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TWO NEW SPECIES OF GONIOBASIS

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THE novelty of one of these species was oddly overlooked in that period, about 1840 to 1868, in which a deep interest was taken in American Melanians and there was an eagerness to get descriptions of them upon paper. The other species was not seen until Herbert H. Smith made his survey of the Coosa River and its tributaries.

Goniobasis annettae, new species

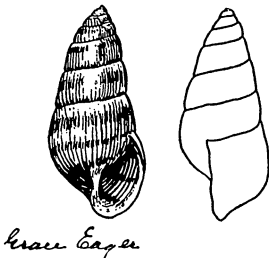


FIG. 1.

SHELL.—Nearly cylindrical, the diameter of the body whorl at the periphery being only .75 mm. greater than the diameter at the suture; bright, shining, the color of the epidermal background yellow-brown, interrupted by three revolving bands of deeper pigmentation. Upper whorls somewhat more rounded than the upper part of the body whorl, apical whorls eroded; six whorls remaining of the type. Sutures well marked, a little irregular. Aperture ovate, small, produced into a slight sinus. Columella white, rounded, narrow, inconspicuous. Outer lip acute, a little sinuous (Fig. 1).

MEASUREMENTS.—Altitude, 21.50 mm.; diameter, 9.50 mm.; aperture: altitude, 7.50 mm.; diameter, 5 mm.

TYPE LOCALITY.—Cahaba River, Lily Shoals, Bibb County, Alabama. Type, Mus. Zool., Univ. Mich., No. 128908.

This is the transition successor of the upriver *G. cahawbensis* (Lea), 1861. It has some of the characteristics of that mollusk, but for want of a recognized nomenclature for such complexes as these it deserves specific designation if only for the sake of convenience. Occasional specimens, apparently not more than two or three in several thousands, are striate over the whole disk, and for a time these have been assigned to *G. sulcata* Lea. A closer study of Lea's description and the quite apparent fact that the collector, Dr. Schowalter, from whom the original specimen was received, did not visit the Cahaba River in the Lily Shoals area, has led to the conviction that *sulcata* belongs to another species.

The very young of *annettae* are scarcely distinguishable from the young of *cahawbensis*, although they do show a tendency toward tighter coiling. As the shell increases in growth it alters in shape from conic to cylindrical and is markedly of this form at maturity.

G. annettae was taken in all six of the habitat types into which Lily Shoals could be divided during a visit there in 1935. The highest percentage of individuals as compared with other Pleuroceridae collected was in rapids of moderate current, the lowest percentage in spots of stagnant water over a silty bottom. The highest percentage of banded individuals, 91.2, was in a colony of *annettae* occupying pools the water of which was slow moving; the lowest, 77.2, in rapids of heavy current. Melanistic specimens were found only in pools crowded with vegetation.

Great numbers of the species were taken on the shoals by Dr. R. E. Call in the 1880's. As they are uniformly smaller than the *annettae* of 1935, it is probable that the earlier collection was made on another part of Lily Shoals than was visited fifty years later. The species has not been seen outside of what can be called the transition zone of the Cahaba

River, the range being from Lily Shoals to Pratt's Ferry, both localities being in Bibb County, Alabama.

Goniobasis chiltonensis, new species

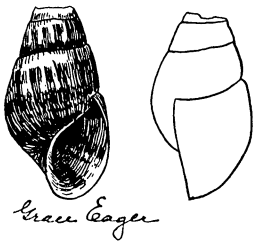


FIG. 2.

SHELL.—Conic, thick, with a yellowish brown ground color. The two and one-third whorls remaining of the type are sculptured above the peripheries with rather wide, evenly-spaced, plicae, which are parallel with the axis of the shell; the base of the shell with microscopic revolving folds. The earlier plicae are rendered conspicuous by deposits of dark pigment between them that contrast

with the lighter color mass of the epidermis. On the body whorl the plicae become indefinite and obsolescent. Sutures deep, a little irregular. Body whorl large, rounded. Aperture ovate, a little more than half the size of the whole type specimen, slightly spatulate at the base; decorated within with four revolving, nearly black bands. Columella rather narrow, reduced to a wash of callus above the center. Line of outer lip parallel with the axis (Fig. 2).

OPERCULUM.—Large, leathery, broadest near the base. The spiral lines are obscure, tightly coiled and crowded into the left margin. This operculum corresponds to that known as neomelanian.

MEASUREMENTS.—Altitude, 19.25 mm.; diameter 11.25 mm.; aperture: altitude, 9.25 mm.; diameter, 5 mm.

TYPE LOCALITY.—Warsan Creek, near junction with Waxahatchee Creek, Chilton County, Alabama. Type, Mus. Zool. Univ. Mich. No. 137905. Collector, Herbert H. Smith.

This species belongs to a large-stream group, of which *G. olivula* is the oldest name, to judge by the fine silken texture noticeable in juvenile specimens, the strong plications, a tendency of the outer lip to be indented at the top, and the large size and general characteristics of the operculum.

Herbert Smith took the mollusks in Waxahatchee Creek of

Chilton and Shelby counties, Alabama, together with three of its tributaries, and in Weguska Creek, Coosa County. Without describing it, he gave it a name somewhat difficult to remember with exactness, and I have taken the liberty as describer to simplify it to *chiltonensis*.

The shells are much alike for the most part. The plicae weaken in an upstream direction, and in the same direction there is a reduction in the percentages of shells bearing bands. Specimens of Waxahatchee and Warsan creeks, the latter a tributary of the other, have about the same proportions of altitude to diameter, the average index of obesity of the ten largest specimens of three colonies being 63.4 per cent. But in Mill Creek, a branch of the Waxahatchee in Shelby County, the index is 69.3. This follows a rule observable in *Anculosa*, but not hitherto seen in *Goniobasis*. Very young shells are carinate, but carinae are quickly hidden by the general habit of tight coiling. No striae occur except on the base, and this is not present in all individuals. Whereas the majority of specimens in lower habitats are banded, those in Warsan Creek near its headwaters are wholly without bands. These upstream shells are also flatter of whorls, more distinctly conic, more loosely coiled on the spire, and have a higher percentage of unPLICATED forms than the others.