

A highly significant discovery

Oldest human-like fossil uncovered in South Africa

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The discovery of the oldest complete fossilised hominid or human-like skeleton in South Africa announced on December 9 will greatly enhance scientific knowledge of evolutionary history by enabling an unprecedented examination of the bone structure of a primitive human.

Dr Ron Clarke of Witwatersrand University of South Africa made the discovery of the 1.2-metre adult *Australopithecus* (southern ape) in the Sterkfontein caves near Johannesburg. *Australopithecus* is the immediate ancestor of the genus *Homo*, the biological classification that includes modern man or *Homo sapiens*. The skeleton has been dated at between 3.22 and 3.58 million years old by the Geomagnetism Laboratory at the University of Liverpool. Previously the oldest complete hominid skeleton was a 1.5 million-year-old *Homo erectus* discovered in Kenya.

The age of the skeleton may prove to be contentious, as it has been notoriously difficult to date fossil material from South Africa because of a lack of volcanic ash, which is used in the most advanced radiometric dating. Donald Johanson, the Director of the Institute of Human Origins at Arizona State University, commented that 'it may very well be that it is a million years younger than they say. That should not overshadow the remarkable importance of a complete specimen like this, so we can really define what a hominid looks like.'

In 1994, Clarke was led to the discovery through the examination of some stored fossilised bones identified as belonging to the foot and lower leg of a hominid, which he named 'Little Foot'. He followed the clues to the Sterkfontein caves. After a thorough search, he unearthed more hominid bones, which were found to be

a perfect match with 'Little Foot'. After careful excavation, the team discovered that they had a complete skeleton.

The Sterkfontein caves have already proved a veritable treasure trove of fossilised hominids. It was the site of the discovery of the 2.6 million-year-old *Australopithecus africanus* skull known as 'Mrs Ples' as well as numerous other related fossils. Clarke's discovery was made in a deeper and much older rock stratum.

The analysis of 'Little Foot' has already yielded some valuable insights into the hominid's ability to walk upright. An examination of its bone structure revealed the creature was adapted for clutching onto tree branches. Philip Tobias, one of Clarke's colleagues, said that the hominid had 'arboreal habits coupled with terrestrial habits'. His statement has created considerable controversy, as most anthropologists previously believed that hominids were completely ground dwelling 3.5 million years ago.

The current knowledge of *Australopithecus* has been obtained from a number of incomplete skeletons and bone fragments. Until now the oldest most complete *Australopithecus* was the 3.2 million-year-old fossil, known as 'Lucy,' which Donald Johanson discovered in 1974 in the Hadar valley of Ethiopia.

The discovery of 'Lucy' caused a scientific sensation as it possessed human characteristics such as the ability to walk upright and use tools but had the brain size of a chimpanzee. Until then scientists had dismissed the conjecture made by Karl Marx's collaborator Fredrick Engels last century that upright stature, freeing the hands for tool making, was the crucial first step in human evolution--not brain size.

Clarke's find is still partially embedded in the Sterkfontein cave. Given the delicate and painstaking nature of the work, it will take another year to complete the excavation. The skeleton has only just started to yield its full story, which the scientific community eagerly await.

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