

The glow of duck-billed platypuses

It's easy to answer "which is the strangest animal?". The answer: the platypus. These strange creatures live only in Australia and that is the reason for their unique characteristics. Platypuses have remained isolated for millions of years and have evolved in a unique and entirely different way from mammals on other continents. Australia, as we know, has a distinctive fauna precisely because it separated from the supercontinent Gondwana (which united all the emerged lands of the Planet) a very long time ago, in the Permian period, 300 million years ago, when the first mammals appeared. It was from those ancestral animals, isolated from all the others, that marsupials and monotremes evolved. We are familiar with marsupials, like kangaroos, opossums and koalas. They are mammals that give birth to their young at a very early stage, when they are still tiny, able to cling to their mother's teat and develop inside her warm pouch, but outside her body. And then there are monotremes, not many in reality, only five species, the last representatives of very ancient animals, more similar to reptiles and birds than to modern mammals.

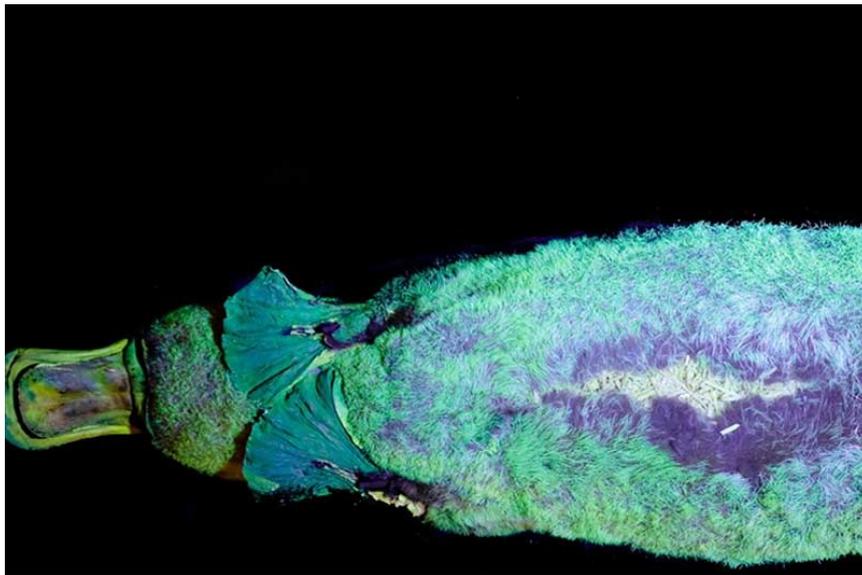


The name itself determines a reptilian characteristic: *monotremes* means *with a single opening* and indicates the cloaca, that is, the single opening, typical of birds and reptiles, for the intestine, urinary and reproductive tracts. Additionally, their brains have retained reptilian characteristics; for instance, they do not have the *corpus callosum*, that is the central part joining the two hemispheres of the encephalon common to all modern mammals like us. They are also cold-blooded, not as cold as reptiles, but much more so than mammals. The body temperature of platypuses is 32°C, while ours is 37°C. It seems a small difference, but at 32 degrees modern mammals die. Yet the most surprising characteristic is their means of reproduction. Platypuses are oviparous, that is, they lay eggs like birds and reptiles and do not give birth to young who are already formed, as do viviparous animals, that is, mammals like us. The females lay their eggs in an underground chamber of the nest, near a stream, and brood them until hatching. However, they do suckle their young. Yes, but not like other mammals do, through mammary glands: the milk is released by the skin in special hairy patches on their bellies and the young lick the food-soaked hairs. Platypuses also have poisonous weapons, which is very rare among mammals. The males have a spur on each of their hind legs, a sort of claw able to inject venom that is only painful for us, but lethal for smaller animals.

The best-known aspect of platypuses is, however, their appearance. They are the size of a cat and look like a hotchpotch made with the characteristics of many different animals. They are shaped like beavers with wide, flat tails and have the thick, soft fur of otters. They have webbed paws and the bill of a duck and, indeed, they are the only mammals with a bill.

They are aquatic and, like beavers and nutrias, they are excellent swimmers. They are carnivores and find small prey, especially worms, shrimps and insects, with their very sensitive bills. Sensitive even to the very weak electric fields emitted by their prey when they move.

So if we know all about platypuses, what's the news? Simple: the platypus is a biofluorescent animal. As if all these oddities weren't enough to make it unique, researchers at the University of Ashland in Wisconsin (USA) recently discovered that when illuminated with ultraviolet light, the platypuses' brown fur turns blue, a beautiful, bright blue, electric colour. A fluorescence that makes these animals even stranger.



The bioluminescence of the platypus. Credits: [Mammalia](#)

But why is this? There are various hypotheses including camouflage to hide from predators and communication between platypuses. It is also possible that, in reality, this strange adaptation has no function whatsoever and is merely an ancestral trait retained by platypuses, although it has lost its usefulness. In short, platypuses never cease to amaze us.

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