

# Bivalve Family Identifier

## HINGES, LIGAMENTS & PALLIAL SINUSES

### Ligaments and Dentition

#### Ligament External

Hinges taxodont, heterodont or isodont

With **taxodont** hinge —  
Small, sub-equal teeth in two rows to either side of the umbo.  
Hinge plate straight (Arcidae, Cucullaeidae) or arched (Glycymerididae).



ARCIDAE, *Tegillarca*

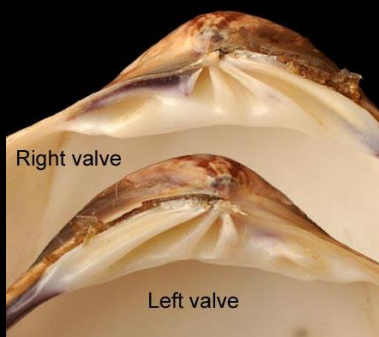


CUCULLAEIDAE, *Cucullaea*  
Lateral teeth horizontal  
(arrowed at right)



GLYCYMERIDIDAE, *Glycymeris*

With **heterodont** hinge —  
Cardinal teeth radiating from the umbo and lateral teeth parallel to the shell margin in various combinations, ligament external.



VENERIDAE - *Meretrix*



CYRENIDAE, *Geloina*



CYRENIDAE, *Corbicula*  
Serrated lateral teeth arrowed

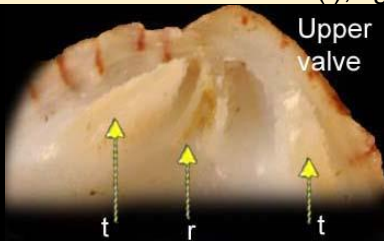
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With **isodont** hinge —

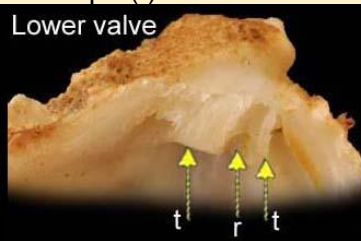
A solitary tooth and a socket to either side of the umbo with a central internal ligament.

Spondylidae: thick, rounded teeth (t), ligament (r)

Plicatulidae: narrow teeth (t), ligament pit (r)



**PLICATULIDAE**, *Plicatula*



**SPONDYLIDAE**, *Spondylus*

## Ligament Internal

### Heterodont

Ligament in a pit or groove (chondrophore), heterodont teeth



**CRASSATELLIDAE**, *Eucrassatella*: central, triangular pit.



**SEMELIDAE**, *Semele*: oblique, linear pit.



**MACTRIDAE**, *Mactra*: deep central pit, diverging cardinals.



**MACTRIDAE**, *Mactrinula*: projecting ligament pit (chondrophore) arrowed.

Continued over

## Ligament Various

Hinge edentulous or teeth insignificant  
Ligament in multiple pits (multivincular)



**PTERIIDAE**, *Isognomon*

**Toothless** hinge or teeth insignificant, external ligament present



**OSTREIDAE**, *Saccostrea*  
Ridges either side of hinge are chomata.



**PINNIDAE**, *Pinna*  
Ligament long, along antero-dorsal margin.



**MYTILIDAE**, *Perna*  
Ligament short along curved antero-dorsal margin.



**MYTILIDAE**, *Septifer*  
Ligament short along antero-dorsal margin, an anterior calcareous shelf.

Continued over

### Toothless and devoid of ligament



PHOLADIDAE, *Martesia*



TEREDINIDAE, '*Teredo*'

Valves held together by soft tissues. A linear projection (apophysis) present for muscle attachment. Both species are wood borers.

### Toothless, internal ligament attached to divaricating ridges (crura) or grooves; or otherwise



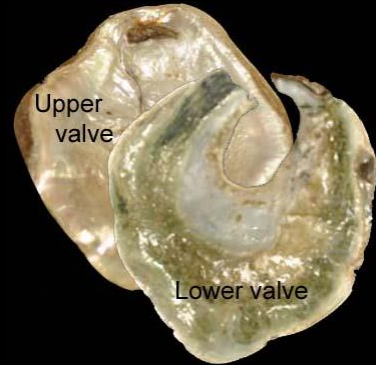
PLACUNIDAE, *Placuna*

Left:

Crura and ligaments (black colour) in upper valve, grooves in lower valve.

Right:

Lower valve has a central deficit, through which the byssus passes, for attachment to the substrate.



ANOMIIDAE, *Anomia*

### Muscle attachments and pallial lines

#### Two muscle scars (dimyarian)



TRAPEZIDAE, *Trapezium*



CHAMIDAE, *Chama*

Two muscle scars, entire pallial line without sinus

Continued over





**VENERIDAE, *Meretrix***  
Indented pallial sinus.



**MACTRIDAE, *Oxyperas***  
Small pallial sinus with short inferior limb.



**DONACIDAE, *Donax***  
Large pallial sinus.



**PSAMMOBIIDAE, *Gari***  
Muscle scars unequal, very large pallial sinus.

The pallial sinus is a scar left by the line of attachment of the part of the mantle that forms the incurrent and excurrent siphons and are proportionate to the length of the siphons. Shallow burrowers have small pallial sinuses and deep burrowers have large ones.



**TELLINIDAE, *Tellinides***  
Extremely large pallial sinus, cruciate muscle scars present.

Continued over

## Single muscle scar (monomyarian)

Single muscle scar, pallial line indistinct, no pallial sinus



**OSTREIDAE,**  
*Magalana, Crassostrea*



**GRYPHAEIDAE,** *Hytissa*



**PLICATULIDAE,** *Plicatula*



**PECTINIDAE,** *Decatopecten*

Left:  
Internal ligament in a small V-  
shaped pit, an external  
component stretching over the  
hinge line.

A single posterior muscle scar,  
usually very indistinct.