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Do Pakistan Fossils Alter Path of Lemur Evolution?

Bijal P. Trivedi
for National Geographic Today
October 22, 2001

Scientists have discovered what they believe is the oldest known lemur fossils in the Bugti Hills of central Pakistan. The finding is controversial because the new evidence suggests that lemurs originated in Asia, not in Africa as commonly believed.

The fossil remains consist of a collection of tiny teeth that resemble the teeth of Madagascar's modern dwarf lemur, *Cheirogaleus*. The 30-million-year-old fossils predate all lemur fossils found in Africa. Lead scientist Laurent Mariveux, of Universite Montpellier, in France, said the find was "totally unexpected."

The team dubbed the new lemur *Bugtilemur mathisoni*. The findings are published in the October 19 issue of the journal *Science*.

Today lemurs live primarily in Madagascar and some nearby islands—it is thought that they may have migrated to the islands on floating vegetation. The question now is where did the migration begin?

Geological evidence shows that Madagascar separated from India about 88 million years ago, long before the origin of lemurs about 62 million years ago, making Asia an unlikely point of origin.

Mariveux admits the solution to this enigma is still in the future. But he says, "the time has come for the Asian scenario to receive more serious attention."

But some scientists have more fundamental disputes with Mariveux's work. They question whether these teeth really belong to a lemur.

The trademark feature of a lemur—a tooth "comb", which juts out on the lower jaw—was not among the fossils discovered by the team.

"There isn't enough evidence to determine whether this is, or is not a lemur," says William Hylander, director of the Duke University Primate Center in Durham, North Carolina.

A more likely explanation, says paleontologist Richard Kay, also of Duke University, is that the fossil teeth belong to a family of Eurasian primates—*sivaladapis*—that are now extinct. The *sivaladapis* family of primates which lived in India about 13 million years ago have similar teeth to lorises, a close relative of the lemur, but the two are unrelated.

Mariveux's new finding departs radically from mainstream opinion, which doesn't mean that it is wrong, says Kay, it just needs more support.

Suggesting that the fossilized teeth belong to a lemur is "an extraordinary claim," says Kay. "It demands extraordinary evidence."

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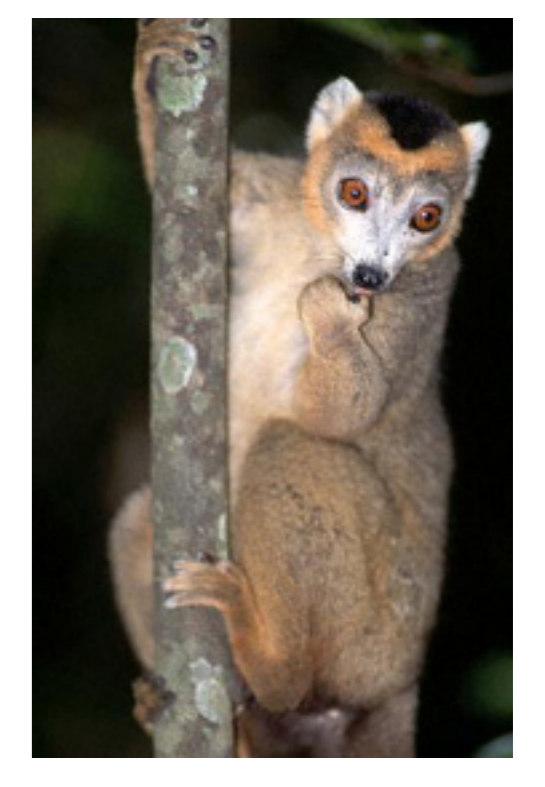
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Male Crowned Lemur
Photograph by Gavin G. Thomson/CORBIS

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Lemurs

Lemurs are found only on the large island of Madagascar off the southeastern coast of Africa and on the small neighboring Comoro Islands.

Lemurs, like apes, monkeys, and humans, belong to the primate order.

Because of their isolation, lemurs have little competition for their food and only a few enemies. Today the large-eyed animals remain relatively unchanged from their ancestors.

Lemurs move about in the trees by leaping and climbing. They use their hands and feet to grip the branches.

There are many species of lemurs and they vary greatly in size. The mouse lemur, one of the smallest of the primates, measures only 5 inches (13 centimeters) long, not including its tail. The indri is the largest lemur. Its body measures more than two feet (61 centimeters) long.

Mouse and dwarf lemurs usually feed alone and scurry along tree branches at night. Their big ears help them search for food and hear such enemies as catlike fossas. All lemurs eat plants, but mouse and dwarf lemurs also feed on insects.

Typical lemurs usually grow as big as house cats. Nearly all typical lemurs live in groups.

Lemurs may live up to 40 years in captivity. They usually produce one to three young.

About two thirds of the 30 species of lemur are threatened or endangered.

Source: This is an extract from the National Geographic Book of Mammals. For more information about lemurs and more than 500 other mammals, order this book [here](#).

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