

Dental Modifications in North American Woodlands Period Populations

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Introduction

Contact and trade with Mesoamerican culture has been considered to be a significant influence in the transition of the North American Indian hunting and gathering subsistence in the Woodland period, to the agricultural settlements of the Mississippian period. Iconography in pottery and metalwork, stone blade technology, and the appearance of dental modification in the Midwest and Southwest has led some anthropologists to speculate that either actual Mesoamerican population movement took place; or that dental modifications spread village-to-village from Mesoamerica as a result of strong trade networks. Assessing where and when these dental modifications occurred is important for understanding the interaction between these populations.

Distribution of Dental Modifications Across the United States



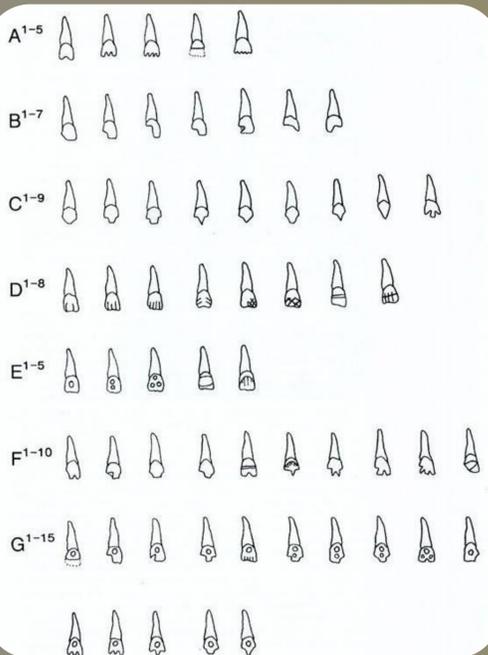
Iconography in pottery and metalwork, stone blade technology, the appearance of dental modifications in the Midwest and Southwest and the rapid transition to maize agriculture has led some anthropologists to suspect that Mesoamericans culturally influenced populations in North America.

Figures: 1) Copper plate from Cahokia (Photograph courtesy of Cahokia Mounds Museum); 2) Obsidian blade from Wupatki Pueblo (Photographers: Dan Boone/Ryan Belnap); 3) Maxilla from Cahokia showing dental modification; 4) The development of maize agriculture (Photographer: Joel Penner)

Results

✓ Re-evaluated three Illinois specimens previously described by Stewart and Titterton (Figure a, Figure b, Figure c below).

✓ Identified one additional specimen with clear indication of dental modification in the Illinois collection (Figure d below). No specimens with dental modifications were identified in the Ohio or Georgia collections.



Mesoamerican skull from Chiapas, Mexico with inlaid teeth. Corresponds to Romero's Type E. Photographer: José C. Jiménez López



Mayan dental inlays and filing. Corresponds to Romero's Type F & G. Photographer: Vera Tiesler.



Mesoamerican jade inlays and filing. Corresponds to Romero's Type G. Photograph courtesy of the Instituto Nacional de Antropología

Mesoamericans culturally modified their upper (and sometimes lower) incisors by filing, etching grooves into the surface or drilling small holes and inserting gems or minerals. Romero's chart above shows the different types of dental modifications that have been found in Mesoamerican remains.

Methods

Examined anterior dentition of individuals from the Natural History Museums' Illinois, Georgia and Ohio American Indian collections for evidence of dental modification by notching, filing or intentional chipping of the occlusal surface or labial surface of the crown.



Natural tooth wear can appear similar to dental modifications. Using the teeth as tools can cause wearing of the enamel that changes the shape of the tooth.



Chipping during or after the life of the individual can also create notches in the teeth.



Enamel hypoplasia results in pitting of the teeth which can be mistaken for labial grooves.

Conclusions

✓ While Illinois, Ohio and Georgia sites were roughly contemporaneous, populations in Ohio and Georgia do not appear to have culturally modified their teeth.

✓ Further consideration of cultural differences between these populations is necessary for understanding why they did not adopt this cultural trend.

✓ The differential findings from Illinois versus Georgia and Ohio give no further support to the theory of Mesoamerican influence.

Research Goal

Supplement current data on dental modifications in Northern America to further elucidate the influence of Mesoamerican culture, both spatially and temporally, on the peoples of the central northern American region.

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