

# American Museum Novitates

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PUBLISHED BY THE AMERICAN MUSEUM OF NATURAL HISTORY  
CENTRAL PARK WEST AT 79TH STREET, NEW YORK 24, N.Y.

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NUMBER 2149

JULY 25, 1963

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## A New Species of *Latiaxis* from the Western Atlantic (Mollusca, Gastropoda)

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### INTRODUCTION

In the course of a study of the Japanese and Caribbean Coralliophilidae, we came to the conclusion that the western Atlantic species referred by Dall (1889a, 1889b) and others to the Japanese species *Pyrula* (*Rhizochilus*) *deburghiae* Reeve (1857) is not referable to Reeve's taxon. Inasmuch as specimens of the American species are now being recovered in increasing numbers by collectors dredging off the coast of Florida and are, therefore, no longer a rarity confined to the larger public museums, it is appropriate to describe this long-neglected species at the present time.

We have not attempted here to review the generic allocations of the species in the Coralliophilidae, other than for the present species. A thorough reëvaluation of the classification of the family would be required to revise the present highly unsatisfactory arrangement.

A number of people have assisted us in the completion of this study. Dr. R. Tucker Abbott of the Academy of Natural Sciences of Philadelphia, Dr. William J. Clench of the Museum of Comparative Zoölogy, Harvard University, and Dr. Harald A. Rehder of the United States

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National Museum, Smithsonian Institution, kindly permitted us access to the collections of their respective institutions. We are particularly indebted to Mrs. S. S. Allwell of Baltimore, Maryland, Mr. Jim Moore of Palmetto, Florida, and Mr. and Mrs. Dan Steger of Tampa, Florida, for the loan of specimens in their private collections. Mr. William E. Old, Jr., of the American Museum of Natural History assisted us in various ways.

The following abbreviations have been used for collections of institutions:

A.M.N.H., the American Museum of Natural History

A.N.S.P., Academy of Natural Sciences of Philadelphia

M.C.Z., Museum of Comparative Zoölogy, Harvard University

U.S.N.M., United States National Museum, Smithsonian Institution

## SYSTEMATIC ACCOUNT

### GENUS *LATIAxis* SWAINSON, 1840

TYPE SPECIES: *Pyrula mawae* Griffith and Pidgeon, 1834, Recent, western Pacific, by monotypy.

REMARKS: The present confusion concerning the generic placement of the *Latiaxis*-like species that comprise the family Coralliophilidae (Magilidae) results largely from the absence of a radula in this group and from our ignorance of the soft anatomy and ecology of most of the sublittoral species. In recent years, the predominantly spinose coralliophilids have been generally referred to either *Latiaxis* Swainson (1840) or to various non-nominate subgenera of *Coralliophila* H. and A. Adams (1853). Australian workers have placed these species in *Tolema* Iredale (1929) on the mistaken belief that the type species of Iredale's taxon is *Tolema australis* Laseron (1955). Actually, Iredale (1929, p. 186) designated *Purpura sertata* Hedley (1903) the type species of *Tolema*, and this designation cannot be changed without the sanction of the International Commission of Zoological Nomenclature (Article 70) despite the fact that Laseron (1955, pp. 70, 71) has shown that Iredale's concept of *Purpura sertata* Hedley was not the species described by Hedley (1903). Therefore, unless action is taken by the Commission to change the type designation, *Tolema* is not available for the spinose coralliophilids.

Of the taxa now assigned to Coralliophilidae, the group that appears to be most closely related to the present species on the basis of conchological characters is *Babelomurex* Coen (1922), which is based on *Fusus babelis* Requier (1848), a species that occurs in the Mediterranean Sea. This group is characterized by having an attenuated spire, keeled whorls bearing scaly spiral cords and weak, undulate, axial threads with scaly spines on the keels, a wide body whorl with a funnel-shaped umbilicus

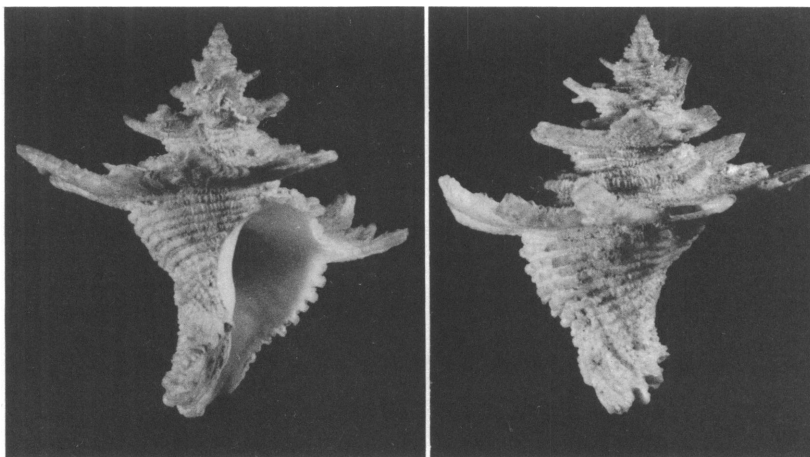


FIG. 1. Holotype of *Latiaxis (Babelomurex) dalli*, new species, off Guadeloupe Island, French West Indies, in 878 fathoms (U.S.N.M. No. 87215). *Left*: Apertural view. *Right*: Dorsal view.  $\times 1.25$ .

surrounded by a scaly margin, a crenulated outer lip, and a weakly twisted columella with a rather wide margin (Wenz, 1941). We propose to place the present species in *Babelomurex* on the basis of the present knowledge of the family.

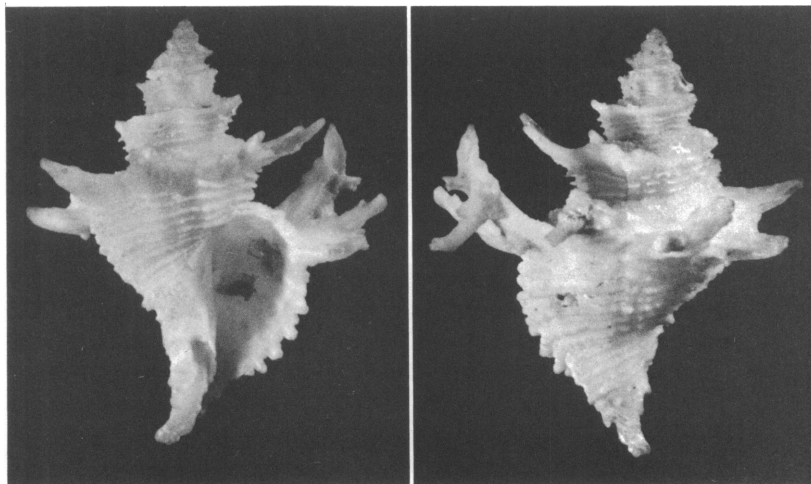


FIG. 2. Paratype of *Latiaxis (Babelomurex) dalli*, new species, off Egmont Key, Florida, in 120 fathoms (A.M.N.H. No. 102799). *Left*: Apertural view. *Right*: Dorsal view. Note foreign growths on spines.  $\times 2$ .

SUBGENUS *BABELOMUREX* COEN, 1922

TYPE SPECIES: *Fusus babelis* Requier, 1848, Recent, Mediterranean Sea, by original designation.

***Latiaxis (Babelomurex) dalli*, new species**

Figures 1-3

*Coralliophila deburghiae* Reeve, DALL, 1889a, pp. 19, 218, 219, pl. 16, fig. 5; 1889b, p. 122, pl. 16, fig. 5, in part, not pl. 44, fig. 1, nor reference to Cape Hatteras, North Carolina. HENDERSON, 1914, p. 120, Pourtales Plateau, off Key West, Florida, 90 fathoms. JOHNSON, 1934, p. 118, "Off Cape Hatteras, North Carolina to the West Indies, 56-878 fathoms." SMITH, 1937, p. 118, in part, not reference to pl. 58, fig. 5; 1939, p. 32, pl. 20, fig. 11, off Key West, Florida. ABBOTT, 1954, p. 220; 1958, p. 66.

Not *Pyrula (Rhizochilus) deburghiae* Reeve, 1857, p. 208, pl. 38, figs. 3a, 3b.

DIAGNOSIS: The expanded, shelf-like keel, with its large triangular spines, as well as the widely open umbilicus and strong scaly ribs, separates this species from the known species of *Latiaxis* from the western Atlantic.

DESCRIPTION: White shell medium-sized for genus, with about eight whorls; spire high (i.e., viewed dorsally, shoulder dividing shell midway). Protoconch consisting of three glossy whorls regularly increasing in size. Shell sharply angulate at shoulder, with about 10 broadly triangular, large spines at periphery. Angulate spire having five to seven ribs above, with a prominent central one; below angle, three equal ribs; all ribs set with erect, semitubular scales. Body whorl below shoulder having from 14 to 18 scaly ribs, and spaces between ribs also set with scales. Spines on shoulder consisting of folded laminae, with their hollow sides facing aperture; rounded edge of spines opposite hollow sides scaly; about one-third of lower portion of each spine fitting tightly over each succeeding spine to form keel; scaled ribbing on spines less developed than on shell, diminishing toward peak of spines. Body whorl below keel slightly convex above and constricted below, then swelling out to dilated margin of umbilicus; body whorl having weak axial undulations, their convexity being centered on spines. Aperture ovate, lustrous white; interior of lip lirate; lip edge thin, crenulated, with pronounced groove formed by hollow edge of spinose keel and a lesser groove formed by prominent central rib above keel; columella having a spiral indentation below; parietal shield having outer edge projecting a little from shell; canal open, long, and slightly recurved. Umbilicus wide and funnel-shaped; inner side having laminate striae projecting out of moderately deep chink; outer edge and side possessing ribs and scales as on body whorl.

Operculum typically magilid (fig. 3), subcrescentic in outline; mar-

ginal callus offset by concentric ridges; exterior surface marked with growth striae.

MEASUREMENTS OF HOLOTYPE: Length, 42 mm.; diameter, 22 mm.; diameter, including spines, 42 mm.

TYPE MATERIAL: Holotype, U.S.N.M. No. 87215, "Blake" Station 174, off Guadeloupe Island, 878 fathoms. Paratypes: M.C.Z. No. 7321, "Blake" Station 174, off Guadeloupe Island, 878 fathoms, one specimen; collection of Dan Steger, southwest of Egmont Key, Florida, 220–230 fathoms, two specimens; collection of Jim Moore, southwest of Egmont Key, Florida, 120 fathoms, four specimens; A.M.N.H. No. 102799, 200–230 fathoms, southwest of Egmont Key, Florida, one specimen.

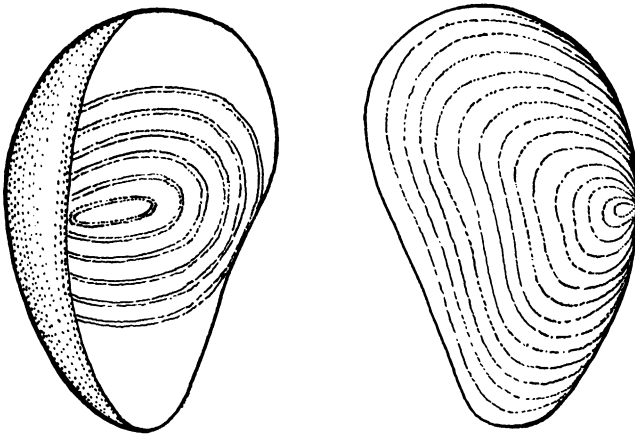


FIG. 3. Operculum of the holotype of *Latiaxis* (*Babelomurex*) *dalli*, new species. Left: Under side. Right: Outside. Greatly enlarged.

RANGE: Caribbean Sea, from Guadeloupe Island to the Bahama Islands, and the Gulf of Mexico, off southern Florida.

VERIFIED RECORDS: Off Guadeloupe Island, 878 fathoms, "Blake," U.S.N.M. No. 87215 (holotype, fig. 1); M.C.Z. No. 7321 (paratype). Off Guadeloupe Island, 150 fathoms, "Blake," U.S.N.M. No. 87213, one specimen; M.C.Z. No. 7320, one specimen. Off Punta Alegre, Camaguey, Cuba, 220 fathoms, "Atlantis," M.C.Z. No. 135288, one specimen. Off Cuyo Coco, Camaguey, Cuba, 220 fathoms, "Atlantis," M.C.Z. No. 135287, one specimen. Off Caibarien, Cuba, 235 fathoms, "Atlantis," M.C.Z. No. 135286, one specimen. Off Havana, Cuba, 80 fathoms, "Blake," U.S.N.M. No. 87211, one specimen. Off Great Isaac Island, Bahamas, 210 fathoms, "Atlantis," M.C.Z. No. 135071, one specimen. Off Bimini Island, Bahamas, 155 fathoms, "Atlantis," M.C.Z. No.

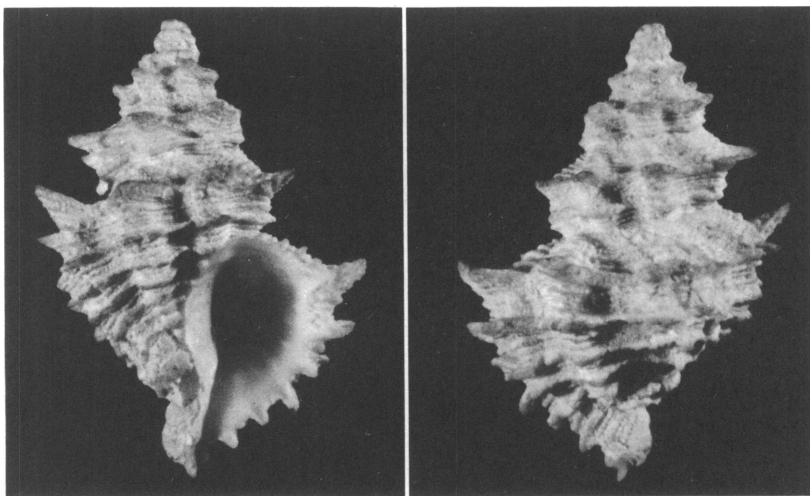


FIG. 4. *Latiaxis (Babelomurex) mansfieldi* (McGinty, 1940), southwest of Egmont Key, Florida, in 75 to 100 fathoms (A.M.N.H. No. 105210). *Left*: Apertural view. *Right*: Dorsal view.  $\times 2$ .

135071a, one specimen. Off Key West, Florida, 60 fathoms, "Eolis," U.S.N.M. No. 417053, one specimen. Off Sandy Key, Florida, 61 fathoms, "Eolis," U.S.N.M. No. 417052, one specimen. Off Sandy Key, Florida, 85 fathoms, "Eolis," U.S.N.M. No. 417054, one specimen. One

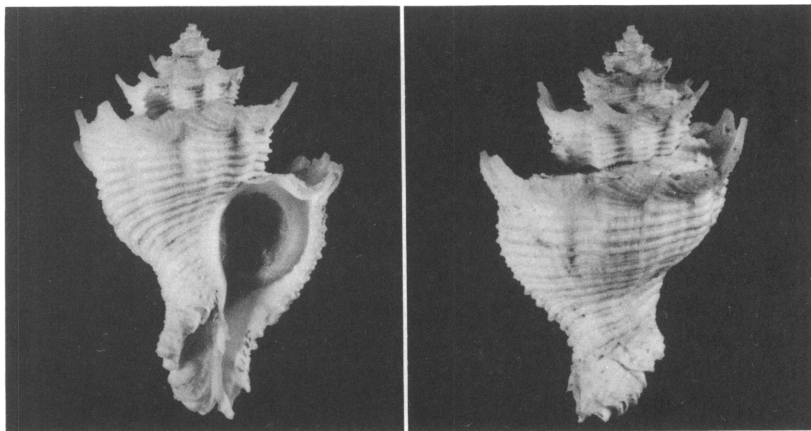


FIG. 5. *Latiaxis (Babelomurex) nakamigawai* Kuroda (1959), off Tosa, Shikoku, Japan, in 100 fathoms (A.M.N.H. No. 91937). *Left*: Apertural view. *Right*: Dorsal view. Spines damaged.  $\times 1$ .

hundred and sixty-five miles southwest of Egmont Key, Florida, 100 fathoms, A.N.S.P. No. 196666, one specimen (*ex* Dan Steger). Southwest of Egmont Key, Florida, 120 fathoms, Dan Steger collection (two paratypes). Southwest of Egmont Key, Florida, 200–230 fathoms, Jim Moore collection (four paratypes); A.M.N.H. No. 102799 (one paratype, fig. 2).

**BATHYMETRY OF VERIFIED RECORDS:** The range is 60 to 878 fathoms; median, 152.5 fathoms; average, 199.21 fathoms.

**REMARKS:** This new species exhibits very little variation in shape, the spinose keel being present even in immature specimens. In juvenile

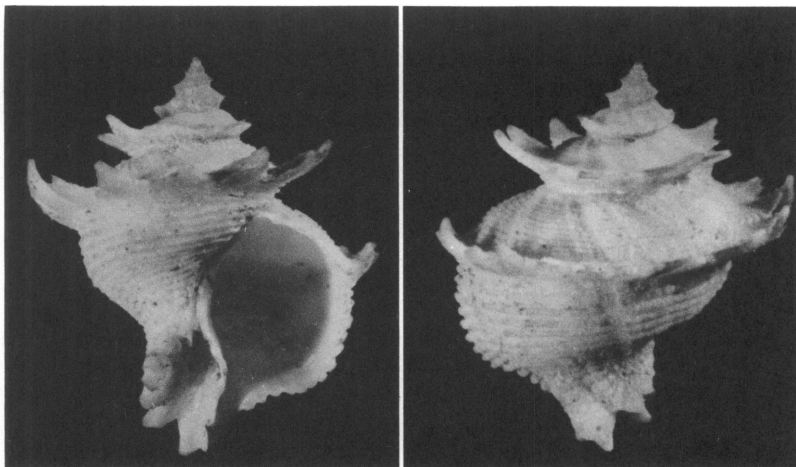


FIG. 6. *Latiaxis (Babelomurex) deburghiae* (Reeve, 1857), off Kii, Japan, in 50–80 fathoms. (A.M.N.H. No. 105209). *Left*: Apertural view. *Right*: Dorsal view.  $\times 2$ .

specimens, the spines, however, are more recurved than in mature specimens (cf. figs. 1, 2).

The only species in the western Atlantic that approaches the present species is *Latiaxis (Babelomurex) mansfieldi* (McGinty, 1940), which has a smaller shell, with shorter spines on the shoulder keel, axial plications, and generally a pronounced spiral rib covering the sutures of the spire and extending onto the body whorl (see fig. 4). Pilsbry and McGinty (1949) suggested that this shallow-water species is a close relative of *L. (B.) babelis* (Requien, 1848) and other Mediterranean coralliophilas.

None of the species of *Latiaxis* known from the western Pacific closely resembles the present species, although one from Japanese waters, *Latiaxis (Babelomurex) nakamigawai* Kuroda (1959), possesses similar surface ornamentation. It differs strongly, however, in general appearance by reason of its larger size, relatively shorter spire, less prominently

developed shoulder keel, with more numerous spines, and other characters (see fig. 5).

Although Dall (1889a, 1889b) and subsequent workers have confused the present species with *Latiaxis* (*Babelomurex*) *deburghiae* (Reeve, 1857), the two species are readily distinguishable. The latter has a smaller shell that rarely exceeds 30 mm. in height, whereas *L. (B.) dalli* attains 45 mm. The Japanese species also has a thinner shell, a more inflated body, much less pronounced spiral ribs, and less produced scales (cf. figs. 1, 6).

We take pleasure in naming this species in honor of the late William Healey Dall, who for many years was a paleontologist on the staff of the United States Geological Survey, with offices in the United States National Museum. Dall (August 21, 1845, to March 27, 1927), truly one of America's foremost students of mollusks, was the author of more than 685 publications dealing with mollusks and brachiopods (Bartsch, Rehder, and Schields, 1946).

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