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Edgar Lehr, Illinois Wesleyan University, interviewed by Jim Brown, WGLT
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The world now knows of three new frog species, thanks to the work of a professor of Biology at Illinois Wesleyan University who returned from an expedition to Peru with the findings this spring.

Jim Browne: Edgar Lehr is a tall man with a lanky build but he crams into a small office on the first floor of IWU's Center for Natural Sciences. The office is further cramped with various notebooks, some with papers struggling to escape their binders, all but obscuring the walls. On the narrow surface between us that serves as a desk, there is a three-liter jar, half-full of frogs Professor Lehr is cataloguing, each with a note attached to one of its legs.

Edgar Lehr: There are two jars, in this jar there are frogs which I found in a museum collection in Peru in Lima and I realized that these present a new species, so I have them on loan with me. My last expedition was during March this year. I work in the Andes mostly between let's say 1,000 and 4,000 meters elevation.

Jim Browne: How long were you in Peru for this trip?

Edgar Lehr: For the last trip I was a total of four weeks and I spent around twelve days in the field.

Jim Browne: Twelve days is not very long, you must have made your discoveries fairly soon after you arrived.

Edgar Lehr: Yeah I was well-equipped, I had a car, I had a driver, and had two people helping me and we know the area—this short time to confirm new species.

Jim Browne: Could you describe for me the moment of discovery when you found a new species?

Edgar Lehr: We were driving around to areas where probably no scientists have been and we were looking around and looking for good areas where we could start looking for frogs and there were a lot of fields and farmers living in the area, even—it was very far away from cities, and we were frustrated so we stopped with the car just to look around a little bit and suddenly we heard frog calls and there was no frog recorded in this area at this elevation—it was about 3,500 meters, so it was sure that there was a new species, so the problem was then how to find it and they were little frogs, about two centimeters, and they lived under moss, under plants, well-hidden, and they were calling from inside the moss.

Jim Browne: So you had to walk around and lift up the—

Edgar Lehr: And lift up moss and of course they stopped calling when we did this, so it was a lot of time, it was so exciting, we wanted to find it but then we couldn't hear it anymore. We spent hours there and we managed to find six specimens.

Jim Browne: Three specimens that you found do not have a tadpole phase—

Edgar Lehr: Yeah, mhmm.

Jim Browne: How are the eggs incubated?

Edgar Lehr: They depend on humidity and because in the high Andes there are usually no rivers or if there are rivers or creeks they are so fast that tadpoles wouldn't develop there usually, so these have evolved their reproductive mode where they deposit their eggs under moss or under leaves or within humid conditions, so they're well-hidden, difficult to find, I've never seen them, I must say, and then after a while, young or little frogs hatch out of the eggs and they are very tiny.

Jim Browne: But what is the temperature underneath this moss?

Edgar Lehr: The temperature, 10℃, 15℃, depending on the… of the day.

Jim Browne: That seems rather chilly for an egg to develop.
Edgar Lehr: Yeah but amphibians—they just would need more time then to finish the development.

Jim Browne: When I first found out that these amphibians, these frogs, did not have a tadpole phase, I was kind of surprised because I always thought—

Edgar Lehr: Yeah.

Jim Browne: That—frog tadpole, tadpole frog.

Edgar Lehr: It's—

Jim Browne: But it's not that unusual, is it?

Edgar Lehr: It's not unusual for South America. The three species I recently described belonged to a family and all of them don't have tadpoles, so it's obviously a very successful strategy in reproducing.

Jim Browne: I assume they don't all leave their eggs underneath moss, are there other ways for the eggs to incubate? I understand some frogs ingest the eggs?

Edgar Lehr: This is an example from Australia. This was a frog who was discovered to a species in the 80s and then some years later became extinct.

Jim Browne: Yeah.

Edgar Lehr: And they swallowed the fertilized eggs and the eggs would develop inside the stomach. I think it's a—possibly the most unusual form of reproduction maybe.

Jim Browne: What excites you the most about these amphibians?

Edgar Lehr: I don't know. It started during childhood. It always was—I found frogs, not attractive, but I was attracted to them, so I caught them, I kept them as pets, and I liked the diversity of frogs and the—how the way they can live in different habitats and the strategies how they reproduce. And sometimes frogs can be very beautiful. Usually they may be brown or gray but—or green, but some, like one of the new species I just described, had like orange flecks or dots and it's—I think they are beautiful but it depends if you would consider a frog to be beautiful.

Jim Browne: Lehr's blue eyes light up whenever he discusses his beloved frogs and has written about them in the book he's coauthored, *Terrestrial Breeding Frogs in Peru*. His work was first published when he was just 17, and so far he has described 70 new species. He says the only places on earth where frogs do not exist are the north and south poles. I'm Jim Browne, WGLT News.