**[Isn't This Octopus Adorabilis?](http://sciencefriday.com/video/06/15/2015/isn-t-this-octopus-adorabilis.html)**

**Science Friday, June 15th, 2015**

***(Unedited Transcript)***

**Description:**

What do you call a tiny octopus with big eyes and gelatinous skin, and that's cute as a button? Nobody knows quite yet! Stephanie Bush of the Monterey Bay Aquarium Research Institute aims to classify and name this presently undescribed deep-sea cephalopod using preserved specimens and a clutch of eggs housed at the Monterey Bay Aquarium.

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CHRISTIAN BAKER (VOICEOVER): This is the Monterey Bay Aquarium Research Institute, also known as MBARI. Hidden inside is a large, cold room with a tiny secret. Dozens of rare octopus eggs have been incubated for over a year and may continue to do so for many more before hatching. The eggs are from this creature, a presently undescribed deep-sea cephalopod with no formal name.

Its genus is *Opisthoteuthis*, but aside from that, not much else is known. Stephanie Bush of MBARI has the distinct privilege of describing this peculiar octopus.

STEPHANIE BUSH: You're looking at specific morphological features of this species that differentiate it from other species. They're really gelatinous and fragile. And they have relatively large eyes for the size of their body. Because they're pretty small. They have a well-developed web between the arms. They'll just spread that web and kind of parachute along.

And they kind of steer themselves with the fins on their mantle. As someone that's describing this species, you get to pick what the specific name is. One of the thoughts I had was making it *Opisthoteuthis* *adorabilis*. Because they are just-- yeah, they're really cute.

CHRISTIAN BAKER (VOICEOVER): Despite being undescribed, *Opisthoteuthis* specimens have been collected as far back as 1990.

STEPHANIE BUSH: What I do when I'm taking one of these preserved animals is actually dissect out the digestive system, starting from the beak and down to the stomach and out the other side. And then you do the same thing with the reproductive system. I take out the reproductive system and take pictures of it and then measure the size of the mature eggs.

So the reproductive system consists of the ovary, which is full of the eggs. And then the ovary leads to the oviduct. And then the oviduct leads to the oviducal gland. The oviducal gland is what puts the egg case on the egg. Then it goes out into the world.

CHRISTIAN BAKER (VOICEOVER): Preserved specimens provide valuable insight into the octopus's anatomy and behavior, which comes in handy when dealing with live specimens. In early 2014 several *Opisthoteuthis* were collected in the Monterey Bay for research. But keeping an undescribed deep sea cephalopod alive and healthy while in human care is an arduous task. Luckily the team at MBARI has some help from Bret Grasse of the Monterey Bay Aquarium.

BRET GRASSE: Our relationship with MBARI is pretty special because we can use their knowledge of these animals out in the wild, and we can use our ingenuity and innovative skills here at the aquarium to accurately mimic their natural environmental conditions.

All right. Come on. Follow me. So up over here, this is behind the scenes where we kept our *Opisthoteuthis*.

BRET GRASSE: Notice the nice deep tank so it gives them a lot of vertical space if they need to swim up and kind of move around a little bit. We also have this nice big red light up here. The reason we choose red is because red light dissipates the fastest in seawater. And so their eyes aren't designed to see that light spectrum. Seawater chillers keep the water temperature extremely cold for our animals. And we're decreasing the oxygen concentration so that we can provide the most comfortable experience for these animals while they're under our care.

CHRISTIAN BAKER (VOICEOVER): It turns out that *Opisthoteuthis* was so comfortable in this environment that it left a surprise at the bottom of the tank. The eggs were carefully removed from the exhibit and transported back to MBARI, where they can develop in peace.

STEPHANIE BUSH: It's been at least a year now that they've been developing, and they're not ready yet. It may take two and a half or three years, something like that, for them to be ready to hatch out of the eggs.

CHRISTIAN BAKER (VOICEOVER): This lengthy incubation period is not unheard of for deep sea animals. But when the eggs finally do hatch, it will be well worth the wait.

STEPHANIE BUSH: These animals are part of the greater ocean ecosystem.

And in order to have a healthy functioning ocean ecosystem, we need to understand the ecology and behavior of the individual species.

CHRISTIAN BAKER (VOICEOVER): For Science Friday, I'm Christian Baker.