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Special Species

Platypuses Are So Peculiar, Early Scientists Thought They Were Being Tricked

According to National Geographic, the first scientists to examine one of these unlikely animals believed they were the victims of a hoax, as it was a strange hodgepodge of other species. Six features that make them truly unique.

Reviewed by Dr. Becker

STORY AT-A-GLANCE

- Platypuses are one of the few mammals that lay eggs
- Platypuses have the bill and webbed feet of a duck, the tail of a beaver and the body of an otter
- Male platypuses have a venomous spur in their rear heels
- Platypuses are bottom feeders and dine on insects and insect larvae, shellfish, and worms, which they scoop up in their bill along with gravel and mud
- The platypus bill has fascinating sensory receptors, including electroreceptors and "push rods," which can detect touch or pressure, even subtle changes in water movement

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Most mammals do not lay eggs and instead give birth to live young. However, there are five species of monotremes worldwide, which are mammals that do lay eggs.

The platypus is among them (the others include four species of echidna, or spiny anteaters) — and this is just one of their fascinating characteristics. They're so unusual that when they were first discovered, the scientists thought someone was playing a trick on them. According to National Geographic:[1]

> *"The platypus is among nature's most unlikely animals. In fact, the first scientists to examine a specimen believed they were the victims of a hoax. The animal is best described as a hodgepodge of more familiar species: the duck (bill and webbed feet), beaver (tail), and otter (body and fur)."*

6 Features That Make the Platypus So Unique

1. **Egg-laying mammal —** It's thought that at one time most mammals laid eggs, and in this way the platypus is an example of an ancient relic.

   The Australian Platypus Conservancy explained, "It is often described as a living fossil — a furry, warm-blooded, egg-laying mammal which retains some features of reptiles."[2]

   Female platypuses lay only one or two eggs at a time and keep them warm by incubating them between their

tail and body. After about 10 days, the eggs hatch, revealing tiny babies the size of lima beans.

Mothers nurse their babies for up to four months, at which point the babies begin to swim on their own.

2. **Males are venomous —** Male platypuses have stingers on the heels of their rear feet, which they can use to deliver a dose of poison to predators and other threats.

   Not only are venomous mammals extremely rare (some species of shrews and moles are venomous too), but the platypus is the only animal with a venomous spur.

   Platypus venom is not life-threatening to humans, but it will lead to severe swelling and excruciating pain (that is not easily relieved by pain relievers and actually worsens if you apply an ice pack).[3]

3. **Sensory-equipped duck bill —** The platypus bill is very similar to a duck's bill. It feeds only in water, mainly by foraging underwater and using its bill to find and seize prey.

   Platypuses are bottom feeders and dine on insects and insect larvae, shellfish, and worms, which they scoop up in their bill along with gravel and mud.

Platypuses store their meal in cheek pouches until they reach the surface. Then, the gravel bits help the animals to "chew" their food.

The platypus bill has fascinating sensory receptors, including electroreceptors and "push rods," which can detect touch or pressure, even subtle changes in water movement. The Australian Platypus Conservancy explained:[4]

> *"Nerves are activated when the tip of a push rod receptor is displaced by as little as 20 microns (0.00002 meters), which means a platypus can detect the movements of edible invertebrates such as freshwater shrimp or crayfish at a distance of 15 to 20 centimeters, simply by sensing the associated movement of water.*
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> *The bill surface is also thickly dotted with acutely sensitive electroreceptors (sensory mucous glands), which respond to the tiny amount of electricity generated when the muscles of aquatic invertebrates contract.*
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> *Because electricity moves so rapidly through water, the tail flick of a shrimp will be recorded a fraction of an instant earlier by bill electroreceptors as compared to push rods, providing a way for a platypus to judge the distance to a prey item."*

4. **Claws for digging —** Platypuses are able to retract the webbing on their feet to expose claws, which allow them to run on land and dig in the dirt. This is useful since the animals build burrows in the dirt, near banks of a river, creek or lake.

   Burrows are used for nesting as well as sleeping, although platypuses have also been observed sleeping in a hollow log, cave or large pile of branches.

5. **Large flat fat-storing tail —** Platypuses have a beaver-like tail that's used like a rudder while they're swimming. The tail also stores fat, which is useful for females during nesting and both males and females when food is scarce.

6. **Webbed feet —** Platypuses' webbed feet resemble that of ducks. They help to make platypuses graceful swimmers, and the animals move easier in the water than out.

Are Platypus Populations Declining?

The International Union for Conservation of Nature (IUCN) categorizes platypuses, which live only in Australia, as an animal of "least concern." However, the Australian Platypus Conservancy has reason to believe their numbers are declining. They stated:[5]

> *"... [A] reasonable (though conservative) estimate for the number of platypus occupying the Wimmera River basin in western Victoria at the time of European settlement would have been in the order of 1500 animals. Mark-recapture studies carried out by the Australian Platypus Conservancy confirmed that this had declined to less than 200 animals by the 1990s ...*
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> *Habitat degradation, channel sedimentation, use of drum nets that drowned platypus as by-catch, and regulation of natural flows by the Wimmera- Mallee Stock and Domestic System ... would all have contributed to reduced population size."*

Catastrophic losses were also reported in the summer of 2006 to 2007 during a severe drought that caused the Wimmera River channel to dry out for an extended period. Platypus are vulnerable to population declines in the long term because of their dependence on surface water for survival as well as their low reproductive rate and population density.[6]

Another peculiar thing about platypuses is the lack of a word to describe their young (such as "cub" for lion or "kitten" for cat). This has to do with the fact that by the time the animals only emerge from their burrows, they look like small adults. The Australian Platypus Conservancy explained:[7]

> *"... [T]here is no well established term in the English language for a juvenile platypus. This presumably reflects fact that when a young platypus first emerges from its natal burrow it basically looks like a small adult. As juveniles are not normally seen by people at an earlier stage of development, there has never been a need to adopt a special term for a baby platypus."*

Sources and References

Mom.me, The Adaptations of the Platypus (Archived)

[1] National Geographic, Platypus

[2, 3, 4, 5, 6, 7] Australian Platypus Conservancy, The Platypus – A Very Special Australian