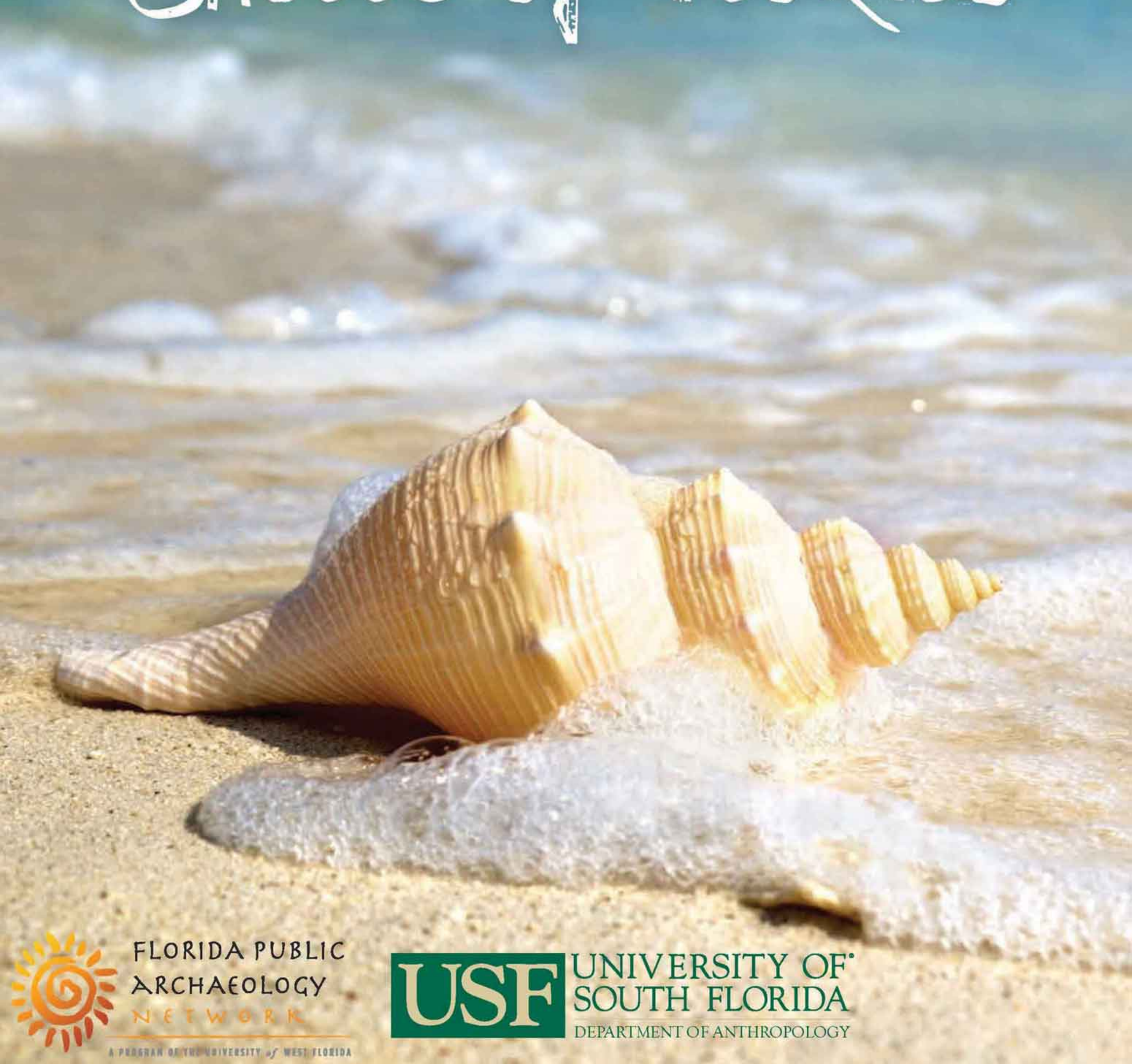
Archaeological Shells of Florida



FLORIDA PUBLIC ARCHAEOLOGY NETWORK
A PROGRAM OF THE UNIVERSITY of WEST FLORIDA

USF UNIVERSITY OF SOUTH FLORIDA
DEPARTMENT OF ANTHROPOLOGY

About this Guide

The purpose of this handbook is to familiarize students with the numerous types of prehistoric shells found along Florida's coasts and waterways. *Archaeological Shells of Florida* is not intended to highlight mollusk characteristics in a natural or biological sense, but to explain the role of shellfish in daily prehistoric life. Each individual shell species highlighted in this book carries up to four different icons representing both their general uses for prehistoric Floridians and their current use for scientific research. These are:

Food

Tools

Scientific Research

Art/Jewelry

Guide Organization

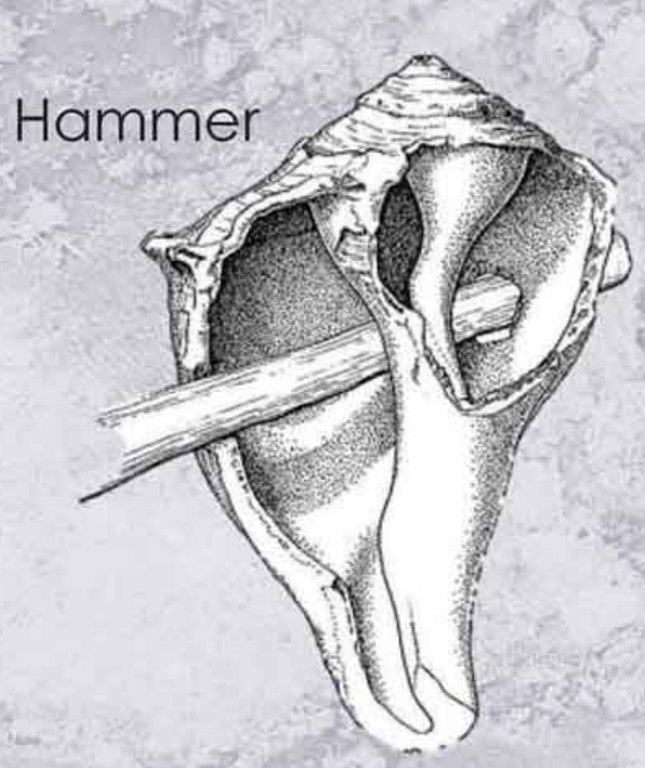
Symbol Guide

Food

Just like we do today, Native Americans loved to eat shellfish! Living close to the water meant fast and easy access to oyster and other shellfish. Most people have seen someone shucking oysters or clams before, but how do you get conchs and other gastropods out of their shells? Native Americans would knock a hole in the side of a gastropod shell, releasing the suction, allowing them to pull the yummy animal out of the shell. Archaeologists often find many gastropod shells with these seemingly random holes when investigating prehistoric middens. Smaller gastropods and bivalves were probably boiled to make soup!

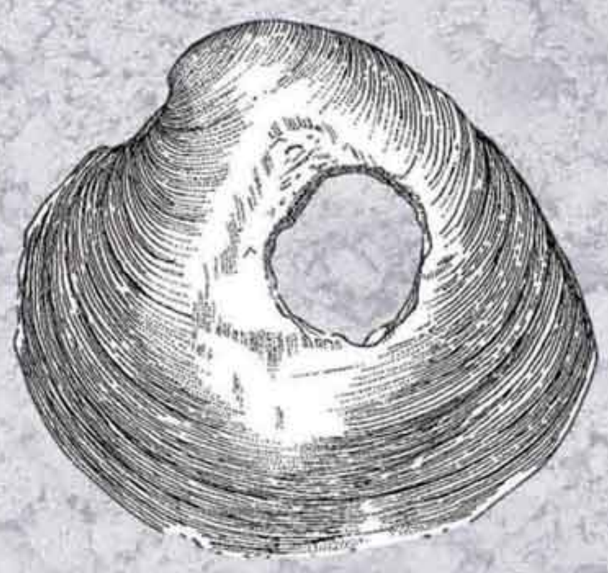
Tools

Instead of throwing the empty shells away after eating, Native Americans often recycled some of them to make useful tools. Large gastropods could be made into hammers, axes, cups, scrapers, and more. Over time the wood parts of a tool such as a hammer rots and wears away, but the shell part of the tool often remains. For archaeologists this means we find many gastropods with two holes drilled in them where the wood handle would have been. Pieces of these shells were even used to make net gauges and weights for fishing nets. The columella of a gastropod shell is very strong and could be used individually as a drill or fishing lure.

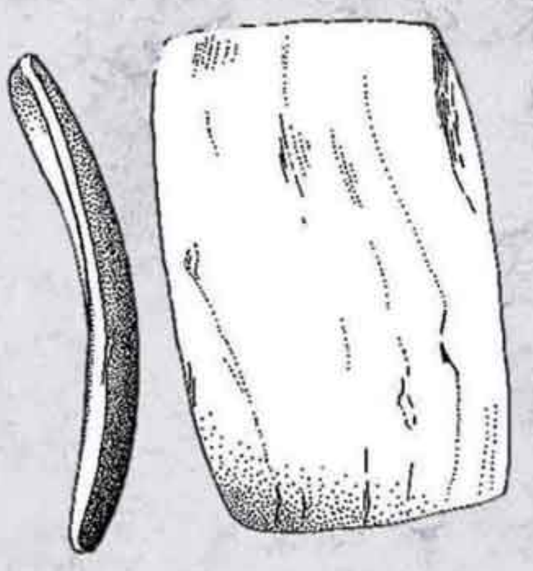


Hammer

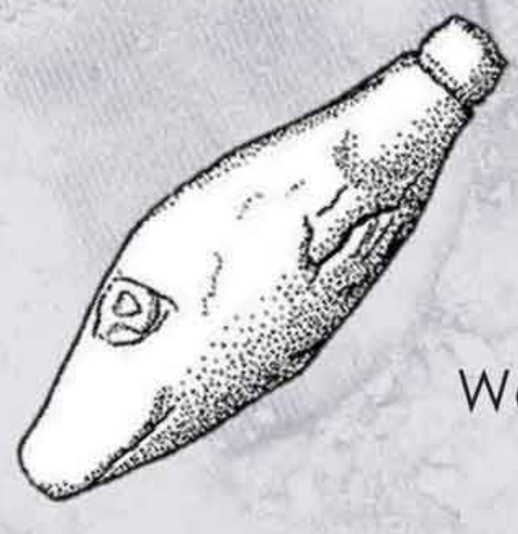
Hammer



Digging tool



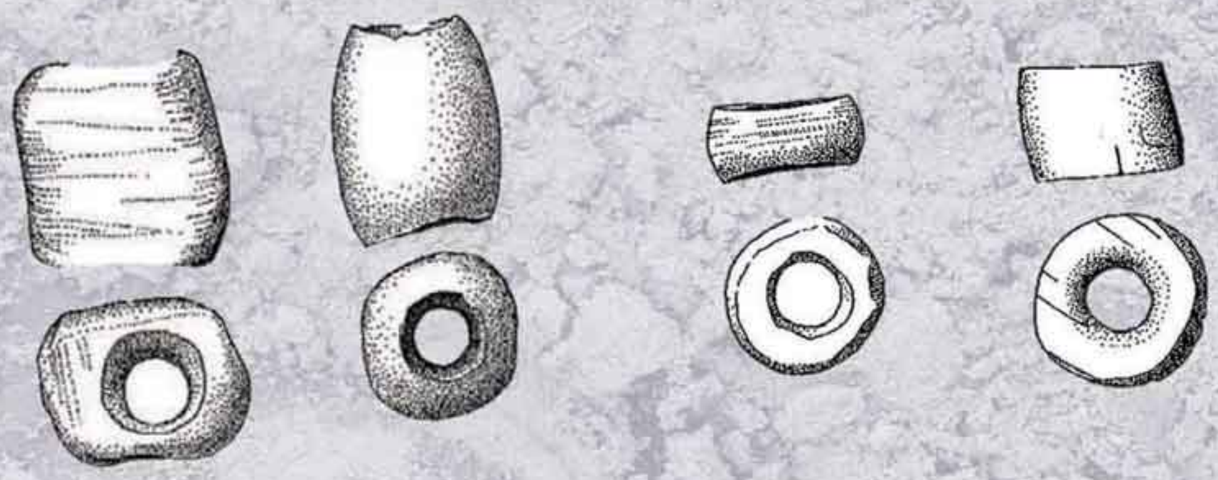
Net gauges



Weights

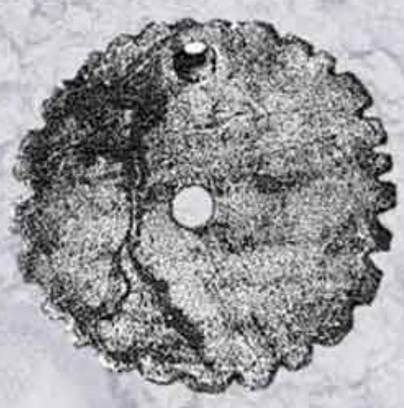
Art/Jewelry

Just like we do today, Native Americans made jewelry out of shells. They would carve shells into beautiful beads and pendants. Jewelry was not just for everyday use but was also important for ceremonies and in burial practices. Shells were such a hot commodity that they were even traded hundreds of miles north to Native American groups in the Ohio River Valley area.

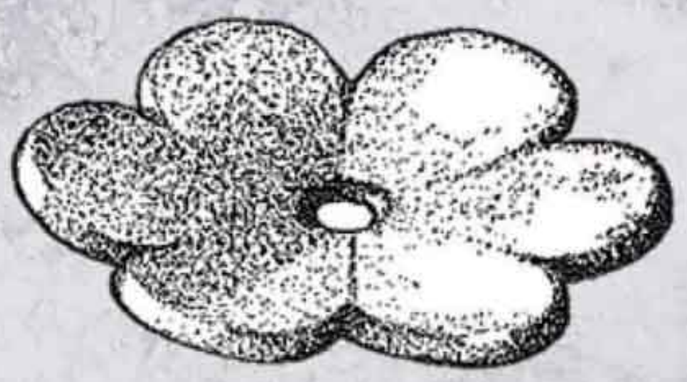


Shell beads

Carved shell



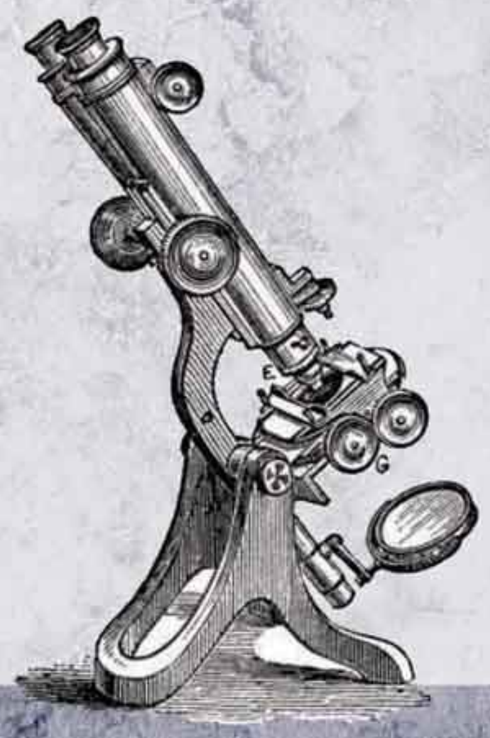
Pendants

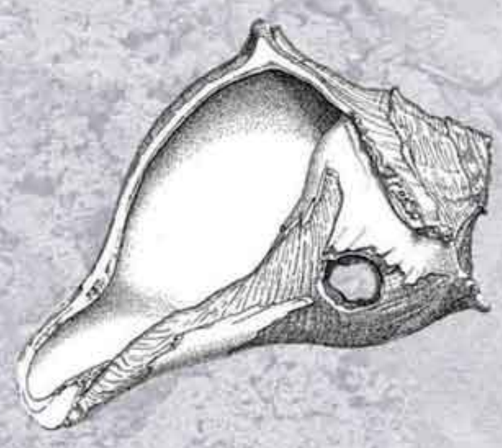


Scientific Research

Shells are very important to archaeologists today because they can tell us many things about the past including what the environment was like and what Native American shell tools were used for. Because of how they grow, shells are a time capsule of information on past climates.

When shells grow, they take in the environmental conditions around them, including temperature, salinity, vegetation, waste and pollution, and more. By analyzing the chemical make-up of shells, archaeologists can get a better idea of what the environment was like for past peoples.





Microscopes allow archaeologists to see use wear on shell tools that is not visible to the naked eye. This helps us to figure out how Native Americans used these tools. The damage on the edge of a shell tool will look different depending on what it was used for. The modern example of a conch shell tool above was used to break open oyster shells.

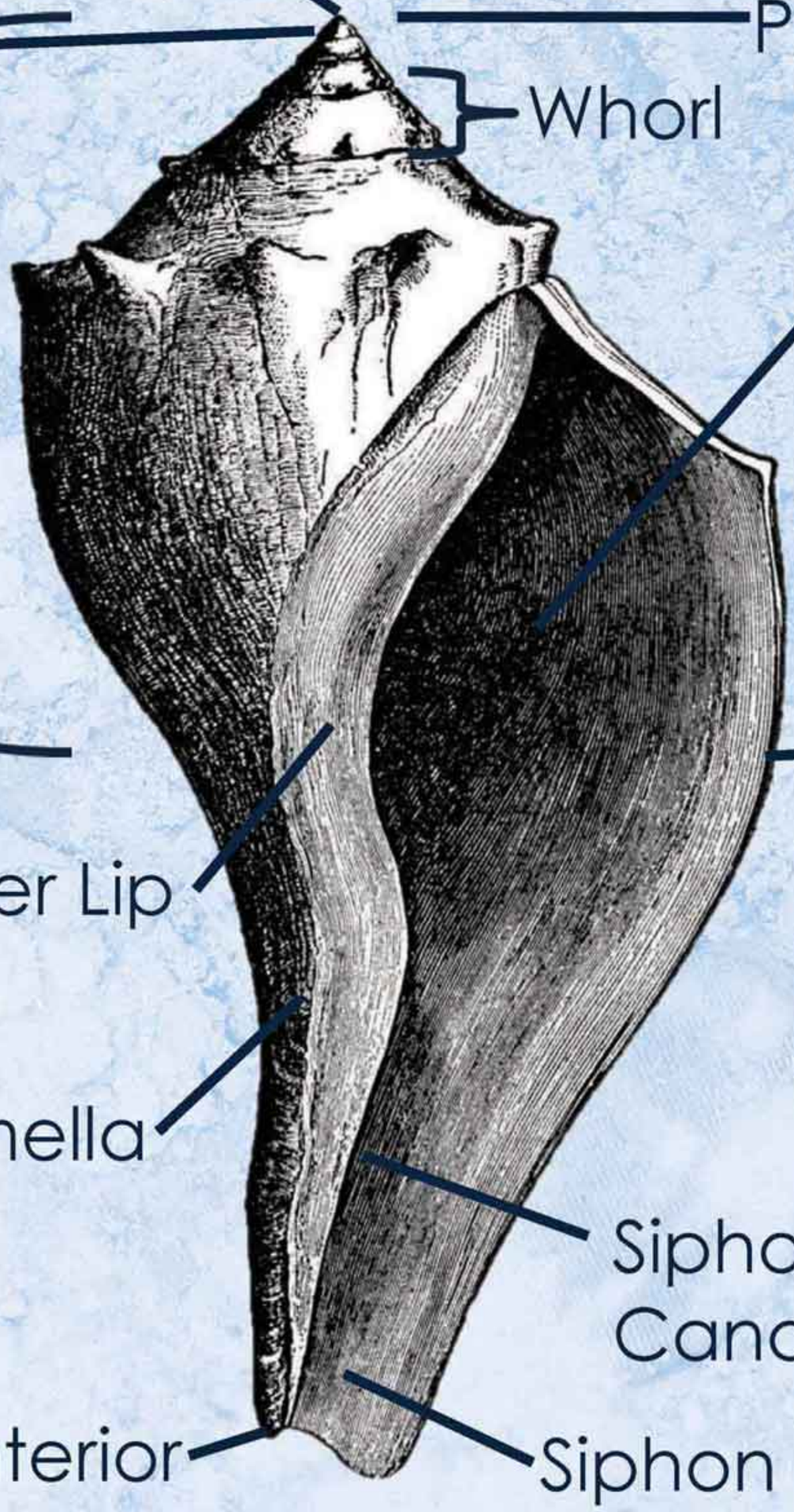
Mollusks

What we often refer to as "seashells" are actually living creatures belonging to the phylum mollusca, or the mollusks.

Mollusks are invertebrates (no backbone) and usually produce a calcareous (calcium) shell. They come in many shapes and sizes, ranging from clams and oysters, to octopi and squid. This handbook will focus on two of the seven classes of mollusks, Gastropoda and Bivalvia.

Gastropods

Gastropods represent the largest branch of mollusca and possess only a single valve or opening, which is generally spiral-shaped. They live in water and on land, and can be herbivorous or carnivorous.



The Operculum is a thin shell door that covers the mouth of the shell during its life

Busycon Whelks

The Busycon whelks are large predatory sea snails. Their shells have convex whorls, though they are not usually as prominent as conchs and tritons. Their openings are also generally large and have notches at the bottom. Whelks live in northern seas throughout the world.

Lightning Whelk

(*Busycon sinistrum*)
Archaeological Significance:

Large gastropod identified by its left-opening aperture. In most other species the opening is to the right.

Channeled Whelk

(*Busycotypus canaliculatus*)
Archaeological Significance:

Large gastropod identified by its "channeled" whorls, which are deeper than other *Busycon* species.

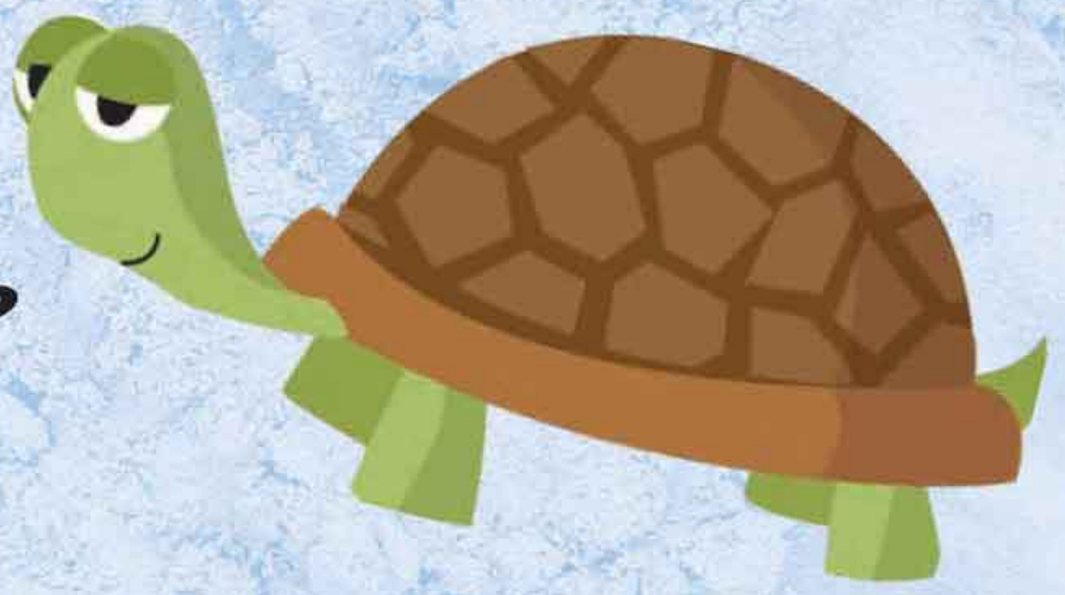
Pear Whelk

(*Busycon spiratum*)

Archaeological Significance:

Large gastropod identified by a lack of protrusions on its body whorls, forming a smooth, oblong, pear-shaped aperture.

The lightning whelk was like a Swiss army knife for prehistoric Floridians; it was used as a cup, hammer, axe, and so much more!



Knobbed Whelk

(*Busycon carica*)

Archaeological Significance:

Large gastropod identified by "spines" or knobs protruding from the outer part of its whorl. Its opening is bright orange.

Strombus Conchs

The "true" conchs or *Strombus* conchs have thick, strong shells and extremely large body whorls. Compared to whelks, the apertures are elongated and narrow, with notches on both ends. Usually a diagnostic trait, true conchs have aperture lips that are thick and expand outward in adult specimens.

Florida Fighting Conch

(*Strombus alatus*)
Archaeological Significance:

Common along Florida's coastlines, this is a medium-sized conch which has protruding spines and a burnt orange aperture.

Queen Conch

(*Lobatus gigas*)
Archaeological Significance:

One of the largest *Strombus* conchs, it has a large, solid shell and a bright pink aperture.

Tritons

Tritons are large predatory marine snails, closely related to murex shells (though they are generally bigger). Similar to whelks and conchs, they have strong, rugged shells with a more elongated whorl.

Horse Conch

(*Triplofusus giganteus*)
Archaeological Significance:

Though not a true conch, the horse conch is the state shell of Florida. It is the largest shell found in American waters.

The horse conch is the state shell of Florida, but it was also important to the ancient Mayans. They used them as ink holders and trumpets!

Atlantic Triton

(*Charonia variegata*)
Archaeological Significance:

The Atlantic triton has a very blunt top end (apex) and its body whorls are covered in bright brown, orange, and purple patterns.

Tulip Shells

Tulip shells are a species of large predatory marine snail. Their whorls lack the sharp edges or points of whelks, conchs, and tritons. The soft shoulders of their whorls create a "spindle" or tulip-shaped appearance with a sharply pointed spire on top.

Tulip Snail
(*Fasciolaria tulipa*)
Archaeological Significance:

The tulip snail gets its name from the spindle-shaped and high-spired whorls of its shell. Compared to other large predatory snails, its shell is quite smooth.

Rock and Drill Shells

Medium-sized predatory snails, these shells are generally thick, and covered in spines. Their name is derived from their preference for rocky or gravel seafloors.

Florida Crown Conch

(*Melongena corona*)

Archaeological Significance:

A medium-sized predatory gastropod, the crown conch is recognized by bands of white and brown and the sharp spines on the shoulders of its whorls.

Apple Murex

(*Phyllonotus pomum*)

Archaeological Significance:

Also called rock snails due to their rough exterior, the murex shells are medium-sized gastropods with pink apertures.

Tampa Oyster Drill

(*Urosalpinx tampaensis*)

Archaeological Significance:

As the name implies, oyster drills feed primarily on oysters. The Tampa variety is a local sub-species which is grayish brown.

Gulf Oyster Drill

(*Urosalpinx perrugata*)

Archaeological Significance:

The gulf oyster drill is similar to other species of drill shells, but is somewhat slimmer. It is also yellow and gray.

Auger and Cone Shells

Cone snails are named for their cone-shaped shells which are created by many spiraling whorls. They come in dozens of colors and shapes and tend to live among coral and rock beds. Auger shells are closely related to cone shells, but the base of the inner lip is twisted and there are no folds on the columella.

Florida Cone Shell

(*Conus floridanus*)
Archaeological Significance:

The Florida cone is a buff-yellow cone-shaped shell found throughout the state. It is very smooth with a sharp apex.

Common American Auger

(*Terebra dislocata*)
Archaeological Significance:

The common auger shell has about 15 whorls and the surface is covered with wavy vertical folds and grooves. Its cousin, the Florida auger, is much more common and found in deeper water.

Periwinkles and Turbans

Perwinkles are small, shore-dwelling snails. They generally have a thick and sturdy shell with few whorls. Turban shells also have a heavy, sturdy shell though the surface may be spiny, wrinkled, and smooth. These shells are named for their top-like appearance.

Knobby Turban

(*Turbo castaneus*)
Archaeological Significance:

The knobby turban has a sturdy shell that is top-shaped. It has round whorls decorated with rows of bumps.

Common Periwinkle

(*Littorina littorea*)
Archaeological Significance:

Periwinkles have a relatively smooth surface and the shell is heavy and solid. They range from brown to black in color, and are sometimes banded.

Moon and Slipper Shells

Moon snails are carnivorous, feeding on small bivalves. The shells themselves are generally round and polished in appearance, but can also be flattened. Slipper shells are similar to limpets; they are cap-shaped with an extra shell plate on the inner side of the shell. They permanently attach to shells, rocks, or other surfaces.

Shark Eye

(*Polinices duplicatas*)
Archaeological Significance:

The shark eye is grayish blue with hints of brown and orange. When fully grown, it will have 5 or 6 whorls.

Florida Natica

(*Natica tedbayeri*)
Archaeological Significance:

This shellfish is only found in south-east Florida and farther south in the Caribbean. It has spiral bands of brownish-red.

Slipper Shell

(*Crepidula fornicata*)

Archaeological Significance:

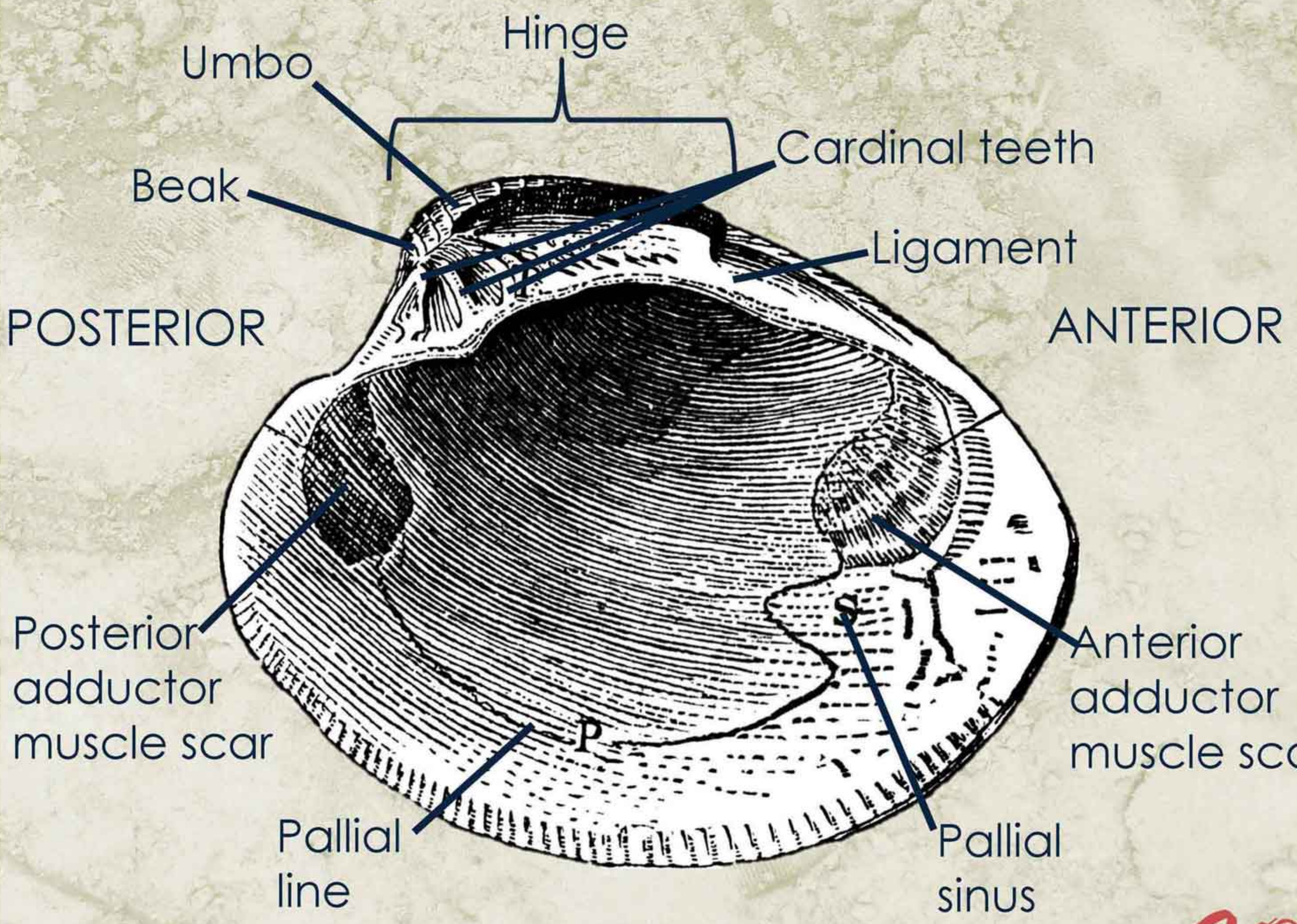
Slipper shells look like bivalves, but are actually gastropods. They are easily recognized by a white plate in their shell cavity.

Many gastropods attack and eat other snails and clams!

Bivalves

Bivalves are entirely aquatic and consist of two valves or shells attached by muscles within the shell. Some are immobile while others have a muscular foot to burrow into the sand. They use a siphon to feed upon microscopic plant and animal matter.

DORSAL side



VENTRAL side

Gari Shells

Closely related to tellin shells, gari shells generally have equal-sized valves. Their anterior end is rounded and the posterior end is usually pointed. Garis and tellins are known for having extremely long siphons, as well as being some of the shiniest and most brightly colored clams.

Common Rangia Clam

(*Rangia cuneata*)
Archaeological Significance:

The rangia clam is an estuarine/freshwater bivalve, usually found near the junction of bays and rivers.

Carolina Marsh Clam

(*Polymesoda caroliniana*)
Archaeological Significance:

This clam lives in muddy-bottom areas with brackish water. The interior of the shell is glossy white and usually stained with purple around the edges.

Cockles and Spiny Jewel Boxes

Cockles have equal-sized valves and are often shaped like hearts when both valves are together. Their margins (ridges) are scalloped or serrated. Jewel boxes are heavy, sturdy shells that attach themselves to objects.

Giant Heart Cockle

(*Dinocardium robustum*)
Archaeological Significance:

The largest of the cockle family, the giant heart's surface is yellowish-brown with serrated ridges.

Atlantic Strawberry Cockle

(*Americardia media*)
Archaeological Significance:

The strawberry cockle is more triangular than other cockle species. It is also cream-colored with red, purple and off-white spots.

Florida Spiny Jewel Box

(*Arcinella cornuta*)

Archaeological Significance:

The Florida spiny jewel box is easily recognized by its spiny exterior and bright white color. It has unequal valves and its interior is usually a soft red.

Mussels

Mussels live in intertidal zones of both freshwater and marine environments. Unlike other bivalves, their shells are usually more elongated and uneven, and they are sometimes longer than they are wide. Their outer shells are dark black or brown.

Hooked Mussel

(*Ischadium recurvem*)
Archaeological Significance:

The hooked mussel is triangular and outwardly curved. The surface is blueish-black with fine ridges.

Yellow Mussel

(*Brachidontes modiolus*)
Archaeological Significance:

The yellow mussel is shaped like a fan and is easily recognized by its bright yellowish-brown exterior.

Pen Shells

Pen shells are marine clams with long triangular valves. Their shells are thin and fragile and black-brown in color. If the outer shell is chipped away, the inner shell is shiny. In life they anchor themselves into the sand or mud using a group of strong threads called a byssus.

Stiff Pen Shell
(*Atrina rigida*)
Archaeological Significance:

The stiff pen shell is large, it can be up to one foot in length, but is fragile. It is recognized by its unique wedge shape.

Scallops and Oysters

Scallops generally have unequal valves, the lower is convex while the upper is flat or concave. Scallops can travel freely in the water by rapidly opening and closing their valves. Oysters live in marine or brackish environments. These shells are highly calcified and give the oyster a rough and textured outer surface. Because they grow on many different surfaces, the shape of their shells vary.

Bay Scallop

(*Argopecten irradiens*)
Archaeological Significance:

There are three subspecies of the bay scallop based upon geographic range. They are typically found among beds of eelgrass.

Common Altantic Oyster

(*Crassostrea virginica*)
Archaeological Significance:

The oyster is perhaps the most well-known mollusk in the U.S. Huge quantities of oyster are harvested during certain seasons.

Hard-shelled/ Venus Clams and Angel Wings

Venus clams live only in marine environments, preferring the sandy ocean floor over rocky areas. This shell type is quite diverse, as venus clams come in a variety of shapes, sizes, and colors. Angel wings, or paddock shells, are white and brittle. They are nearly always elongated and narrow at the posterior end. Angel wings dig into wood, coral, and even rock.

Sunray Venus Clam
(*Macrocallista nimbosa*)
Archaeological Significance:

The sunray venus is large compared to other venus clams, often reaching six inches in length. It has a glossy surface with smooth ridges. The outside coloring of the shell resembles sunrays.

Cross-barred Venus Clam

(*Chione cancellata*)

Archaeological Significance:

The cross-barred venus is not smooth like the sunray venus. Starting at the hinge, the shell has many ridges that cross each other.

The quahog clam is second only to the oyster in popularity as seafood. It is especially well-known in New England!

Quahog Clam

(*Mercenaria mercenaria*)

Archaeological Significance:

Popularity among Native Americans, the quahog is found in middens (trash piles) along the Atlantic and Gulf coasts. The sturdy shell makes for sturdy tools.

Coquina Clam

(*Donax variabilis*)

Archaeological Significance:

Less than an inch long, the coquina clam is wedge-shaped and comes in a variety of colors. Its surface may be white, yellow, red, purple, or even blue.

Angel Wing Clam

(*Cyrtopleura costata*)

Archaeological Significance:

Angel wing clams have soft, brittle shells and are bright white in color. The clam gets its name from its shell's resemblance to angel wings.

Jingle Shells

Jingles are thin, translucent shells. The upper valve is usually cup-like while the lower is convex, creating an opening over the lower valve where the muscle can permanently attach itself to an object or surface.

Common Jingle Shell
(*Anomia simplex*)
Archaeological Significance:

The jingle shell is shiny and comes in many different colors. Its adult shape is dependent on the surface it attaches to early in life.

For More Information

About Shells

World Register of Marine Species
http://www.marinespecies.org/photogallery.php?album=668

Bailey-Matthews Shell Museum
http://shellmuseum.org/shells.cfm

Smithsonian Information on Mollusks
http://www.si.edu/encyclopedia_si/nmnh/mollusk1.htm

Seashells.org
http://www.seashells.org/index.html

National Exotic Marine and Estuarine Species Database
http://invasions.si.edu/nemesis/chesapeake.html

Hardy's Shell Guide
http://www.gastropods.com

Peter's Seashells
http://www.petersseashells.com/shellcore.html

Jacksonville Shell Club
http://www.jaxshells.org/

Conchologists of America, Inc.
http://www.conchologistsofamerica.org/home/

The Secret Lives of Seashells
http://www.molluskvideos.com/

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