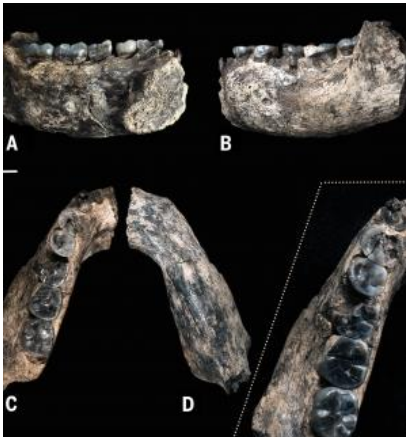


Part of the curriculum: Human evolution

Discovery of Oldest Human Fossil Fills Evolutionary Gap

adapted from history.com - Christopher Klein - MARCH 11, 2015



Close up view of the mandible just steps from where it was sighted by Chalachew Seyoum, an ASU graduate student from Ethiopia. (Credit: Kaye Reed)

It looks like mankind may have suddenly aged by nearly a half-million years. According to a pair of newly published papers in the journal *Science*, paleoanthropologists working in Ethiopia have discovered a 2.8-million-year-old jawbone, making it the oldest fossil in the human ancestral line ever found by more than 400,000 years. The finding could fill important gaps in scientists' understanding of human evolution.

Researchers have discovered numerous fossils from Lucy's *Australopithecus afarensis* species, the ape-like, bipedal human ancestors approximately 4 feet tall that are 3 million years or older. They have also found numerous skeletal remnants from multiple lines of the human genus *Homo*, of which *Homo sapiens* are the only remaining species, that are 2.3 million years old and younger. Little, however, has been discovered from that interim 700,000-year period to explain or

date the evolution from *Australopithecus* to *Homo* that occurred during that timeframe, and that gap in the fossil record has hampered scientists' understanding of human origins.

The specimen's primitive, sloping chin resembled that of Lucy, but its slimmer molars, symmetrical premolars and rounder, evenly proportioned jaw distinguished it as a member of the *Homo* genus. "Our detailed study of this specimen shows that it is more advanced, closer to humans, than previously discovered fossils in this area that date from around 3 million years ago back to about 3.5 million years ago," paleoanthropologist Bill Kimbel, director of Arizona State's Institute of Human Origins, said in the university-released video.

Radiometric testing of the layers of volcanic ash surrounding the fossil has revealed the approximate age of the jawbone to be between 2.75 and 2.8 million years old, which makes it the earliest evidence of the *Homo* genus ever discovered. Prior to the find, the oldest known *Homo* fossil had been a 2.3-million-year-old upper jaw also found in northern Ethiopia, so the dating pushes back the origin of the *Homo* genus by at least 400,000 years.

Research remains to be done, however, to discover what the specimen ate and whether it employed stone tools. More work needs to be done, as well, to determine whether it could be from a previously unknown human species or an extinct one such as *Homo habilis*.

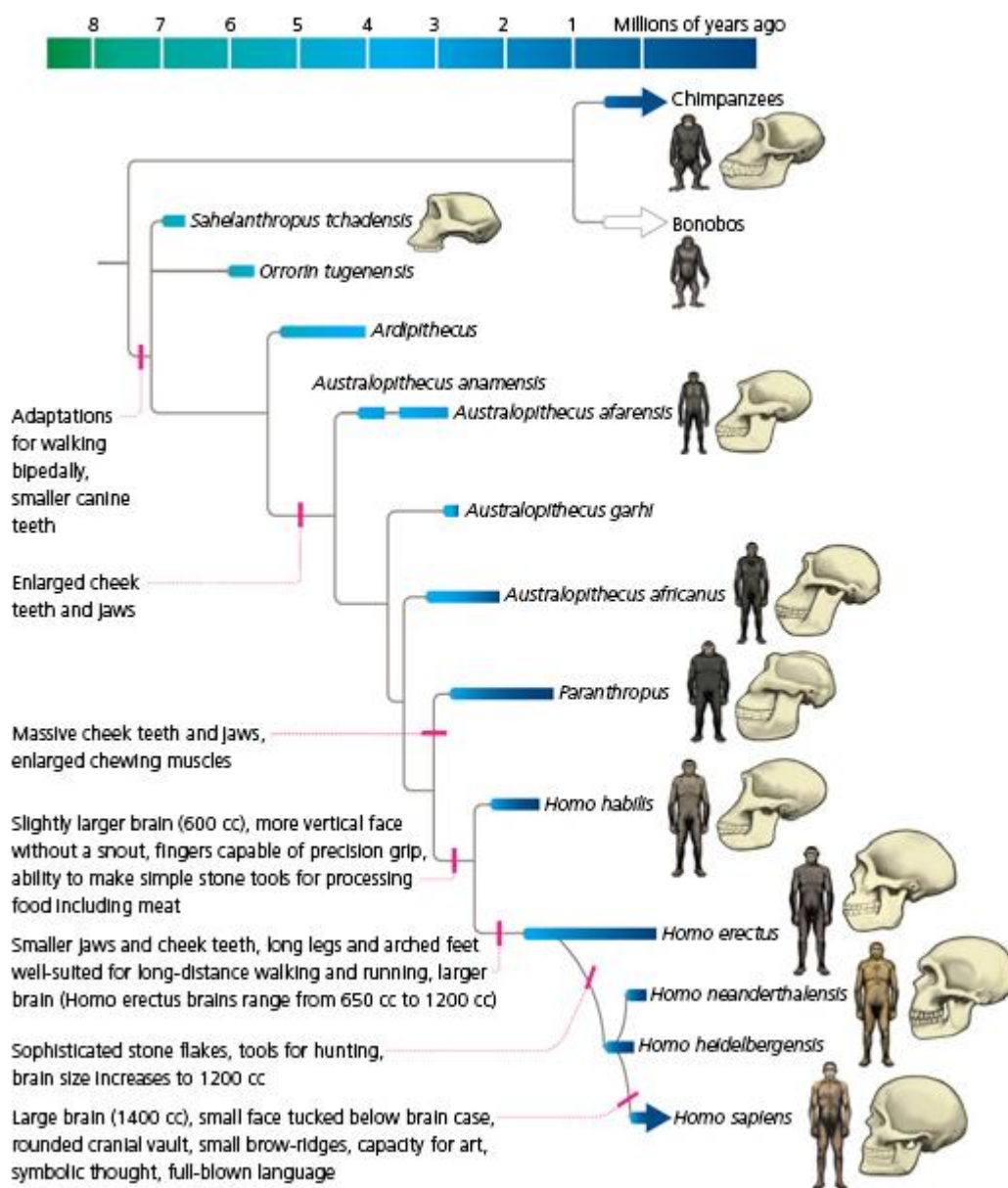
Present this discovery and its consequences using the documents and your knowledge. Then, explain what other features could help in placing this kind of fossil in the *Homo* genus but not *Australopithecus*.

You may use the following keywords:

Bush-like evolution – anatomical features – bipedalism - relationships

Source : <http://www.history.com/news/discovery-of-oldest-human-fossil-fills-evolutionary-gap>

Chart of Hominid evolution



(sources : http://evolution.berkeley.edu/evolibrary/article/evograms_07)