

Parasite Vertebrates

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Cookiecutter shark

The **cookiecutter shark** (*Isistius brasiliensis*), also called the **cigar shark**, is a species of small squaliform shark in the family Dalatiidae. This shark occurs in warm, oceanic waters worldwide, particularly near islands, and has been recorded as deep as 3.7 km (2.3 mi). It migrates vertically up to 3 km (1.9 mi) every day, approaching the surface at dusk and descending with the dawn.

Parasitic behaviour :

The cookiecutter shark is considered a facultative ectoparasite, meaning it feeds off larger animals, without killing them. The name "cookiecutter shark" refers to its feeding habit of gouging round plugs, as if cut out with a cookie cutter, out of larger animals.

The cookiecutter shark exhibits a number of specializations to its mouth and pharynx for its parasitic lifestyle. When a would-be predator approaches the lure, the shark attaches itself using its suction lips and specialized pharynx. Then secures itself to the body surface of its prey by closing its spiracles and retracting its basihyal (tongue) to create pressure lower than that of the surroundings; its suction lips ensure a tight seal. It then bites, using its narrow upper teeth as anchors while its razor sharp lower teeth slice into the prey. Finally, the shark twists and rotates its body to complete a circular cut, quite possibly aided by the initial forward momentum and subsequent struggles of its prey. The action of the lower teeth may also be assisted by back-and-forth vibrations of the jaw. This species has been known to travel in schools.

Like all sharks, cookiecutter sharks lose several sets of teeth throughout their lifetimes. This process ensures that they always have sharp, healthy teeth capable of feeding by their preferred strategy. Unlike other species, though, cookiecutter sharks apparently purposely swallow the teeth that they lose. Some scientists believe that to be a result of them living in the nutrient-poor deep water column. By swallowing the relatively large teeth, they may be able to recycle the calcium and other materials important in tooth development.

Effect on host :

Marks made by cookiecutter sharks have been found on a wide variety of marine mammals and fishes, as well as on submarines, undersea cables, and even human bodies. It also consumes whole smaller prey such as squid. Several species – including bluefin tuna, great white sharks, spinner dolphins, and other large predators – have been observed with one or more scars caused by these sharks. Diseased or otherwise weakened animals appear to be more susceptible, and in the western Atlantic observations have been made of emaciated beached melon-headed whales with dozens to hundreds of recent and healing cookiecutter shark wounds, while such wounds are rare on nonemaciated beached whales.



The Hood Mocking bird :

The Hood Mocking bird is endemic to the Galapagos Islands and occurs only on Espanola and Gardner Islands. It is larger than other species. Fearless of humans, it may land on their head or some object, often searching for food and drink. This species lives in groups of 8-10 birds, sometimes up to 40 individuals. They are territorial, with an established hierarchy within the group.

Feeding habits :

The Hood Mockingbird is omnivorous. The varied diet includes insects, fruits and berries, marine arthropods and small vertebrates. It also feeds on carrion at carcasses of seabirds, lizards and marine mammals. It consumes damaged seabird eggs, but it is also able to open others, thanks to its powerful bill.

Parasitic behaviour : The Hood Mockingbird has developed some peculiar feeding behaviour, especially in dry season: it drinks blood from wounds on living sea lions, from sea lion placentas, on marine iguanas and nestling boobies (Sulidae), by frequenting the hunting areas of the Galapagos Hawk. It removes the ticks and some pieces of dead skin from iguanas, involving sometimes the creation of small wounds from which it drinks the blood. The Hood Mockingbird has larger and more decurved bill than other Mimidae species, allowing the bird to perform this type of feeding behaviour.



Vampire bat :

The **common vampire bat** (*Desmodus rotundus*) is a small, leaf-nosed bat native to Latin America. It is one of three extant species of vampire bat, the other two being the hairy-legged and the white-winged vampire bats. The common vampire bat practices hematophagy, mainly feeding on the blood of livestock.

Parasitic behaviour :

The common vampire bat feeds primarily on mammalian blood, particularly that of livestock such as cattle and horses. Vampire bats feed on wild prey like the tapir, but seem to prefer domesticated animals, and favor horses over cattle when given the choice. Female animals, particularly those in estrus, are more often targeted than males. This could be because of the hormones. Vampire bats hunt at night, using echolocation and olfaction to track down prey. They feed in a distance of 5 to 8 km (3.1 to 5.0 mi) from their roosts. When a bat selects a target, it lands on it, or jumps up onto it from the ground, usually targeting the rump, flank, or neck of its prey, heat sensors in the nose help it to detect blood vessels near the surface of the skin. It pierces the animal's skin with its teeth,

biting away a small flap, and laps up the blood with its tongue, which has lateral grooves adapted to this purpose. The blood is kept from clotting by an anticoagulant in the saliva.

Effect on host :

Sleeping cattle and horses are their usual victims, but they have been known to feed on people as well. The bats drink their victim's blood for about 30 minutes. They are protective of their host and will fend off other bats while feeding. It is uncommon for two or more bats to feed on the same host, with the exception of mothers and their offspring. They don't remove enough blood to harm their host, but their bites can cause nasty infections and disease.



Related questions:

1. Describe the parasitic behaviour of hooded mockingbird.
2. Write the morphology and distribution of cookie cutter shark.
3. Write the parasitic behaviour of vampire bat.

References:

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