

## WILDLIFE

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# Rocky Shore

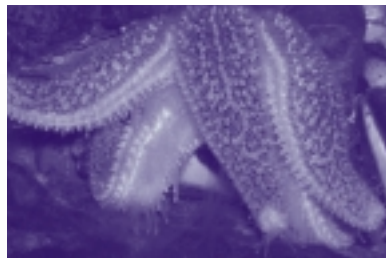
Everybody who has been to the beach has participated in foraging through rock pools looking for sea creatures, which inevitably escape under rocks. When we find these creatures, the next thing is to identify them. Even for an expert, this is a challenge. The rocky shore has a rich diversity of animals and plants. This pamphlet is filled with interesting facts about these animals, aimed at encouraging you to go and discover the beauty and riches of our shores.

The animals that live on the rocky shore are mainly marine in origin. These marine animals have evolved strategies to live on the rocky shore contending with strong forces, tides, waves, air exposure and desiccation. The animals choose the appropriate part of the shore where they can survive.

Animals are organised into groups according to their similarities and given Latin group names.

### Starfish

**Structure:** The common starfish has 5 arms but species like the Sun starfish has up to 14 arms. The skeleton is external. The under surface of the animal is covered with 100's of parallel



### Phylum Echinodermata

(Starfish, Sea urchin, Sea cucumber,)

tube feet which run down each arm. These tube feet have a round sucker like ending similar structure to a sink plunger.

**Locomotion:** They move in a random fashion using their tube feet. Each arm can take the lead depending on the direction they wish to go.

**Feeding:** Starfish are scavengers and carnivores, mostly feeding on mussels. They use their tube feet to capture prey by attaching their feet to either side of the shell and pulling the shell apart. It then ejects its stomach through its mouth, covers the fleshy prey and draws back its stomach into its body.

**Senses:** Starfish have no eyes but have sensory tube feet on the tips of each arm to detect light. They also use specialised spines (pedicellaria) on the upper body.

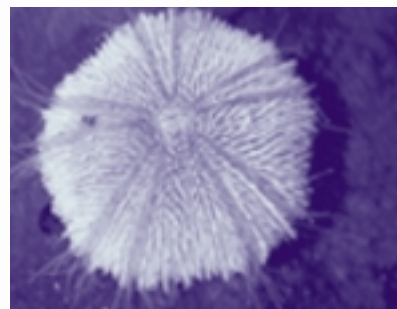
These look like fire tongues. They can't be seen with the naked eye but are fascinating under the microscope. Their job is to snip off small animals and plants before they grow and become a hindrance.

**Regeneration:** Starfish can regenerate arms and tube feet if they happen to lose them.

### Brittlestar

They too have 5 arms and a central round body but their arms are very narrow and stick like. They are usually found in soft mud sediment.

### Sea urchins



#### Common Sea Urchin

**Structure:** Sea urchins have a round exoskeleton. Sand dollars are round and look like someone stamped an image of a starfish on their shell.

**Locomotion:** They use their tube feet and their spines to move. The spines help them right themselves if they are turned over.

**Feeding:** They feed on algae growing on rocks. They scrape the food away by using a lowering mouth called an Aristotle's lantern which grows a few millimetres a week as it is constantly being worn down by the friction of the rock.

**Reproduction:** All sea urchins have separate sexes. Fertilisation of the eggs occurs in the surrounding water. Then they will collect the fertilised eggs and keep them safe in their mouth until they are developed.

### Sea cucumber

**Structure:** These are long sausage shaped animals. They are black, brown or greenish olive in colour. They vary in size considerably from the size of a sausage to 3 metres long.

**Defence:** Tropical sea cucumbers have an unusual self-defence. When in danger, they expel out their insides (stomach and intestines) into the face of the predator. This allows them to escape, leaving their attacker with the intestines and their contents to feed on. The sea cucumber can then grow them back again.

### PHYLUM MOLLUSCA

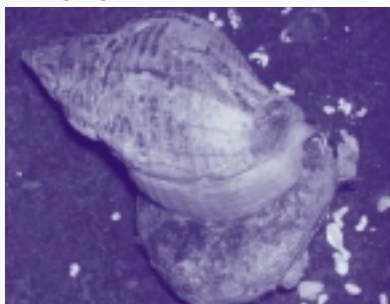
Limpets, Shellfish, Periwinkles, Squid, Octopus

### Mussels, oyster, cockles, Clams

A strong muscle holds the two shells together. Each year the shellfish lay down a growth line on the shell. So if you start at the rounded end of the shell and work your way back you can tell

the age of shellfish. The shell is made up of three layers. The inside nacreous layer is the same material as pearls. Oysters produce most of the commercial pearls but in fact all bivalves can produce pearls. Pearls are produced by the shellfish to protect themselves from harmful substances that enter the shell e.g. parasite, grit. The Nacreous layer is also used in some cosmetics to add a bit of glitter.

### Whelks



Common Whelk

The Dogwhelk (*Nucula*) is a large shell predator. They have a drill like tooth, which makes a small hole in the shell allowing them to get to their prey. Their egg case can be found washed up on the shore looking like a lump of foam.

### Limpet

Limpets in a dome shaped shell. If you have ever tried to pull a You'll realise how difficult it is. The reason it is nearly impossible is because they have a strong muscular foot. They also make a hole in the rock face and return to the same hole every time the tide goes out to help prevent water loss.

### Sea slug

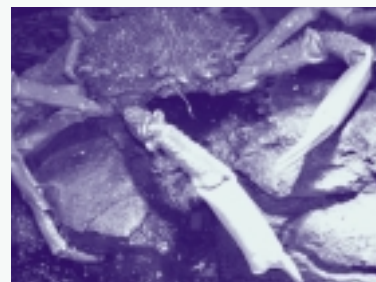
These are one the most colourful delights of the rocky shore. They come in all ranges of flamboyant colours. Their gills are outside

their body. But like many beautifully coloured animals in the wild, their colour is not there for attraction but as a warning. They have skin glands that produce sulphuric acid which is toxic to predators.

### PHYLUM BRYOZOA

These are small colonial animals about 1mm in length. They are independent but live together in a colony. You can see them in all there glory underneath a microscope. or with a hand lens. These animals can be described as blanket animals, covering seaweeds and rocks but some are solitary. When submerged in seawater they actively feed on plankton (small floating animals and plants) using their tentacle.

### PHYLUM CRUSTACEA Crabs, Lobsters, Prawn, Barnacles



Spider Crab

### Crabs

**Structure:** Crabs have an external skeleton made from chitin (same material as hair and nails). This hard exoskeleton can't expand so in order for a crab to grow they have to shed their skeleton every year - the moulting process. Shore crabs moult in July. The crab will go into hiding as they are more venerable to being eaten at this time. They pull themselves out of the old skeleton. Then swell up with

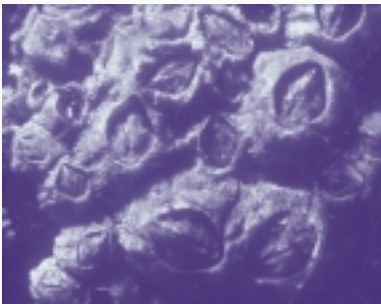


water to enlarge the new exoskeleton. In a few days their new skeleton will become hard. Hermit crabs live the discarded shells of marine snails which they carefully choose. As they grow they will look for a larger shell.

**Locomotion:** Crabs move side ways. Their legs have up to 10 joints that allow them great manoeuvrability. If they get their leg trapped in a rock they simply pull their leg off and grow a new one.

**Reproduction:** The male will turn the female upside down and will hold her with his claws, remaining attached to her for 3-4 days. The female will then spawn (occurring in winter) collect up her eggs and carry them under her until spring. Although a single female will spawn hundreds of thousands of eggs, only a few will survive until adulthood. Although this may seem wasteful the crab larvae themselves are an important part of the marine food web.

## Barnacles



**Acorn barnacles *Semibalanus balanoidus***

**Structure:** These animals live attached to the rocks, shells or even whales!

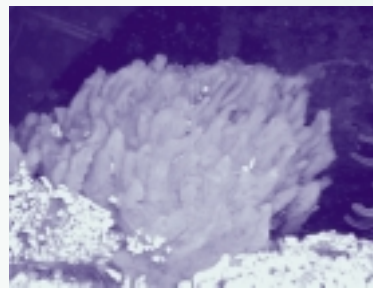
**Feeding:** They feed by sieving the water for plankton using their legs.

**Reproduction:** Barnacles are hermaphroditic (one individual having both male and female sex

organs). Their male sex organ is well endowed. The long penis increases by 5 times its size during reproduction. It is able to reach across to neighbouring barnacles and fertilise them. Eggs are retained inside the barnacle. The young barnacle grows through 7 different body forms until they reach adulthood when they attach to the rock.

## PHYLUM PORIFERA

### Sponges



**Breadcrumb sponge**

**Structure:** The natural sponge your Grandmother has in her bathroom is in fact a marine animal which grows on rocks. Spider crabs gather sponges and put them on their back, perhaps to aid camouflage.

**Feeding:** They filter plankton from the water.

**Reproduction:** Most sponge species are hermaphroditic (have both sex organs) but some species have separate sexes. Sponges can grow very quickly, and for rapid reproduction they use asexual means. The cells of the sponge simply divide, drop off and grow next to the parent sponge.

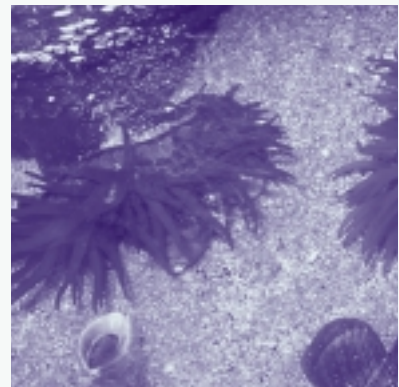
## PHYLUM CNIDARIA Jellyfish, Sea anemones, Hydroid

### Jellyfish

**Structure:** Everyone knows the jellyfish sting. They have stinging cells inside their tentacles to capture plankton. The sting actually comes from a whip that is released from the cell on contact.

**Locomotion and senses:** They move with the water currents. Their body is designed to suspend in the water so they sink very slowly. If you think of cracking an egg in water, it will take longer to sink than if you drop a whole egg into a saucepan of water. Having long tentacles and a large body diameter creates a greater surface area like the sinking egg, or like a parachute.

### Sea anemones



**Beadlet anemone**

**Structure:** They are in effect upside down jellyfish that attach themselves to rocks, held in place by their muscular foot while their tentacles dangle in the water. When the tide is out, they look like a lump of jelly stuck to the rock (sometimes called blood sucker) as they withdraw their tentacles to help stop water loss. These tentacles like those of the

jellyfish, are packed with stinging cells.

The common sea anemone is called the Beadlet anemone (*Actinia*). They are found in two colours, red and green. It is very rare to find both colours close together on the rock. They have war zones when both colours meet. They battle each other with stings to remove the other from their territory.

### **Class Hydrozoa**

**Structure:** These animals come in a wide variety of shapes and sizes. The common rocky shore Hydrozoa looks like a piece of seaweed.

### **Jack sail by the wind**

This is a colonial hydrozoan animal that floats on the seas. It is a tropical species but is found washed up on the Irish beaches in July and August. It is usually found dried up looking like bluish transparent paper. It has an oval shaped body with an erect fin to sail. The sail may be left or right handed which separate the group into two. Each group is driven to our shores by two different winds.

### **Rocky shore ethics**

When you venture on to the shoreline the biggest problem is the human foot. Be careful where you stand and respect to the life you find there. It is important to replace any over turned rocks and to return animals and plants to the exact place where they were found. Animals that live on the rocky shore have adapted to a specific area on the shore. The rocky shore is a widely diverse habitat. There are many species that are common but some are rare. It is best to treat every animal and plant with care.

Leave no litter, and why not make an effort to remove a few items of other people's litter washed up by the tide on your rocky shore.

Also bear your own safety and that of family members in mind. Be aware of the danger of slipping, and of deep water, waves and rising tides.

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*Printed on recycled paper  
by Print & Promotions  
Tel: 087 2567205  
May 2005*

