



NEWSLETTER OF THE HOOSIER HERPETOLOGICAL SOCIETY

A non-profit organization dedicated to the education
of its membership and the conservation of all
amphibians and reptiles.



Volume 36 Number 11

November 2025

HHS Monthly Meeting

Guest Speaker – Daniel Yates

Topic – *Understanding the Neuroscience of Reptiles*

Thursday, November 20, 7:00PM

Holliday Park Nature Center

About our guest speaker:

Daniel Yates has an AS degree in physics, He also has a BS degree in polymer chemistry focused on medical tech, and he studied how to target cancer cells, zika, and Ebola.

Daniel grew up in southwest Missouri on the Arkansas border. He worked in pharmaceutical and other labs, where he had to design his own experiments.

Daniel keeps a variety of herps. Some of his more unique reptiles are, green basilisk, ornate plated lizard, giant golden land mullet skink, Chinese water dragons, zebra skinks, Savannah monitors, tegu, chuckwalla, redhead agama, south African rock agama, and more

The following is a reprinted article from 1990 by Dr. Sherman A. Minton, known as one of the giants of herpetology in his time. Though this is a dated paper, it still stands the test of time.

Scientific Collecting, Voucher Specimens, and Things Like That

Sherman A. Minton Jr.
(Reprinted from The Monitor, August 1990)

Many persons who are interested in herpetology, and particularly in conservation, are unhappy with their colleagues who collect amphibians and reptiles for museum specimens. Moreover, they seem to collect primarily those species that are rare and unusual at least in a particular locality.

It seems like a flagrant violation of the conservation ethic. As one who has done his share of this sort of collecting, I am going to try to explain why it is necessary.

To begin with, you will have to agree that studies on the distribution and geographic variation of animals are serious science. If you don't feel this way, but I'm talking about, document as to locality and date and deposited in a well cared for collection are known as voucher specimens. And her pathology they are the best way to verify that species. X occurred in a locality Y on date Z. There are alternatives, but first, let me give some examples that involve Indiana snakes.

In 1892 Oliver P. Hay had no hesitation about listing the mud snake (*Francia abacura*) and the coral snake (*Micrurus fulvius*) as part of the Indiana Herpetofauna, but he was dubious about the presence of the cottonmouth (*Akistrodon piscivorus*) in the state. Today we know there are at least two spots in the state where the cottonmouth almost certainly occurs. But probably no one alive today has seen a mud snake or a coral snake in the field in the Hoosier state. Voucher specimens collected about 1880 by the well-known naturalist, Robert Ridgeway, and it deposited in the National Museum of Natural History they've no doubt that the mud snake wants inhabited swamp of Knox County, Indiana.

Moreover, he said one specimen was found with her eggs, making it clear there was a viable breeding population. He didn't get the last mud snakes in the state; they were reported again in 1894 by Angus Gaines, an amateur naturalist living at Vincennes. He didn't have any specimens, but Ridgeway's specimens gave credits to his report. The mud snake seems to have vanished with the drainage of the extensive Cypress swamps of southwestern Indiana, but there is the remote chance a small population may still exist. If it is found, do we take a voucher specimen? Possibly not – I'd settle for a good photograph.

The cottonmouth, with much of the same general range in habit as the mud snake, alluded the scientific discovery much longer. Of course, in Oliver Haye's day and for years after, everyone who spent time outdoors knew there were poisonous water moccasins in all parts of Indiana. But no one could come up with a bona fide specimen until May of 1983 when Tony Wilson and I were asked to identify a large snake killed at Buffalo Bottoms near Jasper.

It was a cottonmouth, and we saw others where it was taken. The original dead snake served as our voucher specimen. Subsequently, another cottonmouth from a locality near the Ohio river on the Harrison – Crawford County border was found in the IU Southeast collection and documents another Indiana locality.

The coral snake story is a puzzle letter. Sometime about 1890 a colorful snake was killed near Milan and Ripley County and brought to Bigney's drugstore in the nearby town of Sunman where it was preserved. It was identified by Professor A. J. Bidney and deposited in the collection of Moore's Hill College, where he was on the faculty. He reported his find in the first number of the proceeds of Indiana of science and, based on his report, such herpetologist as Raymond Ditmars and Leonard Stejneger considered the coral snake native to Indiana. After Moore's Hill College graduated its last class in 1919, its collections were transferred to Evansville College, where Dr. Goethe Link relocated the coral snake specimen about 1950. He and I checked the measurements and vertical counts and found them close to those given by Bigney. We also determined it belonged to the western sub species TENERE. The real puzzler is whether this snake was of natural population or was accidentally introduced. No coral snakes have been found near Milan or anywhere else in Indiana since then, and this is far from the nearest authentic records in Arkansas and Mississippi. The country around Milan today does not look like the terrain where I have found coral snakes in the south, and no other unusual reptiles or amphibians have been found in this area. I believe that the Millen snake was one that had been accidentally brought up from the south, and it was living free until killed and identified, and those days literally one in 1 million chance.

My own story with the Indiana Scarlet snake is also strange. In the summer of 1935, four of us who regularly hunted snakes and the knobs near New Albany found an odd little snake. We couldn't identify, but which looked like the picture of the scarlet snake (*Cemophora coccinea*) in Ditmar's reptile book, the only reference book we had. Our husband re-techniques were extremely primitive in those days, and we put the little snake into a galvanized iron wash top with some other small snakes. A few days later, a heavy thunderstorm dumped several inches of water into the tub. The other snakes swam to freedom; the scarlet snake drowned. I preserved it, and a year or so later, sent it to Dr. Ditmar's who confirmed my identification. He didn't seem specially surprised. This specimen might have been just as enigmatic as the coral snake record if Dr. Bernard Bechtel hadn't come to Indiana. In May 1957, he, my eldest daughter, and I collected two Scarlett snakes in the knobs in two days. None have been found in Indiana since. All the Indiana specimens were preserved, and have been examined by others. I don't think we got the last ones. This is an uncommon snake throughout its range and extremely secretive. I'm pretty sure it still lives in the knobs. Because it looks so much like a small red milk snake (*Lampropeltis triangulum sypila*), I did not accept a record that wasn't backed up by an actual specimen or a very good close-up photo of the head and ventral service.

Voucher specimens don't have to document rarities to be scientifically useful. Dr. Douglas Rossman, *Now at Louisiana State University, was interested in the taxonomy of ribbon, snakes, and particularly whether the eastern and western ribbon snakes, traditionally considered subspecies, might not actually be two full species. The crux of the matter was what happened where the ranges of the two forms came together. If they were subspecies, the characteristic separating them would gradually blend producing an intermediate or integrated population. If they were species, both would maintain the identity. Indiana happened to be in the zone of greatest overlap, and, lucky for Doug, there were quite a few museum specimens from the state. He was able to demonstrate that they behave here and elsewhere as full species. Contrariwise, the small sample of Indiana and Kentucky Crown snakes provided evidence that the Appalachian population of the snake, once known as T. C. Midriff, is not significantly different from Loland populations to be worthy of recognition.

An obvious alternative to preserved voucher specimens is photographs. But this has its problems. A few museums today are prepared and equipped to create collections of 35 mm slides or other photographs. These usually remain with the photographer where they are more likely to be lost or damaged and often are difficult to obtain for examination. Not all herpetologists are good photographers and even expert photographers have trouble occasionally with cameras and film. some species are easily identified even in bad photos; the alligator snapper is a good example. For many species, however, the photographer must not only have a good camera, but must also know

exactly which features he wants to show, the belly pattern of the Graham's queen snake (*Regina grahami*), the head markings of false map turtles (*Graptemys pseudo-geographica*), the mental shields of the Coal skink (*Eumeces anthracinus*), and mini structure is important in the herpetological, taxonomy - teeth, hemipenes, femoral pores, just can't be adequately seen in ordinary photos. Finally, I believe that honest (and dishonest) mistakes are more easily made with photos than with actual specimens.

The science of systematics is becoming ever more complicated. To common Indiana tree frogs, (*Hyla versicolor*) and (*Hyla chrysocelis*) are the best identified by their calls, identification of salamanders in the *Ambystoma jeffersonianum* complex often requires measuring red blood cells, and minute differences in tooth shape seem to be all that separates the pond breeding (*Ambystoma texanum*) from the recently described stream breeding (*Ambystoma barbouri*). When I had my formal training in herpetology, emphasis was on the status goal differences between populations and the lung series of a lot of specimens from locality. The first money I ever made as a herpetologist was by collecting about 40 chorus, frogs (*Pseudacris triseriata*) from the type locality near New Harmony for a famous museum. The bright young herpetologist of today think of immunological differences, allo-enzymes, and DNA sequences. This still requires the collection of animals from the wild. The need for many specimens from a locality is an emphasis so much, but it is necessary to have both sexes and examples of more than one age group represented.

Very rarely will this harm natural populations of a species. Sometimes it may help, for knowing the geographic variation, natural distribution pattern, and ecological requirements of an uncommon species, often permits development of better measures for its protection.

Because Donald Tinkle and Roger Conan determined that the Brazos water snake (*Nerodia h. harteri*) the harder eye and the Concho watersnakes (*Nerodia h. paucimaculata*) differ from each other and from all other water snakes, there has been an extra extraordinary effort to protect the habitat of these snakes.

Sherman A. Minton.
Hoosier Herpetological Society
The Monitor, August 1990

President's Message

Jim Horton

Well folks, it looks like winter out there as of press time. I hope you are keeping warm and ready to write some articles for this publication, ha ha! But really, I'd love to see what our members have been up to this past season. Did you find a great 'lifer' or have a significant find or perhaps see cool herps on a vacation? I'd love to hear from you. Drop me a line at president@hoosierherpsociety.org

Our guest speaker this month, Mr. Daniel Yates, is traveling from southwest Missouri for us! I hope you can make it to this **special meeting date on Thursday, November 20 at Holliday Park.**

This month would typically be our election of officers for next year. There have been some complications with that situation. Some of the nominees were unable to run due to other obligations in the year 2026. I have agreed to continue as president for the year 2026. Vice-president, secretary, and treasurer positions will also remain the same for next year. Luckily, Mr. Steve Striedinger has agreed to accept the Marketing/Outreach position for '26. Thank you Steve and thanks to you all for understanding.

The Mudpuppy (*Necturus maculosus*)

Article and photos - Jim Horton

The mudpuppy, Indiana's elusive aquatic salamander, is a vital indicator of freshwater health and a species of special concern across the state.

Hidden beneath the surface of Indiana's lakes, rivers, and streams lives a creature few Hoosiers have seen but many are fascinated by—the *mudpuppy* (*Necturus maculosus*). This fully aquatic salamander, often mistaken for a fish, is one of 23 salamander species native to Indiana and is considered *a species of special concern* due to its secretive nature and sensitivity to environmental changes.



Mudpuppies thrive in clean, oxygen-rich waters, making their presence a strong indicator of good water quality. They prefer habitats with submerged rocks, logs, and debris where they can hide during the day and hunt at night. These nocturnal amphibians feed on *crayfish, insect larvae, and small fish*, playing a crucial role in aquatic food webs.

During winter, mudpuppies move into shallower waters, increasing the chances of being spotted by anglers. The Indiana Department of Natural Resources (DNR) encourages residents to report sightings to help track their populations and better understand their distribution.



What sets the mudpuppy apart from other salamanders is its *external, bushy red gills*, which it retains throughout its life—a trait known as neoteny. Adults typically grow to *12–16 inches* in length and display mottled gray or brown skin with dark blotches. Unlike the larger hellbender, another aquatic salamander found in Indiana, mudpuppies are smaller and lack the hellbender's loose skin folds. Interestingly, mudpuppies are sometimes called “water dogs,” and while they don't actually bark, they can emit a

high-pitched squeak when disturbed.



Female mudpuppies lay *50–100 eggs* in clusters beneath submerged objects in spring. The larvae are yellowish with dark stripes, which fade as they mature. With a lifespan of up to *11 years*, mudpuppies are long-lived but vulnerable to habitat degradation, pollution, and changes in water temperature and flow. Because of their elusive nature and declining numbers in some regions, conservation efforts are underway. Organizations like Mudpuppy Palace promote environmental education and outdoor exploration, using the mudpuppy as a symbol of curiosity and ecological stewardship.



The specimen pictured was found in early January 2025. It was found by walking a shallow creek with lights.

If you're an angler or nature enthusiast in Indiana, keep an eye out for mudpuppies—especially in winter. Use a flashlight to scan shallow waters at night, and if you

spot one, report it to the Indiana DNR. Your observation could contribute to vital conservation data and help protect this fascinating amphibian for future generations



Look for the HHS
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Scientists discover a stunning new golden-tongued lizard in China

October 30, 2025
Source: Pensoft Publishers

A new species of mountain lizard, *Diploderma bifluviae*, has been discovered in the upper Dadu River Valley of China. Its distinct traits and isolated habitat highlight the hidden biodiversity of the Hengduan Mountains.



Years of Field Surveys Lead to a Surprise

Starting in 2018, the research team carried out extensive field surveys in the upper reaches of the Dadu River. During their expeditions, they came across a population of lizards that displayed unusual traits not seen in other known *Diploderma* species from the area. Detailed genetic testing and morphological comparisons confirmed their suspicions: this was a species that had never been documented before.

The scientists named it *Diploderma bifluviae*, a nod to its discovery site near the meeting point of two rivers, Chuosijia and Jiaomuzu.

With this finding, *Diploderma bifluviae* becomes the 47th recognized species of *Diploderma* in China. Members of this genus are found throughout East Asia and the northern Indochinese Peninsula, where they occupy a wide variety of mountain habitats.

A Unique Lizard With Distinctive Traits

Measuring about 6-7 centimeters in body length, *D. bifluviae* stands out with its distinctive coloring and a wheat-colored tongue -- features that set it apart from closely related species. It thrives in semi-arid shrublands and rocky, sun-exposed valleys at elevations between 2,100 and 2,500 meters. The environment it inhabits is characterized by small-leaved shrubs and scattered stones, creating the perfect camouflage for this elusive reptile.

"This discovery highlights the understudied biodiversity of the upper Dadu River," the researchers wrote in their report, published in the open-access journal *ZooKeys*. Their finding underscores how even in well-surveyed regions of China, nature continues to reveal new surprises.

Special meeting date on Thursday, November 20 at Holliday Park.

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2025 HERPETOLOGICAL EVENTS

November 16, 2025 – Midwest Reptile Show, Indianapolis State Fairgrounds

November 19, 2025 – Daniel Yates (St. Louis Herp Society). Topic – Neuroscience in Reptiles.

December – HHS Holiday Party – date and venue TBD

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