



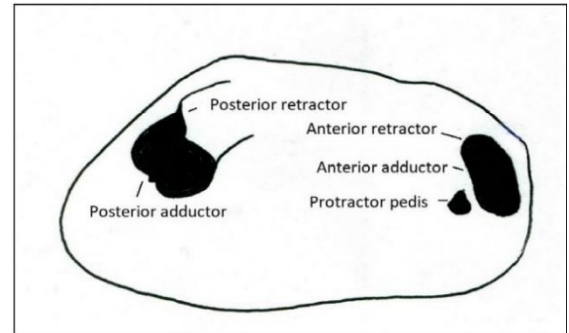
British Naturalists' Association

The National Body For Naturalists

A Guide to Freshwater Mussels of the United Kingdom

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Freshwater mussels are bivalve molluscs and may be found in aquatic environments ranging from muddy canals to the gravel beds of fast flowing rivers. The two shells, or valves, are joined together at a small section called the hinge and are opened or closed by muscles called adductor and retractor muscles. They breathe and feed through tubes called siphons, of which there are two, an incurrent and an excurrent. Feeding is by filtering water as it passes into the mollusc via the incurrent siphon.

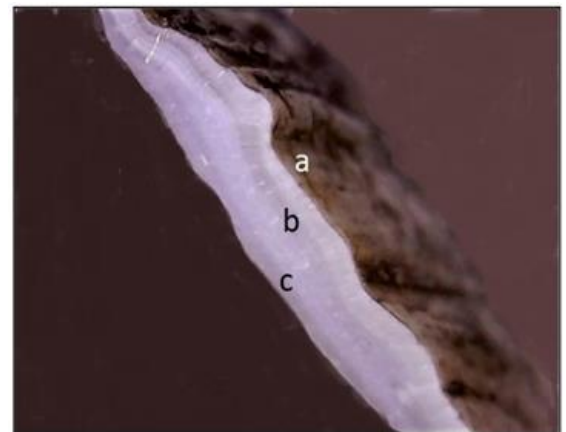


Do not intentionally disturb living mussels. You are likely to come across the shells of dead animals and so be able to see the inside of the shell. The location of the muscles fixed to the interior of the shell are visible in dead animals as small depressions called muscle scars as shown in the picture under.

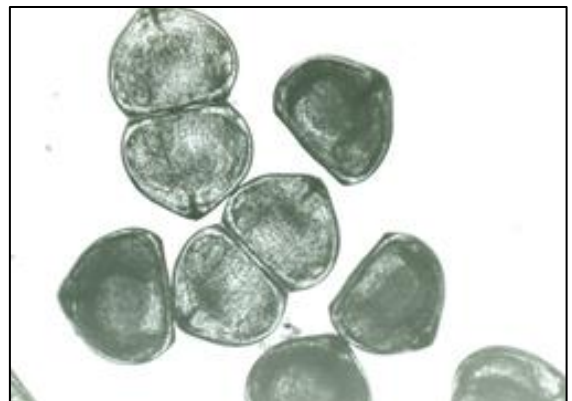
If you were able to look at a cross section of a mussel shell you will see that is composed of three layers.

These are shown in the picture and consist of:

- a hard outer (periostracum) layer **(a)**
- an outer crystalline (prismatic) layer **(b)** and
- an inner crystalline (nacreous) layer **(c)**



Reproduction in late spring relies on the presence of a fish, to which the small larvae, called glochidia, attach and encyst until they drop off as small juvenile mussels. This picture is of glochidia of the mussel *Pseudanodonta complanata*.



Mussels grow by adding rings to the outer edge of their shells, which are clearly shown in the picture of the Swan mussel below. Are the rings added one each year?

COMMON MUSSEL SPECIES

Anodonta cygnea



The Swan Mussel. This is the largest British mussel and grows to 150 cm or more in length. It is more common in the mud of slow flowing rivers or in mud lined lakes, where it buries itself, sometimes with only the tip exposed to allow respiration and feeding. When a river is dredged many of these animals may be found in the spoil.

Anodonta anatina



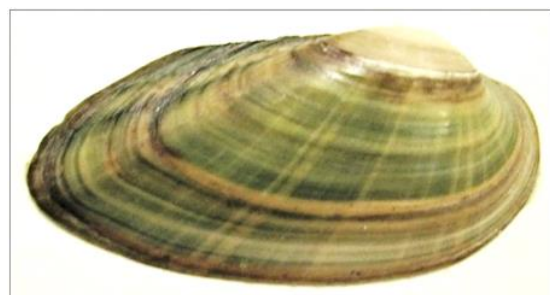
The Duck Mussel. This is smaller than the swan mussel. It does not generally bury itself completely but adopts a sloping position such that its siphons are uppermost. It grows to about 100 mm in length. Its form is more variable than the swan mussel and, in some locations, exists in both a robust form with strong shell and many annuli, and a gracile form with thinner shell and far fewer annuli, which has been called the *piscinalis* form by some continental authors. Confusingly, some use *A. piscinalis* as a synonym for *A. anatina*. Some specimens can move several meters pulled along by their muscular foot.

Pseudanodonta complanata



This is called the Depressed River Mussel. Its shell is far more robust than the swan or duck mussel and it reaches about 90 mm or more in length. The shape of the shell can be somewhat variable, which can lead to misidentification, but its greater shell mass can distinguish it from others. Some specimens have been observed to employ an interesting reproductive tactic. When the female is due to release glochidia its siphons close and pulsate regularly. When a fish notices this and “pecks” at the siphon, the mussel releases a cloud of glochidia into the fish’s face and mouth. It is an endangered species.

Unio tumidus



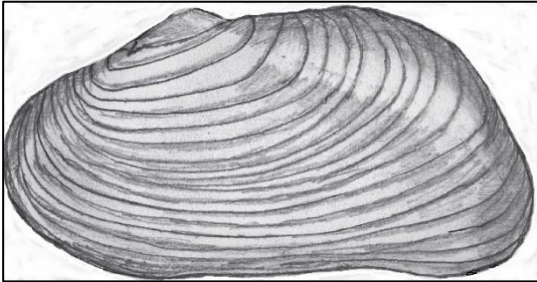
The Swollen River Mussel. These are common in slow flowing rivers or canals. Some specimens can look very similar to swan mussels at first glance but a closer examination will reveal differences. They grow to about 78 mm in length.

Unio pictorum



This mussel has been called the Painter's Mussel because artists are said to have used them to mix and hold their paint. It is found in similar locations to *U. tumidus* and grows to about 100 mm in length. It is fairly widespread and likes slow flowing rivers and canals, where it can burrow into the mud.

Margaritifera margaritifera



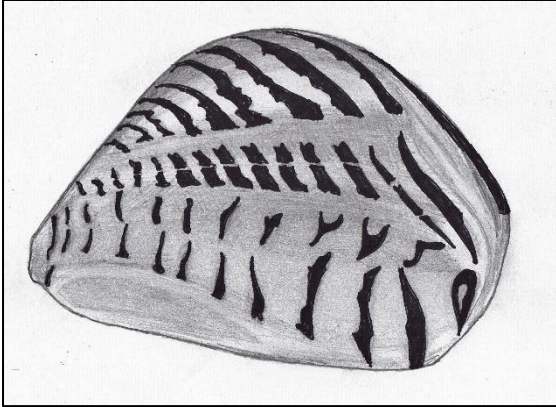
Specimens of the Pearl Mussel can be up to 150 mm long and show a very variable form. It requires a very clean unpolluted environment and is extremely rare due to degradation of its ecosystem. It may be found in some rivers in Devon and parts of North Eastern England, and parts of Wales and Scotland. It is both an endangered and a protected species so it, and its habitat must not be interfered with. Various projects to protect it exist. Some specimens do contain pearls, but this is relatively unusual.

Dreissena polymorpha

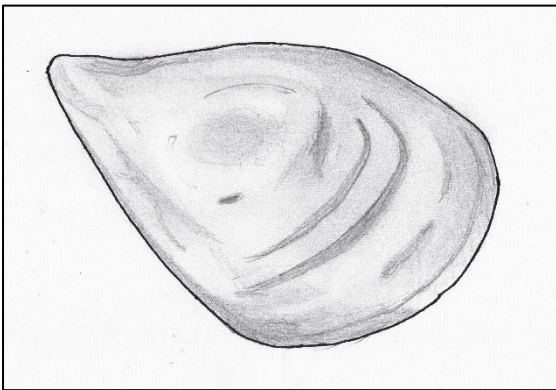


The Zebra Mussel can be identified by its characteristic shell, which is vaguely similar to the saline edible mussel *Mytilus edulis* and up to 40 mm long. It has been seen to affix itself in large number to the hulls of boats and is believed to have arrived in the ballast of ships from the Black and Caspian seas in south-east Europe. It and the Quagga mussel are named after the Zebra and Quagga, (an extinct cousin of the zebra) because of their stripe pattern.

Dreissena rostriformis bugensis



The Quagga mussel is not unlike the Zebra mussel and can grow to 40 mm in length. It can outcompete native mussels, and like the Zebra mussel can affix itself to boat hulls and block water pipes.



The shell patterns and the intensity of colour can vary greatly between individuals, some extreme examples show definite dark patterns as in the illustration above of the Quagga Mussel, others are very pale with few visible stripes as shown here. Most are somewhere in between. There is also some variation in shape.

If you spot a Quagga mussel you should report it to the UK Centre for Ecology & Hydrology through their on-line form, found at http://www.brc.ac.uk/risc/alert.php?species=quagga_mussel. Quagga mussels can be hard to distinguish from Zebra mussels, but their shells are less “bent”. They are roughly the same size, but the quagga mussel is also both more rounded and flatter.

Sperium spp. and Pisidium spp.

Freshwater Cockle/Pea mussel. *Sperium* species may be between 10 and 25 mm long and yellow or white in colour though the larger species may tend towards green. *Pisidium* are smaller than *Sperium* and may be between 2 and 7 mm long although the largest (*P. amnicum*) can grow up to 12 mm long. Although their small size will identify them as either *Pisidium* or *Sperium*, precise identification can be difficult.

Invasive species

In addition to the Zebra and Quagga mussels, invasive species now include the Asian clam *Corbicula fluminea*, which has been found in the rivers Thames, Great Ouse, Medway and Trent. Control of such invasive species is difficult.