Couple finds evidence indicating earliest humans lived by rivers and streams

December 26 2011, by Bob Yirka

Image: USGS

(PhysOrg.com) -- When many people think of our earliest human ancestors, they think of the hot dried out dusty environments in Africa in which many of their remains were found. Unfortunately, such images don't take into account the changes in environment that have occurred since those times when early peoples walked the Earth. Archeologists of course have thought of such things and for many years have tossed ideas back and forth debating whether such people lived by rivers and streams, as did those that came later and built civilization along such places as the Nile or whether they lived in woodlands.

Now new evidence has come to light that suggests the former might be more likely. Husband and wife team Royhan and Nahid Gani have been studying the sediments surrounding the place where *Ardipithecus*

ramidus, aka, "Ardi," was found in Ethiopia, and have, as they describe in their paper published in Nature Communications, found that most of the evidence in the area points to a group of people that lived near a very large river.

Ardi is believed to have lived some four and half million years ago in what is now Aramis, a hot and dry part of Ethiopia, but until now, no serious study had been done on the dirt in which the skeletal remains were found. After doing so, the Gani's discovered that the dirt was actually layers of sandstone that appear most likely to have been the result of an ancient stream overflowing it's banks periodically, leaving behind layers of sand. Branching out, the team discovered that the sediments indicated that such a stream was actually a river, likely twenty six feet deep and over twelve hundred feet wide.

Next they turned their attention to plant material that had been preserved in the sandstone, measuring their isotopes, and found that the material had come from grassy plants, suggesting a savannah type environment. But once again, widening their area of study, they also found that there were wide changes in the types of plant material in the area. This caused them to surmise that there were patches of forests near the rivers and streams.

Based on these two pieces of information, the team suggests that it appears Ardi, who many researchers believe is our oldest found ancestor, lived in a savannah, near fresh flowing water. Some suggest that such an environment would be consistent with learning to walk upright to see over the tall grasses.

More information: River-margin habitat of Ardipithecus ramidus at Aramis, Ethiopia 4.4 million years ago, *Nature Communications* 2, Article number: 602 doi:10.1038/ncomms1610

Abstract

The nature and type of landscape that hominins (early humans) frequented has been of considerable interest. The recent works on Ardipithecus ramidus, a 4.4 million years old hominin found at Middle Awash, Ethiopia, provided critical information about the early part of human evolution. However, habitat characterization of this basal hominin has been highly contested. Here we present new sedimentological and stable isotopic (carbon and oxygen) data from Aramis, where the in situ, partial skeleton of Ar. ramidus (nicknamed 'Ardi') was excavated. These data are interpreted to indicate the presence of major rivers and associated mixed vegetations (grasses and trees) in adjacent floodplains. Our finding suggests that, in contrast to a woodland habitat far from a river, Ar. ramidus lived in a river-margin forest in an otherwise savanna (wooded grassland) landscape at Aramis, Ethiopia. Correct interpretation of habitat of Ar. ramidus is crucial for proper assessment of causes and mechanisms of early hominin evolution, including the development of bipedalism.