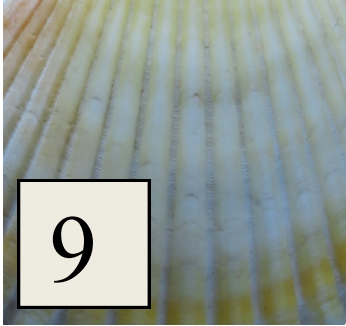
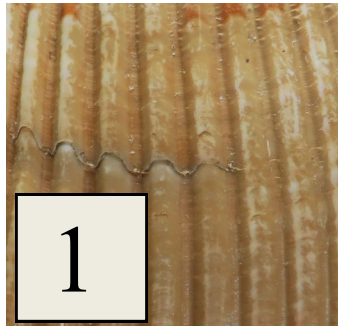


Ridged Shells A Primer on Identification

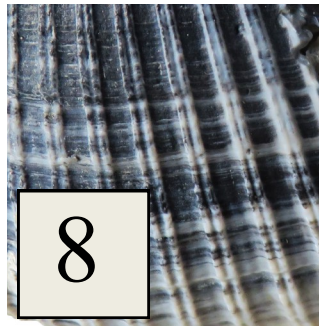
There are many species of mollusk with ridged sculpture on their shell. Determining which is which can be confusing. This guide will help answer some of the questions and help make you an expert that can determine which is which even when the shell has been reduced to a fragment when making a determination becomes especially challenging.



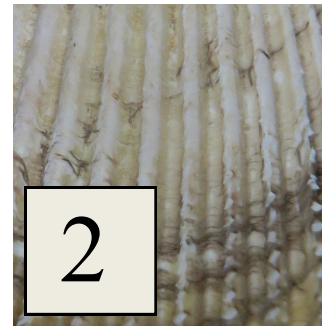
9



1



8



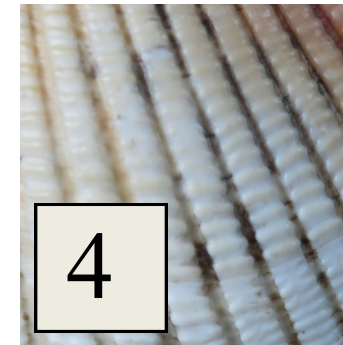
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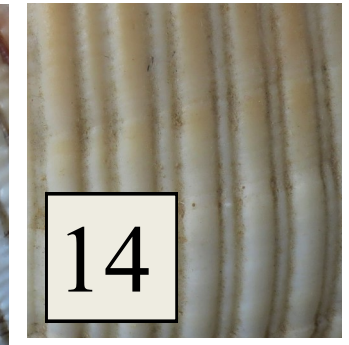
17



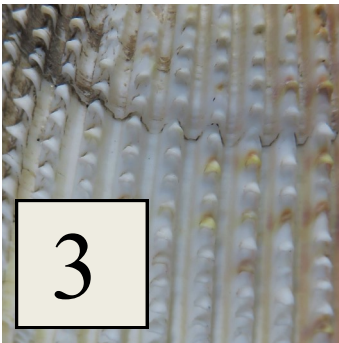
6



4



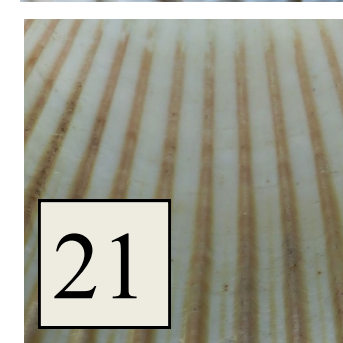
14



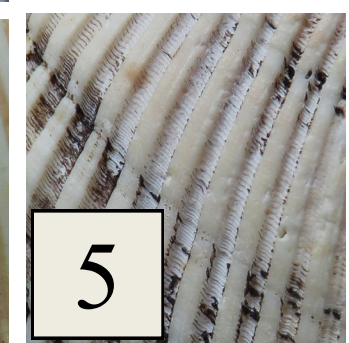
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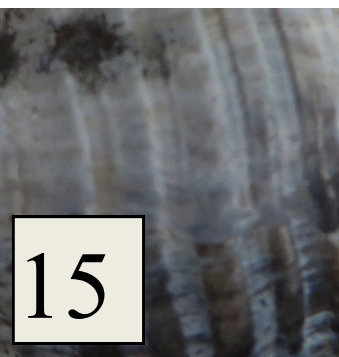
16



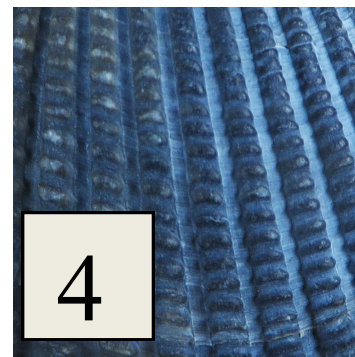
21



5



15



4



7



12

When shells become broken, identification is more difficult. Fragmentary remain are sometimes the only clues available as to the presence of a species in a given local.

Reference the numbered images above to their identifications found within the tutorial. Note: These are entry not page numbers. This is a random sample. Not all entries are represented on this page.

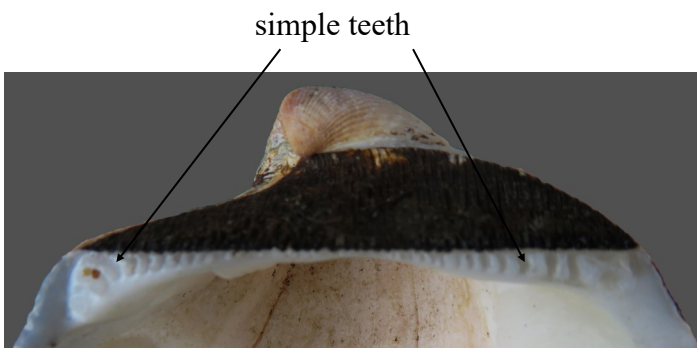
Introduction

There are many different characteristics of bivalves that help determine the Genus. Collectively an experienced observer can determine what shell they are holding. The type of hinge is a key first step to arriving at identification.

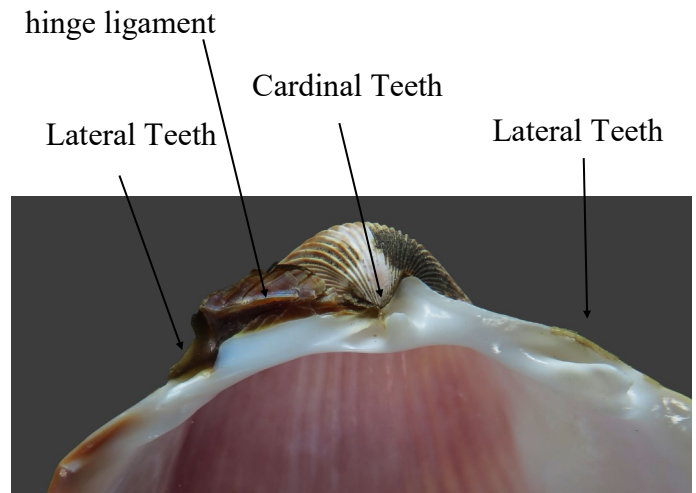
Mollusk Bivalves typically consist of two sides. Each side is referred to as a valve.

Classification for all animals is a two part name. The first is the Genus and the second the species. Identifying the type of hinge in a bivalve is very helpful to determining Genus.

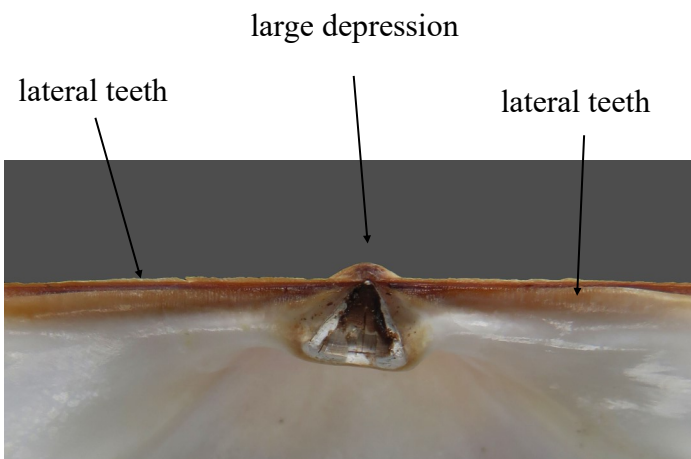
The different types of hinges in bivalves are super helpful to figuring out what Genera you have when using the presence of ridges becomes confusing.



Taxodont Hinges have simple teeth that fit neatly into grooves on the opposite valve. Ark shells are a good example of this hinge.



Heterodont Hinges as the name implies consist of different shapes. The Cardinal Teeth radiate from the apex of the valves. The Lateral Teeth vary in size and shape and radiate to each side of the Cardinal Teeth. Cockles are a good example of this hinge.



Isodont Hinges have a single large depression at the center where a ligament is attached. There are a few simple teeth to each side of the central depression. Scallops are a good example of this hinge.

To lesser degree the type of hinge ligament is helpful to confirming what genus being looked at. The hinge ligament is made of a protein material that often breaks down and is lost well before the shell wears away, thus may not be present. The hinge ligament allows the valves to open when the adductor muscles that hold the valves together are relaxed.



A pair of bivalves with ridged shells, one is an Ark and one is a Cockle. There are differences in the shape of the shells and ridges.

The hinge reveals the identity of each.

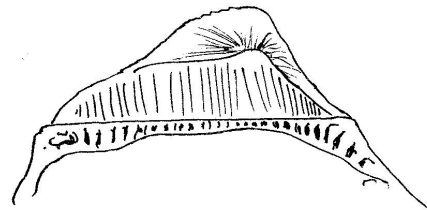
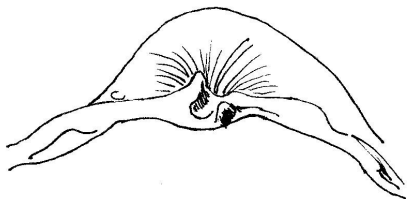
Heterodont Hinges = Cockle

Taxodont Hinges = Ark

2



6



Taxodont Hinge

Heterodont Hinge

Three Common North Carolina Cockles



1

Giant Atlantic Cockle
Dinocardium robustum (Lightfoot, 1786)
4 – 5 inches

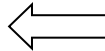


2

Yellow Prickly Cockle
Dallocardia muricata (Linnaeus, 1758)
1 – 2 inches
Scales on the ridges
Rounder, flatter and thinner than
Florida Prickly Cockle



3



Florida Prickly Cockle
Trachycardium egmontianum (Shuttleworth, 1856)
2 -3 inches



Strong scales on the ridges

Five Common North Carolina Arks



4

Incongruous Ark

Anadara brasiliana (Lamarck, 1819)

1 – 2 inches



5

Ponderous Ark

Noetia ponderosa (Say, 1822)

2 – 2.5 inches



7

Transverse Ark

Anadara transversa (Say, 1822)

1 – 1.5 inches



6

Blood Ark

Lunarca ovalis (Bruguière, 1789)

1 -2 inches



8

Cut-ribbed Ark

Anadara secticostata (Reeve, 1844)

4 – 5 inches





Two Common North Carolina Scallops



Bottom valve

9

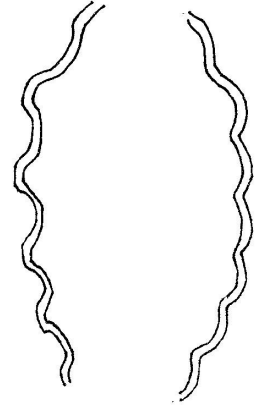
Atlantic Bay Scallop

Argopecten irradians concentricus (Say, 1822)

2 - 3 inches



Top valve



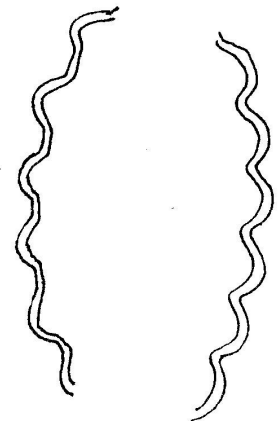
Without color these two scallops can be hard to differentiate. The Calico Scallop has flatter more rounded ridges on the bottom valve and slightly flattened ridges on the top valve compared to the Bay Scallop. The top valve in both species is more colorful when fresh.



Bottom valve



Top valve



10

Atlantic Calico Scallop

Argopecten gibbus (Linnaeus, 1758)

1 -2.5 inches

In the natural world definitions are hard to be precise. Many bivalves have different hinges including some with ridges on their shells that do not adhere to the outline presented here defining an Ark, Cockle or Scallop.

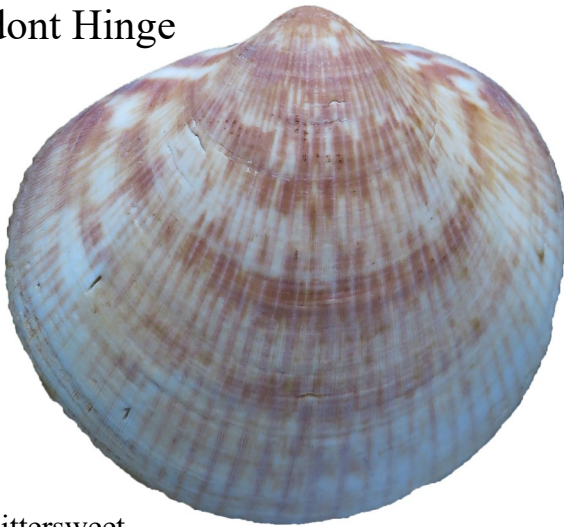


Taxodont Hinge



Isodont Hinge

11



Giant Bittersweet

Glycymeris americana (DeFrance, 1826)

3 - 4 inches

12



Channeled Duckclam

Raeta plicatella (Lamarck, 1818)

2 -3 inches

Some arks, cockles and scallops do not have boldly ridged shells.



13

Turkey Wing (Ark)

Aca zebra Swainson, 1833

3 -4 inches



Taxodont Hinge

When shells are worn and broken by the elements, determining which it is by the ridges can be tricky. Some gastropods with ridged shells when broken compared to similar size broken bivalve fragments may at first appear the same.



Ridges alternate between large and small



Ridges are equal in size



14

Giant Tun

Tonna galea (Linnaeus, 1758)

4 – 6 inches



1

Giant Atlantic Cockle

Dinocardium robustum (Lightfoot, 1786)

4 – 5 inches



4

Incongruous Ark

Anadara brasiliiana (Lamarck, 1819)

1 – 2 inches



15

Poulsen Triton

Linatella caudata (Gmelin, 1791)

2 - 3 inches

Sub-fossilization gives these shells a gray color.

Ridged Gastropods not to be confused for ridged Bivalves when fragmented



16

Giant Hairy Triton

Monoplex parthenopeus (Salis Marschlin, 1793)

3 - 6 inches



15

Poulsen Triton

Linatella caudata (Gmelin, 1791)

2 - 3 inches



17

Scotch Bonnet

Semicassis granulata (Born, 1778)

2 - 3 inches



18

Florida Horse Conch

Triplofusus giganteus (Kiener, 1840)

6 - 15 inches



Bivalves occasionally found on North Carolina beaches



19

Fossil Scallop

Carolinapecten eboreus (Conrad, 1833)

6 inches

Extinct



20

Gibb's Clam

Kalolophus speciosa (A. Adams, 1854)

1.5 – 2 inches



21

Ravenel Scallop

Euvola raveneli (Dall, 1893)

2 inches

The top valve is flat



Squared ridges on lower valve



Cut-ribbed Ark

Anadara septicostata (Reeve, 1844)

6 inches

Huge, single valves are sometimes found washed ashore

8