

BIVALVES

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GENERAL REMARKS

The Bivalvia is the second most speciose class in the phylum Mollusca. Bivalves are distinctive within the Mollusca in that they are almost always completely enclosed within their shells. They are laterally compressed, typically with shells divided in two halves, or valves, hinged together dorsally by an elastic, chitinous, external or internal ligament. The bivalve shell probably originated from an evolutionary split of a single ancestral, cap-like shell along a longitudinal line. The bivalve hinge bears sets of interlocking teeth that prevent the valves from sliding along each other as a result of external forces (e.g., predation), or improperly shut. The shell is kept shut by action of the paired adductor muscles. The adductor muscles counter the tension in the elastic ligament, which tends to keep the shell valves spread apart.

Most of the bivalve body is located dorsally in the shell. The mantle cavity in bivalves is located ventrally and laterally. Folds of the mantle margin form the exhalant and inhalant siphons.

Most of the mantle cavity is occupied by the paired ctenidia, which in bivalves perform not only their original role as site of gas exchange, but also become the major food-gathering and food-sorting organs in filter-feeders. Ctenidia are important and remarkably variegated organs in the Bivalvia, and most of the higher classification in the class is based on their morphology and function.

The head in bivalves is reduced, probably as result of a sedentary or attached lifestyle. Bivalves have lost the radula, eyes, or tentacles as present in other molluscs, but some have acquired secondary tentacles and eyes along the mantle margin. The mouth is located well inside the animal, and a pair of fleshy labial palps helps direct the food particles toward the mouth after these particles have been collected and sorted by the ctenidia.

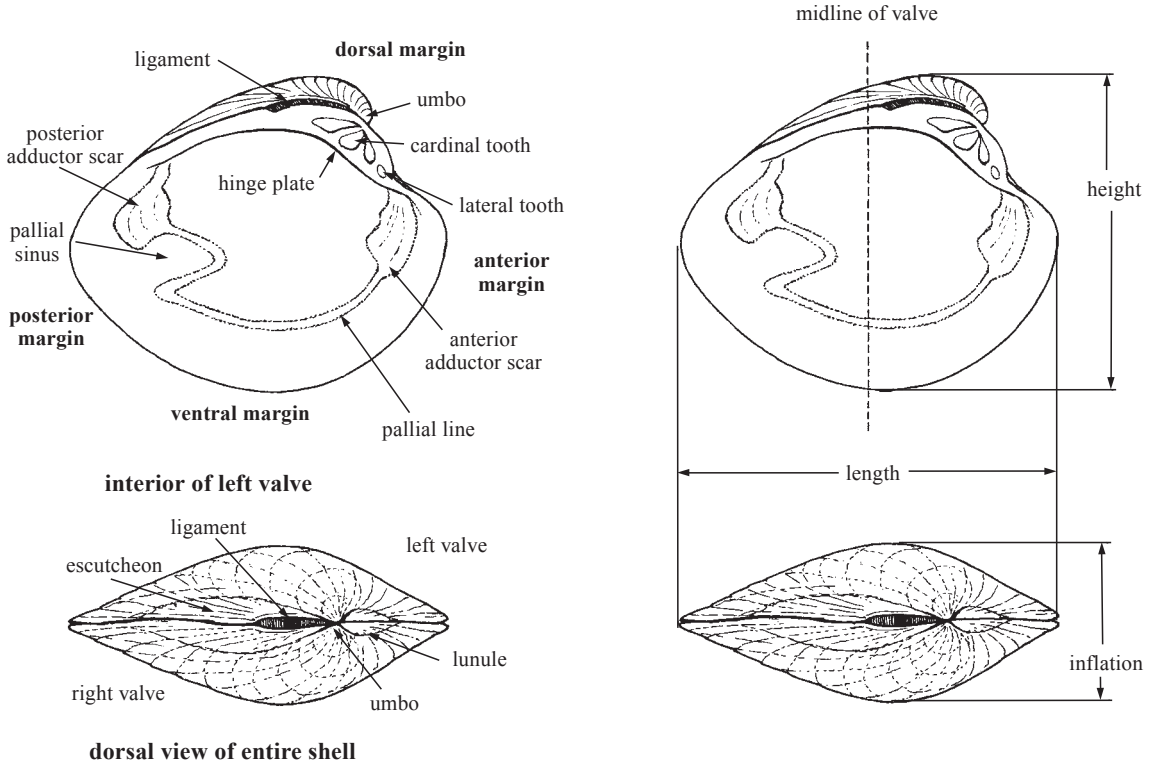
Bivalves can be deposit-feeders (subclass Protobranchia), using their long, modified labial palps to collect food particles from the bottom surface. Protobranchs do not use their ctenidia as food-collecting organs. Most bivalves are filter-feeders (e.g., subclasses Pteriomophia and Heterodonta). Filter-feeders have well-developed ctenidia that display an elaborate sorting system of cilia-lined grooves and surfaces that select particles of the right size and density for feeding. In addition, the highly specialized carnivore bivalves in the order Septibranchia have their ctenidia modified as septa that help pump water in, sucking in small crustaceans and other small prey.

Like gastropods, bivalves can live in a highly diverse gamut of habitat conditions: oysters permanently attach themselves to hard substrates, mussels and ark shells live temporarily attached by bundles of protein fibers called byssus, most clams burrow in sand or mud, and representatives of a number of different families can bore themselves for life into rock, wood, or other hard substrates.

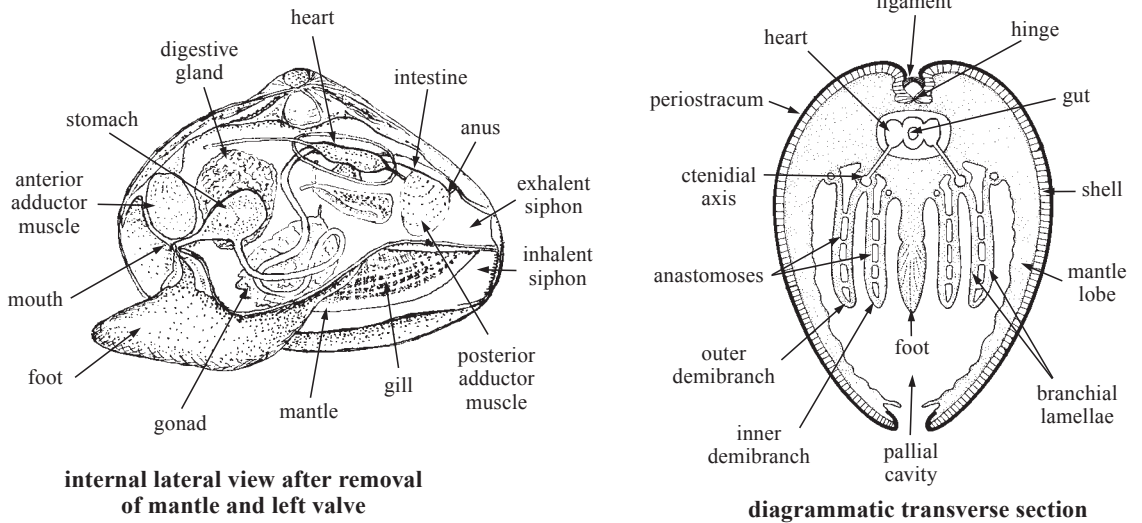
Reproduction in bivalves is mostly through external fecundation and, like gastropods, bivalves display a wide range of modes of development, from species having planktotrophic, long-duration veliger stages to those brooding their offspring in the mantle cavity.

The total catch by weight in 2000 for bivalves in Fishing Area 31 was 283 135 t, which represents about 15% of the total catch for the area. The American cupped oyster, *Crassostrea virginica*, comprised 222 866 t of the total for bivalves for that year.

TECHNICAL TERMS AND MEASUREMENTS



main features of a bivalve shell



general anatomy of bivalves

GLOSSARY OF TECHNICAL TERMS

Albino - shell lacking normal pigmentation.

Anterior - region situated near the head. In bivalves: region opposite to the siphons, consequently, opposite to the shell sinus.

Beak - same as umbo.

Bivalve - molluscs that have, among other features, shell comprised of 2 halves, or valves.

Byssal - position relative to byssus.

Byssal gap - gap or opening sometimes present on the ventral margin of bivalve shells for passage of byssus.

Byssus - bundle of fibers secreted by some bivalves attaching the animal to the bottom. Mussels, some arks, and pen shells are attached to the substrate by byssus.

Cancellate - cross-barred sculpture. In bivalves, radial and concentric elements will cross to produce a cancellate sculpture.

Chondrophore - depression in spoon-like form housing the internal ligament of some bivalve shells.

Chomata - marginal crenulations in Ostreidae and Gryphaeidae, occurring all around the inner side of valves or only near the hinge, composed of small tubercles or ridgelets on the right valve, and corresponding pits on the left valve.

Compressed - outline of bivalves which are flattened laterally.

Concentric - feature of sculptural elements curving about the umbo in bivalves.

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

Cordlet - same as cord.

Corrugated - appearance of surfaces forming wrinkles.

Crenulated - appearance of surfaces which are delicately notched or corrugated. Usually applied to wrinkled shell margin or edge.

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

Depressed - outline of low, pressed-down gastropod shells. OBS: Term usually applied to some top shells or baby ear.

Dorsal - in bivalves, the region of the hinge.

Elongate - shell with length significantly larger than width.

Equivalve - characteristic of bivalves that have the 2 valves or halves of same size.

Escutcheon - an area of the posterodorsal shell surface near a ligament that is differentiated by sculpture and frequently demarcated by a marginal ridge or furrow.

Excavated - appearance of a hollow, concave surface.

Foliated - characteristic of being leaf-like.

Foot - in bivalves, hatchet-like, expandable structure involved in burrowing.

Glassy - surface resembling glass, vitreous, transparent.

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.

Hinge - region of the bivalve shell where the two valves are joined together, usually including interlocking teeth and the ligament.

Hinge teeth - projections that interlock on the inner side of the bivalve shell hinge helping to prevent the two valves from sliding sideways past each other.

Horny - substance that is hardened, proteinaceous; partially or completely forming the ligament, shell periostracum, and possibly other structures.

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

Indented - surface bearing an indentation.

Inequivalve - characteristic of having the two valves (halves) of different size.

Inflated - characteristic of being 'fat', rotund, and frequently lightweight.

Interspaces - spaces between sculptural features, e.g., ribs, costae, or cords.

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

Knob - large nodule, rounded projection.

Knobbed - surface bearing knobs.

Lamella - thin plate or blade-like projection

Lamellation - same as lamellae.

Ligament - structure that is horny, 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.

Lunule - impression on the external side of the hinge, anterior to the umbo, usually heart-shaped.

Mantle - fleshy sheet surrounding vital organs and composed of 2 lobes, one lining and secreting each valve.

Margin - edge of shell.

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

Nodules - projections which are rounded as tubercules.

Nodulose - surface bearing nodules.

Notch - cut or depression, as on a shell margin.

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

Ovate - characteristic of having the form of an egg.

Oval - same as ovate.

Pallial line - fine scar-like impression present internally; in bivalve shells produced by the edge of the mantle.

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

Plication - same as fold.

Posterior - in bivalves, the region of the shell sinus away from the foot.

Prodissoconch - shell in larval state remaining on the umbonal region of well-preserved bivalve shells.

Radial - structures that are directed away from the umbo toward the shell margin in bivalve shells.

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.

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 - outline resembling tiny saw teeth.

Shell sinus - embayment on the pallial line of bivalve shells that correspond to the position of the siphons.

Siphon - prolongation of the mollusc mantle used to convey water into or out of the mantle cavity.

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

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. Usually, the earlier name is the valid one.

Thread - same as line.

Trigonal - same as triangular.

Umbo (pl. umbones) - projected portion of the hinge. OBS: First-formed part of the bivalve shell.

Varix (pl. varices) - 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.

Valve - one half of the bivalve shell.

Ventral - region of the animal opposite the dorsal region; usually region of the foot in bivalves.

GUIDE TO FAMILIES OCCURRING IN THE AREA

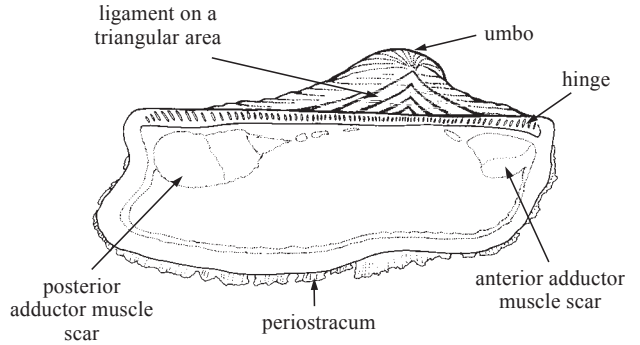
The following guide is intended to facilitate the identification of marine or brackish-water bivalve families regularly exploited or occasionally found in markets of the area. Additionally included are those families that are similar to exploited families but do not contain species that are regularly utilized. The families in this guide represent only a small part of the bivalve 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.

ARCIDAE

p. 41

Ark shells

Three species of interest to fisheries in the area.

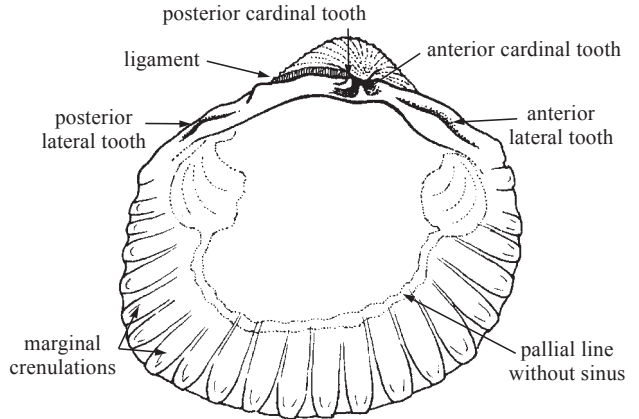


CARDIIDAE

p. 46

Cockles

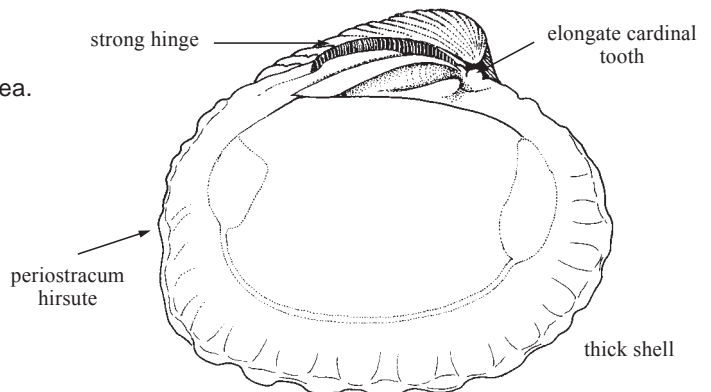
Two species of interest to fisheries in the area.



CARDITIDAE

Carditas

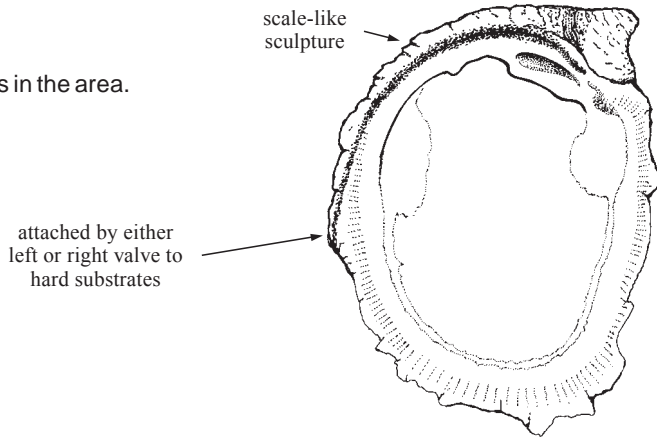
No species of interest to fisheries in the area.



CHAMIDAE

Jewel box shells

No species of interest to fisheries in the area.

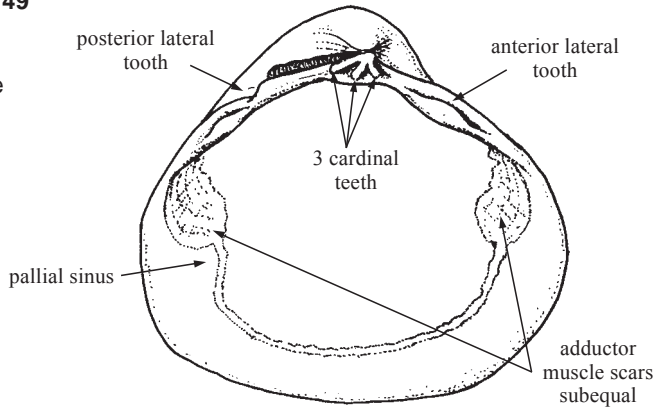


CORBICULIDAE

p. 49

Marsh clams

Three species of interest to fisheries in the area.

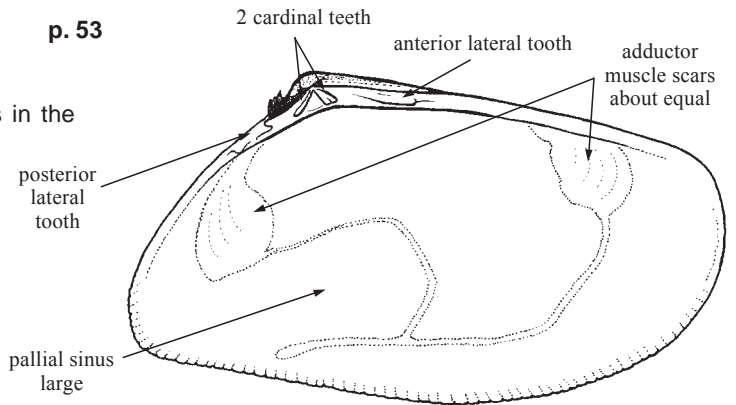


DONACIDAE

p. 53

Donax clams

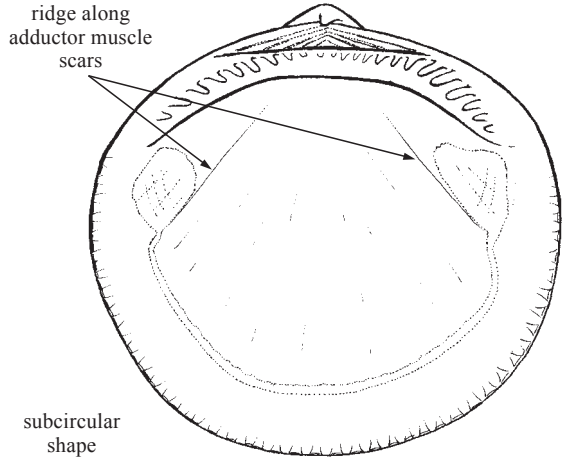
Three species of interest to fisheries in the area.



GLYCYMERIDIDAE

Bittersweet clams

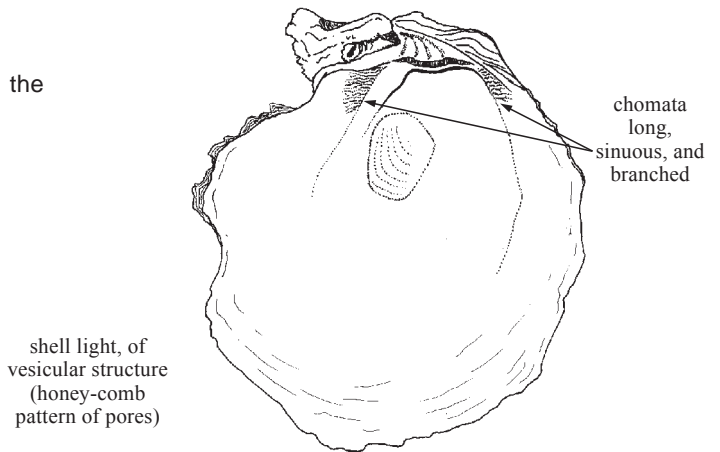
No species of interest to fisheries in the area.



GRYPHAEIDAE

Honeycomb oysters

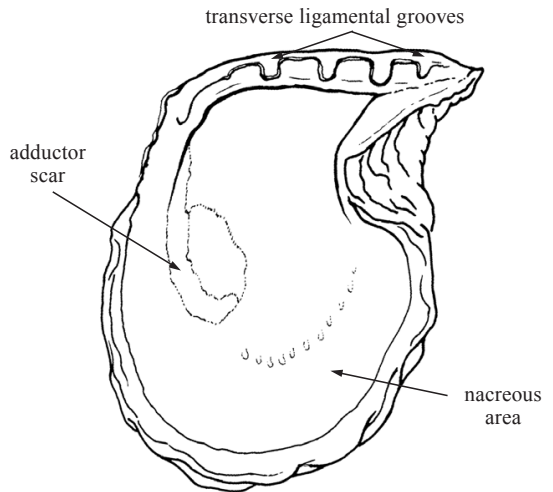
No species of interest to fisheries in the area.



ISOGNOMONIDAE

Tree oysters

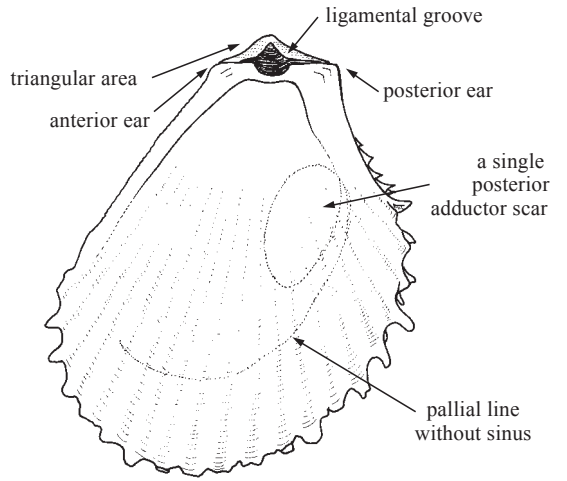
No species of interest to fisheries in the area.



LIMIDAE

File shells

No species of interest to fisheries in the area.

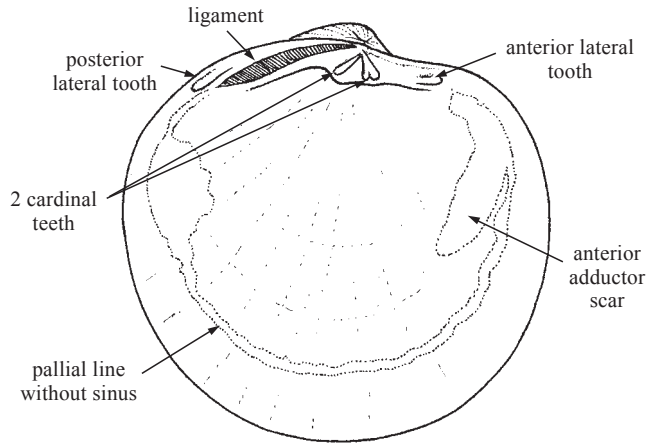


LUCINIDAE

p. 57

Lucinas

One species of interest to fisheries in the area.

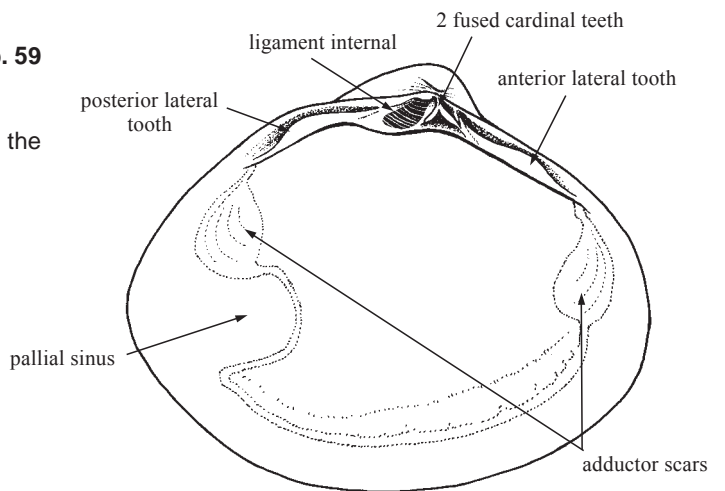


MACTRIDAE

p. 59

Trough shells

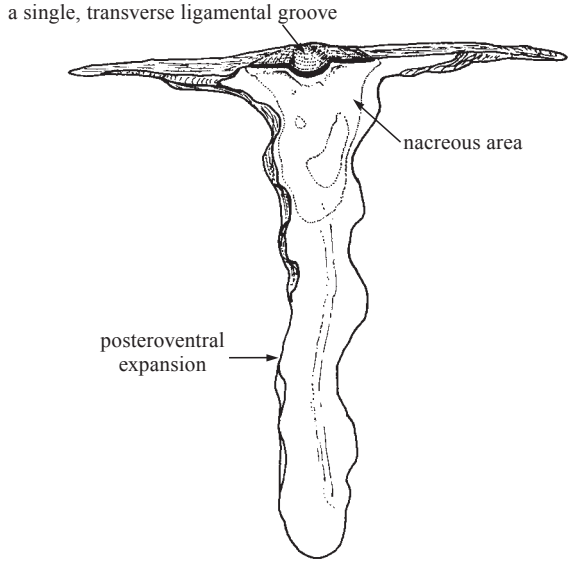
Two species of interest to fisheries in the area.



MALLEIDAE

Hammer oysters

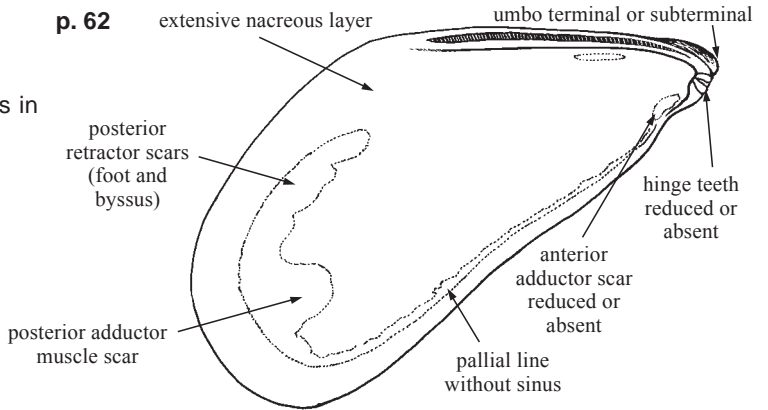
No species of interest to fisheries in the area.



MYTILIDAE

Sea mussels

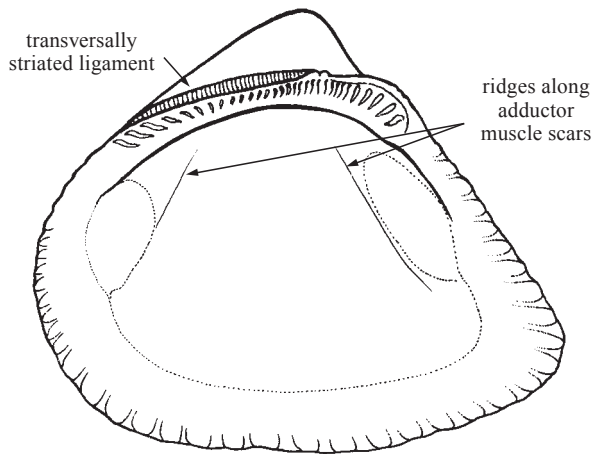
Six species of interest to fisheries in the area.



NOETIIDAE

Noetiid ark shells

No species of interest to fisheries in the area.

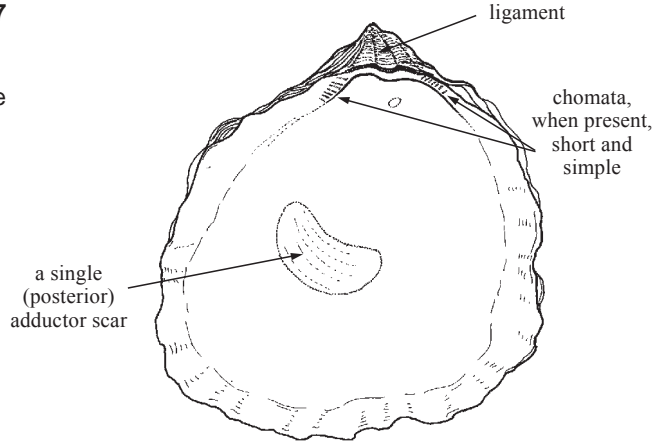


OSTREIDAE

p. 67

Oysters

Two species of interest to fisheries in the area.

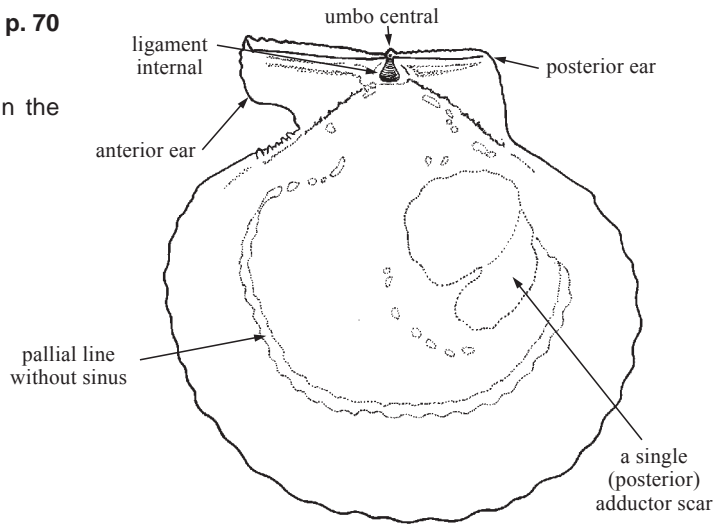


PECTINIDAE

p. 70

Scallops

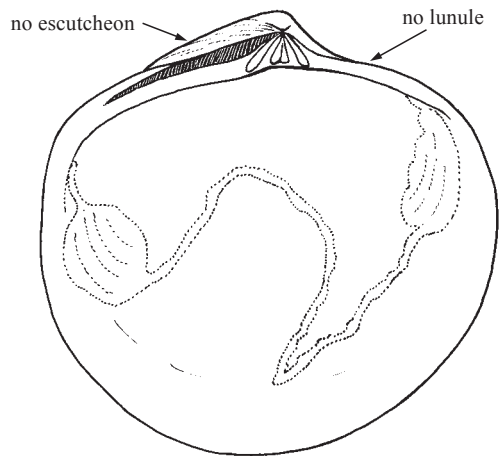
Four species of interest to fisheries in the area.



PETRICOLIDAE

Petricolid clams

No species of interest to fisheries in the area.

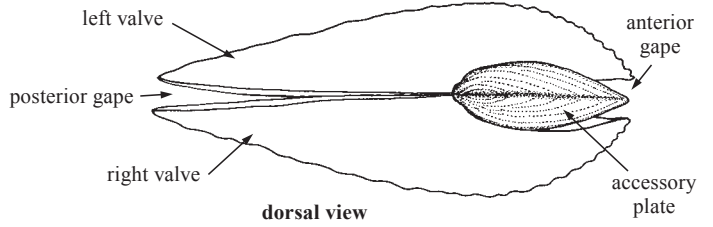
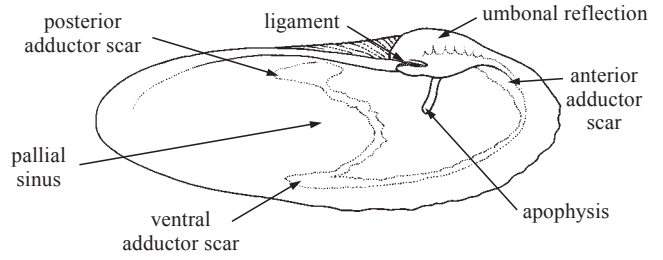


PHOLADIDAE

Angel wings

One species of interest to fisheries in the area.

p. 76

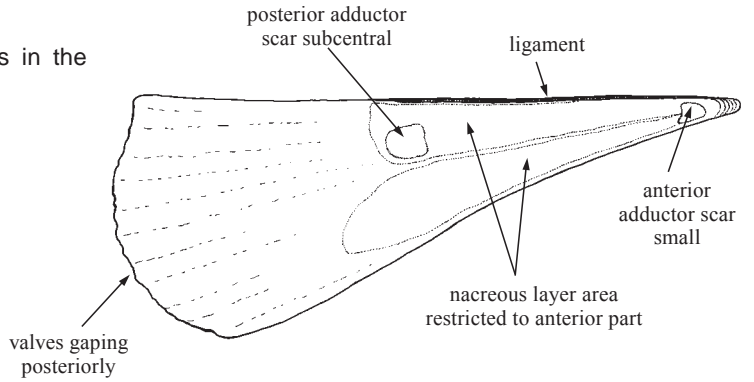


PINNIDAE

Pen shells

Two species of interest to fisheries in the area.

p. 78

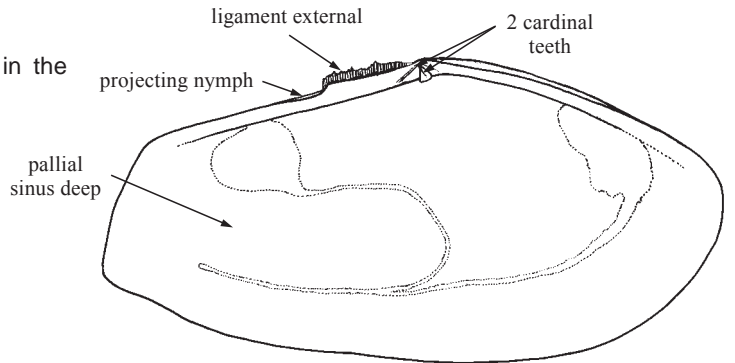


PSAMMOBIIDAE

Sunset clams, sanguins

One species of interest to fisheries in the area.

p. 81

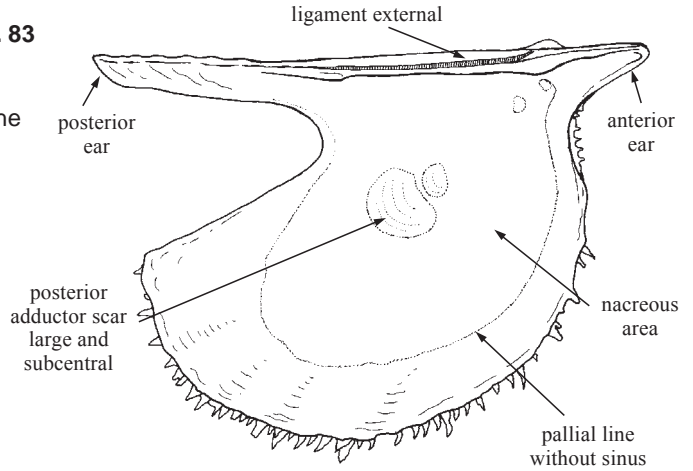


PTERIIDAE

Pearl oysters

One species of interest to fisheries in the area.

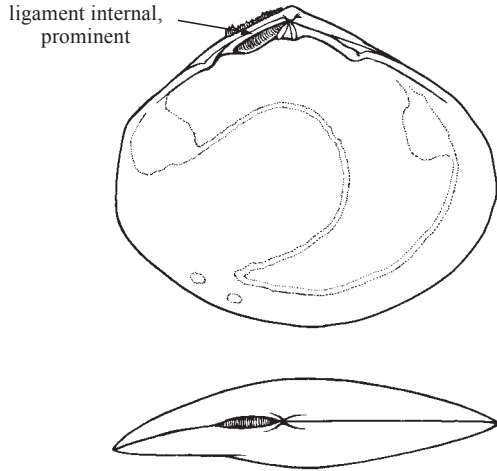
p. 83



SEMELIDAE

Semelids

No species of interest to fisheries in the area.

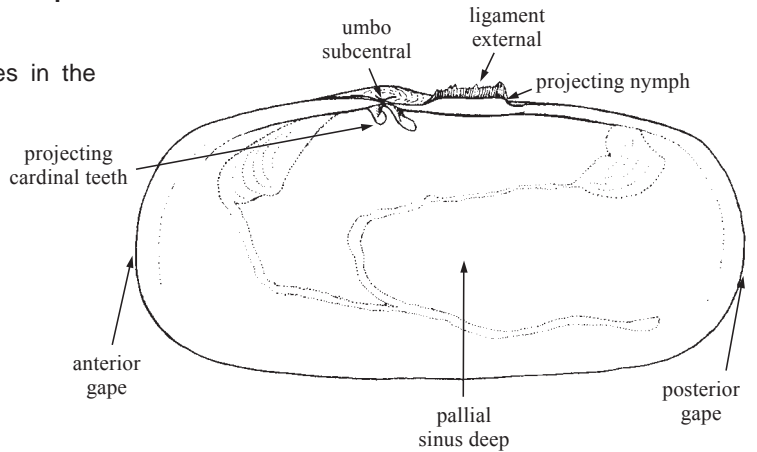


SOLECURTIDAE

Short razor clams

One species of interest to fisheries in the area.

p. 85

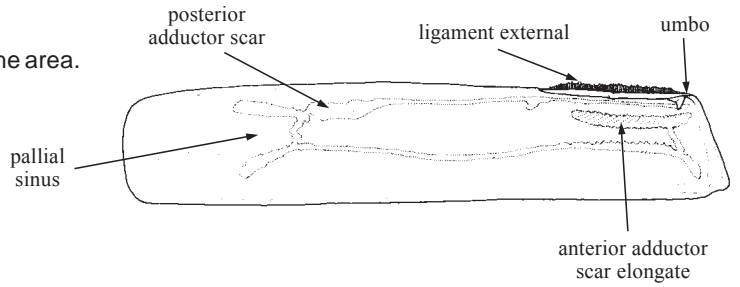


SOLENIIDAE

p. 87

Knife and razor clams

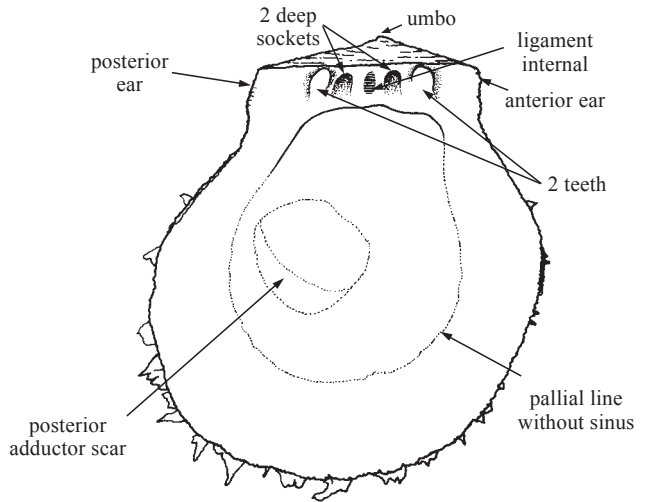
One species of interest to fisheries in the area.



SPONDYLIDAE

Thorny oysters

No species of interest to fisheries in the area.

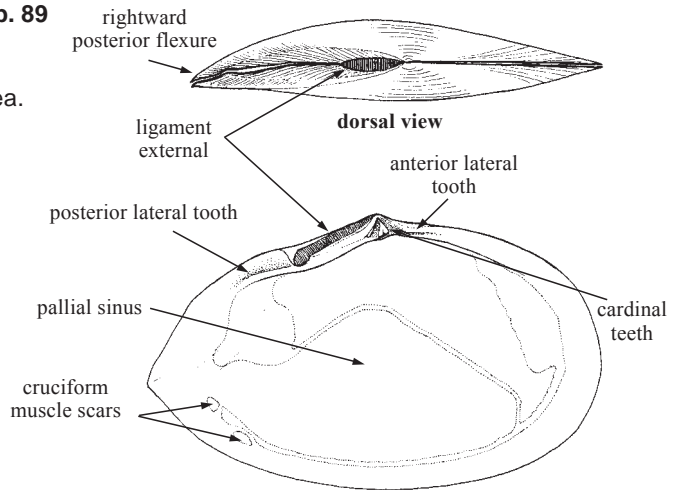


TELLINIDAE

p. 89

Tellins

Two species of interest to fisheries in the area.

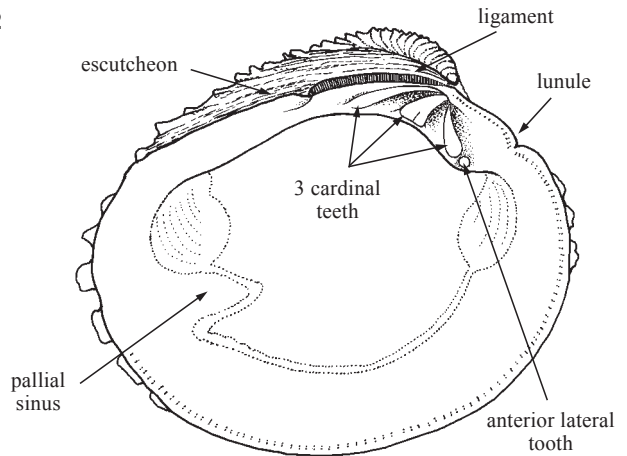


VENERIDAE


p. 92

Venus clams




Five species of interest to fisheries in the area.





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

The symbol  is given when species accounts are included.




ARCIDAE

-  *Anadara brasiliiana* (Lamarck, 1819).
-  *Anadara notabilis* (Röding, 1798).
-  *Arca zebra* (Swainson, 1833).




CARDIIDAE

-  *Dinocardium robustum* (Lightfoot, 1786).
-  *Trachycardium muricatum* (Linnaeus, 1758).

CORBICULIDAE

-  *Polymesoda caroliniana* (Bosc, 1801).
-  *Polymesoda triangula* (Philippi, 1849).
-  *Polymesoda arctata* (Deshayes, 1854).



DONACIDAE

-  *Donax denticulatus* Linnaeus, 1758.
-  *Donax striatus* Linnaeus, 1767.
-  *Iphigenia brasiliiana* (Lamarck, 1818).

LUCINIDAE

-  *Codakia orbicularis* (Linnaeus, 1758).

MACTRIDAE

-  *Mactrellona alata* (Spengler, 1802).
-  *Rangia cuneata* (G. B. Sowerby I, 1831).

MYTILIDAE

- 🐚 *Geukensia demissa* (Dillwyn, 1817).
- 🐚 *Modiolus americanus* (Leach, 1815).
- 🐚 *Modiolus squamosus* Beauforthuy, 1867.
- 🐚 *Mytella guyanensis* (Lamarck, 1819).
- 🐚 *Mytella strigata* (Hanley, 1843).
- 🐚 *Perna perna* (Linnaeus, 1767).

OSTREIDAE

- 🐚 *Crassostrea rhizophorae* (Guilding, 1828).
- 🐚 *Crassostrea virginica* (Gmelin, 1791).

PECTINIDAE

- 🐚 *Amusium laurenti* (Gmelin, 1791).
- 🐚 *Argopecten gibbus* (Linnaeus, 1758).
- 🐚 *Argopecten irradians* (Lamarck, 1819).
- 🐚 *Euvola ziczac* (Linnaeus, 1758).

PHOLADIDAE

- 🐚 *Cyrtopleura costata* (Linnaeus, 1758).

PINNIDAE

- 🐚 *Atrina rigida* (Lightfoot, 1786).
- 🐚 *Atrina seminuda* (Lamarck, 1819).

PSAMMOBIIDAE

- 🐚 *Asaphis deflorata* (Linnaeus, 1758).

PTERIIDAE

- 🐚 *Pinctada imbricata* (Röding, 1798).

SOLECURTIDAE

- 🐚 *Tagelus plebeius* (Lightfoot, 1786).

SOLENIDAE

- 🐚 *Solen obliquus* Spengler, 1794.

TELLINIDAE

- 🐚 *Tellina fausta* Pulteney, 1799.
- 🐚 *Tellina laevigata* Linnaeus, 1758.

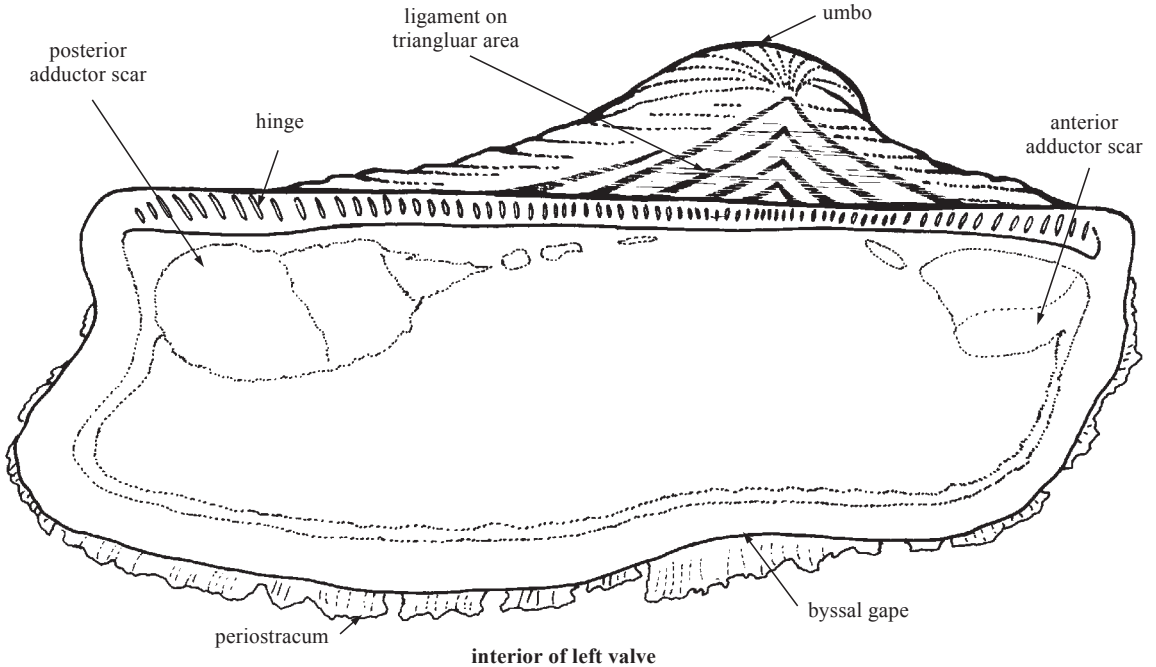
VENERIDAE

- 🐚 *Chione cancellata* (Linnaeus, 1767).
- 🐚 *Macrocallista maculata* (Linnaeus, 1758).
- 🐚 *Macrocallista nimbose* (Lightfoot, 1786).
- 🐚 *Mercenaria campechiensis* (Gmelin, 1791).
- 🐚 *Tivela mactroides* (Born, 1778).

ARCIDAE

Ark shells

Diagnostic characters: Shells very thick, heavy, box-like. Hinge with a large number of teeth perpendicular to main shell axis, usually of equal size and perpendicular to main shell axis. Usually with thick, dark periostracum.



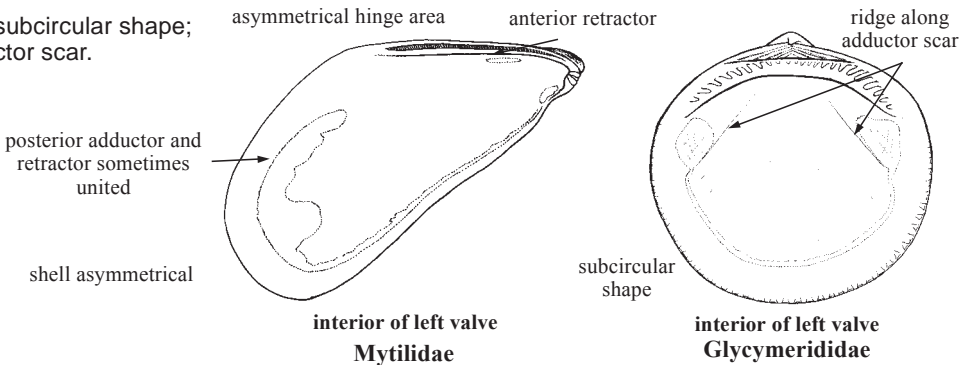
Habitat, biology, and fisheries: Most representatives of the family (for example, the genera *Arca* and *Barbatia*) live attached by byssus to the underside of rocks, coral heads, and other hard substrates. Other species (for example, the genus *Anadara*) live buried in sandy mud.

Remarks: Species listed are edible and mostly collected for food in the southern half of the area. Not usually eaten in the USA because of their bitter taste and because of the hemoglobin content of the blood in some species.


Similar families occurring in the area




Mytilidae: shell elongate, with umbones near or at anterior end; ligament in anterior margin; hinge without teeth or with tiny denticles; internal surface nacreous; adductor muscle scars differing in size, the anterior small or absent.

Glycymerididae: subcircular shape; ridge along adductor scar.



List of species of interest to fisheries occurring in the area

The symbol  is given when species accounts are included.

-  *Anadara notabilis* (Röding, 1798).
-  *Arca zebra* (Swainson, 1833).
-  *Scapharca brasiliana* (Lamarck, 1819).

References

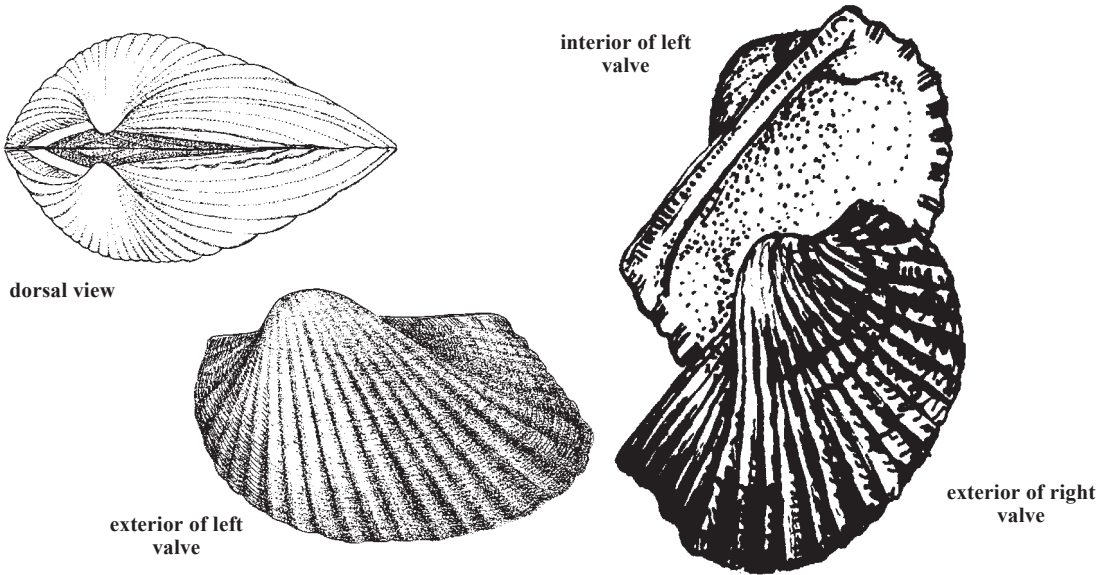
- Manrique, R. 1982. *Estudio de la producción y algunos aspectos ecológicos de la pepitona roja Anadara notabilis del Golfo de Cariaco*. Tesis Licenciatura en Biología, Universidad de Oriente, Cumaná, Venezuela, 94 p.
- Waller, T. R. 1980. Scanning electron microscopy of shell and mantle in the order Arcoidea (Mollusca: Bivalvia). *Smithsonian Contr. Zool.*, 313:1-58.

***Anadara notabilis* (Röding, 1798)**

NDL

Frequent synonyms / misidentifications: None / *Scapharca brasiliana* (Lamarck, 1819).

FAO names: En - Eared ark; Fr - Arche auriculée; Sp - Arca auriculada.

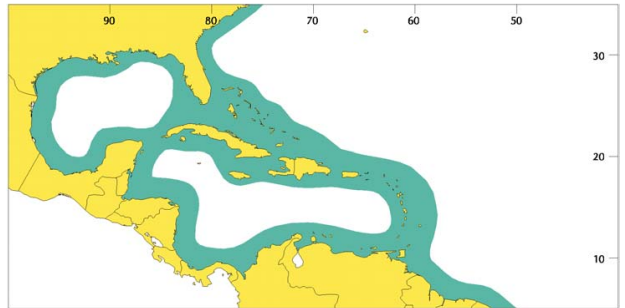


Diagnostic characters: Shell heavy, sturdy, inequivalve, with one valve slightly larger than the other. Anterior end short and rounded, posterior end longer and angled. Hinge straight. Sculpture of 25 to 27 radial ribs crossed by fine concentric lines prominent between ribs. Ribs never bifurcated. Umbones prominent, ligamental area large, hinge long, straight. Periostracum heavy. **Colour:** white; periostracum brown.

Size: To 90 mm.

Habitat, biology, and fisheries: Soft bottoms (mud or sand), sometimes in seagrass environments, at shallow intertidal depths. Consumed locally in soups and chowders.

Distribution: North Carolina to eastern Florida, Caribbean, south to Brazil.

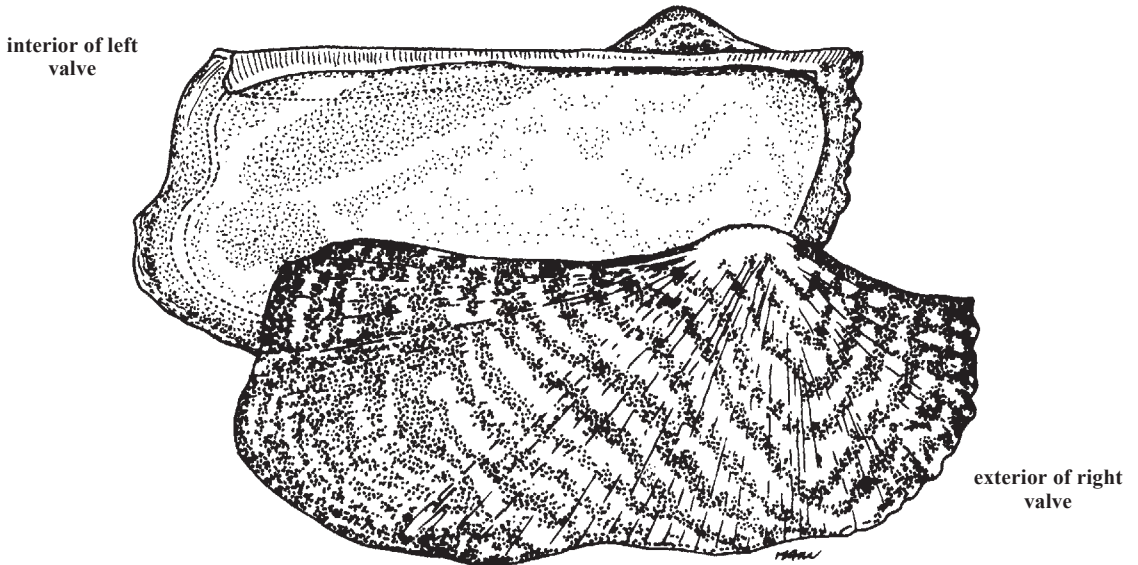


Arca zebra (Swainson, 1833)

RQZ

Frequent synonyms / misidentifications: None / *Arca imbricata* Bruguière, 1789

FAO names: En - Turkey wing; Fr - Arche zèbre; Sp - Arca cebra.

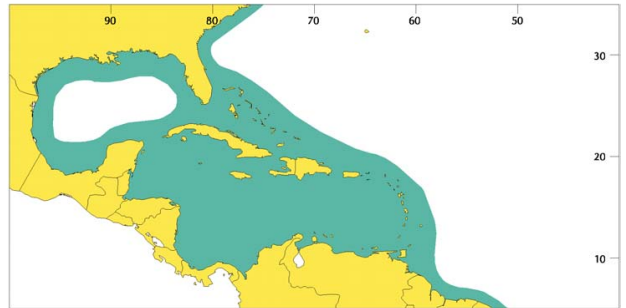


Diagnostic characters: Shell rectangular, elongate (twice as long as wide), equivalve. Sculpture of about 24 to 30 irregular radial ribs, and fine concentric threads that cross-ribs and interspaces. Byssal gap present opposite to hinge, moderately narrow. Hinge long, straight. **Colour:** creamy white, streaked with reddish to dark brown wavy bands. Periostracum brown and dense on fresh shells, covering colour pattern almost completely.

Size: To 100 mm.

Habitat, biology, and fisheries: Attached to the underside of rocks and coral heads by byssus. A relatively important resource in the southern half of the area (e.g., Venezuela), although detailed data about its fisheries are not available.

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

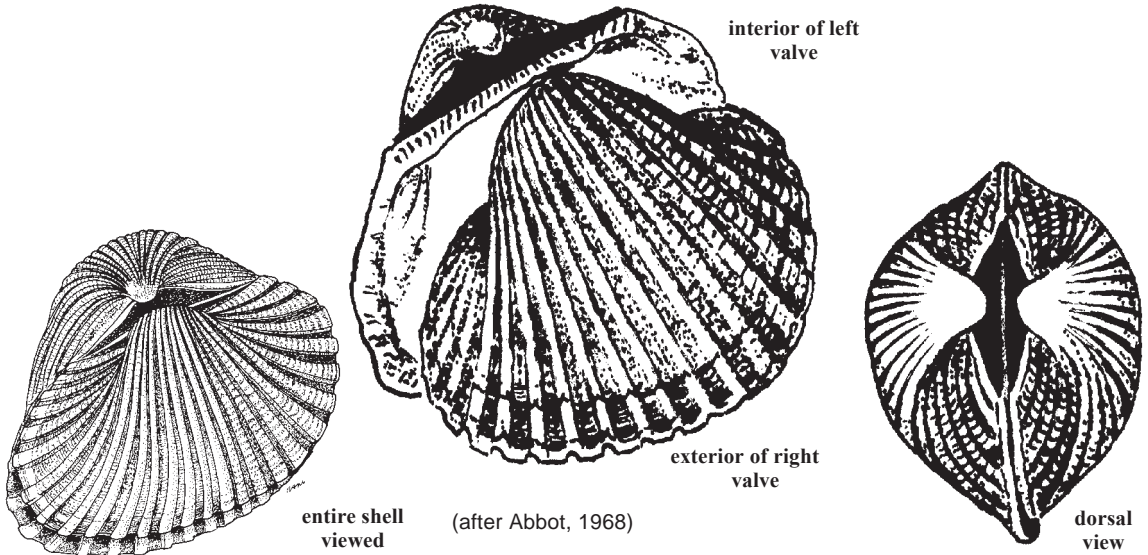


Scapharca brasiliana (Lamarck, 1819)

FCR

Frequent synonyms / misidentifications: None / *Anadara notabilis* (Röding, 1798).

FAO names: En - Incongruous ark; Fr - Arche incongrue; Sp - Arca pepitona.

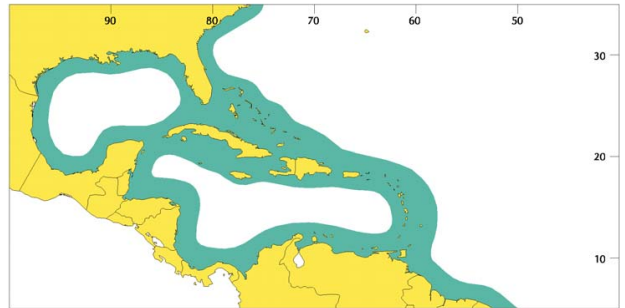


Diagnostic characters: Shell heavy, sturdy, almost as high as long, inequivalve, with left valve overlapping right. Sculpture of 26 to 28 radial ribs of square cross-section, each with prominent beads. Umbones facing each other. Hinge straight, ligament short, ligamental area with transversal striations. Periostracum thin. **Color:** white, periostracum light brown.

Size: To 78 mm.

Habitat, biology, and fisheries: On sand, shell rubble, and seagrass beds, at shallow subtidal depths. Collected for food mostly in the southern half of the area.

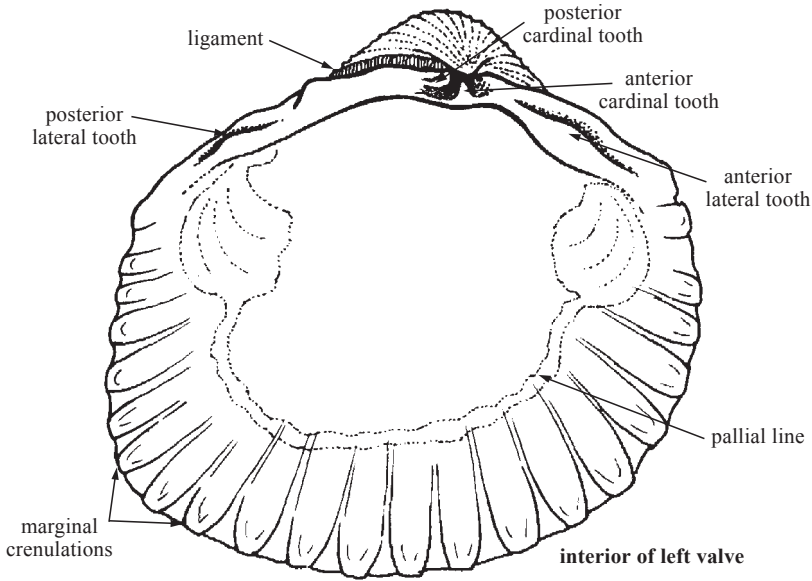
Distribution: North Carolina to Florida, Texas, Caribbean, and south to Brazil.



CARDIIDAE

Cockles

Diagnostic characters: Shell round, large, inflated, usually with strong radial sculpture that yields crenulated shell margins; scales or spines sometimes present along radial sculpture elements. Foot long and strong.

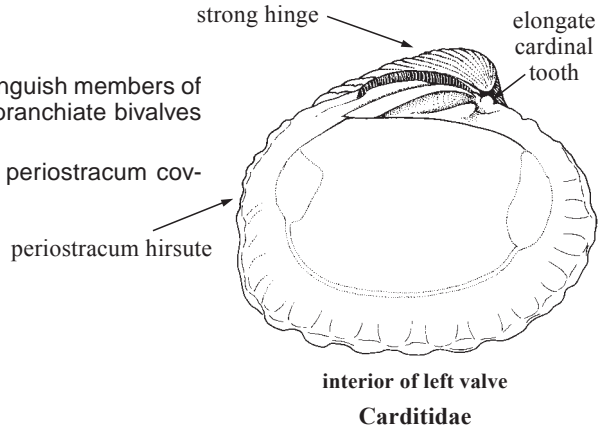


Habitat, biology, and fisheries: In sand, from the intertidal zone to deeper, sublittoral waters. Collected locally for food, mostly in the southern Caribbean.

Similar families occurring in the area

The characteristic features of the hinge easily distinguish members of the Cardiidae from other radially ribbed eulamellibranchiate bivalves such as the Carditidae.

Carditidae: hinge strong; cardinal tooth elongate; periostracum covered with hairy projections.



List of species of interest to fisheries occurring in the area

The symbol is given when species accounts are included.

Dinocardium robustum (Lightfoot, 1786).

Trachycardium muricatum (Linnaeus, 1758).

References

- Schneider, J.A. 1992. Preliminary cladistic analysis of the bivalve family Cardiidae. *Am. Malac. Bull.*, 9(2):145-155.
 Schneider, J.A. 1995. Phylogeny of the Cardiidae (Mollusca, Bivalvia): Protocardiinae, Laevicardiinae, Lahiliinae, Tulongoncardiinae subfam. n. and Pleurocardiinae subfam. n. *Zool. Scripta*, 24(4):321-346.

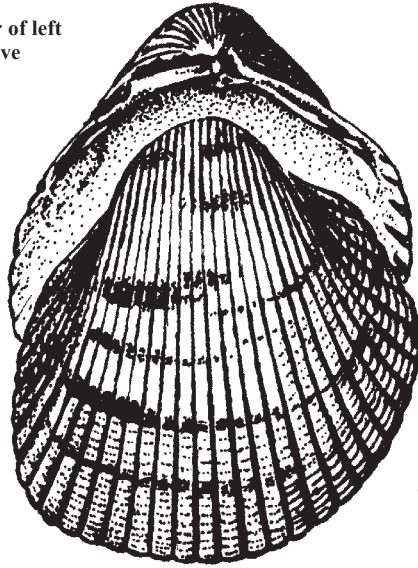
Dinocardium robustum (Lightfoot, 1786)

DKR

Frequent synonyms / misidentifications: None / None.

FAO names: En - Giant Atlantic cockle (AFS: Atlantic giant cockle); Fr - Bucarde géant de l'Atlantique; Sp - Berberecho del Atlántico.

interior of left
valve



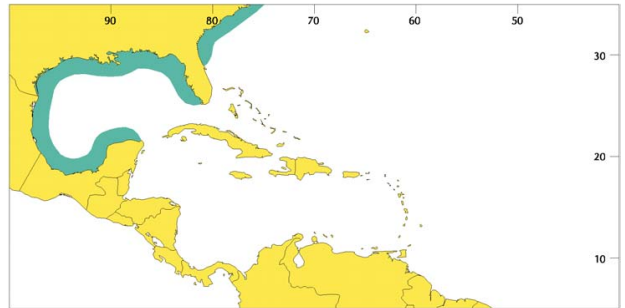
exterior of right
valve

Diagnostic characters: Shell very large for family, inflated, obliquely ovate. Sculpture of about 32 to 36 rounded, smooth radial ribs. Pallial line simple. Margins crenulated. Umbones rounded. **Colour:** pale tan to yellowish brown, mottled irregularly with red-brown. Posterior slope mahogany brown. Interior salmon pink.

Size: To 125 mm.

Habitat, biology, and fisheries: Buried in sand in shallow subtidal environments. Hand-collected, consumed locally in chowders and soups.

Distribution: Virginia to Florida, Texas, and Mexico.

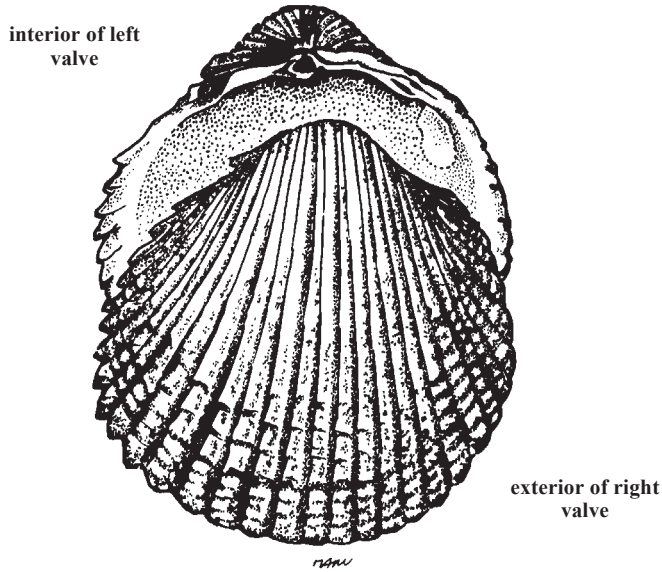


Trachycardium muricatum (Linnaeus, 1758)

TIX

Frequent synonyms / misidentifications: None / *Trachycardium egmontianum* (Shuttleworth, 1856); *Trachycardium magnum* (Linnaeus, 1758).

FAO names: **En** - American yellow cockle (AFS: Yellow prickly cockle); **Fr** - Bucarde jaune; **Sp** - Berberecho amarillo.

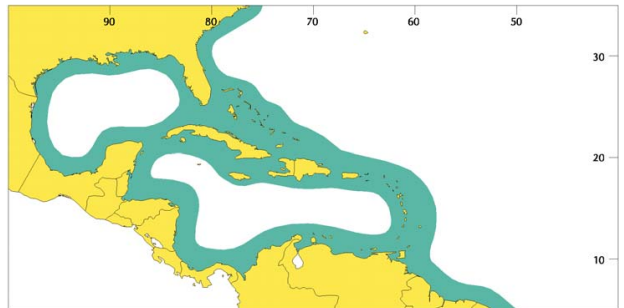


Diagnostic characters: Shell with circular to oval outline, equivalve, higher than long. Sculpture of 30 to 40 radial ribs with sharp scales. Scales less prominent on central ribs. Hinge well developed. **Colour:** externally light cream with irregular patches of brownish red or yellow; internally white, rarely yellowish.

Size: To 50 mm.

Habitat, biology, and fisheries: Buried in sand in moderately shallow subtidal conditions, sometimes in coral reef environments. Collected by hand, consumed locally in stews, chowders, and soups.

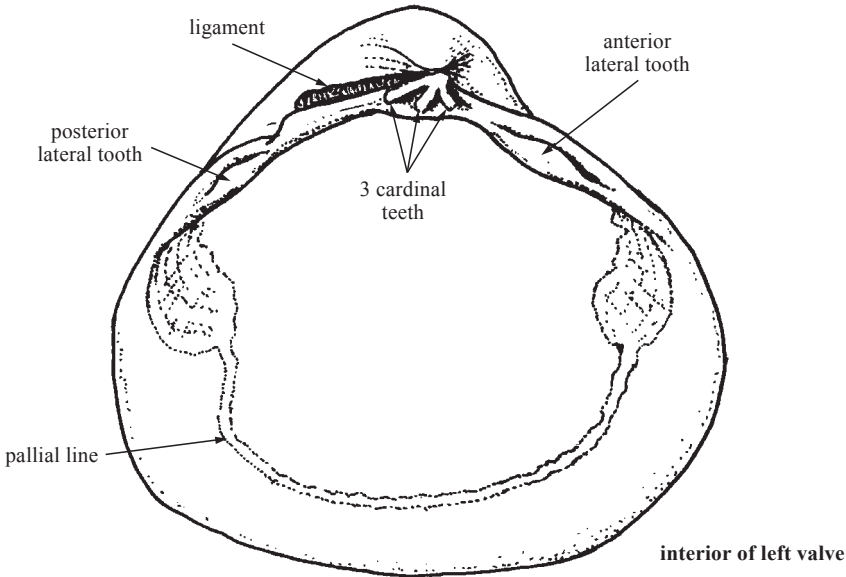
Distribution: North Carolina to Florida, Texas, Caribbean, and south to Brazil.



CORBICULIDAE

Marsh clams

Diagnostic characters: Shell oval to triangular. No lunule or scutcheon. Hinge with 3 cardinal teeth in either valve. Pallial sinus short to absent.

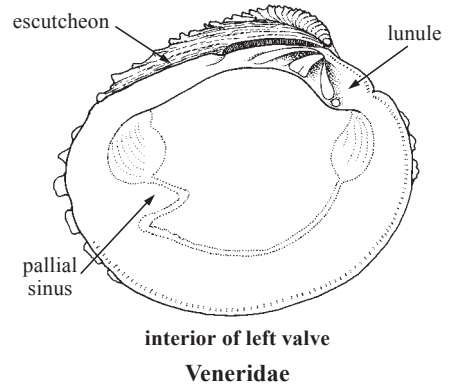


Habitat, biology, and fisheries: Buried in mud in estuaries, coastal lagoons, and other brackish-water environments. The listed species are consumed locally.

Remarks: Fisheries for these species in the USA are mainly prevented by restrictions prompted by degradation of enclosed brackish-water habitats.

Similar families occurring in the area

Veneridae: shell usually solid, umbones anterior to midline, lunule and scutcheon usually present, sculpture usually concentric, sometimes lacking; ligament external; hinge with 3 or rarely 2 cardinal teeth in each valve; adductor muscles (and their scars) usually equivalent in size



List of species of interest to fisheries occurring in the area

The symbol 🐚 is given when species accounts are included.

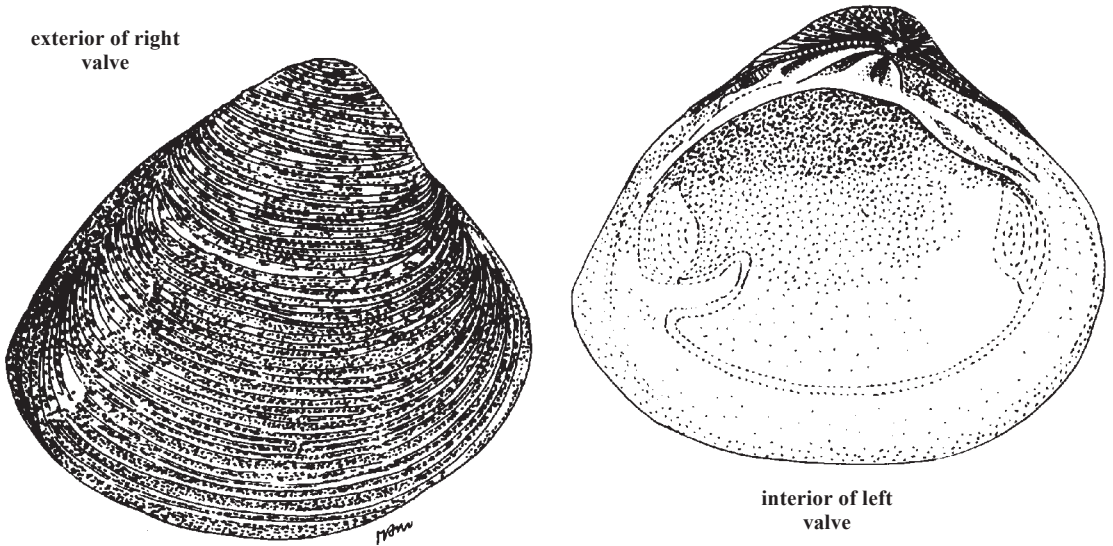
- 🐚 *Polymesoda arctata* (Deshayes, 1854).
- 🐚 *Polymesoda caroliniana* (Bosc, 1801).
- 🐚 *Polymesoda triangula* (Philippi, 1849).

Polymesoda arctata (Deshayes, 1854)

YMK

Frequent synonyms / misidentifications: None / *Polymesoda triangula* (Philippi, 1849), *Polymesoda aequilatera* (Deshayes, 1854).

FAO names: **En** - Slender marsh clam; **Fr** - Cyrène élancée; **Sp** - Guacuco de marjal esbelto.



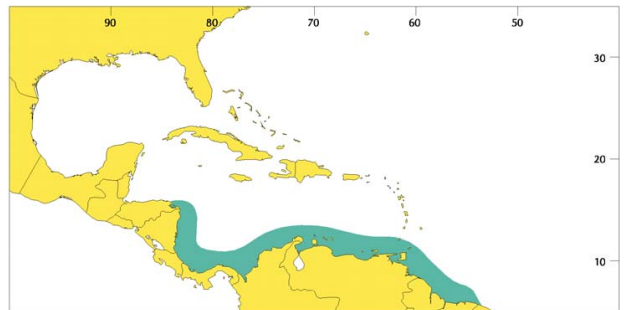
Diagnostic characters: Shell outline subtriangular, as high as long, inflated, heavy, slightly pointed posteriorly. Sculpture of well-defined concentric threads. Hinge with 3 cardinal teeth situated under umbo; 1 anterior and 1 posterior lateral tooth. Lateral teeth smooth. Ligament long, narrow. Periostracum with minute scales, fuzzy. **Colour:** externally cream-white, sometimes tinged with purple or grey, internally white often stained with purple and frequently with darker radial stripes at both ends; periostracum pale or dark brown.

Size: To 40 mm.

Habitat, biology, and fisheries: Infaunal in mud or sandy-mud in estuaries, mangrove swamps and coastal lagoons. Consumed locally, boiled.

Distribution: Southern Caribbean and northern South America.

Remarks: The similar species *Polymesoda aequilatera* (Deshayes, 1854) is apparently restricted to Suriname and Guyana.



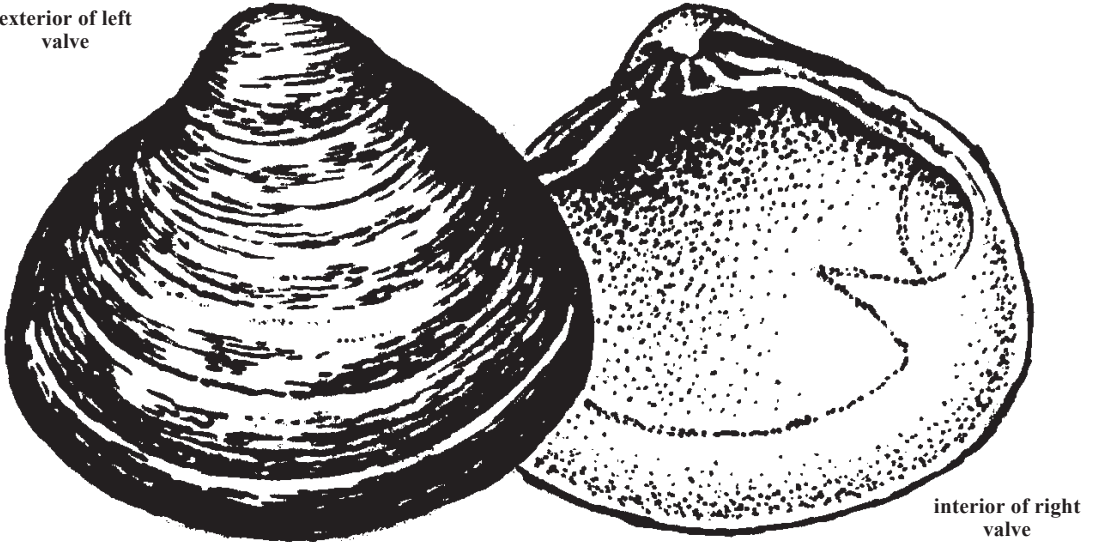
Polymesoda caroliniana (Bosc, 1801)

YMR

Frequent synonyms / misidentifications: None / *Polymesoda triangula* (Philippi, 1849).

FAO names: **En** - Carolina marsh clam; **Fr** - Praire marais de la Caroline; **Sp** - Almeja de marjal.

exterior of left
valve



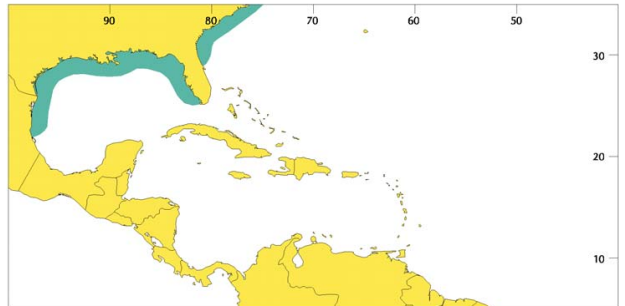
interior of right
valve

Diagnostic characters: Shell outline subtriangular, as high as long, inflated, heavy. Shell smooth, sculpture absent. Hinge with three cardinal teeth situated under umbo; 1 anterior and 1 posterior lateral tooth. Ligament long, narrow. Periostracum with minute scales, fuzzy, thin. **Colour:** externally dull white, internally white rarely stained with purple; periostracum glossy brown.

Size: To 35 mm.

Habitat, biology, and fisheries: Infaunal in mud or sandy mud in estuaries, mangrove swamps, and coastal lagoons. Consumed locally boiled, restrictions due to habitat degradation hamper exploitation in parts of area.

Distribution: Texas and Virginia to northern Florida.

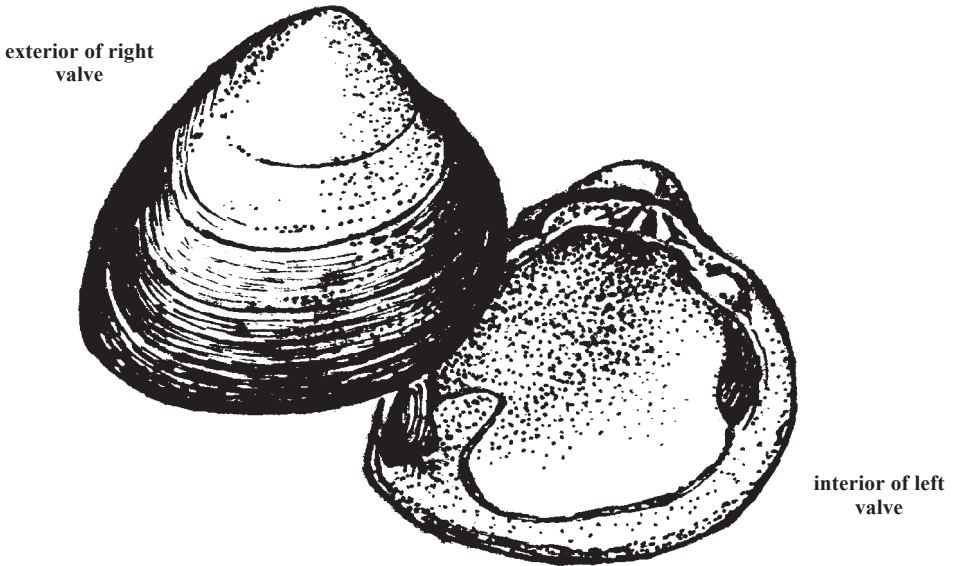


Polymesoda triangula (Philippi, 1849)

YMT

Frequent synonyms / misidentifications: None / *Polymesoda arctata* (Deshayes, 1854), *Polymesoda aequilatera* (Deshayes, 1854).

FAO names: En - Triangular marsh clam; Fr - Praire marais triangulaire; Sp - Almeja de marjal triangular.



Diagnostic characters: Shell outline triangular, as high as long, inflated, heavy. Shell smooth, sculpture absent. Hinge with 3 cardinal teeth situated under umbo; 1 anterior and 1 posterior lateral tooth. Ligament long, narrow. Periostracum smooth. **Colour:** externally dull white, internally white; periostracum grey to greyish brown.

Size: To 45 mm.

Habitat, biology, and fisheries: Infaunal in mud or sandy mud in estuaries, mangrove swamps, and coastal lagoons. Consumed locally boiled.

Distribution: Mexican Caribbean to Panama.

Remarks: The similar species *Polymesoda aequilatera* (Deshayes, 1854) is apparently restricted to Suriname and Guyana.

