LSU professor discovers new species

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Chris Austin, assistant curator of herpetology at LSU's Museum of Natural Science, or LSUMNS, and adjunct professor in biological sciences, recently discovered a new species of lizard while conducting field research in Borneo.

Austin, along with colleague Indraneil Das from the Institute of Biodiversity and Environmental Conservation at the Universiti Malaysia Sarawak, will publish their findings and photos of the new species in the prestigious Journal of Herpetology. The article, which will contain the currently embargoed scientific name of the species, is slated for publication in March 2007.

"We actually found four specimens at once," said Austin. "One of the best methods for finding lizards in the rainforest is to look under logs. We found two individuals of the new species under one log and two more under another." With more than 15 years of fieldwork experience behind him, Austin knew immediately that he had found a new species. After collecting the lizards, he and Das began the difficult work of proving what they already knew.

"Determining that a species is new to science is a long and laborious process," said Austin. "Natural history museums and their invaluable collections are critical in that they allow scientists to examine known biodiversity in order to determine a species is new." He and Das examined specimens from a slew of museums around the world.

Natural history collections, such as the more than 80,000 specimens in

the LSUMNS reptile and amphibian collection, are important because taxonomy – the science of describing, naming and classifying organisms – has implications for basic and applied fields of science. "We can't conserve what we don't know we have. It is imperative that we know what species exist in order to preserve them for future generations," said Austin.

He used the cutting-edge molecular genetics lab at the LSUMNS to decipher the genetic code of the lizards. "We sequenced the DNA of this new species and several other closely related species in order to help our diagnosis," he said. "Using DNA to help describe new species is becoming one of the most important tools for scientists to use in documenting and describing biodiversity." The global decline of biodiversity has become a major public issue recently, and the use of modern molecular methods is proving to be fundamental in gaining a better understanding of the situation.

The new species is distinguishable from its closest cousin, a type of skink found in the southern Philippines, in several distinct ways:

-- different color patterns;
-- its structure, or morphology;
-- differences in scale count, which is one of the basic ways scientists distinguish between species;
-- and significant genetic variations.

These traits combined to confirm the original hypothesis that the lizard was, in fact, an entirely new species.

Austin spent the entire summer of 2006 in New Guinea, his geographical area of expertise, conducting fieldwork with graduate students. He is currently working on research funded by the National Science Foundation to understand why New Guinea, called a megadiverse region,

has such a high level of biodiversity.

"While we were there, we collected what we think is a new species of snake, a new species of lizard and probably two or three new species of frogs," he said. "But the process of certifying a new species takes so long that it will be awhile before we're certain."

Source: Louisiana State University

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