

Life – but not as we know it.
January 2010

This proved to be an apt title for Berwick Wildlife Group's first indoor event of the year, a talk with wonderful photographs by Liza Cole, who until recently was the Ranger for the St Abb's Voluntary Marine Reserve. The Marine Reserve stretches from the shoreline of the National Nature Reserve down to the 50m contour – because this was about the depth limit for amateur divers when the Reserve was set up. Although there are areas of sand and boulders, the hard volcanic rock that has produced St Abb's Head continues out to sea, and provides a firm substrate for a host of weird, wonderful and brightly coloured marine creatures, including corals.

Liza began by leading us on an imaginary dive into the cool but outstanding clear waters of the Reserve. As we sank down through the water column we passed by the plankton, minute plants and grazing animals which are the base of the marine food chain. Some larger animals are also planktonic in that they float in the water column – like the comb jellies (with transparent cases covered in shimmering cilia) and lion's-mane jelly-fish, which look much better afloat than when stranded on shore, although their tentacles can still give a nasty sting. Turtles come to the British Isles in summer especially to feed on our abundant jelly-fish, returning to the tropics to breed. Also in the water column are fishing sea-birds, the occasional guillemot "flying" past giving a somewhat surreal effect on a dive.

Where the rocky reefs are within 10m. or so of the surface there is enough light for big seaweeds to grow, the kelp forest being the marine equivalent of a rain forest with animals inhabiting all levels. On the fronds are bright-coloured sea slugs, the warning colouring advertising their poisonous nature, in turn derived from the poisons of the tiny "sea mat" animals which they eat. Sea slugs often gather in small groups to lay and fertilise eggs – all engaging in both activities as they are hermaphrodite. Tiny limpets with glowing blue bands eat the kelp directly, and the sea bed is grazed by edible urchins with hundreds of hydraulic tube-feet. These are preyed on by lobsters and ballan wrasse, spotted fish with horny lips and extra teeth in their gullets so they can eat shellfish easily. Ballan wrasse all start out as female, but as they grow some turn in to males, although we don't know how they tell each other apart!

In deeper water it is too dark for kelp, but there are lots of animals, often sedentary filter-feeders who look more like exotic flowers. Anemones include the plumose anemone, a white, orange or pink column up to 9ins. long with a fluffy top; and the even brighter dahlia anemone with multicoloured waving tentacles. More unusual are the deeplet anemone, a cold-water species from Arctic waters; and the Devonshire cup coral, a solitary coral more at home in the south and west. Both find a congenial home at St Abbs. Dead men's fingers is another species of coral, this time colonial. Fluffy-looking when the polyps emerge to feed, they are clusters of smooth, white tubes like.... dead men's fingers, when the polyps are retracted into the body of the coral for safety. On flatter areas are dense beds of brittle stars, holding on to each other with some legs and trawling the water for plankton with others. Among these are larger echinoderms like sun-stars and sea-urchins.

The bottom-dwelling animals are food for more active creatures – lobsters, crabs (such as hermit crabs or the velvet swimming crab) and fish. Some predatory fish

look particularly fierce, for instance the wolf fish with large teeth or the angler fish with its huge mouth surrounding by tentacles to attract small creatures. In their turn the lobsters and crabs are eaten, mostly by us, and the less fierce-looking back half of angler fish is sold by fishmongers as monk fish. Creel fishing for lobsters and crabs is allowed in the Marine Reserve, but trawling is not, and the 25,000 people who dive from St Abbs are asked not to take home a lobster or crab "for the pot". The balance of plants, grazers and predators needs careful protection, something the Voluntary Reserve has achieved in the last 25 years purely through agreement among those involved.

Liza's audience were amazed to hear of this world of colourful animals, rivalling a coral reef, in the North Sea. Although naturalists have been listing and studying birds, plants and butterflies on land for centuries, very little is known about the ecology of even shallow coastal waters. Even less is known about the behaviour and physiology of the animals. Why, for example, are so many brightly coloured in white light, whereas in the natural dim blue light of their homes they appear dark, to our eyes at least? A great many surprising discoveries are still to be made in this other world beneath the sea.

Fiona, Jan 2010