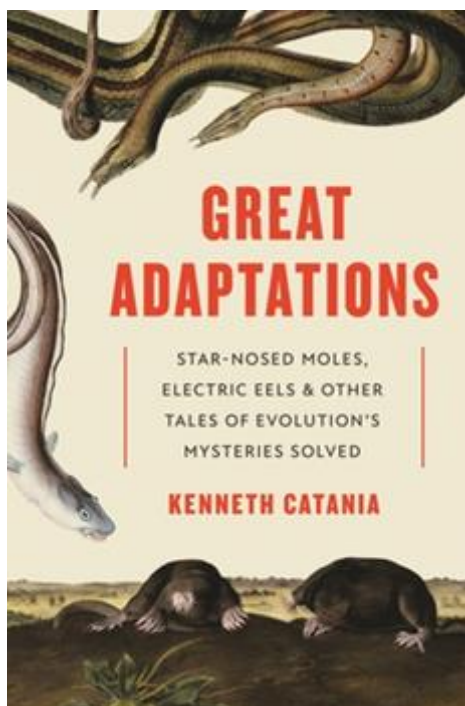


## Great Adaptations: Star-nosed Moles, Electric Eels, and Other Tales of Evolution's Mysteries Solved

JoAnn Hackos. March 1, 2021 :

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Did you know that a Star-nosed Mole uses its star nose to find food by touch? Have you ever heard of the Tentacled Snake that directs prey fish to swim into its mouth? What about worm grunners or water shrews or electric eels? Or a wasp that turns cockroaches into zombies?



Kenneth Catania, author of *Great Adaptations*, is a scientist who likes to investigate unsolved biological mysteries and extreme adaptations. His investigations have led to amazing discoveries about the capabilities of a variety of unusual creatures.

Catania started working with Star-nosed Moles as an undergraduate working at the National Zoo in Washington, DC. He continued studying their strange star-shaped noses for his doctoral dissertation. And, he continues studying creatures with extreme anatomical traits. By investigating strange adaptations, he argues that we can learn about “animal behavior, brain organization, development, and evolution.”

In reading *Great Adaptations*, we learn not only about some very unusual creatures but also about the methods that Catania uses to understand why they behave the way they do. He is an inveterate experimenter, investigating puzzling behaviors to ferret out what might really be going on.

Take the star-nose on the mole. What is it doing with that star on its nose? Since the mole was discovered in the 1800s, people thought the star might be used to smell food. Or perhaps they used an electric field like sharks do to detect prey. Instead, Catania discovers through considerable investigation that the stars detect the mole's prey through touch. They are like extremely sensitive hands, the most sensitive touch receptors in the animal world.

Not only is Catania's work fascinating, revealing amazing adaptations in a series of creatures that interest him, Catania is also a gifted and very amusing writer. In fact, I kept reading passages in the book to my husband because they were just so entertaining.

One of my favorites involves his trip to Tillamook, Oregon to investigate moles. Here's what he writes:

“After checking in, I opened the phone book and called the nearest golf course. “Hello,” I said, “I was calling to see if you have a mole problem.” “Of course, we do,” said a woman. But she sounded suspicious. “Why do you want to know?” “Well, if you'd allow me, I'd like to come over and collect some moles.” “That's okay. We can handle them ourselves. We don't need an exterminator.” She was about to hang up. “Wait. You don't need to hire me. I'm a biologist conducting a study, and I'd collect them for free.” I took a little explaining to convince her that I wasn't a scam artist. Apparently, there are so many moles in the area that various companies are constantly hawking mole control solutions. When she realized I was serious, I was invited over.”

I'm convinced that everyone one of you reading this review will be fascinated by *Great Adaptations*. It's become one of my favorite books. And, I can't wait until Catania writes something else. I might even read one of his scientific papers. I won't even tell you what happens when he shocks himself to learn what an electric eel's electrical shock feels like.

By the way, I listened to a recent Zoom presentation by Professor Catania offered by the Denver Museum of Nature and Science. He's just as amusing in person.