

## A NEW *FASCIOLARIA* FROM THE NORTHEASTERN GULF OF MEXICO

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From August 1965 through November 1967 the Florida Department of Natural Resources Marine Laboratory conducted a systematic sampling program, Project Hourglass, on the West Florida Shelf (Lyons, 1968; Joyce & Williams, 1969). Collections of benthic animals were taken along two east-west transects off Egmont Key near St. Petersburg and off Sanibel Island. Stations on each transect ranged in depth from 6 to 73 m. Two specimens of *Fasciolaria* collected at Hourglass station E (73 m) represent an undescribed species. Searches of the mollusk collections of the U.S. Museum of Natural History, Washington, D. C., the Museum of Comparative Zoology, Cambridge, Massachusetts, and the Academy of Natural Sciences of Philadelphia, Pennsylvania, failed to uncover any other material. Two additional specimens were provided by Mr. Harvey R. Bullis, Jr. from collections made off the Florida west coast by the U.S. Fish and Wildlife Service exploratory fishing vessel *Oregon*.

***Fasciolaria bullisi*, new species**

Fig. 1

*Description:* Shell thin, fusiform, slender; length/width ratio of the 3 unbroken specimens increasing with shell length from 2.62 to 2.87; largest specimen with nearly 8 whorls including nucleus; background color pale yellow with large patches of deeper yellow and orange. Embryonic whorls  $1\frac{3}{4}$ , first smooth except for two faint spiral threads on lower end (on unworn specimen), final  $\frac{3}{4}$  whorl with 16-18 moderately strong axial riblets. First post-embryonic whorl with five incised, equidistant spiral lines, replaced by five thin brown bands on later whorls. Large specimens with 10-12 primary brown bands and 6-9 secondary bands on body whorl. Aperture ovo-elongate; outer lip thin, simple, finely lirate within. Columella straight to arcuate, with two shallow, oblique anterior plicae; siphonal canal long, slender, oblique, of a rich amber, deepening to brown at tip. Operculum thick, corneous, ovo-elongate, attenuated obliquely at anterior end. Periostracum on dried specimens tan, very thin.

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Figure 1. *Fasciolaria bullisi* Lyons, new species. Holotype, off Egmont Key, Florida, 73 m. Length: 134.1 mm.

*Type depositories:* The holotype and one paratype are in the collection of the U.S. Museum of Natural History, Smithsonian Institution (USNM), Washington, D. C. Additional single paratypes are in the collections of the Museum of Comparative Zoology (MCZ), Harvard University, and the Florida Department of Natural Resources Marine Research Laboratory (FSBC), St. Petersburg, Florida.

*Material examined:* *Holotype:* USNM 706880. Length 134.1 mm, width 46.8 mm (living). Hourglass station E, 27°37'N, 84°13'W, 73m; bottom temperature 19.0°C; June 7, 1966. *Paratypes:* USNM 706881. Length 117.0 mm, width 43.0 mm (living). Oregon station 1024, northwest of Dry Tortugas, 25°13'N, 83°55'W, 119 m; bottom temperature 20.0°C; April 19, 1954.—FSBC I 7294. Length 59.3 mm, width 22.6 mm (dead shell). Hourglass station E; bottom temperature 19.5°C; May 12, 1967.—MCZ 261430. Length 119.0 mm, width 49.1 mm (dead shell, siphon broken). Oregon station

1254, south of Pensacola, 29°43'N, 87°18'W, 164 m; bottom temperature 17.2°C; March 1, 1955.

*Remarks:* The species is named for Harvey R. Bullis, Jr., Associate Director, U.S. Bureau of Commercial Fisheries, Washington, D. C., who graciously loaned his specimens for study.

The dead specimen with damaged siphon from off Pensacola (MCZ 261430) was apparently more globose than unbroken specimens. Although the spire is 4 mm shorter than that of the holotype, the width of the body whorl is 2.3 mm greater, suggesting a lower length/width ratio. Color, banding, nuclear sculpture, and absence of a presutural ridge, however, indicate that it should be assigned to *Fasciolaria bullisi* sp. nov.

It is difficult to place *Fasciolaria bullisi* within the currently accepted systematic scheme. Hollister (1957) erected the subgenus *Cinctura* to contain *Fasciolaria lilium* Fischer von Waldheim, *F. lilium tortugana* Hollister, *F. hunteria* (Perry), *F. branhamae* Rehder and Abbott, and *F. apicina* Dall. This group was distinguished from *Fasciolaria* s.s. (type species *F. tulipa* Linné) by a prominent spiral ridge extending onto the parietal wall from within the posterior portion of the aperture. The validity of *Cinctura* is questionable; specimens of *F. tulipa* with a swollen or raised "hump" on this area of the shell are common, though I have seen none as strongly expressed (ridge-like) as those borne by species of *Cinctura*. *Fasciolaria bullisi* lacks any indication of this ridge.

Primary and secondary banding of later whorls of *F. bullisi* is weak, often interrupted like that of *F. tulipa*, but unlike the strongly expressed bands of *Cinctura* species. Distinct axial riblets on the last embryonic whorl readily separate it from *F. hunteria*, which lacks such sculpture. However, *F. bullisi* has the longer spire and more slender outline of certain *Cinctura* and, like the latter, lacks the incised spiral lines found on later whorls of *F. tulipa*. Also, like *Cinctura*, *F. bullisi* bears only traces of the rough, presutural wrinkles of *F. tulipa*.

The radula of the holotype of *F. bullisi* is similar to that of *F. hunteria*, both in the subtriangular cusps of the median tooth and in the number and shape of cusps of the lateral teeth. Cusps of the median tooth of *F. tulipa* are longer and more slender; those of the laterals are much more numerous and are also more slender. Radulae of *F. lilium* and *F. branhamae* have not been described.

It is possible that *F. bullisi* is the eastern Gulf analogue of *F. branhamae*, which occurs from Texas to Campeche in moderate depths. *Fasciolaria branhamae* has an axially sculptured nucleus and elongate siphon like *F. bullisi*, but differs in color, strength and number of bands, possession of a strongly-defined presutural ridge, and in having a more globose body whorl. It occurs sympatrically with *F. lilium*, the western Gulf analogue of *F. hunteria*. Certain similarities of sculpture, banding and outline between specimens from separate localities suggest that *F. branhamae* may be merely a subspecies of *F. lilium*. It was described as a subspecies of *F. distans* Lamarck (= *lilium* Fischer von Waldheim) by Rehder and Abbott (1951), but Hollister (1957) elevated it to specific rank. No such similarities have been noted between *F. bullisi* and any other western Atlantic *Fasciolaria*.

The possibility that *F. bullisi* represents a hybrid of *F. hunteria* and *F. tulipa*, the two other eastern Gulf species, seems untenable. No other specimens of *F. bullisi* are known from North Carolina to the Mississippi Delta, the region where *F. hunteria* and *F. tulipa* occur sympatrically. The deepest record I have seen for *F. tulipa* is 73m (Work, 1969:674) from off Suriname. In Hourglass collections, *F. tulipa* decreased in numbers markedly with increased depth; only two specimens were collected in 73 m from 110 tows at this depth. *Fasciolaria hunteria* showed a similar decrease in abundance, but was still fairly common at 73 m stations. However, specimens of the latter from 73 m had remarkably heavy shells with very short siphons quite unlike those of *F. bullisi*. The deepest-collected *F. hunteria* I have seen is a juvenile from 77 m off northwest Florida. Specimens of *F. bullisi* seem to occur only at the extreme edge or beyond the bathymetric range of their hypothetical parents. It appears best at present to treat *F. bullisi* as a species distinct from other western Atlantic *Fasciolaria*.

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