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Link Between Ancient Lizard Fossil in Africa and Today's Komodo Dragon in Indonesia

University of Alberta researchers have unearthed a mysterious link between bones of an ancient lizard found in Africa and the biggest, baddest modern-day lizard of them all, the Komodo dragon, half a world away in Indonesia.

Biologists Alison Murray and Rob Holmes say the unique shape of the vertebrae links the 33-million-year-old African lizard fossil with its cousin the Komodo, which has only been around for some 700,000 years.

"The African fossil was found on the surface of a windswept desert," said Holmes. "It's definitely from the lizard genus *Varanus* and there are more than 50 species alive today, including Komodos and other large lizards."

Holmes says the telltale African vertebrae fossils belonged to a lizard that was about a metre- and-a-half long whose ability to swim may be key to figuring out how more than 30 million years later its ancestors turned up on the other side of the world.

Holmes says the ancient African *Varanus* specimen was found on land that was once the bottom of a river or small lake. "Whether the animals lived in the water or surrounding land, we don't know, but we do know that some modern day species of *Varanus* are comfortable swimming in fresh water."

The researchers agree that fresh-water swimming wouldn't get the African lizard all the way to Indonesia. Murray says the mystery of how the animals spread deepens when you

consider ancient world geography. "From about 100 million years ago until 12 million years ago, Africa was completely isolated, surrounded by ocean, but somehow they got out of Africa during that period," said Murray. "That's why this paper is important because there was no known land connection."

Murray says one unproven theory of how *Varanus* moved out of Africa is that over millions of years, small land masses or micro-plates may have moved from one place to another, carrying their fauna with them.

The work of the U of A researchers and various co-authors runs counter to some prevailing theories about the origins of some ancient fossil types found in Africa including *Varanus* lizards and some fresh-water fish. "The assumption for several types of ancient African fossils is that the animals didn't originate in Africa but came there from Asia," says Holmes. "But the fossil record of *Varanus* shows exactly the opposite path of migration."

The work of Murray and Holmes and various co-authors was published in the journal *Palaeontology*.

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