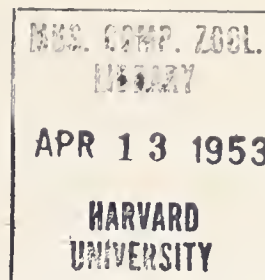


JOHNSONIA

Published by
THE DEPARTMENT OF MOLLUSKS
Museum of Comparative Zoölogy, Harvard University
Cambridge, Massachusetts



APRIL 13, 1953

REVIEW NUMBER

VOL. 2, NO. 32

The notes and descriptions of new species in this review number cover but little of the new information actually on hand for publication. However, space is limited and we give pertinent data on only a few genera that have been covered to date in *Johnsonia*. It is our plan to devote more space in Volume III to reviewing many genera that have been covered in the earlier numbers of this publication.

THE GENUS *BANKIA* IN THE WESTERN ATLANTIC

BY

RUTH D. TURNER AND DOROTHY J. BROWN¹

A number of new records, several of which extend the ranges of the various species of *Bankia*, have been received from the Clapp Laboratories since the publication of *Johnsonia* No. 19 which covered this genus. This was a result of new test board locations and continued collecting from the many old stations. The specimens collected from test boards placed on various lightships, most of them well out to sea, indicate the distance the free swimming larval forms can regularly be carried either directly by the currents or by driftwood containing adults from which young are being liberated. The pallets of many of the specimens taken from the test boards on the lightships were in excellent condition, often with the very early cones, possibly because they were free from browsing fish which are generally far more abundant in inshore waters.

Bankia (*Bankiella*) *gouldi* Bartsch

Bankia (*Bankiella*) *gouldi* Bartsch, Clench and Turner 1946, *Johnsonia* 2, p. 13.

Records. MARYLAND: Annapolis. VIRGINIA: Portsmouth; Yorktown. NORTH CAROLINA: Harbor Island; Wilmington; Southport; Morehead City; Ocracoke; Fort Mason; Frying Pan Shoals. GEORGIA: Savannah Lightship, off Savannah. FLORIDA: St. John's Lightship, off Mayport; Ormond Beach; Fort Pierce; Panama City. TEXAS: Freeport. CUBA: Preston; Guantánamo. COSTA RICA: Golfito. PANAMA: Armuelles; Fort Amador, Canal Zone. VENEZUELA: Bahía de Amuay (all MCZ).

Bankia (*Bankiopsis*) *caribbea* Clench and Turner

Bankia (*Bankiopsis*) *caribbea* Clench and Turner 1946, *Johnsonia* 2, p. 16.

Records. MASSACHUSETTS: Nantucket. NORTH CAROLINA: Diamond Shoal Lightship; Frying Pan Shoals; about 18 miles off Assateague Island (all MCZ): FLORIDA:

¹ Biologist, William F. Clapp Laboratories, Inc., Duxbury, Mass.

Miami (A. Merrill). JAMAICA: Montego Bay. HISPANIOLA: Puerto Libertador. PUERTO RICO: Mona Island; Muertos Island. HONDURAS: Puerto Cortes. GUATEMALA: San José (all MCZ).

The record of *B. caribbea* Clench and Turner from Nantucket, Massachusetts would appear on the surface to be a great extension of the range of this species northward. However, since the specimens are always taken from a test board submerged in June and removed in October of the same year, it probably indicates nothing more than a fortuitous occurrence of this species at Nantucket during the summer months only. Probably driftwood containing adults with eggs is carried up to Nantucket by the Gulf Stream from the West Indies. Young colonies then become established only to be killed out with the onset of winter.

Bankia (Liliobankia) katherinae *Clench and Turner*

Bankia (Liliobankia) katherinae Clench and Turner 1946, *Johnsonia* 2, p. 18.

Records. CUBA: Guantánamo. HONDURAS: Puerto Cortes. VENEZUELA: Bahía de Amuay (all MCZ).

Bankia (Neobankia) destructa *Clench and Turner*

Bankia (Neobankia) destructa Clench and Turner 1946, *Johnsonia* 2, p. 20.

Records. CUBA: Guantánamo Bay. VENEZUELA: Bahía de Amuay (all MCZ).

Bankia (Plumulella) fimbriatula *Moll and Roch*

Bankia (Plumulella) fimbriatula Moll and Roch, Clench and Turner 1946, *Johnsonia* 2, p. 22.

Records. FLORIDA: Biscayne Bay; Panama City. CUBA: Preston; Banos. PANAMA: Fort Sherman, Canal Zone. VENEZUELA: Bahía de Amuay (all MCZ).

An interesting record for *Bankia fimbriatula* Moll and Roch was reported upon by W. S. S. van Benthem Jutting (1952, *Basteria* 16, no. 3, p. 37). The specimens were from a piece of driftwood that had been thrown up on the beach between Ijmuiden and Zandvoort, Netherlands. Many records of *Bankia* of driftwood origin from the West Indies are known for the British Isles but this is the first record we have encountered from the Netherlands.

Bankia (Plumulella) fosteri *Clench and Turner*

Bankia (Plumulella) fosteri Clench and Turner 1946, *Johnsonia* 2, p. 24.

At the time that *Bankia fosteri* was described only fragmentary specimens from two localities on the mainland of South America were known. The new specimens, taken from test boards at the Diamond Shoal Lightship off Cape Hatteras, have greatly extended the known range of the species and, in addition, are much larger than any we had seen. This species has now occurred in the test boards at Diamond Shoal Lightship on two successive years which would indicate either that it is reintroduced each year or that it actually is able to withstand the winter months and can breed at this locality. This species probably occurs throughout the West Indies though the only record known to date is Muertos Island, Puerto Rico.

The pallets of the largest specimen received from North Carolina had lost the early

cones; however, there were 26 cones remaining and the complete pallet would probably have measured well over 85 millimeters. The stalk of this specimen measured 43 mm. in length, the longest proportionately that we have seen. A specimen in the collection at the W. F. Clapp Laboratories had pallets 90 mm. in length. So far as we now know *Bankia fosteri* has the longest pallets of any species of *Bankia* on record.

Shell		Pallet	
height	length	length	no. of cones
11.9	10.5	77 mm.	26 (incomplete)

Records. NORTH CAROLINA: Diamond Shoal Lightship, about 15 miles off Cape Hatteras. PUERTO RICO: Muertos Island (all MCZ).

Bankia (Plumulella) cieba Clench and Turner

Bankia (Plumulella) cieba Clench and Turner 1946, *Johnsonia* 2, p. 25.

Records. CUBA. Preston (MCZ).

Notes

Xylotrya fimbriata var. *subaequalis* Dall 1883, Proc. United States National Museum 6, no. 22, p. 337 (Cedar Keys, Florida). [Nomen nudum.]

This name probably refers to some species of *Bankia*. No description was given and the few remarks are completely meaningless as it is impossible to tell whether Dall is referring to the shells or the pallets. We quote Dall in full: "Cedar Keys. This differs from the type in having the anterior and posterior areas subequal in size."



Plate 178. *Murex argo* Clench and Farfante
Holotype of *Murex imbricatus* Higgins and Marrant
(= *M. argo* Clench and Farfante) (natural size).

THE GENUS MUREX IN THE WESTERN ATLANTIC

BY

WILLIAM J. CLENCH

Murex argo *Clench and Farfante*

Plate 178

Murex argo Clench and Farfante 1945, *Johnsonia* 1, no. 17, p. 31.

We are indebted to Mr. W. K. Ford, Department of Zoology, Liverpool Museums, for the figure of *Murex argo*. As the original figure by Higgins and Marrat was a drawing, Mr. Ford sent us a photograph of the holotype from which our present plate was made. A biographical sketch of Rev. Higgins by Mr. Ford has been published in the Liverpool Bulletin.¹ In addition to a portrait of the Rev. Higgins, there is an excellent plate of *Murex argo*, twice natural size.

Murex (Murex) branchi, new species

Plate 179

Description. Shell large, reaching 121 mm. (about $4\frac{3}{4}$ inches) in length, rather solid and having a very few short spines. Whorls 9 and rather strongly convex. Color white or a very light gray with spiral bands of chestnut-brown. There are three wide bands on the body whorl and three bands on the siphonal canal. Spiral threads of brown exist in between the wide bands. Spire extended. Suture deeply impressed. Aperture subcircular, slightly oblique and open below into a long siphonal canal. Parietal lip adherent to the body whorl, the upper portion completely attached, the lower portion erect and standing free. Palatal or outer lip rather strong and not crenulated. Siphonal canal rather broad and curved slightly and very slightly recurved upwards. Two previous stages of the siphonal canal remain and these terminate above the end of the present canal. The sculpture consists of three strong and relatively narrow varices. Each varix supports a series of very low and blunt spines, the largest being at the whorl shoulder. The varices of one whorl are nearly aligned with the varices on the whorls above. Spiral sculpture consisting of numerous and fine cords and these are minutely nodulose where they cross a similar series of axial cords. Nuclear whorls probably smooth, the next three to four whorls are finely costate, the costae nearly equal in size to the varices. On the remaining whorls the varices become much larger and the costae become finer and continue as the axial cords. Operculum unknown.

length	width	whorls	
121	44.5 mm.	9	Holotype
93.5	40	8	Paratype

Types. The holotype is in the collection of C. L. Branch of Rockport, Texas and was dredged in the Gulf of Campeche, Mexico by Mr. Branch in 1952. A single dead specimen was obtained by Mr. J. L. Baughman from off Corpus Christi, Texas (N. Lat. $27^{\circ}36'$; W. Long. $96^{\circ}55'$). This specimen, no. 2115, is in the Museum of the Game and Fish Commission, Rockport, Texas.

¹ Liverpool Bulletin, Libraries, Museums and Arts Committee 2, pp. 67-76, 1952.

Remarks. This species appears to be close in its relationship to *M. antillarum* Hinds. It differs mainly in being much larger, having more color and lacking nearly all spines. *M. branchi* has numerous axial cords, seven to eight between each varix, while in *M. antillarum*, the axial cords are reduced to three and are usually somewhat larger, even on a smaller shell.

We are indebted to Mr. Branch for the privilege of reporting upon this fine species and to Mr. Baughman for the loan of the specimen obtained off the Texas coast which he had collected in August 1952.

Range. From off Corpus Christi, Texas south to the Gulf of Campeche, Mexico.

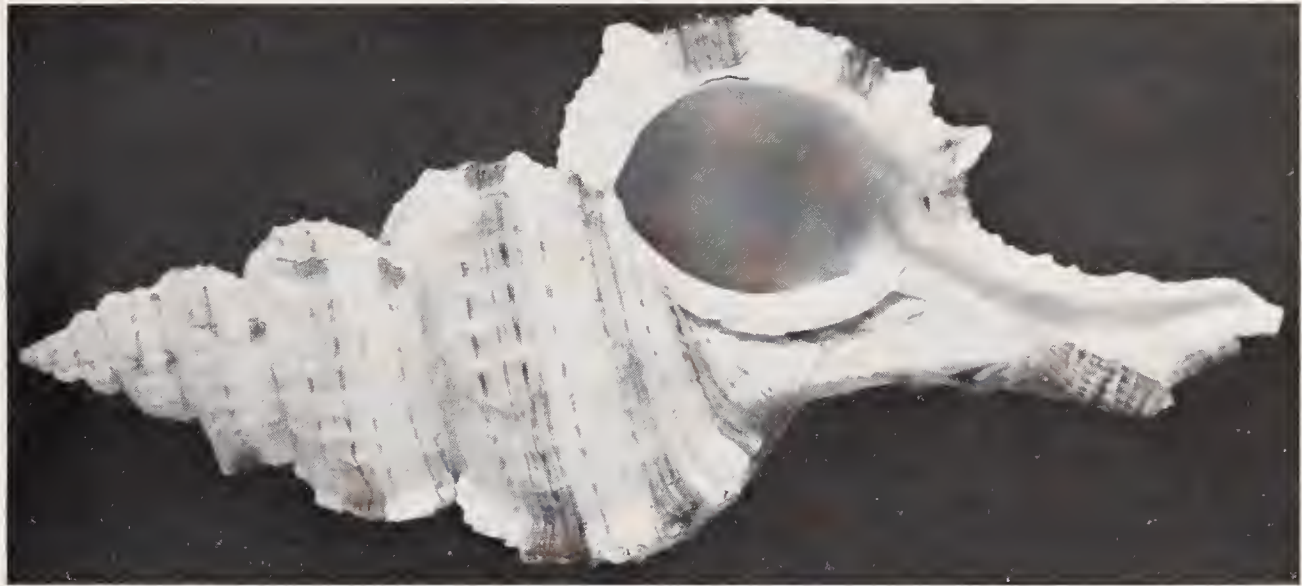


Plate 179. *Murex (Murex) branchi* Clench
Gulf of Campeche, Mexico. Holotype (1.3x).

THE GENERA EPITONIUM, OPALIA AND CYLINDRISCALA IN THE WESTERN ATLANTIC

BY

WILLIAM J. CLENCH AND RUTH D. TURNER

Epitonium (Boreoscala) blainei, new species

Plate 180

Description. Shell reaching about 30 mm. (1½ inches) in length, attenuate, imperforate and strongly sculptured. Color a uniform white. Whorls 9 (nuclear whorls lost), rather strongly convex and attached. Suture deeply impressed. Aperture circular. Lip thickened. Columella short and arched. Axial sculpture consisting of numerous and well rounded costae which number 13 on the body whorl. These costae are convex on the forward side, slightly concave on the inner side. Spiral sculpture consisting of several well developed ridges which number 7 on the last whorl above the basal ridge. They are absent on the shoulder of the whorl. Below the basal ridge several more ridges appear but they are exceedingly fine. The axial costae are crenulated due to a series of small rounded knobs, each reflecting a point above a corresponding spiral ridge. Basal ridge strongly developed in between the axial costae: it does not, however, pass over the costae. Nuclear whorls and operculum unknown.

length	width	whorls	
25.3	9.5 mm.	9*	Holotype
28	10	8*	Paratype

* early whorls lost.

Types. Holotype, Museum of Comparative Zoölogy, no. 189246 from southwest of the lighthouse, Boca Grande, Florida [about 45 miles] in 22 fathoms. Collected by Soson Vatikiotis in 1937. Paratype, from Bear Cut, Crandon Park, Miami, Florida. Collected by Arthur Merrill in 1951.



Plate 180. *Epitonium (Boreoscala) blainei* Clench and Turner

Fig. 1. About 45 miles off Boca Grande, Florida. Holotype (3.2x).

Fig. 2. Bear Cut, Crandon Park, Miami, Florida. Paratype (3.2x).

Remarks. We are indebted to Mr. A. P. Blaine for the opportunity of reporting upon this fine species. It bears no close relationship to any other *Epitonium* occurring in the Gulf of Mexico or on the Lower Florida Keys and it is the only species in the subgenus *Boreoscala* recorded from the tropical portion of the Western Atlantic. It approximates *E. magellanicum* Philippi from Patagonia in many of its characters, differing, however, in possessing much stronger spiral ridges, in having the crenulated axial costae and in being narrower proportionately. From *E. greenlandicum* Perry it differs in having the crenulated or nodulose axial costae and somewhat stronger basal ridge. In proportions, these two species appear to be about the same. In our arrangement of this group this species would follow the *Epitonium greenlandicum* complex.

Range. Western Florida and south to off Miami.

Records. FLORIDA: off Boca Grande in 22 fathoms (A. P. Blaine); Bear Cut, Crandon Park, Miami (A. Merrill).

Opalia (Nodiscala) eolis *Clench and Turner*

Opalia (Nodiscala) eolis Clench and Turner 1950, *Johnsonia* 2, p. 242.

Records. LESSER ANTILLES: off Anguilla in 100–250 fathoms (B. Hubendick).

Opalia (Nodiscala) aurifilia *Dall*

Opalia (Nodiscala) aurifilia Dall, Clench and Turner 1950, *Johnsonia* 2, p. 240.

Records. NORTH CAROLINA: *Albatross*, station 2595, off Cape Hatteras (N. Lat. 35°08'; W. Long. 75°05') in 63 fathoms (USNM).

Opalia pumilio var. **morchiana** *Dall*

Opalia pumilio morchiana Dall, Clench and Turner 1950, *Johnsonia* 2, p. 239.

Scala (Nodiscala) barbadensis de Boury 1913, *Journal de Conchyliologie* 61, p. 76. [New name for *morchiana* Dall, non *morchii* Angas 1881, non *morchii* Sowerby 1874.] The name *morchiana* is not a homonym of *morchii* and should not have been renamed by de Boury.

Cylindriscala andrewsii *Verrill*

Cylindriscala andrewsii Verrill, Clench and Turner 1952, *Johnsonia* 2, p. 335.

Records. FLORIDA: 16 miles off Tortugas in 90 fathoms (USNM). CUBA: *Atlantis*, station 3485, Bahía de Matanzas in 385 fathoms (MCZ).

THE GENUS *CONUS* IN THE WESTERN ATLANTIC

BY

WILLIAM J. CLENCH

Since the publication of our monograph of this genus in *Johnsonia* (1942, 1, no. 6, pp. 1–40) there have appeared several descriptions of new species of *Conus* from the Western Atlantic region. We attempt to review these various species in this number and in addition, add several new locality records for the species considered in our earlier work.

Conus regius *Gmelin*

Conus regius Gmelin, Clench 1942, *Johnsonia* 1, no. 6, p. 3, pl. 3, figs. 1–4.

Records. LESSER ANTILLES: Barbados (MCZ). BRASIL: Fernando de Noronha (W. A. Williamson).

Conus regius abbotti *Clench*

Conus regius abbotti Clench 1942, *Johnsonia* 1, no. 6, p. 7, pl. 4, figs. 5–6.

Records. BAHAMA ISLANDS: Stocking Island, Great Exuma Island (MCZ).

Conus dominicanus *Hwass*

Conus dominicanus Hwass, Clench 1942, *Johnsonia* 1, no. 6, p. 6, pl. 4, fig. 4.

Records. CUBA: Mariel (R. Humes). LESSER ANTILLES: 10 fathoms off St. Lucia (R. G. Fennah); Chaguramas Bay, Trinidad (H. G. Kugler).

Conus citrinus *Gmelin*

Conus citrinus Gmelin, Clench 1942, *Johnsonia* 1, no. 6, p. 7, pl. 4, figs. 5-6.

Records. PUERTO RICO: San Juan: Mona Island (both MCZ).

Conus stearnsii *Conrad*

Conus stearnsii Conrad, Clench 1942, *Johnsonia* 1, no. 6, p. 9, pl. 5, figs. 1-4.

Records. FLORIDA: 5 miles N.E. of Carysfort Light, Key Largo in 117 fathoms (L. A. Burry).

Conus jaspideus *Gmelin*

Conus jaspideus Gmelin, Clench 1942, *Johnsonia* 1, no. 6, p. 10, pl. 6, figs. 1-4.

Records. PUERTO RICO: San Juan (MCZ).

Conus jaspideus branhamae, new subspecies

Plate 181, fig. 2

Description. Shell reaching about 27 mm. (about 1 inch) in length. Whorls 11, nearly flat-sided but slightly convex near the whorl shoulder and slightly concave near the base. Color pattern consisting of a few rather large and very irregular axial patches of dark mahogany-brown which extend from the peripheral area above to the whorl shoulder

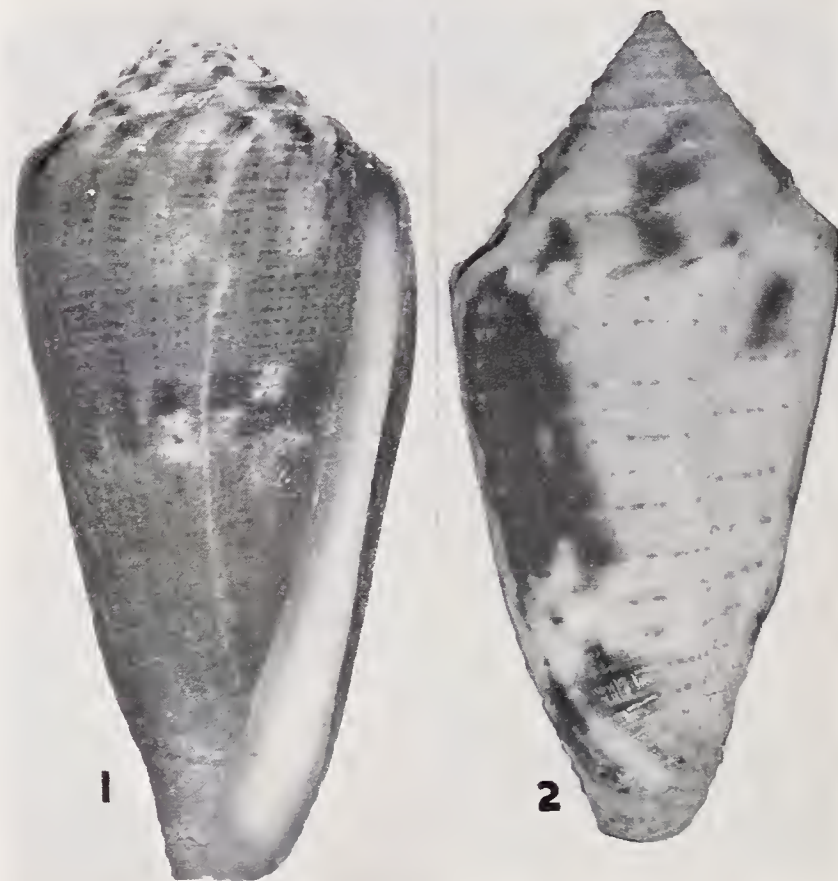


Plate 181

- Fig. 1. *Conus granulatus* Linné. Dry Rocks, off Key Largo, Florida (about 1.5x).
 Fig. 2. *Conus jaspideus branhamae* Clench. Green Turtle Cay, Great Abaco, Bahama Islands. Holotype (about 3x).

with additional patches on the spire. There is another but much smaller series of patches of the same color near the base. There is also a series of spiral threads that have small minute brown spots of the same dark mahogany-brown which are spaced by small white areas. Spire concave, acute and finely carinate, the carinae being the acutely shouldered margin of each whorl. The spire is produced at an angle of about 70° . Aperture oblique, a little wider near the base and deeply inset above at the anal notch. Aperture colored a dull brownish deeply within. Outer lip thin and flatly arched in profile. Sculpture consisting of numerous fine, spiral threads which are a little more strongly developed near the base. Whorl shoulder sharply angled. Periostracum thin and a light-brown in color. Operculum unknown.

length	width	whorls	
27.5	13 mm.	11	Holotype

Types. Holotype and only known specimen in the collection of Mrs. Hugh Branham of Fort Myers Beach, Florida. This specimen was collected on a coral mud flat at Green Turtle Cay, Great Abaco, Bahama Islands.

Remarks. This subspecies differs from the typical form by being somewhat larger, having a straighter and more elevated spire and having the sculpture much weaker. In general, the incised lines on most specimens of *C. jaspideus* Gmelin are deeply cut and the ridges between them are nodulose. From *C. jaspideus pygmaeus* Reeve this present subspecies differs by being proportionately narrower, having far less prominent sculpture and possessing a more attenuate spire.

Range and Records. Known only from the type locality.

Conus verrucosus *Hwass*

Conus verrucosus *Hwass*, Clench 1942, *Johnsonia* 2, no. 6, p. 13, pl. 8, figs. 1-4.

Records. BRASIL: off Bahía (S. Lat. $11^\circ 45'$; W. Long. $37^\circ 20'$) in 40 fathoms (MCZ, *Hassler* Voyage).

Conus verrucosus piraticus *Clench*

Conus verrucosus piraticus *Clench* 1942, *Johnsonia* 1, no. 6, p. 14, pl. 11, fig. 1.

Records. FLORIDA: Molasses Reef, Key Largo (L. A. Burry). LESSER ANTILLES: Dry Rocks, east side of Buccoo Reef, Tobago (MCZ).

Conus havanensis *Aguayo and Farfante*

Plate 182, fig. 5

Conus havanensis *Aguayo and Farfante* 1947, *Revista Sociedad Malacologica Carlos de la Torre* 5, p. 11, text figure (Arenas de la Chorrera, Habana, Cuba).

Description. Shell reaching 20 mm. (about $\frac{3}{4}$ of an inch) in length, rather solid in structure and sculptured. Whorls 8, and slightly convex. Nuclear whorls ($1\frac{1}{2}$) papillose. Color a light and somewhat suffused lemon-yellow with fairly strong flames of reddish-brown on the spire and whorl shoulder. Occasionally there is a peripheral band of reddish-brown which consists of irregular patches of color. Spire depressed, finely nodulose, obtuse and formed at an angle of about 130° . Aperture oblique, of a nearly uniform width

throughout and not deeply notched above. Sculpture consisting of numerous spiral threads which are minutely papillose. Whorl shoulder finely nodulose. Operculum and periostracum unknown.

length	width	whorls	
20.2	11.3 mm.	7	Holotype
18.0	10.8	8	Paratype
17.5	10.5	8	Paratype

Types. Holotype, Museo Poey, Universidad de la Habana, no. 12133 from Arenas de la Chorrera, Habana, Cuba.¹ Paratypes from the same locality in the Museum of Comparative Zoölogy, no. 175241.

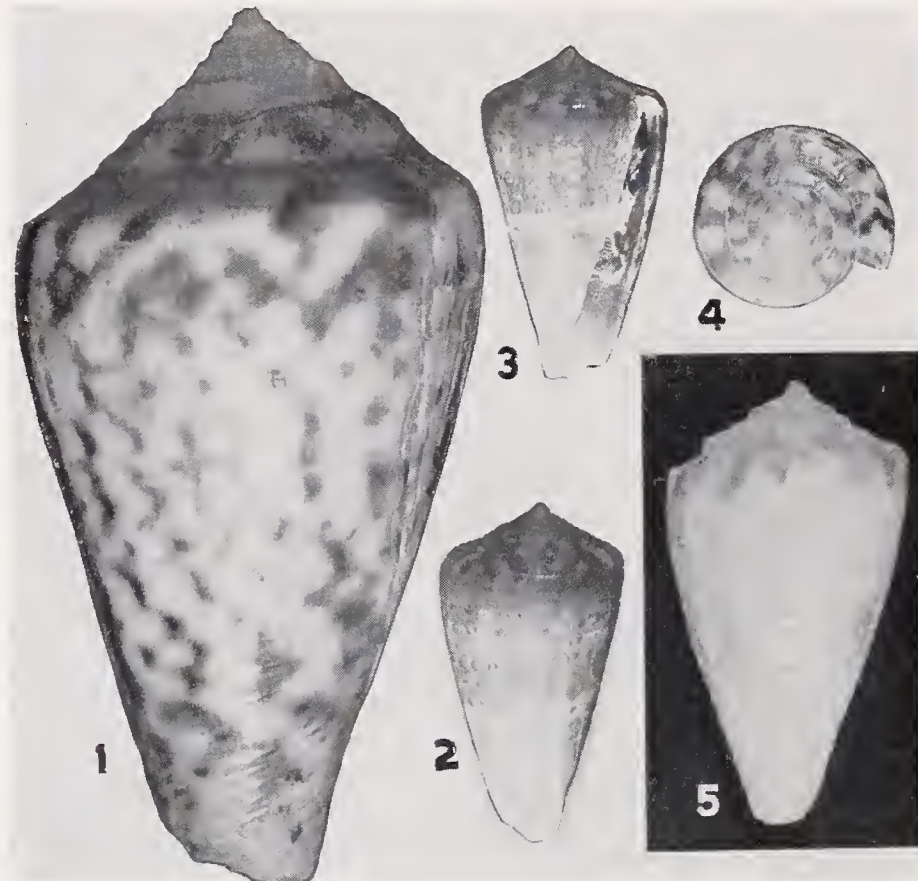


Plate 182

Fig. 1. *Comus carcellesi* E. A. Martins. Mar del Plata, Buenos Aires, Argentina. Paratype (about 3.3x). Figs. 2-4. *Comus clenchi* E. A. Martins. Barra do Furado, Municipio de Campos, State of Rio de Janeiro, Brasil (natural size). Fig. 5. *Comus havanensis* Aguayo and Farfante. Arenas de la Chorrera, Habana, Cuba. Paratype (3.2x).

Remarks. This species is closely related to *C. verrucosus* Hwass, differing, however, by having a more depressed spire and having very much finer sculpture. In *C. havanensis* the threads are minutely papillose while in *C. verrucosus* the little knobs are situated between the fine incised lines. The color in *C. havanensis* may not be quite the same in living examples, probably somewhat darker. From *C. verrucosus piraticus* Clench it differs by having a more depressed spire, finer papillose sculpture and having larger nodules on the whorl shoulder.

Range and Records. Known only from the type locality.

¹ See footnote, *Johnsonia* 2, p. 229.

Conus stimpsoni Dall

Conus stimpsoni Dall, Clench 1942, *Johnsonia* 1, no. 6, p. 15, pl. 5, fig. 5.

Records. FLORIDA: off The Elbow, Key Largo in 75 fathoms; 5 miles east of Carysfort Light, Key Largo in 96 to 107 fathoms (both L. A. Burry).

Conus austini Rehder and Abbott

Plate 183, fig. 7

Conus austini Rehder and Abbott 1951, *Journal Washington Academy of Sciences* 41, p. 22, text fig. 7 (off Loggerhead Key, Dry Tortugas, Florida).

Description. Shell medium in size, reaching 55 mm. (about $2\frac{1}{4}$ inches) in length, solid and strongly sculptured. Color a dull-white. Whorls 13 to 14, nearly straight-sided above and very slightly concave near the base. Whorl shoulder somewhat rounded to carinate, the carinae indicated on the spire as a small sutural ridge. Spire extended, moderately concave, acute and formed at an angle of about 80° . Nuclear whorls $1\frac{1}{2}$, smooth and glass-like. Aperture narrow, of equal width throughout, deeply notched above and flatly arched in profile. Outer lip thin and finely crenulate. Sculpture consisting of about 40 well developed spiral cords which are somewhat stronger near the base. Periostracum a dull yellowish-brown. Operculum unknown.

length	width	whorls	
55.5	25.3 mm.	14	Holotype
43.1	22.0	13	Paratype
51.0	25.5	13	Paratype
50.5	27.5	13	East of St. Joseph Island, Texas

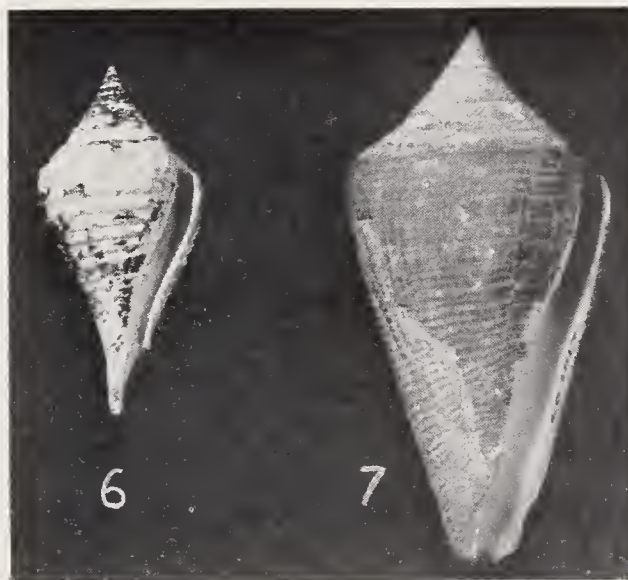


Plate 183

Fig. 6. *Conus clarki* Rehder and Abbott. Fifty miles south-southeast of Marsh Island, Iberia Parish, Louisiana. Holotype (natural size).
Fig. 7. *Conus austini* Rehder and Abbott. Off Loggerhead Key, Dry Tortugas, Florida. Holotype (natural size).

(Plate 183 is the original halftone received through the kindness of Rehder and Abbott.)

Types. Holotype, United States National Museum, no. 603017 from southeast of Loggerhead Key, Tortugas, Florida in 40 to 46 fathoms. Collected by W. L. Schmitt from the *Anton Dohrn*, June 1932. An additional paratype from the same locality and another paratype obtained by J. B. Henderson from the *Eolis*, dredged at the entrance of English Harbour, Antigua, Lesser Antilles.

Remarks. See under *Conus clarki* Rehder and Abbott.

Range. From off Alabama and Texas south to Campeche, Mexico and east to the Lesser Antilles.

Records. ALABAMA: Bayou la Batre (H. I. Johnstone). TEXAS: east of St. Joseph Island and 100 miles south of Port Isabel (both H. Hildebrand). MEXICO: Tampico; 25 miles off Obregon; Tecolutla (all T. E. Pulley); off Campeche in 13-16 fathoms (H. Hildebrand). FLORIDA: off Loggerhead Key, Tortugas in 40-46 fathoms (USNM). LESSER ANTILLES: off English Harbour, Antigua (USNM).

Conus clarki Rehder and Abbott

Plate 183, fig. 6

Conus clarki Rehder and Abbott 1951, Journal Washington Academy of Sciences 41, p. 22, text figures 1-6 (50 miles south-southeast of Marsh Island, Iberia Parish, Louisiana).

Description. Shell reaching 36 mm. (about 1½ inches) in length, moderately strong, broadly fusiform in shape and strongly sculptured. Color a chalky-white and occasionally faintly spotted with small red squares. Whorls 11, convex above and concave below. Spire acute, extended, and formed at an angle of 70°. Aperture narrow and flatly sigmoid in shape. Outer lip thin and flatly arched when seen in profile. Suture indented and crenulated. The uppermost cord on the whorl shoulder is beaded and as the new growth of the shell proceeds along this cord, the sutural crenulations are produced. Spiral sculpture consisting of 27 to 30 strongly developed cords, the uppermost cord strongly beaded, the cords below much less so. Axial sculpture consisting of exceedingly fine threads, which are strongest in between the spiral cords. Periostracum thin, axially striate, deciduous and light-brown in color.

length	width	whorls	
36	16 mm.	11	Holotype
34.4	15.5	10.8	Paratype

Types. Holotype, United States National Museum, no. 485740 from 50 miles south-southeast of Iberia Parish, Louisiana (N. Lat. 28°27'; W. Long. 92°14') in 29 fathoms. A paratype from the same locality is in the Museum of Comparative Zoölogy no. 181956.

Remarks. Three species, *C. austini*, *clarki* and *frisbeyae*, are all members of a closely related complex. There appear to be distinct characters that separate them. However, the number of specimens available is still relatively small. Certainly more specimens may indicate that both *austini* and *frisbeyae* are only subspecifically distinct from *C. clarki*.

Conus austini differs from both *clarki* and *frisbeyae* by being a larger and more solid shell with somewhat finer spiral cords. *C. clarki* differs from *frisbeyae* by having a less attenuated spire, being proportionately wider at the whorl shoulder and by having much smaller beads and far less color on the beads which are developed on the spiral cords.

These characters, however, are all relative or qualitative, and as stated above, more material may show that they are not as distinctive as they now appear.

***Conus frisbeyae* Clench and Pulley**

Plate 184, fig. 1

Conus frisbeyae Clench and Pulley 1952, Texas Journal of Science no. 1, p. 59, pl. A, fig. 1 (Campeche Banks, Yucatan, Mexico).

Description. Shell medium to small in size, reaching 33 mm. (about 1¼ inches) in length, rather solid and strongly sculptured. Whorls 12, last whorl slightly convex above, rather deeply concave below. Color consisting of a series of brown spots regularly disposed on the spiral cords and somewhat irregularly aligned axially. The basic color of the shell is a light-cream with fine axial threads of white in the interspaces between the cords. Spire extended, acute and moderately concave. Aperture narrow and nearly equal in width throughout its length, deeply and concavely inset at the anal notch. Outer lip thin. Inner lip not indicated by any glaze. Columella not indicated. Suture slightly indented and a little wavy owing to its development along the beaded cords. Sculpture consisting of a series of beaded or knobbed spiral cords which number about 20 on the body whorl. The small knobs are best developed on the shoulder cord and become progressively less so toward the base of the shell. On the spire, the knobs are well developed and the early post-nuclear whorls are, in addition, slightly carinated. Operculum unknown.

length	width	whorls	
32.5	14.4 mm.	12	Holotype

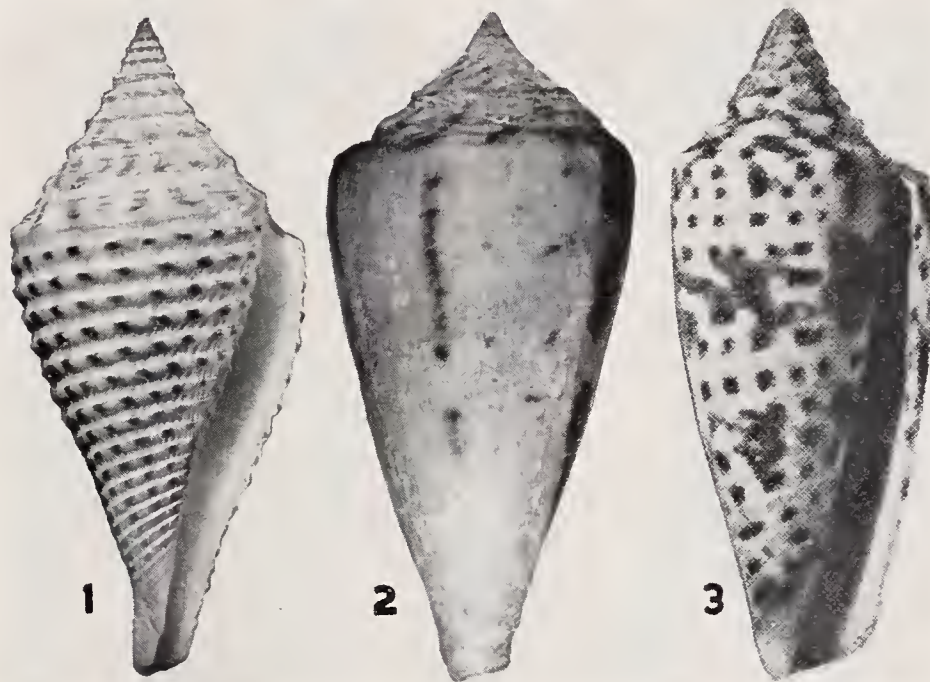


Plate 184

Fig. 1. *Conus frisbeyae* Clench and Pulley. Campeche Banks, Yucatan, Mexico. Holotype (about 2x). Fig. 2. *Conus ampliurgus* Dall (= *C. villepini* Fischer and Bernardi). Off Cabo Catoche, Yucatan, Mexico. Holotype (about 2x). Fig. 3. *Conus cavaillovi* Fenaux. Bermuda (after Fenaux, enlarged a little less than 2x from the original plate).

Types. Holotype, Museum of Comparative Zoölogy, no. 187708 from the Campeche Banks, Yucatan, Mexico in about 23 fathoms. Received from Mrs. W. C. Frisbey, originally from a shrimp trawler.

Range and Records. Known only from the type locality.

Remarks. This species is fairly close in its relationship to *C. clarki* Rehder and Abbott. It differs from *clarki* by being proportionately narrower, having the spire more acutely conic and in possessing fewer and more pronounced spiral cords. The colored spots on the spiral cords are far more developed in *frisbeyae*, giving the shell a strongly papillose appearance.

Conus sennottorum *Rehder and Abbott*

Plate 185, figs. 1-2

Conus sennottorum Rehder and Abbott 1951, Revista de la Sociedad Malacologica Carlos de la Torre 8, p. 63, pl. 9, figs. 1-2 (50 miles off Campeche, Yucatan, Mexico).

Description. Shell reaching 35 mm. (about $1\frac{3}{8}$ inches) in length, rather solid in structure and broadly fusiform. Color white with numerous spiral rows of small dots and dashes. Whorls 12, convex above and concave below and having a sharp angle at the whorl shoulder. Spire moderately extended and strongly concave forming an angle of 90° when measured from nuclear whorls to whorl shoulder. Aperture narrow, oblique, of equal width throughout and faintly sigmoid in shape. Anal notch deeply inset. Outer lip exceedingly thin. Suture slightly indented. Sculpture consisting of 4 or 5 rather flat spiral cords which are produced near the base of the shell. Axial sculpture consisting only of very fine growth lines.

length	width	whorls	
35	20 mm.	11	Holotype
31	16	12	Paratype
31	17.5	12	Paratype

Types. Holotype, United States National Museum, no. 597519 from 50 miles off Campeche, Yucatan, Mexico (N. Lat. $19^\circ 40'$; W. Long. $91^\circ 20'$) in 15-16 fathoms. Additional paratypes are in the United States National Museum and in the collection of Mrs. J. M. Sennott from the same locality.

Remarks. This species appears to be rather closely allied to *C. austini* Rehder and Abbott and *C. clarki* Rehder and Abbott. It differs, however, in being smooth, lacking the strong spiral cords and in having spiral rows of orange-brown dots. It seems to be more distantly related to *C. stimpsoni* Dall but this latter species differs in having broad bands of color and much straighter sides to the body whorl and the spire.

Range and Records. Known only from the Gulf of Campeche and the Campeche Banks.

Conus mazei *Deshayes*

Conus mazei Deshayes, Clench 1942, *Johnsonia* 1, no. 6, p. 17, pl. 9, figs. 1-2.

Record. TEXAS: about 50 miles east of Padre Island (N. Lat. $26^\circ 48'$; W. Long. $96^\circ 23'$) in 200 fathoms (J. L. Baughman).

Conus granulatus *Linnaeus*

Plate 181, fig. 1

Conus granulatus Linné, Clench 1942, *Johnsonia* 1, no. 6, p. 18, pl. 9, fig. 3.

Remarks. We are indebted to Mrs. E. N. Townsend for the loan of two fine specimens of this species collected in two feet of water at mean low water at Dry Rocks, off Garden Cove, Key Largo, Florida by James Higman.

The periostracum is rather thin, straw-yellow in color and finely ridged axially. The operculum is very small, only 7 mm. in length, from the specimen which measured 43 mm. in length. We give the measurements of these two specimens as both exceeded in size the measurements given in our earlier report.

length	width	whorls	
60.2	27.4 mm.	13	Dry Rocks, Key Largo, Florida
43.0	18.5	11	Dry Rocks, Key Largo, Florida

Records. FLORIDA: Dry Rocks, $4\frac{1}{4}$ miles off Garden Cove, Key Largo (Mrs. E. N. Townsend); Molasses Reef, Key Largo (A. S. Merrill). BAHAMA ISLANDS: Nassau, New Providence (USNM). CUBA: Cuesco Beach, Guantánamo Naval Base (MCZ). VIRGIN ISLANDS: St. Thomas (USNM). LESSER ANTILLES: Barbados (MCZ). CARIBBEAN ISLANDS: Curaçao (USNM). PANAMA: Colón (MCZ).

Conus spurius aureofasciatus *Rehder and Abbott*

Plate 185, figs. 3-4

Conus spurius aureofasciatus Rehder and Abbott 1951, *Revista de la Sociedad Malacologica Carlos de la Torre* 8, p. 64, pl. 9, figs. 3-4 (off Tortugas, Florida).

Description. Shell reaching 67 mm. (about $2\frac{1}{2}$ inches) in length, solid and nearly smooth. Color consisting of numerous, pale orange, spiral bands which vary in width.

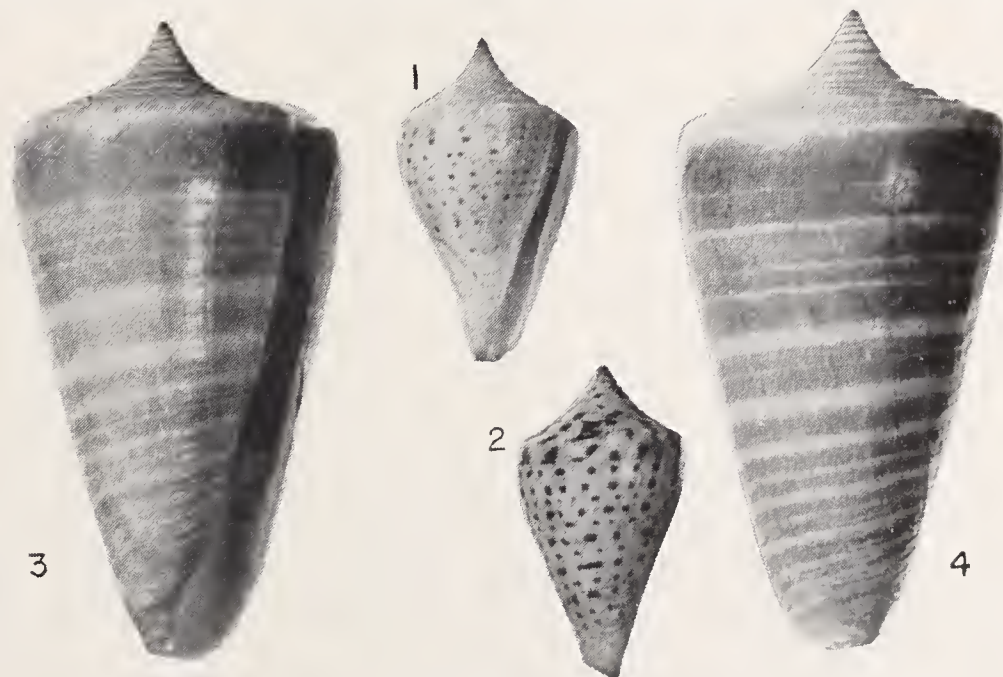


Plate 185

Figs. 1-2. *Conus sennottorum* Rehder and Abbott. Fifty miles off Campeche, Yucatan, Mexico. Holotype, fig. 1; paratype, fig. 2. Figs. 3-4. *Conus spurius aureofasciatus* Rehder and Abbott. Off Tortugas, Florida. Holotype (all natural size).

Ground color a china-white. Whorls 13 and nearly flat-sided. Spire acute, extended and deeply concave. The entire spire, however, is really obtuse, being 100° , if the angle measured is from the summit to the whorl shoulder. Whorl shoulder angled. In the holotype, the early whorls are slightly offset or scalariform as the forward growth of each whorl was just a little below the whorl shoulder. Aperture oblique and of nearly equal width throughout. Anal notch deeply inset. Outer lip straight and very thin. Sculpture consisting of numerous and very fine axial growth lines. Spiral cords appear near the base and above for about one-third of the length of the body whorl. Operculum long and narrow, its length being about one-third the length of the aperture.

length	width	whorls	
67.5 *	36.5 mm.	13	Holotype
59.5	29.0	12	Paratype
34.5	18.5	10	Paratype

* Corrected measurements.

Types. Holotype, United States National Museum, no. 597521, from off Tortugas, Florida in 20 fathoms. A paratype from the same locality is in the collection of Mrs. J. N. Sennott. Another paratype from Sanibel Island, Florida is in the collection of Mr. H. M. Woolsey.

Remarks. This subspecies is exceedingly close to *Conus spurius* Gmelin. It differs mainly in the color mottlings on the spire and by having solid spiral bands of color rather than dots of color in spiral arrangement. It is perhaps only an individual variant of either *spurius* or *spurius atlanticus* in which the color pattern has been modified.

Range. Sanibel Island, Florida south to Tortugas and west to the Gulf of Campeche, Mexico.

Records. FLORIDA: off Tortugas in 20 fathoms (USNM; J. N. Sennott); Sanibel Island (H. M. Woolsey). MEXICO: Gulf of Campeche (USNM).

Conus carcellesi Martins

Plate 182, fig. 1

Conus sp. Carcelles 1944, Revista del Museo de la Plata (n.s.) *Zoology* 3, p. 261, pl. 5, figs. 49-50.

Conus carcellesi Martins 1945, Notas del Museo de la Plata 10, no. 88, p. 260, text figures (Mar del Plata, Buenos Aires, Argentina).

Description. Shell reaching 30 mm. (about $1\frac{1}{8}$ inches) in length, rather solid and nearly smooth. Whorls 8 to 9, and nearly flat-sided. Color consisting of numerous, irregular axial flames of brown which extend above on the spire, the ground color being a very pale ivory. Spire moderately depressed, nearly straight-sided and produced at an angle of 90° . Aperture oblique, of a nearly uniform width and having a moderate anal notch. Outer lip thin and flatly arched when seen in profile. Sculpture limited to a few fine, incised, spiral lines near the base of the shell; remainder of the shell nearly smooth. Shoulder of the whorl rather sharply angled but not nodulose. Periostracum yellow and thin. Operculum unknown.

length	width	whorls	
29	14 mm.	7 *	Holotype
29	15	7	Paratype
26	14	7	Paratype
30	14	7	Paratype

* Probably a loss of 1 to 2 nuclear whorls.

Types. Holotype, Museo Nacional de Rio de Janeiro, no. 36300, from Mar del Plata, Buenos Aires, Argentina. Additional paratypes from the same locality in the Museo Argentino de Ciencias Naturales and the Museum of Comparative Zoölogy, no. 146473.

Remarks. *Conus carcellesi* Martin does not appear to be closely related to any other known species in the Western Atlantic. It is probably nearest to *C. flavescens* Sowerby as both possess a very similar shape and have the same kind of limited sculpture. These two species differ widely in color pattern and in size, *C. carcellesi* being a somewhat larger species. Superficially it approaches *C. cleryi* Reeve, but here the resemblance is only in a somewhat similar color pattern. Shape of spire, sculpture and shoulder angle are quite different in the two species.

Range and Records. This species extends from Uruguay south to central Argentina, possibly as far as Puerto Deseado. We have seen only the paratypes from the type locality.

***Conus daucus* Hwass**

Conus daucus Hwass, Clench 1942, *Johnsonia* 1, no. 6, p. 21.

Conus praeclarus Fenaux 1942, Bull. L'Institut Oceanographique (Monaco) no. 814, p. 2, fig. 3 (Bermuda).

Remarks. In our opinion both the figure and description of *C. praeclarus* Fenaux refer to *C. daucus* Hwass.

Records. FLORIDA: off The Elbow, Key Largo in 55 fathoms (L. A. Burry). LESSER ANTILLES: Grand Anse, Grenada (H. G. Kugler).

***Conus flavescens* Sowerby**

Conus flavescens Sowerby, Clench 1942, *Johnsonia* 1, no. 6, p. 22, pl. 11, fig. 3.

Records. FLORIDA: off the town of Gulf Stream, Palm Beach Co., in 10 fathoms (F. B. Lyman).

***Conus caribbaeus* Clench**

Conus caribbaeus Clench 1942, *Johnsonia* 1, no. 6, p. 23, pl. 11, figs. 4-5.

Records. FLORIDA: Dry Rock Reef, off Garden Cove, Key Largo (R. Humes).

***Conus centurio* Born**

Conus centurio Born, Clench 1942, *Johnsonia* 1, no. 6, p. 24, pl. 12, fig. 1.

Conus woolseyi M. Smith 1946, *Nautilus* 60, p. 1, pl. 1, fig. 5 (off Ocho Rios, Jamaica).

Remarks. *Conus woolseyi* Smith appears to be an absolute synonym of *C. centurio* Born. Smith makes his comparisons with *Conus regius* Gmelin, a species not at all closely related to this present form. *C. centurio* is perhaps more nearly related to *C. carribaens* Clench and perhaps a little more distantly to *C. floridanus* Gabb.

This is a very rare species and probably occurs only in relatively deep water. So far as the present records indicate, it has been recorded from Puerto Plata, Hispaniola and off Ocho Rios, Jamaica.

Conus juliae *Clench*

Conus juliae Clench 1942, *Johnsonia* **1**, no. 6, p. 26, pl. 12, fig. 4.

Remarks. We are indebted to Dr. Jeanne Schwengel for the gift of a specimen of this exceedingly rare species and to Mrs. E. N. Townsend for the loan of another. Both specimens were collected originally by T. McGinty from off Palm Beach in 30 fathoms. Mr. Arthur S. Merrill loaned us a third specimen which had been obtained originally in 15 fathoms off Obregon, Tabasco, Mexico. These two records extend the range very materially, the only other record being from off Fort Walton, Florida in the northern Gulf of Mexico.

Conus villepinii *Fischer and Bernardi*

Plate 184, fig. 2

Conus villepinii Fischer and Bernardi, Clench 1942, *Johnsonia* **1**, no. 6, p. 25, pl. 12, fig. 3; pl. 13, fig. 5.

Conus ampliurgus Dall 1889, Bull. Museum Comparative Zoölogy **18**, p. 70; Clench 1942, *Johnsonia* **1**, no. 6, p. 30.

Remarks. We figure the holotype of *Conus ampliurgus* Dall as a synonym of *C. villepinii* F. and B. The holotype of *ampliurgus* has fewer brown color markings and is somewhat larger than the holotype of *villepinii*, otherwise they appear to be the same in all other characters. Measurements of *C. ampliurgus* are as follows:

length	width	whorls	
40.5	20 mm.	12	Holotype

Range. Lesser Antilles and west to Yucatan.

Records. FLORIDA: off Cape San Blas in 115 fathoms (A. S. Merrill). MEXICO: *Albatross*, station 2366, off Cape Catoche, Yucatan (N. Lat. 22°28'; W. Long. 87°02') in 27 fathoms (Holotype of *C. ampliurgus* Dall, USNM no. 87303).

Conus clenchi *Martins*

Plate 182, figs. 2-4

Conus clenchi Martins 1943, Boletim Museu Nacional Brasil, Zoologia no. 12, p. 2 (Barra do Furado, Município de Campos, Rio de Janeiro, Brasil).

The following is the original description of this species. We are grateful to Dr. Martins for the photographs of the holotype.

“*Description.* Shell turbinated, extended, solid but not heavy. Spire low, slightly convex, formed by eight closely coiled whorls, smooth and marked with fine curved threads; papiliform apex; shoulder margin smooth. Last whorl smooth, traversed by thin spiral lines crossed axially by equally thin growth lines; near the base the spiral lines are more developed, producing beaded threads. Aperture oblique, long and narrow; outer lip thin, finished and even. Color yellow shading to white near the base. On the spire, there are white and brownish-yellow alternating bands radiating in a zig-zag pattern from the apex to the shoulder. White and brownish-yellow alternating and articulated bars of color form fine spiral bands that cross the body whorl. In the mid portion there is a white and oblique band. Internal surface¹ of the shell is smooth, white and porcelaneous. Periostracum and operculum unknown.”

¹This refers to the inner surface of the aperture.

length	width	aperture	
38	20	30 x 4 mm.	Holotype

Types. Holotype, Museu Nacional Brasil, no. 11.720, from Barra do Furado, Município de Campos, State of Rio de Janeiro, Brasil. E. A. Martins collector, March 1943.

Remarks. This species is based upon a single dead, though fresh specimen. It does not appear to be closely related to any other species known to us that occurs in the Western Atlantic. It may be distantly related to *C. juliae* Clench, differing mainly in being much smaller and having a moderately different color pattern. We have not seen the type specimen.

Range and Records. Known only from the type locality.

***Conus floridanus* Gabb**

Conus floridanus Gabb, Clench 1942, *Johnsonia* 1, no. 6, p. 27, pl. 13, figs. 1-2.

Records. MEXICO: Isla del Carmen, Campeche (M. E. Bourgeois).

***Conus floridanus burryae* Clench**

Conus floridanus burryae Clench 1942, *Johnsonia* 1, no. 6, p. 29, pl. 14, figs. 3-4.

Records. MEXICO: Isla del Carmen (M. E. Bourgeois).

***Conus sozoni* Bartsch**

Conus sozoni Bartsch, Clench 1942, *Johnsonia* 1, no. 6, p. 30, pl. 15, figs. 1-4.

Records. TEXAS: off Port Isabel (Mrs. L. A. Weisenhaus). FLORIDA: 5 miles north-east of Carysfort Light, Key Largo in 117 fathoms (L. A. Burry); 40 miles off Cedar Keys in 21 fathoms (Mrs. Fiske Warren).

***Conus ranunculus* Hwass**

Conus ranunculus Hwass, Clench 1942, *Johnsonia* 1, no. 6, p. 32, pl. 15, figs. 6-7.

Records. BAHAMA ISLANDS: Bimini Islands (USNM). CUBA: Cuesco Beach, Guantánamo Naval Base (MCZ). JAMAICA: Montego Bay (MCZ). VIRGIN ISLANDS: St. Croix; St. Thomas (both USNM). LESSER ANTILLES: Barbados (MCZ). CARIBBEAN ISLANDS: Curaçao (USNM).

***Conus cavailioni* Fenaux**

Plate 184, fig. 3

Conus cavailioni Fenaux 1942, Bull. L'Institut Oceanographique (Monaco) no. 814, p. 4, fig. 12 (Bermuda).

The following is a translation of the original French description:

"Shell elongate, subcylindrical, base attenuate, color pattern consisting of numerous rather regularly square, orange dots and three bands of irregular orange flammules; spire acuminate, elevated in tiers of slightly concave, straight whorls, ornamented with orange flammules; aperture normal above, broadening at the base; lip arched and sinuous; base with broad, deep, plicate cords.

"Bermuda. Dedicated to M. Cavailon, Judge.

“This beautiful species recalls by its contour *C. scalaris* (Valenc.) and *C. fuscomaculatus* Smith but differs distinctly by its spire as well as the color pattern.”

The figure we have given is a photograph of Fenaux's plate. We seriously question Bermuda as being the original locality for this species. The marine mollusks of Bermuda are very well known and it seems quite remarkable that a large cone such as this newly described form should have escaped notice until as late as 1942.

THE GENERA SCAPHELLA AND AURINIOPSIS IN THE WESTERN ATLANTIC

BY

WILLIAM J. CLENCH

The following records and descriptions of new forms are based upon material obtained by shrimp trawlers in various areas in the Gulf of Mexico.

Scaphella junonia Shaw

Plate 186, fig. 1

Scaphella junonia Shaw, Clench 1946, *Johnsonia* 2, p. 49, pl. 28, figs. 1-3.

Records. FLORIDA: off Wreck Buoy, Key West in 15-17 fathoms; off Rebecca Shoals Light, Tortugas (both J. H. Butler).

Scaphella junonia johnstoneae, new subspecies

Plate 186, fig. 2

Description. Shell fusiform, reaching 115 mm. (about $4\frac{1}{2}$ inches) in length¹ solid and strong. Whorls 6 to $6\frac{1}{2}$, slightly shouldered and moderately convex. Color a slightly shining brownish-orange with a series of dark mahogany-brown spots in spiral rows. These spots are subcircular to almost square, the subsutural row being lengthened axially. Aperture lengthened and subelliptical in shape, upturned slightly at its base forming the siphonal canal. Outer lip thin and sharp, thickened below. Parietal area thinly glazed. Columella somewhat oblique and margined below by a convex ridge which is formed by the successive growth stages of the siphonal canal. Parietal area supporting four strongly developed plicae. Nuclear whorls $1\frac{1}{2}$ and smooth, followed by two whorls that are finely and spirally ridged and axially costate. Beyond these whorls the shell is nearly smooth, the sculpture consisting of exceedingly fine growth lines with a few, low and rather irregular spiral cords near the base of the whorl. Nuclear whorls tipped with reddish-brown. Periostracum light-brownish and exceedingly thin. Operculum probably absent.

length	width	whorls	
98	37.5 mm.	6	Holotype
101	41.0	$6\frac{1}{2}$	Paratype
103	42.0	$6\frac{1}{2}$	Paratype
115	46.5	$6\frac{1}{2}$	Paratype (dead)

¹This is the largest specimen we have seen. Specimens may be found eventually that equal in size the typical *Scaphella junonia* Shaw. A specimen of this latter species from Wreck Buoy, Key West in 15 fathoms measured 128 mm. (5 inches) in length. This is in the collection of J. H. Butler of Marathon, Florida.

Types. Holotype, Museum of Comparative Zoölogy, no. 194190, from off Petit Bois Island, Alabama in about 10 fathoms, received from Mr. and Mrs. H. I. Johnstone. Paratypes in the United States National Museum and the collection of Mr. and Mrs. Johnstone. Paratypes from the same locality and from 20 to 45 miles off Bayou Labatre: off Mobile Bay: 40 miles off Southport (all Alabama) and off the Alabama-Mississippi line in 10 fathoms. All of the above were collected by shrimp trawlers.

Remarks. This present new subspecies is readily distinguished from the typical form by the presence of the dull golden-brown ground color. In all other respects the characters are very much the same. Our black and white photograph (Plate 186, fig. 2) does not show this coloration but does show the similarity of shape.

Range. From 10 to 45 miles off the Alabama coast. We have seen two specimens of this subspecies labeled as "off the Texas Coast." This record should be verified.

Records. See under *Types*.

***Scaphella junonia butleri*, new subspecies**

Plate 186, fig. 3

Description. Shell very similar to typical *junonia*, differing mainly in its type of color spots. In the present subspecies, the blackish-brown spots are much smaller on a ground color of china-white. In *S. junonia* the ground color is usually a pale ivory. In addition, the nuclear whorls or calcarella, are much less pigmented with brown in *butleri* than in *junonia*. The periostracum is a dull and pale straw-yellow.

length	width	whorls	
126	52 mm.	6½	Holotype
125	51.5	6½	Paratype
120	47	6¼	Paratype

Types. Holotype, Museum of Comparative Zoölogy, no. 193591, from the Bay of Campeche, Yucatan, Mexico. Received from Mr. H. Hildebrand. Additional paratypes from the same general area in the United States National Museum, the collection of Mr. J. H. Butler, of Marathon, Florida, Mr. A. S. Merrill and Mr. C. L. Branch.

Remarks. This subspecies differs from typical *junonia* by having the blackish-brown spots much smaller. In addition, the ground color is white and there is less pigmentation in the nuclear whorls. In fully adult specimens the whorl shoulder near the aperture turns upwards in *butleri*, almost reaching the suture above the body whorl.

Typical *Scaphella junonia* is limited to the coast of North Carolina south to Florida, while *Scaphella junonia butleri* appears to be confined to the coast of Mexico. All specimens that we have seen come from the Campeche Bank and the Gulf of Campeche.

Range. Campeche Bank south to the Bay of Campeche, Yucatan, Mexico.

Records. MEXICO: Bay of Campeche (H. Hildebrand); Campeche Bank (L. A. Weisenhaus: USNM); northwest coast of Yucatan in 15–20 fathoms (USNM); off Champoton in 12–14 fathoms (J. H. Butler); west of Obregon, Tabasco (C. L. Branch).

Scaphella (Aurinia) florida *Clench and Aguayo*

Scaphella (Aurinia) florida Clench and Aguayo, Clench 1946, *Johnsonia* 2, p. 52, pl. 29, fig. 4.

Range. Palm Beach and south along the Florida Keys to Key West.

Records. *Triton*, station 630, off Palm Beach in 120 fathoms: *Triton*, station 903, off Delray Beach in 105 fathoms (both T. McGinty).

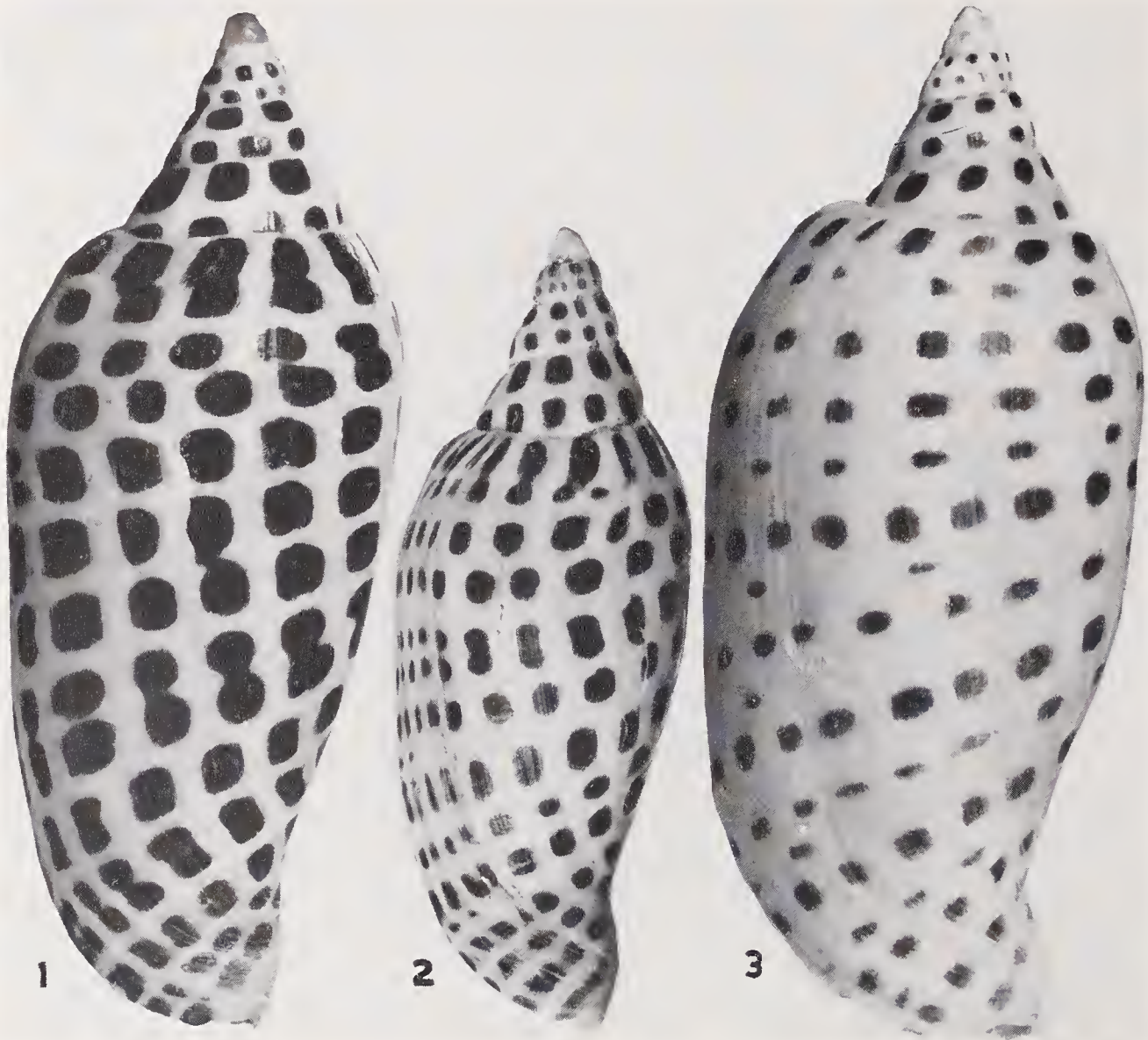


Plate 186

- Fig. 1. *Scaphella junonia* Shaw. Off Rebecca Shoals Light, Tortugas, Florida (natural size).
 Fig. 2. *Scaphella junonia johnstoueeae* Clench. Off Petit Bois Island, Alabama (natural size).
 Fig. 3. *Scaphella junonia butleri* Clench. Bay of Campeche, Yucatan, Mexico (natural size).

Auriniopsis,¹ new genus

Shell large, reaching 197 mm. (about 7½ inches) in length, thin, light in structure, spotted and without columellar plicae. Early post-embryonic whorls finely to moderately axially costate. Calcarella large, usually larger than the first post-embryonic whorl.

Genotype, *Fusus tessellatus* Kiener (= *Scaphella kieneri* Clench).

¹ Appearance or aspect of *Aurinia*.

In appearance, *Auriniopsis* is certainly fairly close in its relationship to *Bathyaurnia* and *Rehderia*. *Auriniopsis* differs from *Rehderia* in its lack of columellar plicae, heavy periostracum and fine spiral striae. It differs from *Bathyaurnia* by not having the mantle more or less completely enveloping the shell and by having the strongly marked subquadrate spots. It is more distantly related to *Aurinia*, differing in having a much thinner shell and in lacking the columellar plicae. The radula still remains to be investigated.

Auriniopsis kieneri Clench

Plate 187

Scaphella kieneri Clench 1946, *Johnsonia* 2, p. 58, pl. 31, fig. 1.

There appears to be no question but that the specimens now being obtained in the Gulf of Mexico represent this "lost" species of Kiener. This species, along with *Busycon coarctatum* Sowerby and possibly many others, was probably obtained from Mexican fishermen in the early 19th century and eventually reached Europe.

My thanks are due to Mr. J. L. Baughman for the loan of the first specimen that came to us for study. Since then, others have been loaned to us. We figure a specimen that exhibits a little more black on the siphonal canal than exists on the other material.



Plate 187. *Auriniopsis kieneri* Clench
Off mouth of the Mississippi River, Louisiana (natural size).

length	width	whorls	
197	61.5 mm.	7	off Obregon, Mexico
145	46.5	6	off Tampa, Florida
138	45.0	6	off Louisiana

Range. Gulf of Mexico from Florida west to Texas and south to Yucatan, Mexico.

Records. FLORIDA: about 150 miles west of Tampa in 80 fathoms (A. S. Merrill). LOUISIANA: off the mouth of the Mississippi River in 40 fathoms (A. S. Merrill). TEXAS: about 80 miles east of Padre Island (N. Lat. 27°12': W. Long. 96°21') in 100 fathoms (J. L. Baughman). MEXICO: off Obregon, Tabasco, in 30 fathoms (C. L. Branch).

* * * *

Recent Works on the Marine Mollusks of Argentina

In recent years three very important papers have been published on the marine mollusks of Argentina. They are all the result of the work of Dr. Alberto R. Carcelles, head of the Division of Protozoology and Invertebrates in the Argentina Museum of Natural Sciences, Buenos Aires. The first of these is on the fauna of Puerto Quequén, Buenos Aires. In this paper Carcelles outlines briefly the faunal provinces of Argentina and gives a short account of the various vessels that have been responsible for zoological work in the area. In the systematic portion he gives the distribution and habitat of each species, its relative abundance and geologic horizon.

The second paper, a catalogue of the marine mollusks of Patagonia, covers that area extending from Rio Colorado on the north to Cabo Virgenes on the south. Dr. Carcelles introduces the catalogue with a descriptive account of the area and an historic sketch of the work that has been done there. A total of 296 species are listed for this region of which 23 are chitons, 179 gastropods, 69 bivalves, 3 scaphopods and 22 cephalopods. Under each species he has given the original citation and range, with occasional additional references and notes.

The third report, on the marine mollusks of the Magellanic Province, covers in area the Golfo Nuevo in Argentina south including Tierra del Fuego, the Malvinas or Falkland Islands, the Burwood Bank and north on the Chilian coast to Concepción. An account of the limits and characteristics of the province is given. As in the two previous reports, he includes an excellent summary of the expeditions and voyages in this area and an outline of the important works published. In the systematic portion of the catalogue there are included the original citation, range and important references for each species.

The first two papers include several good plates and all three have excellent bibliographies, the one on the Magellanic Province being complete for the papers published on this province to that date. Numerous papers by Carcelles, Doello-Jurado, Parodiz and others have also appeared in recent years, but the three catalogues discussed give the overall of the area and references to additional literature.

Carcelles, Alberto 1944, Catálogo de los Moluscos Marinos de Puerto Quequén. Revista del Museo de la Plata (N.S.) Zoology 3, pp. 233-309, pls. 1-15.

Carcelles, Alberto 1950, Catálogo de los Moluscos Marinos de Patagonia. Anales del Museo Nabel Huapi 2, pp. 41-100, pls. 1-6.

Carcelles, A. and Susana I. Williamson 1951, Catálogo de los Moluscos Marinos de la Provincia Magalánica. Revista del Instituto Nacional de Investigacion de los Ciencias Naturales. Zoological Sciences, 2, no. 5, pp. 225-383.

—RUTH D. TURNER

INDEX

BY

MERRILL E. CHAMPION

See Table of Contents for references to new genera and species,
book reviews, voyages, and contributors.

- abbotti, *Conus*, 363
 abbotti, *Opalia*, 333, 348, 349
 abbreviata, *Coralliophila*, 90
 abbreviata, *Mya*, 30, 31
 aberrans, *Purpura*, 90
 aberrans, *Tritonalia*, 90
 abyssicola, *Puncturella*, 138, 142, 143
 abyssorum, *Oocorys*, 167, 187, 188
 Aciona, 251
 Acirsa, 229, 327
 Acmaea, 151
 Acme, 151
 Acmea, 151, 152
 acrilla, *Liotia*, 195, 196
 acrillum, *Cyclostrema*, 197
 acuminata, *Puncturella*, 145, 146, 147
 acus, *Cylindriscala*, 331, 333, 334
 acus, *Scala*, 331
 acus, *Scalaria*, 331, 333
 acuta, *Mya*, 32
 acuta, *Puncturella*, 129
 acuta, *Scalaria*, 354
 Acutiscalca, 255
 acutum, *Epitonium*, 354
 adamsi, *Thais*, 71
 adamsi, *Truncatella*, 160
 Admete, 191
 aeospila, *Scala*, 306
 aequisculpta, *Rimula*, 110, 114
 aethiopica, *Melo*, 166
 Agariste, 102
 agger, *Puncturella*, 127, 118, 130
 aguayoi, *Bathyauringia*, 41, 42, 44
 alba, *Mya*, 32
 Albertisia, 152
 albida, *Scalaria*, 260, 261
 albidum, *Epitonium*, 260, 351, 352
 albocincta, *Purpura*, 84
 album, *Dolium*, 169, 171
 alcocki, *Morio*, 189
 alcocki, *Oocorys*, 189
 alta, *Puncturella*, 118
 Altivasum, 213
 amabile, *Cyclostrema*, 197, 198, 200
 amabilis, *Liotia*, 197
 Amaea, 242, 287
 Amoria, 48
 amphiuirus, *Conus*, 374
 ampullacea, *Tonna*, 175
 analoga, *Puncturella*, 141
 andrewsii, *Cylindriscala*, 335, 336, 341, 363
 andrewsii, *Scalaria*, 335
 angulata, *Scala*, 255, 271
 angulata, *Scalaria*, 271
 angulata, *Voluta*, 204
 angulatum, *Epitonium*, 271, 353, 354
 angulatus, *Xancus*, 204
 Anguliscalca, 255
 antillana, *Puncturella*, 118, 120
 antillarum, *Dolium*, 173
 antillarum, *Scalaria*, 290, 302
 apertura *Patella*, 116
 apiculata, *Scala*, 290
 apiculatum, *Epitonium*, 290
 aquilarum, *Buccinum*, 191
 arcella, *Cirsotrema*, 227, 228
 arctica, *Scalaria*, 229
 Arctoscala, 319
 arenaria, *Mya*, 32
 Arenomya, 29
 argentinica, *Bankia*, 26
 argo, *Murex*, 360
 aruanus, *Meglotractus*, 166
 ascensionis, *Thais*, 69
 asinina, *Haliotis*, 37
 Astraea, 194
 Asperiscalca, 290, 319
 asturiana, *Puncturella*, 118, 119, 120, 121, 123
 asturiana, *Rimula*, 118
 atlantica, *Nesta*, 97, 98
 atlantis, *Nystiella*, 341, 343
 atlantis, *Scaphella*, 53
 aulacodes, *Eudolium*, 180
 aurantia, *Purpura*, 87
 aurantiacus, *Latinus*, 213, 214
 aurea, *Truncatella*, 162
 aureofasciatus, *Conus*, 371
 aurifila, *Opalia*, 240, 363
 aurifila, *Scala*, 240
 Aurinia, 42, 49, 51, 55
 Auriniinae, 49
 Auriniopsis, 378
 aurita, *Scala*, 258, 281, 327
 austini, *Conus*, 367
 australis, *Opalia*, 288
 australis, *Scalaria*, 231
 azelotes, *Epitonium*, 342
 azelotes, *Nystiella*, 342
 babylonia, *Scala*, 314
 babylonium, *Epitonium*, 314
 bahamensis, *Epitonium*, 306, 308
 bahamensis, *Truncatella*, 152, 155
 bairdiana, *Truncatella*, 153, 154
 bairdii, *Dolium*, 178, 179
 bairdii, *Eudolium*, 179
 Balanus, 61, 89
 Bankia, 1, 8, 357
 Bankiella, 11, 13, 357
 Bankiopsis, 11, 16, 357
 barbouri, *Haliotis*, 36, 40
 barbouri, *Oocorys*, 183, 184
 barbadensis, *Scala*, 363
 barbadensis, *Truncatella*, 153
 barcinonensis, *Purpura*, 74
 bartschi, *Oocorys*, 167, 182
 Bathyauringia, 42
 bayrardi, *Dolium*, 178
 belaurita, *Scala*, 224, 226
 belaurita, *Sthenorytis*, 225
 bellastriata, *Scalaria*, 290
 Benthodolium, 188
 bermudezi, *Scaphella*, 56
 bicarinata, *Nodiscalca*, 237
 bicarinata, *Purpura*, 83
 bicarinata, *Thais*, 81, 82, 83
 bicostalis, *Purpura*, 80
 bigelowi, *Zeidora*, 93, 95, 96, 148
 bilabiata, *Truncatella*, 153, 157

- billsae, *Puncturella*, 123
 bipalmulata, *Bankia*, 9, 10
 bipalmulata, *Teredo*, 8, 9, 11, 22
 bipennata, *Bankia*, 23
 biserialis, *Purpura*, 73
 bitubercularis, *Purpura*, 80, 90
 bitubercularis, *Thais*, 90
 bizonalis, *Purpura*, 86
 blainei, *Epitonium*, 361
 blainvillea, *Purpura*, 74
 blainvillii, *Rimula*, 110
 blandii, *Epitonium*, 254
 blandii, *Scala*, 253
 borealis, *Opalia*, 231
 borealis, *Scalaria*, 229, 230
 Boreoscala, 319, 327, 361
 borroi, *Puncturella*, 131, 132, 143
 branchi, *Murex*, 360
 branhamae, *Conus*, 364
 brasiliiana, *Dolium*, 169, 176
 brasiliiana, *Tonna*, 175, 176
 breve, *Epitonium*, 252
 brevis, *Epitonium*, 355
 brevis, *Scalaria*, 355
 brujensis, *Thais*, 69, 71
 brychia, *Puncturella*, 136, 144
 Buccinella, 203
 buccinoidea, *Purpura*, 86
 Buccinum, 63, 270
 bulbulus, *Scalaria*, 256
 burryae, *Conus*, 375
 burryi, *Opalia*, 235
 Bursa, 181
 Bursidae, 165, 166
 bushi, *Cyclostrema*, 195
 Busycon, 202
 butleri, *Scaphella*, 377
 Cadium, 168
 Cadus, 168
 caerulea, *Buccinella*, 203, 208
 caerulescens, *Purpura*, 87
 calceolina, *Zeidora*, 95, 97
 callaensis, *Purpura*, 73, 74
 callifera, *Purpura*, 71
 callifera, *Thais*, 72
 caleoscala, 226
 campanellata, *Bankia*, 27
 campanulata, *Teredo*, 27
 canalis, *Bankia*, 22
 Cancellariidae, 191
 cancellata, *Cyclostrema*, 194
 cancellata, *Delphinula*, 196
 cancellata, *Emarginula*, 102, 103
 cancellata, *Oocorys*, 189, 185
 cancellata, *Sinusigera*, 68
 cancellatum, *Cyclostrema*, 196
 candeana, *Scalaria*, 301
 candeantum, *Epitonium*, 290, 301
 candida, *Emarginula*, 98
 candida, *Nesta*, 97, 98
 cania, *Nystiella*, 336, 340
 canimarense, *Cyclostrema*, 195
 canium, *Epitonium*, 340
 Cantharus, 86
 capillacea, *Truncatella*, 153, 154
 capitellum, *Murex*, 214
 capitellum, *Turbinella*, 210, 214
 capitellum, *Vasum*, 214, 218
 capitellum, *Voluta*, 214
 carcellesi, *Conus*, 372
 caribaeensis, *Truncatella*, 156, 158
 caribaeus, *Conus*, 373
 caribaeus, *Truncatella*, 156
 caribbaea, *Oocorys*, 184
 caribbea, *Bankia*, 12, 16, 357
 Caribbean Shipworm, 16
 Caricella, 49
 cassididae, 165, 166, 181
 cassidiformis, *Turbinella*, 212
 cassiforme, *Vasum*, 212, 218
 cassiformis, *Turbinella*, 212
 castanea, *Purpura*, 87
 cavailoni, *Conus*, 375
 celtica, *Purpura*, 87
 Cectoria, 116
 centiquadra, *Aciona*, 311
 centiquadra, *Scala*, 310
 centiquadrum, *Epitonium*, 311
 centurio, *Conus*, 373
 ceramica, *Voluta*, 208, 209
 ceramicum, *Vasum*, 201, 214
 ceramicus, *Murex*, 209
 championi, *Epitonium*, 318, 354
 chocolatatum, *Purpura*, 90
 chocolatatum, *Thais*, 90
 Choristoma, 152
 cieba, *Bankia*, 12, 25, 359
 Cinctiscala, 290
 cingulatum, *Buccinum*, 73
 circularis, *Puncturella*, 130, 144
 Cirsostrema, 226
 Cirsostrema, 226
 Cirsostrema, 226, 281, 353
 Cirsostremopsis, 226
 citrina, *Purpura*, 87
 citrinus, *Conus*, 364
 clarki, *Conus*, 368
 clathrata, *Puncturella*, 135, 136
 clathrum, *Epitonium*, 251
 clathrus, *Epitonium*, 283
 clathrus, *Truncatella*, 160
 clathrus, *Turbo*, 281
 clavata, *Tubularia*, 204
 clenchi, *Conus*, 374
 Clypidella, 94
 cochlea, *Cirsostrema*, 228
 coestus, *Vasum*, 209, 210
 cognata, *Puncturella*, 141
 columellaris, *Purpura*, 63, 91
 communis, *Mya*, 32
 commutata, *Gyroscala*, 280
 commutata, *Scalaria*, 280, 281
 compressa, *Emarginula*, 100
 concava, *Nystiella*, 339
 concava, *Opalia*, 339
 concava, *Scala*, 339
 confusa, *Scalaria*, 301
 conica, *Emarginula*, 99
 conica, *Puncturella*, 141
 conica, *Scalaria*, 251
 consul, *Murex*, 90
 consul, *Purpura*, 90, 91
 consul, *Thais*, 90
 contorquata, *Epitonium*, 257
 contorquata, *Scala*, 256
 Conus, 363
 cookeana, *Arene*, 199
 cookeana, *Liotia*, 199
 cookeanum, *Cyclostrema*, 199
 cornigera, *Turbinella*, 208, 209
 cornigera, *Turbo*, 209
 cornigera, *Voluta*, 209
 cornigerus, *Scolymus*, 208
 cornuta, *Purpura*, 74
 coronata, *Cuma*, 71
 coronata, *Purpura*, 69, 71
 coronata, *Thais*, 69, 71, 72, 73
 coronata, *Scala*, 355
 coronatum, *Epitonium*, 355
 corpulenta, *Mya*, 32
 costata, *Cerithidea*, 355
 costata, *Truncatella*, 160
 costellata, *Purpura*, 74
 costulata, *Acirsa*, 229, 230
 costulata, *Scalaria*, 229
 costulata, *Turritella*, 229
 coturnix, *Cadus*, 172
 Cranopsis, 94, 118, 128, 137
 crassa, *Emarginula*, 100, 105, 106

- crassa*, *Thais*, 85
crassicosta, *Rissoa*, 234, 235
crassicosta, *Scalaria*, 234, 235
crassicostata, *Scalaria*, 234
crassissima, *Purpura*, 87
craticia, *Puncturella*, 118
crebricostata, *Scalaria*, 320
crebricostatum, *Epitonium*, 321
Cremides, 94
Cremoria, 116
crenata, *Opalia*, 233
crenimarginata, *Opalia*, 354
crenulata, *Scalaria*, 233
crenatus, *Turbo*, 232, 233
Crepidula, 126
Crepimarginula, 95
Crisposcala, 232
croseana, *Doliopsis*, 177
croseanum, *Dolium*, 178
croseanum, *Eudolium*, 178
croseanum, *Vasum*, 212
cuba, *Scaphella*, 58, 59, 60
cubana, *Sthenorytis*, 224, 225
cubanum, *Cyclostrema*, 194
cumingii, *Truncatella*, 160
Cycloscala, 253
Cyclostoma, 251
Cyclostrema, 193, 194, 199
Cyclotrema, 194
Cylindriscala, 289, 331, 332
Cymatiidae, 165, 166, 181
Cynodona, 208, 209
Cynodonta, 208
dactylus, *Pholus*, 8
dalli, *Cirsotrema*, 227, 354
dalli, *Haliotis*, 39
dalli, *Padollus*, 39
dalliana, *Scalaria*, 277
dallianum, *Epitonium*, 277, 352
daucus, *Conus*, 373
debenhami, *Bankia*, 19
debilis, *Truncatella*, 153
decussata, *Amaea*, 245
Decussiscula, 290
deltoidea, *Purpura*, 84
deltoidea, *Thais*, 61, 81, 84, 85
Dentarene, 194
dentex, *Haustrum*, 91
denticulata, *Scalaria*, 290, 310
denticulata, *Turbo*, 310
denticulatum, *Epitonium*, 310
dentigera, *Emarginula*, 107, 108
Dentiscala, 232
Depressiscula, 327
destructa, *Bankia*, 12, 20, 358
Deviobankia, 19
Diadora, 116
Diodora, 94, 110, 116
discobalaria, *Opalia*, 355
discobalaria, *Scala*, 355
discoideum, *Cyclostrema*, 193, 195
dissoluta, *Scalaria*, 344, 347
dissoluta, *Solutiscala*, 347
Ditremaria, 110
divergens, *Volutella*, 208
dohrni, *Scaphella*, 51
dohrni, *Voluta*, 51
Doliidae, 181
Doliopsis, 177
Dolium, 168, 169, 181, 270
dominicanus, *Conus*, 363
d'orbigny, *Epitonium*, 266
d'orbigny, *Scalaria*, 265
dorriae, *Rimula*, 110, 114, 115
douvillei, *Cirsotrema*, 324
douvillei, *Epitonium*, 325
dromio, *Epitonium*, 339
dromio, *Opalia*, 337, 338
dubia, *Fulguraria*, 54
dubia, *Purpura*, 90
dubia, *Scapha*, 54
dubia, *Scaphella*, 51, 54
dubia, *Voluta*, 51, 52, 54, 60
dunkeri, *Nodiscala*, 237
dunkeri, *Scala*, 253
dunkeriana, *Cycloscala*, 253
dunkeriana, *Scala*, 237, 253
eburneum, *Epitonium*, 388
eburnea, *Scala*, 261
eburnea, *Scalaria*, 288
Eburniscula, 255
echinaticosta, *Scalaria*, 253
echinaticostum, *Epitonium*, 253, 353, 354
electa, *Scala*, 256, 257
elegans, *Epitonium*, 266
elegans, *Scalaria*, 265
Elegantiscala, 243, 287
elegantissima, *Scala*, 243, 287
elevata, *Oocorys*, 190
elliotti, *Epitonium*, 292, 294
elongata, *Mya*, 32
elongata, *Oocorys*, 186, 190
Emarginula, 94, 99, 110
Emarginulinae, 93
Emarginulus, 99
colis, *Opalia*, 241, 242, 363
epae, *Sthenorytis*, 224
epidermata, *Dolium*, 173
Epitoniidae, 221, 249, 289
Epitonium, 249, 251, 255, 290, 361
equestris, *Patella*, 116
erecta, *Puncturella*, 121
erectispina, *Scala*, 263, 264
Erpetrometra, 152
eschrichti, *Scalaria*, 229
Eucycloscala, 193
eudeli, *Purpura*, 67
Eudolium, 165, 177, 178, 181, 182
eulita, *Epitonium*, 350, 351
eulita, *Scala*, 350
expansa, *Scalaria*, 224
foliaceicosta, *Scalaria*, 273
falklandica, *Puncturella*, 141
fasciata, *Purpura*, 74, 80
fasciata, *Scala*, 255
fasciata, *Tonna*, 168
Fasciolaria, 166
Fasciolariidae, 204
fauce-violacea, *Purpura*, 87
fenestrata, *Liotia*, 199, 200
ferminianum, *Epitonium*, 287
ferminianum, *Ferminoscala*, 287
Ferminoscala, 243, 287
ferminoscala, *Epitonium*, 243
Ficidae, 165, 166
Fidelis, 152
filare, *Epitonium*, 355
filaris, *Scalaria*, 355
filosum, *Buccinum*, 86, 90
filosa, *Purpura*, 86
fimbriata, *Bankia*, 22
fimbriata, *Teredo*, 22
fimbriatula, *Bankia*, 22, 358
fischeri, *Oocorys*, 190
fischeriana, *Scalaria*, 285
fissura, *Emarginula*, 102
Fissurella, 94, 99, 110
fissurella, *Patella*, 138
Fissurellidae, 95, 116
Fissurisepta, 94, 144
flavescens, *Conus*, 373
flemingiana, *Cemoria*, 138
flemingii, *Cemoria*, 138
flindersi, *Altivasum*, 214
flindersi, *Vasum*, 214
florida, *Scaphella*, 52, 378
floridana, *Purpura*, 74
floridana, *Thais*, 61, 76, 77, 78, 80

- floridanum, Vasum, 212
 floridanus, Conus, 375
 foliaceicosta, Scalaria, 273
 foliaceicostata, Scalaria, 273
 foliaceicostum, Epitonium, 273, 353, 354
 Foratidolium, 169
 Foratiscala, 344
 forbesii, Purpura, 91
 forbesii, Thais, 75, 76, 91
 formosissima, Scala, 344
 formosissima, Scalaria, 344
 formosissima, Solutiscala, 344, 345, 346, 347, 354
 fosteri, Bankia, 12, 24, 25, 358
 fractum, Epitonium, 276, 314, 351
 fragilis, Scalaria, 260, 261
 frenulata, Emarginula, 111
 frenulata, Rimula, 110, 111, 148
 frielei, Epitonium, 300, 301
 frisbeyae, Conus, 369
 fulgens, Scala, 333
 funiculata, Cylindriscala, 334
 funiculata, Scalaria, 231, 332, 333, 349
 fusco-apicata, Purpura, 87
 fuscus, Murex, 68, 69
 fusiformis, Voluta, 48
 fusus, Xancus, 201, 202
 Galea, 169
 galea, Buccinum, 168, 169, 173
 galea, Purpura, 90
 galea, Tonna, 166, 167, 168, 173
 galeata, Puncturella, 141
 Galeodea, 181
 Galeodolium, 177
 gemmulata, Purpura, 83
 Geomelania, 150
 georgettina, Epitonium, 262, 264, 265, 266, 269
 georgettina, Scalaria, 265
 georgiana, Rehderia, 41, 46, 47
 gigantea, Fasciolaria, 201
 gigantea, Purpura, 73, 74
 Glaucothoë, 152
 Globivasum, 215
 globosa, Voluta, 216
 globulum, Vasum, 216, 218, 219
 globulus, Turbinella, 216
 gouldi, Bankia, 1, 3, 13, 357
 gouldi, Scalaria, 231
 gouldi, Xylotrya, 13
 gouldiana, Scaphella, 52, 55, 56
 gouldiana, Voluta, 55
 gouldii, Truncatella, 158
 gracilis, Acirsa, 326
 gracilis, Acirsella, 326
 gracilis, Epitonium, 327
 gracilis, Scalaria, 326
 graeca, Patella, 116
 gradatella, Epitonium, 261
 gradatella, Scala, 260, 261
 granulata, Puncturella, 124
 granulata, Rimula, 124
 granulatus, Conus, 371
 Granuliscala, 232
 granulosa, Morio, 190
 granulosa, Oocorys, 190
 granulosa, Scalaria, 232
 greenlandica, Scalaria, 319, 320
 greenlandicum, Epitonium, 319, 320, 353, 354
 grisea, Thais, 73
 groenlandica, Scala, 319
 groenlandica, Scalaria, 320
 groenlandicus, Turbo, 320
 grossicostata, Scalaria, 235
 guerinii, Truncatella, 156, 159
 guernei, Emarginula, 100
 guinensis, Purpura, 71
 guinensis, Thais, 72
 Gyroscala, 280
 haemastoma, Buccinum, 73
 haemastoma, Thais, 73
 Halia, 49
 Haliotidae, 37
 Haliotis, 37, 39
 Harpa, 270
 Harpidae, 204
 haustorium, Buccinum, 63, 64
 Haustrium, 62, 64
 haustum, Purpura, 63
 havanensis, Conus, 365
 hawaiiensis, Bankia, 9, 11
 haysae, Thais, 62, 78, 79, 80, 86
 helena, Purpura, 83
 hellenica, Opalia, 238
 Hemitona, 94, 108
 hemphilli, Mya, 32
 hendersoni, Puncturella, 121, 123
 hendersoni, Sthenorytis, 224
 Herpetometra, 152
 horridum, Vasum, 209, 214
 hostestieriana, Scalaria, 234
 hotessieriana, Opalia, 232, 234, 236
 hotessieriana, Scalaria, 234, 235
 humphreysiana, Scalaria, 268
 humphreysii, Epitonium, 265, 268, 269, 270, 273, 354
 humphreysii, Scala, 269
 humphreysii, Scalaria, 268
 Ianthina, 166
 Imarginula, 99
 imbricata, Purpura, 86, 88
 imperiale, Vasum, 210
 inconspicua, Scalaria, 356
 inconspicuum, Epitonium, 356
 inconstans, Scalaria, 253
 indica, Oocorys, 190
 inerma, Purpura, 91
 jacobiscala, Solvaclathrus, 255
 japonica, Mya, 32
 Janthoscala, 356
 johnstoneae, Scaphella, 376
 joubini, Scalaria, 227
 juliae, Conus, 374
 junonia, Maculopeplum, 49
 junonia, Scaphella, 49, 376
 junonia, Voluta, 48, 49
 katherinae, Bankia, 12, 18, 27, 358
 kieneri, Auriniopsis, 379
 kieneri, Cyclostrema, 195, 200
 kieneri, Delphinula, 200
 kieneri, Purpura, 80
 kieneri, Scaphella, 58, 379
 kingyokuensis, Bankia, 9
 kiosquiformis, Thais, 71, 72
 konaensis, Bankia, 9, 11
 krebsii, Epitonium, 256, 275
 krebsii, Scala, 256, 257
 lactea, Purpura, 87
 laevigata, Truncatella, 152, 153
 laevigata, Turbinella, 207
 laevigatus, Xancus, 201, 206, 207
 Lamelliscala, 255
 lamellosa, Scala, 280
 lamellosa, Scalaria, 281
 lamellosa, Thais, 62
 lamellosa, Turbo, 281
 lamellosum, Epitonium, 250, 281, 353, 354, 355, 356
 lapillus, Buccinum, 85, 86
 lapillus, Nucella, 86
 lapillus, Purpura, 87
 lapillus, Thais, 61, 86, 90
 larva, Puncturella, 118, 125, 126
 larva, Rimula, 126
 lata, Mya, 32
 latecostata, Opalia, 324

- latecostata, *Scalaria*, 324
 latilabris, *Malea*, 177
 lavaratum, *Epitonium*, 337, 338
 leeana, *Opalia*, 349, 350
 leeana, *Scalaria*, 349
 Legrandia, 95
 lena, *Thais*, 68, 69
 Lepsia, 63
 leptalea, *Scalaria*, 292
 leptaleum, *Epitonium*, 293, 294
 ligata, *Scalaria*, 260, 261
 Liliobankia, 11, 17, 358
 Limnoria, 15
 lineata, *Acmea*, 151
 lineata, *Morio*, 190
 lineata, *Oocorys*, 190
 lineata, *Purpura*, 73
 lineata, *Scalaria*, 281, 284
 lineatum, *Buccinum*, 73
 lineatum, *Epitonium*, 252, 284
 lineatum, *Eudolium*, 178
 lineolata, *Purpura*, 87
 lineolata, *Scalaria*, 284, 285
 Lineoscala, 285
 linteatum, *Epitonium*, 238
 linteatum, *Opalia*, 237
 Liotia, 194, 195
 Liotiidae, 193, 195
 Liotina, 194
 Lippistes, 196
 Liriscala, 319
 Livona, 51
 Livonia, 51
 longa, *Rimula*, 111, 112, 148
 lovenii, *Epitonium*, 322, 323
 lovenii, *Scalaria*, 322
 Lucapina, 94
 Lucapinella, 94
 Macgillivrayia, 166, 169
 maculata, *Scaphella*, 49
 Maculopeplum, 48, 49
 maculosa, *Tonna*, 169
 maculosum, *Buccinum*, 169, 171
 magellanica, *Opalia*, 324
 magellanica, *Scalaria*, 324
 magellanicum, *Epitonium*, 324, 325
 magnifica, *Amaea*, 243
 magnifica, *Emarginula*, 105, 106
 magnifica, *Scalaria*, 242
 major, *Purpura*, 87
 Malea, 165, 176, 177
 Mancinella, 83
 mancinella, *Murex*, 83
 Maninose, 33
 marcoense, *Epitonium*, 303, 304
 matthewsae, *Epitonium*, 295, 304
 mazei, *Conus*, 370
 Mazza, 203
 medium, *Epitonium*, 252
 Megalotractus, 166
 melanostrema, *Tonna*, 166
 meleagris, *Cadus*, 172
 Melo, 166
 Melongena, 204
 Melongenidae, 204
 mercenaria, *Mya*, 32
 metallica, *Thais*, 73
 mexicana, *Bankia*, 13, 15
 micans, *Pseudoliotia*, 195, 200
 micromphala, *Scala*, 258, 259
 microphysma, *Fissurisepta*, 146
 Microstoma, 63
 Microtoma, 63
 minima, *Purpura*, 74
 minor, *Oocorys*, 186, 190
 minor, *Purpura*, 83, 87
 mirificum, *Epitonium*, 251
 mitchelli, *Amaea*, 243, 244
 mitchelli, *Scala*, 243
 mitis, *Turbinella*, 214
 Mitridae, 204
 mixta, *Purpura*, 87
 modesta, *Scala*, 356
 modesta, *Scalaria*, 263, 264, 256
 modesta, *Truncatella*, 162
 modestum, *Epitonium*, 264, 265
 monocycla, *Scalaria*, 281
 monozonalis, *Purpura*, 87
 montaguana, *Glaucothoë*, 153
 morchiana, *Opalia*, 239, 363
 morchiana, *Scala*, 239
 multifila, *Puncturella*, 129, 130
 multilirata, *Scala*, 292
 multistriata, *Scalaria*, 290, 292
 multistriatum, *Epitonium*, 292
 Munditia, 194
 Murex, 360
 muricata, *Scalaria*, 273
 muricata, *Voluta*, 210
 muricatum, *Vasum*, 210, 218
 muscapedia, *Scalaria*, 306
 muscapedium, *Epitonium*, 307, 308
 mutabilis, *Fasciolaria*, 51
 Mya, 29
 Myidae, 29
 Mytilus, 61, 88
 naufraga, *Zcidora*, 96, 97
 Nausitora, 8
 nautlae, *Depressiscula*, 328, 329
 nautlae, *Scala*, 329
 nebulosa, *Purpura*, 74
 nebulosa, *Thais*, 73
 Neobankia, 11, 19, 358
 neptunia, *Scaphella*, 57, 59
 neritoides, *Thais*, 69
 Nesta, 97
 nitida, *Turbo*, 152
 nitidella, *Depressiscula*, 328
 nitidella, *Scala*, 328
 Nitidiscala, 255
 noachina, *Diodora*, 138
 noachina, *Patella*, 116, 138
 noachina, *Puncturella*, 138
 Nodiscala, 237, 263
 nodosa, *Nerita*, 69
 nodosa, *Thais*, 69
 nodosocarinata, *Scala*, 237
 nodulosa, *Purpura*, 91
 nodulosum, *Sistrum*, 91
 nordica, *Emarginula*, 109
 norvegicum, *Epitonium*, 323
 novangliae, *Epitonium*, 306
 novangliae, *Scalaria*, 306
 novemcostata, *Scala*, 273
 novemcostatum, *Scalaria*, 275
 Nucella, 85, 86
 nuttalli, *Purpura*, 73
 nuttingi, *Turbinella*, 217, 219
 nuttingi, *Vasum*, 217
 Nystiella, 289, 337, 343
 Nystiellinae, 386
 occidentale, *Epitonium*, 258
 occidentalis, *Dolium*, 169
 occidentalis, *Scalaria*, 258
 oceanica, *Purpura*, 74
 octocostata, *Scala*, 310
 Oocoritidae, 181
 Oocorys, 181, 191
 Oocorythidae, 181
 Oocorythinae, 181
 Opalia, 231, 331, 333, 363
 Opalia, *Nystiella*, 337
 opalinum, *Epitonium*, 337
 ornata, *Scalaria*, 323
 ornatum, *Epitonium*, 323
 ovalis, *Mya*, 30
 ovata, *Mya*, 34
 ovoidea, *Turbinella*, 207
 oxia, *Puncturella*, 134

- pacifica, Benthodolium, 190
 pacifica, Oocorys, 190
 Padollus, 39
 pallasii, Scala, 255
 palmulata, Bankia, 23
 palmulata, Teredo, 9, 10
 palmulatus, Teredo, 9
 panama, Thais, 73
 pandion, Epitonium, 326
 pansa, Purpura, 68
 papillosa, Puncturella, 144
 paradisiaca, Volema, 204
 Parvitonna, 169
 purpura, Patella, 63
 patula, Purpura, 64
 patula, Thais, 63
 patulum, Buccinum, 64
 pauper, Puncturella, 137
 pelagica, Macgillivrayia, 166, 169
 pelex, Cranopsis, 118
 pennatum, Dolium, 169
 Perdix, 168
 perdix, Buccinum, 168, 172
 perdix, Dolium, 166, 181
 perdix, Tonna, 172, 181
 permodesta, Epitonium, 356
 permodesta, Scala, 356
 pernobilis, Scalaria, 224
 pernobilis, Sthenorytis, 224
 perselecta, Parvitonna, 169
 persica, Purpura, 91
 persicum, Buccinum, 63
 philippinarum, Scala, 255
 Pholadidae, 1
 Pholas, 8
 phrixodes, Emarginula, 103
 Pictoscala, 281
 pileum, Emarginula, 107
 pilsbryi, Cirsotrema, 227
 pilsbryi, Epitonium, 227
 Pinaxia, 71
 piratica, Bathyaurinia, 42
 piratica, Truncatella, 161
 piraticus, Conus, 365
 planicosta, Scalaria, 320
 planorbis, Lippistes, 196
 plecta, Puncturella, 135
 Plicopurpura, 63
 plumatum, Dolium, 172
 Plumulella, 22, 358
 polacia, Scala, 316
 polacium, Epitonium, 297, 316
 polygyrella, Epitonium, 222
 Polytropa, 85
 Polytropicalicus, 85
 pomum, Buccinum, 177
 ponderosa, Purpura, 87
 pourtalesii, Epitonium, 312
 pourtalesii, Haliotis, 38
 pourtalesii, Scalaria, 312
 praecisa, Mya, 30
 praeovoideus, Xancus, 206
 pretiosa, Scalaria, 252
 pretiosula, Scala, 273
 princeps, Cemoria, 138, 140
 princeps, Puncturella, 140, 141
 princeps, Truncatella, 162
 principale, Epitonium, 252
 profondi, Puncturella, 129
 profunda, Puncturella, 129
 profundi, Puncturella, 129, 148
 profundior, Mya, 35
 pseudoarenaria, Mya, 34
 pseudocancellata, Cyclostrema, 200
 pseudocancellata, Pseudoliotia, 195, 200
 Pseudoliotia, 195, 200
 Pseudoliotina, 194
 pseudoscalaris, Scalaria, 281
 Pseudostenorhytis, 224
 Pseudosthenorytis, 224
 Psiloteredo, 27
 Psychrosoma, 231
 pugillaris, Turbinella, 210
 pulchella, Truncatella, 156
 pullus, Mya, 30
 pumila, Emarginula, 107, 148
 pumila, Subemarginula, 107
 pumilio, Opalia, 237, 246
 pumilio, Scala, 237
 Punctiscala, 237
 Puncturella, 116
 punica, Albertisia, 152
 Purpura, 62
 Purpurella, 63
 Purpuridae, 64
 pycnonema, Rimula, 113
 Pyramidella, 270
 Pyramiscala, 319
 pyriforme, Dolium, 180
 pyriforme, Eudolium, 180
 pyrrhias, Acirsa, 346
 pyrrhias, Scalaria, 346
 pyrrhias, Solutiscala, 346
 pyrum, Mazza, 203
 pyrum, Turbinella, 202
 pyrum, Voluta, 203
 pyrum, Xancus, 203
 Quimalea, 177
 quindecimcostata, Scala, 260
 Ranella, 181
 ranunculus, Conus, 375
 regius, Conus, 363
 Rehderia, 45
 reticulata, Crepiemarginula, 95
 reticulata, Emarginula, 102
 reticulata, Zeidora, 95, 97
 reticulatus, Perdix, 168, 172
 retifera, Amaea, 243
 retifera, Scala, 243
 revoluta, Scalaria, 344
 reynoldsi, Epitonium, 285
 rhinoceros, Volutella, 208
 riisei, Epitonium, 298
 riisei, Scala, 298
 Rimula, 110, 148
 Rimulanax, 118
 Rimularia, 110
 Rimulus, 110
 ringens, Cassis, 177
 ringens, Malea, 177
 Rissoidae, 151
 robusta, Scaphella, 59
 rollandii, Emarginula, 107
 rollandii, Subemarginula, 107
 rostrata, Puncturella, 145
 rostrata, Truncatella, 162
 rotunda, Oocorys, 190
 rubra, Bankia, 9
 rudis, Nassa, 86
 rudolphi, Buccinum, 91
 rudolphi, Purpura, 91
 rufum, Dolium, 172
 rugosa, Purpura, 86
 rupicola, Scalaria, 285
 rupicolum, Epitonium, 284
 rushii, Epitonium, 296
 rushii, Scala, 296
 rustica, Purpura, 80
 rustica, Thais, 80
 rusticum, Buccinum, 86
 sayana, Scala, 269
 santodomingensis, Thais, 71
 scaeva, Scala, 235
 scaeva, Scalaria, 232
 Scala, 251
 scalare, Epitonium, 252
 Scalaria, 251
 scalariformis, Truncatella, 154, 160

- scalaris*, *Aciona*, 251
scalaris, *Rissoa*, 160
scalaris, *Truncatella*, 160
scalaris, *Turbo*, 251, 252
Scalatarius, 251
Scalina, 287
Scaphella, 48, 376
Scaphellinae, 49
Scaphopoda, 92
schepmani, *Oocorys*, 190
schmitti, *Aurinia*, 46
schmitti, *Rehderia*, 46
schrammii, *Cyclostrema*, 195
schrenki, *Bankia*, 13, 15
scipio, *Depressiscala*, 331
scipio, *Scala*, 330
scipio, *Scalaria*, 330
scolymoides, *Xancus*, 206
Scolymus, 203, 208
scolymus, *Murex*, 204
scolymus, *Turbinella*, 204
Sconsia, 181
seguenzae, *Zeidora*, 95
semidisjuncta, *Scalaria*, 347
semivaricosa, *Nodiscala*, 237
sennottorum, *Conus*, 370
sensuyi, *Liotia*, 194
sericifila, *Scala*, 317
sericifilum, *Epitonium*, 317
setacea, *Bankia*, 13
sicula, *Emarginula*, 102
similis, *Scalaria*, 320
Simplicidolium, 178
Simplicodolium, 177
Sinugigera, 69
Sinusigera, 68
Sipho, 116
Siphon, 116
Sistrum, 91
Sodaliscala, 290
solidior, *Dolium*, 180
solidula, *Emarginula*, 109
soluta, *Scala*, 253
soluta, *Scalaria*, 254
Solutiscala, 344, 347, 354
solutum, *Epitonium*, 254
Solvaclathrus, 255
sozoni, *Conus*, 375
spina-rosae, *Scala*, 273, 274
spinae-rosae, *Scala*, 273
spirintrorsum, *Dolium*, 173
spirintrorsum, *Dolium*, 173
sportella, *Puncturella*, 133
spuria, *Scala*, 273
squamosa, *Emarginula*, 102
squamulosa, *Emarginula*, 102
staminea, *Scalina*, 287
stearnsii, *Conus*, 364
stellata, *Thais*, 73
Stenorhyscala, 224
Stenorhytis, 224
Stenorhytiscala, 224
Sthenorytis, 224
stimpsoni, *Conus*, 367
Stramonita, 73, 86
striata, *Purpura*, 74
striata, *Sconsia*, 181
striata, *Sipho*, 138
striatus, *Sipho*, 138
stutchburyi, *Bankia*, 27
stylina, *Scala*, 298
stylinum, *Epitonium*, 298
subaequalis, *Xylotrya*, 359
subcapitellum, *Vasum*, 214
subcylindrica, *Helix*, 152, 164
subcylindrica, *Truncatella*, 149, 164
subdeltoidea, *Purpura*, 84
sublineata, *Scalaria*, 285
subulata, *Scalaria*, 320
subvaricosa, *Scala*, 237
subvaricosa, *Scalaria*, 237
succinea, *Truncatella*, 158
sulcata, *Oocorys*, 181, 186
sulfurea, *Helix*, 169
sulphurea, *Helix*, 169
swainsoni, *Sphenia*, 30
swiftii, *Epitonium*, 257
swiftii, *Scala*, 256
Taheitia, 150
tardina, *Dolium*, 173
tasmanica, *Legrandia*, 95
tenebrosa, *Tonna*, 175
tenue, *Dolium*, 173
tenuicola, *Puncturella*, 147
tenuis, *Scalaria*, 258
tenuistriata, *Scalaria*, 299
tenuistriatum, *Epitonium*, 299
Terebra, 150
Teredinidae, 1
Teredo, 2
teres, *Depressiscala*, 331
teres, *Scalaria*, 330
tessellatus, *Fusus*, 58, 60
tessellata, *Scaphella*, 60
testardi, *Eudolium*, 178
testardi, *Tonna*, 178
textilis, *Xancus*, 206
Thaididae, 64
Thais, 68, 69
Thaisella, 69
Thalessa, 83
theobroma, *Nucella*, 86
theresa, *Fidelis*, 152
Thracia, 270
tiburonense, *Epitonium*, 305
tolleni, *Epitonium*, 267
tollini, *Epitonium*, 266, 296, 354
Tomlinella, 159
Tonna, 168
Tonnacea, 165
Tonnidae, 165
Tonninae, 168
Tornatella, 270
torrei, *Aurinia*, 42, 43
torrei, *Bathyaurinia*, 43
tortilis, *Cylindriscala*, 334
tortilis, *Scalaria*, 334
tortugana, *Liotia*, 198
tortugana, *Lippistes*, 198
tortuganum, *Cyclostrema*, 198
trapa, *Purpura*, 84
triangulata, *Puncturella*, 145
Trichotropidae, 196
trifolium, *Puncturella*, 144
trinidadensis, *Purpura*, 69
trinidadensis, *Thais*, 69
trinitatensis, *Purpura*, 69
trinitatensis, *Thais*, 69
Tritonalia, 90
Tritonidae, 181
truncata, *Mya*, 30
truncata, *Truncatella*, 164
truncata, *Truncatula*, 152
truncatum, *Vasum*, 210
Truncatella, 151
Truncatellidae, 149
Truncatula, 152
truncatula, *Truncatella*, 164
truncatulum, *Cyclostoma*, 152
truncatus, *Turbo*, 152, 164
tryphenensis, *Liotina*, 194
tuberculata, *Buccinella*, 216
tuberculata, *Haliotis*, 37
tuberculata, *Puncturella*, 124
tuberculata, *Purpura*, 64
tuberculatum, *Haustum*, 64
Tuberculodolium, 178
tuberculosa, *Emarginula*, 100

- tubifer, *Purpura*, 63
 tumida, *Emarginula*, 107, 148
 turbinata, *Scalaria*, 271
Turbinella, 203
Turbinellarius, 203
turbinellum, *Vasum*, 201, 209
Turbinellus, 203
turbinellus, *Murex*, 208
turbinellus, *Vasum*, 208
turbinellus, *Voluta*, 208
Turbo, 310
Turbofusula, 203
Turbona, 255, 280
Turbonilla, 162
turricula, *Scalaria*, 301
turrita, *Scalaria*, 302
turrita, *Truncatella*, 156
turritellula, *Scala*, 298
turritellulum, *Epitonium*, 298
Typhis, 62, 63
typica, *Volutomitra*, 50
Uddevalensis, *Mya*, 30
uncinati-costum, *Epitonium*, 308
uncinati-costa, *Scalaria*, 285, 306
undecimcostata, *Scala*, 351
undata, *Purpura*, 83
undata, *Thais*, 80
undecimcostata, *Scalaria*, 350
undecimcostatum, *Epitonium*, 265
undosa, *Cantharus*, 86
undulata, *Scalaria*, 229
undulata, *Scaphella*, 48
unicostata, *Scalaria*, 285
unifascialis, *Purpura*, 73
unifasciata, *Scala*, 255
unifasciata, *Scalaria*, 279
unifasciatum, *Epitonium*, 279
urna, *Vasum*, 210
validus, *Xancus*, 206
vanhyningi, *Dinocardium*, 296
variabilis, *Truncatella*, 156
varicosa, *Scalaria*, 226
Vasum, 208
venosa, *Scala*, 255
venosa, *Scalaria*, 263
venosum, *Epitonium*, 263
ventricosior, *Dolium*, 172
vermetiformis, *Scalaria*, 347
vermetiformis, *Solutiscala*, 347
verrillii, *Dolium*, 185
verrillii, *Oocorys*, 185
verrucosus, *Conus*, 365
Viciniscala, 255
villeginii, *Conus*, 374
virginicum, *Epitonium*, 292
Vitrinellidae, 195
Volema, 204
volubile, *Epitonium*, 254
volubilis, *Scala*, 253
Volutacea, 204
Volutella, 208
Volutidae, 41
Volutifusus, 51
watsoni, *Cylindriscala*, 332
watsoni, *Oocorys*, 189, 190
watsoni, *Opalia*, 231, 332, 348
watsoni, *Puncturella*, 124
watsoni, *Scalaria*, 231, 332
weberi, *Oocorys*, 190
wilsoni, *Xancus*, 206
woolseyi, *Conus*, 373
wroblewskyi, *Opalia*, 231
Xancidae, 204
Xancus, 203
Xylotrya, 8
zealandicum, *Haustrum*, 64
Zeanöe, 152
zebra, *Scaphella*, 48
Zeidora, 95, 148
zeteki, *Bankia*, 19
Zidora, 95
zonata, *Tonna*, 175