

NOTES ON THE FRESH-WATER MOLLUSK *PLANORBIS*
MAGNIFICUS AND DESCRIPTIONS OF TWO NEW
FORMS OF THE SAME GENUS FROM THE SOUTH-
ERN STATES.

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Early in November, 1906, the writer made a trip to Wilmington, North Carolina, in quest of that magnificent member of the genus *Planorbis*, *Planorbis (Picrosoma) magnificus*; which was described by Dr. H. A. Pilsbry in the *Nautilus*.^a

The locality cited was lower Cape Fear River. An examination of the type lot at the Philadelphia Academy of Sciences created some doubt in my mind about this being a fluviatile species. The thin texture of the large shell appeared to me as indicating evidence of a lacustrine form.

Inquiry as to the larger lakes about Wilmington resulted in the location of Greenfield Pond, about a mile and a half south of the city. This pond is formed by a broad earthen milldam, about 20 feet high, which banks up the water between sand dunes, inundating the low-lying ground, and transforming it into a lake, the digitations of which extend back for some 3 miles. Its greatest width probably does not exceed 400 feet. A large portion is fringed with cypress trees, and there are several cypress-covered islands in it. The trees are not large, hardly more than a foot in diameter, and are all draped with large festoons of Spanish moss. The water of the lake comes from springs, is unpolluted, and contains an interesting fauna and flora. Conspicuous among the plants were long strings of *Potamogeton* and several species of pond lilies, the leaves of which extend over the surface of the water. After a half hour's sifting of bottom material and vegetation, I succeeded in finding many small mollusks and the first fragment of the desired *Planorbis*. The sieve was discarded for a time and a systematic search among the heavier aquatic vegetation began, which resulted shortly in discovering the first perfect living *magnificus*. The search continued all day, when, gathering

^a November, 1903, XVII, p. 75.

the results of my labor, I found myself the possessor of 29 fine *Planorbis*. These were carefully packed in Spanish moss to prevent injuring their delicate edges and taken to the hotel. The following day was spent in further searching, and ended by increasing the number of specimens found to 46.

Most of the specimens of *Planorbis magnificus* found were attached to the underside of the expanded leaves of the larger species of the white pond lily, probably a *Castalia*, though many were obtained from the heavy banks of *Potamogeton* growing in dense masses a short distance offshore. By pulling these masses and shaking them the mollusks were dislodged and rose to the surface for a moment before sinking to the bottom. I was able to find them only along the border of the south side of the lake, the shore line of which consists of a series of loops, and then only off the west side of the extreme points of each loop. It is quite possible that the shells live in greater numbers in deeper parts of the lake, and that they are driven inshore with dislodged vegetation by northwest winds. (See Plate LVII, figs. 7-9.)

Other lakes about Wilmington, as well as the river, were explored during my visit, but none yielded this large shell nor the new species described below, which so far confines the distribution of the two to this lake.

There are many interesting features about the very profuse molluscan life of this lake. I found among other forms a new *Liogyra* and probably also a new *Limosina*, the latter, I believe to be the most northern record for that genus. I observed also a curious habit of the white pond lily of forming a circlet of fleshy roots on the stem, about a foot below the expanded leaves. Many of these were floating free near the edge of the pond, where they undoubtedly become anchored and start a new plant by this natural slipping process.

The specimens collected were brought home alive; some were preserved in alcohol, but the greater number were placed in aquaria, where it was soon discovered that *Planorbis magnificus* had other interesting features besides being our largest form. They were entirely blind. Not one of the lot showed even the trace of an eye. Rudiments of this organ, however, may be seen in microscopic sections, where it appears as if it had been covered by the thickened cuticle.

I was anxious to note if the species would reproduce itself in captivity. Up to June 15, 1907, when I left on my vacation, this had not taken place. Large appetite, slow growth, and a great mortality sum up the events to that time. The mortality appears to have continued until only a few of the mollusks remained. When I returned to Washington in September and examined the aquaria, I found several young specimens of one and a half whorls which had been

born during my absence, and these, like well-behaved *Planorbis*, have small but well-defined eyes on the inner side, at the base of the tentacles.

Figures 7, 8, and 9 represent three views, profile, bottom and top, of the largest specimen, all natural size. This shell (Cat. No. 193321, U.S.N.M.) measures: Greatest diameter, 37 mm.; lesser diameter, 26 mm.; altitude, 25 mm., and is the largest specimen on record up to date.

PLANORBIS EUCOSMIUS, new species.

Plate LVII, figs. 1-3.

Shell resembling *Planorbis bicarinatus* Say in outline but much smaller than that species, of yellowish horn color with two rather broad, bright chestnut bands.

Shell biconcave. Entire surface marked by very strong lines of growth and numerous fine spiral lirations. Upper surface strongly umbilicated, showing a little more than three and one-half whorls. A moderately strong carina is situated about halfway between the periphery and the suture. The upper surface is marked by the two chestnut bands which are of about equal width, a little more than one-third as wide as the space between the dorsal carina and the suture. The posterior of these bands is a little nearer the suture than the carina, and the anterior one is about as far anterior to the carina as the other is posterior to it. Periphery well rounded. Base broadly umbilicated, showing a little more than three and one-half turns. Outer limiting angle of the umbilicus marked by an obtuse carina. Aperture decidedly oblique, with somewhat expanded, black edged peristome; slightly angulated at the posterior carina and more strongly so at the basal one; outer lip reenforced within by a moderately thick white callus. Parietal wall covered with a thin callus.

The type (Cat. No. 193890*a*, U.S.N.M.) measures: Greater diameter, 6.6 mm.; lesser diameter, 5.1 mm.; altitude, 3.1 mm.

The type and 46 specimens (Cat. No. 193890, U.S.N.M.) were collected by the author in Greenfield Pond, near Wilmington, North Carolina.

PLANORBIS EUCOSMIUS VAUGHANI, new subspecies.

Plate LVII, figs. 4-6.

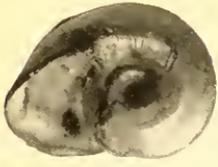
Similar to *Planorbis eucosmius*, but with much narrower and deeper basal umbilicus, with the basal carina much stronger and with the last whorl considerably more expanded toward the aperture. The spiral sculpture and the lines of growth are less strongly developed than in *eucosmius*. The present form is also considerably higher than *Planorbis eucosmius*. Three specimens of this subspecies (Cat. No.

125719, U.S.N.M.), were collected by Dr. T. Wayland Vaughan, at Burkes Place, Louisiana. The type shows three and one-half whorls in the umbilicus and measures: Greater diameter, 6.7 mm.; least diameter, 5.1 mm.; altitude, 3.3 mm.

EXPLANATION OF PLATE LVII.

FIGS. 1-6 are enlarged four diameters; figs. 7-9 are natural size.

- FIG. 1. *Planorbis cucosmius*, top view. Type. Page 699.
2. *Planorbis cucosmius*, bottom view. Type.
3. *Planorbis cucosmius*, profile. Type.
4. *Planorbis cucosmius raughani*, top view. Type. Page 699.
5. *Planorbis cucosmius raughani*, bottom view. Type.
6. *Planorbis cucosmius raughani*, profile. Type.
7. *Planorbis magnificus*, profile. Page 698.
8. *Planorbis magnificus*, bottom view.
9. *Planorbis magnificus*, top view.



5.



4.



1.



6.



2.



3.



7.



8.



9.

SPECIES OF PLANORBIS FROM NORTH CAROLINA AND LOUISIANA.

FOR EXPLANATION OF PLATE SEE PAGE 700.

