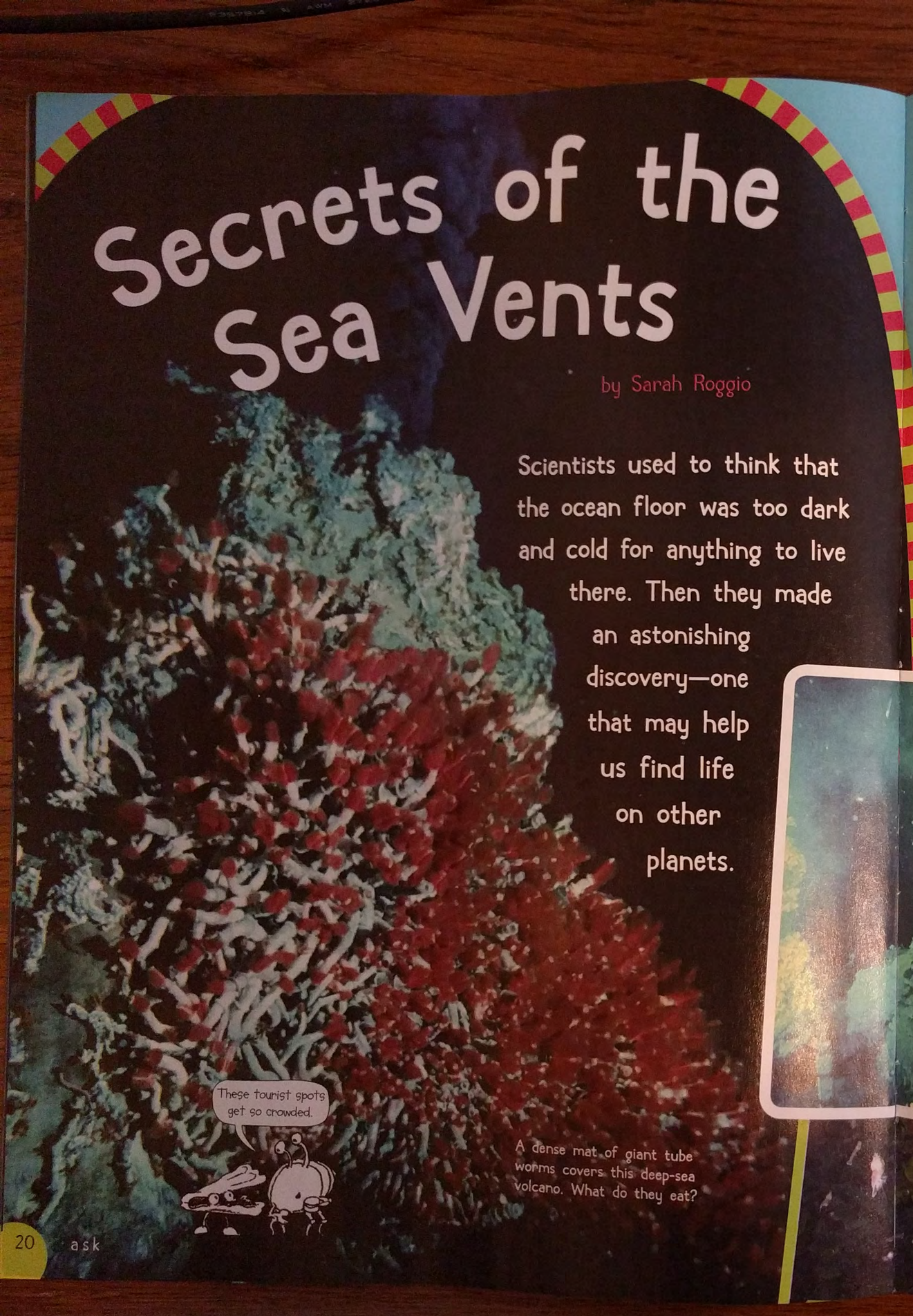
Secrets of the Sea Vents

by Sarah Roggio

Scientists used to think that the ocean floor was too dark and cold for anything to live there. Then they made an astonishing discovery—one that may help us find life on other planets.



A dense mat of giant tube worms covers this deep-sea volcano. What do they eat?

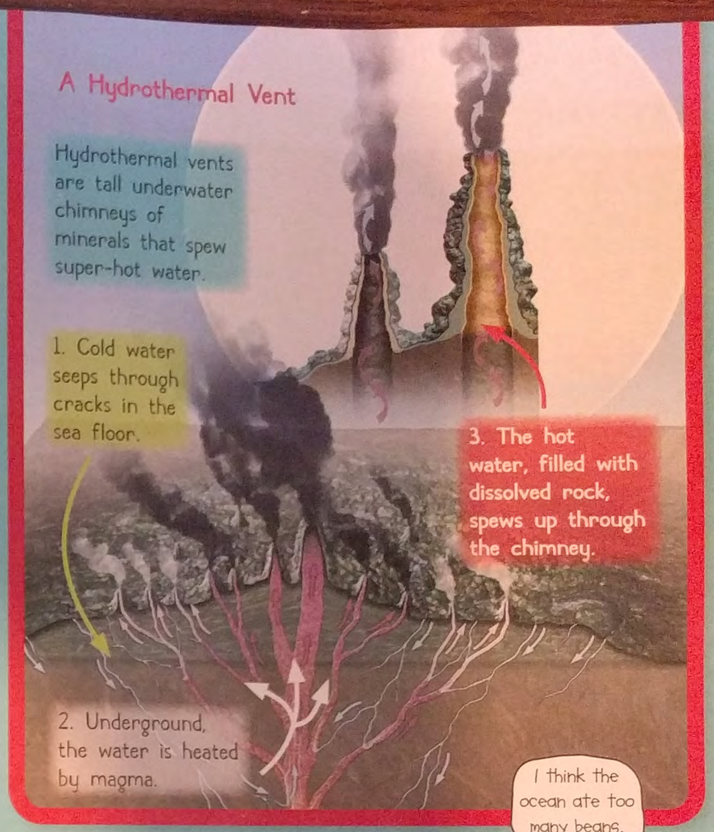
Volcanoes in the Deep

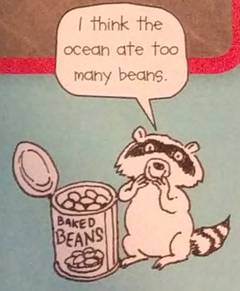
It all started in 1977, on an expedition to explore underwater volcanoes near the Galapagos Islands in South America.

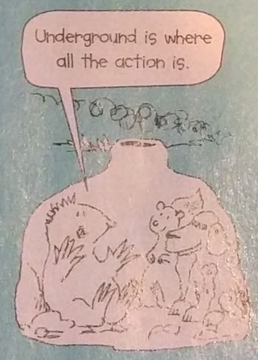
Scientists sent cameras down to the sea floor near where a new volcano was forming. There they found strange, tall chimneys made of rock. Out of the chimneys poured what looked like black smoke. But it wasn't smoke. It was super-hot water filled with sulfur and other minerals.

And then they got a big surprise. The sub's camera showed fields of giant mussels. Clams as long as a man's foot. Tube worms as tall as a person. These hot chimneys were covered with life!

The researchers called the towers "hydrothermal vents." Hydrothermal means "hot water." Since that first discovery, hundreds of vents have been found all over the world. They form on the ocean floor, near deep cracks in the Earth's crust. Seawater seeps through cracks. Underground, it's heated by magma (hot melted rock). The hot water shoots back up. Minerals falling out of the water build up the crusty chimneys.







This black plume is not smoke—it's super-hot water (750° F, 400° C) full of minerals.

White lobsters crawl over a thick mat of mussels growing around a vent chimney.