

COMMENTARY

Kill to live

PART 2

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LAST week we explored how animals both terrestrial and aquatic, prey on others for food and the variety of strategies used to lure and capture prey. This week I would like to give some more examples of predation in the Animal Kingdom.

Another class or group of animals to be examined is the Class Aves, for example being the hawk. This animal has very keen eyesight to locate prey and can actually magnify an area in its field of vision. It also has wing slots between the feathers at the ends of its wings, to prevent stalling when flying to get at the prey items. It also has very long and sharp talons, which are used to grasp and carry prey. Its beak is horny and the upper part is sharply curved downwards to form a meat hook. So by holding the prey with its talons and pulling at bits of flesh with its beak this bird rips its prey to pieces.

A second raptorial or predatory bird is the Barn Owl. This too has very sharp talons and a beak sharpened to form a meat hook, to catch and kill prey. But it also has other adaptations, such as very large eyes, which enable it to hunt at night, since the larger the eyes; more of the existing light can enter. It can also rotate its head almost 180° to locate prey. It also relies on sound to locate prey which accounts for its heart-shaped face which directs sound towards its ears. Finally, it has soft feathers at the ends of its wings, which enable it to fly almost soundlessly, therefore using stealth and surprise to capture its prey.

The next class to be examined is the Class Reptilia; order crocodylia, for example, crocodiles, which hunt in an aquatic environment. This animal also relies on keen eyesight to locate prey, as well as stealth. This is achieved by the location of the nostrils on top of its snout. So that it can keep most of its body submerged in the swampy water and breathe at the same time while looking for prey.

Also in this animal its teeth are thecodont in nature, which means that they are fitted into sockets in the jaw as seen with predatory cats. This is different to the teeth attachment of other reptiles, which include acrodont, which means that

they are attached on the alveolar surface of the upper jaw and is found in such reptiles like snakes, while other reptiles like lizards have pleurodont teeth, which are attached to the inner side of the jaws.

But the advantage of having a thecodont attachment is that the teeth resist the shearing action of moving prey. These animals also have powerful upper jaw muscles so they cannot chew. Instead they clamp their jaws on a prey item and the great force exerted by the upper jaw creates a sort of perforated surface on the prey's body. They then flick their head to the side and the rest of the body is flung nearby with the piece remaining in their mouths to be swallowed whole.

Finally, there are the animals belonging to the order serpents, the snakes. These can either kill their prey by injecting them with a poison

or by constriction such as the South American rattlesnake. They possess long, sharp, hollow fangs through which they inject a powerful neurotoxin capable of killing their prey in three seconds. These fangs can fold inwards thus allowing the mouth to close and enabling them to swallow prey. These snakes are called solenoglyphous. However, in snakes with short hollow fangs, which serve the same purpose,



they are referred to as opisthoglyphous if they are at the back of the jaw or proteroglyphous if at the front of the jaw.

Snakes that kill by constriction like the Water Boa and the Anaconda are called aglyphous, as they possess no fangs. But they kill by the same method, which is to grab the prey in their mouth and coil around it with their bodies and drag it into the water since both live in the water. They then ensure that the prey's chest cannot expand so that it cannot breathe and will eventually die by drowning. However, some snakes use a combination of venom and constriction to kill their prey.

But besides elaborate strategies and morphological adaptations, some animals can rely on mimicry to get prey. For example in aggressive mimicry where the firefly *Photuris* sp. mimics the mating flashes of the female in order to lure a male which it then kills.

Therefore, it can be seen that the act of predation spans all the classes in the Animal Kingdom from the invertebrates to the vertebrates but with emphasis being placed on the latter due to their relevance on strategies, morphological adaptations and mimicry in order to obtain prey.