* (1), *Actinonaias carinata* (1) and *Micromya lienosa* (1). Since some of these species were not evinced by living representatives farther upstream, we have evidence that they had at sometime been established, but had been destroyed by changed river conditions. Also,

there is the possibility that ice, during spring thaws, transported the valves downstream.

Station 7 was instituted two miles southwest of Goodfield, and about four miles downstream from Mackinaw Dells. Aside from being considerably more rocky, river bottom conditions approximated those of Station 6. Living clams, previously found only as dead valves at Station 6, were located: *Lasmigona complanata* (5), *Quadrula pustulosa* (2), *Alasmidonta marginata* (1), *Lampsilis siliquoidea* (1) and *Strophitus rugosus* (1).

As a result of the survey, fourteen genera and twenty-one species of Unionidae were collected and observed.

In its course, the river does not flow through urban or industrial areas; therefore, the water is relatively free from pollution. It has been observed that freshwater mus-

sels are among the first residents of an aquatic habitat to disappear when pollution occurs. Baker and Smith observed this previously in their research on the upper Vermilion River (Baker and Smith, 1919).

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