BRITISH NATURALISTS' ASSOCIATION

Guide to British Marine Life

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by Roger Tabor

We live on a blue planet, as over 60% of the northern hemisphere, and over 80% of the southern hemisphere, is mantled by seawater. Three quarters of that area of sea has a depth of between 3000 and 6000 metres. Only a fraction, some 1%, is deeper, in contrast some 16% makes up the shallower areas of continental shelf that surrounds most land that forms a plateau down to around 200 metres. The whole of the British Isles are surrounded by a large continental shelf which is continuous with that of mainland Europe. The entire North Sea is bottomed by the N.W. Atlantic continental shelf.

Our western shores are bathed in the warm Gulf Stream, which brings rich plankton food for fish which then supports numbers of our coast's seabird colonies.

Basking Shark (*Elasmobranchii* , the sharks, cartiliginous skeleton)

You may be lucky enough to spot this huge fish when looking out to sea from cliffs. These feed directly on plankton, swimming slowly with a huge open mouth that nets vast amounts of plankton. These fish can be up to 11 metres long.

Rocky or Muddy Shores? - Seaweeds and Plants

Some parts of our coastline are cliff edged, some with rockpools at their feet at low tide as at Cornwall and N.W. Scotland. Other parts of our coastline have flat muddy or sandy shores, such as around the Essex shores. These widely differing habitats are home to very different populations of wildlife. Both rocky and muddy shores have a regular tide pattern, but rocky shores provide a range of conditions that varies with rock type, and angles of exposure on rockfaces to the sun. The seaweeds (algae) of the wrack group have distinctly different amounts of bladder-floats depending on species, and so they exploit different areas of rocky coasts according to amounts of shelter.

Species of red seaweeds are particularly abundant in reasonably sheltered pools and tide gullies. Their distinctive red colour is an adaptation to a significant factor of sea depth and light. In the spectrum of light it is the blue wavelengths that can travel further into the water, and the algae's red pigment has the best colour to absorb the blue light.

In most rockpools, and washed onto the shore, you will find three distinctly coloured groups of algae (seaweed), red, brown and green, and it is the red that can live at the lower depths. Green seaweeds' pigments capture red wavelengths of light that cannot penetrate far into the seawater. Off rocky shores at low tide you can find forests of a type of brown seaweed called oarweed, which has big hand like flat fronds to maximise their light gathering ability.

Off muddy shores there are vast areas of eel grass, which perhaps unexpectedly is a flowering plant that lives a submarine life.

The distinctive feature of a muddy shoreline is a saltmarsh, and huge areas line places like the Wash in East Anglia. The snaking channels of a saltmarsh have been formed by the way silts are deposited around plants. The key plant that begins the settlement of silt is glasswort otherwise called marsh samphire. There are a number of species of glasswort that are remarkably similar.

Once the saltmarsh mud accumulates from estuary waters, channels scour away between the areas bound by plants. The one normally found all along the banks of the saltmarsh channel is sea purslane . As the table of the marsh becomes established then other plants including sea lavender, sea aster, sea pink and scurvy grass can become established.

Coastal Marine Invertebrates.

Invertebrates are all those animals without backbones. Generally invertebrates cannot reach the sizes achieved by vertebrates, however, there are a few "monsters of the deep", notably the giant squid that from top to tentacle tip can reach up to 15 metres. There are many phyla of invertebrates, but 5 key phyla include those species likely to be seen around our coastline:

Arthropoda (includes marine crustaceans like crabs and lobsters),
Mollusca (including the sea shells),
Annelida (includes the marine segmented bristleworms like the ragworm),
Echinodermata (includes sea urchins and starfishes) and
Coelenterata (includes sea anemones and jellyfishes).

Arthropods/crustacea

Exoskeletal animals with jointed legs, includes crabs and lobsters (the Decapopds), and barnacles (Cirripedia).

Crabs
There are number of different crabs along the shores of the UK, including the edible crab which is familiarly eaten. Along the shoreline this pink coloured crab is only likely to be found up to 15cm long, but further out to sea they reach the full size of almost twice that. The typical small, green-brown, crab (up to 12cm) commonly caught by children is usually the shore crab. Some shore crabs have white patches.

Lobsters
The massive claws of lobsters are even more pronounced than those of crabs. True lobsters have pronounced abdomens and tails. There are dark bodied in the sea, and emerge from shelter to feed by scavenging. (Their pink colour seen in restaurants only occurs during cooking).

Coelenterata

Their bodies have an inner and outer layer of cells with jelly between. Includes jellyfish (Scyphozoa), Portuguese man of war (Siphonophora), and sea-anemones (Anthozoa).

Jellyfish
These can often be seen washed up on the beach as jelly-like structures. At sea they may have a pulsing action, but their travel is largely due to drifting. *Aurelia aurita* is commonly seen round Britain. Jellyfish have stinging cells to immobilise prey. Although the Portuguese man of war is usually described as a jellyfish, technically it is in a separate closely related group, and has been described as a collaborating colony of different specialist polyps rather than as a single animal.

Sea Anemones
Look into a rock pool and you will probably find sea anemones, either as dense coloured stumps with waving tentacles on top, or as fleshy lumps when they retract their tentacles into their body. Due to their colouration they appear more solid than jellyfish, but their fundamental design is very similar, in that they have a body with a simple cavity, and stinging tentacles around the mouth.

Mollusca

Molluscs are a huge group of animals, with unsegmented bodies, and include the animals that made the sea shells found washed up on beaches. These occur in two main groups, the Gastropods (slugs and snails) and the Lamellibranchs (bivalve-shelled animals). Unexpectedly for many people, Cephalopods (the octopus and cuttlefish) are also part of this grouping.

Marine Snails
One of the most common groups of animals found on rocky shores are Winkles. These have a typical snail's round-enclosed spiral shape of shell. The carnivorous Dog Whelk eats barnacles through their hunter's tongues. Whelks typically have a spiral cone shape of shell.

Although they occur as a simple low cone, and do not have spiral shells Limpets are also marine snails. They are famed for their tight and tenacious grip on their rocks when exposed to air at low tide. When the tide is up they grind their shell and the rock together to a perfect fit, which becomes their base. During high tide they release themselves and wander over the rock scraping off the film of algae to feed on. By the time low tide returns they also have returned to the security of their special spot.

Marine Bivalves
Although generally marine snails are commoner on rocky shores, in the mud of estuaries and sandy shores bivalves are more common. However whelks and other snails can be readily found. Cockles are the classic muddy shore bivalve, it burrows into mud up to around 4cm deep using its extendable foot. Thinner, smoother shelled Tellins are also commonly encountered. Scallops readily take to under water 'flight' by flapping their shells together. Oysters prefer the firm bottom of estuarine channels to live on rather than shifting mud. (These form a significant part of my own ancestry, as I come from at least ten generations of oystermen).

Mussels attach themselves to firm objects by threads, and so are not just found on rocks, but commonly attached around harbour posts.

Annelida – Marine Worms

Ragworms and Lugworms
Both of these have been dug for centuries by fishermen as bait. The marine worms and shellfish are the reason for the massive flocks of wintering waders, as they exploit the marine species as food. (The length of the birds' bills affects which bird catches which prey.

Ragworms are carniverous nereid worms with many paddles on their sides. In contrast the lugworm is a filter feeder that lives off a fine suspension of detritus that it can pull through its tunnel in the sea bed.

Echinoderms

These have a general circular pattern (seen most clearly in sea urchins) but can be in a form with radial arms (like starfishes). They all have tubefeet linked to a system of tubes in the body. The phyla includes the classes of: starfishes (Asteroidea), sea urchins (Echinoidea), brittle stars (Ophiuroidea), sea cucumbers (Holothuroidea) and sea lilies (Crinoidea).

Sea Urchins
A typical sea urchin is seen in the rock urchin, which, although only being of up to some 6cm diameter, has dramatic long spines. Colour is variable from brown to green or purple-violet.

Starfishes
The common starfish regularly preys on oysters, to the extent of being considered a pest by the oyster fishing industry. They can be up to 30cm across and of variable colour, from a pinky-fawn to purple-violet

Brittle Stars
Typically these have thinner arms than starfish, radiating from a central hexagonal body block.