FIVE ADDITIONS TO SOUTHWESTERN PENNSYLVANIA NAIAD FAUNA

DON P. TANNER

The Society for Pennsylvania Archaeology
3223 Arapahoe Road, Pittsburgh, Pa. 15241

Lastena lata Raf., 1820; *Simpsoniconcha ambigua* (Say, 1825); *Carunculina parva* (Barnes, 1823); *Lasmigona compressa* (Lea, 1829), and *Anodonta umbecillis* Say, 1829 were found in various situations during the past year.

Lastena lata Raf., 1820. Recently processed archaeological material, excavated by Carnegie Musenm, Section of Man during 1964 and 1965 with grants from National Science Foundation and National Park Service, has produced one left and four right valves of this delicate species (C.M. 4792, 4810, 4537). These examples are from archaeological sites, Gr. 23, near Carmichaels, Greene County, Pennsylvania, and Fa. 26, Brownsville, Fayette County, Pennsylvania. These sites are on high hills about one mile from the Monongahela River. A date in the late thirteenth century A. D. is suggested by ceramic typology.

Nineteen additional valves were recovered in early 1969 from a high, midden-filled rock crevasse overlooking the Allegheny River directly opposite Godfrey, Armstrong County, Pennsylvania. These examples, excavated by Philip Doyle of Vandergrift, Pennsylvania were donated to the Section of Man, Carnegie Museum.

Stansbery (personal communication, May 18, 1969) states, 'The nearest records here (Ohio State Museum) are from the Tuscarawas River at New Philadelphia Ohio, collected by Dr. Victor Sterki.'

Ortmann (1919) does not locate *L. lata* in Pennsylvania, although prehistoric Indians (ca. 1400 A.D.) were able to recover it in limited numbers. Current surveys support Dr. Ortmann's findings. Considering the presence of this species in the Ohio River drainage as outlined by Simpson (1900: 655; 1914: 453), its occurrence in Pennsylvania was not unexpected.

Simpsoniconcha ambigua (Say, 1825). A single valve (FC. 29.0) was recovered June 21, 1969. Three complete, plus one left and six right valves (FC. 29.3) were found October 11, 1969 in a muskrat run under tree roots exposed by wave action of the Allegheny River at Godfrey, Armstrong County, Pennsylvania.

This location, a major station for mussel collecting at the turn of the century, did not then produce *S. ambigua*. Ortmann (1919: 136) states, 'On May 23, 1912 I found a single specimen of this species in the headwaters of the Monongahela in West Fork River, Lightburn, Lewis Co., West Virginia.' He adds, 'This species has never been found in Pennsylvania.' The possibility exists of a recently established population at Godfrey; the water dog *(Necturus maculosus)* host of *S. ambigua*, is present in these waters. Factors

that contribute to this former range restriction are not immediately apparent with the data at hand.

Eleven specimens range in age from 3½ years to a somewhat dwarfed 6 years. The average age would approach 5½ years. This appears to be a healthy, possibly isolated population.

Anodonta imbecillis Say, 1829. A single specimen (FC. 29.3) was found at Johnetta, Armstrong County, Pennsylvania on November 11, 1969. This four year old example was on the beach of Allegheny River under a small bush. Small striations on the anterior margin of one valve suggest a predator such as a raccoon or similar carnivore.

Caruncula parva (Barnes, 1823). Investigation of the Allegheny River by members of the Allegheny Chapter, Society for Pennsylvania Archaeology recovered a number of small shells during late 1968. A sample was turned over to the Section of Man, but remained unidentified. Interest was again stimulated on June 21, 1969 when a similar shell (FC. 29.0) was located at Godfrey. A second, recently dead, example (FC. 29.3) was also found November 11, 1969 at Johnetta, Pennsylvania a short distance up river. All proved to be *C. parva*.

The nearest station of record, over 70 air miles northwest, was at Conneaut Lake outlet, Crawford County, Pennsylvania (Ortmann, 1919: 258 - 259). The present Johnetta substrate, soft mud, is most conducive to *C. parva* (Clarke and Berg, 1959: 50) but the restriction of range noted by Ortmann is not clearly understood. Clarke and Berg (1959: 9-11) point out the wide variety of limnological conditions affecting naiad distribution. The activities of man that frequently result in gross extirpation of the fresh-water mussel may have been beneficial to this animal at this location during the past 60 years.

Lasmigona compressa (Lea, 1829). This species, not previously reported from Monongahela River drainage, was located at five collection stations near Amity, Washington County, Pennsylvania. Two specimens were found alive in the North Branch of Ten Mile Creek at Conger (2-FC. 59.1) and one specimen one mile northwest of Lindley's Mills (FC. 59.2). Recently dead examples were collected at the latter station (2-FC. 59.2), at Interstate 79 (FC. 59.6), one mile west of I-79 at Bailey's Covered Bridge (FC. 59.5), and a fragmentary specimen (FC. 59.3) at Ringland. Dates of collection include August 2, 1969 (FC. 59.1, 59.2, 59.3), September 20, 1969 (FC. 59.5), and September 28, 1969 for Field Catalog Number 59.6.

Typical habitat is a small stream. At one station, Lindley's Mills, this species was recovered alive, in fast riffles, flowing over rather coarse substrate.

The valuable work of Dr. Ortmann at the turn of this century, chronicles a naiad series no longer obtainable. Four recent additions are here noted, yet significant change may have been in operation before and during the time of Ortmann's collection, if archaeological material is considered as well. Further study of archaeological midden debris may reveal drastic changes in the composition of the local naiad fauna.

ACKNOWLEDGEMENTS

Appreciation of the support and facilities of Dr. Juan J. Parodiz at Carnegie Museum and Dr. David H. Stansbery at The Ohio Historical Society is gratefully tendered. The latter confirmed determination of species collected prior to July 2, 1969. Mr. John E. Guilday of the Carnegie Museum was most helpful by reading the manuscript. Appreciation is extended to Mr. Philip Doyle for permission to visit his excavation and retain examples of his collection.

REFERENCES CITED

CLARKE, Arthur H., Jr. and BERG, Clifford O. (1959) The freshwater mussels of

central New York. -- N.Y. State Coll. Agriculture, Ithaca: Cornell Univ. Agric. Exp. Sta., Memoir 367, 79 p.

ORTMANN, Arnold E. (1919) A Monograph of the Naiades of Pennsylvania. -- Mem. Carnegie Mus., 8: 1-342, pls. 1-21.

SIMPSON, Charles Torrey (1900) Synopsis of the Naiades, or pearly fresh-water mussels. -- Proc. U. S. Nat. Mus., 22: 501-1044.

---- (1914) A descriptive catalogue of the Naiades or pearly fresh-water mussels. -- Detroit (Bryant Walker), i-xi, 1-1540 pp.

Manuscript received January 10, 1970.

CORBICULA MANILENSIS: RANGE EXTENSION UPSTREAM IN THE MISSISSIPPI RIVER

Jamie E. Thomerson and Donal G. Myer

Faculty of Biological Sciences
Southern Illinois University
Edwardsville, Illinois 62025

In March, 1969, Mr. H. J. Hellrich of the Granite City Steel Co., Granite City, Madison County, Illinois brought us samples of clams taken from his plant's cooling system. The water intake for their system is at Lock and Dam 27 in the Chain of Rocks Canal, a channel of the Mississippi River. The clams are the introduced Asiatic clam, *Corbicula manilensis* (Philippi, 1844).

Parmalee (1965, Trans. Illinois State Acad. Sci. 58(1): 39-45) studied *Corbicula* in Illinois and reported them common in the Ohio River. However, his only record for the Mississippi River was three dead shells and a juvenile collected on the Missouri side just below the Illinois-Missouri Bridge south of Cairo, Illinois. Parmalee also collected three other stations in the Mississippi River in southern Illinois between 8 and 10 September 1964 but did not encounter *Corbicula*. Fechtner (1966, Nautilus 79(4): 138-139) collected four miles south of Chester, Randolph Co., Illinois and one-half mile south of Grand Tower, Jackson Co., Illinois 4-7 August 1963, but did not obtain *Corbicula*.

Mr. Hellrich collected two gallons of live *Corbicula* from the Granite City Steel Co. '21st Street Reservoir' during April 1969. Two of these clams were unusually large total shell length 31 mm. Analysis of shell lengths of 400 other randomly selected clams revealed a size range of 4 to 24 mm with a major peak around 19 mm and lesser peaks around 7 and 13 mm total shell length. These groupings compare with those of Gunning and Suttkus (1966, Nautilus 79(4): 113-116) who interpreted groups around 8.0, 14.0, 22.0, and 34.0 mm total length for a sample of *Corbicula* from Pearl River, Louisiana as representing four different year classes. Our data also suggest four year classes in the Granite City sample. The smallest clams probably represent the 1968 year class and the two large individuals the 1965 year class. It seems that *Corbicula* was first abundant at this locality in 1966.

The range extension is the northernmost population known in the Upper Mississippi Valley. Horning and Keup (1964, Nautilus 78(1): 29-30) attributed a decline in the Cincinnati reach, Ohio River, population of *Corbicula fluminea* between 1962 and 1963 to the unusually severe 1962-63 winter when the Ohio River was frozen over for seven days. *Corbicula* may thus be near the northern limits of its possible range at both Cincinnati and Granite City. On the other hand, warming of northern rivers by thermal enrichment from industrial and power plant cooling water discharge may result in northward extension of the range of *Corbicula*.

We thank Mr. Hellrich for bringing the Granite City population of *Corbicula* to our attention.

Manuscript received January 2, 1970.