Institute for Marine Scientific Research
Prinses Elisabethlaan 69
8401 Bredene - Belgium - Tel. 059 / 80 37 15

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Comments on three Jamaican Melanellid Species Described by C. B. Adams (Gastropoda: Melanellidae)[1]

By WILLIAM G. LYONS

Abstract. Supression of a previously selected lectotype (MCZ 186183) of *Eulima (=Vitreolina) conica* is recommended because that specimen, a rissoinid, is variant from the original description; it should be replaced by a melanellid (USNM 83270) upon which the description was probably based. A lectotype (USNM 83268) of *Eulima fulvocincta* is proposed. The lectotype (MCZ 156416) of *Rissoa eulimoides* is a poor specimen of a *Melanella;* the species is redescribed from better specimens. *Vitreolina conica* is known only from Jamaica. *Melanella eulimoides* is reported from Cayman Brac, the Bahamas, and West Florida. *Eulima fulvocincta* occurs from offshore waters of North Carolina to Florida, Jamaica, Hispaniola, and probably St. Thomas and Puerto Rico. Types and comparative specimens are illustrated.

INTRODUCTION

Clench and Turner (1950) selected and illustrated extant types of C. B. Adams' western Atlantic molluscan species, in many instances noting subsequent familial or generic classifications. A review of shallow water Florida and Caribbean Melanellidae has revealed new information concerning identities of three of Adams' Jamaican species. Dr. Anders Waren, who is also presently studying western Atlantic Melanellidae, suggested appropriate genera and

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provided additional distributional records for two of the species.

Specimens were examined from collections of the Museum of Comparative Zoology (MCZ), Harvard University, Cambridge, Massachusetts, the National Museum of Natural History (USNM), Washington, D.C., the Academy of Natural Sciences of Philadelphia (ANSP), Pennsylvania, the Florida Department of Natural Resources (FDNR) Marine Research Laboratory (catalogue prefix FSBC I), St. Petersburg, Florida, and the Steger collection, now at the Delaware Museum of Natural History (DMNH), Greenville, Delaware.

Eulima conica C. B. Adams, 1850

Adams named *Eulima conica* with the following description: "shell conic turrited: white: smooth and shining: apex acute: spire with the axis moderately curved throughout with the outlines rectilinear in the plane perpendicular to that of the curvature: whorls about eleven, planulate, with an indistinct suture: last whorl subangular, quite oblique anteriorly: aperture small, ovate. Mean divergence [spire angle] about 22°; length .1 inch; breadth .042 inch."

In their introduction, Clench and Turner stated (p. 234) that all Adams' western Atlantic *Eulima (=Melanella)* were missing, but they assigned types for *Eulima conica* and *E. jamaicensis* C. B. Adams, 1845 in the text. Their illustrated lectotype (MCZ 186183; Figure 1) and a conspecific paralectotype (MCZ 186184; Figure 2) of *Eulima conica* are not melanellids. Relatively large, obtusely conical protoconchs of about two whorls, glassy teleoconchs dulled by many microscopic axial striae, and two tooth-like swellings within outer lips indicate the shells to be specimens of *Zebina browniana* (d'Orbigny, 1842), a species somewhat resembling some melanellids but belonging to the family Rissoinidae.

Adams sold duplicate specimens to finance a monograph of his species, a task he never completed. Some National Museum melanellids are of certain Adams origin, and others may be duplicates acquired from other collections. Dall (1889) mentioned that "specimens [of *Eulima jamaicensis*] in the National Museum were received from Prof. Adams

and have lately been compared with his original type"; he also mentioned comparing other specimens with the type of *E. arcuata* C. B. Adams, 1850. This suggests that Adams' melanellid types may have been loaned to Dall prior to completion of the *Blake* Gastropoda report, and at least some may have later been catalogued into the National Museum collection. Apparent types of two such species are presently housed there; both conform well with Adams' descriptions and are marked "Jamaica. . .C. B. Ad.," evidently in Dall's handwriting. One lot (USNM 83270) containing a single specimen so marked is labeled "*Eulima conica* C. B. Ad." The shell (Figure 3) is a melanellid agreeing closely with Adams' description and measurements (Table 1). It is not now possible to demonstrate conclusively that this is the specimen upon which Adams based his description, but it seems certain the shell embodies Adams' concept of *E. conica.*

TABLE 1. Measurements of discussed *Eulima conica* specimens and those from Adams' description.

	Original Description	USNM 83270	MCZ 186183	MCZ 186184
Length	.1 in (2.54 mm)	2.6 mm	3.1 mm	3.2* mm
Breadth	.042 in (1.00 mm)	1.0 mm	1.4 mm	1.4 mm
Spire angle	22°	21°	33°	26°
whorls	ca. 11	10	6-3/4	7*

*First embryonic whorl damaged.

The previously selected lectotype and paralectotype do not agree with Adams' measurements and whorl counts (Table 1). Numbers of whorls are especially variant, being considerably fewer on shells larger than that originally described. Although the shells are of Adams origin, they do not satisfy the criteria of his description. I therefore propose that the previous designation of MCZ 186183 as lectotype be set aside, and that USNM 83270 be considered the proper lectotype of *Eulima conica* C. B. Adams, 1850. Accordingly, the slender outline and moderate curvature of the spire indicate that *E. conica* should be assigned to *Vitreolina* Monterosato, 1884.

To date I have seen this species only from Jamaica, but it probably occurs elsewhere in the northern Caribbean.

Eulima fulvocincta C. B. Adams, 1850

Clench and Turner were unable to locate the type of *E. fulvocincta* but, as with *E. conica,* an apparent C. B. Adams syntype from Jamaica is in the National Museum collection (USNM 83268; Figure 4) and may serve as lectotype. Measurements of the worn shell (length 4.9 mm; breadth 1.6 mm) are similar to those reported by Adams (.2 in = 5.1 mm; .065 in = 1.65 mm). Early whorls are missing, leaving about 6 whorls on the teleoconch and perhaps explaining Adams' reference to a "rather obtuse apex". The shell possesses the two distinctive interrupted spiral bands and scattered, thin, brown stained varices described by Adams, markings which separate this species from all other western Atlantic melanellids. A freshly dead shell from off the Florida west coast *(Hourglass* station B, 27° 37′N, 83° 07′W; 18 m; Figure 5) is illustrated for comparison.

Adams' species is assigned to *Eulima* Risso, 1826, *sensu* Winckworth (1934). It is closely related to the eastern Pacific *E. schwengelae* (Bartsch, 1938), formerly known as *Strombiformis hemphilli* Bartsch, 1917. Both Keen (1971) and Abbott (1974) were unaware of Bartsch's subsequent name, changed to avoid homonymy with the western Atlantic *Eulima hemphillii* Dall, 1884.

Mörch (1875) reported *Leiostraca (=Eulima) fulvocincta* from St. Thomas (Virgin Islands) and Porto Plata (Hispaniola). Soon thereafter, Dall (1889) erroneously designated *fulvocincta* a synonym of *Eulima bilineata* Alder, 1848; the latter species occurs off western Europe, not in the Americas, but its name has been applied to the western Atlantic *S. bifasciatus* (d'Orbigny, 1842) and several apparently unnamed species. Dall's synonymy was evidently convincing, for I find no subsequent use of *fulvocincta.* Illustrations of the shell are also scarce. The battered shell, probably from Puerto Rico, of Warmke and Abbott's (1961) figure 26-o appears to be *E. fulvocincta.* Although their

figure legend refers the specimen to *Eulima auricincta* Abbott, 1958, their text treatment of *E. auricincta* makes no mention of that figure, referring properly to figure 26-j.

Specimens examined: NORTH CAROLINA: 1, 6.6 mm length; USFC sta. 2595, 115 m, 22 mi east southeast of Cape Hatteras; USNM 97519.—1; USFC sta. 2616, 31 m, 25 mi east southeast of Cape Fear; USNM 97521.—1; USFC sta. 2622, 27 m, 25 mi southeast of Cape Fear; USNM 92808.—16, largest 5.8 mm; USFC sta. 2619, 27 m, 25 mi southeast of Cape Fear; USNM 97523.—1; USFC sta. 2619, 27 m, off Cape Fear; USNM 330408.—3; 22 m, 12 mi east of Frying Pan Shoal; Rush, coll.; USNM 82989.—FLORIDA: 1; USFC sta. 7106, 23 m, west coast of Florida; USNM 194641.—1; 18-22 m, Florida west coast; Benedict, coll.; USNM 194896.—2; airport, St. Petersburg (Tampa Bay); McGinty, coll.; DMNH 110031.—2; Hourglass sta. B, 18 m, off St. Petersburg, December, 1965; FSBC I 11750.—2; Hourglass sta. B, November, 1967; FSBC I 15258.—2; Eolis sta. 30, 13 m, 5 mi off north entrance to Key West; USNM 417546.—1; 29 m, Dry Tortugas; USNM 433291.—JAMAICA: 1, 4.8 mm; Jamaica; C. B. Adams, coll.; USNM 83268 (suggested lectotype).—14; Port Royal; Orcutt, coll.; USNM 442257.—HAITI: 2; Les Trois Pavillons, Dept. du Nord-Ouest; Orcutt, coll.; USNM 440513.

The range of *Eulima fulvocincta* extends from off Cape Hatteras, North Carolina to west Florida and southward to the Greater Antilles, including the Virgin Islands if Mörch's record is correct. Dr. Waren has also seen material from Yucatan. No depth records accompany the Caribbean specimens, but most were probably collected from beach drift. Most Florida samples were taken in 13-29 m, but the Tampa Bay specimens were obtained from spoil during fill operations for the St. Petersburg Airport (Mrs. Barbara Steger, pers. comm.), and probably lived at shallower depth. Five of six North Carolina lots are from 22-31 m; the sixth, from 115 m off Cape Hatteras, is the northernmost record and contains the largest specimen examined (6.6 mm). These records may indicate temperate submergence of a tropical shallow water species.

Rissoa eulimoides C. B. Adams, 1850

Dr. D. R. Moore first called to my attention that the type of *R. eulimoides* is a melanellid. Subsequent inspection revealed the holotype (MCZ 156416; Figure 6) to be a worn, juvenile specimen with rather dull surface and lacking embryonic whorls. It is, however, identical with an excellent specimen of similar size from Goat Cay, Andros, Bahamas (FSBC I 11749; Figure 7); and others from Cayman Brac (ANSP 296068; Figures 8, 9); and Gulfport, Tampa Bay, Florida (MCZ 104323). The species is redescribed from these specimens.

Shell small, to about 16.0 mm total length, glossy, white, nearly straight. Protoconch of 4 small, slender whorls; postembryonic whorls about 15, considerably broader than long posteriorly, less so anteriorly, slightly rounded, forming shallow, narrow sutures; penultimate whorl merging smoothly with base. Sculpture lacking except for one deep axial incision at completion of each whorl, creating a single, nearly straight, incised line from posterior terminus of outer lip to base of final embryonic whorl. Umbilicus absent. Aperture small, broadly ovate, constricted posteriorly, rounded anteriorly; columella short, simple, slightly elevated, merging with base on juveniles, separated on adults. Outer lip thick, broadly rounded, resembling that of various Rissoinidae.

Poor condition of the type probably misled Adams to place the species in *Rissoa;* the embryonic whorls are missing and early postembryonic whorls are worn to resemble early whorls of some Rissoinidae. The comparatively dull surface and shape of the outer lip further suggest that family. Fresh shells, however, are clearly melanellid as indicated by the shape of embryonic whorls and by the highly glossy, oily texture of the shell surface. The strong labial scars and solid shell dictate that the species be placed in *Melanella* Bowdich, 1822. Linear arrangement of deeply incised varices also occurs on *Melanella dufresnei* Bowdich, 1822, from Japan.

Dr. Waren allowed examination of the MCZ and ANSP specimens on loan to him. He also (pers. comm.) reported examining specimens from the Caribbean coast of Panama

(USNM 620567). The Gulfport specimen is especially curious; I have not otherwise seen the species among many Tampa Bay melanellids. Except for that record, the species seems restricted to shallow areas of the Caribbean, where it is evidently uncommon.

The shell of *M. eulimoides* somewhat resembles that of Abbott's (1974) figure 1344, which he ascribes to *Melanella gibba* (De Folin, 1867). However, that species was described from Margarita Island, Panama (Bartsch, 1917), and the original illustration is of a shell quite different from that illustrated by Abbott, seeming more closely related to the group containing *M. arcuata* (C. B. Adams, 1850).

Acknowledgments

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Plate 16

Fig. 1. *Eulima conica;* Jamaica; MCZ 186183; lectotype of Clench and Turner (1950) (= Rissoinidae); length 3.1 mm (10 x).

Fig. 2. *Eulima conica;* Jamaica; MCZ 186184; paralectotype; (= Rissoinidae) length 3.2 mm (10 x).

Fig. 3. *Eulima* (= *Vitreolina*) *conica*; Jamaica; USNM 83270; new lectotype; length 2.6 mm (10 x).

Fig. 4. *Eulima fulvocincta;* Jamaica; USNM 83268; lectotype; length 4.9 mm (10 x).

Fig. 5. *Eulima fulvocincta*; *Hourglass* station B, 18 m; FSBC I 11750; length 4.8 mm (10 x).

Fig. 6. *Rissoa* (= *Melanella*) *eulimoides*; Jamaica; MCZ 156416; holotype of Clench and Turner; length 5.2 mm (10 x).

Fig. 7. *Melanella eulimoides*; Goat Cay, Andros, Bahamas; FSBC I 11749; length 5.6 mm (10 x).

Fig. 8. *Melanella eulimoides*; Cayman Brac; ANSP 296068; length 13.0 mm (tip broken) (5 x).

Fig. 9. Same; lateral view (5 x).

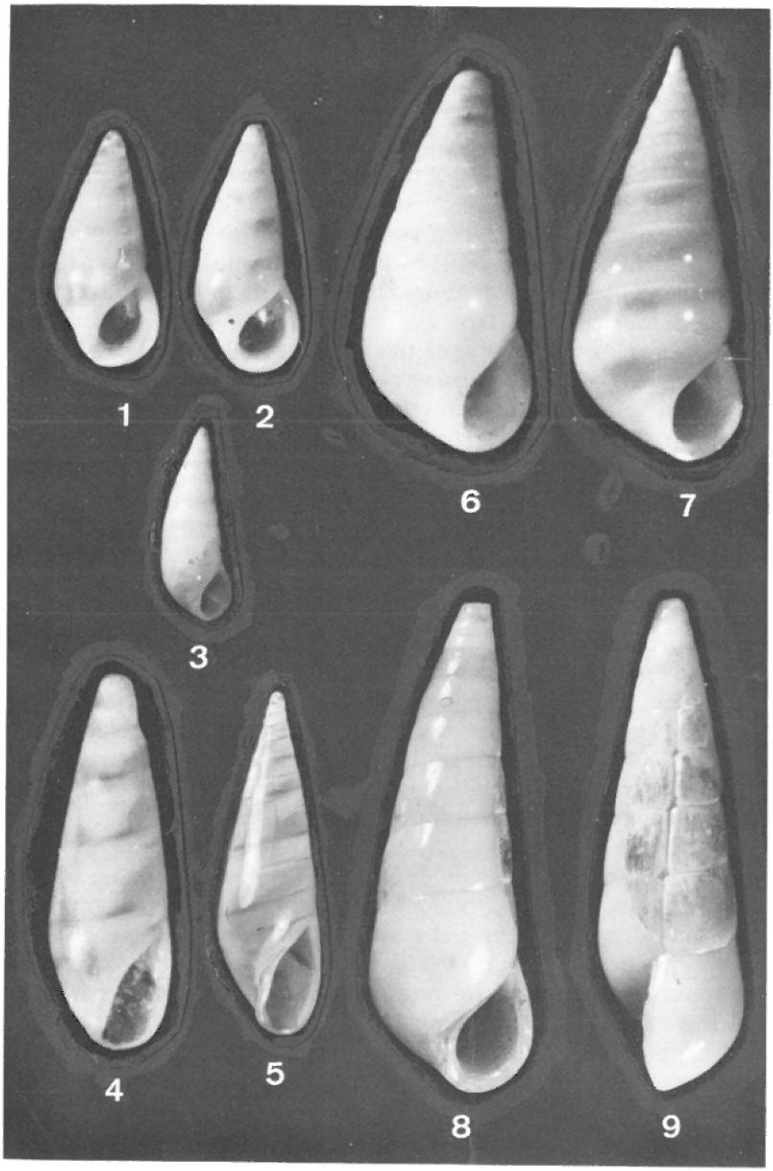

Plate 16

Alcide d'Orbigny's South American Expedition (1826–1833)

By HARRIET HORNBLOWER

By 1834, much of the fauna and flora of Brazil and Peru had been collected and described by such eminent naturalists as Alexander von Humboldt and Augustin Saint-Hilaire. The rest of the South American continent to the south remained mostly uninvestigated. The Muséum National d'Histoire Naturelle conceived an ambitious project to fill this lacuna which, at the request of Geoffroy Saint-Hilaire, was undertaken by Alicide Charles Victor Dessalines d'Orbigny (1802–57). Orbigny readily assented, as such an expedition would be an invaluable opportunity for a young and aspiring naturalist.

Saint-Hilaire chose Orbigny because his research had already revealed an ability to clarify and impose new order on hopelessly inadequate systematics. He had separated the Foraminifera from the Cephalopoda which Lamarck had failed to do.

A foundation in zoology had been provided to him by his father, Charles-Marie Dessalines d'Orbigny (1770–1856), a naval surgeon with a passionate interest in natural history. He took his sons, Alcide and Charles, on numerous collecting trips. The Orbignys worked on the marine animals of the coast of Aunis and Vendée, and with Fleuriau de Bellevue, founded the first French regional museum at La Rochelle.

From youth, Alcide had been in contact with other naturalists: Savigny, Cuvier, Audouin, and Milne-Edwards.

On July 26, 1826 Orbigny sailed from Brest, and on September 24 arrived at Rio de Janeiro. Two weeks later he sailed to Montevideo, arriving on October 30 and for several months explored Uruguay. On February 14 he left Buenos Aires, journeying up the Paraná to Rosario and then on to Corrientes. For more than a year, he remained in the Corrientes region making excursions into Chaco and Guaraní territory. In December, he reached the frontiers of Paraguay, which he would have investigated had its dictator, Dr. Francia, not previously taken Bonpland, Humboldt's botanist, captive.

Leaving Corrientes at the end of May, he sailed down the Paraná to Buenos Aires. On January 2, 1829, Orbigny departed for the Río Negro, and for nine months he explored Patagonia.

Warring factions made an overland expedition from Buenos

Aires to Valparaiso impossible; so he went by sea around the Horn to Valparaiso, Chile arriving on February 16, 1830.

After a visit to Santiago, Orbigny learned upon returning to Valparaiso that President Santa Cruz, "a friend of the sciences", had requested his services in evaluating the riches of Bolivia. The offer was providential, for it not only gave Orbigny access to new zoogeographic zones, but afforded him badly needed financial assistance. Orbigny made an ascent of the Cordillera as he journeyed into Bolivia. Once in Bolivia he spent two years investigating the *Yungas.*

In Santa Cruz Province, while exploring the tributaries of the Madeira by *piroque,* he made extensive zoological, geographical and ethnological observations in almost unknown areas.

In Callao, Peru, Orbigny met M. Fontaine, a French physician for *The Griffon.* They collected marine mollusks in the vicinity. Fontaine continued to collect coastal, marine species as far north as Piura and later sent them to Orbigny in Paris.

On returning to Paris, Orbigny published the results of his expedition in nine folio volumes (1835–47). Elie de Beaumont described the work as presenting "in an almost encyclopedic framework, one of the most extensive monographs ever given on any region of the earth." Volume 5, part 3, is devoted to mollusks; many new species are described. [Some had been briefly described previously (Orbigny 1835).]

Orbigny's expedition served as a model for the scientific investigations of other unexplored regions. His contributions to South American geology, paleontology and malacology were monumental and became foundations in these fields.

Orbigny made one of the most extensive collections of the land and freshwater mollusks ever made in South America. The previous collection of shells made by Humboldt and Bonpland, described by Valenciennes, is of nugatory importance. Other naturalists such as Spix and Wagner, and Moricand described only the mollusks of Brazil.

Besides figuring over a hundred new mollusks, Orbigny made general observations on their habitats and a new synthesis of their distribution. Latitudinally he divided the continent into three zones, using gastropods and birds as examples. He noted a sharp diminution in species density from the tropical to the cold zone. He also recognized faunal zones in the distribution of the marine mollusks, concepts which were later augmented by Edward Forbes.

Many of Orbigny's speculations have been since discarded; yet he did much to organize and clarify South America's faunal, geological, and paleontological record, an immense accomplishment for a single man who generally travelled alone under perilous conditions.

Orbigny sold his shells, for pecuniary reasons, to the British Museum (Nat. Hist.), all of them glued to cards, with an x on the figured specimens. The over 800 lots were described by Gray (1854). The freshwater bivalves were critically examined by Johnson (1971).

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