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PLEUROBEMA CLAVA (LAM.) AND *PLANORBIS*
DILATATUS BUCHANENSIS (LEA)
IN MICHIGAN

BY MINA L. WINSLOW

During the summer of 1917 the Museum of Zoology sent expeditions to Hillsdale, Branch, and Berrien Counties, in the extreme southern part of Michigan. A study of the mollusks of this region resulted in additional records for each county, among them two species new to the state. Of these *Pleurobema clava* (Lam.) represents a genus not before recorded for Michigan, but whose presence was expected since its range as given by Sterki¹ and Simpson² includes the Maumee Basin. Clark and Wilson³ list this species from the Upper Maumee and the St. Joseph.

The only specimen procured was taken between Woodbridge and Amboy Townships, Hillsdale County, in a small branch of the St. Joseph of the Maumee. The stream was at this point

¹ Proc. Ohio St. Acad. Sci., Vol. IV, 1907, Pt. 8, p. 392.

² Descriptive Cat. of the Naiades, 1914, p. 736.

³ Bur. Fish., Doc. 757, 1912, p. 43.

not more than ten feet wide, two or three feet deep, swift, and filled with pebbles and small stones. Assiduous search in other branches of the same stream failed to add to the number of specimens, which was due probably to the fact that the greater part of that section of the county is under cultivation, and the natural streams have been cleared of vegetation in order to be used as drainage ditches.

The second species new to Michigan has been identified by Bryant Walker as *Planorbis dilatatus buchanensis* (Lea). Two large specimens and a number of small ones were collected near Harbert, Berrien County. These were all taken from dead leaves and sticks submerged in a small pond above a dam. The largest specimen measures as follows: greater diameter 4.25 mm., lesser diameter 2.75 mm., altitude 1.5 mm. This differs from Lea's *buchanensis*⁴ in its greater size and distinctly angular aperture due to the strong carina. It agrees in all points with a specimen from New Philadelphia, Ohio, with which it has been compared. The surface sculpture of incised revolving lines cannot be compared with that of *P. buchanensis* since the sculpture is not mentioned in the original description. The original specimens of *P. buchanensis* were from "near Cincinnati, Ohio," and the only other record until the present one was New Philadelphia, Ohio.⁵

The typical *P. dilatatus* was described by Gould⁶ from Nantucket and Hingham, Massachusetts. According to available records the range of the typical form extends from New England to Florida, north to Ohio and Ontario, and west to the Mississippi. A single record from Texas indicates a possible

⁴ Lea, Obs., IV, 18, p. 6. W. G. Binney, L. & F. W. Shells N. Am., Pt. II, 1865, p. 127, fig. 212.

⁵ Sterki, Proc. Ohio St. Acad. Sci., Vol. IV, 1907, Pt. 8, p. 383.

⁶ Inv. Mass., 1841, p. 210, fig. 140. "In July, 1840, Mr. T. J. Whittemore, found it in great numbers at Hingham...."

extension of the range to the south and west. With the assistance of Dr. Bryant Walker the following fairly complete list of references to records has been made and to it are added the localities of specimens in his collection.

Baker, F. C.—Bull. Ills. St. Lab. Nat. Hist., VII, 1906, p. 109. Carbondale, Jackson Co., Ills.

Beauchamp, Wm.—L. & F. W. Shells of Onondaga Co., N. Y., 1886, p. 4. No exact locality given and "identification doubtful."

Daniels, L. E.—Report Dept. Geol. Ind., 1914, p. 321. Blue Lake, Whitley Co., Ind.

Dall, Wm. H.—Pr. U. S. N. M., VIII, 1885, p. 273. St. Augustine, Gainesville and Enterprise, Fla.; and "something almost exactly similar" from Northern Mexico.

Dall, Wm. H.—Naut. XXIV, p. 2. Marl at Lake Panasoffkee, Fla.

Gould, A. A.—Invert. Mass., 1841, p. 210, fig. 140, from Nantucket and Hingham, Mass.

Harper, G. W.—3rd Ann. Rep. Fla. St. Geol. Survey, 1911, p. 280.

Johnson, C. W.—Occas. Pap. Bost. Soc. Nat. Hist., VII, Fauna of New Eng., 13, 1915, p. 191. Harrison, Me.; Magnolia; Duxbury, Plymouth, Mass.; Smithfield, R. I.; Yantic River, Norwich; Stratford and near New Haven, Conn.

Lewis, James.—Bull. Buff. Soc. Nat. Sci., II, 1874, p. 136. N. Y. without exact locality, "fide Ingalls." (Ingalls lived at Greenwich, Washington Co., and his shells probably came from that vicinity.—Walker.)

Lewis, James.—L. & F. W. Shells of Ala., 1876, p. 27. "N. W. Georgia."

Mazyck, Wm.—Contrib. from Charleston Mus., II, 1913, p. 3. Near Charleston, S. C.

Pilsbry & Rhoads.—Pr. Acad. Nat. Sci. Phil., 1896, p. 494. Knoxville, Tenn.

Rhoads, S. N.—Naut., XIII, 1899, p. 48. Lemon City, Fla.

Smith & Prime.—Ann. N. Y. Lyc. Nat. Hist., IX, 1870, p. 402. Huntington, Southold and Greenport, L. I., and Gardiner's Id., N. Y.

Sterki, Victor.—Proc. Ohio St. Ac. Sci., Vol. IV, Pt. 8, 1907, p. 383. "Over the state." [Ohio.]

———. Note in Naut., XII, 1899, p. 144. Guadeloupe River, Victoria Co., Texas.

Bryant Walker Collection.—Amherst, Worcester, and No. 4993 from Mass.; Lime Lake, Staten Id., Gardiner's Id., and Long Id., N. Y.; District of Columbia; Allegheny, Pa.; head of Miami River, and New Philadelphia, O.; Holston River, Knoxville, Tenn.; Bearcamp Creek, Bolo, Ills.

The figures of both the typical *dilatatus* and the variety given by Binney (*loc. cit.*) are small and lack details, hence it has been considered advisable to publish the present figures from camera lucida outlines. *Planorbis dilatatus* was drawn from a specimen loaned by Dr. Walker, No. 4993 of his collection, and is from the collection of T. J. Whittemore. Though it has no exact locality it is assumed that it came from Hingham, Mass., and if not one of the original lot mentioned by Gould (*loc. cit.*) it is at least a topotype. *Planorbis d. buchanensis* was drawn from the largest of the Berrien County, Michigan, specimens, evidently a fully adult shell.

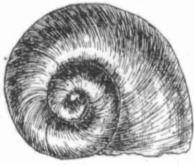
PLATE I.

Figs. 1, 2, 3. *Planorbis dilatatus* Gld. $\times 10$.

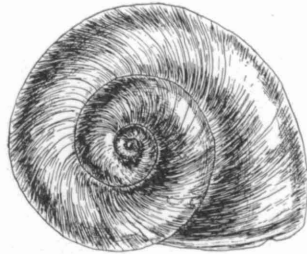
Figs. 4, 5, 6. *Planorbis dilatatus buchanensis* (Lea). $\times 10$.

PLANORBIS DILATATUS
PLANORBIS DILATATUS BUCHANENSIS

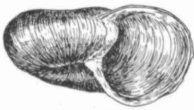
PLATE I



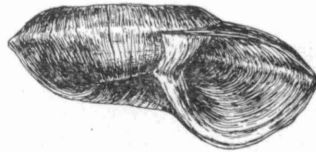
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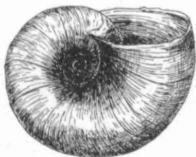
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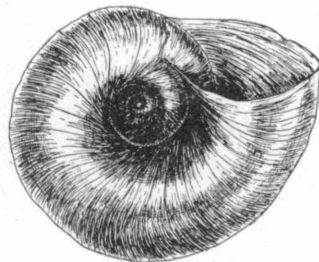
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