

MOUNTAINS

Professor discovers 4 new snakes in 6 years



Word from the Smokies
Frances Figart
Columnist

October 21 is National Reptile Awareness Day, and perhaps few people are more aware of these beautiful yet often misunderstood creatures than UNC Asheville professor R. Graham Reynolds. His earliest memories of becoming enamored with reptiles started in elementary school at the Western North Carolina Nature Center where he attended summer camps.

“Every day I ‘visited’ the snakes and turtles upstairs in the education center,” he recalls. “I knew that studying snakes was going to be part of my path. They seemed especially mysterious to me.”

As a kid Reynolds spent rainy days poring over field guides to reptiles, amphibians, fishes, and sharks. In fifth grade he started to learn scientific names of species and began keeping what scientists call “life lists” of all the animals he had seen. His parents supported his interest.

“I would plan trips with my family to places like Great Smoky Mountains National Park in the hope of finding snakes in the wild,” he says. “Finding a snake or a salamander on a family walk was an event to be celebrated and documented, and this encouragement no doubt gave me the spark to find joy in looking for wildlife.”

That spark has been especially bright for Reynolds in the past six years, during which he has found or helped to discover an astounding four new species of snakes! The best known is the Silver Boa, which he likes to say actually ‘found him’ on a remote, uninhabited island in the Bahamas where he and some colleagues were taking inventory of snakes.

“Turning in for the night, we stretched out in the sand on the beach and tried to grab an hour or two of rest before the boat returned to pick us up at dawn,” Reynolds recalls. “I awoke around 4 a.m. with a start as I felt something large moving on my face. I reached up and discovered that a silver-colored boa had crawled out of the forest, across the beach, and onto my head!”

Like any well-trained scientist, Reynolds shrugged, put the snake in a snake bag, and went back to sleep. Just before dawn, he woke his colleagues and in-



The Silver Boa was discovered by R. Graham Reynolds and colleagues from Harvard on a remote island in the Bahamas in 2015. PROVIDED BY GRAHAM REYNOLDS



A juvenile milk snake from Great Smoky Mountains National Park, a gorgeous and seldom seen species.



The Crooked-Acklins boa, described by R. Graham Reynolds and colleagues in 2017. PROVIDED BY JOSEPH BURGESS



A copperhead in Great Smoky Mountains National Park, one of the most beautiful and most common snakes in the Smokies. PROVIDED BY GRAHAM REYNOLDS

formed them that they had one more snake to measure before they could leave.

It would be days before Reynolds would realize how incredible the experience of the silvery snake slithering over him in the night really was. Upon returning to the lab, he used DNA analysis to discover that it was, in fact, a new species.

In some ways, such a discovery involves a bit of luck, but Reynolds says it is more about preparation and having in-depth knowledge of the details of natural areas that might improve your chances of finding something new.

“While we were fortunate to discover the Silver Boa, we were largely successful because we were trained to survey remote islands at night — not something that just any naturalist might do — as well as conduct DNA analyses back in the lab,” he says. “Over the years I specifically sought out training in every-

thing from the nuances of international research permit bureaucracies to wilderness survival to DNA analysis, all of which converges to yield the tools to conduct this type of work.”

After high school at Carolina Day School in Asheville, Reynolds did undergraduate work at Duke University in Durham, got his Ph.D. at the University

of Tennessee, and is now a National Geographic Explorer and an Associate of the Harvard University Museum of Comparative Zoology. He co-authored “The Amphibians of Tennessee,” and “The Reptiles of Tennessee” with colleague Matthew Niemiller of the University of Alabama Huntsville.

“During our research for those books, we spent innumerable hours in GSMNP looking for and documenting species of reptiles and amphibians from Cades Cove to Clingmans Dome,” he says. “Now the Smokies represent a living laboratory where my UNCA students can learn about the incredible biodiversity of the southern Appalachian Mountains.”

The biggest challenge for those who study reptiles is convincing people that they are worth appreciating. “People often view snakes with apathy at best and hatred at worst,” he says. “Happily, in my career I have seen changes for the better, and places I have worked for decades are starting to celebrate the reptile diversity found nearby.”

From an ecological perspective, Reynolds says snakes are a key component of the animal communities in which they live, and the existence of predators like snakes in a community elevates its diversity. “If we value biodiversity,” he says, “we must also value reptiles.”

The No. 1 way to help reptiles and amphibians is to watch out when you are driving, especially at night. “During our years of surveys in the park, we documented thousands of dead amphibians and reptiles along the roads,” Reynolds says. “Roads are a huge source of mortality for these slow-moving species.”

Reynolds and his colleagues now know that the silver boa is the world’s most endangered species of boa and that fewer than 200 individuals survive.

“I have shared the story of its discovery with colleagues around the world and have yet to meet any other naturalist who has had a similar experience of one crawling on top of them,” he says. “There is something mysterious, beautiful, and truly serendipitous about a snake seemingly making sure it was found!”

Frances Figart is the editor of “Smokies Life” magazine and the Creative Services Director for the 29,000-member Great Smoky Mountains Association, an educational nonprofit partner of Great Smoky Mountains National Park. Learn more at SmokiesInformation.org and reach the author at frances@gsmassoc.org.

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