

Scientists find 'Lucy' species skeleton

Source: <http://sci.tech-archive.net/Archive/sci.bio.evolution/2006-09/msg00111.html>

- *From:* "The Mott/w Studio 60 On The Sunset Strip" <MottolaVersion2@xxxxxxx>
 - *Date:* Thu, 21 Sep 2006 00:08:31 -0400 (EDT)
-

TdmBHNIYwM3NTM-

NEW YORK – Scientists have discovered a remarkably complete skeleton of a 3-year-old female from the ape-man species represented by "Lucy."

The discovery should fuel a contentious debate about whether this species, which walked upright, also climbed and moved through trees easily like an ape.

The remains are 3.3 million years old, making them the oldest known skeleton of such a youthful human ancestor.

"It's pretty unbelievable" to find such a complete fossil from that long ago, said scientist Fred Spoor. "It's a once-in-a-lifetime find."

Spoor, professor of evolutionary anatomy at University College London, describes the fossil in Thursday's issue of the journal *Nature* with Zeresenay Alemseged of the Max Planck Institute for Evolutionary Anthropology in Leipzig, Germany, and other scientists.

The skeleton was discovered in 2000 in northeastern Ethiopia. Scientists have spent five painstaking years removing the bones from sandstone, and the job will take years more to complete.

Judging by how well it was preserved, the skeleton may have come from a body that was quickly buried by sediment in a flood, the researchers said.

The skeleton has been nicknamed "Selam," which means means "peace" in several Ethiopian languages.

The creature was a member of *Australopithecus afarensis*, which lived in Africa between about 4 million and 3 million years ago. The most famous *afarensis* is Lucy, discovered in Ethiopia in 1974, which lived about 100,000 years after the newfound specimen.

Most scientists believe *afarensis* stood upright and walked on two feet, but they argue about whether it had ape-like agility in trees.

That climbing ability would require anatomical equipment like long

Scientists find 'Lucy' species skeleton

arms, and afarensis had arms that dangled down to just above the knees. The question is whether such features indicate climbing ability or just evolutionary baggage.

Spoor said so far, analysis of the new fossil hasn't settled the argument but does seem to indicate some climbing ability.

While the lower body is very human-like, he said, the upper body is ape-like:

_The shoulder blades resemble those of a gorilla rather than a modern human.

_The neck seems short and thick like a great ape's, rather than the more slender version humans have to keep the head stable while running.

_The organ of balance in the inner ear is more ape-like than human.

_The fingers are very curved, which could indicate climbing ability, "but I'm cautious about that," Spoor said. Curved fingers have been noted for afarensis before, but their significance is in dispute.

A big question is what the foot bones will show when their sandstone casing is removed, he said. Will there be a grasping big toe like the opposable thumb of a human hand? Such a chimp-like feature would argue for climbing ability, he said.

Yet, to resolve the debate, scientists may have to find a way to inspect vanishingly small details of such old bones, to get clues to how those bones were used in life, he said.

Bernard Wood of George Washington University, who didn't participate in the discovery, said in an interview that the fossil provides strong evidence of climbing ability. But he also agreed that it won't settle the debate among scientists, which he said "makes the Middle East look like a picnic."

Overall, he wrote in a Nature commentary, the discovery provides "a veritable mine of information about a crucial stage in human evolutionary history."

The fossil revealed just the second hyoid bone to be recovered from any human ancestor. This tiny bone, which attaches to the tongue muscles, is very chimp-like in the new specimen, Spoor said.

While that doesn't directly reveal anything about language, it does suggest that whatever sounds the creature made "would appeal more to a chimpanzee mother than a human mother," Spoor said.

The fossil find includes the complete skull, including an impression of the brain and the lower jaw, all the vertebrae from the neck to just

Scientists find 'Lucy' species skeleton

below the torso, all the ribs, both shoulder blades and both collarbones, the right elbow and part of a hand, both knees and much of both shin and thigh bones. One foot is almost complete, providing the first time scientists have found an afarensis foot with the bones still positioned as they were in life, Spoor said.

The work was funded by the National Geographic Society, the Institute of Human Origins at Arizona State University, the Leakey Foundation and the Planck institute.

—

On the Net:

Further information on the find: <http://www.nationalgeographic.com/ngm>

Afarensis information:

<http://www.mnh.si.edu/anthro/humanorigins/ha/afar.html>