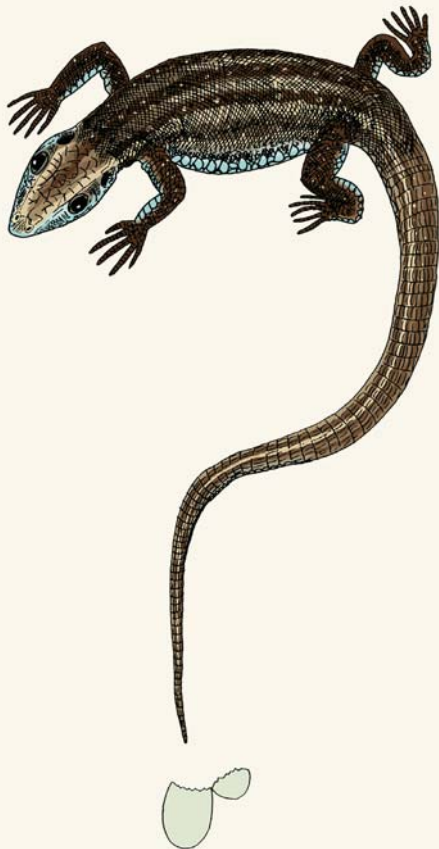


## Leapin' Lizards

**Navigating** the Grand Staircase-Escalante National Monument in southern Utah involves wriggling through its narrow “slot” canyons—and sometimes making way for wildlife.

“The guidebooks tell you: when you see a rattlesnake, give it a wide berth,” says Peter Baumann, who happened upon one while hiking the rugged cliffs and terraces with his wife Diana. “That’s not easy when you’re in a canyon that’s 30 feet deep and a mile long—but only a foot-and-a-half wide!”

The Baumanns survived the encounter: they leapt over the snake—and then shimmed over a second one by bracing their feet against one wall of the canyon and their backs against the other. But he also parlayed it into a new avenue of research: investigating how some lizards can reproduce by parthenogenesis, a



process in which eggs develop without the aid of sperm.

As a kid, Baumann brought home his fair share of snakes, lizards, frogs, and rodents. His parents, Baumann says, were “very tolerant”—until he showed up with a lamb. “They didn’t see that our suburban yard could be tended much better by a sheep than a lawn mower,” he says.

For years, the Baumanns have kept reptiles as a hobby. But it wasn’t until they joined the Stowers Institute for Medical Research that Peter thought of bringing his lizards to the lab. Over dinner with Stowers CEO William Neaves, the Baumanns shared their rattlesnake tale—and discovered that Neaves had studied parthenogenic lizards as a graduate student. In animals that reproduce this way, fertilization never occurs. So Baumann got to wondering: what do their eggs look like? Are they like the eggs of a sexually reproducing animal, with half the number of chromosomes as the rest of its cells? Or, if the eggs have a full set, how exactly are they made?

Neaves didn’t know—and a literature search suggested no one else did either. So the Baumanns grabbed their gear and headed to New Mexico to collect study subjects. “On our first trip, we discovered that rattlesnakes can live in the same holes as lizards,” says Baumann, now an HHMI early career scientist. “So it’s not advisable to stick your hand in to pull them out.” Instead, one person uses a noose on the end of a fly rod to hold the creature while someone else slips it into a bag—a method fashioned by Neaves, who joined in the fun.

Back at the lab, the Baumanns set up a breeding facility under Diana’s guidance. What started out as a few lizards in plastic kiddie pools has grown into a department that houses 20 species of fish, amphibians, reptiles, and marine invertebrates. And though keeping reptiles can be a challenge—

the animals have pretty specific needs when it comes to nutrition and to temperature, humidity, and lighting—Baumann says that all the lizards they captured in New Mexico survived. Now Diana, as managing director of the reptiles and aquatics facility, shares their accumulated wisdom whenever they hire a new lab tech. “Just try to find someone with experience maintaining a colony of whiptail lizards,” Peter Baumann laughs.

At home, the Baumanns favor Saharan spiny tailed lizards, which they pamper with salad greens and a handful of seeds every morning. And they enjoy photographing rattlesnakes when they visit friends in West Texas each year. On those trips, though, they leave their lassos behind, says Baumann. “We don’t take any more animals home with us.” —Karen Hopkin

**WEB EXTRA:** Visit the *Bulletin* online to see photos and learn more about the lizards Baumann studies ([www.hhmi.org/bulletin/nov2009](http://www.hhmi.org/bulletin/nov2009)).



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