

Study shows early primate had a transitional lemur-like grooming claw

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Celebrities are channeling a distant relative with what Harper's Bazaar describes as the latest trend in nail fashion for 2012: claws. But this may not be the first time primates traded their nails for claws.

A new study co-authored by a University of Florida researcher examines the first extinct North American primate with a toe bone showing features associated with the presence of both [nails](#) and a grooming claw, indicating our primate ancestors may have traded their flat nails for raised claws for functional purposes, much like pop icons Adele and Lady Gaga are doing today in the name of fashion.

The study appearing in the journal [PLoS ONE](#) Jan. 10 raises questions about a 2009 study documenting the lack of grooming claws in another primitive primate species said to be a link in the ancestry of apes, monkeys and humans.

Study co-author Jonathan Bloch, an associate curator of [vertebrate paleontology](#) at the [Florida Museum of Natural History](#) on the UF campus, said the 47-million-year-old primate, *Notharctus tenebrosus*, clearly had a grooming claw on its second digit. Surprisingly, the claw was somewhat flattened like a nail.

"*Notharctus* may provide evidence that nails did develop in this primate group, or it could be telling us that claws were developed from nails in this group, which would make them more lemur like," Bloch said.

Lead author Stephanie Maiolino, an anthropology graduate student at Stony Brook University, said the presence or lack of a grooming claw has previously been used to classify primate groups: humans, apes and monkeys have nails, while lemurs have grooming claws in their second digit.

"But it's not clear that lacking a grooming claw means a species is related to [anthropoids](#), which is

the primate group that includes apes, humans and monkeys," said Maiolino, who has studied primates for six years while working on her doctoral dissertation.

The toe bone described in the new study has claw-like features near the base, but the tip is more flat, much like a modern monkey nail.

Study co-author Doug Boyer, an assistant professor of physical anthropology at Brooklyn College in New York, said the primate was "either in the process of evolving a nail and becoming more like humans, apes and monkeys, or in the process of evolving a more lemur-like claw."

"I now believe it's more likely that nails were the starting point and grooming claws developed as a functional trait," Boyer said.

The findings raise questions about a 2009 study describing the extinct [primate species](#) *Darwinius masillae*, which has been classified in the same group of extinct primates as *Notharctus*.

Darwinius was previously interpreted to have a nail on its second digit instead of the expected grooming claw, which led researchers to hypothesize the ancient [primate](#) and the group it belonged to were more closely related to monkeys, apes and humans than lemurs.

Wighart Von Koenigswald, professor of paleontology at the University of Bonn in Germany and a co-author of the 2009 study, said he disagrees with some findings in the current study, and his more recent research on *Darwinius* and related taxa shows it is likely *Darwinius* also had a grooming claw like lemurs.

"I don't know whether one can call such a lemuroid grooming claw transitional," Von Koenigswald said. "There are quite a number of details I am careful to agree with in the final report and the cladistic

analysis."

Boyer said the current study "demonstrates without a doubt that the shape of the digit is best described as intermediate" but points out the paper actually embraces the uncertainty about what type of evolutionary transition this may represent.

Provided by University of Florida

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