

10 Weird and Whacky Reptile Adaptations

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Did you know that, according to the Reptile Database, there are over 10,000 different species of reptile? And over the course of the last >300 million years, this incredibly diverse group of animals has devised many clever and sometimes weird ways to make the most of their circumstances:

Expanding Jaws

Food is hard enough to come by when you're a predator, and this becomes especially hard when you're a predator that doesn't have any legs to chase down prey. To solve this problem, many snakes such as the Pythonidae family have evolved expanding jaws and a particularly stretchy stomach that enables them to eat larger prey. Bigger meals = having the calories to be able to survive long periods of fasting. So when a python needs to swallow the prey that it caught, it expands its lower jaw by dislocating the joint at the chin, and then uses specialized muscles to work each side of the jaw back and forth to swallow!

Leg-Ribs

Another by-product of not having legs is that snakes have invented an alternative method of getting around: instead of using legs, they use their ribs! Snakes have impressively flexible ribs that allow them to swallow large prey, but they also multitask as a method of locomotion. All the snake has to do is twitch the muscles attached to each pair of ribs, and suddenly their ribs start moving like tiny little legs! If you've ever watched a millipede walk, that's how it works for snakes.

Sand Swimming

What do you do when you live in a dangerously hot environment full of loose sand? You dig into the sand to protect yourself from the heat — and as a bonus, it protects you from predators! Sandfish skinks (*Scincus spp.*) have specialized anatomy that allows them to go well beyond simple digging: with reduced eyes, a sand-filtering respiratory tract, feather-like toes, and a strong tail, these little lizards are able to swim through loose sand much in the same way a fish swims through water!

Turtle Ballast Tanks

While bladders are typically thought of as strictly for urine storage, some species of freshwater turtles multitask by using accessory bladders called *cloacal bursae* like the ballast tanks on a submarine! By taking on or expelling water, they can automatically adjust for their lung volume to make it easier to swim. It's for this reason that a turtle that is constantly floating or having trouble surfacing is a sign of illness.

Venom

Venom is a quite common method that reptiles, and particularly snakes, use to help secure food. But did you know that there are three different methods of venom delivery? Some species of lizard, such as Komodo dragons (*Varanus komodoensis*) and gila monsters (*Heloderma suspectum*) have venomous saliva that they inject via chewing. Some species of snake, such as hognose snakes (*Heterodon spp.*) and false water cobras (*Hydrodynastes gigas*) have grooved fangs at the back of their mouth to deliver venom through the act of chewing. And other species of snake, such as the king cobra (*Ophiophagus hannah*) and gaboon viper (*Bitis gabonica*), have hollow fangs at the front of their mouth to deliver venom in a single bite.

Aposematism

According to Encyclopedia Britannica, aposematism is “the biological means by which a dangerous, or noxious, organism advertises its dangerous nature to a potential predator.” This attribute is particularly common in venomous species, with one of the best examples being the rattlesnake (*Crotalus spp.*): Rattlesnakes have evolved a rattle on their tail, which they vibrate loudly to warn potential predators that have gotten too close.

Parthenogenesis

Some species of reptiles are able to reproduce with or without the assistance of a male, but in the case of mourning geckos (*Lepidodactylus lugubris*), they are so proficient at it that it's their main method of reproduction! Almost all mourning geckos are female — essentially genetic clones of their mothers — although males do still occasionally occur through mutations.

Infrared Vision

Did you know that infrared (heat) is a wavelength of light? Humans don't have the right equipment to see infrared, but many crepuscular or nocturnal species of snakes such as pythons and boas do! If you take a close look at their lips, you will notice little holes or pits. These are known as heat pits, and they lead to a membrane that allows the snake to “see” infrared radiation coming from warm bodies up to

one meter away. For snakes that primarily prey on warm-blooded animals like birds and mammals, this drastically increases their chances of success when hunting at night.

UVA Vision

Many more reptiles (snakes, lizards, turtles, and tortoises!) are capable of seeing Ultraviolet A wavelengths in addition to the colors that humans can see. Because of this extra “color” in their palette, the ability to see UVA affects a reptile’s total perception of color as much as red-green color blindness does in humans. Although science is still exploring how reptiles use their UVA vision, it appears to affect herbivores’ ability to find food, and also affects the way that some of them find mates! The web-footed gecko (*Pachydactylus rangei*) has stripes and spots on its body that fluoresce neon green under UV light, identifying it to other members of its kind.

Blood Squirting

The Texas horned lizard (*Phrynosoma cornutum*) has a unique way of escaping from would-be predators: it shoots blood at them from its eyes! Squirting blood is obviously not ideal to do on a daily basis, but when the horned lizard is out of options and they’re about to end up in a large mammal’s mouth, this blood-shooting mechanism is their last defense. Apparently horned lizard blood tastes positively nasty to canine and feline predators, and they will gape, drool heavily, and wipe their muzzles on the ground for several minutes as a result — allowing the horned lizard plenty of time to escape!

Conclusion

This is just a short list out of the many amazing ways that reptiles have adapted to survive their various individual circumstances, whether swimming through sand or swimming through water, active during day or night, or they’re completely legless.

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