REPTERS, AMPHIBIANS, AND FISH

QUESTIONS & ANSWERS BOOK



SNAKES



TURTLES







FISH



LIZARDS

THE GOOD AND THE BEAUTIFUL LIBRARY

Written by The Good and the Beautiful Team

QUESTION: How long can snakes grow?

ANSWER: The record for the longest snake kept in captivity goes to a reticulated python (*Python reticulatus*) that measures over 7 m (25 ft) in length! Her name is Medusa, and she



weighs 159 kg (350 lb) and can eat an entire deer in one sitting. An even longer snake was found in the wild; the 10 m (32 ft) reticulated python was found in Indonesia, in 1912. There are many claims of larger snakes, but none that have been officially recorded. Anacondas are another species of snake that are known to grow very large.

A BOOMSLANG SNAKE SHOWS OFF HIS FANGS.

QUESTION: How do snakes produce venom?

ANSWER: Snake venom is a highly specialized form of saliva produced by salivary glands in the snake's head. Many venomous snakes have hollow fangs that work like hypodermic needles. When they bite, the muscles in their heads squeeze the venom glands, plunging the venom through the fangs and into the victim. Snakes have different venom types that can affect the muscular system, nervous system, or circulatory system.

GUESS WHAT!

Which snake has the largest fangs?

That would be the African gaboon viper. The 1.8 m (6 ft) snake can have fangs over 5.1 cm (2 in) long!

QUESTION: Are any snakes faster than humans?

ANSWER: The black mamba has a reputation for outrunning humans. It can reach speeds of 19 km (12 mi) per hour, but it can't sustain this speed for long. This fearsome predator is one of the deadliest snakes. Just two drops of its venom will kill a human within a few hours unless treatment is quickly given.



QUESTION: How do tree geckos hang upside down from their toes?

ANSWER: Geckos are known for their gravity-defying feats of scaling glass and hanging completely upside down by their toes. If you ever get the chance to touch a gecko, you will find its toes are not sticky. Instead, adhesion is possible because the gecko's round toes are covered in microscopic hairs. An electromagnetic attraction between the hairs and the surface they touch causes an electron bond between them! Because the

MICROSCOPIC HAIRS ON A GECKO'S TOES ALLOW IT TO ADHERE TO SURFACES.

angle of the hairs on the toes shifts as the foot moves, the adhesion or attraction can quickly change. This means geckos can rapidly "stick" and "unstick" their bulbous toes to quickly travel across almost any surface. However, if there is too much moisture on the surface, the adhesion fails, causing the gecko to lose its grip.

QUESTION : Are there any flying lizards?

ANSWER: While there are no lizards that have true powered flight, there is an unusual lizard genus called *Draco* that can be seen leaping from one tree to the next. These lizards commonly make glides of about 9 m (30 ft). They have elongated ribs that are joined together with flaps of winglike skin, which can be held against the body when the lizard is creeping on all fours or spread out wide when it takes to the air! The word "draco" means dragon in Greek, and these little creatures do look like little dragons!

DRACO LIZARD

QUESTION: How do reptiles break out of their shells?

ANSWER: Reptiles emerge from their shells using a special "egg tooth" called a caruncle, which is located on the tip of the snout. Its purpose is to crack the shell from within. As the hatchlings continue developing outside of their shells, the caruncle is lost. Crocodilian mothers use their teeth to aid their hatchlings in their efforts to free themselves from their shells.



HATCHLINGS USE THE BRIGHT MOONLIGHT TO GUIDE THEM TO THE OCEAN.

QUESTION: How do baby sea turtles know which way leads to the ocean after they leave their nests?

ANSWER: Young sea turtles hatch from their eggs with no mother to guide them on their immediate journey into the sea. They know to go toward the brightest light they see. In natural habitats this would be the moon reflecting off the nearby waters of the ocean or bay where their mother laid them. Hatchlings run into trouble when their nesting grounds are close to manmade lights from nearby beach homes and condos that are used by humans. Many beach communities where sea turtle nesting is common have nighttime rules to keep curtains drawn and outdoor lights off during turtle nesting season. This has helped more baby turtles reach the sea instead of getting lost on land.

A SEA TURTLE NESTING ON THE BEACH

did you know?

How do reptiles and amphibians breathe oxygen when they are brumating under the water or mud? **QUESTION:** Why do sea turtles lay their eggs on land and not in the water where they live?

ANSWER: Though they are adapted to living in the sea for their entire lives, sea turtles must breathe oxygen through their lungs, as mammals and other land animals do. It is for this reason that sea turtles must come to land to lay their eggs in nests along the coast. As the babies are developing within ping-pong-ball-sized eggs, they too must get oxygen and are incapable of gill breathing, which is how fish and amphibians breathe. The developing babies would suffocate if the eggs were covered in water. The mother sea turtle knows this, for she will crawl up on the beach past the high tide zone to be sure the nest she digs is beyond the reach of the sea even in the highest tides.

CONTRACTOR CONTRA

Brumation is a low-energy state in reptiles and amphibians that is similar to hibernation. In brumation the animal is awake but not moving much, if at all. Brumation is the body's response to temperatures that are too cold for the ectothermic animal. During brumation, reptiles and amphibians can tolerate very low levels of oxygen because their movement slows so much. Reptiles such as turtles will bury themselves in mud, and any oxygen that is needed can be obtained through their skin.

GUESS WHAT!

The Nile crocodile can also generate an extremely powerful bite.

QUESTION: What animal has the strongest bite?

ANSWER: The saltwater crocodile's bite force is the strongest of any animal in the world, measured at around 3,700 psi. The saltwater crocodile also wins the award for being the largest reptile of all, measuring up to 7 m (23 ft) long and weighing up to 998 kg (2,200 lb). In crocodiles the muscles for closing the mouth are quite strong, but the muscles for opening the mouth are rather weak. Inside are fifty or more teeth. The combination of jaw strength, body size, and the element of surprise used in hunting make the crocodile a fearsome predator.

AN AMERICAN SALTWATER CROCODILE OPENS ITS MIGHTY MOUTH WHILE TAKING A SWIM IN GARDENS OF THE QUEEN, CUBA.

QUESTION: Why do amphibians lay their eggs in water?

ANSWER: Most amphibians lay their eggs in water since their young are equipped with gills instead of lungs. Also, the eggs of amphibians are not equipped with hard shells to keep them from drying out; if they were laid on land, the eggs would quickly dry and the young would not survive. But not all frogs and toads lay their jellylike eggs in water and hope they hatch. The midwife toad is one such oddity. The female lays a strand of eggs that the male fertilizes once they are laid. He then wraps the string of eggs around his legs and back to protect them from aquatic predators. Because the midwife toad has a back covered in warts that secrete a horrible smell, most predators leave it alone. When the time comes for the eggs to hatch, the

male midwife toad makes his way to a shallow pool where the tadpoles spring out of their eggs!

THE MALE MIDWIFE TOAD FERTILIZES THE STRAND OF EGGS LAID BY THE FEMALE AND WRAPS THE STRAND AROUND HIS BODY TO PROTECT THE EGGS FROM PREDATORS.



QUESTION: What is the purpose of bioluminescence, and how does it work in ocean creatures?

ANSWER: Bioluminescence is the production of light by a living organism. You may have seen this phenomenon in fireflies! It is more common in marine creatures as well as in some fungi and bacteria, but it is only rarely found in freshwater creatures. In some living organisms, light can result from a chemical reaction of two substances called luciferin and luciferase. A type of plankton called dinoflagellates can make luciferin, but many sea creatures that exhibit bioluminescence do not produce light themselves. Instead, they "capture" it from these tiny sea creatures by eating them and then storing the glowing substances in their own light organs. Light organs can be in one spot of an animal's body or distributed all throughout the skin, such as in some squid. Bioluminescence can be used to lure and hunt prey, to light up an otherwise dark area to look for prey, to confuse would-be predators so a quick escape can be made, and to signal to potential mates.

GUESS WHAT!

A hatchetfish lights up the underside of its body with just the right amount of illumination to match the light coming from the ocean's surface. This effectively disguises its shadow, making it nearly impossible for predators that may be underneath the hatchetfish to notice it.

THE REPTILES, AMPHIBIAN'S, AND FISH QUESTIONS & ANSWERS BOOK

Did you know there are lizards that can glide so far they look like they're flying? Have you ever wondered how geckos can run along ceilings without falling? The Reptiles, Amphibians, and Fish Questions & Answers Book answers these questions and more, from which animal has the strongest bite, to who lives in the deepest part of the ocean. Stunning real-life imagery and fascinating facts make this a must-have book for all ages.

ORIGINAL PUBLICATION



