Octopus: Armed but Not Dangerous

Ranger Jim Serpa

As I lean over the tide pool exhibit, making sure that all our animals have been fed I overhear a small boy ask his mother where the octopus is. The mother looks around for a few seconds and spots what she assumes is the arm of an octopus, sticking out from under a rock. This arm is trying, quite successfully, to grab a small piece of food left uneaten by the other residents of our tide pool. Mom then points to the arm and says, "There, under that rock; see the tentacle?" This is where I come in. Not wanting to sound too much like a know-it-all, but wanting to set the record straight, I say "Oh, wow, you have found one of the hardest to find residents of our tide pool, the brittle star." This is now the point where I explain that we don't have any octopus in our tide pool.

"The octopus is far too intelligent and shy to let itself be seen, even if we did have one in this tank," I say. I go on to explain that we did have a small octopus in the exhibit several years ago. The only people that saw it were the night rangers after all the lights were turned off and the Visitor Center closed.

Then, after a few months, we didn't see it at all! Assuming it had perished to some other hungry resident of the tide pool, we pretty much forgot about it. Then the weirdest thing happened. We were cleaning out the tide pool, water drained and animals removed, scrubbing like mad to remove some of the built up marine deposits, when the very same octopus we had thought long gone came crawling out of one of the water pipes. It had grown to about twice its size and was not real happy with its sudden lack of water. We quickly snatched it up and placed it in one of our holding tanks. We were amazed that no one had seen it for several months and not only was it not deceased but thriving! The next day we set it free, back into the waters off Doheny where I had caught it months earlier,

rationalizing that if it could not be seen then there wasn't any real good reason to keep it in captivity.

The octopus belongs to the animal phylum mollusca, which includes animals like clams, sea slugs, abalones and even the pesky garden snail that eats your prized petunias each spring. While it doesn't resemble these animals too closely it does resemble its closest relative, the squid. Both squid and octopus belong to a sub group of mollusks called the cephalopods. All cephalopods have a ring of tentacles (from 8 to 80 depending on the species) lined with sucking discs, surrounding a sideways parrot-like beak. They also possess a fleshy muscular sac called the mantle that houses their internal organs.

Octopus are thought to be the most intelligent of all the invertebrates and can be found from the intertidal areas along our coastline to depths as great as 15,000 feet. According to most behavioral scientists, the octopus can teach itself many complex tasks and can even learn from watching other octopus. There have been reports of octopus removing lids from bottles placed in their tanks, with prey inside, in a few short minutes. Octopus in adjacent tanks were allowed to watch all this. Then when the same bottle is placed in the watchful octopus' tank, it immediately takes the lid off and consumes the contents. They have even been observed leaving their tanks, crawling to another tank, eating the food in the other tank, then returning to their tank.

Cephlapods swim by forcing water from their mantle cavity through a siphon at high pressure, sort of like a jet engine. This can propel the animals very quickly through the water for short periods of time. The octopus actually crawls along the ocean floor most of the time preferring to "jet" along only occasionally. Squid and octopus can also change color so astonishingly fast that it almost takes your breath away to watch them do it. The color changes in the octopus are often tied to the animal's mood. Many octopus also have the ability to change the texture of their skin instantly as well. All this aids them in their stealth-like mode of hunting prey and in avoiding being preyed upon by such predators as the moray and man. The sucking discs located along the arms also act as a hunting aid, enabling the octopus to taste the environment. When the octopus catches prey it often bites it with its beak and injects a poisonous saliva that

paralyzes the prey for easier feeding. It also has a file-like tongue that can drill through shells, which allows an avenue for the poison to attack the animal under the shell. It is a testament to this animal's docile nature that more people are not bit while picking octopus up in the local tide pools.

The eyes of many of the cephlapods are almost as sophisticated as a human's and, in the case of the Giant Squid (Architeuthis), are the largest on earth. These wonderful eyes are their primary means of locating prey. The ink that cephlapods squirt is used to confuse the attacker, as well act as a molluscan stink bomb, often rendering its attacker "nose dumb" for short periods of time. For many years sepia writing ink was obtained from the ink sacs of cuttlefish, another type of cephalopod.

The species found in our local tide pools is usually the two-spotted octopus, Octopus bimaculoides. It grows to a length of approximately 2 feet preying on crabs and other shellfish. Here at Doheny, we hope to add a special octopus viewing tank sometime in the future so that our visitors will have the pleasure of observing this amazing creature.