



SCIENCE & TECHNOLOGY

Scientists Discover How a Kind of Fish Makes Colorful Light Appear

March 15, 2023

The skin of a small fish from Thailand is almost completely clear. But when light shines through it, a **shimmering** rainbow of colors appear.

Now, scientists have found out how this fish — called the ghost catfish — creates colorful light that is **iridescent**. Something iridescent shines with many different colors depending on how you look at it.

That color comes from within the fish's body. Researchers reported their findings in a study published recently in *Proceedings* of the National Academy of Sciences. As light passes through the fish's skin, it hits very small structures in the muscle that turn light into a colorful **spectrum**.

The ghost catfish, which is sometimes called the glass catfish, is a small fish native to rivers in Thailand. It averages just a few centimeters long. It is sold around the world as an **aquarium** fish.

Other creatures are also iridescent, creating the rainbow effect when colors change when looked at from different sides. Usually, they have outer surfaces that **reflect** the light, like a hummingbird's feathers or a butterfly's wings, said Ron Rutowski. He is a biologist at Arizona State University who was not involved with the research.

The ghost catfish have no **scales**, said writer Qibin Zhao. He is a physicist at China's Shanghai Jiao Tong University. Zhao became very interested in the fish after seeing it in an aquarium store.

Instead, it has structures in its muscles. These are what turns light into rainbow colors. Researchers made the discovery after shining different kinds of light and lasers onto the fish in a laboratory. As the ghost catfish swims, its muscles move, resulting in reflections of many colors.

The fish's clear skin lets in around 90 percent of outside light.

"We wouldn't be able to see the colors if the skin of the fish is not so **transparent**," Zhao said in an email.

Some species use their iridescence to attract mates or give off warning signals. It is not clear whether the ghost catfish's colors serve a purpose, Rutowski said.

I'm Dan Novak.

Dan Novak adapted this story for VOA Learning English based on reporting by The Associated Press.

Words in This Story

shimmer — *v.* to shine with a light that appears to move around

iridescent — *adj.* shining with many colors when seen from different directions

spectrum — *n.* a group of colors that appear when white light is separated by glass or a similar material

aquarium — *n.* a glass tank that holds fish or similar animals that people keep for recreation

reflect — *v.* to move light in a direction other than the one it is traveling in

scale — *n.* small, hard structures that cover the body of most fish, reptiles, and some other animals

transparent — *adj.* able to be seen through

