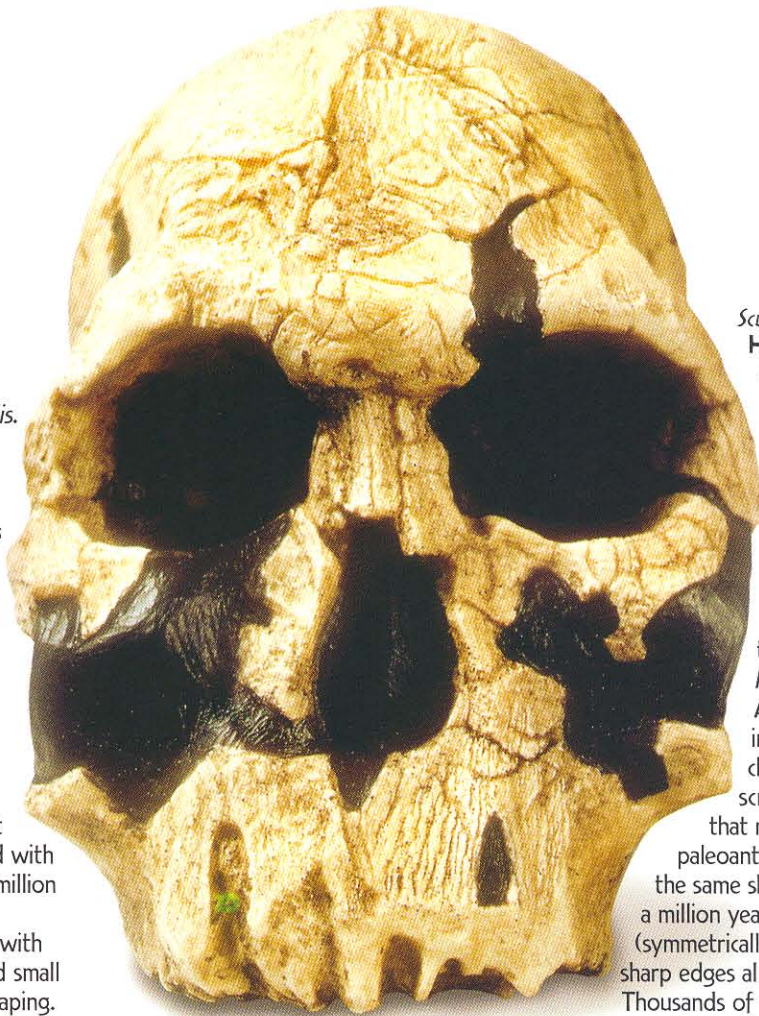


THE FIRST MEMBERS OF THE GENUS *HOMO*

Overlapping the later australopithecines in time are the first members of our genus—*Homo rudolfensis* and *Homo habilis*. They are dated to about 2 million years ago. Behaviors of these hominids may be reflected in their larger brain sizes. *Homo rudolfensis* had a brain nearly twice the size of the brain of the australopithecines. Stone tools called Oldowan are attributed to these hominids, although stone tools are even older and date to 2.6 million years ago. Australopithecines also may have made stone tools. Some evidence has been found such as Tim White's discovery of stone-tool cut marks on antelope bones associated with *Australopithecus garhi*, dated 2.5 million years ago.

The Oldowan tools are cobbles with flakes removed, hammerstones, and small flakes for cutting, gouging, and scraping. They are found in many areas of East Africa, especially Kenya, Ethiopia, and Tanzania.

The next overlapping hominid is *Homo ergaster*, at 1.8 million years ago. These hominids are credited with the first migrations out of Africa into Europe (Georgia) and Asia, where descendants evolved as *Homo erectus*.



Sculptural replica of fossil skull
***Homo rudolfensis* (ER 1470)**
Found in Koobi Fora,
East Turkana, Kenya, in 1972
by Richard Leakey's team
Age: 1.9 million years

Within a few hundred thousand years of their origin, *Homo ergaster* developed the Acheulean tool industry. This included hand axes, picks, cleavers, choppers, and scrapers. But it is the hand axes that remain one of the mysteries of paleoanthropology. They are made in the same shape, over vast areas, for over a million years. They are bifacial (symmetrically flaked on both sides) with sharp edges all around and a blunt point. Thousands of these tools have been found, but an explanation for their use is still debated. Although they are called "hand axes" they may not have been used as such. Suggestions include butchering, digging for roots and tubers, scraping hides, a core for striking off flakes, an anvil, and a weapon thrown at animals like a discus.

The *Homo erectus* populations which spread throughout Asia and Southeast Asia do not show the same Acheulean tool types as those found in Africa and Europe. They may have left Africa before such tools were invented, taking with them the chopper and flake tools of the Oldowan type. Bamboo may have been used for containers, projectile points, and knives just as it is in Southeast Asia today, but it is not preserved in the archaeological record. This successful species crossed to Java from the northern part of Southeast Asia during a time when sea level was low, exposing "land bridges" to what are now islands. They adapted to the cold weather of China, living in large caves such as Zhoukoudian near Beijing for thousands of years.

The nearly complete skeleton of Turkana Boy (*Homo ergaster*) has given us an amazing amount of information about the physiology of this hominid who lived 1.6 million years ago. Turkana Boy was young—by his teeth he was about 8 years old. At this stage in hominid evolution, tooth eruption was faster, more like the dental eruption in apes. The boy was tall, about 5 feet 4 inches, and if he had lived to adulthood, he would have been over 6 feet tall. His limbs were slim, giving him a physique that is adaptive in hot climates: much skin surface in relation to body mass. This allows cooling of the body through perspiration and, in turn, cooling of the blood which cools the brain.

Although they eventually learned to control fire and are known to have hunted large game, the earliest cultural advances shown by *Homo ergaster* and *Homo erectus* involved their stone tools.



**Oldowan
chopper**
Replica by National Museums of Kenya

Acheulean Hand Ax
Fayum Desert Collection
San Diego Museum of Natural History
(1.3 times actual size)



Oldowan stone tools

2.6 to 1.7 million years ago

Stone tools are the earliest signs of human technology and culture. Evidence of early tool technology has been found at a variety of sites throughout Africa.

Stone tools were a significant part of hominids' adaptation to the environment. The earliest stone tools were choppers, flakes, and scrapers. Scientists believe *Homo habilis* made these tools, because they were found at Olduvai Gorge where the first *Homo habilis* fossil was found. Even simpler stone and bone tools may have existed earlier, but cannot yet be recognized as tools. Tools made of perishable materials like wood, fiber, bark, or hide would not have survived over millions of years.



Replicas of stone tools (choppers)

Found in Koobi Fora, Kenya

Age: 1.8 million years

Replicas by National Museums of Kenya

