ABC News

New species of human found in 'death trap'

By Anna Salleh for ABC Science Online

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Remains of new species of early human have been found in South Africa at the base of what was once a network of underground caves, described by scientists as a "death trap".

New species: A cranium found in the ancient cave complex (AFP: Brett Eloff)

- ***Video:** 'Death trap' discovery (ABC News)*

The find is set to provide more fuel for the never-ending debate over the evolution of humans.

Two papers published today in the journal Science describe the fossils of what has been called Australopithecus sediba and the environment in which they were found.

The partial skeletons of a juvenile male and adult female were found close together in sediments dated between 1.95 and 1.78 million years old.

"From looking at the sediments you can get an idea that the material has been washed down from a higher location," says one of the Australian authors, Dr Andy Harries of the University of New South Wales in Sydney.

The researchers, which included Dr Lee Berger from the University of Witwatersrand in South Africa, found the fossils in a cave called Malapa in the Cradle of Humankind World Heritage Area.

They believe where the fossils were found was once the base of an underground cave system that extended tens of metres below the surface.

The entrance to the caves would have been a hole in the ground.

"You find that fossils actually fall into these caves, they die, they become partly mummified and then they get redistributed into lower sections by floodwater," said Dr Harries, who was involved in dating the sediments.

"It would have been what we call a death trap."

The first bone was picked up by Professor Berger's nine-year-old son, Matthew, who says he thought he had discovered an animal bone.

"I turned the rock over and I saw the clavicle sticking out - that's the collar bone," he said. "I didn't know what it was at first. I thought it was just an antelope.

"So I called my dad over and about five metres away he started swearing and I was like, 'what did I do wrong?' and he's like, 'nothing, nothing - you found a hominid'."

The researchers also found fossils of at least 25 animals in the cave, including large-toothed cats, a brown hyena, a wild dog, antelopes and a horse.

Debate on human origins

Dr Harries says the new fossils add to an increasingly complicated picture on the evolution of humans (Homo sapiens).

"I'm sure that this fossil will create huge amounts of new debate on exactly what the origins of Homo are," he said.

"It gets more complicated by every fossil that's found."

Dr Harries says most scientists believe the genus Homo evolved from the genus Australopithecus and until now the most likely candidate was Australopithecus africanus.

He says Australopithecus sediba had a small brain like the primitive Australopithecus africanus, which died out around 2.1 million years ago.

But its other features, especially its pelvis, are similar to Homo erectus which appeared around 1.8 million years ago.

"It would have walked in a very modern way," Dr Harries said.

He says the features of the new species are an intermediate between Australopithecus africanus and Homo erectus, suggesting it provides a link between them.

"There seems to be a very clear transition from one to the other," Dr Harries said.

Predecessor puzzle

One fly in the ointment of this theory is that there are other species that have been classified in the genus Homo that appear in East Africa 2.3 million years ago, making Australopithecus sediba too young to be a predecessor of Homo.

But Dr Harries says Australopithecus sediba may have evolved a lot earlier than the specimen found at Malapa.

And some experts argue that many earlier Homo specimens are actually Australopithecus, he says.

Australian anthropologist Professor Colin Groves of the Australian National University in Canberra disputes the analysis of the latest fossil find.

He thinks the new species should be classified as Homo.

"It was a very strange decision to assign them to Australopithecus," Professor Groves said.

"Except for its cranial capacity - and I have my doubts about the way they estimated that - all its characters are those of Homo."

He describes the specimens as "intensely interesting" because they confirm that early Homo species existed in South Africa as well as in East Africa around the same time.

"What they've probably found is the South African sister species of Homo habilis," Professor Groves said.

What's in a name?

Dr Harries agrees there will be debate on the classification of the new fossils.

"I think a lot of people will be surprised it is called Australopithecus," he said.

But Dr Harries says some of the disagreement over classification can be explained by the fact that so many early human fossils were mere fragments which encouraged one classification over another.

He says Australopithecus sediba fossils are the most complete skeletons of early humans of that time.

"It's got a mosaic of characteristics. It's got some characteristics that look very Homo-like and some characteristics that look very Australopithecine," Dr Harries said.

"So if you were to find one part of it you might find the bit that looks more like Australopithecus. If you found another part you might find a part that looks a bit more like Homo. So you would end up classifying it one way or the other."

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