

Paleoanthropology- Australopithecines

History of the Universe

Final Report

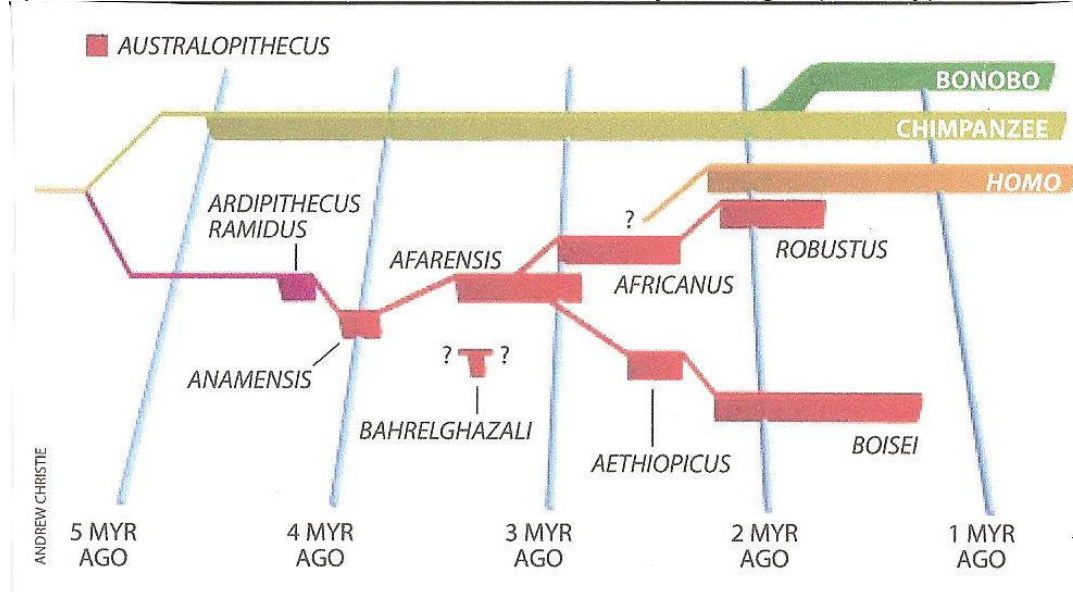
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Today, we live in a society that tells us where we came from, but not with any form of evidence or detail. Throughout the world, children in school are taught that humans evolved from apes and that is it. This short-coming of information makes most constantly wonder what their true origins really are. In the last few decades, a vast amount of substantial evidence has been found to provide detailed evidence to the true history of human evolution.

In 1925, the first Hominid fossil was discovered in South Africa by Raymond Dart of the University of the Witwatersrand (Leakey). This first discovery of a new species to be known as Australopithecus, would cause many people to venture out into the paleontology field in order to be part of the search. Later on, according to Leakey, more fossils would be found in this same area of South Africa that would push back the origins of upright walking to more than four million years. One such example of a fossil would be the infamous Lucy fossil which was put in the Houston Museum of Natural Science in late August of 2007 (Berger).

The majority of human-like fossils have all been found in the same general area of the Middle Awash, where “seven other human-like species spanning

Figure 1: The family tree of the species Australopithecus includes a variety of species that lived between 4 and 1.25 million years ago. (Leakey)



nearly six million years and three major phases of human development were previously discovered.” (“Fossil”). The discovery of such a variety of species in a given area allows scientists to find the ultimate chain of evolution that continues consistently throughout time. It can be seen in Figure 1 that one form evolved to another, with evidence of evolution in one place throughout millions of years (“Fossil”). Until very recently, scientists merely had glimpses of human evolution scattered around the world, but with these latest fossil discoveries, a continuous prediction of evolution can be made.

With the discovery of new fossils, comes the hypothesis as to what the species looked like and how they acted during their time. According to Berger, Australopithecines were small mammals, with small craniums, and they had a diet consisting primarily of fruits and nuts. John Hawks, assistant professor of anthropology at the University of Wisconsin-Madison, suggests that the species



Figure 2: A reconstruction of the species Australopithecines. (Wikipedia)

was constantly threatened by predators, being at the bottom of the food chain due mainly to their small stature.

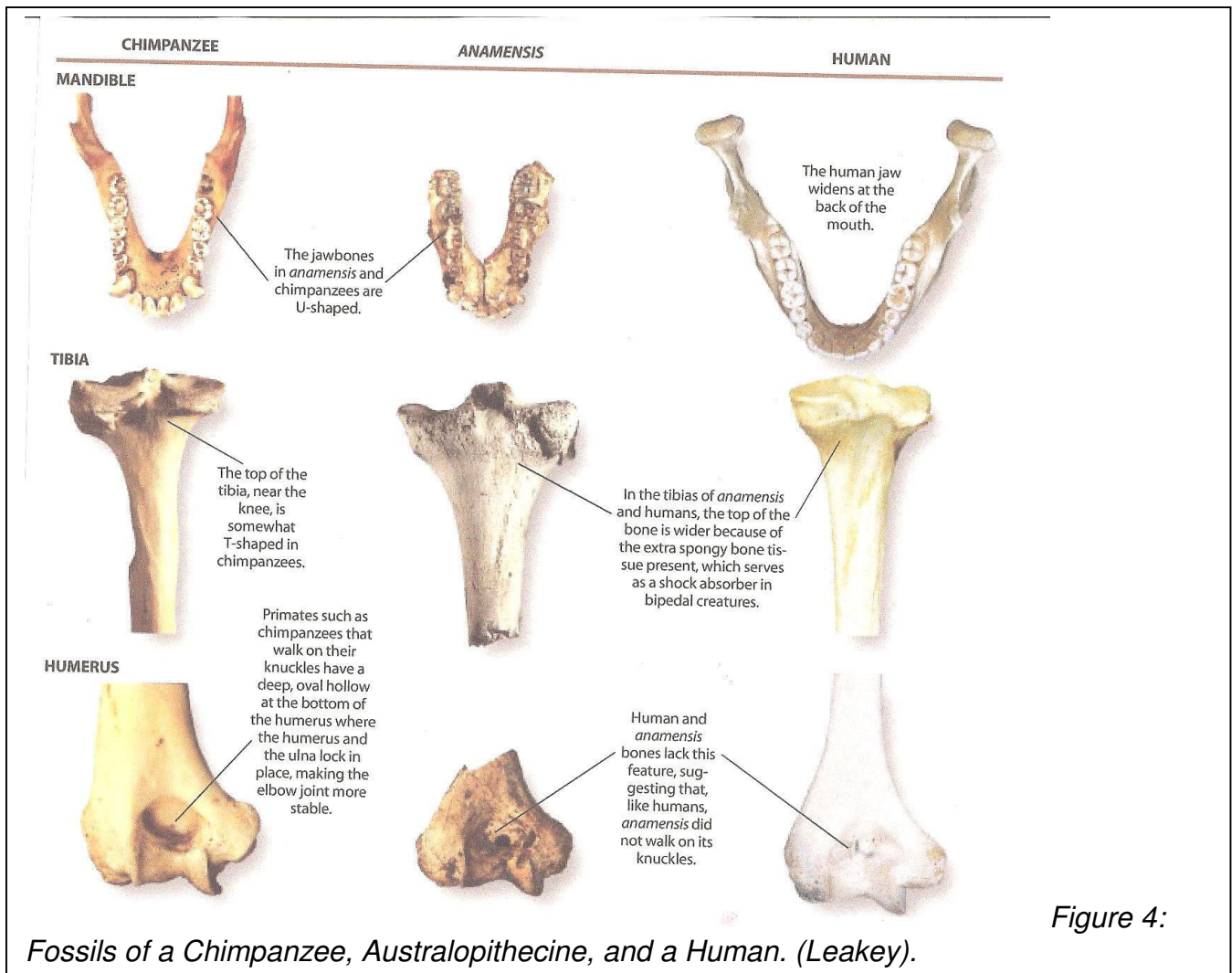
Australopithecines usually were about 4-4.5 feet tall, with a slenderness about them (Wikipedia). Their size would vary based upon the theory of sexual dimorphism, which was considerably apparent in the species. Males would be up to 50% larger than females, which differ from the modern human average of 15% (Wikipedia). The brains of most species of Australopithecines were roughly 35% of the size of that of a modern human brain, which suited the small stature of the body

(Wikipedia). According to Stanford, male Australopithecines were also 30-40% heavier than females. The structure of the hominid's teeth suggest that the teeth and jaw may have required more grinding than that of an ape's diet, providing yet another example to their differences (Stanford). Hotz also displays his views on how many of the fossils found most recently display a brutish jutting jaw, flat nose, and a weak, sloping forehead to the hominid's characteristics which can be seen in figure 3.



Figure 3, a fossil skull of the Australopithecines species (Wikipedia).

The species Australopithecines, had a similar amount of body hair in comparison to apes, but they were believed to have walked upright on two legs most of the time—a practice known as bipedalism—instead of using all four limbs for locomotion (Tattersall). Although their walking abilities vary from that of chimpanzees, the jawbones of the two species are similar in that the sides sit close together as opposed to widening in the back like they do in humans. The teeth of the species appear to be more advanced with thicker enamel in order to adjust to the new diet of grinding (Leakey). In the tibia of both humans and Australopithecines, the top of the bone is wider because the spongy bone tissue



that serves as a shock absorber in bipedal creatures. The humeri in both species

are similar, suggesting yet again that both did not walk on their knuckles, but rather legs as seen in figure 4. Leakey demonstrates how scientists now have almost definitive molecular evidence that humans and chimpanzees once had a common ancestor and that this lineage had previously split from gorillas. For many decades, paleontologists have told us that upright-walking behavior originated in the savanna, but with recent proof, it can be noted that in fact, the earliest bipedal hominid known to date lived a significant amount of time in the wooded areas (Leakey).

In the last few decades, people have traveled the world in hopes of finding definitive answers of their ancestry in evolution. Falkenberg conducted a questionnaire on the search for evolution and Deena Dail has said “That’s the cradle. We’re looking at humanity at its earliest point that we know of. And we’re seeing our ancestry, you know, everybody, regardless of race, religion, ethnicity, belief systems. Before we composed this complex society we live in, we had Lucy. And it’s the unifying thing”. Through the findings of new fossils, people are discovering the deep processes of evolution as well as the simple fact that we all are from the same being, and that we are one. No matter what scientists tell us, it will always be a fact that many of us will continue the search for answers until all is proven definitively, on the process of evolution from one being.

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