

A Primer on Human Evolution

As with all other life on earth, humans have evolved. This is not simply a scientific opinion, but is a position supported by the hard facts of evolution: the fossil record. This evidence counters the patently false claims made by "creation science" that the human fossil record is nothing more than a motley collection of aberrant apes, modern humans and forgeries. In fact, compared to many other mammals, humanity's ancestry is very well documented. Although controversy swirls around the details of the past five million years of our evolution, there is consensus among scientists that we are the products of that evolution.

Our ultimate origins lie in Africa. Four to six million years ago a new group of primates evolved called the australopithecines. The famous "Lucy" skeleton, discovered in Hadar, Ethiopia in 1974, is the best known representative of these early ancestors. "Lucy" and her kin defy facile categorization as simply ape or human because they displayed features common to both. Australopithecine faces had projecting snouts and brains a third the size of ours, as in modern chimps, but they walked erect as only we do. They diversified into various species during their four million years of existence; some of the later forms became powerful chewers whose molars were almost as big as nickels!

Between three and two million years ago, one of the australopithecine species gave rise to the first members of our direct lineage, the genus *Homo*. Their most remarkable attribute was a brain up to 50% bigger than their australopithecine forebears. We also see the first evidence of stone tool use at about the same time. As early as two million years ago, our ancestors left Africa. Generally referred to as *Homo erectus*, they had bodies that were similar in proportions to ours, though much more powerfully built. Their skulls were long and low, not tall and globular like ours, and they contained a brain only two-thirds the size of an average modern human. Their faces featured huge brow-ridges above the eyes and chinless jaws. Nevertheless, their harnessing of fire, exploitation of big-game and perhaps even the development of a primordial human curiosity accounts for their spread

around most of the Old World by half a million years ago. In Europe, their descendants became the Neandertals, a barrel-chested, short-legged group who were the first to adapt to the glacial conditions of the "Ice Ages." These people began the uniquely human ritual of burying their dead, signaling the advent of religious awareness in our ancestors.

What happened to the Neandertals and the other archaic groups around the Old World before we arrived on the scene? This remains one of the most contentious debates in paleoanthropology. Some researchers believe that modern humans arose only in Africa, 100-200 thousand years ago, and then spread around the world replacing the archaic groups wherever they were encountered. Other anthropologists argue that the archaic groups, including the Neandertals, provided at least partial ancestry for their modern counterparts throughout the Old World. In any event, we occupy virtually every habitable nook and cranny of the earth today and the reconstruction of our species grand evolutionary voyage remains one of the most fascinating of human endeavors.

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Reconstruction of
"Turkana Boy," a 1.5
million-year-old *Homo
erectus* fossil from north-
western Kenya (courtesy
of the McClung Museum)

For more information on human evolution, please visit the McClung Museum's permanent exhibition: "Human Origins – Searching for our Fossil Ancestors"

http://mcclungmuseum.utk.edu/newpermanent/human_origins/index.html

Distributed for Darwin Day
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