12-2017

Corncobs in the Campfire: Evidence of Cultivation of Zea mays at 44CH62, The Randy K Wade Site

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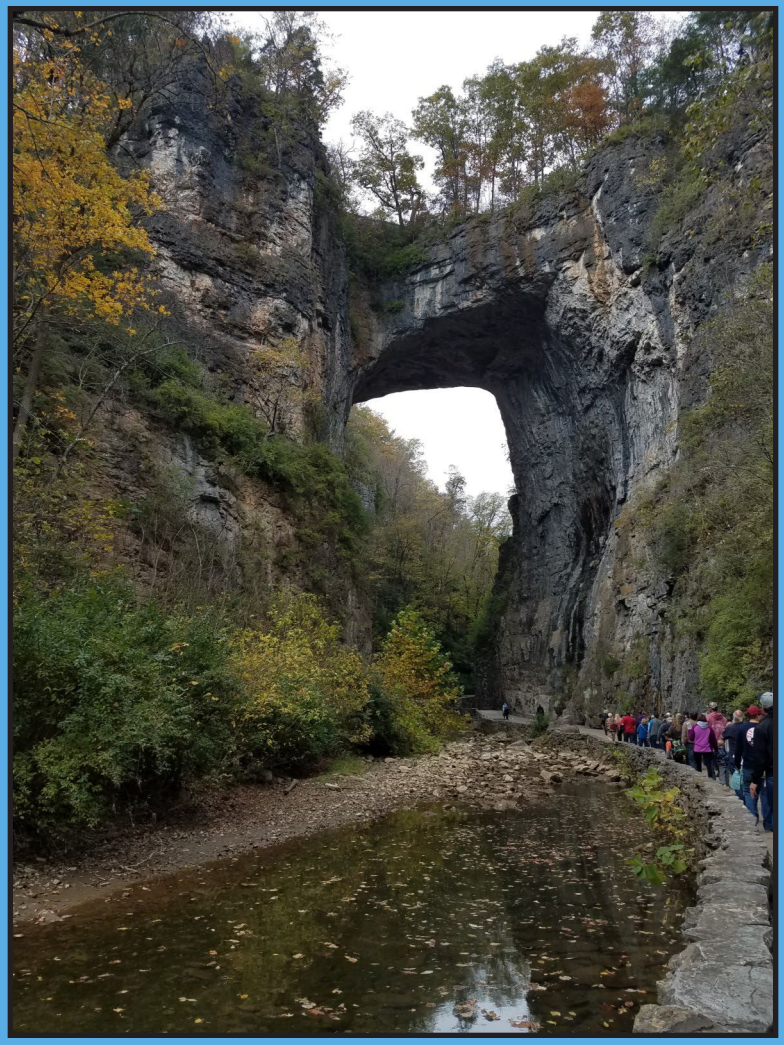
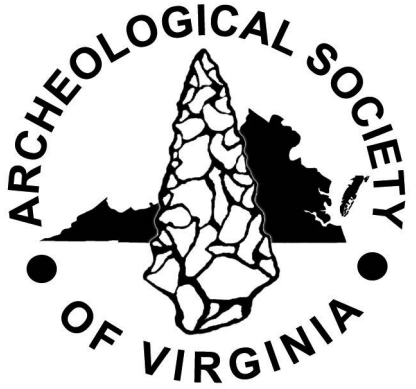
QUARTERLY BULLETIN

ARCHEOLOGICAL SOCIETY OF VIRGINIA



Volume 72 Number 4 December 2017

Quarterly Bulletin



Publication of the
Archeological Society of Virginia
Since 1942

Volume 72
Number 4
December 2017

CORNCOBS IN THE CAMPFIRE: EVIDENCE OF CULTIVATION OF *ZEA MAYS* AT SITE 44CH62, THE RANDY K. WADE SITE[1]

By Olivia Mehalko and Cameron Reuss

Abstract

In 20 years of excavation, the Randy K. Wade site (44CH62) has only produced indirect evidence of the cultivation of corn (*Zea mays*) in the Late Woodland village. This indirect evidence consists primarily of corncob impressions on Dan River pottery. In the summer of 2017, an intact hearth was excavated which contained the preserved remains of multiple charred corncobs- the first direct evidence of corn. The hearth also contained remains of other organic materials such as charred corn kernels, bark, sticks, bone fragments, and acorns. This paper will examine the direct evidence for corn cultivation at the Wade site and how this fits into the broader context of Dan River sites in the southern piedmont of Virginia.

Introduction

The Randy K. Wade site (44CH62), located at Staunton River Battlefield State Park near Randolph, Virginia, is a Dan River culture site that has been the subject of excavations by the Dr. James W. Jordan Archaeology Field School at Longwood University for the past 20 years. Until recently, the Wade Site has only produced indirect evidence of corn cultivation, consisting mainly of pottery sherds with corncob impressions. Corn cob impressed pottery is a recurring trait on Dan River sites, including the Box Plant Site (44HR2), the Stockton Site (44HR35), and the Wells Site (44HR9) (Davis et al. 1997a,b, and c). The Wade Site has produced an array of features and grave goods that indicate an apparent chiefdom system of social hierarchy. Cultivation of corn, specifically *Zea mays*, has been linked to population growth and cultural shifts from hunter-gatherer societies to structured, agricultural settlements (VanDerwarker and Idol 2008). During the annual field school in the summer of 2017, an intact hearth was excavated with the remnants of multiple charred corncobs along with other organic materials such as wood, acorns, and animal bone fragments. This is the first direct evidence of *Zea mays* cultivation at the Wade Site and provides researchers with data that is useful in framing the social transition to a chiefdom that was occurring at the Wade Site in the years around the turn of the first millennium.

Migration and Societal Influences of *Zea Mays*

Based on data from pollen and phytolith dating methods, *Zea mays* likely first appeared in North America around 3000 B.P (Fern and Liu 1995). Prior to its introduction to North America, corn cultivation occurred in Central and South America (Fern et al. 1995). Early *Zea mays* did not reflect the crop that most people would recognize today. It was generally smaller in both size and kernel count, with the earliest strands resembling teosinte, which many speculate to be the primary ancestor of *Zea mays* (Smalley and Blake 2003). Despite these differences, *Zea mays* provided stable subsistence and supplied a backup source of food if other procuring methods, such as hunting, gathering, or other crops failed to provide required subsistence. This appeal was most likely one of the initiating factors of *Zea mays'* migration through Central America to North America (Smalley and Blake 2003).

Prior to the introduction of *Zea mays*, the majority of North American people were organized into highly mobile hunter-gatherer bands. The nomadic lifestyle of these band-level societies forced them to seek

1 This paper won the McCary Award for the best student research paper in Prehistoric Archaeology at the ASV Annual Meeting in October 2017 at Natural Bridge.

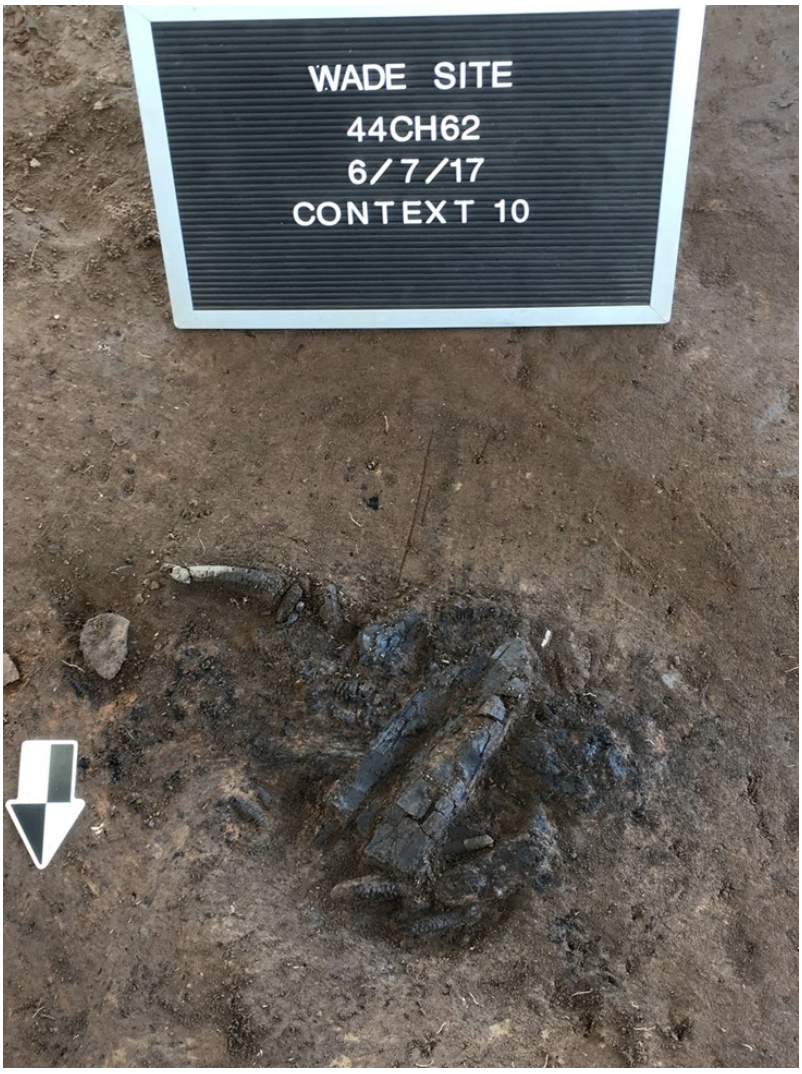


Figure 1. The excavated hearth feature at the Wade Site. Only half of the feature was uncovered due to time limitations.

out subsistence by temporarily settling in areas of abundant resources until such resources were depleted. After learning how to cultivate *Zea mays* and adopting ways to store the surplus crop yields, people no longer needed to migrate constantly in search of subsistence. Corn cultivation required that the once nomadic bands remain sedentary in order to maintain the crops and protect them from encroachment by vermin. Even with *Zea mays*, most sedentary tribes continued to gather locally available plant resources to augment the corn yield. Of course, hunting and fishing remained the primary means of procuring animal protein (VanDerwarker and Idol 2008).

Cultivation of *Zea mays* created surplus food that could be stored for use throughout the year which had a stabilizing effect on the food supply that could generally be counted on year after year and ultimately facilitated incremental population growth (VanDerwarker and Idol 2008). Due to the increase in population and a wider range of subsistence variability, these newly sedentary tribes began to experience social division and complexity, which called for the development of more effective means of social control. The transition from egalitarian hunter-gatherer bands to Big Man social organization was the first stage of hierarchical complexity that ultimately led to the emergence of chiefdoms in which a single authority exercised political and economic power (Meyers 2002). This pattern of increased social hierarchy following the introduction of *Zea mays* is commonplace (Hilgeman 1991).

As reliance on *Zea mays* increased, crop-centered ceremonies became a noticeable and consistent occurrence. One such ceremony is referred to as the "Green Corn Ceremony" in the Southeastern United States. A generalized description of this ceremony indicates that prior to the commencement of the ritual, all members of the community cleaned and renovated the village grounds, cleaned and rebuilt the hearth in the center of the plaza, doused all home cooking fires and cleared them of ash and remains, and repainted any murals or decorative art. The elder or chief then lit the new fire using a fire-drill. Sacrifices of premature (green) corn were made in the new fires to mark the beginning of the harvest season. The amount of preparatory work done for this type of ceremony indicates its importance among the groups who practiced it (Hilgeman 1991).

Corn Cultivation in Virginia

The Late Woodland period, 900 to 1650 A.D., is characterized by complex agricultural practices that supported sedentary villages resembling hamlets or small settlements (VanDerwarker and Idol 2008; Meyers 2002). Prior to this period, many prehistoric cultures relied heavily upon hunting and gathering methods for primary subsistence with little to no supplementation from crops. Over time, domestication practices arose from the select cultivation of wild plants and early crops such as sunflower, nuts, prehistoric gourd species, and *Zea mays* (VanDerwarker and Idol 2008; Smith 2006). By 1000 A.D., *Zea mays* cultivation became a widespread phenomenon in the Virginia piedmont (VanDerwarker and Idol 2008) and as agricultural practices

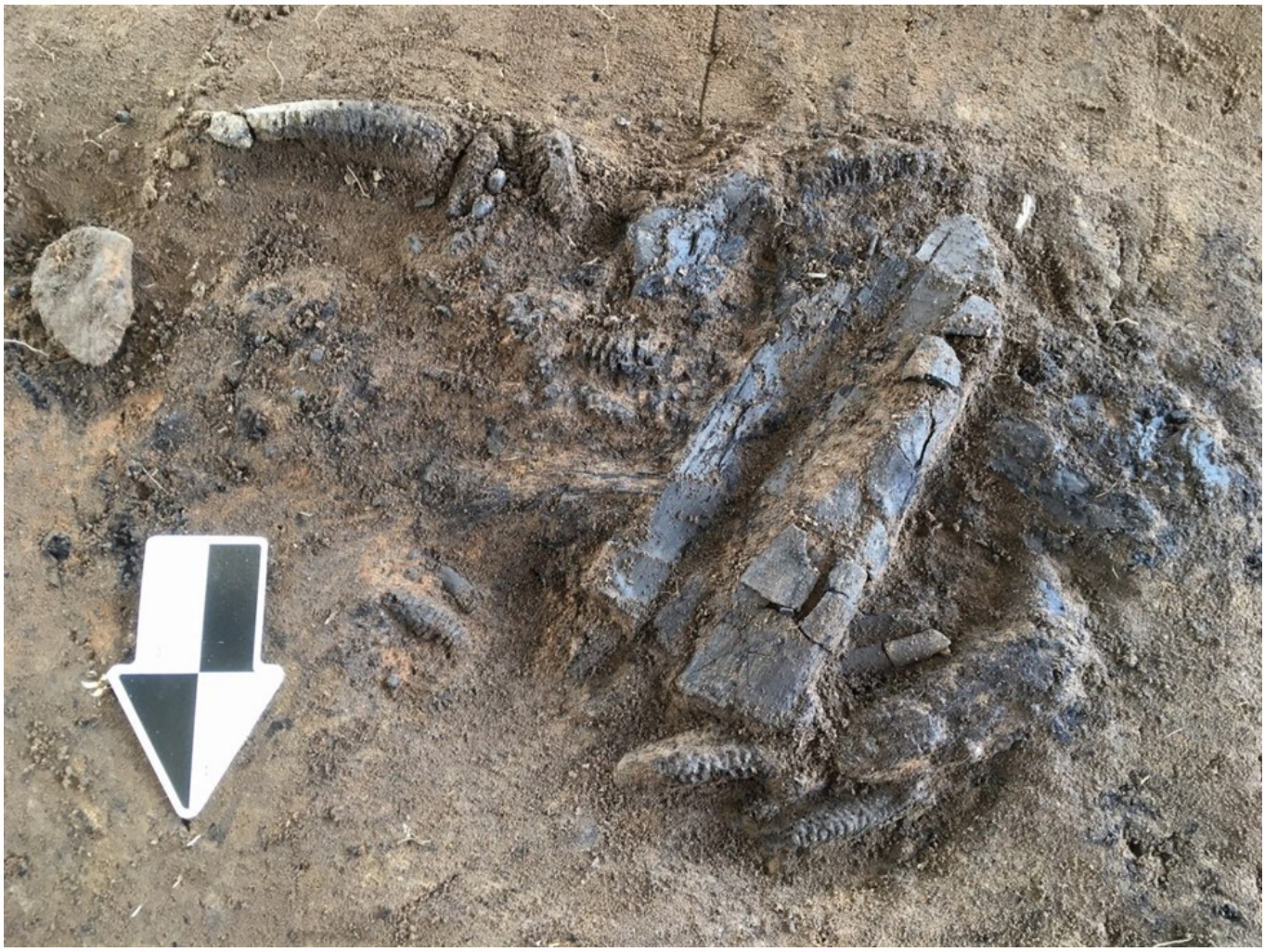


Figure 2. A close-up of the hearth feature. The remains of small logs, sticks, and several Zea mays cobs can be seen here.

increased, more advanced techniques arose, such as the beginning of artificial selection in which the grower chose specific plant specimens based on size and quality (Hart 1999). This selective breeding yielded a larger crop output and further increased the total cultivated subsistence.

By this time, Late Woodland tribes began to experience increased population growth due to the new subsistence presented by agriculture. Previous archaeological investigations of Late Woodland sites show evidence of shifting settlement patterns, architecture, and settlement organization. For example, settlements with hamlet and palisade-style villages began to appear in close proximity to rivers or other large water sources (VanDerwarker and Idol 2008). Along with the development in village style and population growth, these settlements demonstrated early stages of socio-political division. Individuals within the village were able to advance and gain status over others through subsistence surplus, creating "big man" complexes between village members (Blanton 2000). Big man complexes existed in transitional hunter-gatherer tribes; however, the introduction of agriculture allowed social stratification to continue as the people experienced an increase in personal materials. Central plazas and cleared sections within villages also emerged, indicating settings for large-scale social interaction, possible public ceremonies, and individualized housing large enough for one family unit (VanDerwarker and Idol 2008). This societal division resulted in a need for a single authority. Typically associated with cultivation societies, a simple chiefdom system of authority efficiently centralizes the population around one seat of power that represents the entire community. In this system, the authority figure officiated political and ceremonial events, which is reflective in the organization of the village around the central plaza that allowed all members of the village to gather collectively (Meyers 2002).

Zea mays at 44CH62

The Randy K. Wade site (44CH62) is believed to have been culturally affiliated with the Sappony Indians. This site is located along the Staunton River and has a distinct hamlet-style organization with a central plaza surrounded by myriad activity areas and pit features. Radiocarbon dates for the Wade Site range from 940 A.D. +/- 40 to 1425 A.D. +/- 30 years and align chronologically with the projectile point types and Dan River series pottery found at the site. During excavations conducted in May and June 2017, the remnants of multiple charred *Zea mays* cobs were found at the Randy K. Wade site. Evidence from other Dan River sites indicates that corn cultivation was widespread in the Southern Piedmont of Virginia and Northern Piedmont of North Carolina by this time. Evidence from Dan River sites suggests that Late Woodland people also cultivated other plants, such as wild grapes, beans (VanDerwarker and Idol 2008) and sumpweed (Barber, Barber, and Owen 1994). These crops were cultivated alongside corn and aided meeting the subsistence needs of growing populations. As hunting continued to provide critical animal protein such as whitetail deer, turkey and turtle to human diets, the surpluses produced by *Zea mays* cultivation may have relieved some pressure on animal resources and diminished the potential for overhunting (Davis et al. 1997b). At the Wade site, this is evidenced by the abundance of adult specimens in the faunal assemblage with very few juveniles present.

Cultivation of *Zea mays* and other crops had myriad influences on the cultures where it was adopted. Among the most significant of these effects was the sedentism required of a horticultural subsistence strategy and the increase in population that resulted from sustained stability and surplus in the food supply. The increasing population necessitated a shift in social organization toward an emerging chiefdom. Mortuary practices at the Wade site demonstrate social status distinctions, with higher status burials being in the semi-flexed position and containing non-local grave goods whereas average status burials are in the flexed position with local grave goods. This is strongly suggestive of the kind of social stratification associated with chiefdoms.

The stability in the food supply that was facilitated by corn cultivation also likely led to an expansion of leisure time. Evidence for fishing is manifest at all Dan River culture sites, including the Wade Site (Davis et al. 1997a). Net fishing was the primary means of fishing to feed large numbers of people, yet fishhooks created from animal bone have been found on sites throughout Virginia. Fishing with a hook is not an efficient way to harvest large numbers of fish but it may well represent an expanding leisure time activity such as fishing for sport.

Conclusion

The recovery of the intact hearth containing charred *Zea mays* at the Wade site during the summer 2017 excavation provides direct evidence of corn cultivation at the site. Exploring the ramifications of the cultivation of *Zea mays* and other domesticates is critical to understanding the changes in social structure that began to take place slowly at first, but that ultimately became much more rapid in their manifestations after the turn of the first millennium. The Wade Site presents a case study in this process and continues to produce new evidence that illuminates our understanding of the Dan River cultures that were prevalent in the region for nearly 500 years.

Contact

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THE ARCHEOLOGICAL SOCIETY OF VIRGINIA

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