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Foragers among farmers in the Early Iron Age of Botswana? Dietary evidence from stable isotopes

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Abstract

The thesis attempts to identify human skeletal remains of Later Stone Age (LSA) hunter-gatherers on sites associated with Early Iron Age (EIA) farmers in east central and north western parts of Botswana and to identify individuals who may have shifted between foraging and farming. Because of the sources of dietary carbon, EIA farmers were expected to have $\delta^{13}C$ values of approximately -8‰, which are distinguishable from those of the LSA hunter-gatherers ($\delta^{13}C$ values of around -17‰). Individuals who shifted from foraging to farming would have significant differences in $\delta^{13}C$ values of bones and teeth that form or remodel at different ages and rates.

In the east central, 76 humans from Toutswe sites were analysed. From the Tsodilo Hills and Okavango River there were five individuals. Animal samples from EIA contexts at of the sites mentioned above were analysed to provide reference standards necessary for the interpretation of human isotope values. Moreover, animal isotope values were used to reconstruct past environmental and climatic conditions.

Two adults from N!oma appear to have shifted from a childhood subsistence based on foraging and most probably fishing to full-time farming in adulthood. The two adults from Xaro have bone collagen $\delta^{13}C$ values associated with both foraging and freshwater fishing. Though samples are small, there is some support for the argument that some LSA foragers had adopted the farmers' mode of subsistence during the Iron Age.

Nitrogen isotope values of domestic herbivores from the east central suggest annual rainfall of about 500mm while carbon isotope results indicate heavy reliance on C_4 photosynthetic grasses. Result from the north west suggest rainfall on 450mm with some degree of browsing. Morden herbivore samples from Toutswe area show that rainfall patterns have not changed but in contrast, the feeding habits of both cattle and small have changed to include significant amount of C_3 photosynthetic plants. This change is attributed to the general degradation of the environment.