NOTES ON THE FAUNA OF THE CHIPOLA FORMATION – XIX
ON THE PRESENCE OF *GASTROCHAENA (SPENGLERIA)* (MOLLUSCA: BIVALVIA)

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The Gastrochaenid subgenus *Spengleria* Tryon, 1862, is known, according to the Treatise on Invertebrate Paleontology (1969, p. N699), only from the Recent faunas of the East and the West Indies. It was, therefore, unexpected to find it represented in the collections by a single valve from each of three localities in the Chipola Formation of Calhoun County, Florida. Subsequently, during the preparation of the present paper, it was noted that a Paleocene species described by G. D. Harris as *Gastrochaena cimitariopsis* from the "uppermost layers of the Midway limestone as exposed on the Chattahootchee river at Fort Gaines . . . Georgia" (1896, p. 70 [184], pl. 6 [16], fig. 13) had been questionably referred to *Spengleria* by Dall (1898, p. 824). Examination of Harris' original illustration appears to confirm Dall's conclusion. Harris gave no dimensions for his specimen other than to state that the figure was "twice natural size"; measurement would suggest a specimen about 7.5 mm long and 4.0 mm high. Accordingly it seems probable that *Spengleria* may range throughout the Tertiary of eastern North America.

The Chipola species differs in number of characters from both the West Indian Recent *Gastrochaena (Spengleria) rostrata* Spengler and the Midway *G. (S.?) cimitariopsis* Harris, and is here described.

Genus GASTROCHAENA Spengler, 1783

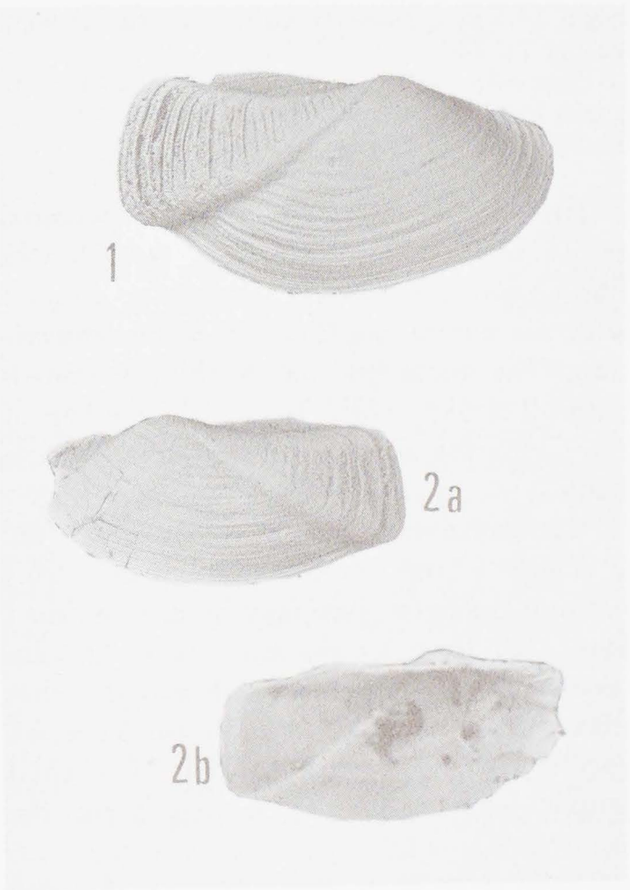
Type species, by subsequent designation, Children 1822, *Gastrochaena cuneiformis* Spengler. Recent, Indo-Pacific.

According to the Treatise on Invertebrate Paleontology, the range of *Gastrochaena* s.s. is "? U.Jur., U.Cret.-Rec., N.Am.-Eu.-circumtrop."

Subgenus SPENGLERIA Tryon, 1862

Type species, by subsequent designation, Stoliczka, 1871, *Gastrochaena mytiloides* Lamarck. Recent, East Indies.

Those species referred to the subgenus *Spengleria* may be distinguished from the typical forms of *Gastrochaena* primarily by having a somewhat raised posterior area of the valves separated from the anterior and ventral areas by an oblique furrow extending from the posterior side of the umbone to the postero-ventral margin. This raised area, which is marked by vertical grooves, is bounded dorsally by a second groove that delimits it from a projecting escutcheon-like postero-dorsal flange. It may also be noted that in all of the specimens available to the writer, the umbones in *Spengleria* are more remote from the anterior end of the valve than they are in *Gastrochaena s.s.*



Text figures. *Gastrochaena (Spengleria) emilyana* H. E. Vokes, n. sp. (1) holotype, USNM 647648, right valve; (2) paratype, USNM 647649, left valve. X 1½.

GASTROCHAENA (SPENGLERIA) EMILYANA H. E. Vokes, n. sp.

Text figures 1-2

Diagnosis: Shell of average size for the subgenus; broadly gaping anteroventrally, elongate-subovate in outline with an almost straight dorsal profile and a broadly convex ventral one. Umbone situated posterior to the anterior third of the length of the valve, slightly projecting and, because of the well-marked postero-umbonal furrows, appearing as if opisthogyrate, although proving on careful investigation to be slightly prosogyrous. Valve surface anterior and ventral to the postero-ventral furrow marked by narrow, concentric growth rugae separated by microscopically fine grooves; superimposed on this ornament is a tendency toward broadly rounded, low concentric undulations that are most strongly marked immediately anterior to the prominent furrow. The posterior end relatively high, and sharply delimited from the rest of the valve. The vertical furrows to be observed only on more worn parts of the surface; the unworn parts being covered by a rather fragile secondary coating (intriticalx ?) that appears almost as if composed of irregularly deposited microscopic aragonitic needles.

Holotype: USNM 647648; length 28.2 mm, height 14.1 mm, diameter (right valve) ca. 5.7 mm; locality TU 830.

Paratype: USNM 647649; length 23.1 mm, height 11.3 mm, diameter (left valve) ca. 4.6 mm; locality TU 547.

Discussion: The holotype specimen comes from the basal bed of the Chipola Formation immediately above its contact with the underlying Chattahootchee Formation. The paratype and a third specimen (from TU 555) come from near the top of the formation as exposed along the Chipola River.

Gastrochaena (Spengleria) emilyana n. sp. is similar to the Recent West Indian *G. (S.) rostrata* Spengler, but may be distinguished from that form by the much more broadly convex anterior and ventral margins that makes the height of the valve of the fossil species equal to almost one-half of its total length whereas in the Recent form the height is equivalent to only slightly more than one-third the total length. In addition, the umbones in the new species are located slightly posterior to the anterior third of the length, in contrast to their position nearer the anterior fourth of the length in *G. (S.) rostrata.* Most striking, perhaps, is the nature of the posterior area, which is somewhat higher above the adjacent shell surface in the fossil species than it is in the Recent one and is marked by the unusual secondary coating or intriticalx (?) that covers the vertical grooves or furrows; in *Spengleria rostrata* there is a somewhat similar deposit that is, however, considerably thinner and as a result depressed into the furrows and rises on the intervening ridges making the vertical ornament visible at all stages of wear.

The specific name assigned to the new species is in recognition of the scientific labors of my dear wife and co-worker, Emily Hoskins Vokes.

LOCALITY DESCRIPTIONS

The three specimens here studied all come from the Chipola Formation of late lower Miocene (Burdigalian) age as exposed in Calhoun County, Florida.

830. Tenmile Creek, basal beds at power line crossing about one mile west of the Chipola River (SE¼ Sec. 12, T1N, R10W).

547. West bank of Chipola River about 2000 feet upstream from mouth of Four Mile Creek (SW¼ Sec. 29, T1N, R9W).

555. East bank of Chipola River about 1000 feet upstream from mouth of Four Mile Creek (SW¼ Sec. 29, T1N, R9W).

LITERATURE CITED

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