



The Jacksonville Herpetological Society presents

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Cold Blooded



August 2020 Edition

by **Monica Pierson** on August 2, 2020

Dear members, as we deal with this global pandemic, all activities, meetings and field trips are canceled until further notice. We hope you all are safe and healthy during this trying time.

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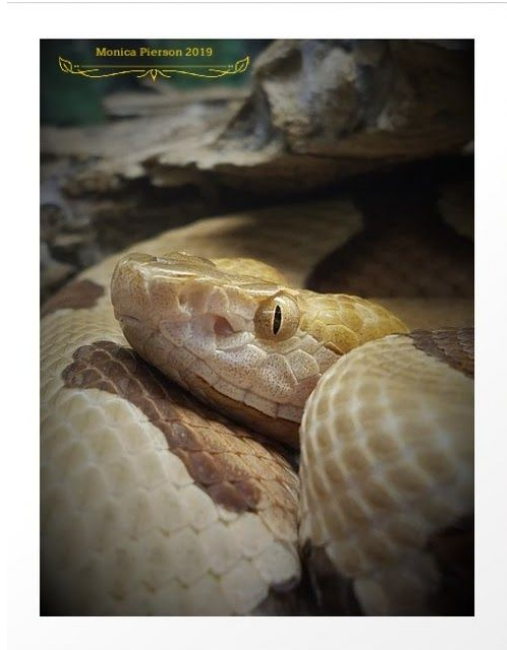
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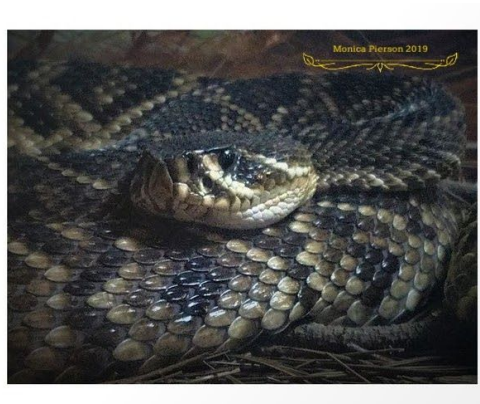
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Account	Current	To Date
JHS checking	\$756.48	
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Save the Buzztails		\$615.00
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Ashton Biological Preserve		\$580.00



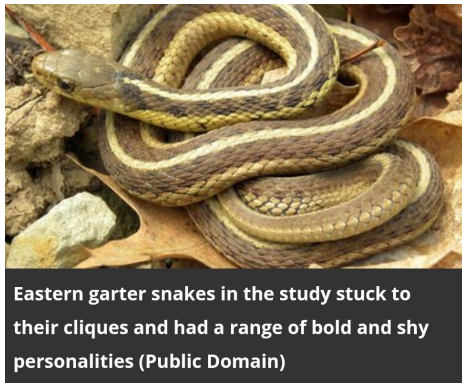
Cold-Blooded, but Not Cold-Hearted, Garter Snakes Form Friendships

By tracking 40 snakes over eight days, researchers found that the reptiles tended to return to the same groups

by Theresa Machermer SMITHSONIANMAG.COM

MAY 18, 2020

Eastern garter snake



Eastern garter snakes in the study stuck to their cliques and had a range of bold and shy personalities (Public Domain)

Garter snakes are some of the most common snakes in North America. As the weather warms up, they can be spotted slithering across lawns or sunning on rocks. Their range spans from Canada to Costa Rica, and new evidence suggests they don't go it alone. Instead, garter snakes seem to form social bonds.

The research, published last month in the journal *Behavioral Ecology and Sociobiology*, looked at the behavior of 40 garter snakes—30 of them wild-caught, 10 captive-bred. When placed in an enclosure with a limited number of hiding places, the snakes not only formed groups, but returned to the same cliques after they were scrambled around. The findings match up with previous conclusions that reptiles can make friends and could be used to

improve reptile relocation efforts

“Social behaviors of reptiles generally—and snakes in particular—are more complex and likely meaningful than we had thought,” University of Florida ecologist Harvey Lillywhite, who wasn't involved in the research, tells Elizabeth Pennisi at *Science* magazine. Lillywhite's past research has shown that cottonmouth snakes socialize and forage in pairs.

Study leader and behavioral ecologist Morgan Skinner of Wilfrid Laurier University in Canada placed ten snakes at a time in a walled enclosure measuring about three feet per side. The enclosure had four boxes for the snakes to hide in, so for all of them to find shelter, they had to group up. Each snake sported a colorful dot on its head so the researchers could identify individuals in photos of the enclosure, which were taken every five seconds for eight days to track the snakes' movements.

Twice per day, Skinner recorded what groups had formed.

“All animals—even snakes—need to interact with others,” Skinner tells Virginia Morell at *National Geographic*. “Like us, they seek out social contacts, and they're choosy about whom they socialize with.”

The snakes formed groups of up to eight individuals. And when Skinner checked on the groupings, he removed the snakes from the enclosure, cleaned the space and put the snakes back in different places around the box. On camera, the researchers watched the snakes return to their previous cliques.

Their behaviors and social connections “are in some ways surprisingly similar to those of mammals, including humans,” Skinner tells *Science* magazine.

During the research, Skinner also conducted personality tests on the snakes, which placed them in one of two groups, either “bold” or “shy.” The simple categories are a common metric used in animal behavior studies today; dolphins have bold and shy personalities, too. In snakes, one serpent's boldness was measured by how much time it spent exploring a new enclosure. Very bold snakes took time to see the sights and smell the air, while shy snakes were satisfied to sit inside their shelters. But the researchers also found that groups tended to act together, entering or leaving their hiding place at the same time regardless of personality type.

“It’s really cool to see this study,” says Melissa Amarello, herpetologist and director of Advocates for Snake Preservation, to National Geographic. But she adds, “animals behave differently in captivity, so I’m left wondering how this translates to natural conditions.”

Skinner and co-author Noam Miller, who is Skinner’s adviser at Wilfrid Laurier University, tell National Geographic that wild garter snakes tend to group up in a similar way, so the behavior may translate beyond the lab. A group of cuddling snakes could conserve heat and moisture better than a lone serpent, and living in a group gives each snake better odds of escaping if the crew is attacked by a predator, Miller tells Science.

The cliquey behavior might also explain why reptiles often leave the areas that they’re relocated to for their own safety. Relocating might work better if the snake’s entire friend group is moved together. To top it off, treating their new home with the species’ scent could entice the crew to stay.

For Lillywhite, the new paper is “a significant beginning” to the study of social behavior in snakes, he tells Science.

Original article found here: <https://www.smithsonianmag.com/smart-news/garter-snakes-form-friendships-180974882/>

Hot or Cold, Venomous Rattlesnakes Still Quick to Strike Researchers find colder temperatures barely slow down striking rattlers.

By Padma Nagappan

July 20, 2020

In nature, how quickly a creature moves can mean the difference between life and death. Venomous rattlesnakes defend themselves by uncoiling and striking out when faced with predators or prey.

Most cold-blooded creatures tend to move more slowly when the temperature drops — but striking rattlers appear to be an exception. Cold weather barely slows them down and they still strike fairly quickly.

San Diego State University ecologist Rulon Clark and his students went to New Mexico last summer for several weeks to observe and collect a dozen Mojave rattlesnakes from their native habitat, and brought them back to the lab in San Diego to study, along with a dozen Western rattlers they collected locally.

When they placed the snakes in a temperature controlled container, they found that the rattlers continued to strike quickly at a balloon that played the role of an intruder, even when they lowered the temperature considerably and made the box quite cold. At most, they were about 25% slower, which goes against the logic behind dropping temperature and the impact on mobility.

“We expected their strike to be about half as fast for every 10 degree drop in temperature, but they’re still able to uncoil and strike fairly rapidly, even at our lowest test temperatures” Clark said.

To strike, rattlesnakes must propel their head toward their target and open their mouth fast enough to pose a threat to a potential predator.

“By far, the hardest part of the study was working with snakes in the 35 C (95 F) treatment,” said Malachi Whitford. “The snakes were extremely fast, making them very difficult to corral.”

Whitford, who conducted the experiments, was a doctoral candidate in Clark’s lab at the time of the study and first author of the paper published July 20 in the Journal of Experimental Biology.

In the lab, some snakes displayed quite the personality. One of the Mojave rattlers nicknamed Hulk would strike at anything that moved very quickly, and repeatedly tried to escape his enclosure.

Snakes have a morning routine, much like most of us. They bask in the sun, charging themselves up with heat they will need to retain as the temperature drops at night.

How they continue to respond quickly at night when it's cold will be part of the next study the researchers conduct. It's apparent, however, that snakes are more vulnerable in cold weather, even if the difference in vulnerability is not as great as expected for these ectotherms that rely on external sources of heat.

Clark's lab is studying how a whole range of processes relate to temperature, including other types of movements, sensory systems, activity cycles, metabolism, and how frequently they eat.

Tim Higham, a biomechanics expert with the University of California, Riverside collaborated with Clark for the lab study, providing expertise on measurement instruments used to observe and capture strike speed. Grace Freymiller, a doctoral student in Clark's lab was part of the field trip to New Mexico and also contributed to the study.

Funding for laboratory equipment and supplies to support the husbandry and care of captive snakes was provided by SDSU and the National Science Foundation. Funding in support of the fieldwork was provided by the Animal Behavior Society Student Research Grant and the SDSU Graduate Student Travel Fund.

Original article found here : http://newscenter.sdsu.edu/sdsu_newscenter/news_story.aspx?sid=78095

Lake Titicaca giant frog: Scientists join forces to save species

July 27, 2020, 4:14 PM

Five scientific institutions are joining forces in a cross-border effort to preserve the Lake Titicaca giant frog (*Telmatobius culeus*).

The frog is one of the world's largest exclusively aquatic frogs and lives in the waters of Lake Titicaca, which straddles the border between Peru and Bolivia.



Photo of a Lake Titicaca giant frog courtesy of Bolivia's Natural History Museum

The aim of the project is to ensure the future of the endangered frog.

The amphibian is threatened by pollution from mining and also by its use in traditional medicine.

The scientists will study the habitat of the Lake Titicaca giant frog and also carry out genetic analyses to find out how to best protect the species.



Close-up of a Lake Titicaca giant frog courtesy of Bolivia's Natural History Museum

The frog lives its entire life in the waters of Lake Titicaca and nearby lagoons. It has loose, baggy skin which ripples around its body in folds, which earned it the nickname "scrotum frog".

Scientists think the skin flaps help the frogs absorb more oxygen in the lake's water, which is located at a height of 3,800m (12,500ft) above sea level.

Telmatobius culeus are large - their bodies alone can measure up to 14.5cm (5.7in). However, French explorer Jacques Cousteau described coming across a specimen measuring 50cm in total length in the 1970s.



A Lake Titicaca giant frog in its habitat

It is exclusively aquatic and can be found at depths of up to 100m (330ft).

In 2016, thousands of the frogs were found dead on the shores of a tributary to Lake Titicaca. Pollution from agriculture and plastics were thought to have caused the mass dying.

But the frogs are also caught as they are mistakenly thought to be an aphrodisiac. They are mixed into a drink called "frog juice" sold at some local markets and their bodies are also used as amulets.

Their unusual skin is sometimes turned into small artisanal bags and their legs are eaten roasted or grilled.

The team will be made up by experts from Bolivia's Science Museum and the country's Natural History Museum, Peru's Cayetano Heredia University, Ecuador's Pontifical Catholic University, Denver Zoo in the US and the NGO NaturalWay.

It has the backing of the Peruvian and Bolivian governments as well as of the United Nations Development Programme.

All photos subject to copyright and courtesy of Bolivia's Museum of Natural History "Alcide d'Orbigny".

Original article found here: <https://news.yahoo.com/lake-titicaca-giant-frog-scientists-162922463.html>

