

Australopithecus



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The Australopithecus fossil was given its name with regards to its thinking ability in comparison to the other hominids. The Australopithecus was a genius ape whose thinking ability was closer to the modern man than the ancient apes. Archaeological and paleontological evidence indicate that the Australopithecus fossils were located in East Africa more than four million years ago thus indicating that the species evolved from this part of the world. The ape then moved across the African continent before becoming extinct after approximately 2million years. The Australopithecus existed in different forms during this period including; Australopithecus afarensis, Australopithecus Africanus, Australopithecus sediba, and Australopithecus anamensis (Richmond and Strait, 2001).

Controversies and debates have come up on whether some of the hominid species located in Africa such as the Australopithecus boisei and Australopithecus robustus fall under the same genus as the other Australopithecus. Some scholars have given the named species different names like Paranthropus as they believe they were not members of the same genus as the other Australopithecus. It is believed by many paleontologists and archaeologists that australopiths played an important role in the evolution of man and it was the australopiths species which eventually evolved to become the Homo genus. Homogenus was the second last stage of evolution before the Homo sapiens, which is the current human species (Johanson, 1999).

History of the Specimen

The first australopithecine specimen to be documented after discovery was a three year old fossil of *Australopithecus africanus* in South Africa in a place called Taung by quarry workers. Raymond Dart who was serving as an Australian anatomist studied the specimen and published his findings in a *Nature* magazine in 1925. Dart's discovery was that the specimen had various humanoid features thus concluded it was an ancestor of humans. It took Dart and Robert Broom from Scotland more than ten years after Darts discovery to go back and look for more hominid species. Other contributors to the discovery of *Australopithecus* included Mary Leakey who discovered *Australopithecus bosei* skull in Eastern Africa (Johanson and Heiple, 1997). The Leakey family went ahead with their search and discovered more *Australopithecus* fossils and other evolved species like the *Homo erectus* and *Homo habilis*. Modern scientists have recently come across new australopithecine specimens in Malapa cave in South Africa that appear to have lived more than 1.9 million years ago. The Gracile type of australopiths had more of the modern man traits and was discovered in Northern and Eastern Africa approximately 3.5 million years. The earliest evidence of this specimen was located at Laetoli in Tanzania (Johanson, and Heiple, 1997).

Evolutionary Role

The fossils discovered indicate that the *Australopithecus* formed part of the common ancestor of the *Paranthropus*, a distinct hominid group as well as genus *Homo* including the modern man. Although the hominid was not as intelligent as the common man, it was sophisticated compared to other earlier apes. Its bipedal structure forms the key feature that distinguishes

this genus from other earlier primates that had a quadruped structure. The Australopithecus morphology upsets scientists belief that because of their bipedal form, they had large brains. This has remained a topic of controversy as scientists have not been able to explain how primates with bipedal form first evolved many years ago. This has led to a lot of concepts being put in place to study this matter. An example is the Australopithecus africanus which had a biped form yet it had a small brain. Bipedalism gave the Australopithecus the advantage of using its arms to freely grasp objects and carry their young ones but still most of the anthropologists argue that such advantages were not sufficient to result in bipedalism evolution (Kimbel and Coppins, 1992).

Morphology

The Australopithecus species brains were approximated to be 35% of that of a modern human. Most of these species were gracile and diminutive, standing at about 1.2 to 1.4 m tall. The Australopithecus species also varied in its sexual dimorphism degrees with the female being smaller than the male. Modern hominids as well as modern humans display low sexual dimorphism degrees. The modern man's sexual dimorphism is 15% larger than that of females. The Australopithecus males had more than 50% sexual dimorphism than the females. The modern human being is however closely related to the Australopithecus sharing body features like waist bones with both the man's and apes strengthened to allow knuckle-walking (Kimbel and Coppins, 1992).

This has also raised some controversies as most of the other primates were knuckle walkers thus the biomechanics and anatomy of knuckle walking witnessed in gorillas and chimpanzees was different suggesting the knuckle walking ability evolved independently without any association with the modern man. Radial changes were also witnessed within the Australopithecus genus with some more evolved than others. The gracile australopiths was more evolved as its feet and pelvis structures were similar to that of the modern humans. The dentition had smaller canines but still had larger canines and thicker enamel compared to the modern man. Most of the species did not adapt well to using tools like the modern man and not any better than the earlier primates (McHenry, 1998).

Range of Places

Africa can be regarded as the home of Australopithecus as all the sites where its specimens were found happened to be in Africa. Despite the first specimen being discovered in South Africa, in Taung, most of the other fossils were located in East Africa. The first Australopithecus fossils were discovered at 17 different locations spread over approximately 1.55km. This can be taken to present 17 different individuals that once existed in this area. The holotype collected at this location was 'ARA-VP-6/1' which was based mainly on eight teeth. Most of these teeth were found to be damaged. The specimen discovered at this site was later discussed as to be representing Australopithecus ramidus. Parts of the body discovered at the site included the base of what was later considered to be its skull (ARA-VP-1/500) located around 550m away. The other part discovered was a bone of a fragmented arm (ARA-VP-7/2) that was found 270m away. A good part of <https://assignbuster.com/australopithecus-essay-samples/>

the piece discovered had marks that had been caused by carnivore teeth. Eleven of the specimens collected comprised of a tooth piece, a tooth or a bone piece. The molar tooth was also discovered around the same area but 1.55 km away from where the holotype was located (Stratigraphy and Park, 2000).