BioAlmanac

by Emily Huhn

Revolutionary Evolution

Poisonous cane toads first hopped onto Australian soil in 1935, wreaking havoc on native creatures in Queensland. For many snakes, eating one of these toxic toads is fatal, but some are adapting with what scientists call "contemporary evolution."

Scientists from the University of Sydney studied the long-term effects of the cane toad (*Bufo marinus*) invasion on snakes. They began by examining 623 preserved snake specimens from the Queensland Museum collected over the last century. The scientists knew that the size of a snake's prey is limited by the size of the snake's head. Therefore, snakes with smaller heads relative to their body size are less likely to eat toads big enough to kill them. The scientists suspected that these snakes were more likely to survive and pass on their genes.

The study, published in December 2004 in the *Proceedings of the National Academy of Sciences*, suggests that this is indeed the case. The two species in the study that are most vulnerable to the toads—the red-bellied black snake (*Pseudechis porphyriacus*) and the green tree snake (*Dendrelaphis punctulatus*)—seem to be evolving smaller heads and longer bodies. The authors speculate that organisms can also evolve rapidly in response to natural events, global warming, and pollution.

What's in a Name?

The word "armadillo" is Spanish in origin, and it means "little armored one." The nine-banded armadillo is the only armadillo native to the United States; it also lives in South and Central America. The Aztecs called it *azotochtli*, meaning "tortoise-rabbit," presumably because it has a carapace of hard plates on its back and head that resemble a tortoise shell, and rabbit-like ears. Linnaeus later named its genus *Dasypus*—"rabbit" in Greek—and its species *novemcinctus*, which means "nine bands" in Latin. Strangely named armadillos include the screaming hairy armadillo (*Chaetophractus vellerosus*), which squeals when threatened, and the pink fairy armadillo (*Chlamyphorus truncatus*), the smallest armadillo and bearer of a pale pink shell.

Armadillos, sloths, and anteaters once belonged to the order Edentata, which means "toothless" in Latin. Although all modern members of this order lack incisors and canines, the designation was a misnomer—only anteaters have no teeth. In fact, the giant armadillo (*Priodontes maximus*) can have as many as 100. The order was renamed Xenarthra, meaning "strange joint" in Greek, to describe these animals' unusual vertebrae.

According to ancient Mayan myth, the sun god Hachakyum created armadillos to exact revenge. He persuaded two lesser gods who had angered him to sit on a bench, then changed the bench into a pair of armadillos that leapt into the air, knocking the gods to the ground and humiliating them.

Do Bees and Wasps Die After Stinging?

Bees do, but wasps don't. Bees generally sting only to defend their hives. Their barbed stingers, attached to venom sacs and poison glands, remain stuck in the victim. To disengage themselves after stinging, bees must tear their abdomens from their spent stingers; consequently, they die within two days. In contrast, the stingers of wasps, yellowjackets, and hornets do not have barbs, and are used repeatedly to paralyze or kill prey. Only females can sting, because the stinger is actually a modified ovipositor, or egg-laying tube.

Fact or Fiction: Ostriches Bury Their Heads in Sand

It is a common misconception that ostriches (*Struthio camelus*) bury their heads in the sand when they are in danger. When provoked, these large flightless birds can sprint up to 50 miles per hour with a stride reaching up to 15 feet. They can also kick with a force of up to 500 pounds per square inch. But, when an ostrich cannot run away, such as when it is incubating eggs, it will stretch its long neck and head out on the sand and remain still. The light color of the head and neck help it blend in with the ground. From a distance, only the ostrich's bush-shaped body is visible, so it looks like the head is buried.

In Season

With the arrival of spring, mother Virginia opossums (*Didelphis virginiana*) become jungle gyms for their young. When *D. virginiana* offspring are about 70 days old, they outgrow their mother's marsupial pouch, scramble through her fur, and climb onto her back for a ride. There may be as many as 20 baby opossums per litter at birth, and they are so small that it would take more than 200 of them to weigh one ounce. The babies crawl from the birth canal into the pouch, which has 13 mammae. Only those opossums that latch onto a nipple have a chance to survive.

Snake (*Pseudechis porphyriacus*): Steve Wilson; bee: Jack Dykinga/ARS; armadillo: J. & K. Hollingsworth/USFWS; elephant: Jessie Cohen/NZP

The gestation periods of African (*Loxodonta africana*) and Asian elephants (*Elephas maximus*) are the longest of any mammal; they last about 630 to 660 days, or 20 to 22 months.