

Dream Jobs: Herpetologist (snake scientist)

By National Geographic, adapted by Newsela staff on 10.01.17

Word Count **657**

Level **840L**



Dr. Zoltan Takacs studies snakes and their venom. Photo from National Geographic.

Dr. Zoltan Takacs didn't collect comic books or trading cards as a kid. He collected something a bit different: snakes.

Takacs is a herpetologist, a scientist who studies reptiles and amphibians. Reptiles are animals that have scales and lay eggs, like lizards and snakes. Amphibians are animals that live both in water and on land, like frogs.

Takacs became curious about snakes while spending his summers in Transylvania. This is a region in the country of Romania, in Eastern Europe. "That's where I was exposed first to snakes, reptiles, amphibians and other wildlife, so I started to catch them [and] take them home," he said.

His early experiences with snakes were not always fun. "I kept vipers at home in my room, and I got bitten [once]," he said. "It was my mistake, just as the other six bites I have had since then."

"I gave anti-venom to myself," Takacs said, "just to find out a few weeks later that I'm allergic to the snake anti-venom! I did learn a lot during that early period."

A Fascination With Snake Venom

Takacs became very curious about snake venom, a poison that some snakes make. They use it on animals so they can catch and eat them.

There are different types of venom. One attacks the skin around the bite, one attacks the blood and heart and another harms the brain and spine. The one that attacks the brain is the most dangerous. Another type of venom attacks the prey's flesh to make it easier for the snake to eat.

All venomous snakes have fangs, which are long teeth that inject venom as the snake bites into a victim.

Fangs can be fixed, folded or "colubrid." Fixed fangs are at the front of the snake's mouth. Folded fangs are tucked away when they're not used. Colubrid fangs are shorter and in the back of the mouth.



Takacs is very interested in snake venom and finds it really cool. This is why he decided to learn pharmacology, which is the study of drugs and their effects. Venoms can be deadly, but they can also save lives. For example, venom that helps blood flow can stop people from having heart attacks.

Takacs was able to make new technology for turning animal venoms into medicine. He said that scientists don't always need to invent completely new cures. If they make the right changes, they can turn venom into medicine.

Takacs said that he and his fellow scientists have made a toxin library. Toxins are the tiny pieces of matter that make up the venom. "It is like a key and a lock," he said. "If you have a specific key (the toxin) for a particular lock (the target), then you can cure diseases." Takacs and his team have already found ways of making medicine for certain diseases.

Close Calls

Takacs has traveled to some of the world's most extreme places to look for animal venoms. Some of his missions have turned into life-threatening adventures.

One of these happened about 10 years ago during a trip to the Amazon rain forest in South America. Takacs was bitten by a snake, which almost killed him. His co-workers rushed him by boat to a hospital in the city of Manaus, Brazil.

Before that, another close call was when Takacs was in an African rain forest. "A forest elephant in Cameroon was looking eye to eye at me," he said. "That was a scary moment." Luckily, Takacs had some help. His guide told him to stay still, then spoke to the elephant and the elephant walked away.

Takacs does not mind that his work can be scary. He is glad that his search for animal venoms lets him travel the world. "My passion for snakes," he said, "is part of a larger passion for wildlife and the Earth and exploration."

Quiz

1 Read the paragraph below from the section "A Fascination With Snake Venom."

Takacs said that he and his fellow scientists have made a toxin library. Toxins are the tiny pieces of matter that make up the venom. "It is like a key and a lock," he said. "If you have a specific key (the toxin) for a particular lock (the target), then you can cure diseases." Takacs and his team have already found ways of making medicine for certain diseases.

Which detail from this paragraph BEST supports the conclusion that Takacs' research has been helpful to people?

- (A) Takacs said that he and his fellow scientists have made a toxin library.
- (B) "It is like a key and a lock," he said.
- (C) "If you have a specific key (the toxin) for a particular lock (the target), then you can cure diseases."
- (D) Takacs and his team have already found ways of making medicine for certain diseases.

2 Read the introduction [paragraphs 1-5.] Select the paragraph from the section that shows that Takacs' interest in snakes came from his personal experiences.

3 Read the sentence from the introduction [paragraphs 1-5.]

"That's where I was exposed first to snakes, reptiles, amphibians and other wildlife, so I started to catch them [and] take them home," he said.

Which sentence uses "exposed" in the same way as the sentence above?

- (A) The shells are exposed on the beach when the tide goes out.
- (B) The students were exposed to classical music at the concert.
- (C) The soldiers were exposed during an ambush.
- (D) The newspaper exposed the actor's secret.

4 Read the following paragraph from the section "A Fascination With Snake Venom."

All venomous snakes have fangs, which are long teeth that inject venom as the snake bites into a victim. Fangs can be fixed, folded or "colubrid." Fixed fangs are at the front of the snake's mouth. Folded fangs are tucked away when they're not used. Colubrid fangs are shorter and in the back of the mouth.

Fill in the blank. The author uses the word "fixed" to show that the snake's fangs are ____ .

- (A) permanent
- (B) stationary
- (C) fastened
- (D) strong