



Ssssssnakes, Frogs, Salamanders, and Turtles

Right here in Sun City!

Who knew when Jim Christiansen's grandmother found him playing with a "really pretty worm" on her kitchen floor, that his future would be foreshadowed by this event?

By Phyllis Moses

That "pretty worm," turned out to be a red-sided garter snake. Jim says, "I was so impressed with that snake, mainly because it was bright red. I know I will never forget it because my grandmother's reaction impressed me even more. So my interest in reptiles really began when I was quite young."

Let me try to head off any potential misunderstanding right up front: Jim Christiansen does not keep live specimens of our Sun City snakes at his home. However, later in the morning, he did show me a preserved one he had tagged for research.

Thus, my first meeting with Jim began. And what a fascinating time we had exploring the subjects of herpetology and biology that have been Jim's vocation and avocation throughout his extraordinary career.

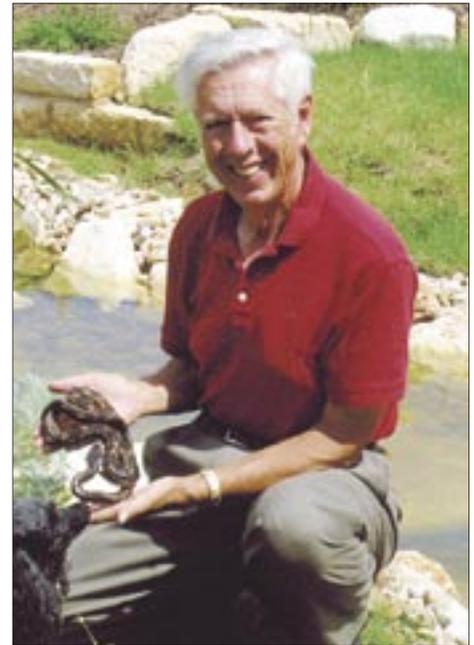
Jim Christiansen, retired professor of herpetology at Drake University at Des Moines, first chose geology as his major in college, but when he learned from others it was hard to make a living as a geologist, he shifted the emphasis of his studies to amphibian and reptile biology. His father, head of the chemistry department at Buena Vista College in Iowa, insisted that Jim major in chemistry, "Because," he said, "Chemistry is the basis of everything, and you can't really understand anything unless you understand chemistry first."

"However," Jim reiterated, "my principal thrust is biology, and I'm still trying to answer little questions in biology that nobody else cares about, but it all contributes to the basic scientific knowledge of how and why things are." Jim

continues, "So this will be my main thrust for as long as I can punch a computer." His entire career has been devoted to the biology of amphibious and terrestrial animals, which includes the study of snakes.

The pursuit of the science of herpetology is the study of amphibians and reptiles. By its nature it is a biological study. To do this effectively, one needs to have a good background in biology and chemistry. A reasonable amount of knowledge of mathematics is needed for the compilation of statistics. In addition, a broad background of history and paleontology also is useful in order to understand the fossil records.

Just because Jim is retired from the university in Iowa doesn't mean he's given up his studies of reptiles. As he explains, "We're working with the University of Texas Research collection on a three-year project that will sample amphibians and reptiles throughout Sun City. We will plot the location of each specimen we find here. The most important people in this project are the residents of Sun City. We want everyone to call us, Dick Woolheater or me, who is a major partner in helping with this, so we can pick up and verify the identification of every specimen in our community. So every frog, salamander, turtle, lizard or snake that anyone finds here, squashed on the road, no matter how many times it has been run over or how old it is, we can come and scrape it off the road. Or if there is a big snake sitting on your patio looking in the window, if you don't want it there, we'll come and remove it. We'll release it outside of Sun City. If it's not alive, we'll tag it, preserve it and turn it over to the research collection. So far, we've had over



Sun City resident Jim Christiansen proudly displays a preserved snake.

Photo by Phyllis Moses

200 specimens turned in that we've identified in the past year and a half."

You've probably heard lots of myths and legends about snakes and lizards. Snakes have captured the interest of people from the earliest of times. Everybody is familiar with the Bible story of Eve and her event with the apple in the Garden of Eden. Her "wickedness" became represented as a serpent. The story goes on to tell about how the children of Israel were in the desert when they became plagued by poisonous snakes. As a result of this, Moses proffered a cure, by the image of two snakes wrapped around a pole for people to look at and believe they would be cured. In fact, this became the symbol of the medical



profession, the Caduceus, to indicate the power of healing. So even in Biblical history we see snakes played a pretty large part.

There are over 3,000 kinds of snakes in the world. Giants, like the 7-metre long python can squeeze the life out of a large antelope and swallow it whole. Other snakes grow no longer than a pencil. Some live in the sea, some burrow underground, others climb trees. Jim said, "Another common belief is that if a snake's pupils are round, they are not venomous; on the other hand if their pupils are elliptical in shape, they are venomous. But that doesn't hold true here in Sun City. We have one snake, extremely rare, called a coral snake. It has round pupils, but it is highly poisonous. Fortunately, it has a pretty good temper and almost never bites anybody."

Jim continued, "Other snakes found here in our community are rattlesnakes that have vertically elliptical pupils – like a cat. In contrast to that, there are harmless snakes in Texas that are cat-eyed. One in particular is the Lyre snake which has vertically elliptical pupils and is not known to be dangerous to humans.

"Copperheads which occur in Williamson County, (but not in Sun City as far as we've been able to determine), have elliptical pupils, but no rattle." Then there is the cottonmouth which has never been found in Williamson County, although it's found in counties around us. The Cottonmouth moccasin, the only poisonous water snake in North America, has vertically elliptical pupils. It also has a very large head and a fat body."

As Jim talked about this fascinating subject, throughout the discussion there was an unmistakable respect for the animals of our world, along with his passion to preserve and protect the environment and all creatures living here. This includes humans too.

Many of Jim's research studies involved NASA. He says, "As far as we know, there has never been a reptile included in space expeditions. It's just not practical. However, we've learned that there is a certain cell in the reptile immune system that is able to fight bacterial infections at near freezing temperatures. Mammals don't have anything like that, because we don't hibernate. Reptiles do."

The reason for the interest in this research is that if we can put humans into some sort of hibernation, we might be able to reach planets that are more than a lifetime away. Jim explained, "The study of this theory is what NASA is interested in; that and longevity, and the study was done under a grant from NASA.

"Reptiles are important to use in the aging and longevity studies, because if they become extinct, we may be losing a specimen that holds the secret for something that can be applied to humans that would be of great value to us. Thus, reptiles are important to study in many aspects of human biology because they are so

much simpler.

"You can narrow the problem down to a specific factor much more easily than you can with mammals."

On the subject of Jim's hope for the future, his answer is simple. "I hope to remain in Sun City and work with the UT Research collection for the rest of my life. The main focus of my work in the future will probably be in turtle reproduction, and its adaptation to aridity.

"I love solving any kind of problem. There's nothing more satisfying than to be able to answer a question, especially when everybody else believes you're wrong. This is also true in science. It's tremendously exhilarating to go against the grain, to find a solution that nobody expects. To me that's the highest reward one achieves in life.

"As one gets older and realizes that you're looking at the end of your life span, one does make adjustments, because you never know when that life is going to end. I'm working much more intensively now. I'm completing projects, rather than having ten or fifteen incomplete projects that I intend to complete "some day."

"Something that has driven me all my life is that we are all born with a job to do on this earth. We are required to find out what our job is, focus on it, get it done and make a contribution that makes our life on earth worthwhile.

"I believe my major job is to work with these animals, learn what I can from them and apply that to the scientific research that is ongoing."

In the time I spent with Jim, I made some significant discoveries. He thoroughly enjoys reviewing his life work and is generous with his time, talent and his hopes for the future. In fact, he was packing up to go to west Texas to initiate a study in the lives and habitats of turtles, the yellow mud turtle, *Kinosternon flavescens*.

Another interesting piece of information is that our Texas horned toads are not frogs, they are lizards. That was news to me!

Jim's wife, Sarah, retired from Principal



Financial in Des Moines continues to work full time as an actuarial consultant for insurance companies. While Jim and Sarah have retired from their structured jobs, they are giving more than full time attention to their respective professions. They may eventually slow down, but definitely not yet.

Spending time with this engaging couple, I found that their lives are rich with memories and with plans for the future. Their contribution to the bucolic life at Sun City is significant and long-lasting. We're lucky they chose Sun City to spend their retirement years.

In order to reach Jim Christiansen to come to your home and retrieve a reptile of any kind, please call 868-3504.

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Author Phyllis Moses is a freelance writer with a focus on Aviation and Aviation history. She and her husband Brian own two airplanes at the Georgetown Airport. Phyllis and Brian are Sun City residents who are loving every minute of living in our beautiful community.

Curriculum Vitae of James L. Christiansen

Academic Degrees

Ph.D., 1969, The University of New Mexico, Albuquerque, New Mexico

M.S., 1965, The University of Utah, Salt Lake City, Utah

B.A., 1962, Buena Vista College, Storm Lake, Iowa

Academic and Research Positions

2006-Present Research Associate University of Texas Memorial Museum, Collections Section

1969-2006 Professor of Biology, Drake University, Des Moines, Iowa

Honors

President, Iowa Natural History Association, fall 2000

President Elect, Iowa Academy of Science, served 1998-99

Received Iowa Medical Society, Henry Albert Scientific Presentation Award

Distinguished Service Award, Iowa Academy of Science

Outstanding Service Award, Buena Vista College

Graduated Valedictorian, Buena Vista College