

# The Roots Of Civilization Trace Back To ... Roots

September 21 2005

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About five to seven million years ago, when the lineage of humans and chimpanzees split, edible root plants similar to rutabagas and turnips may have been one of the reasons.

According to research by anthropologists Greg Laden of the University of Minnesota and Richard Wrangham of Harvard University, the presence of fleshy underground storage organs like roots and tubers must have sustained our ancestors who left the rain forest to colonize the savannah.

They have published their research in the October issue of the Journal of Human Evolution.

"You can think of roots as a kind of 'conveyor belt' ... they were somewhat available in the forest, but abundant on the savannah," said Laden.

"Once roots were 'discovered,' chimp-like creatures would not only be able to survive on the savannah, but may well have been compelled to extend their range into more and more open habitats."

When our ape ancestors moved - for reasons unknown - onto the open, relatively treeless savannah, they left behind the rain forest and its abundance of fruit and leaves, the mainstays of modern chimpanzee diets.

Laden and Wrangham believe that savannah-dwellers may have adopted game as their primary food in place of fruit. But for a fallback food, they may well have taken to eating roots and tubers, which are much more abundant on savannahs than in rain forests.

In the article, Laden and Wrangham say that the evidence lies in the fossil record, specifically teeth and jaws. The teeth and jaws of savannah dwelling apes evolved into large massive jaws, jaw muscles and molars, ideal for grinding roots instead of shearing leaves.

The size of the teeth and jaws reflect the apes' secondary food source (roots) instead of primary foods like meats and fruits, which do not require such massive chewing abilities.

While our ancient ancestors may have left the rain forest for the savannah in pursuit of game meat, it was the ability to find and eat roots that may have contributed to the initial split between humans and the other apes. Laden and Wrangham's paper is available at

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