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SCIENCE

SpongeBob, the Carnivore

By JAMES GORMAN APRIL 17, 2014

The oceans are full of predators, but nobody thought sponges were among them until 1995, when scientists first realized that not all of these sedentary animals spent their days just filtering out bacteria and other micro-organisms from seawater.

That is how most sponges make a living, but carnivorous sponges were identified in the Mediterranean nearly 20 years ago, and since then more than 130 species of them have been found.

Only seven of the species were in the Northeast Pacific, off the coast of North America. But Lonny Lundsten, of the Monterey Bay Aquarium Research Institute, and two Canadian colleagues have reported the identification of four new species.

The sponges, some of which look like miniature artificial Christmas trees, have some fearsome hooks that can be seen with an electron microscope. They use them to help trap small crustaceans like amphipods and copepods. Once the prey is trapped, the sponge can digest it at leisure — the sponge's leisure.

Most sponges have cells with whiplike tails that keep water moving through them, for filtering out the microbes they eat. Carnivorous sponges live in food-poor environments in the ocean, some near communities based around deep-sea vents. The scientists think that the energy spent on moving water through the sponge isn't worth it if the water doesn't have enough micro-

organisms, so the sponges evolved to trap bigger game.

Dr. Lundsten said that remotely operated robot submersibles were used to find and collect some samples of the sponges from the depths. He thinks there are a lot more carnivorous sponges out there.

“For me, what’s really interesting is increasing our understanding of biodiversity,” he said.

“Every time I go out to sea you get this sense of what it’s like to be one of the early explorers. It’s the largest habitat on the planet.”

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