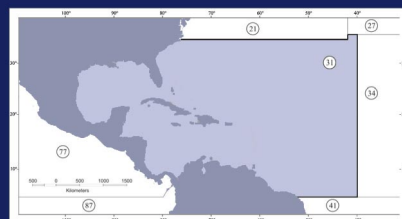




THE LIVING MARINE RESOURCES OF THE WESTERN CENTRAL ATLANTIC



Volume 1 Introduction, molluscs, crustaceans, hagfishes,
sharks, batoid fishes and chimaeras



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EUROPEAN
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GASTROPODS

by J.H.Leal, The Bailey-Matthews Shell Museum

GENERAL REMARKS

The Gastropoda constitute one of the most speciose and diverse groups of animals, comprising more than half of all named molluscs (at the class rank, Gastropoda is second only to the Insecta in number of species). The widely varied array of body plans and shell shapes in the Gastropoda reflects the diverse paths on which the group radiated since the Cambrian. As briefly discussed below, this diversity is a result of some basic constraints defined early in the evolutionary history of the class.

Gastropods are asymmetrical molluscs that underwent torsion. The body is generally divided into 2 main regions: (1) head-foot and (2) mantle (including shell), mantle cavity, and visceral mass. In most gastropods the muscular foot is the locomotion organ; gastropods mainly crawl, attach, or burrow using the foot. The head includes sense organs (e.g., tentacles and eyes) and in many groups is the site of concentration of nerve ganglia and connectives. The mantle, typical of molluscs, lines the shell internally; its external edge is the site of shell deposition. The space between the head-foot and the mantle proper is the mantle cavity, where the ctenidium (or ctenidia), osphradium, anus, nephridiopore, and external genitalia are located. The visceral mass, located in posterior direction, is the location of the gonads, digestive gland, heart, kidney, and part of the alimentary system.

The Gastropoda are almost universally accepted as a monophyletic group. Gastropods are defined by the presence of characters such as a larval operculum, but mainly by undergoing torsion and displaying associated anatomical conditions, such as an increased concentration of organs in the visceral mass. Torsion (not to be confused with coiling of the shell around a point or an axis) is the rotation of the visceral mass and mantle (including shell) for up to 180° in relation to the head and foot, always in a counterclockwise direction, and most frequently in the late-veliger larval stage. During torsion, the mantle cavity and its organs rotate from a posterior to an anterior position. As a result, the longitudinal nerve cords connecting the visceral to the pleural ganglia in a fully torted gastropod form a figure-eight, and the digestive tract is twisted into a U-shape that loops back into the visceral mass. Torsion moves the mantle cavity, and associated organs such as the adult anus, nephridiopores, and gonopores to a more anterior position. Many of the evolutionary pathways in post-torsional gastropods seem to involve modifications to prevent fouling of the anterior region of the mantle cavity (which includes the ctenidia) and head. That includes the gradual displacement of the anus back in posterior direction in vetigastropods such as keyhole limpets, abalones, and slit and top snails. The torted condition is found in most shelled gastropods, but gastropods in the Euthyneura (e.g., pulmonates, opisthobranchs) have secondarily reverted to several stages of detorsion.

Coiling is a phenomenon closely linked to torsion, probably a solution to the spatial constraints of the post-torsional anterior 'piling up' of mantle cavity + visceral mass + shell. Coiling in its simplest form is planispiral, where the shell + visceral mass ensemble coils around a point. The most frequent form of coiling in gastropods, however, is helicoidal, with asymmetrical coiling of the shell around a line producing a skewed turbanate coil. In contrast to simpler planispiral coiling, helicoidal coiling provides larger whorl diameters at older, higher parts of the shell, allowing for more internal space for the visceral mass. The trade-off for the spatial advantages offered by helicoidal coiling is a marked loss of symmetry in the gastropod arrangement of internal organs, in particular those of the mantle cavity: as one of the results of right-handed coiling in gastropods, the right-side member of paired organs such as ctenidia and osphradia are reduced or completely absent in most gastropod groups.

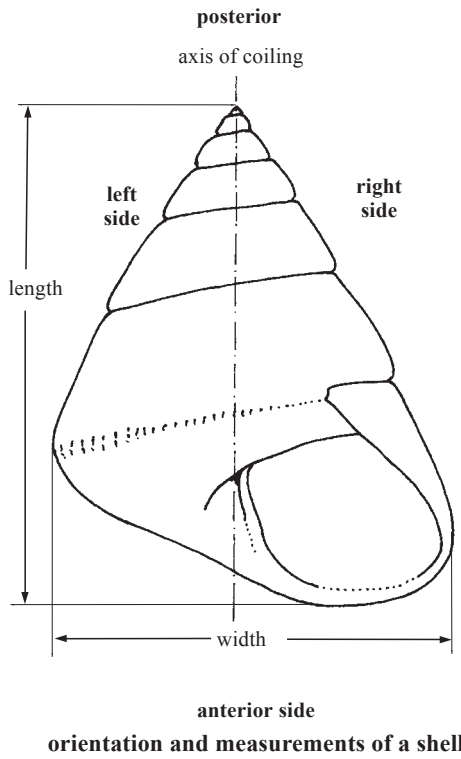
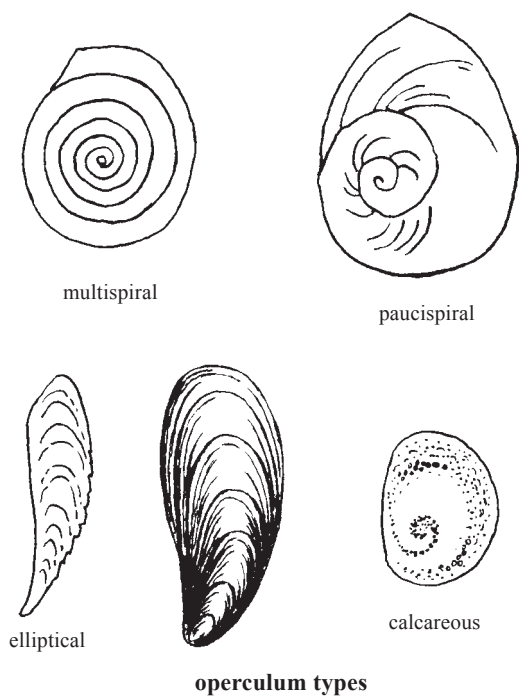
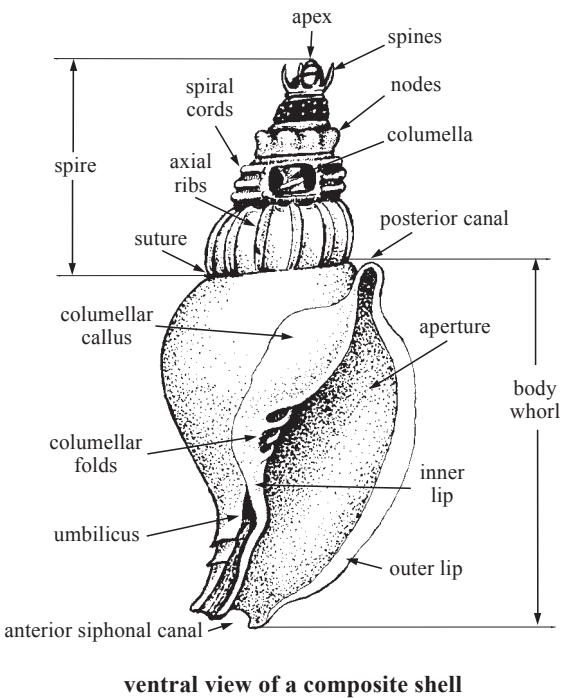
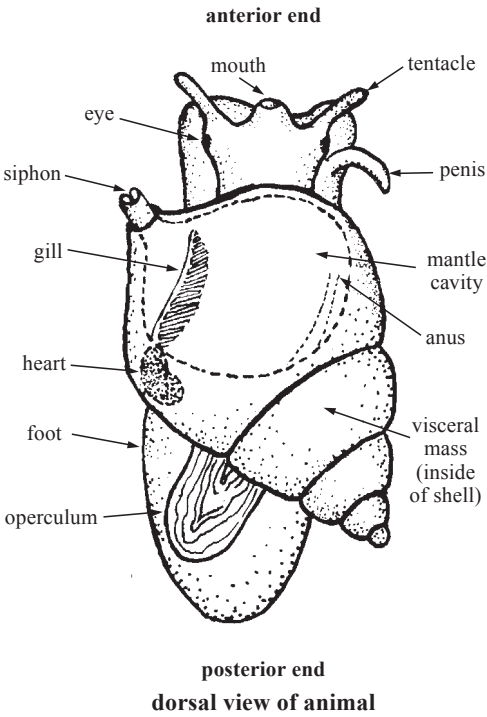
The Gastropoda exhibit extremely diversified food habits. There are predators, scavengers, filter- and deposit-feeders, macro- and micro-herbivores. In addition, in order to reach the food source, some gastropods are able to drill through hard structures (e.g., shells) using the radula.

From the standpoint of reproduction, gastropods may be dioecious or hermaphroditic (simultaneous or protandric), and may perform internal or external fertilization. Most gastropods go through pelagic larval development of varied duration (from a couple of hours to a few months), but some groups are known to have bypassed pelagic development, undergoing intracapsular (direct) development instead.

The types of habitats occupied by gastropods are also extremely diversified; gastropods inhabit both terrestrial and aquatic environments, and in the marine environment, can be found from the bottom of the deepest ocean trenches to the canopies of mangrove forests.

Although showing a lower number of species when compared to other areas of the world's oceans (e.g., Western Central Pacific), Fishing Area 31 includes some of the richest and most diverse marine areas in the Atlantic Ocean, the Caribbean Basin and the Antilles. Within molluscs, gastropods in Fishing Area 31 represent the third class (after bivalves and cephalopods) in catch by weight. At least one genus, *Strombus*, comprised about 1% of the total catch (including fishes, crustaceans, and other molluscs) for the area in 2000.

TECHNICAL TERMS AND MEASUREMENTS



general characteristics of gastropods

GLOSSARY OF TECHNICAL TERMS

Albino - shell lacking normal pigmentation.

Anterior - region situated near the head. In gastropods: in front.

Anterior canal - expansion looking like a groove or a tube and serving to protect the siphon in gastropod shells.

Aperture - opening in gastropod shells.

Apertural - position relative to the aperture of gastropod shells.

Apex - extremity of a gastropod shell opposite to the anterior region; part of the shell built in earlier life.

Apical - situated at or near the apex of a gastropod shell.

Axial - direction forming a plane with main shell axis in gastropods.

Basal - position relative to shell base.

Base - part of the gastropod situated in opposition to the apex.

Bottom of the shell - same as base.

Body whorl - most anterior whorl of the gastropod shell, last and largest whorl.

Callus - thickening of the shell, secondary, smooth, sometimes glazed, usually secreted on the parietal region of the columella.

Cancellate - feature of cross-barred sculpture of some gastropod shells consisting of axial and spiral elements of same intensity crossing at right angles.

Columella - column or pillar located on the centre of a gastropod shell.

Cord - element of gastropod shell sculpture, usually spirally oriented, thicker than line.

Cordlet - narrow cord, thicker than line.

Corrugated - appearance of surfaces forming wrinkles.

Crenulated - appearance of surfaces that are delicately notched or corrugated. Term usually applied to wrinkled shell margin or edge.

Crenulations - notches, or wrinkles that are small and delicate.

Denticles - features of sculpture elements looking like small teeth-like projections. Term usually applied to features seen on the internal part of the aperture.

Depressed - outline of low, pressed-down gastropod shells. Term usually applied to some top shells.

Dorsal - region opposite to the foot in gastropods.

Egg-ribbon - same as ribbon.

Elongate - shell with length significantly larger than width.

Excavated - appearance of a hollow, concave surface.

Fold - ridge spiralling on columella.

Foliated - characteristic of being leaf-like.

Foot - in gastropods, fleshy, sole-like, muscular part of body involved in locomotion.

Furrow - groove in longitudinal direction found on the dorsal region of, among other shells, cowries and Triviidae.

Fusiform - characteristic of being spindle-shaped.

Glassy - surface resembling glass, vitreous, transparent.

Globular - shape resembling a sphere or a ball.

Globose - same as globular.

Granulated - surface covered with minute grains, pustules, or beads.

Growth lines - lines on shell surface indicative of alternating periods of growth and rest; sometimes corresponding to seasonal changes.

Horny - substance that is hardened and proteinaceous; present in or completely forming the gastropod operculum and shell periostracum.

Incised lines - features of shell sculpture represented by cuts or narrow grooves on the shell surface.

Indentation - cut or notch on shell edge or parietal region.

Indented - surface bearing an indentation.

Interspaces - spaces between sculptural features, such as ribs, costae, or cords.

Juvenile - characteristic of being young, immature, not fully grown.

Keyhole - apical orifice in some limpets.

Knob - large nodule, rounded projection.

Knobbed - surface bearing knobs.

Lamella (pl. lamellae) - thin plate or blade-like projection.

Lamellation - same as lamella.

Ligament - structure that is horny and proteinaceous, acting as a spring tending to keep the valves opened in bivalve shells. Usually situated in the region of the hinge, either internally or externally.

Line - sculptural feature narrowly incised on shell surface.

Lip - edges of the outer surface of the aperture in the gastropod shell.

Longitudinal - direction parallel to the largest dimension of the shell or mollusc.

Nacreous - characteristic of being iridescent, like mother-of-pearl.

Nodules - projections that are rounded as tubercles.

Nodulose - surface bearing nodules.

Notch - cut or depression on any margin, canal, or on the gastropod aperture.

Opalescent - characteristic of being whitish, but with nacreous luster.

Operculum - trapdoor or plate which closes the aperture of gastropod shells and isolates the snail from its surrounding environment. Opercula can be horny ('soft', brownish) or calcareous ('hard', usually whitish).

Outer lip - edge of the external part of the aperture away from the shell axis.

Ovate - characteristic of having the form of an egg.

Oval - same as ovate.

Parietal - region of the internal part of the aperture, usually set apart by differences in surface texture and/or coloration.

Parietal shield - parietal region when markedly different from the remainder of the adjacent shell area.

Periphery - region of the outermost part of any given whorl on the gastropod shell. The shell periphery is therefore the greatest circumference of the gastropod shell.

Periostracum - layer of the outside part of the shell. It is horny and sometimes hair-like.

Peristome - aperture rim or periphery.

Plication - same as fold.

Posterior - region away from the siphonal canal, near the apex, in gastropods; in bivalves, the region of the shell sinus, away from the foot.

Posterior canal - canal of small size or notch opposite to the siphonal canal on the aperture of the gastropod shell.

Protoconch - larval shell remaining on the apex of well-preserved gastropod shells.

Radial - structures that are directed away from the apex toward the shell margin, in limpets.

Radiating - same as radial.

Reticulate - feature of shell sculpture consisting of criss-crossed, net-like texture formed by the intersection of lines at right angles.

Reticulated - same as reticulate.

Ribbon - surface consisting of an aligned sequence of egg-cases.

Ribs - structural elements forming a well-defined, narrow ridge in gastropod shells. Term usually applied to those elements forming a plane with (or slightly oblique to) shell axis.

Riblets - diminutive of ribs.

Scales - sculptural elements that are small, raised, and plate-like.

Septum - partition found in the internal side of gastropod shells; characteristic of slipper-shells.

Serrated - resembling tiny saw teeth.

Shoulder - angled region of the whorls of gastropod shells.

Siphon - prolongation of the gastropod mantle used to convey water into the mantle cavity.

Siphonal canal - projection of the anterior region shell in tubular form protecting the anterior siphon.

Snails - common name of gastropods.

Spiral - direction following the coiling of the gastropod shell. Term usually applied as a modifier to sculptural terms such as 'spiral cords'.

Spire - series of successive whorls in a gastropod shell, with exception of the last one.

Spire angle - angle formed by the lines defined by the outermost points on both sides of the spire.

Striation - fine, repeated lines or furrows on shell surface.

Suture - line or region of junction between two adjacent whorls in the gastropod shell.

Synonym - a scientific name applied to a species that has received an earlier name. OBS: Usually, the earlier name is the valid one.

Thread - same as line.

Top of the shell - same as apex.

Turbinate - form that looks top-shaped, tapering evenly from base to apex.

Turreted - form that looks tower-shaped, elongate.

Umbilicus - cavity at base of gastropod shells.

Uncoiled - gastropod shell that lacks coiling.

Varix - axial sculptural element that is more prominent than a costa, and usually more widely spaced; evidence of a growth halt during which a thickened lip develops (plural: varices).

Ventral - region of the animal opposed to the dorsal region; region of the foot in gastropods.

Whorl - a complete turn or coil of the gastropod shell.

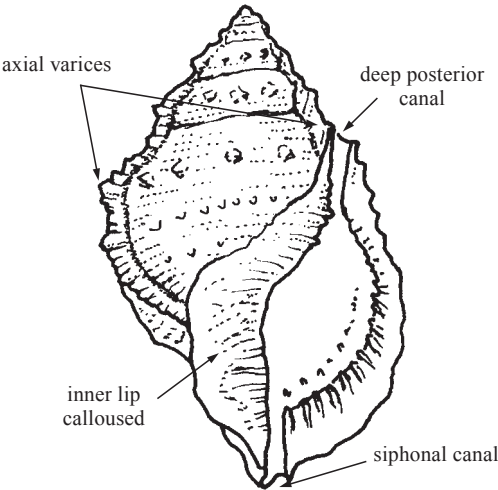
GUIDE TO FAMILIES OCCURRING IN THE AREA

The following guide is intended to facilitate the identification of marine or brackish-water gastropod families regularly exploited or occasionally found in markets of the area. Additionally included are those families that are similar to exploited families but do not contain species that are regularly utilized. The families in this guide represent only a small part of the gastropod fauna occurring in the area, and it is probable that their number will increase once we have better information on the fisheries and utilization of this group of resources.

BURSIDAE

Frog shells

No species of interest to fisheries in the area.

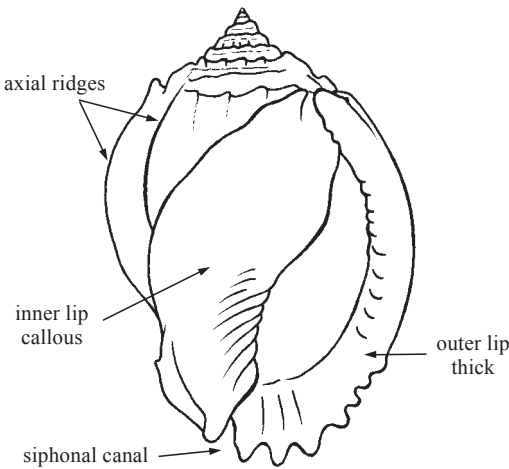


CASSIDAE

p. 113

Helmet and bonnet shells

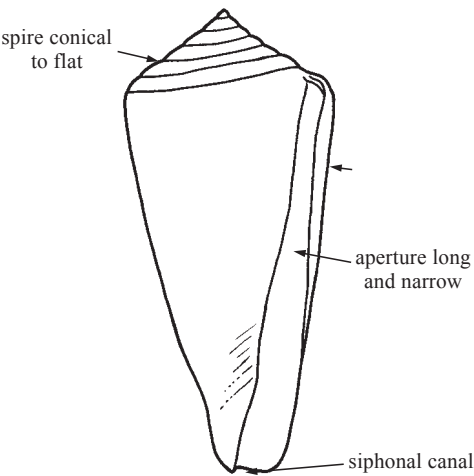
Three species of interest to fisheries in the area.



CONIDAE

Cone shells

No species of interest to fisheries in the area.

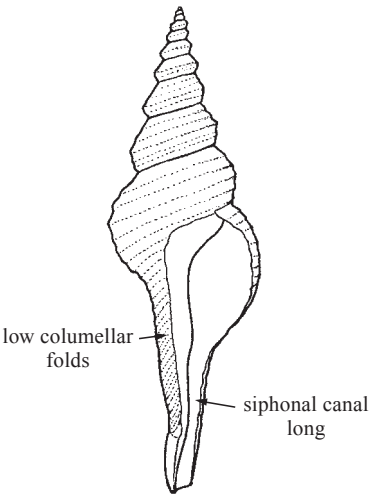


FASCIOLARIIDAE

p. 117

Horse conchs, spindle shells

Two species of interest to fisheries in the area.

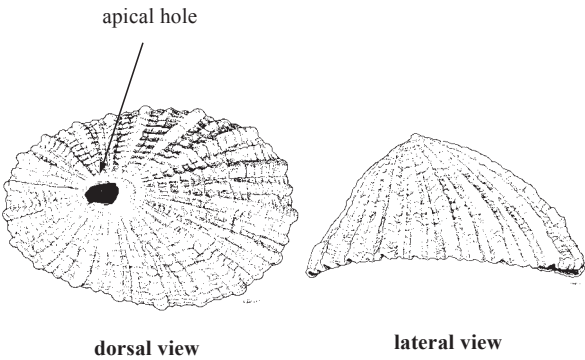


FISSURELLIDAE

p. 120

Keyhole limpets

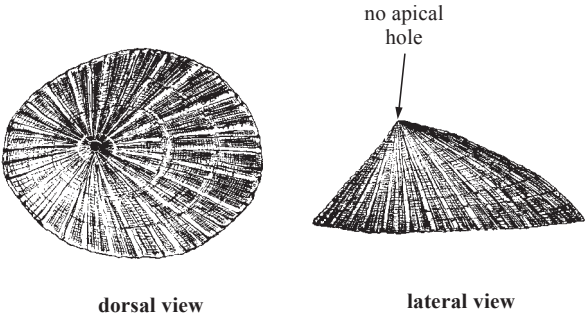
Three species of interest to fisheries in the area.



LOTTIIDAE

Lottiid limpets

No species of interest to fisheries in the area.

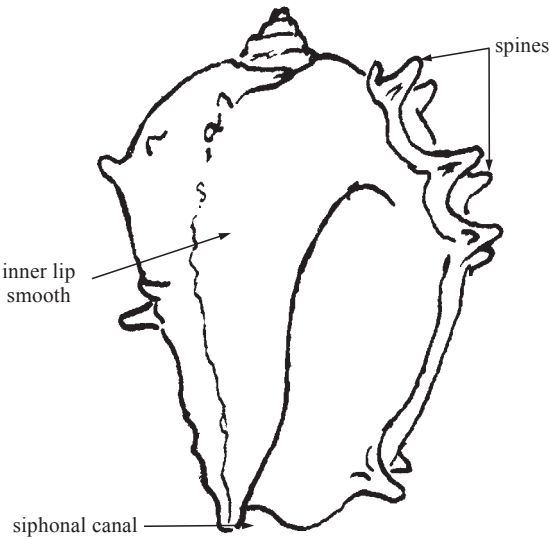


MELONGENIDAE

p. 124

Melongenas

Four species of interest to fisheries in the area.

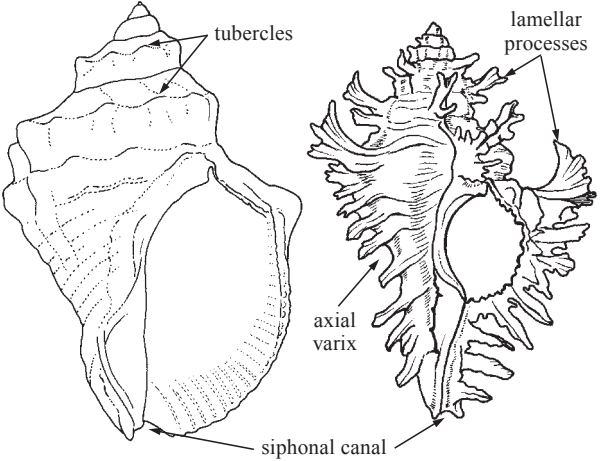


MURICIDAE

p. 128

Purpuras, murex, and rock shells

Three species of interest to fisheries in the area.

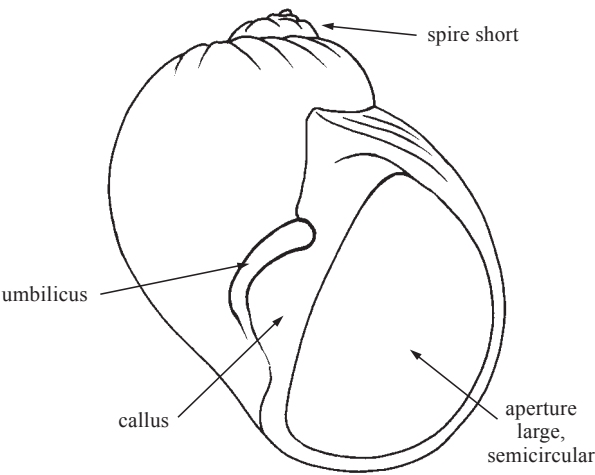


examples showing diversity of shape

NATICIDAE

Moon snails

No species of interest to fisheries in the area.

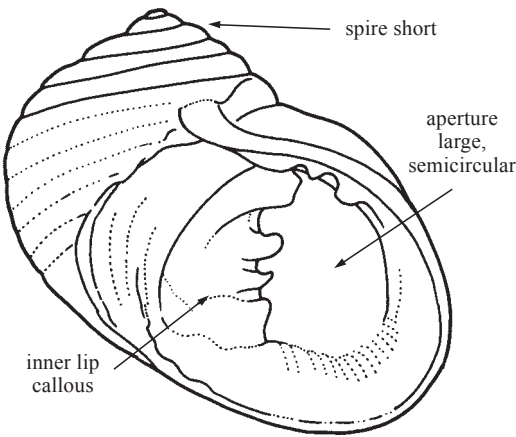


NERITIDAE

p. 133

Nerites

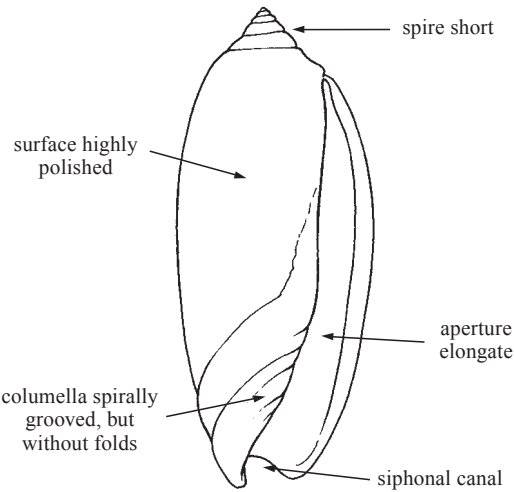
One species of interest to fisheries in the area.



OLIVIDAE

Olive shells

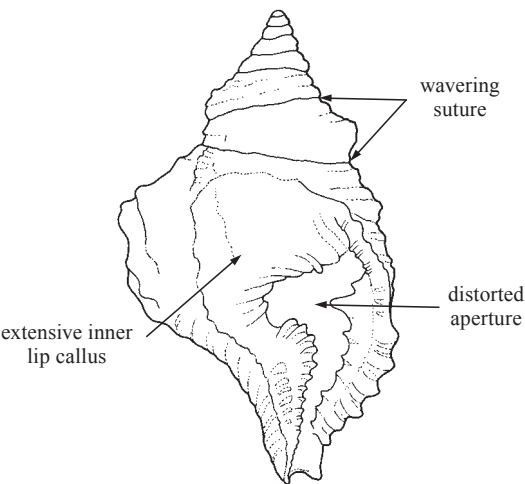
No species of interest to fisheries in the area.



PERSONIDAE

Distorsios

No species of interest to fisheries in the area.

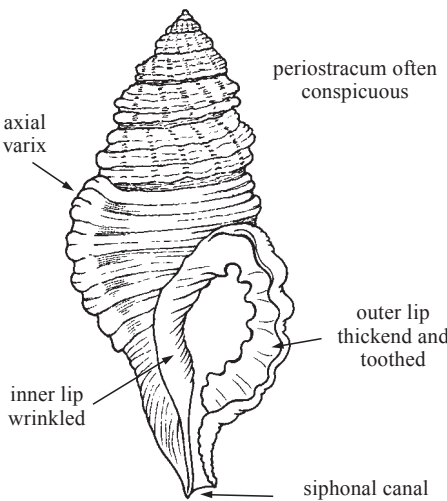


RANELLIDAE

p. 135

Triton shells

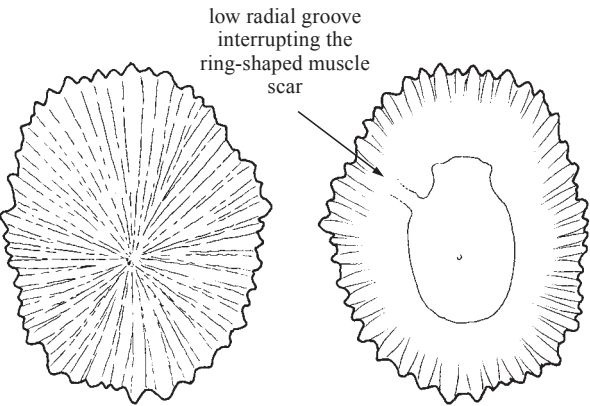
One species of interest to fisheries in the area.



SIPHONARIIDAE

False limpets

No species of interest to fisheries in the area.

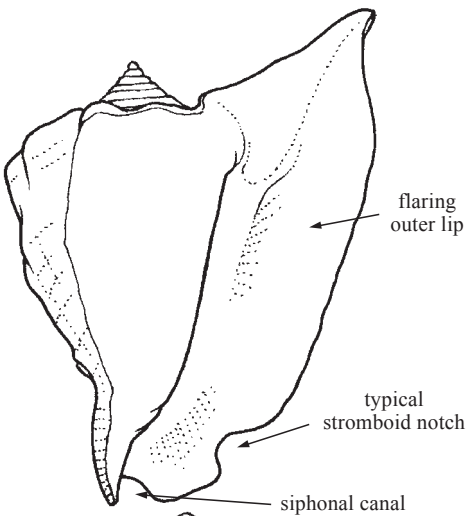


STROMBIDAE

p. 137

Conchs

Three species of interest to fisheries in the area.

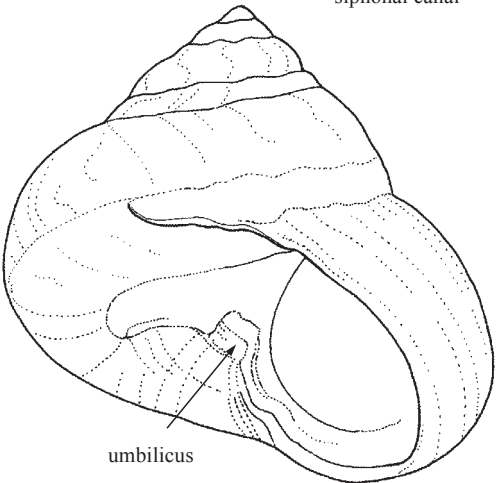


TROCHIDAE

p. 141

Top shells

One species of interest to fisheries in the area.

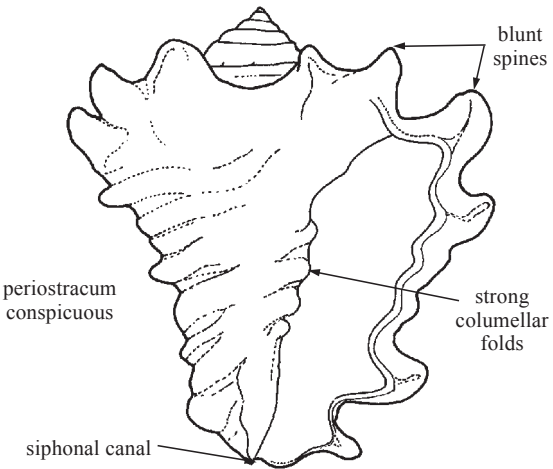


TURBINELLIDAE

p. 143

Vase shells

One species of interest to fisheries in the area.

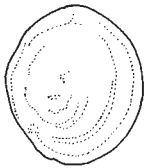
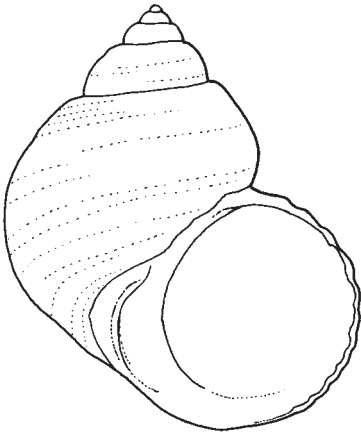


TURBINIDAE

p. 145

Turban shells

One species of interest to fisheries in the area.

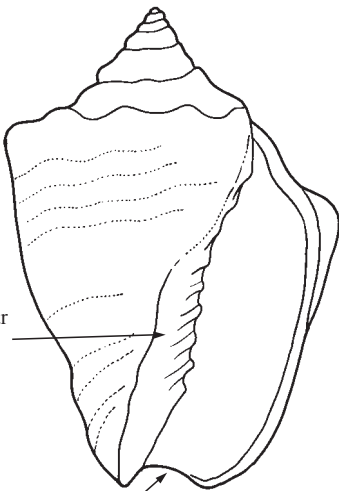


operculum
calcareous

VOLUTIDAE

Volutes


No species of interest to fisheries in the area.






oblique columellar
folds, strongest
anteriorly

siphonal canal



LIST OF FAMILIES AND SPECIES OF INTEREST TO FISHERIES OCCURRING IN THE AREA

The symbol  is given when species accounts are included.




CASSIDAE

-  *Cassis flammea* (Linnaeus, 1758).
-  *Cassis madagascariensis* Lamarck, 1822.
-  *Cassis tuberosa* (Linnaeus, 1758).





FASCIOLARIIDAE

-  *Fasciolaria tulipa* (Linnaeus, 1758).
-  *Pleuroploca gigantea* (Kiener, 1840).




FISSURELLIDAE

-  *Diodora listeri* (d'Orbigny, 1842).
-  *Fissurella barbadensis* (Gmelin, 1791).
-  *Fissurella nimbosa* (Linnaeus, 1758).

MELONGENIDAE

-  *Busycon perversum* (Linnaeus, 1758).
-  *Melongena corona* (Gmelin, 1791).
-  *Melongena melongena* (Linnaeus, 1758).
-  *Pugilina morio* (Linnaeus, 1758).

MURICIDAE

-  *Chicoreus brevifrons* (Lamarck, 1822).
-  *Chicoreus pomum* (Gmelin, 1791).
-  *Stramonita haemastoma* (Linnaeus, 1767).




NERITIDAE

-  *Nerita peloronta* Linnaeus, 1758.

RANELLIDAE

-  *Charonia variegata* (Lamarck, 1816).

STROMBIDAE

-  *Strombus costatus* Gmelin, 1791.
-  *Strombus gigas* Linnaeus, 1758.
-  *Strombus pugilis* Linnaeus, 1758.

TROCHIDAE

-  *Cittarium pica* (Linnaeus, 1758).

TURBINELLIDAE

-  *Turbinella angulata* (Lightfoot, 1786).

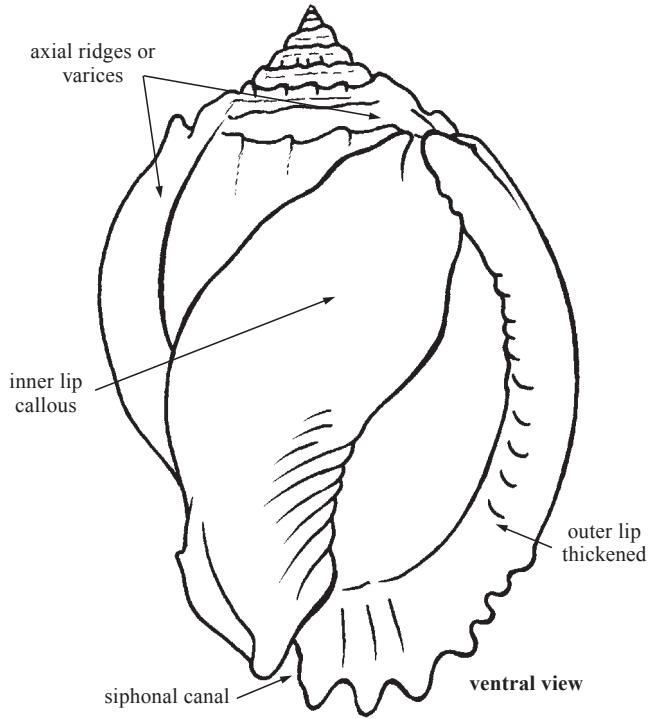
TURBINIDAE

-  *Turbo castanea* Gmelin, 1791.

CASSIDAE

Helmet and bonnet shells

Diagnostic characters: Shell large, thick, heavy, with sculpture usually nodulose, spire usually small. Anterior canal curved dorsally, parietal shield well developed, with thick callus. Varices present.






Habitat, biology, and fisheries: Subtidal, in sandy bottoms. Consumed locally. Shells of the species are sold as souvenirs throughout the area.

Similar families occurring in the area

None.

List of species of interest to fisheries occurring in the area

The symbol  is given when species accounts are included.

-  *Cassis flammea* (Linnaeus, 1758).
-  *Cassis madagascariensis* Lamarck, 1822.
-  *Cassis tuberosa* (Linnaeus, 1758).

References

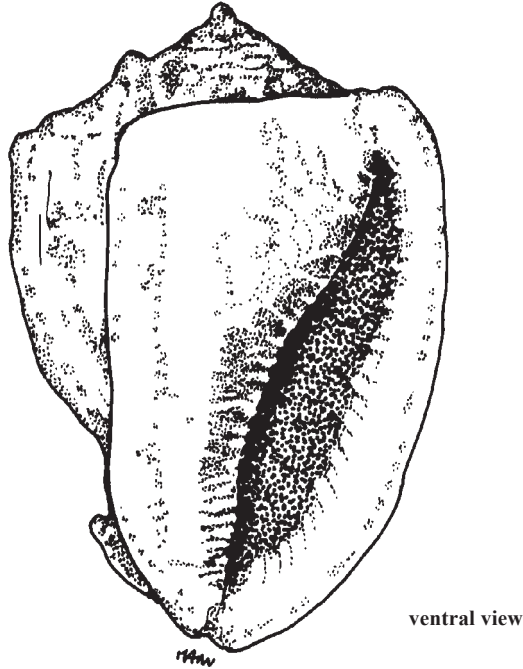
- Abbott, R.T. 1968. The helmet shells of the world (Cassidae). Part 1. *Indo-Pacific Mollusca*, 2(9):7-202.
- Kreipl, K. 1997. *Recent Cassidae*. Verlag Christa Hemmen, Wiesbaden, 151 p.

Cassis flammea (Linnaeus, 1758)

KSF

Frequent synonyms / misidentifications: None / *Cassis tuberosa* (Linnaeus, 1758); *Cassis madagascariensis* Lamarck, 1822

FAO names: **En** - Flame helmet; **Fr** - Casque flamme; **Sp** - Casco flameante.

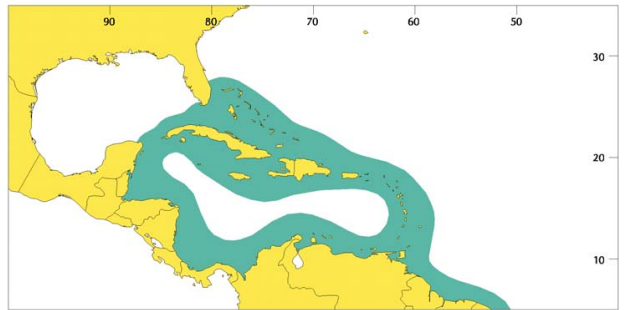


Diagnostic characters: Shell large, heavy. Spire short. Shell surface smooth, except for knobby projections on body whorl. Parietal shield large and well defined, oval. Outer lip with inner tooth-like projections. **Colour:** brownish cream with large patch of brown at centre of parietal shield. Outer lip entirely cream or cream-white.

Size: To 75 mm.

Habitat, biology, and fisheries: On sand bottoms near seagrass beds, at shallow subtidal depths. Collected by diving. Shells sold as collectibles or souvenirs in parts of the area.

Distribution: Lower Florida Keys, Caribbean to Brazil, and Bermuda.

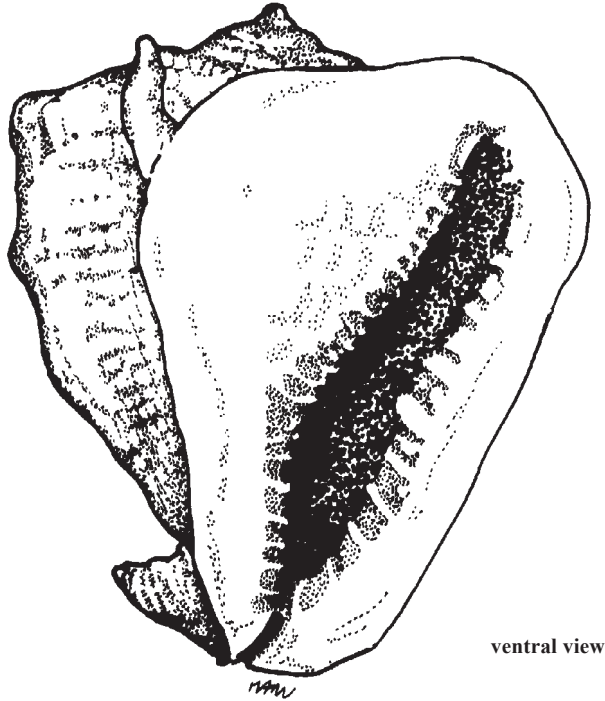


Cassis madagascariensis Lamarck, 1822

KSD

Frequent synonyms / misidentifications: None / *Cassis flammea* (Linnaeus, 1758); *Cassis tuberosa* (Linnaeus, 1758).

FAO names: **En** - Emperor helmet (AFS: Cameo helmet); **Fr** - Casque impérial; **Sp** - Casco imperial.



ventral view

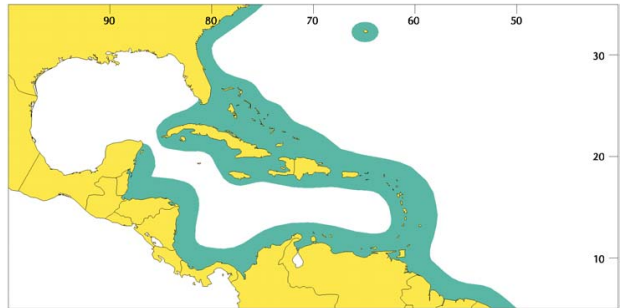
Diagnostic characters: Shell very large, heavy. Spire short. Shell surface with 3 rows of large knobs on body whorl. Parietal shield large and well defined, triangular. Outer lip with inner tooth-like projections. **Colour:** pale cream, parietal shield pale to deep salmon. Outer lip entirely cream or cream white sometimes with light brown between teeth.

Size: To 350 mm.

Habitat, biology, and fisheries: On sand bottoms near seagrass beds, at shallow subtidal depths. Collected by diving. Shells sold as collectibles or souvenirs in parts of area.

Distribution: North Carolina to Florida, Greater Antilles, and Bermuda.

Remarks: Largest species of the family in the Atlantic Ocean.

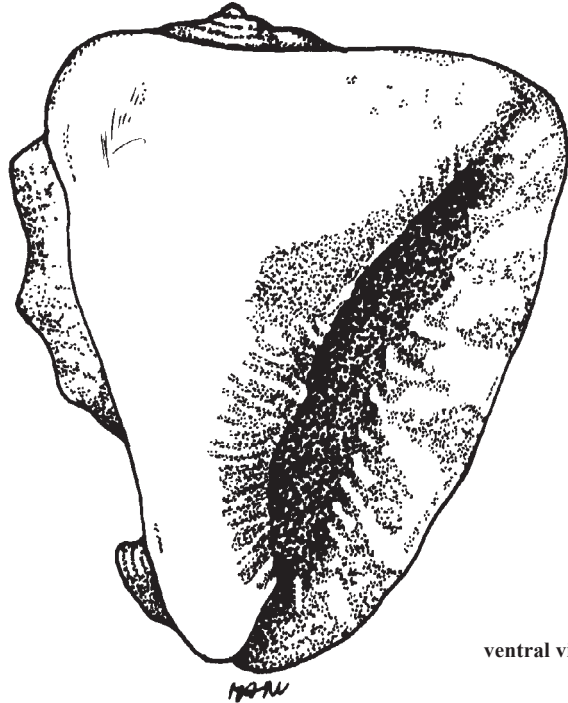


Cassis tuberosa (Linnaeus, 1758)

KST

Frequent synonyms / misidentifications: None / *Cassis flammea* (Linnaeus, 1758); *Cassis madagascariensis* Lamarck, 1822.

FAO names: **En** - King helmet (AFS: Caribbean helmet); **Fr** - Casque royal; **Sp** - Casco real.



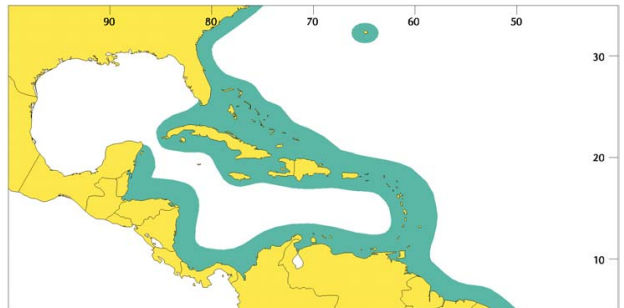
ventral view

Diagnostic characters: Shell very large, heavy. Spire short. Shell surface with fine reticulated sculpture and knobby projections on body whorl. Parietal shield large and well defined, triangular. Outer lip with inner tooth-like projections. **Colour:** brownish cream with large patch of brown at centre of parietal shield. Outer lip entirely cream or cream white with brown between teeth.

Size: To 250 mm.

Habitat, biology, and fisheries: On sand bottoms (sometimes buried) near seagrass beds, at shallow subtidal depths. Collected by diving. Shells sold as collectibles or souvenirs in parts of the area.

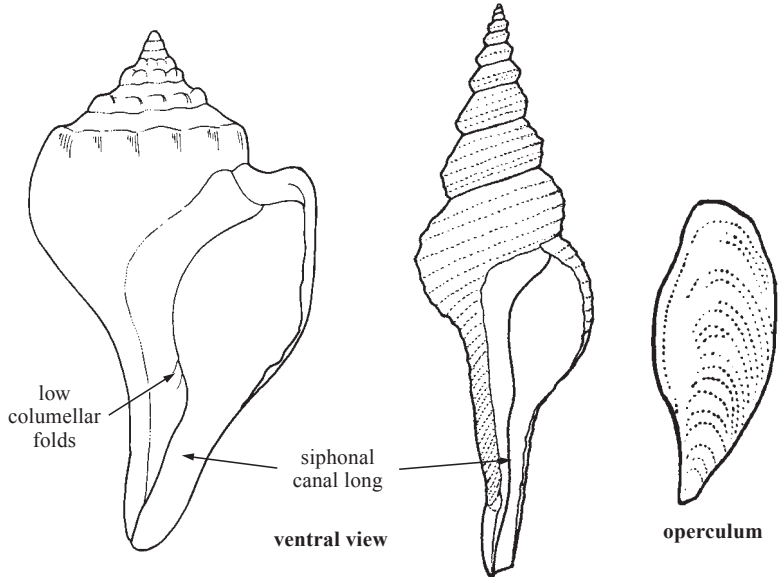
Distribution: North Carolina to Florida, Caribbean to Brazil, and Bermuda.



FASCIOLARIIDAE

Horse conchs (spindle shells, tulips)

Diagnostic characters: Shell large, elongate, spindle-shaped, spire elevated, anterior canal well developed. Columellar folds present. Operculum thick and horny. **Colour:** usually red or orange.



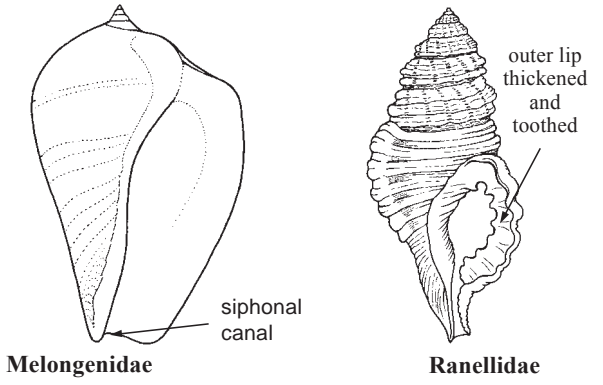
examples showing diversity of shape

Habitat, biology, and fisheries: Subtidal, in sandy bottoms. Soft parts of species of interest to fisheries. Consumed locally.


Similar families occurring in the area

Melongenidae: shell pear-shaped to fusiform, usually with sculpture of spines or nodules on shoulder; periostracum usually thick; parietal shield usually smooth; operculum claw-shaped, heavy, horny.


Ranellidae: shell usually large, heavy, sculpture a combination of strong spiral elements such as cords and axial varices; outer lip internally with strong indentations; periostracum sometimes very well developed, hairy, or fringe-like; operculum heavy, horny.



List of species of interest to fisheries occurring in the area

The symbol  is given when species accounts are included.

 *Fasciolaria tulipa* (Linnaeus, 1758).

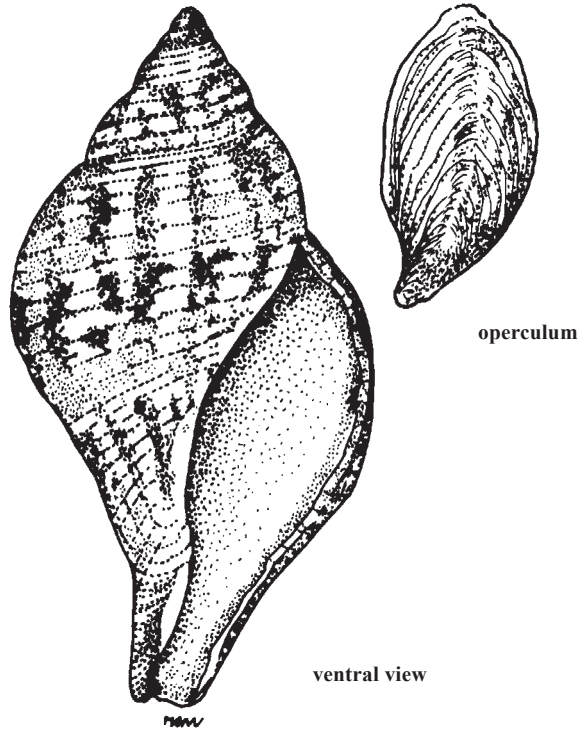
 *Pleuroploca gigantea* (Kiener, 1840).

Fasciolaria tulipa (Linnaeus, 1758)

FST

Frequent synonyms / misidentifications: None / None.

FAO names: **En** - True tulip; **Fr** - Fasciolaire tulipe; **Sp** - Tulipán verdadero.

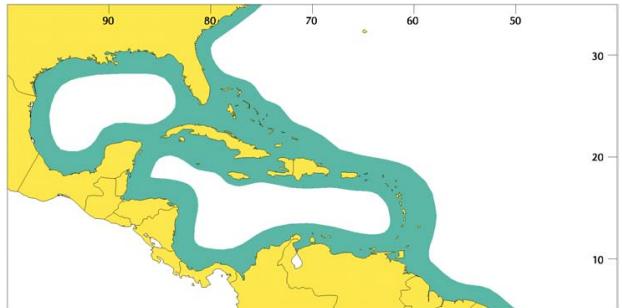


Diagnostic characters: Shell fusiform with about 9 rounded whorls. Surface smooth, except for very fine growth lines. Outer lip thin, with fine denticles on inner edge. Operculum thick, heavy. **Colour:** extremely variable, cream, light brown, to reddish orange with irregular blotches of darker brown, white, or cream. Brown spiral lines present. Living animal is bright orange.

Size: To 200 mm.

Habitat, biology, and fisheries: On seagrass bottoms and sand flats. Collected by divers, consumed locally raw or boiled.

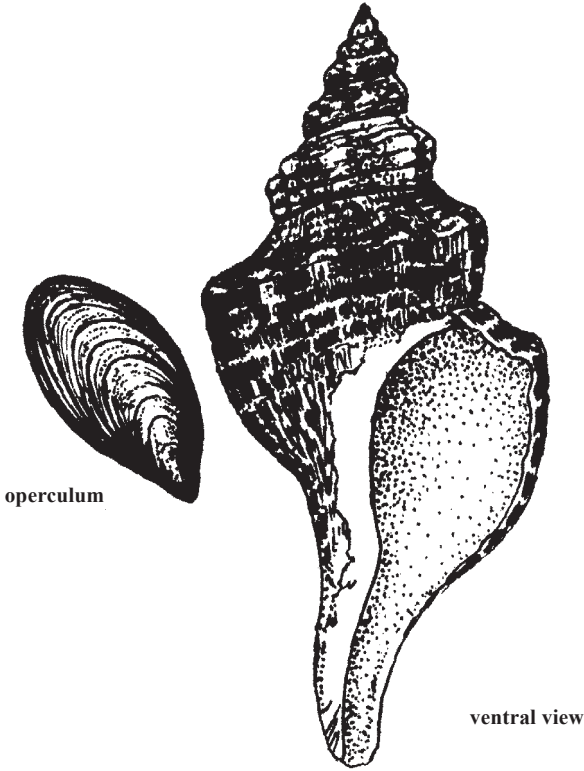
Distribution: North Carolina through Florida to Texas, and Caribbean to Brazil.



***Pleuroploca gigantea* (Kiener, 1840)**

Frequent synonyms / misidentifications: None / *Turbinella angulata* (Lightfoot ,1786).

FAO names: **En** - Florida horse conch (AFS: Horse conch); **Fr** - Pleuroploque géant; **Sp** - Concha gigante.



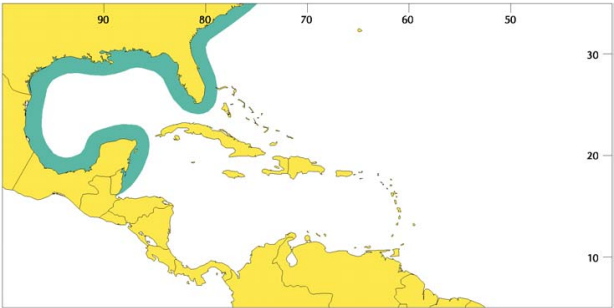
Diagnostic characters: Shell large, with up to 10 whorls. Sculpture of about 5 to 7 spiral cords and weak axial ribs that sometimes form knobs on whorl shoulders. Columella with 3 plications. Periostracum sometimes flaky. **Colour:** shell greyish white to salmon orange, usually orange in younger specimens; periostracum dark brown to light tan.

Size: To 600 mm.

Habitat, biology, and fisheries: Intertidal to shallow subtidal, on sand and mud flats and sea-grass beds. Broad, muscular foot is locally consumed in northwestern Mexico.

Distribution: North Carolina through Florida to Texas and Gulf of Mexico to Yucatán.

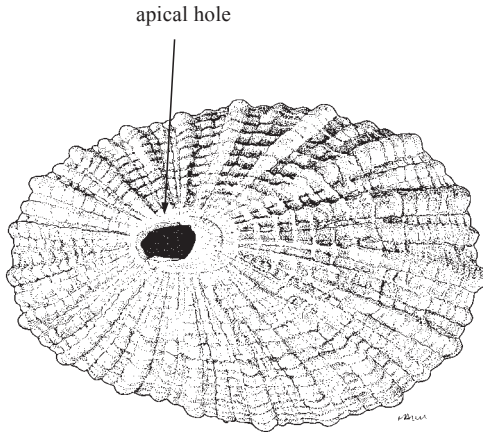
Remarks: This is the largest gastropod in American waters, and the Florida State Shell. A variety lacking nodules known as 'knobless wonder' can be found in southwestern Florida.



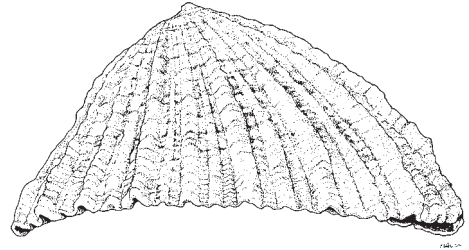
FISSURELLIDAE

Keyhole limpets

Diagnostic characters: Shell conical, usually with apical hole, sometimes with anterior slit. Shell sculpture usually radial, sometimes crossed by concentric elements. Shell internally glossy, porcellanous. Shell muscle (and scar on shell) horseshoe-shaped.



dorsal view



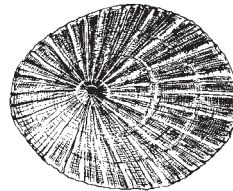
lateral view

Habitat, biology, and fisheries: On rocky coasts or other intertidal or shallow subtidal hard substrates. Consumed locally, boiled.

Similar families occurring in the area

Lottiidae: shell conical, sculpture essentially radial; interior with horseshoe-shaped muscle scar; no operculum; a single true gill in the mantle cavity.

Siphonariidae: easily distinguishable from most Fissurellidae by lack of apical hole; differ anatomically by the presence of a single true gill in the mantle cavity.

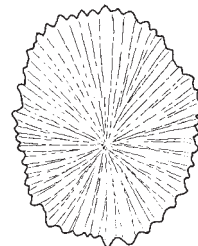


dorsal view

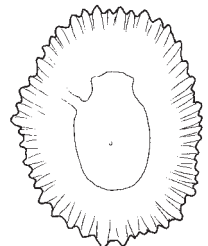


lateral view

Lottiidae



dorsal view



ventral view


Siphonariidae

List of species of interest to fisheries occurring in the area

The symbol  is given when species accounts are included.

 *Diodora listeri* (d'Orbigny, 1842).

 *Fissurella barbadensis* (Gmelin, 1791).

 *Fissurella nimbosa* (Linnaeus, 1758).

References

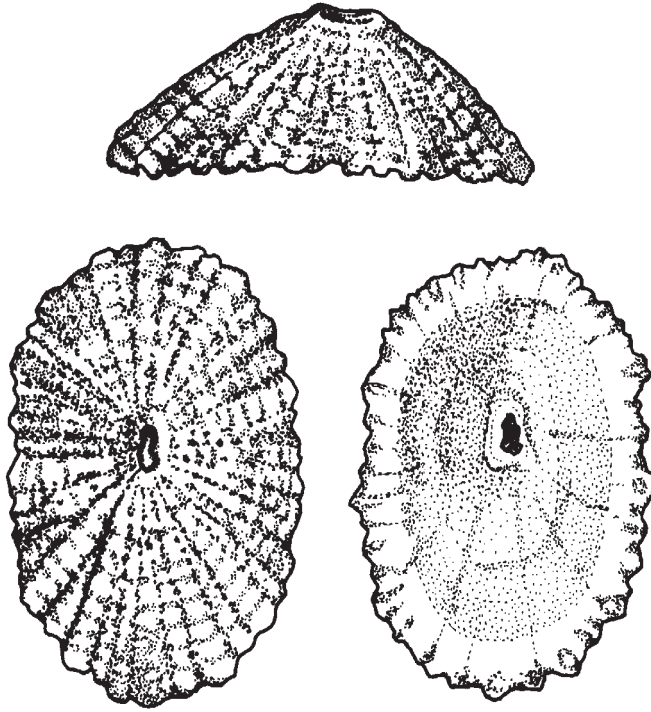
- Farfante, I.P. 1943a. The genera *Fissurella*, *Lucapina* and *Lucapinella* in the western Atlantic. *Johnsonia*, 1(10):1-20.
Farfante, I.P. 1943b. The genus *Diodora* in the western Atlantic. *Johnsonia*, 1(11):1-20.

Diodora listeri (d'Orbigny, 1842)

DDL

Frequent synonyms / misidentifications: None / *Diodora cayenensis* (Lamarck, 1822), *Fissurella barbadensis* (Gmelin, 1791).

FAO names: **En** - Lister's keyhole limpet; **Fr** - Fissurelle de Lister; **Sp** - Fisurela de Lister.

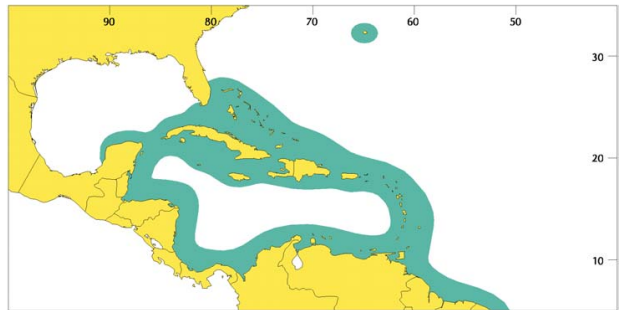


Diagnostic characters: Shell of medium size, elliptical. Sculpture of alternating large and small ribs, with a riblet in the interspaces (total of 3 rib sizes) crossed by distinct concentric cords. Margin crenulated. Orifice keyhole-shaped. Distinguished from *Diodora cayenensis* by much coarser sculpture and alternating large and small radial ribs. **Colour:** cream to grey with darker radial bands.

Size: To 45 mm.

Habitat, biology, and fisheries: On rocky and other hard substrates, present in coral reef environments. Consumed locally, boiled.

Distribution: Southern Florida, Caribbean, to Brazil, and Bermuda.

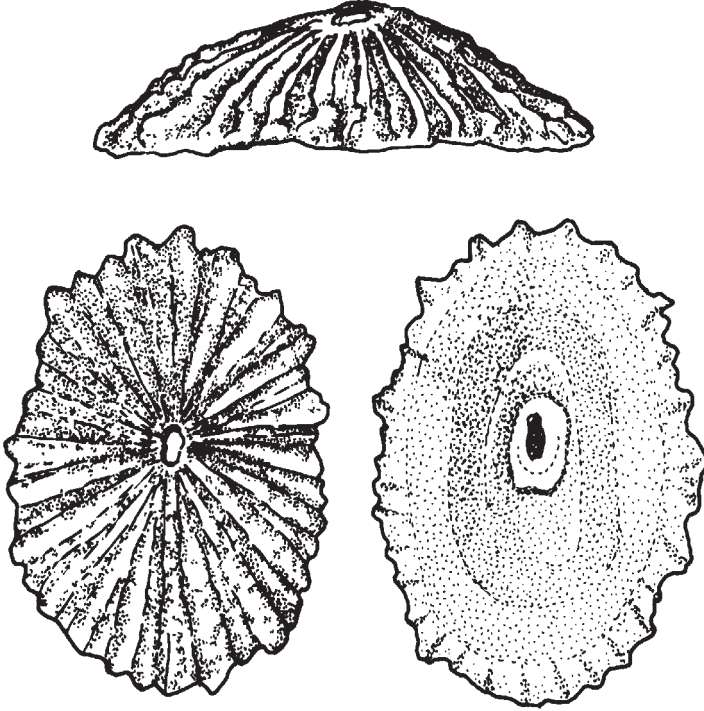


Fissurella barbadensis (Gmelin, 1791)

FSB

Frequent synonyms / misidentifications: None / *Diodora listeri* (d'Orbigny, 1842)

FAO names: **En** - Barbados keyhole limpet; **Fr** - Fissurelle de Barbados; **Sp** - Lapa de Barbados.

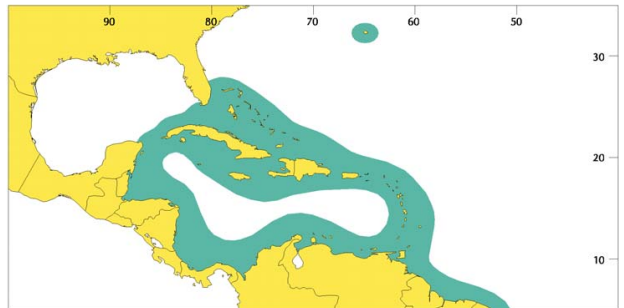


Diagnostic characters: Shell of medium size, elliptical. Sculpture of irregular, coarse, radial ribs. Margin irregular. Orifice almost circular. **Colour:** greyish to pinkish white, usually with purplish blotches and lines between ribs. Internally with green and whitish concentric bands. Border of orifice internally deep green.

Size: To 38 mm.

Habitat, biology, and fisheries: Intertidal on rocky substrates. Consumed locally boiled or in stews.

Distribution: Southern Florida, Caribbean, to Brazil; Bermuda.

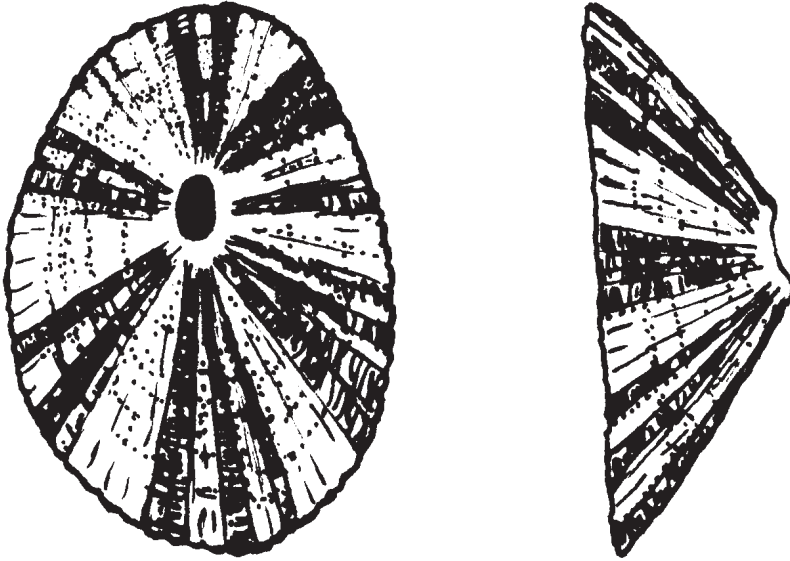


Fissurela nimbosa (Linnaeus, 1758)

FSM

Frequent synonyms / misidentifications: None / None.

FAO names: **En** - Rayed keyhole limpet; **Fr** - Fissurelle rayonnante; **Sp** - Lapa radiante.

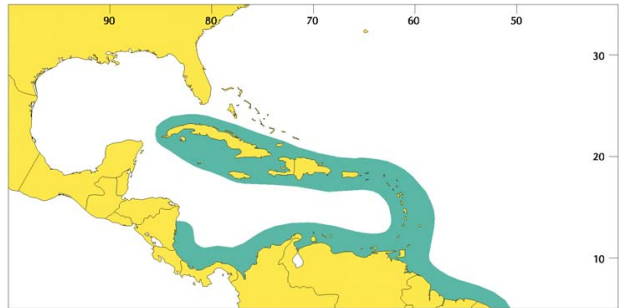


Diagnostic characters: Shell of medium size, elliptical. Sculpture of irregular, radial grooves and narrow, flat ribs, all crossed by fine lines. Margin irregular. Orifice oblong, large, with sides bearing small upward projections. **Colour:** greyish to pinkish white, usually with purplish blotches and lines between ribs. Internally with green and whitish concentric bands. Border of orifice internally deep green.

Size: To 37 mm.

Habitat, biology, and fisheries: On hard substrates. Consumed locally, boiled or in stews.

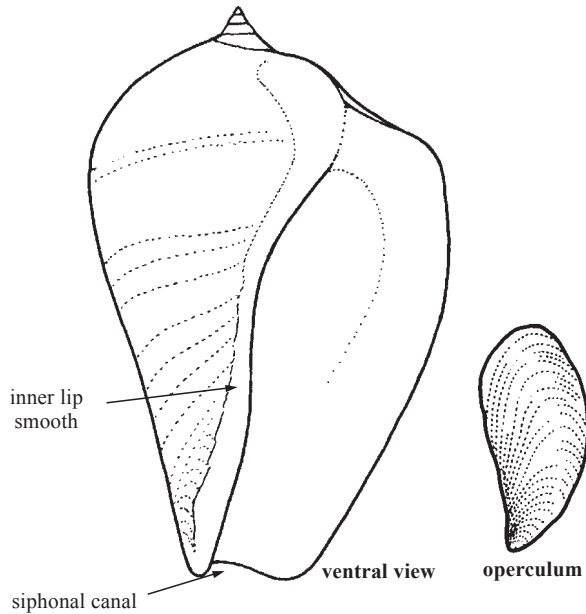
Distribution: Greater Antilles and Caribbean to Brazil.



MELONGENIDAE

Melongenas (whelks, crown conchs)

Diagnostic characters: Shell pear-shaped to fusiform, usually with sculpture of spines or nodules on shoulder. Periostracum usually thick. Parietal shield usually smooth. Operculum claw-shaped, heavy, horny.

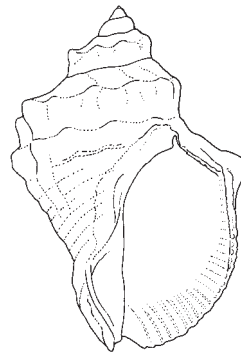


Habitat, biology, and fisheries: Intertidal or shallow subtidal in protected bays, mud flats, or mangrove habitats. Most species of interest to fisheries, consumed locally boiled.

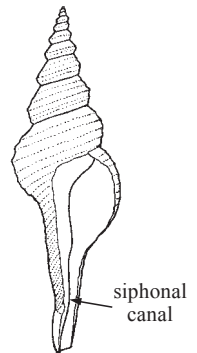
Similar families occurring in the area

Muricidae: shell usually with high spire, shell sculpture with prevailing axial elements such as varices (usually placed at 120° intervals), spines, nodules, lamellae, and others; anterior canal usually well developed; periostracum lacking; operculum thick, horny.

Fascioliariidae: shell large, elongate, spindle-shaped, spire elevated, anterior canal well developed; columellar folds present; operculum thick and horny.



Muricidae




Fascioliariidae

List of species of interest to fisheries occurring in the area

The symbol  is given when species accounts are included.

 *Busycon perversum* (Linnaeus, 1758).

Melongena corona (Gmelin, 1791).

 *Melongena melongena* (Linnaeus, 1758).

 *Pugilina morio* (Linnaeus, 1758).

Reference

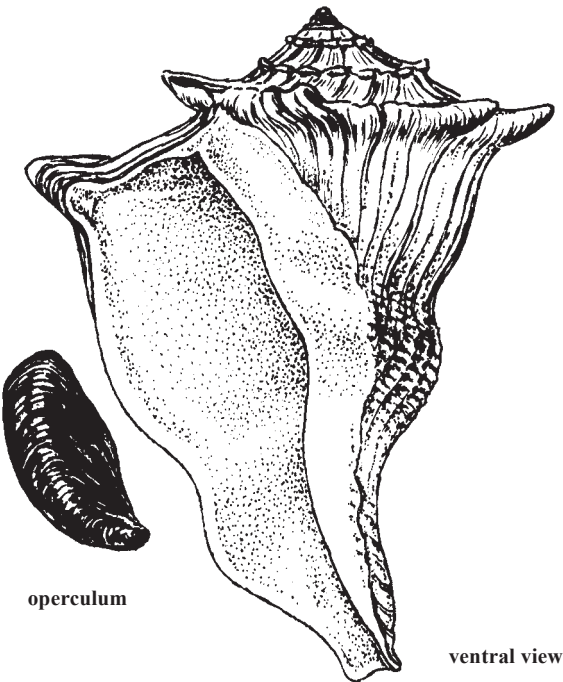
Edwards, A.L. and M.G. Harasewych. 1988. Biology of the Recent species of the subfamily Busyconinae. *J. Shellfish Res.*, 7:467-472.

Busycon perversum (Linnaeus, 1758)

WHX

Frequent synonyms / misidentifications: None / None.

FAO names: En - Perverse whelk; Fr - Busycon peverse; Sp - Busicón peverso.



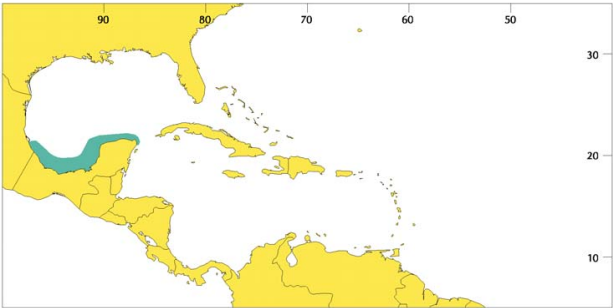
Diagnostic characters: Shell left-handed (or sinistral, coiling to left), heavy, with flattened spire. Shell shoulders with small knobs. **Colour:** tan, shells under 18 cm have axial brown streaks.

Size: To 400 mm.

Habitat, biology, and fisheries: Very common on mud flats and protected bay waters.

Distribution: Campeche to Yucatán, Mexico.

Remarks: May be conspecific with *Busycon sinistrum* Hollister, 1958, from the USA Gulf states and east coast.

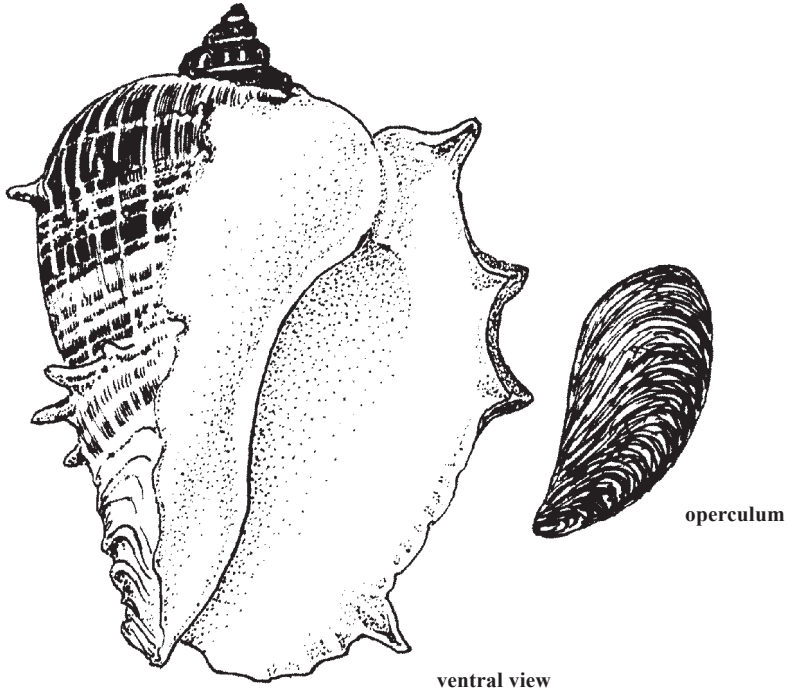


Melongena melongena (Linnaeus, 1758)

NGK

Frequent synonyms / misidentifications: None / None.

FAO names: **En** - West Indian crown conch (AFS: Crown conch); **Fr** - Mélongène des Caraïbes;
Sp - Melongena antillana.

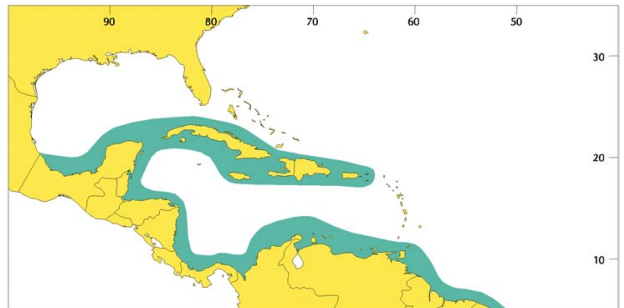


Diagnostic characters: Shell thick, pear-shaped, with large body whorl. Spire short, last few whorls bear single or double rows of spines. Suture deeply channelled. Anterior canal short and broad. Base of shell sometimes with a row of smaller, blunt spines. **Colour:** purplish brown, light grey, or white, with bluish, brownish, or greyish bands.

Size: To 150 mm.

Habitat, biology, and fisheries: Inhabits coastal lagoons, mangroves, river estuaries, and other low-salinity environments. Hand-collected at low tide or by divers. Consumed locally. Shell marketed as ornament or a collectible.

Distribution: Caribbean.

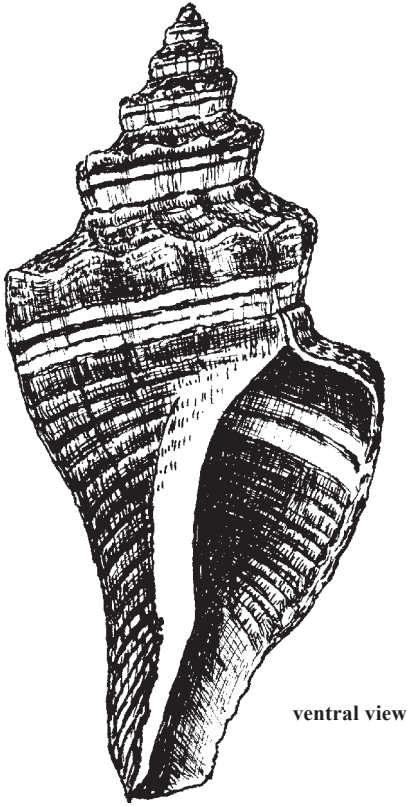


Pugilina morio (Linnaeus, 1758)

UGO

Frequent synonyms / misidentifications: None / None.

FAO names: **En** - Giant hairy melongena (AFS: Hairy melongena); **Fr** - Mélongène noir; **Sp** - Melongena negra.

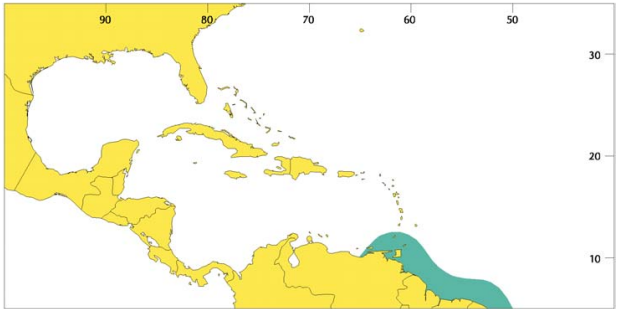


Diagnostic characters: Shell fusiform, spire high, anterior canal well developed, shell surface with sculpture of many fine spiral threads. Shoulder angular, with single row of nodules. Periostracum thick and hairy. **Colour:** chocolate brown to black, with a few contrasting white bands, periostracum brownish.

Size: To 160 mm.

Habitat, biology, and fisheries: Lives on mud and other soft substrates in mangrove areas and near river estuaries. Feeds mainly on carrion.

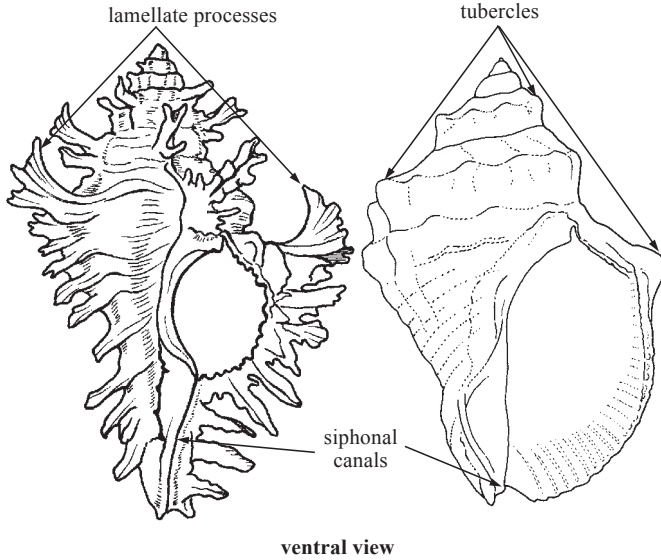
Distribution: Trinidad and Tobago to Brazil, and tropical West Africa.



MURICIDAE

Rock shells (rock snails)

Diagnostic characters: Shell usually with high spire, shell sculpture with prevailing axial elements such as varices (usually placed at 120° intervals), spines, nodules, lamellae, and others. Anterior canal usually well developed. Periostracum lacking. Operculum thick, horny.



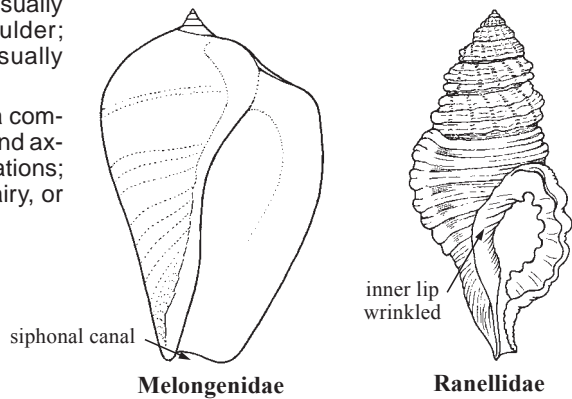
examples showing diversity of shape and sculpture

Habitat, biology, and fisheries: In shallow waters. Active predators, generally feeding on other molluscs and barnacles. Typically, access to the soft parts of the prey is obtained by boring a hole through the shell by means of a softening secretion and then scraping action of the radula. Hand-collected, especially by divers. Marketed and consumed locally. The shell is sold as an ornament.

Similar families occurring in the area

Melongenidae: shell pear-shaped to fusiform, usually with sculpture of spines or nodules on shoulder; periostracum usually thick; parietal shield usually smooth; operculum claw-shaped, heavy, horny.


Ranellidae: shell usually large, heavy, sculpture a combination of strong spiral elements such as cords and axial varices; outer lip internally with strong indentations; periostracum sometimes very well developed, hairy, or fringe-like; operculum heavy, horny.



List of species of interest to fisheries occurring in the area

The symbol  is given when species accounts are included.

 *Chicoreus brevifrons* (Lamarck, 1822).

 *Chicoreus pomum* (Gmelin, 1791).

 *Stramonita haemastoma* (Linnaeus, 1767).

References

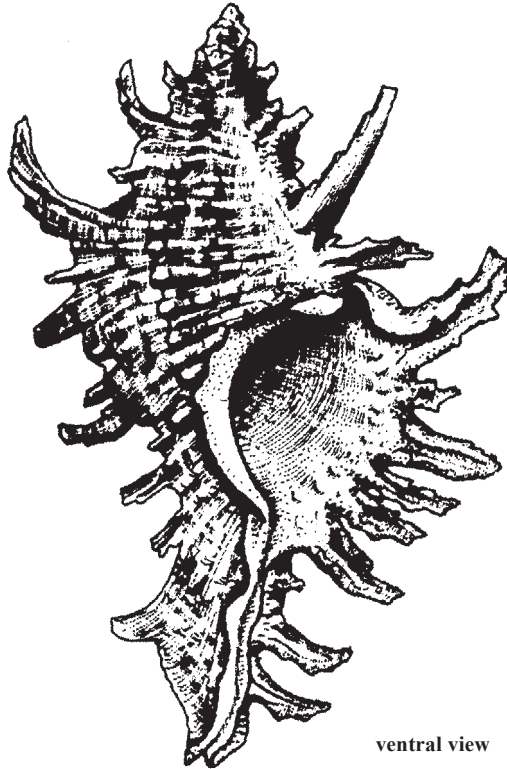
- Houart, R. 1994. *Illustrated catalogue of Recent species of Muricidae named since 1971*. Verlag Crista Hemmen, Wiesbaden, 179 p.
- Kool, S.P. 1987. Significance of radular characters in reconstruction of thaidid phylogeny (Neogastropoda: Muricacea). *The Nautilus*, 101:117-132.
- Radwin, G. and A. D'Attilio. 1976. *Murex shells of the World - An illustrated guide to the Muricidae*. Stanford Univ. Press, 284 p.

Chicoreus brevifrons (Gmelin, 1791)

KSB

Frequent synonyms / misidentifications: *Murex brevifrons* Lamarck, 1822 / *Chicoreus pomum* (Gmelin, 1791); *Chicoreus dilectus* (A. Adams, 1855).

FAO names: **En** - West Indian murex; **Fr** - Rocher antillais; **Sp** - Busano antillano.



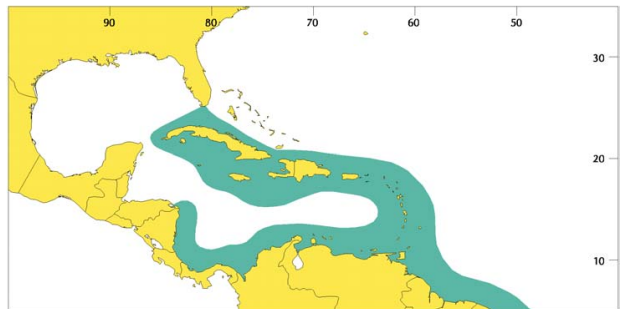
ventral view

Diagnostic characters: Shell elongate, anterior canal well developed, 3 axial varices present on last whorl, varices with foliated spines, surface sculpture of flat spiral cords and cordlets in the interspaces. **Colour:** variable, with dark and pale spiral bands, aperture whitish.

Size: To 150 mm.

Habitat, biology, and fisheries: On mud flats in protected bays and lagoons, near oyster flats, and mangrove environments. Consumed locally raw or boiled.

Distribution: Caribbean to Brazil.

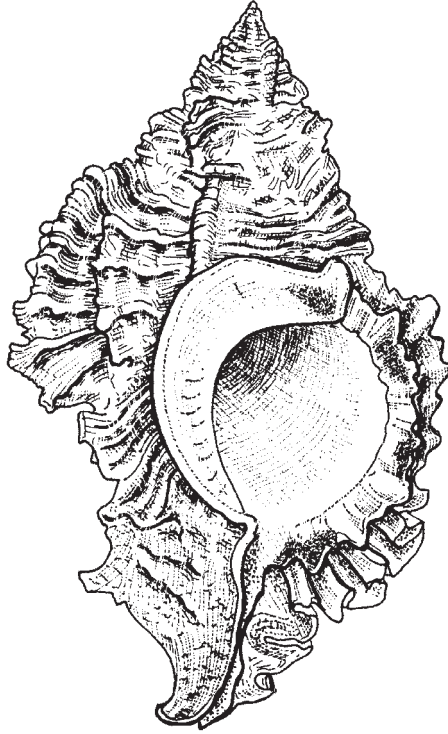


***Chicoreus pomum* (Gmelin, 1791)**

FLO

Frequent synonyms / misidentifications: *Murex pomum* Gmelin, 1791; *Phyllonotus pomum* (Gmelin, 1791) / *Chicoreus oculatus* (Reeve, 1845); *Chicoreus margaritensis* (Abbott, 1958).

FAO names: **En** - Apple murex; **Fr** - Rocher pomme; **Sp** - Busano manzanero.



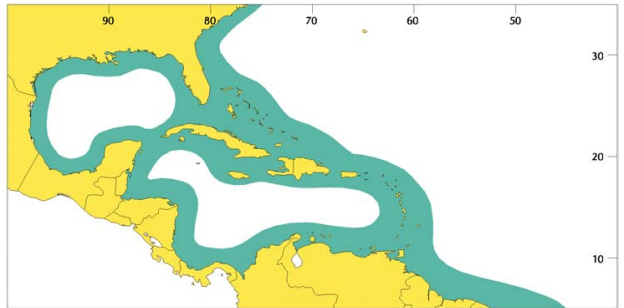
ventral view

Diagnostic characters: Shell heavy, thick, with rough surface. Sculpture of numerous spiral cords and axial ribs, spines absent. Varices strong but spineless. Siphonal canal curved. **Colour:** tan to brown, outer lip with 3 or 4 dark blotches. Aperture glossy, ivory, buff, salmon, or yellow, with dark brown spot on apical end of parietal wall.

Size: To 125 mm.

Habitat, biology, and fisheries: On soft and hard bottoms, along a wide depth range (from 0 to 200 m). Predator feeding on bivalves; performs communal spawning. Consumed locally, raw or boiled.

Distribution: North Carolina to Florida and Caribbean to Brazil.



***Stramonita haemastoma* (Linnaeus, 1767)**

Frequent synonyms / misidentifications: *Thais haemastoma* (Linnaeus, 1767) / *Stramonita rustica* (Lamarck, 1822).

FAO names: **En** - Red-mouthed rock shell (AFS: Rock snail); **Fr** - Pourpre haemastoma; **Sp** - Púrpura de boca roja.



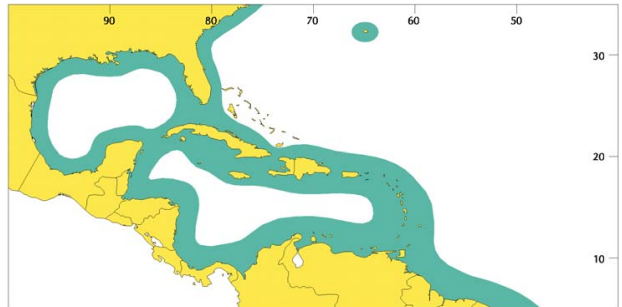
ventral view

Diagnostic characters: Shell solid, elongate. Shell sculpture of fine spiral lines with weak axial growth lines. Last whorls sometimes with nodules on shoulder. **Colour:** variable, light grey, yellowish, or tan, usually mottled or checkered with darker brown, greyish, or orange marks.

Size: To 80 mm.

Habitat, biology, and fisheries: On all kinds of hard substrates, intertidal to subtidal. Active predator on oyster and mussel beds.

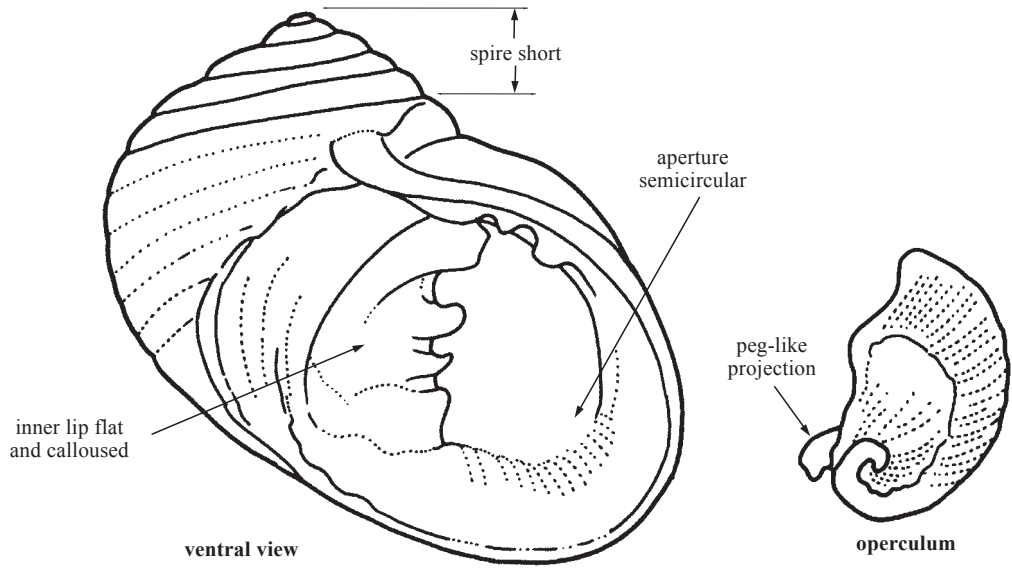
Distribution: North Carolina to Florida, Caribbean to Brazil, Bermuda, and tropical West Africa.



NERITIDAE

Nerites

Diagnostic characters: Shell globose, thick, sculpture usually with strong spiral elements such as cords and threads. Aperture D-shaped, posterior part of outer lip and parietal region usually with strong indentations. Operculum calcareous, with projecting peg on internal edge.




Habitat, biology, and fisheries: Intertidal on rocky coasts. Consumed locally, boiled.

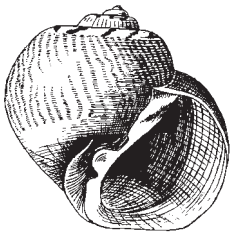
Similar families occurring in the area

Naticidae: shell globular to ovate-conical; outer surface smooth or with reduced sculpture; aperture large, semicircular; siphonal canal absent; umbilicus open or closed, sometimes with an internal rib; operculum corneous or calcified.

List of species of interest to fisheries occurring in the area

The symbol  is given when species accounts are included.

 *Nerita peloronta* Linnaeus, 1758.



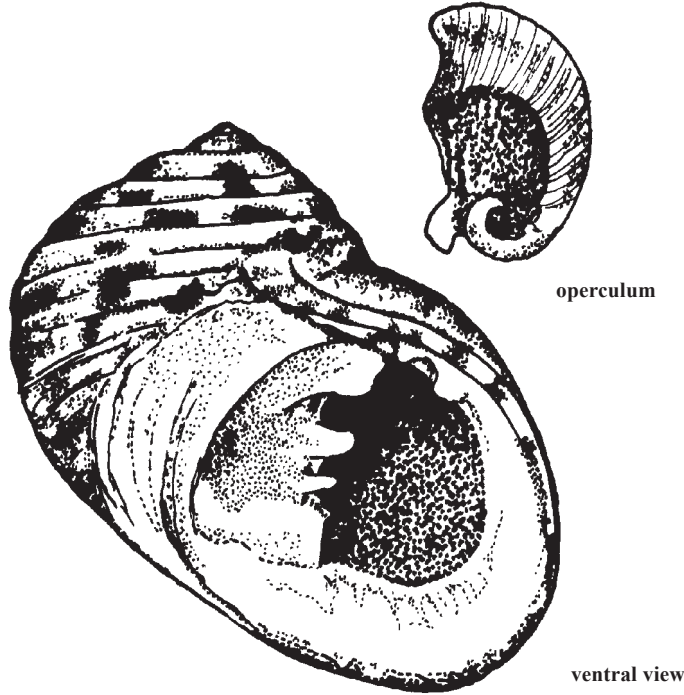
ventral view
Naticidae

Nerita peloronta Linnaeus, 1758

NJE

Frequent synonyms / misidentifications: None / *Nerita tessellata* Gmelin, 1791; *Nerita fulgurans* Gmelin, 1791.

FAO names: **En** - Bleeding tooth; **Fr** - Néríte dent saignant; **Sp** - Nerita diente sangrante.

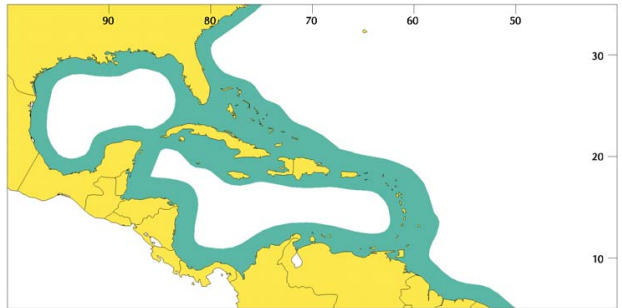


Diagnostic characters: Shell solid, globular, sculpture of strong spiral cords fading out on last whorl. Aperture large, inner lip with 1 to 3 white tooth-like projections, with blood red blotch, outer lip finely crenulated. **Colour:** shell colour yellowish mottled with red and black.

Size: To 40 mm.

Habitat, biology, and fisheries: Inhabits rocky coasts in intertidal zones, usually in high-energy environments. Known to exhibit 'homing' behaviour, moving in search of shelter during the day and foraging at night. Hand-collected, consumed locally, mainly in chowders, stews, and soups.

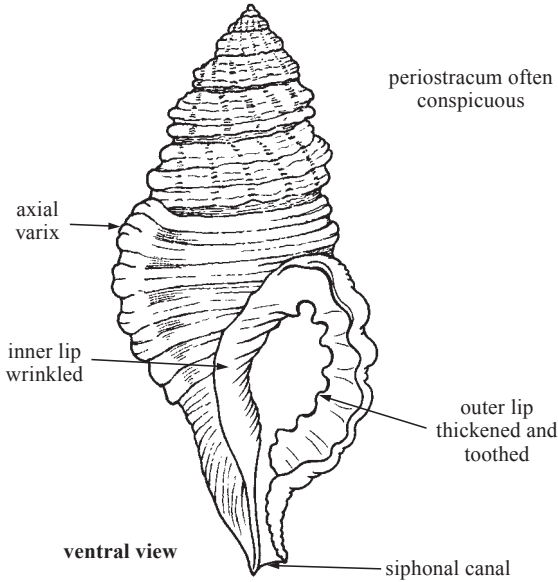
Distribution: North Carolina to Florida and Caribbean to Brazil.



RANELLIDAE

Triton shells

Diagnostic characters: Shell usually large, heavy, sculpture a combination of strong spiral elements such as cords and axial varices. Outer lip internally with strong indentations. Periostracum sometimes very well developed, hairy, or fringe-like. Operculum heavy, horny.



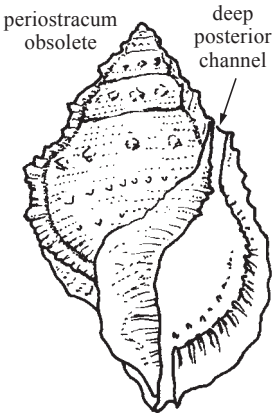
Habitat, biology, and fisheries: Species of interest to fisheries inhabit shallow-water environments. Consumed locally, raw or cooked. Shells marketed as souvenirs, collectibles, or ornaments.

Remarks: Formerly referred to as Cymatiidae.

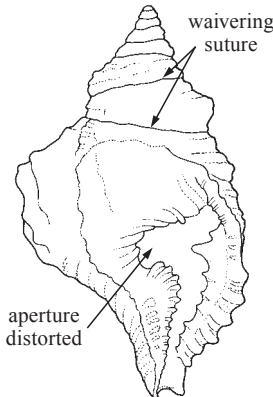
Similar families occurring in the area

Bursidae: periostracum obsolete to absent; aperture with a deep posterior canal.

Personidae: spire whorls irregular, with a wavering suture; aperture distorted; inner lip strongly sinuous, with an extensive, shield-like callus.




ventral view
Bursidae



ventral view
Personidae

List of species of interest to fisheries occurring in the area

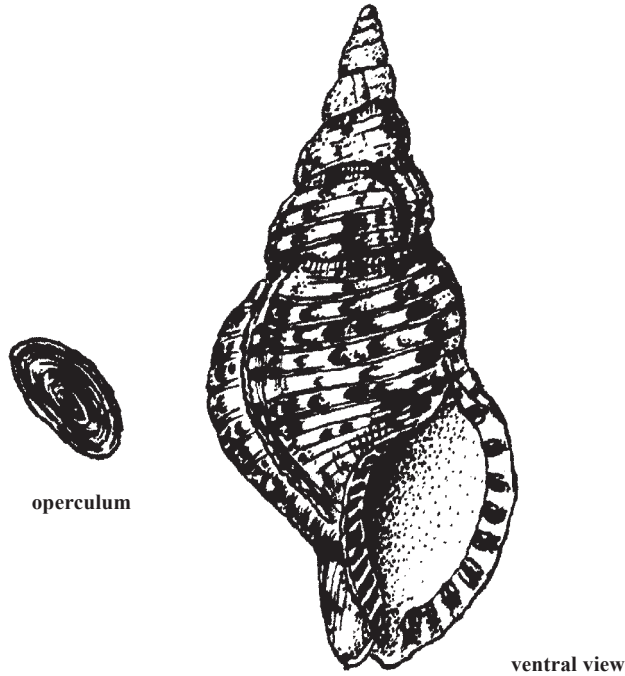
The symbol  is given when species accounts are included.

 *Charonia variegata* (Lamarck, 1816).

***Charonia variegata* (Lamarck, 1816)**

Frequent synonyms / misidentifications: *Charonia tritonis variegata* (Lamarck, 1816) / None.

FAO names: **En** - Atlantic triton's trumpet; **Fr** - Triton de l'Atlantique; **Sp** - Tritón Atlántico.



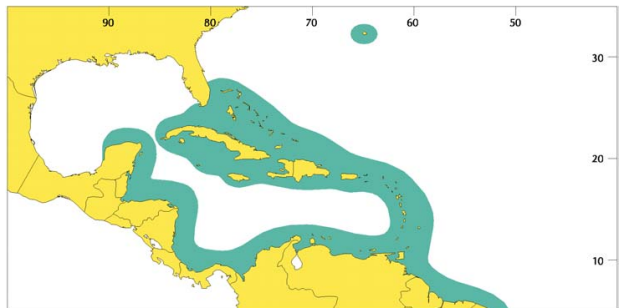
Diagnostic characters: Shell elongate, large, heavy. Spire pointed, elongate. Anterior canal very short. Varices present on last whorls. Parietal region with narrow dark brown inner lip covered by regularly spaced, spirally oriented, white, cord-like plicae. Outer lip internally with pairs of fine white teeth superimposed on square blotches of dark brown colour. **Colour:** cream white with brown markings, usually crescent-shaped.

Size: To 330 mm.

Habitat, biology, and fisheries: Shallow subtidal, collected by divers, consumed locally raw or boiled. Shell sold as collectible or souvenir.

Distribution: Southeastern Florida, Caribbean to Brazil, and Bermuda.

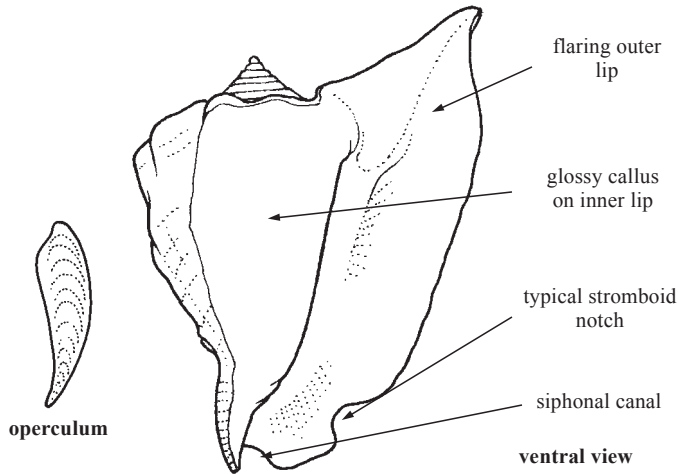
Remarks: Referred to elsewhere as *Charonia tritonis variegata*; however, specific status of the taxon is currently well accepted amongst specialists.



STROMBIDAE

Conchs (stromb conchs)

Diagnostic characters: Shell usually large, thick, heavy, with large last whorl. Shell sculpture consists of a row of spines, nodules, or knobs on shoulder. Aperture with flaring outer lip in mature individuals. Stromboid notch usually well developed, near short, opened anterior canal. Parietal region with heavy, glazed callus. Operculum sickle-shaped, sometimes serrated along outer edge. Foot narrow, elongate, used for leaping. Eyes at the distal end of long stalks.



Habitat, biology, and fisheries: On sandy bottoms, usually in areas of large concentration of brown seaweeds and/or seagrass beds. Most species consumed locally, with at least 1 species (*Strombus gigas*) of great economic importance to fisheries.

Similar families occurring in the area

None.

List of species of interest to fisheries occurring in the area

The symbol 🐚 is given when species accounts are included.

🐚 *Strombus costatus* Gmelin, 1791.

🐚 *Strombus gigas* Linnaeus, 1758.

🐚 *Strombus pugilis* Linnaeus, 1758.

References

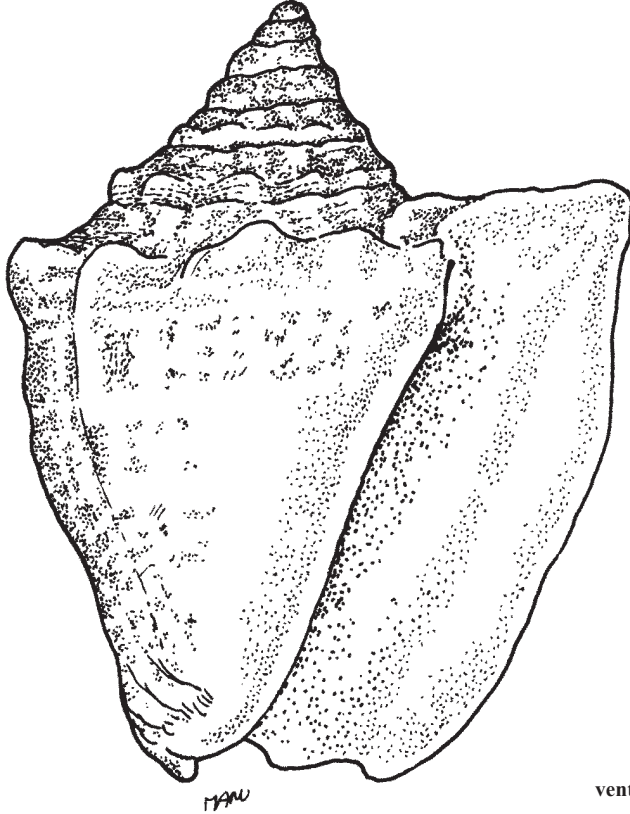
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- Tewfik, A., H.M. Guzmán, and G. Jácome. Assessment of the queen conch *Strombus gigas* (Gastropoda: Strombidae) population in Cayos Cochinos, Honduras. *Rev. Biol. Trop.*, 46(4):137-150.

Strombus costatus Gmelin, 1791

MBQ

Frequent synonyms / misidentifications: None / *Strombus gigas* Linnaeus, 1758, *Strombus goliath* Schröter, 1805.

FAO names: **En** - Milk conch; **Fr** - Strombe laiteux; **Sp** - Cobo lechoso.



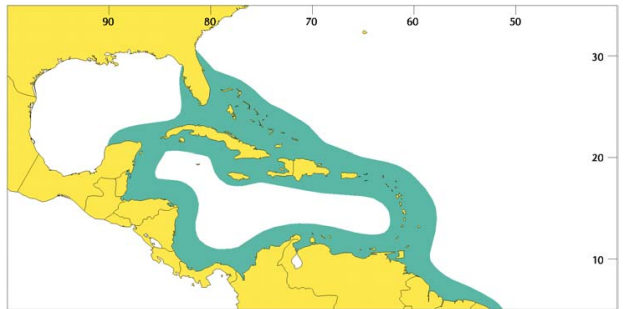
ventral view

Diagnostic characters: Shell of medium size, shape extremely variable, sculpture of projecting nodules on shoulder. Aperture flared in mature specimens, sometimes with very thick lip. **Colour:** internal shell white, sometimes glazed or metallic-like; shell externally cream to brown, frequently flecked with other hues.

Size: To 160 mm.

Habitat, biology, and fisheries: Lives on sand in meadows of seagrass or, less frequently, brown algae. Development includes a long-lasting, planktotrophic stage. Consumed locally and exploited commercially in parts of the area.

Distribution: Southern Florida, southern Gulf of Mexico, Caribbean to Brazil, and Bermuda.

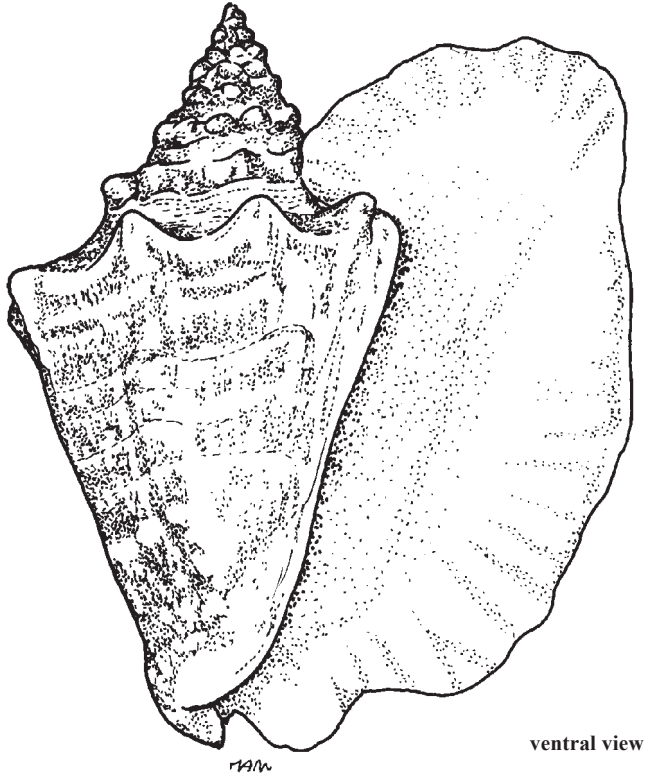


Strombus gigas Linnaeus, 1758

COO

Frequent synonyms / misidentifications: None / *Strombus goliath* Schröter, 1805, *Strombus costatus* Gmelin, 1791.

FAO names: **En** - Pink conch (AFS: Queen conch); **Fr** - Strombe rosé; **Sp** - Cobo rosado.



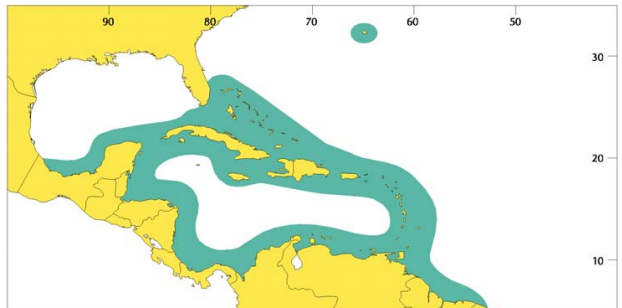
ventral view

Diagnostic characters: Shell large, with relatively large spire, flared outer lip with posterior expansion projecting well beyond spire length. Spire taller than other species in genus. Sculpture of sharp knobs along shoulder. **Colour:** pale tan with thin brown periostracum. Internal shell colour deep pink.

Size: To 300 mm.

Habitat, biology, and fisheries: Lives on sand near seagrass beds, between depths of 2 and 15 m. Unquestionably the more valued and exploited gastropod species in area. The fisheries have grown exponentially in the last 30 years, with resulting declines in population and area closures. The species has been included on appendix 2 of CITES (Convention on the International Trade of Endangered Species). International trade is allowed only from nations in which the populations of the species are not under threat from commercial fishing. Collection/fisheries banned at least in the USA and in the state of Yucatán, Mexico. Stock severely depleted in several Caribbean nations.

Distribution: Southeastern Florida, Caribbean; Bermuda.

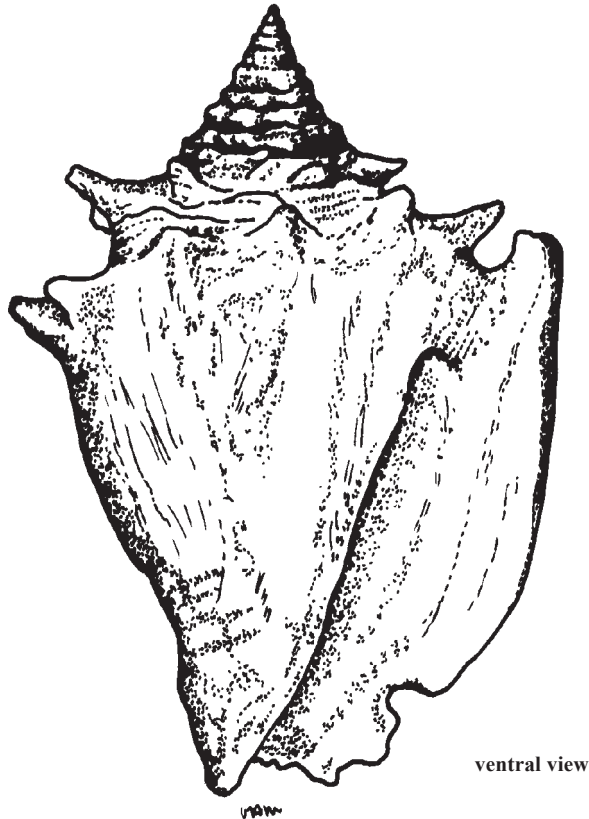


Strombus pugilis Linnaeus, 1758

RXU

Frequent synonyms / misidentifications: None / *Strombus alatus* Gmelin, 1791.

FAO names: **En** - Fighting conch (AFS: West Indian fighting conch); **Fr** - Strombe combattant; **Sp** - Cobo luchador.

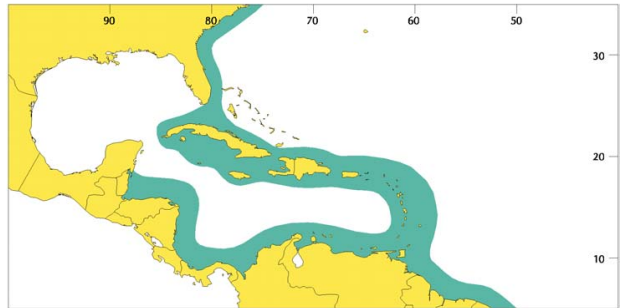


Diagnostic characters: Shell solid, with large last whorl and small, pointed spire. Whorls with single row of nodulose spines on periphery; spines larger on last whorl. Anterior and 'stromboid' notches present. Posterior angle of outer lip distinct, projected in posterior direction. Operculum sickle-shaped, animal with elongate foot used for leaping. **Colour:** variable, from yellowish to light or dark orange, interior of aperture white, anterior end dark purple.

Size: To 130 mm.

Habitat, biology, and fisheries: Lives on sandy bottoms. Development includes a long-lasting, planktotrophic stage. Consumed locally, boiled, exploited commercially in parts of the area.

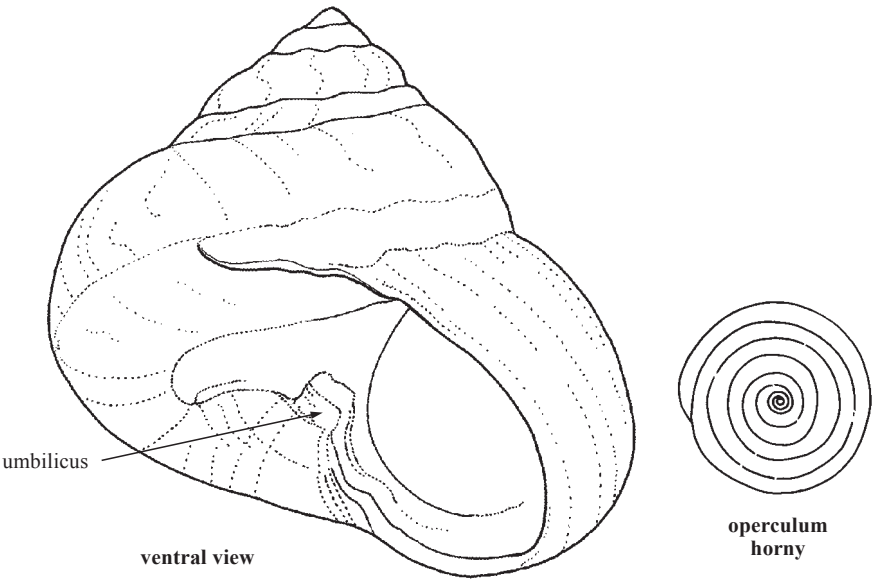
Distribution: Southeastern Florida, Caribbean, Bermuda.



TROCHIDAE

Top shells

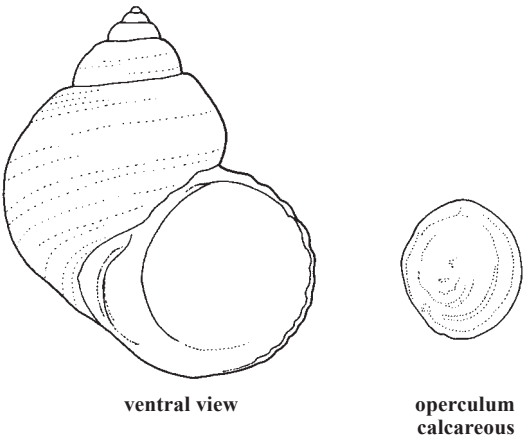
Diagnostic characters: Shell conical to globose, usually with a flattened base, umbilicus present. Aperture usually rounded, siphonal canal lacking. Shell internally nacreous. Operculum horny, multispiral.



Habitat, biology, and fisheries: Species of interest to fisheries live on hard substrates and shell/coral rubble. *Cittarium pica* is an important fisheries resource that is quickly being extirpated due to over exploitation in many parts of the area.


Similar families occurring in the area


Turbinidae: shell heavy, thick, sculpture variable; aperture rounded, internally nacreous, anterior canal lacking; operculum calcified but internally horny.



Turbinidae

List of species of interest to fisheries occurring in the area

The symbol  is given when species accounts are included.

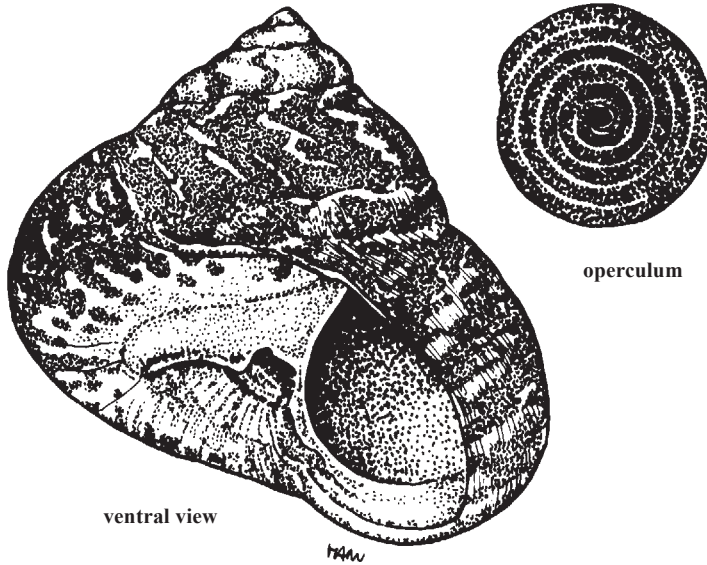
 *Cittarium pica* (Linnaeus, 1758).

Cittarium pica (Linnaeus, 1758)

KUI

Frequent synonyms / misidentifications: None / None.

FAO names: **En** - West Indian top shell; **Fr** - Troque des Antilles; **Sp** - Burgado antillano.

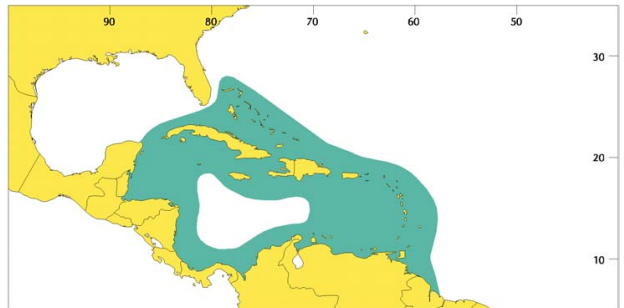


Diagnostic characters: Shell large, heavy, conical, with rounded shoulders. Umbilicus deep and round, operculum multispiral, circular. **Colour:** purple-black on a whitish background; aperture white, internally nacreous; operculum iridescent brown.

Size: To 100 mm.

Habitat, biology, and fisheries: Shallow subtidal, on rocks and shell rubble. Collected by divers. Commercially exploited in entire area of distribution, but stocks have been locally extirpated or are diminishing due to over exploitation.

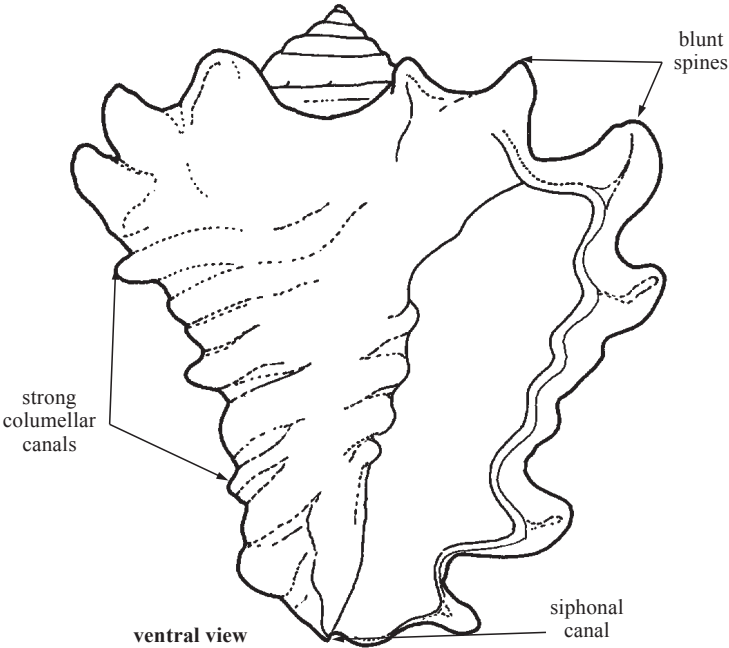
Distribution: Caribbean.



TURBINELLIDAE

Vase shells

Diagnostic characters: Shell very thick and heavy, fusiform. Sculpture of large nodules or blunt spines. Anterior canal and columellar folds well developed. Periostracum conspicuous, thick. Operculum heavy, horny.

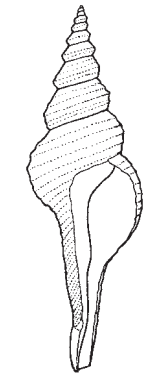


Habitat, biology, and fisheries: Intertidal to shallow subtidal, on rocky bottoms, often in coral reef areas. Consumed locally (mainly foot), boiled or in stews.

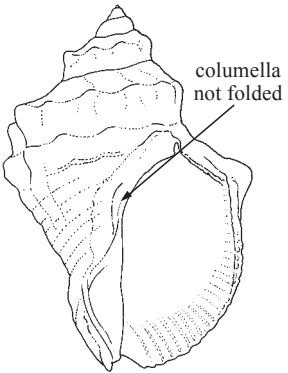
Similar families occurring in the area

Fascioliariidae: shell large, elongate, spindle-shaped, spire elevated, anterior canal well developed; columellar folds present; operculum thick and horny.

Muricidae: shell usually with high spire, shell sculpture with prevailing axial elements such as varices (usually placed at 120° intervals), spines, nodules, lamellae, and others; anterior canal usually well developed; periostracum lacking; operculum thick, horny.



ventral view
Fascioliariidae



ventral view
Muricidae

List of species of interest to fisheries occurring in the area

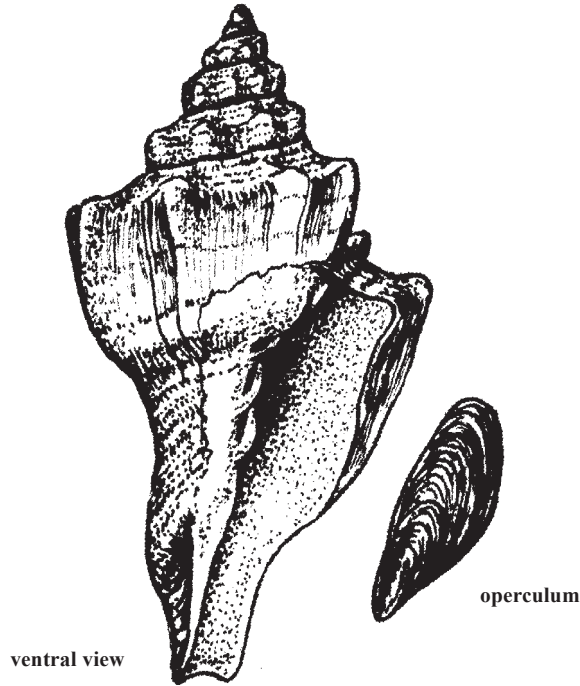
The symbol  is given when species accounts are included.

 *Turbinella angulata* (Lightfoot, 1786).

***Turbinella angulata* (Lightfoot, 1786)**

Frequent synonyms / misidentifications: None / *Pleuroploca gigantea* (Kiener, 1840).

FAO names: **En** - West Indian chank; **Fr** - Chanque antillais; **Sp** - Chanque antillano.



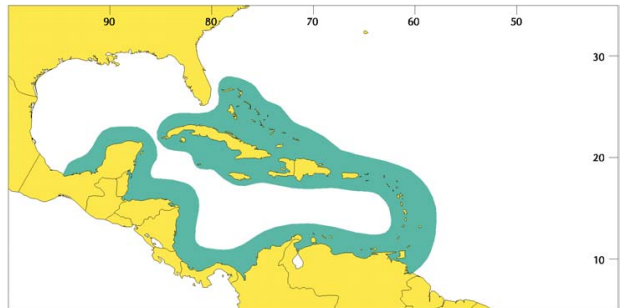
Diagnostic characters: Shell very large, heavy, fusiform. Sculpture of 8 to 10 prominent ribs angled at shoulder, 8 to 10 on last whorl. Columella with 3 strong folds. **Colour:** white, internally tinged with pink or orange.

Size: To 350 mm.

Habitat, biology, and fisheries: Consumed locally, boiled.

Distribution: Caribbean: Bahamas, northern Cuba, and Yucatán to Panama.

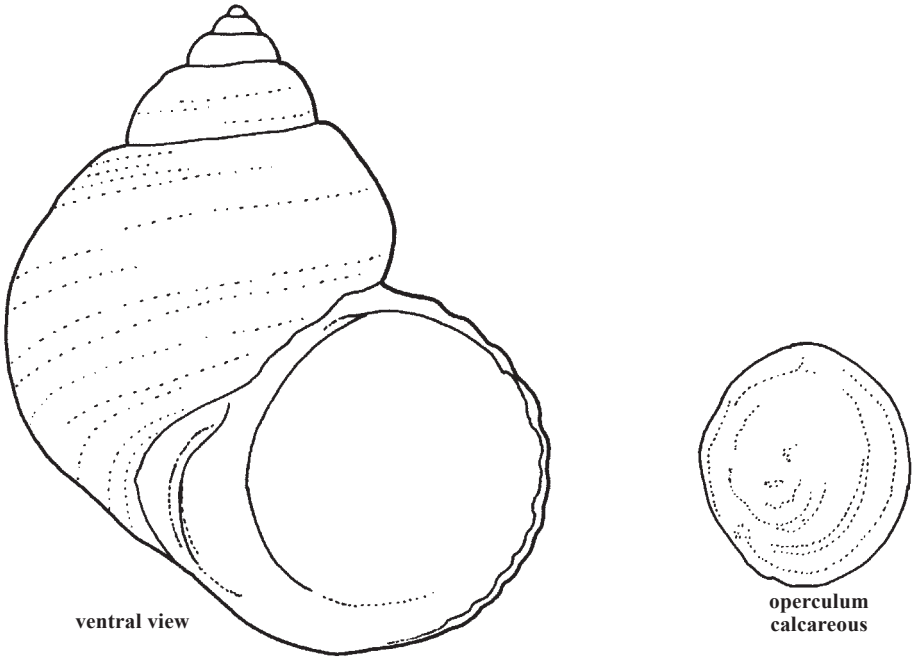
Remarks: This is one of the largest gastropods in the Atlantic Ocean.



TURBINIDAE

Turban shells

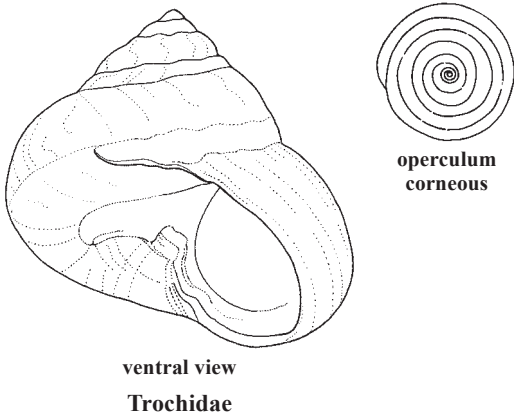
Diagnostic characters: Shell heavy, thick, sculpture variable. Aperture rounded, internally nacreous, anterior canal lacking. Operculum calcified but internally horny.



Habitat, biology, and fisheries: On hard substrates or seagrass beds. Species of interest to fisheries is consumed locally, boiled.



Similar families occurring in the area

Trochidae: shell conical to globose, usually with a flattened base, umbilicus present; aperture usually rounded, siphonal canal lacking; shell internally nacreous; operculum horny, multispiral.



List of species of interest to fisheries occurring in the area

The symbol  is given when species accounts are included.

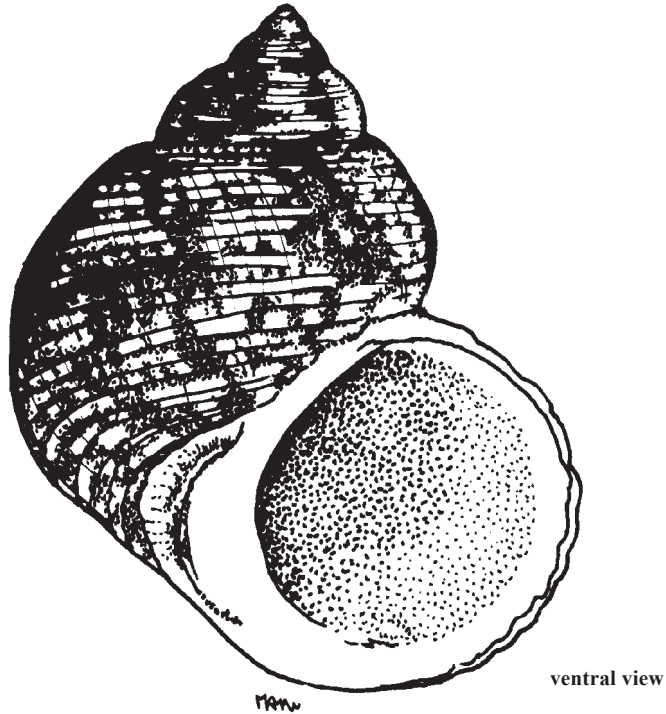
-  *Turbo canaliculatus* Hermann, 1781.
-  *Turbo castanea* Gmelin, 1791.

Turbo canaliculatus Hermann, 1781

UBN

Frequent synonyms / misidentifications: None / *Turbo castanea* Gmelin, 1791; *Cittarium pica* (Linnaeus, 1758).

FAO names: **En** - Channelled turban; **Fr** - Turban canaliculé; **Sp** - Turbante acanalado.

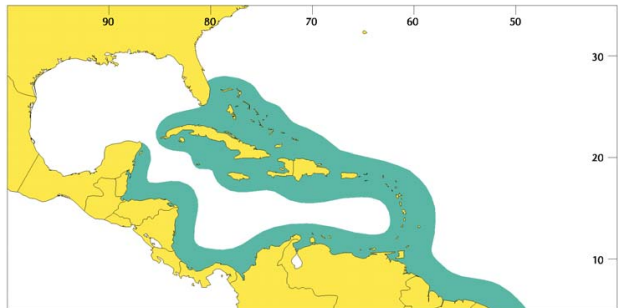


Diagnostic characters: Shell rounded, turbanate, shell base convex, umbilicus small. Sculpture consisting of low, smooth spiral cords (16 to 19 on last whorl). Deep groove present below suture. Operculum circular, smoothish. **Colour:** variable, glossy yellowish to orange to red, with irregular markings.

Size: To 75 mm.

Habitat, biology, and fisheries: On rocks, near seaweeds, in subtidal to 120 m. Consumed locally, boiled, represents a species of potential economic importance.

Distribution: Southeastern Florida and Caribbean to Brazil.

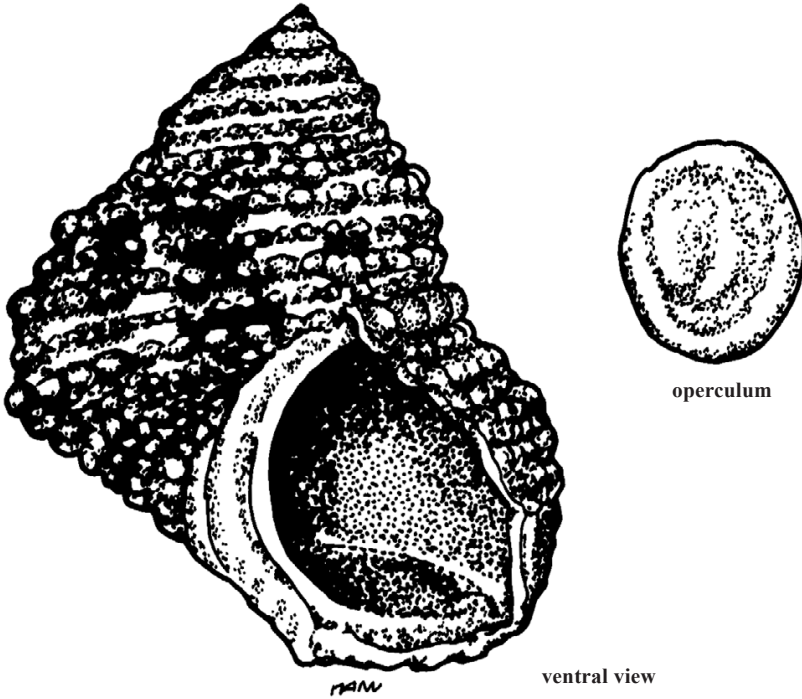


Turbo castanea Gmelin, 1791

UOT

Frequent synonyms / misidentifications: None / *Turbo canaliculatus* Hermann, 1781.

FAO names: En - Chestnut turban; Fr - Turban marron; Sp - Turbante castaña.



Diagnostic characters: Shell turbanate. Sculpture of spiral rows of beads, sometimes with small spines on whorl shoulders. **Colour:** tan to light brown, with patches of brown, reddish brown, and cream.

Size: To 38 mm.

Habitat, biology, and fisheries: On sand and shell and coral rubble, in shallow subtidal. Consumed locally, boiled, represents a species of potential economic importance.

Distribution: North Carolina through Florida to Texas and Caribbean to Brazil.

