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Maize, mounds, and the movement of people: isotope analysis of a Mississippian/Fort Ancient region

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ABSTRACT

The development of farming traditions has long interested archaeologists worldwide. The relationship between this process and human movement has become increasingly well defined in recent years. Here we examine this issue in a case study concerning the longstanding question of the spread of maize agriculture and Mississippian cultural traditions throughout much of the Eastern U.S. Although it has long been common to interpret the spread of Mississippian maize agriculture partially as a result of human migration, there have been very few direct studies of the question. We do so here by analyzing human tooth enamel from burials for $^{87}Sr/^{86}Sr$ and $\delta^{13}C$. Our results suggest that Fort Ancient societies adopted maize agriculture quickly with high levels of consumption at early sites. The intensity of maize consumption declined over time, however, in contrast to the current model. There is evidence for the presence of non-local individuals at early Fort Ancient sites, particularly Turpin, with the majority likely attributable to neighboring Mississippian regions. These developments occurred at some of the larger Fort Ancient sites by the mouths of the Great and Little Miami Rivers in Ohio where the most abundant evidence for Mississippian house styles and objects is concentrated.

The development of farming traditions has long interested archaeologists and anthropologists more generally, and the spread of agriculture by way of human movement has become a regular focus of study in recent years (e.g., Bellwood, 2005). More specifically, there has long been an interest in the spread of maize agriculture in the Eastern U.S. and particularly its intensification during Mississippian times. The use of this domesticate as a dietary staple and the often associated shift to village life is poorly understood. Of particular concern has been whether or not human movements were related to this process. Although it has been demonstrated that humans can be directly provenienced for some time (Price et al., 1994a), surprisingly few such studies have been done in the Eastern U.S. At the same time, arguments for long-distance human migration based on the distribution of Mississippian trade items and architecture have continued (e.g., Cook, 2008; Cook and Schurr, 2009; Pauketat, 2007). The Fort Ancient region in the Eastern U.S. is well-suited to explore this issue as it borders several Mississippian culture complexes. The standard narrative has been that Mississippians had little to do with this shift to maize agriculture and that the development of Fort Ancient villages and the intensification of maize was a relatively gradual process.

Initial interpretation of the origin of Fort Ancient culture posited that the founders were Mississippians that migrated into the region from the south and/or west. The main reason for the resulting development of the relatively less complex Fort Ancient societies was argued to be due to an environment less conducive to intensive maize agriculture (see Griffin, 1967) (Fig. 1). More recently, attention has turned to the similarities between Fort Ancient and Mississippian cultures in social structure as reflected in household organization, authority positions, and village layout around central poles (Cook, 2008). Specific studies of the spread of shell-tempered pottery and maize agriculture also revealed a close connection between these Fort Ancient sites and a number of Mississippian objects (Cook and Schurr, 2009). But what has been lacking is an indication of where the people themselves came from. In other words, as suggestive of Mississippian migration as the results from pottery temper, architecture, mortuary practices, and diet are, they are patterns with alternate explanations. What was needed to further refine the picture were direct measures of maize

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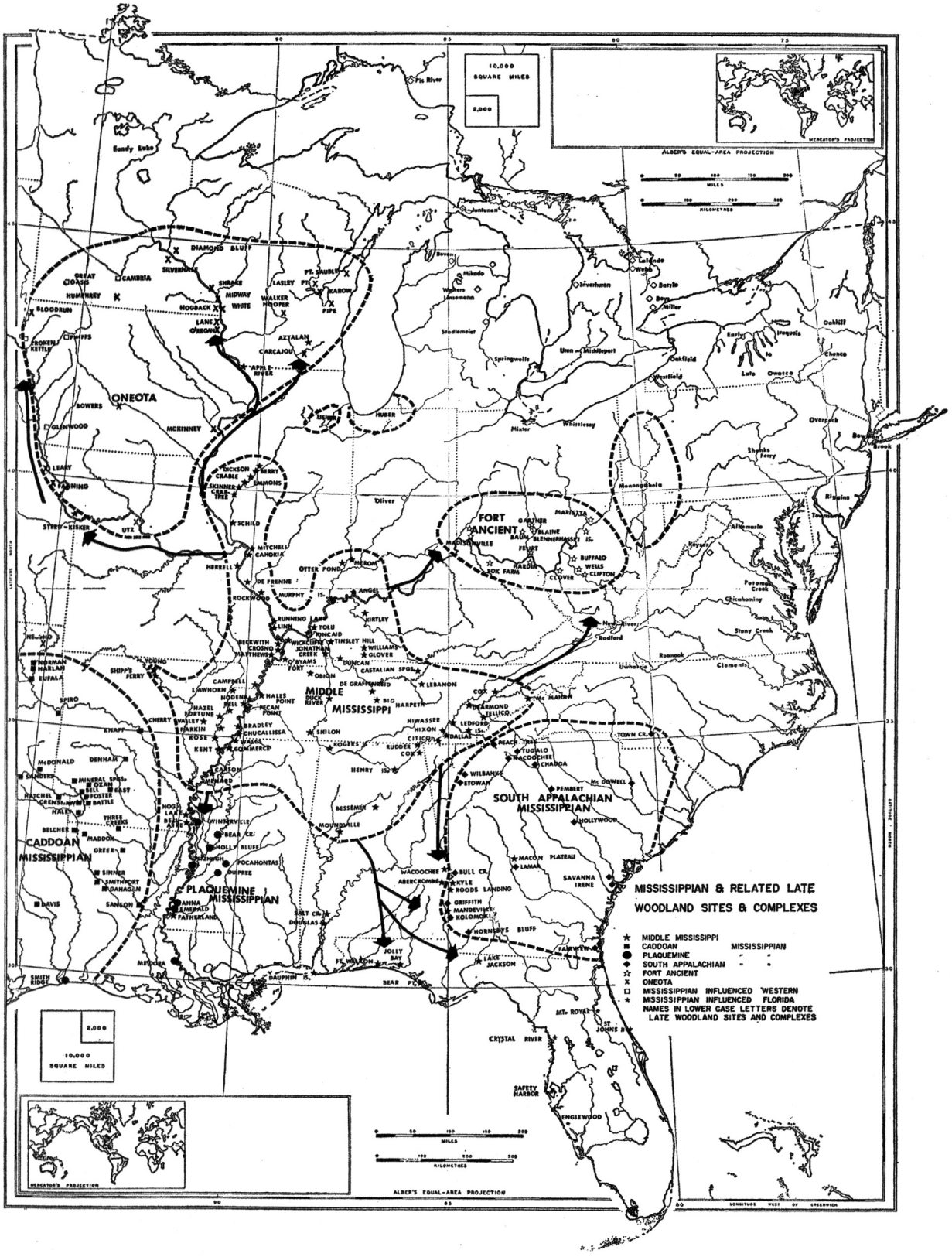

Fig. 1. Map of the Eastern U.S. with generalized locations of Mississippian regions and arrows denoting likely routes of movement (after Griffin, 1967: Fig. 5).

consumption and human movement in a controlled temporal context. Specifically, what is the trajectory of maize intensification and are there non-locals in the Fort Ancient region? If non-locals are present, at which sites are they located and when do they appear in the temporal sequence? Are sites with greater material evidence for extraregional interaction more diverse in dietary and provenience measures? With these issues in mind, the following study examines two hypotheses: