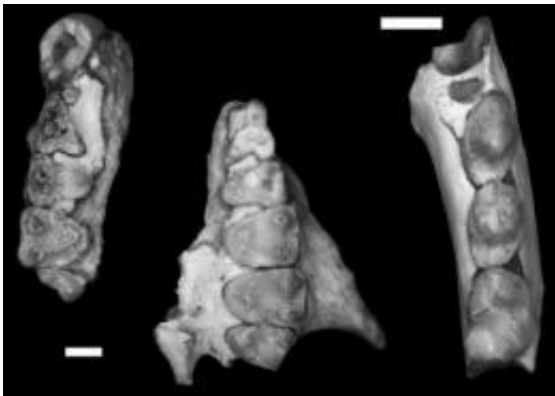


# Anthropologist discovers new fossil primate species in West Texas

May 16 2011

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This is *Mescalerolemur horneri*'s partial upper jaw (in two pieces, at left) and partial lower jaw (at right) (scales = 2 mm). Credit: University of Texas at Austin

Physical anthropologist Chris Kirk has announced the discovery of a previously unknown species of fossil primate, *Mescalerolemur horneri*, in the Devil's Graveyard badlands of West Texas.

*Mescalerolemur* lived during the Eocene Epoch about 43 million years ago, and would have most closely resembled a small present-day [lemur](#). *Mescalerolemur* is a member of an [extinct primate](#) group – the adapiforms – that were found throughout the Northern Hemisphere in the Eocene. However, just like *Mahgarita stevensi*, a younger fossil primate found in the same area in 1973, *Mescalerolemur* is more closely

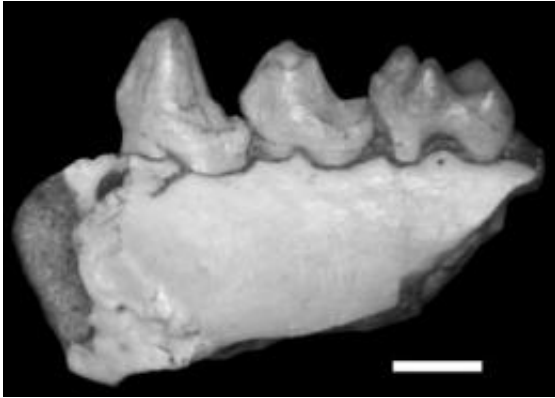
related to Eurasian and African adapiforms than those from North America.

"These Texas primates are unlike any other Eocene primate community that has ever been found in terms of the species that are represented," says Kirk, associate professor in the Department of Anthropology at The University of Texas at Austin. "The presence of both *Mescalerolemur* and *Mahgarita*, which are only found in the Big Bend region of Texas, comes after the more common adapiforms from the Eocene of North America had already become extinct. This is significant because it provides further evidence of faunal interchange between North America and East Asia during the Middle Eocene."

By the end of the Eocene, primates and other tropically adapted species had all but disappeared from North America due to climatic cooling, so Kirk is sampling the last burst of diversity in North American primates. With its lower latitudes and more equable climate, West Texas offered warm-adapted species a greater chance of survival after the cooling began.

Kirk says Marie Butcher, a then undergraduate who graduated with degrees in anthropology and biology from The University of Texas at Austin, found the first isolated tooth of *Mescalerolemur* in 2005. Since that time, many more primate fossils have been recovered by Kirk and more than 20 student volunteers at a locality called "Purple Bench." This fossil locality is three to four [million years](#) older than the Devil's Graveyard sediments that had previously produced *Mahgarita stevensi*.

"I initially thought that we had found a new, smaller species of *Mahgarita*," Kirk says.



This is *Mescalerolemur horneri*'s partial right lower jaw (scale = 2 mm). Credit: University of Texas at Austin

However, as more specimens were prepared at the Texas Memorial Museum's Vertebrate Paleontology Lab, Kirk realized he had discovered not just a new species, but a new genus that was previously unknown to science.

Fossils of *Mescalerolemur* reveal it was a small primate, weighing only about 370 grams. This body weight is similar to that of the living greater dwarf lemur. *Mescalerolemur*'s dental anatomy reveals a close evolutionary relationship with adapiform primates from Eurasia and Africa, including *Darwinius masillae*, a German fossil primate previously claimed to be a human ancestor. However, the discovery of *Mescalerolemur* provides further evidence that adapiform primates like *Darwinius* are more closely related to living lemurs and bush babies than they are to humans.

For example, the right and left halves of *Mescalerolemur*'s lower jaws were two separate bones with a joint along the midline, a common trait for lemurs and bush babies. *Mahgarita stevensi*, the closest [fossil](#) relative of *Mescalerolemur*, had a completely fused jaw joint like that of humans.

"Because *Mescalerolemur* and *Mahgarita* are close relatives, fusion of the lower jaws in *Mahgarita* must have occurred independently from that observed in humans and their relatives, the monkeys and apes" Kirk says.

The new genus is named *Mescalerolemur* after the Mescalero Apache, who inhabited the Big Bend region of Texas from about 1700-1880. The [species](#) name, *horneri*, honors Norman Horner, an entomologist and professor emeritus at Midwestern State University (MSU) in Wichita Falls, Texas. Horner helped to establish MSU's Dalquest Desert Research Site, where the new primate fossils were found.

Kirk and his colleague Blythe Williams of Duke University will publish their findings in the *Journal of Human Evolution* article, "New adapiform primate of Old World affinities from the Devil's Graveyard Formation of Texas."

Provided by University of Texas at Austin

Citation: Anthropologist discovers new fossil primate species in West Texas (2011, May 16)  
retrieved 27 April 2024 from  
<https://phys.org/news/2011-05-anthropologist-fossil-primate-species-west.html>

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