

# B R E V I O R A

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### A NEW SPECIES OF *VESICOMYA* FROM THE CARIBBEAN SEA (MOLLUSCA: BIVALVIA: VESICOMYIDAE)

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During Cruise 104 (fall 1965) of the M/V OREGON of the Bureau of Commercial Fisheries Pascagoula Fishery Station, Pascagoula, Mississippi, an unusually large bivalve was trawled, alive, from a depth of over two hundred fathoms (366 m) off the coast of Colombia in the Caribbean Sea. Upon examination and comparison with material in the United States National Museum, the specimen was found to be referable to the rare and enigmatic family Vesicomylidae. The unique specimen is not conspecific with any known species of this family and is herein described as new.

*VESICOMYA* (*CALLOGONIA*) *CARIBBEA* sp. nov.

Figures 1-6

*Holotype*: Division of Mollusks, U. S. National Museum, catalog number 674573.

*Type locality*: M/V OREGON Station 5692, 12°31'N; 70°58'W; 205 fathoms (375 m); Caribbean Sea, off Cabo la Vela, Peninsula de Guajira, Colombia; bottom temperature 55°F (12.8°C); 10 October 1965. The specimen was collected alive by a 40' shrimp trawl.

*Description*: Shell 96 mm long, 67 mm high and 54 mm wide, irregularly elliptical, inequilateral, equivalve, solid, frangible, inflated with both valves of equal convexity, without posterior gape, but with slight undulate flexure to right posteriorly. Umbos anterior, conspicuous, involute, pointed, prosocline, slightly elevated

and inflated; umbonal cavity deep. Anterior margin not extensive, very broadly rounded and weakly convex; ventral margin extensive, weakly convex, rising gently posteriorly; anterior dorsal margin short, semisigmoid, concave umbonally, rounded and convex distally; posterior dorsal margin convexly arcuate and coextensive with posterior margin, forming broad blunt, oblique truncation; outline weakly pointed posteroventrally. Sculpture closely set, fine concentric laminae, grouped between larger, more conspicuous, irregular growth rings; radial sculpture not evident. Posterior ridge, semisulcated dorsally, radiating from umbo toward posteroventral region, becoming weaker distally. Ligament strong, protuberant, black, elongate, lanceolate, slightly inset basally, supported by thickened hinge line, and forming broad elongate nymph. Lunule not developed or circumscribed by impressed isocardioform line. Hinge dentition invested with periostracum. Right valve with two cardinal teeth beneath umbo; ventral tooth stronger and protuberant; dorsal tooth with anterior laminar portion and posterior thickened portion. Left valve with single central cardinal tooth developed, strong and protuberant; anterior laminate portion broken and obsolete; secondary laminate tooth beneath umbo broken. No true internal radial rib, but rib-like thickening present on posterodorsal margin of anterior adductor muscle scar. Muscle scars moderately impressed, large, irregularly ovate, anterior smaller than posterior. Pallial line weakly convex; pallial sinus irregular, narrow; pallial line not directly or obviously contiguous with posterior adductor muscle scar. Internal surface of valve with radial vermiculations. Periostracum dehiscent, olivaceous, wrinkled, heavier peripherally, also thickened over cardinal and anterior portions of hinge internally. Shell basically white, externally grayish to olivaceous, discolored centrally with russet band; earthy and chalky in texture; internally shining, with darkened blotches and pale salmon centrally.

*Remarks:* The family Vesicomylidae (originally spelled Vesicomylacidae) was established by Dall and Simpson (1901). It has been reviewed by Lamy (1920), and recently Odhner (1960) has listed the species referable to *Vesicomyla*. The status of the family has been questioned: Thiele (1935), Odhner (1960) and Clarke (1962) included *Vesicomyla* in the Kellyellidae. Jukes-Browne (1913) even mentioned it in relation to the Veneridae. On the other hand, Dall (1908), Thiele and Jaeckel (1931), Prashad (1932), Taki and Habe (1955), and Newell (1965) have maintained the Vesicomylidae separately.

There is also a question as to what genera should be included in the Vesicomylidae. For example, Woodring (1938) placed *Calyptogena* Dall, along with his newly described genera *Ectenagena* and *Phreagena*, in the Vesicomylidae. An historical survey of the family and a critical revision of at least the western Atlantic species is currently being prepared.

No western Atlantic *Vesicomya* approaches the size of *V. caribbea*. *V. leeana* (Dall, 1889, p. 440; 1890, pl. 10, figs. 6-9) is the only western Atlantic species that is closely related to and which might be confused with *V. caribbea*. The latter is easily distinguished by being much larger and having a heavier shell with a distinct posterior ridge. In addition, the hinged teeth of *V. caribbea* are stronger and more blunt. The eastern Pacific species, *V. gigas* (Dall, 1896, pl. 18; 1908, pl. 16, fig. 9), attains the size of *V. caribbea* but it is usually less heavily shelled and its teeth are more distinct. It may be differentiated from *V. caribbea* by its much shorter ligament and shorter, more distinct, nymphal callosity. Further, *V. gigas* lacks a posterior ridge and is generally of longer, narrower proportions. Also, *V. gigas* is mesially constricted ventrally while *V. caribbea* is not.

The two species most closely related to *V. caribbea* are known only from widely separated localities and are also rare in collections. The most closely related is *Vesicomya chuni* described by Thiele and Jaekel (1931, p. 244, pl. 4, fig. 100) from VALDIVIA Station 63, 2°N; 8°4.3'E, from a depth of 2492 m in the Gulf of Guinea, eastern Atlantic Ocean. Unfortunately, the authors did not figure an internal view of the shell and no specimens of this species were available for comparison. The outline of the valves of *V. caribbea* and *V. chuni* are quite similar; however, the semisulcated posterior ridge of *V. caribbea* appears to be a distinguishing character. Further, according to Thiele and Jaekel's description, *V. chuni* is relatively thin shelled, whereas *V. caribbea* is thick shelled.

The other species closely resembling *V. caribbea* is from the East Indian area. *Vesicomya winckworthi*, described by Prasad (1932, p. 153, pl. 5, figs. 7-8) from SIBOGA Station 17, 7°28.5'S; 115°28'E, in 1060 m depth, north of Java, is founded on a single right valve which, fortunately, was well illustrated externally and internally. In contrast to *V. winckworthi*, *V. caribbea* is apparently more inflated, its anterior margin more narrowly rounded, and its nymph stronger and thicker.

*Vesicomya caribbea* is placed in the subgenus *Callogonia* Dall 1889 (type-species, by monotypy, *Callocardia* [*Vesicomya*] *leeana*

Dall 1889), as its pallial sinus is, though indistinct, somewhat angular. Thiele and Jaeckel (1931) placed *V. chumi*, the species most closely related to *V. caribbea*, in *Callogonia*.

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#### LITERATURE CITED

CLARKE, A. H., JR.

1962. Annotated list and bibliography of the abyssal marine mollusks of the world. Bull. Nat. Mus. Canada, No. 181, 114 pp.

DALL, W. H.

1889. Report on the Mollusca [BLAKE]. Part II. Gastropoda and Scaphopoda. Bull. Mus. Comp. Zool., **18**: 1-492, pls. 1-40.  
 1890. Preliminary report on the collection of Mollusca and Brachiopoda obtained in 1887-'88 [ALBATROSS]. Proc. U.S. Natl. Mus., **12**(773): 219-362, pls. 5-14.  
 1896. Diagnoses of new species of mollusks from the west coast of America. Proc. U.S. Natl. Mus., **18**(1034): 7-20.  
 1908. The Mollusca and Brachiopoda [ALBATROSS]. Bull. Mus. Comp. Zool., **43**(6): 205-487, pls. 1-22.

DALL, W. H. and C. T. SIMPSON

1901. The Mollusca of Porto Rico. Bull. U.S. Fish Comm., **20**(1): 351-524, pls. 53-58.

JUKES-BROWNE, A. J.

1913. On *Callista*, *Amiantis*, and *Pitaria*. Proc. Malac. Soc. London, **10**: 335-347.

LAMY, E.

1920. Révision des Cypricardiacea et des Isocardiacea vivants. Jour. de Conch., **64**: 259-307.

## NEWELL, N. D.

1965. Classification of the Bivalvia. Amer. Mus. Novit., No. 2206, 25 pp., 3 text figs.

## ODHNER, N. H.

1960. Mollusca. Rept. Swed. Deep-Sea Exped., 2(Zool. 22): 365-400, 2 pls., 12 text figs.

## PRASHAD, B.

1932. The Lamellibranchia of the SIBOGA Expedition. Systematic Part, Pelecypoda II (exclusive of the Pectinidae). SIBOGA-Expedition, Monographie 53 c, 353 pp., 9 pls.

## TAKI, I., and T. HABE

1955. [In] Kuroda, T., Vesicomylidae. Illus. Cat. Jap. Shells, 2(1): 6, text-figs. 1-4.

## THIELE, J.

1935. Handbuch der systematischen Weichtierkunde. Jena, Gustav Fischer, vol. 2, pp. 779-1022, 110 figs.

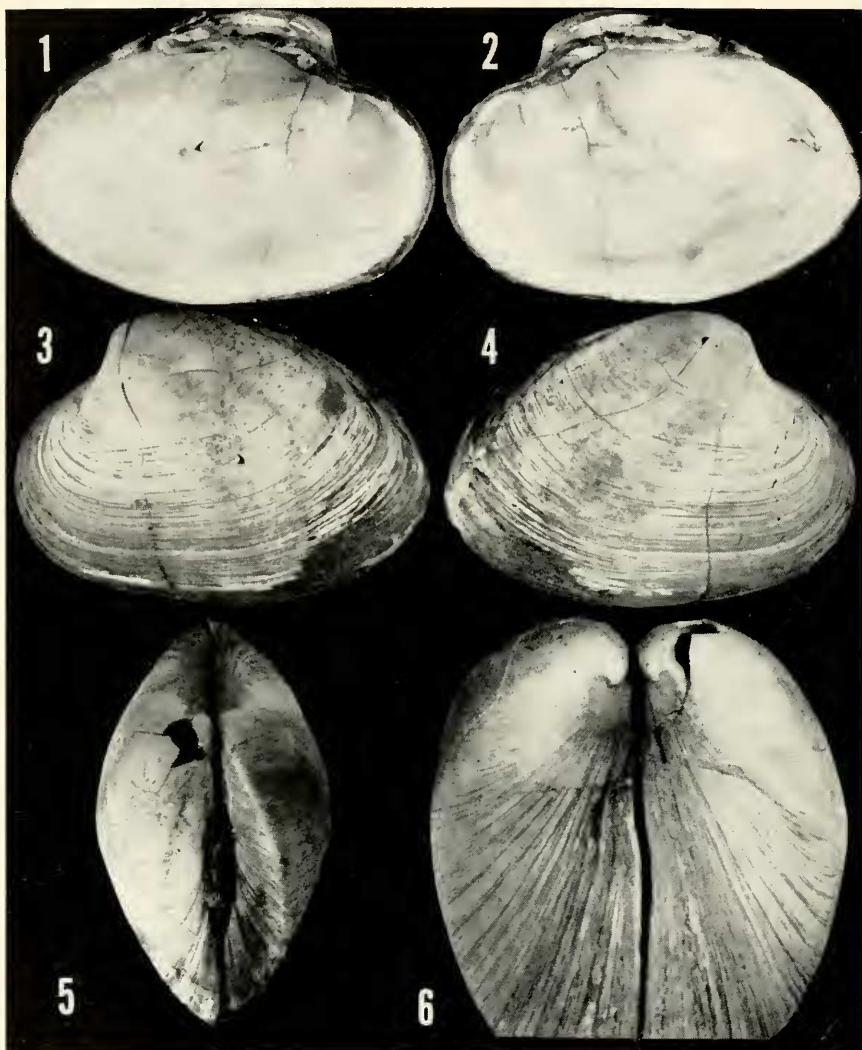
## THIELE, J., and S. JAECKEL

1931. Muscheln der deutschen Tiefsee-Expedition. Wiss. Ergeb. Deutsch. Tiefsee Exped., 21(1): 161-268 (1-110), pls. 6-10 (1-5).

## WOODRING, W. P.

1938. Lower Pliocene mollusks and echinoids from the Los Angeles Basin, California. U.S. Dept. Interior, Geol. Surv. Prof. Papers, 190, 67 pp., 9 pls.

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*Vesicomya (Callogonia) caribbea* n.sp., Holotype, USNM 674573.

Fig. 1. Internal view of left valve. Fig. 2. Internal view of right valve.  
Fig. 3. External view of left valve. Fig. 4. External view of right valve.  
Fig. 5. Dorsal view of valves, showing posterior ridge. Fig. 6. Anterior  
view, showing involute umbos.