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Flamboyant Cuttlefish: Camouflage Tactics and Colorful Behavior

Flamboyant cuttlefish display distinctive color patterns for camouflage, breeding, and territorial aggression.

SOURCE: Journal of Experimental Marine Biology and Ecology

By *Shaquilla Hamlett* 8 October 2020

Flamboyant cuttlefish live up to their namesake, often showcasing creative and elaborate patterns of red, white, brown, and yellow across their skin. Despite the numerous photographs and videos of these cuttlefish displays, not much is known about the reasons behind them. Understanding the behavioral ecology behind each display could lead to a better understanding of these unique invertebrates.

In this study, scientists traveled to Indonesia in December of 2002 and in May of 2019 to observe the behavior of the flamboyant cuttlefish (*Metasepia pfefferi*) living there. During several dives they videotaped the everyday lives of the cuttlefish and then reexamined the footage in slow motion. Clips of these videos showed the cuttlefish courting their mates, laying eggs, and displaying various color changes.

It was found that flamboyant cuttlefish spend most of their time in drab colors such as beige or brown so they can camouflage in their habitat. The cuttlefish can adjust the texture of their body with the use of papillae, which raises their skin to imitate bumps. This feature allows them to mimic all different types of terrain and intimidate predators. However, when a predator such as a fish wandered too close, the cuttlefish would often flash bright colors to startle them.

It was also found that the cuttlefish spend most of their time foraging for food; the females will even continue to forage while being courted by the male. Once she chooses a mate, she will lay anywhere from fifteen to twenty-five eggs inside a coconut shell, and these then hatch into miniature cuttlefish that are able to fully fend for themselves. She will often lay several clutches under one shell, but it is unclear whether the shell type is always coconuts.

Overall, it was discovered flamboyant cuttlefish use their displays for special occasions, usually for courtship. The males are even able to showcase a vibrant design for the female on one side of their bodies, while also showcasing a territorial pattern towards a male on the other side. Since the females are usually foraging for food, the male will wave its arms or “kiss” (touch the female with the tips of his arms) to get her attention. When the courtship ends, it takes a skilled eye to spot these creative creatures as they continue foraging, safely camouflaged in their environment. This is a behavior not always seen in captive cuttlefish since the need to conceal itself is not present.

As more studies are done on invertebrates, more behaviors may be discovered and continue to open up scientists to a new world. In the meantime, knowledge about the behavioral ecology of flamboyant cuttlefish has now been introduced and will continue to grow our understanding of these unique animals.

Citation: Hanlon, R. T., McManus, G. (2020), Flamboyant cuttlefish behavior: Camouflage tactics and complex colorful reproductive behavior assessed during field studies at Lembeh Strait, Indonesia, *J. Exp. Mar. Biol. Ecol.*, 529, <https://doi.org/10.1016/j.jembe.2020.151397>. Published on 05 June 2020.