

## COASTAL NOTES

Maritime Rescue Institute – 13 November 2007

What creature can weigh in at 600 pounds, yet pass that body through a pipe no wider than a 50p: can change colour or texture to suit its environment: has 3 hearts: has blue blood: can taste with its arms: has no skeleton: has eight arms?

That last statement probably gave the game away: of course, it's the octopus. Because the octopus has no skeleton it can flatten its body and slither through extremely small spaces. This gives it great advantage as it searches for food amongst the rocks of the sea bed; the arms can reach down into the tiny crevices to extract a tasty morsel. The suckers on the arms have receptors that can actually taste what they are touching – so no dodgy meals for them, then!

It also makes it extremely hard to keep them in captivity. Not only are they able to escape through tiny gaps, they are also intelligent, problem solving creatures who will actively work out ways to evade their captivity. Maze and problem solving experiments have shown that they have both short and longer term memory, but their short life span limits how much they can learn.

An octopus can hide in plain view. Pigment cells in its skin and specialised muscles can instantaneously match the colour, texture and pattern of its surroundings rendering it almost completely invisible. Predators just swim right on by. If caught unawares, it can squirt a trail of black ink to confuse and disorientate a predator; this ink also dulls the sense of smell.

A major American aquarium moved a large octopus into a tank with dogfish believing that the octopus's ability to hide and camouflage itself would keep it safe from the predatory sharks. Soon after, they started finding dead dogfish on the tank floor. Puzzled as to who the killer could be, they put cameras into the tanks to see what was going on. To their utter astonishment it was the octopus. It was half the size of the dog fish, yet it was wrapping its arms around the sharks, and overpowering them with its toxic bite. Exit one octopus to protect the remaining dogfish!

Their blue blood is caused by the copper rich protein hemocyanin, which carries oxygen more effectively in cold conditions with low oxygen pressure. This blue blood is pumped by no less than three hearts – two pump to the gills while the other pumps blood around the body.

For a short spell in the 1960's there was a craze for octopus wrestling, mostly on the west coast of America. This involved divers grappling with octopus in shallow waters to bring them to the surface. The World Championships were held in Puget Sound Washington, were televised and attracted crowds of up to 5,000 spectators.

There are over 100 different species of octopus. The largest is the Giant Octopus which can be up to 7m when stretched out, while the smallest is the Californian octopus, at only 1cm in length. This huge variation in size makes it very difficult to know whether a captured octopus is a young member of a large specie, or a fully adult small one.

The National Geographic website has lots more information about these fascinating creatures along with video footage that will truly amaze.

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