



NERVE-RATTLING RESEARCH

BY PAT KETCHUM

IT'S NOT EASY TO RATTLE EMILY TAYLOR.

With her affinity for cold-blooded creatures, the assistant professor of biological sciences isn't fazed by the commotion in her Cal Poly laboratory.

"Be careful you don't yank off their tails," she hollers to students who scurry off to capture some scaly fugitives.

Lizards on the loose are no big deal for a woman who has 16 pet rattlesnakes in her living room and devotes her life to studying the vipers.

Enduring centuries of notoriety as evil, cunning creatures, rattlesnakes get a bad rap, according to Taylor. And she hopes to change that.

Rattlers could be a keystone species, she explains, because they seem to keep the animals around them in check. She is excited by how much there is to learn about "their amazing immune system, the unique properties of their venom, and their mating habits."

The self-proclaimed "Snakeymama," who bears a coiled serpent tattoo on her ankle, didn't always love snakes. While running cross country in high school, she recalls shuddering as she jumped over a king snake in the trail.

Taylor experienced a radical change of heart as an undergrad student, when a field instructor pulled a snake from under a rock and placed it in her hands.

Her trepidation was instantaneously replaced with adoration. "I felt awe, a reverence I never imagined," Taylor recalls.

Since then, she's left no stone unturned. After devoting a decade to tracking and analyzing rattlesnakes, Taylor believes she's only begun to uncoil the many mysteries of this resilient reptile.

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(L-R) An Arizona black rattlesnake, one of Taylor's "pets"

Thanks to Taylor and her students, the subjects of her current research are fully loaded with the latest technology as they slither around the Carrizo Plain east of San Luis Obispo.

Twenty Northern Pacific rattlesnakes surgically implanted

the California ground squirrel, whose bushy tail doesn't rattle but performs a similar service.

Project logs indicate that rattlers and California ground squirrels share burrows during summer months. Not surprising, since adult ground squirrels are immune to rattlesnake venom, says Taylor.

However, their babies are not immune, prompting remarkable behavior in mothers. When rattlers threaten, the squirrel dilates the vessels in her tail to fill it with warm blood, which is undetectable by humans but apparently "seen as incredibly bright" by the infrared sensors rattlesnakes possess.

"This is basically like waving a huge lighted saber at the snakes that screams 'get outta here now!'" Even more crazy is that the squirrels don't dilate their vessels when waving tails at gopher snakes, which are also predators but cannot sense infrared radiation," says Taylor.

One squirrel's tail-waving behavior was a bonus in the early

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with radio transmitters and mini data loggers are providing a wealth of information.

Such radio telemetry has revolutionized studies of snake ecology. "Can you imagine trying to locate the same snake twice without it?" Taylor says

Taylor's students track each snake weekly, recording data on behaviors and keeping a close eye on pregnant females. Specifically they document whether the snake is above or below ground, coiled or straight, and whether it is hanging out with other snakes.

Taylor and her students are also documenting interesting behaviors in other wildlife in the Carrizo Plain, in particular

stages of the Rattlesnake Project. "We noticed the squirrel's behavior, investigated, and sure enough, there was a rattlesnake coiled up in the squirrel's burrow. This was fortuitous because it was the final rattler we needed for the study!"

The Rattlesnake Project will continue to keep Taylor, her students – and her husband – busy for years to come.

Taylor's research partner, Marty Feldner, also happens to be her life partner. The wedding bells rang in late August for the couple, who realized their love for rattlesnakes had evolved into a love for each other.

To the relief of many guests, there were no snakes at the ceremony, except for the ones etched on the wine glasses. □

