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Reading Article G1

Article #17: The Octopus

Some people say that the best defense is a good offense; an octopus, however, would disagree. In addition to being one of the strangest and most beautiful creatures in nature, the octopus has some of the most inventive and effective defense mechanisms imaginable. While other animals have teeth, horns, or claws to help defend them from predators, the octopus concentrates its energy on hiding from and confusing its attackers. When it wants to get away, the octopus has an impressive arsenal of tricks at its disposal.

The most well-known of the octopus's defense mechanisms is its ability to squirt clouds of ink into the water. Some octopi use this cloud of ink as camouflage; after squirting the ink,

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Another defense mechanism possessed by many octopi is the ability to change color, much like a chameleon. Most animals get their skin color from chemicals in the skin called chromatophores (melanin is one of these chromatophores). Chromatophores might contain yellow, orange, red, brown, or black pigments, and the amount of each pigment present in the skin determines an animal's color. While most animals are always the same color, some species of octopi can control the amount of each color pigment in their skin cells, allowing them to change color. Some poisonous octopi, when provoked, will change their skin to a bright, eye-catching color to warn predators that they are dangerous and ready to strike. Other octopi use this ability to change their skin to the color and texture of seaweed or coral, allowing them to blend in with their environment. Finally, some octopi—such as the mimic octopus—use this color-changing ability to masquerade as another type of animal. The body of an octopus is highly flexible, and some species can

combine this flexibility with their color-changing skills to make themselves resemble more dangerous animals such as sea snakes or eels.

Yet another defense mechanism possessed by some octopi is the ability to perform an autonomy, or self-amputation, of one of their limbs and regrow it later. Many species of skink and lizard also possess this ability, which allows them to shed their tails when caught by a predator and therefore get away. When a predator catches a tentacle the octopus can amputate this tentacle, thereby unfettering itself, and regrow the tentacle later. Some octopi, however, are even cleverer. When threatened by a predator, these octopi will shed a tentacle before being attacked in the hope that the predator will go after the detached tentacle rather than the octopus itself.

While the octopus may not be the most vicious creature in the ocean, its numerous and clever defense mechanisms help it to survive in the dangerous undersea world.

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