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THE GENUS *VITULARIA* (MOLLUSCA: GASTROPODA) DISCOVERED
IN THE MIOCENE OF SOUTHERN FLORIDA

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In late 1966 road work uncovered, for a tragically short time, the most fabulous fossil locality that it has ever been the writer's privilege to visit. The construction was for a toll road stretching across the Everglades from Naples, Florida, due east to Fort Lauderdale, and bearing the delightful name of "Alligator Alley." Unfortunately subsequent work completely covered the fossil locality and it is no longer in existence. "Alligator Alley" crosses Florida Highway 29 just south of Sunniland, and at this point the underlying formation is the Tamiami Limestone of late Miocene age. Traveling to the east one passes through exposures of the Buckingham facies of the Tamiami and at a point 13 miles east of Highway 29 the molluscan fauna of the upper Miocene Pinecrest Beds is well developed for about one-quarter mile in either direction. On to the east the Pinecrest is still present for several miles but the collecting was poor.

This locality was fraught with exciting fossils but for the writer the single most spectacular find was the discovery of the genus *Vitularia* in the western Atlantic. This genus first appears in the Oligocene of Europe with the distinctive *V. linguabovis* (Basterot). Grateloup (1833, p. 94) reported this species from beds as old as the "Yellow Marls" of Dax, France (Stampian), and it is widespread in the Miocene beds of western Europe. In the New World the genus *Vitularia* first appears in the middle Miocene Daule Formation of southwestern

Ecuador with the species *V. ecuadorana* Marks (1951). It also has been reported from the Pliocene Charco Azul Formation of southwestern Costa Rica by Olsson (1942, p. 170) with a form compared to the West Coast *V. salebrosa*, the only Recent species in the New World. (M. Smith named a subspecies *V. salebrosa extensa* for a low spired form of the typical species but it probably is only a variant.) All other Recent species of this genus are found in the central and western Pacific region, with there being only six known species. These are: *V. miliaris* (Gmelin), the type of the genus; *V. sandwichensis* Pease; *V. crenifer* (Montrouzier); *V. candida* Adams; *V. longmani* (Iredale); and *V. asiaticus* Kuroda.

The systematic position of the genus *Vitularia* is somewhat doubtful. Because the shells bear varices they classically have been allied with the genus *Murex*. But the operculum is purpuroid, with a lateral nucleus, and for this reason the writer (Vokes, 1964, p. 27) placed the genus in the subfamily Tritonaliinae. Since that time she has come to believe that only those shells which possess a completely sealed siphonal canal are to be referred to this subfamily and, as *Vitularia* has an open canal, placement here seems to be out of order. Swainson, in his original description (1840, p. 297), stated that "The inner lip is depressed and flattened as in the Purpurinae," and perhaps it is to this subfamily that the genus should be assigned. The writer has found

no record of the type of radula possessed by the group nor has she been able, as yet, to examine one herself. Until such a time as the nature of the radula is known placement will remain questionable.

VITULARIA LINGUABISON

E. H. Vokes, n. sp.

Text figure 1

Diagnosis: Shell with six whorls in the adult, nucleus unknown. Axial ornamentation beginning on earliest whorls with about 10 lamellar varices per whorl. Early whorls with a strong keel developed at the periphery, diminishing on later whorls. Surface ornamented to a greater or lesser degree with small pustules, especially just in advance of each varix. Varices formed by a series of thin laminae with occasionally a stronger varix composed of multiple laminae, presumably representing a "resting stage." Aperture elongate-oval, opening into anterior canal. Outer lip with numerous denticles, variable in number from 13 to 16. Inner lip smooth, free standing at anterior end, overlapping a moderately strong siphonal fasciole.

Dimensions of holotype: height 70 mm, diameter 42.5 mm.

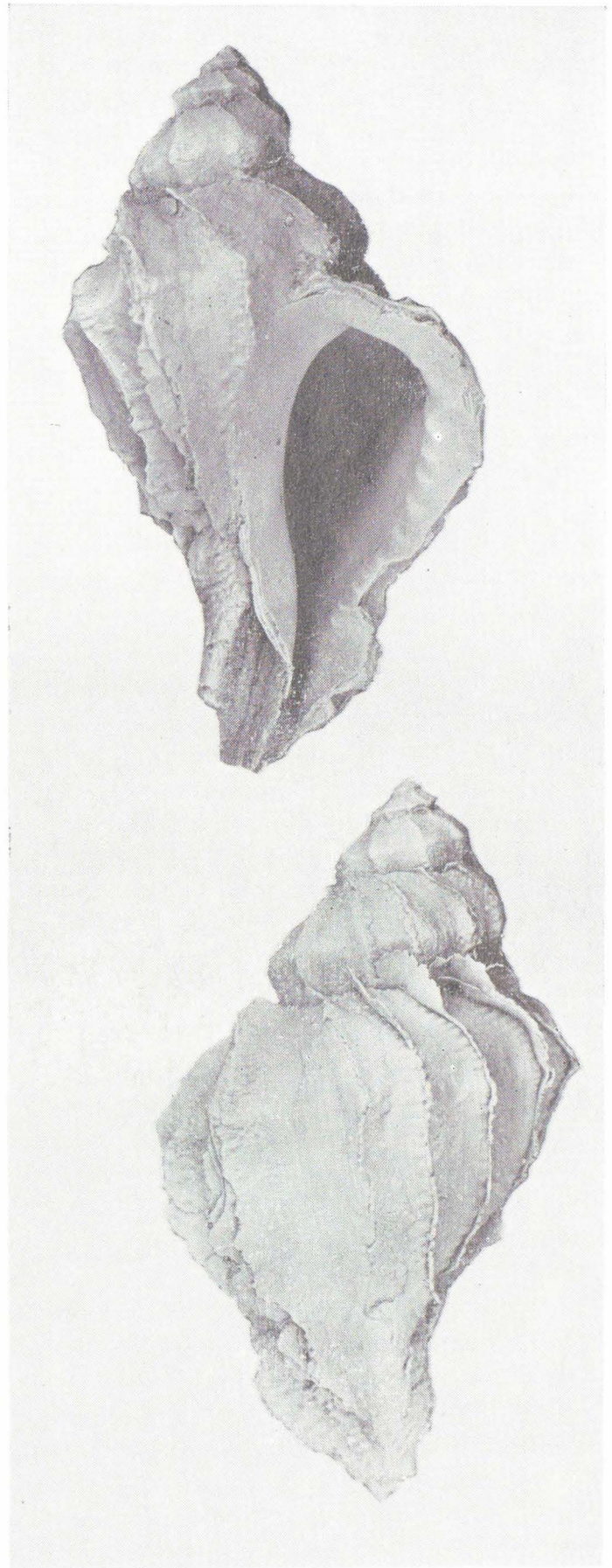
Holotype: USNM 645322.

Type locality: TU 797, "Alligator Alley," 13.2 miles east of junction with Florida Highway 29, Collier County, Florida.

Horizon: Pinecrest Beds, upper Miocene.

Discussion: The one most characteristic feature shared by all of the species of *Vitularia* is their exceeding variability. No two specimens agree exactly and the range of variation is wide. All of the Old World species are marked by a peculiar "bumpy" surface texture unique to the genus but both *V. salebrosa*, the Recent eastern Pacific species, and *V. linguabison* have this texture greatly reduced. In total aspect this new species is much closer to *V. salebrosa* than it is to the European ancestor. One unusual feature of the fossils from the type locality is that the former color pattern is visible under fluorescent light. As a result it is possible to compare the color pattern of *V. linguabison* with that of *V. salebrosa* and it can be seen that they are nearly identical. *V. linguabison* has three wide bands, probably originally dark brown, encircling the body whorl in exactly the same fashion as *V. salebrosa*. The principal difference between these two species is the development in *V. salebrosa* of much stronger peripheral nodes on the early whorls and the persistence of these nodes to a later stage. This

new species may be distinguished from the other New World Miocene species, *V. ecuadorana*, by the lower spire and the more numerous labral denticulations. *V. ecuadorana* is closely related to *V. salebrosa* and both have a marked fold in the anterior portion of the columellar lip not seen in *V.*



Text figure 1. *Vitularia linguabison* E. H. Vokes, n. sp. Holotype, X 1. USNM 645322; TU locality 797.

linguabison. From *V. linguabovis* the new species differs in having a smoother surface and more numerous varices.

In addition to the holotype there are three other specimens presently known of this new species. These paratypes are located as follows: (1) in the collections of the United States National Museum, USNM 645430; (2) in the collections of the Tulane University Geology Department; and (3) in the private collection of Mr. and Mrs. Robert C. Hoerle, of West Palm Beach, Florida.

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