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LETTER FROM THE EDITORS

Dear Reader,

In our continuing efforts to support and report on the wide variety of archaeology in our state, we are pleased to present the *Fall 1999 ASD Bulletin*. You will observe that this issue is unique in that it contains three papers which together offer a diverse look at archaeological activities in Delaware.

The first article, by William Liebeknecht, is a report by a professional archaeologist on investigations conducted for the state at the Hickory Bluff Site (7K-C-411), a prehistoric site near Dover. The second article is a report by Mel Schoenbeck, a dedicated amateur archaeologist, on investigations conducted mostly by amateurs under the direction of professionals at the Brandywine Springs Amusement Park, a historic site near Prices Corner. The third article of this issue is by Wade Catts and Lu Ann DeCunzo. Originally presented at a professional conference in 1996 (Annual Meeting of the Middle Atlantic Archeological Conference), this article provides a comprehensive discussion on the research questions, directions, and interpretations of historical archaeological investigations in Delaware.

All three of these contributions reflect the time, dedication, and perseverance that is needed to bring understanding to our archaeological resources. We thank all of the authors and the field crews involved for their efforts.

Regards and may all of your archaeological endeavors be adventures,

Keith Doms and Barbara Hsiao Silber
Editors

CERAMIC PRODUCTION AT THE HICKORY BLUFF PREHISTORIC SITE 7K-C-411

by

William B. Liebeknecht
Hunter Research, Inc.

Project Background

The following article describes a unique ceramic feature uncovered at the Hickory Bluff Prehistoric Site (7K-C-411) while conducting archaeological studies along the project corridor for the Puncheon Run Connector, a proposed two-mile-long segment of new highway that will link State Route 1 with U.S. Route 13 to the southeast of Dover in Kent County, Delaware (Figure 1). This work involved Phase I-level survey of the entire project corridor, follow-up Phase II-level investigations, partial Phase III-level data recovery and monitoring at the Hickory Bluff Prehistoric Site in mitigation of the effects of the construction of a drainage swale. These studies were performed by Hunter Research, Inc. for the Delaware Department of Transportation (DelDOT).

The planned highway runs in a generally west-east direction and will span the St. Jones River, one of the principal drainages flowing into the west side of the Delaware Bay between Wilmington and Lewes. Beginning at the western end of the corridor at the intersection of Webbs Lane and U.S. Route 13 (Figure 2), the Puncheon Run Connector will veer northeast away from U.S. Route 13, crossing State Street and Puncheon Run just downstream from the present State Street crossing of this drainage. The alignment for the new highway then passes through an area of cultivated fields lying to the south and east of U.S. Route 13 and crosses the St. Jones River just upstream of its confluence with Puncheon Run. East of the St. Jones River, the corridor passes through secondary woodland and meadow before crossing U.S. Route 113, entering another patch of secondary woodland (since cleared) and intersecting with the recently constructed State Route 1. In addition to containing the full width of the proposed traveled way and right-of-way for the highway, the project corridor also included land set aside for drainage improvements and stormwater retention ponds.

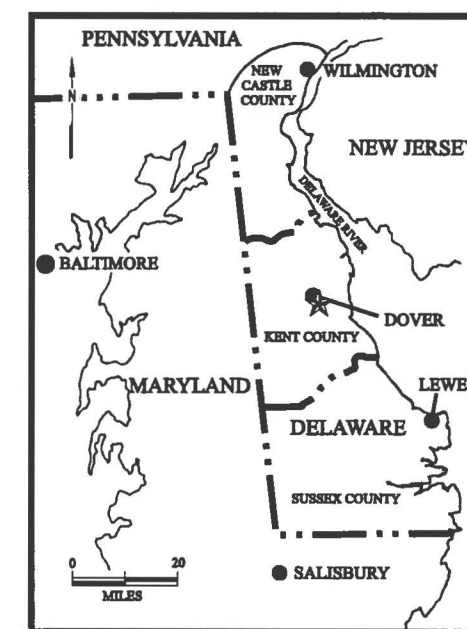


Figure 1. General Location of Project Area (starred).

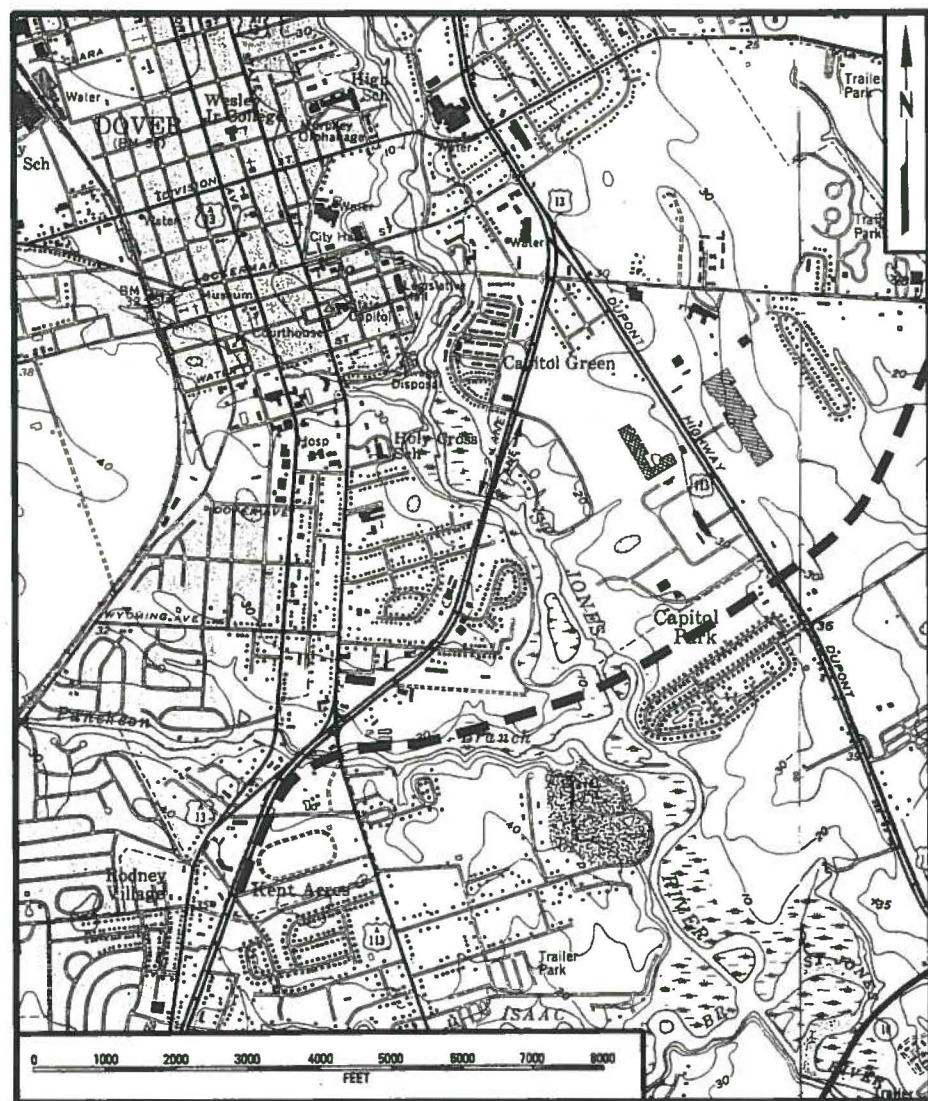


Figure 2. Detailed Location of Puncheon Run Connector (shown with dashed line). Source: USGS Topographic Series Dover, DE Quadrangle (1956, photorevised 1981) and Little Creek, DE Quadrangle (1956, photorevised 1982).

These studies were conducted in accordance with the instructions and intents of various applicable Federal and State legislation and guidelines governing the evaluation of project impacts on archaeological resources, notably: Section 106 of the National Historic Preservation Act of 1966, as amended; Section 4(f) of the Department of Transportation Act of 1966; Section 101(b)(4) of the National Environmental Policy Act of 1969; Section 1(3) and 2(b) of Executive Order 11593; the regulations and guidelines for determining cultural resource significance and eligibility for the National Register of Historic Places (36 CFR 60 and 63); the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (36 CFR 61); the regulations and guidelines specifying the methods, standards and reporting requirements for the recovery of scientific, prehistoric, historic and archaeological data (36 CFR 66); the regulations and guidelines for the protection of historic properties (36 CFR 800); the regulations and guidelines developed for the implementation of Section 4(f) of the Department of Transportation Act of 1966 (23 CFR 771); the *Guidelines for Architectural and Archaeological Surveys in Delaware* (Delaware State Historic Preservation Office 1993); and various historic preservation and

cultural resource management planning documents developed for the State of Delaware, notably the *Delaware Comprehensive Historic Preservation Plan* (Ames et al. 1989) and supplementary texts addressing prehistoric archaeological resources (Custer 1983) and historical archaeological resources (De Cunzo and Catts 1990; De Cunzo 1992).

Field Investigations

An advance phase of archaeological data recovery was performed at the Hickory Bluff Prehistoric Site (7K-C-411) in connection with the construction of a drainage swale. This work built upon information gained from the Phase I and II field survey investigations and consisted primarily of a systematic sampling program undertaken within the construction limits of the proposed drainage ditch (Figure 3). The purpose of this initial phase of data recovery was in part intended to better inform and guide a second, more comprehensive program of data recovery anticipated prior to the main highway construction program. It was intended that this latter work would supply the principal means of placing the site in the context of broader regional issues identified in the *Management Plan for Delaware's Prehistoric Cultural Resources* (Custer 1983) and the recent report *Stability, Storage, and Culture Change in Prehistoric Delaware: The Woodland I Period (3000 B.C.-A.D. 1000)* (Custer 1994).

This initial phase of data recovery involved the excavation of 24 one-meter-square excavation units and a series of split-spoon auger tests. Following the approach established by the University of Delaware Center for Archaeological Research (UDCAR), the 24 excavation units (EU#s 31-54) were located on a 10-meter grid extending over the entire site (Figure 3). The split-spoon augering was conducted on a two-meter grid, which was tightened to a one-meter spacing when soil anomalies or probable features were encountered. Sixteen possible pit features were identified using this latter technique.

Following completion of these tasks, an additional 75 one-meter-square excavation units (EU#s 55-129) were placed in areas projected to yield important information based on the artifact distributions established by the earlier excavations and the results of the split-spoon augering (Figure 3). These excavation units, mostly disposed in two large blocks, located nine pit features, eight of which were adjacent or overlapping. These features are provisionally interpreted here as pit houses.

Forty-eight excavation units (EU#s 65-74, 80-83, 95-99 and 102-128) were located around Excavation Unit 44 (Figures 3 and 4; Plate 1). This location was chosen based on data gained from the split-spoon auger testing and the location of a possible pit house recorded in Excavation Unit 44. The opening up of a larger area of contiguous units here resulted in the identification of a series of adjacent and overlapping pit features, all of which are considered to be pit houses. A total of eight pit houses were identified (Pit Houses 2-9). Pit houses 2 and 3 were excavated completely, while Pit Houses 4 and 5 were half-sectioned. Pit houses 6-9 were sampled as they continued beyond the limits of the block of excavation units.

Initial interpretation of this group of pit houses is that they were not part of a single house cluster, but represent an overlapping range of temporal and cultural occupational episodes within the early and middle Woodland I period. The fills of these features contain diagnostic materials from the Barker's Landing, Delmarva Adena, Wolfe Neck, Carey and Delaware Park complexes. The integrity of the information gained from the post-depositional fill of the pit houses is thus somewhat unreliable and probably inadequate for answering questions on the function and affinity of the pit houses themselves and on Woodland I sites in Delaware.

Figure 3. Hickory Bluff Prehistoric Site, Data Recovery, First Phase - Site Plan Showing Locations of Subsurface Tests.

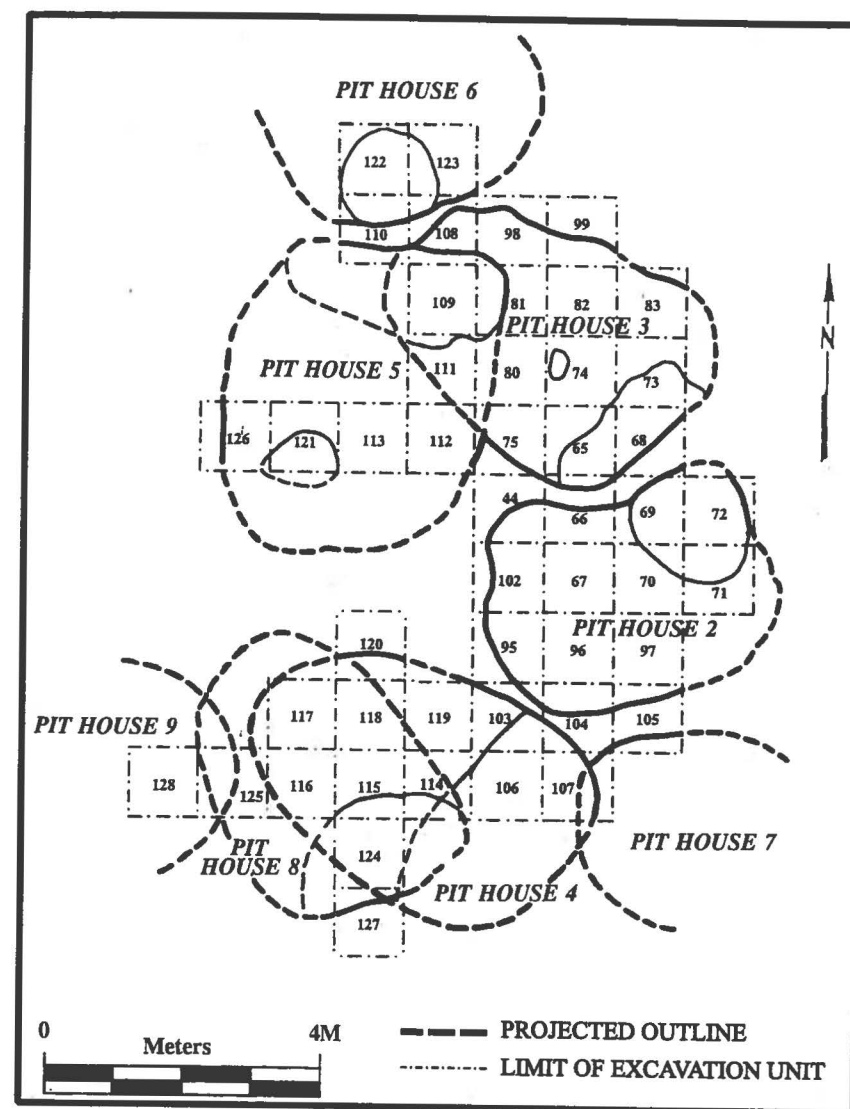
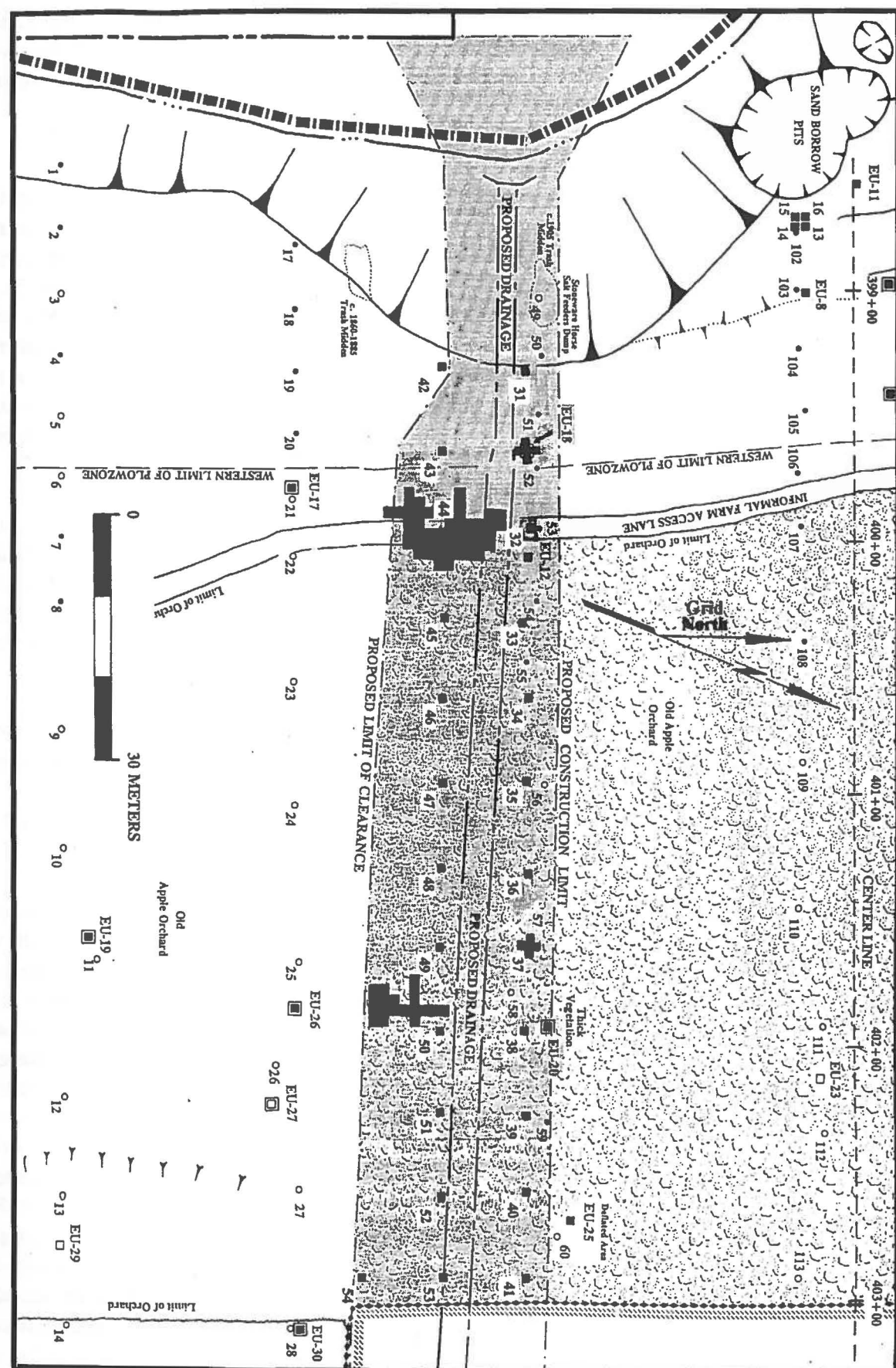


Figure 4. Hickory Bluff Prehistoric Site, Data Recovery, First Phase - Excavation Units 44, 65-74, 80-83 and 102-128, Pit Houses 2-9, Plan View Showing the Projected Outlines of the Subsurface Portion of Pit Houses.

Pit House 4 exhibits what appears to be an intact living floor along the bottom of the upper basement. This context was consistently thin and compact. Artifacts recovered from the basal deposit have much greater interpretive potential for understanding pit features.

Within Pit House 4 the living floor averaged 15 centimeters in thickness and contained a jasper pebble core, 49 pieces of debitage, 37 thermally-fractured rock fragments (randomly scattered across the floor), 29 ceramic sherds of Marcey Creek (7 sherds), Wilgus (5) and Coulbourn (1) wares, as well as 16 other sherds of uncertain type. Marcey Creek ceramics are characteristic of the Barker's Landing Complex (circa 3000 B.C. to 500 B.C.), while the Wilgus and Coulbourn wares are representative of the Delmarva Adena complex (circa 500 B.C. - 1 A.D.). The earlier steatite-tempered Marcey Creek ware sherds may have found their way into a later context as a result of a later pit house cutting into or through archaeological evidence of an earlier occupation.



Plate 1. Area C - Hickory Bluff Prehistoric Site (7K-C-411): General View Looking East Showing Western Block of Excavation Units Containing Pit Houses 2-9 (Photographer: Frank Dunsmore, March 1995) (HRI Neg. 95004/31-32).

This suggestion is further supported by a unique set of internal features clearly associated with the occupation of Pit House 4 (Figures 5 and 6; Plate 2). A stack of 56 ceramic sherds (representing the upper portions of two ceramic vessels) of net-impressed (6 sherds, 10.5mm mesh) and Z-twist cord-impressed (50 sherds) Coulbourn/Wilgus ware was found adjacent to a clay and grog-filled, bell-shaped pit in Excavation Units 114 and 119. These vessels can be treated as a single ceramic type for discussion purposes since they both made use of the same clay as a tempering material (see below). All of the sherds exhibit clay temper containing many small pieces of freshwater mussel shell. Cross-mending of these sherds revealed that sherds exhibiting shell and clay temper mended with sherds that were clay tempered and showed no signs of shell tempering. The freshwater mussel shell may indicate utilization of local resources for tempering materials, since traditional Wilgus ware is tempered with crushed saltwater shells, such as oyster or clam. This observation is important as it would suggest that Coulbourn and Wilgus wares are one ceramic type with local variants using available local resources for tempering.

The 56 sherds in Pit House 4 were deposited in four distinct layers. Cross-mending revealed that they were not broken in-place but were broken prior to deposition and then neatly placed in a stack. As noted above, all of the sherds derive from the upper portions of just two vessels. The upper part of a ceramic vessel is usually the thinnest part and the most likely to be fractured or chipped; this section of a vessel can be trimmed off and recycled as temper for new vessels, while the lower portion can continue to be used. The bell-shaped pit located in Excavation Units 103 and 119, adjacent to the stack of

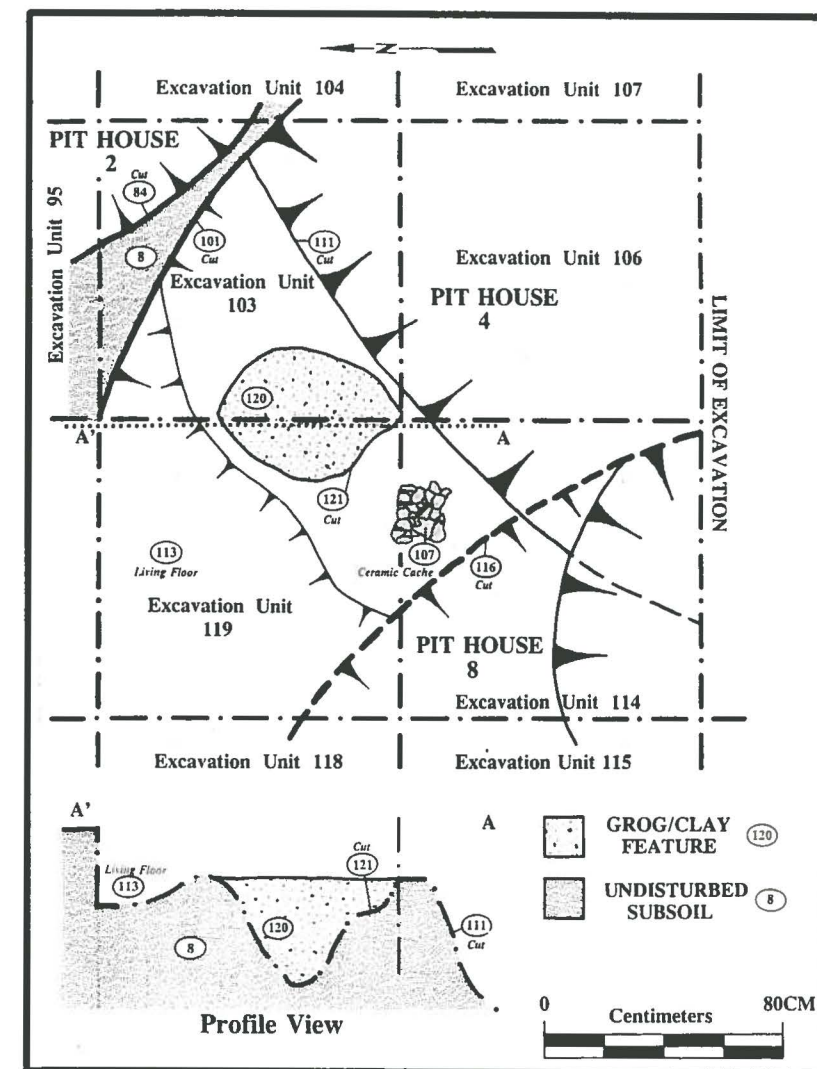


Figure 5. Hickory Bluff Prehistoric Site, Data Recovery, First Phase - Excavation Units 103, 106, 114, and 119, Pit House 4, Plan View and Profile of Ceramic Cache (107) and Associated Grog/Clay Pit Feature (120/121).

ceramic sherds, measured 62 centimeters across with a depth of 36 centimeters. This small pit contained a mixture of clay and crushed, charred ceramic sherds. Together, these features suggest the on-site production of ceramic vessels from the upper portions of old vessels.

The small pit feature within Pit House 4 demonstrates that ceramic vessels were being crushed and recycled as tempering material on site. Evidence of this process could mean that the sherd counts for clay-tempered wares, which are the dominant type, would have even been higher if broken vessels were not being re-used for temper.

Using the following formula developed for conoidal vessels based on rim diameters: $\text{Volume} = 0.533 \times \text{Diameter}^3 \pm 27\%$ (Mounier 1987:95-102), the vessel capacities were calculated for the two vessels found within the small pit in Pit House 4. The rim diameter for the net-impressed vessel was 26 centimeters. Using Mounier's formula, this vessel would have had a capacity of 9.4 liters or 2.8 gallons

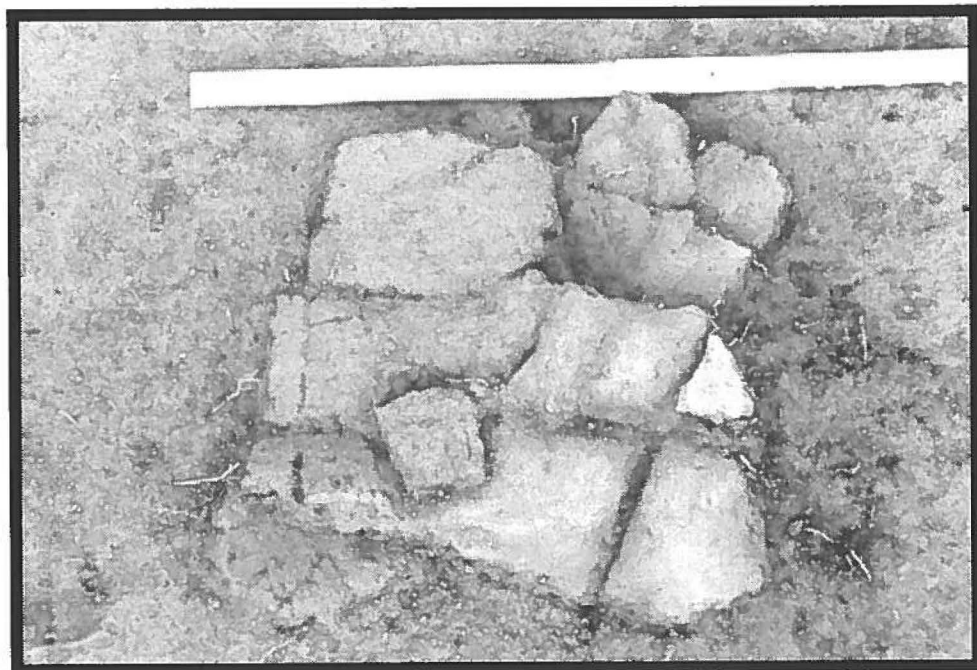


Plate 2. Area C - Hickory Bluff Prehistoric Site (7K-C-411), Excavation Units 114 and 119, Pit House 4, Context 107: Plan View of Cache of 56 Clay-tempered Ceramic Sherds for Two Vessels (Photographer: Frank Dunsmore, March 1995) (HRI Neg. 95004/27-29A).

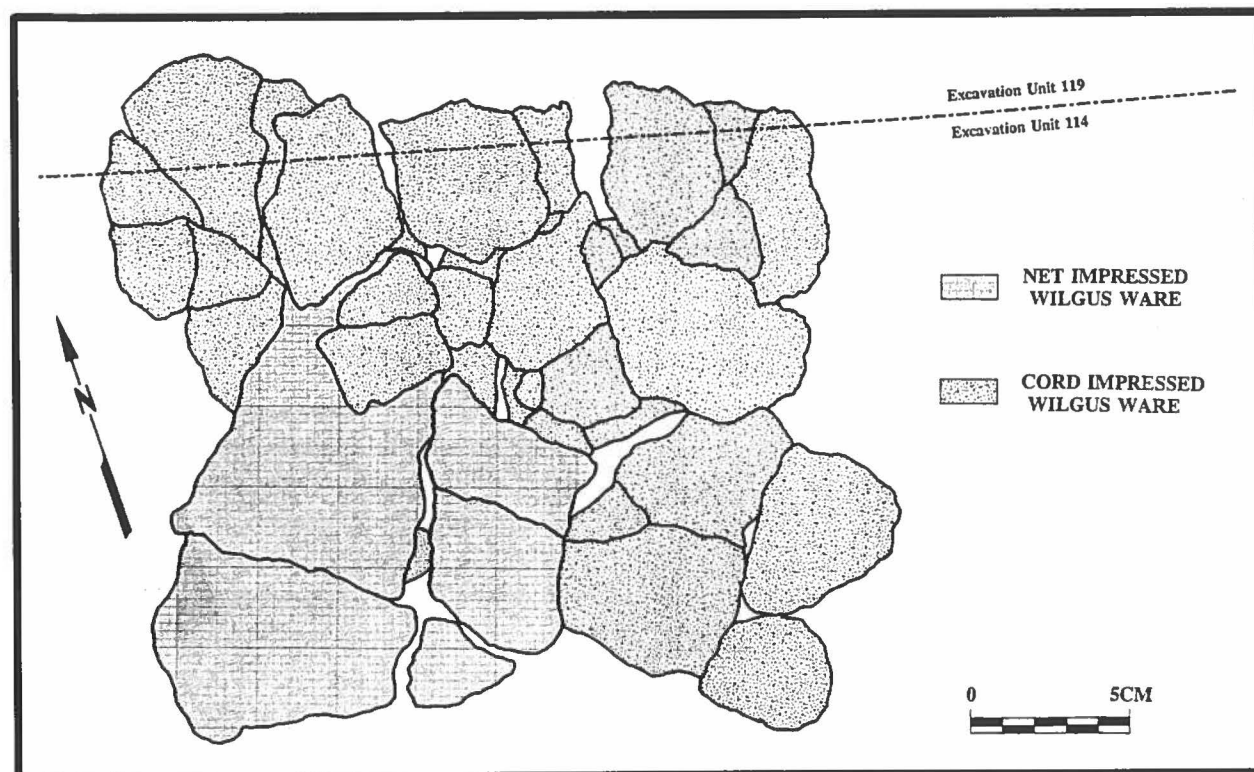


Figure 6. Hickory Bluff Prehistoric Site, Data Recovery, First Phase - Excavation Units 114 and 119, Wilgus Ware Ceramic Cache (107), Detailed Plan View Showing Association of Net-Impressed and Cord-Impressed Variants.

(+/-). The rim diameter of the cord-impressed vessel measured 28 centimeters. The capacity of this vessel would have been 11.7 liters or 3.1 gallons (+/-). Both were clearly substantial vessels, presumably used for food storage.

Several of the clay-tempered sherds contain fragments of freshwater mussel shell. Use of shell in conjunction with clay as a tempering material would classify these sherds as Wilgus ware. However, traditional Wilgus ware is tempered with crushed saltwater shells, such as oyster or mussel. It should be noted that the Wilgus type site is in the Coastal Bay Zone of southern Delaware and contains a shell midden largely composed of oyster with lesser amounts of clams and other shellfish, such as mussel (Custer 1989:256; Blume 1996: personal communication, February 2, 1996). On this basis, one may suggest that Wilgus ware and the clay-tempered Coulbourn ware should be regarded as one ceramic type with local variants defined according to the availability of tempering materials. Another possibility is that the clay and freshwater mussel-tempered sherds recovered from the Hickory Bluff Prehistoric Site merely represent a previously unrecognized variant of Wilgus ware. Another clay-tempered ware found at the site is Nassawango Ware which also contains crushed rock tempering materials. This ware, found only in small quantities on the site, may represent a Coulbourn variant manufactured off-site and inland, away from salt or freshwater shell sources.

Appreciation is extended to the following individuals for their help and support: Kevin Cunningham-DelDOT Archaeologist, Gwen Davis- Delaware State Historic Preservation Office Archaeologist, Charles Fithian- Delaware Bureau of Museums and Historic Properties Curator, Frank Dunsmore and Sue Ferenbach Senior Archaeologists with Hunter Research Inc., Richard Hunter, Ian Burrow and Michael Tomkins of Hunter Research Inc., and a special thanks to Glen Mellin who never stops asking what if or why.

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ARCHAEOLOGICAL EXCAVATIONS AT THE ENTRANCE ARCHWAY SITE OF THE BRANDYWINE SPRINGS AMUSEMENT PARK

by

Mel Schoenbeck
The Friends of Brandywine Springs*

The Brandywine Springs site is located in northern New Castle County, Delaware at the intersection of Newport Gap Pike (Route 41) and Faulkland Road (Route 34). Today it is a county park, but from 1886 to 1923 it was a popular amusement park that attracted visitors from all over this region. It was typical of the amusement parks of that time period and its attractions included a dance hall built over an artificial lake, a boardwalk lined with shops and amusements, a carousel, a roller rink and a movie theater. Probably the best-known trademark of the park was its big entrance archway that was brightly lit at night. It was pictured on many postcards and was long remembered by park visitors. This archaeological work was done to determine the exact location of the entrance archway. The work was done by The Friends of Brandywine Springs* under the direction of the Archaeological Society of Delaware and with assistance from many ASD members. Permission was granted by the county parks department to do this work with the stipulation that all excavations had to be refilled at the end of the day.

After the park closed in 1923 it was allowed to deteriorate (with help from scavengers) and today none of the amusement park buildings remain. While the foundations of some of the buildings are still in place, no foundations of any kind could be found in the area where the archway was known to have been located. The contour map in Figure 1 shows the approximate location of the archway and its position relative to the dance pavilion, the trolley lines of that time and the nearby hillside. Today this area would be considered the back side of the park and not a likely place for an entrance archway. However, in those pre-automobile days, most of the park visitors came by rail - first on the B. & O. RR. and later in much greater numbers on the trolley.

The general location of the archway was determined from old photographs showing it standing next to the old dance pavilion. Many of the concrete supports of the dance pavilion, including those of the north wall, are still there to indicate its location. The picture in Figure 2 shows a side view of the archway with the dance pavilion in the background and it also shows the trolley tracks in front of the archway that were installed in 1911 as part of a system to better handle trolley patrons returning to Wilmington.

To facilitate a systematic exploration of the area, a grid of 5-foot squares was laid out starting with a datum point and a base line. The datum point was the center of a hole in an iron strap imbedded in a

* The Friends of Brandywine Springs is a volunteer organization working to upgrade the park and this includes installing historical signs at the former sites of some of the amusement park attractions.

Figure 1. Location of Entrance Archway.

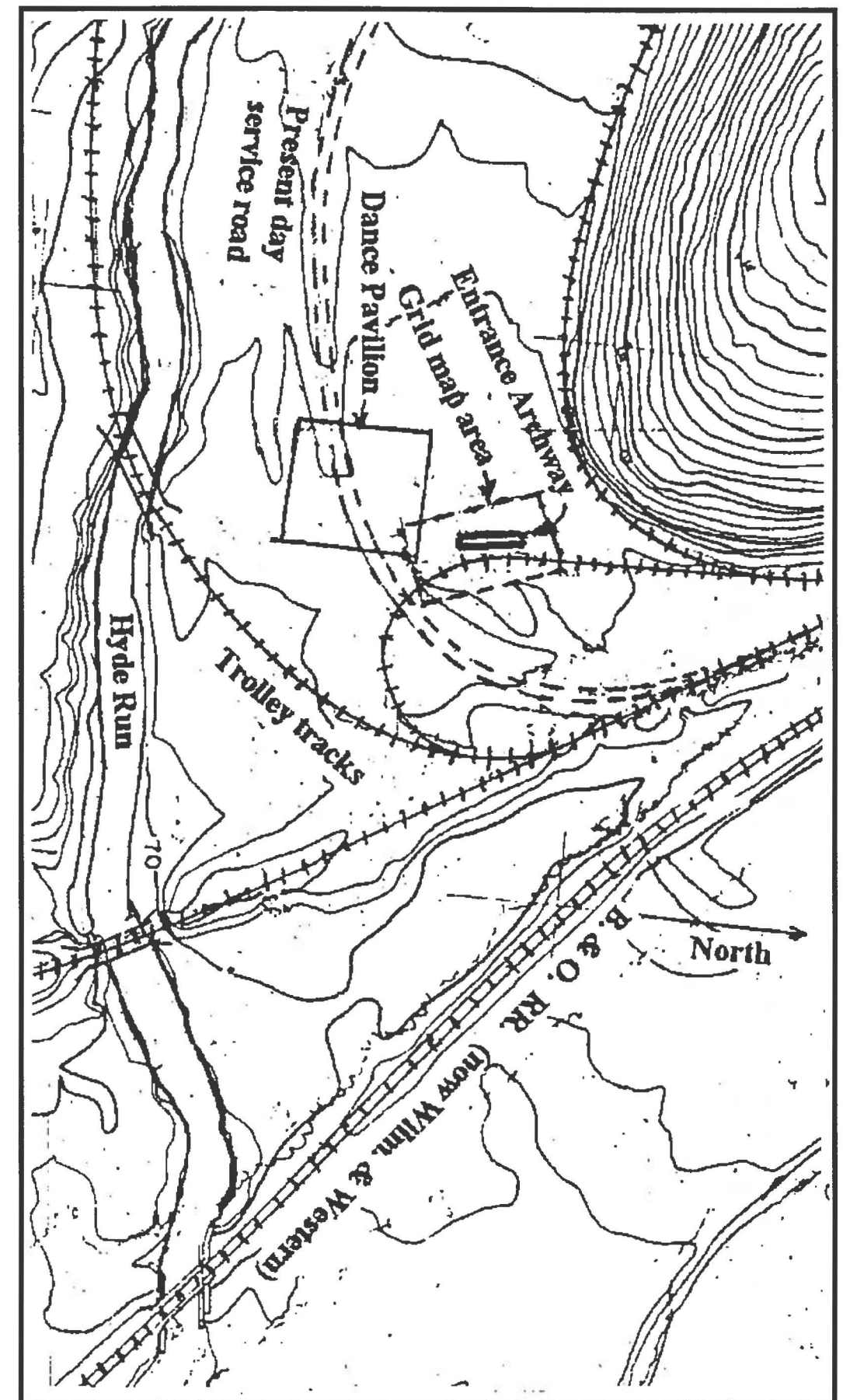




Figure 2. Photograph of Entrance Archway from 1911.

large chunk of stones and concrete located 2 feet east of the northeast corner of the dance pavilion. The base line extended from the datum point in a northerly direction (23 degrees west of north) with perpendicular coordinate lines every 5 feet and parallel coordinate lines every 5 feet east and west of the base line.

The grid map in Figure 3 outlines all the test units that were excavated and indicates the locations of the north and south bases of the entrance archway that were established by this work. This report will describe how the exact location of this structure was determined. For simplicity, the test units are identified in this report by a letter and number code as indicated by the letters across the top of the grid map and the numbers on the left edge.

The eleven test units that were excavated in the fall of 1993 on Sept. 26, Oct. 17 and Nov. 14 are shaded on the grid map in Figure 3. At this stage of our work, the test units we had selected to excavate (in roughly an X pattern) had not yielded any evidence showing the exact location of either the north base or the south base. At times, we were working directly under where the archway had stood, but we did not know it. We were encouraged by the soil patterns in test units H5 and I5, which appeared to be from rotting wood that could have been the cross-ties that were part of the trolley loop that was installed in front of the archway in 1911 (see Figure 1). In addition we were very interested in a packed cinder layer that was being found at roughly the same elevation in every test unit that was dug to that depth. On the grid map, the areas where the cinder layer was found are more shaded than the areas where it was not found. It should be noted that test units F5, F7, F8 and part of C5 were not dug down to the level of the

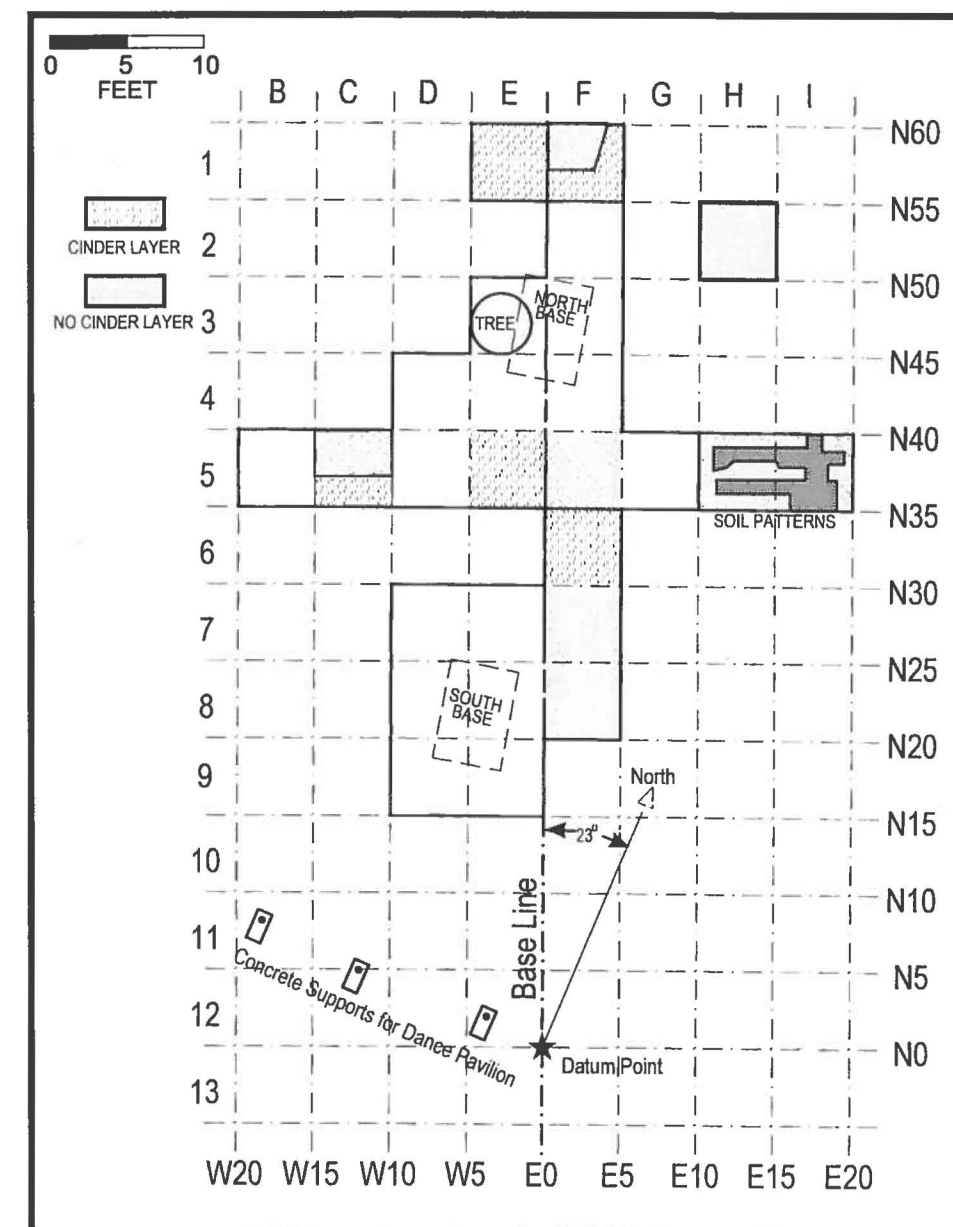


Figure 3. Archaeological Excavations at the Site of the Entrance Archway in Brandywine Springs Park.

cinder layer. We concluded that the cinders had probably been used to surface the walkways and that the top of the cinder layer was probably ground level when the archway was here. The clay soil mixed with rocks that was on top of this layer appeared to be fill that was dumped there sometime later.

Additional test units were excavated in 1994 on May 7 and Oct. 8. We found that the cinder layer was continuous in B5 and D5. However, in D7 and D8 it did not extend over the entire area (see Figure 4). We realized that the absence of a cinder layer could indicate the site of a structure and if the walkway extended all around the structure, the outline of the cinder layer would define the outside walls of the structure. We thought we had located the inside rear corner and adjacent walls of the south base, but we decided later that these cinder outlines probably defined an additional structure that was attached to the back side of the south base - possibly the ticket booth that was added at the same time as the trolley loop

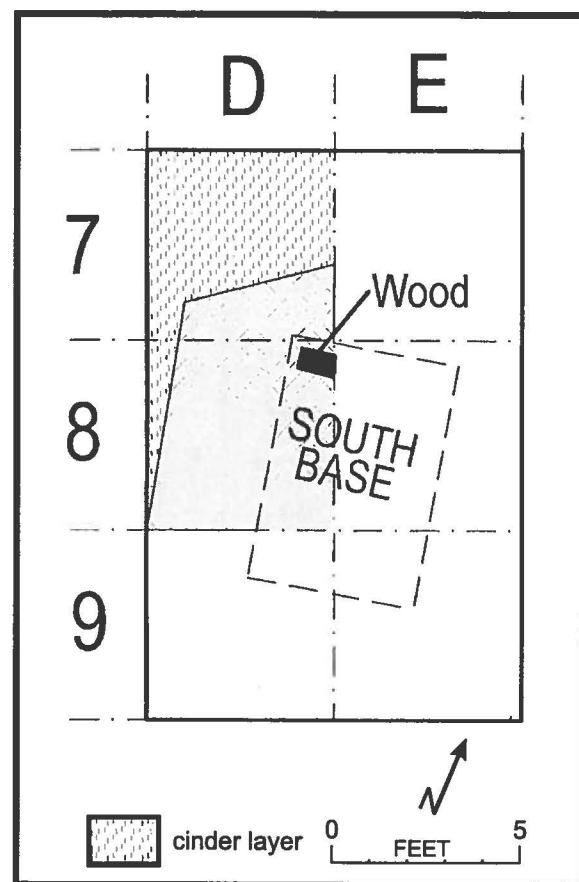


Figure 4. Area of Cinder Layer (stippled area) in Test Units D7 and D8.

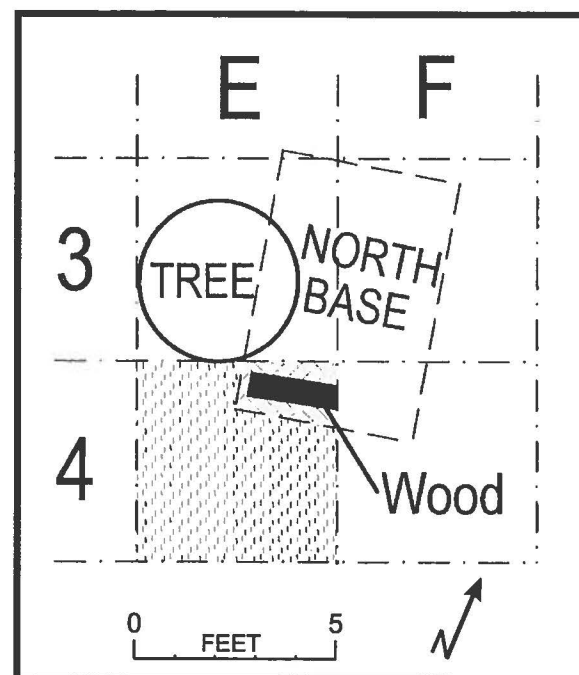


Figure 5. First Excavation into the Area of the North Base.

in front of the archway. The rotting wood beam extending into the northeast corner of D8 was noted, but it did not fit into any pattern at that time. Test unit D8 was dug to a depth of 3.5 feet to search for stability to this tall structure, but nothing was found.

In the northeast corner of test unit E4 (Figure 5) we noted another rotting wood beam, but at the time we did not realize we had reached a corner of the north base because the many tree roots in this area obscured the fact that this was a cinder-free area.

Excavations carried out on Oct. 29 and Nov. 5 & 19 of 1994 completed our work at this site as shown in Figure 6. The inside and outside front corners of the south base were established by the outline of the cinder layer in test units E8 and E9. In Figure 7, the boundary of the cinder layer is marked with a light-colored ribbon. The area with no cinder layer has been excavated to a greater depth to expose the rotting wooden beams along the inside and outside edges of the south base. The one on the right is an extension of the one that was observed in D8. They appear to be part of the foundation that supported the archway. Excavation of D9 confirmed the extension of the wood beam along the outside edge, but did not help to determine the southwest corner. The depth measurement (from front to back) of the archway bases was calculated from measurements taken from photographs once the front dimensions were known.

At the north base, the outline of the cinder layer in F4 established the inside front corner. Test unit F4 was not dug below the level of the cinder layer and thus we did not confirm that the rotting wood in E4 extended into F4. The excavation of F2 and F3 established the outside front corner. Test unit E3 was only partially excavated because of the tree and many large roots extending from it, but we were able to identify a cinder-free area along the east side. The north base was also observed to have a wooden beam buried along the outside edge and a similar one appears to be on the inside edge. We could not determine a purpose for the large pipe found there other than possibly being part of the foundation.

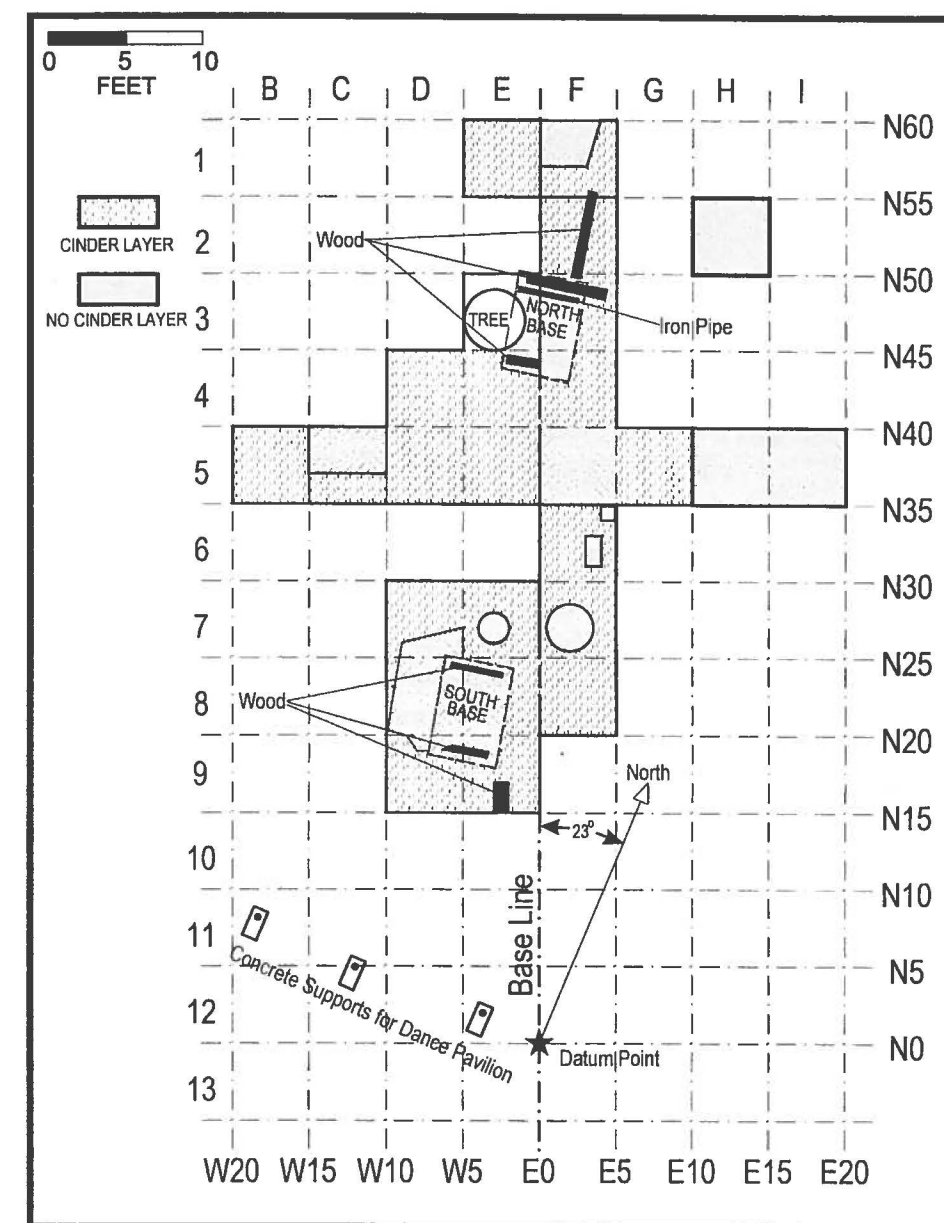


Figure 6. Archaeological Excavations at the Site of the Entrance Archway in Brandywine Springs Park.

The span of the archway was found to be 19 feet and the overall dimensions were 32 ft. x 4.5 ft. and about 50 ft. tall. The grid map coordinates of the four corners of each base are:

	<u>North Base</u>	<u>South Base</u>
Northeast Corner	N49.2E3.5	N42.2W1.6
Southeast Corner	N42.5E2.2	N17.5W3.0
Southwest Corner	N43.6W2.5	N18.5W7.8
Northwest Corner	N50.2W0.9	N25.2W6.1

Using the information from this work, four white posts have been installed that mark the inside and outside front corners of both the north and south bases of the archway. Also, a historical sign has been



Figure 7. This is the Excavation of Test Units E8 and E9. The cinder layer is the surface outside the light-colored tape. The non-cinder area has been dug to a deeper level that has exposed rotting wood beams that appear to be part of the foundation.

placed in front of the site with a picture of the archway and a brief text with additional information. This is one of eleven historical signs about the amusement park that have been placed at appropriate places in the park.

While the primary goal of this project was to determine the exact location of the entrance archway, many interesting artifacts were also recovered. These helped us understand the site history. After cleaning and labeling all artifacts, they were cataloged. (This catalog is available at the back of our official report that has been filed with the Delaware State Historic Preservation Office). Probably the most interesting artifacts were a number of glass bottles, especially those with embossed names and addresses. These include a "Union" bottle with a Hutchinson spring stopper (1879-1920), a "Mosebach's" one-pint milk bottle from 2929 Master St., a Supplee Dairy one-pint milk bottle (1920-1930), and a "T. DiSabatino" of 507 1/2 Lincoln St. Wilmington Del. soda bottle. This last bottle by T. DiSabatino was only made during the years of 1920 and 1921. Most of these bottles were found on the top of the sooty sand layer and below the clean yellow sand fill layer that covered the west half of the site including the most of the archway foundations. The styles of bottle manufacture and the names of the bottlers show that they were all available during the park's operation. The fact that the T. DiSabatino bottle was below the overlaying fill indicates that the archway was removed shortly after 1920.

In addition to bottles, many ceramic electrical items were found including insulators, light sockets and fuse boxes. In one test unit alone we found 48 light sockets, some of them still wired together with bare copper wire. Some of the light sockets were unbroken and some were found with the inside brass and/or copper components still in good condition. A number of these were electrically connected together with one of the fuse boxes and equipped with new light bulbs and fuses to make a demonstration piece used for a symbolic re-lighting of the entrance archway at one of the monthly meetings of the Friends of Brandywine Springs.

"DOWN ON THE FARM": QUESTIONS, DIRECTIONS AND INTERPRETATIONS OF THE ARCHAEOLOGY OF DELAWARE AGRICULTURAL AND FARM LIFE, 1800 - 1950

by

**Wade P. Catts
John Milner Associates, Inc.
and
Lu Ann De Cunzo
Department of Anthropology
University of Delaware**

Abstract

Since the mid-1980s, archaeologists working in Delaware have been confronted by issues of research, significance, and context posed by the state's thousands of 19th and 20th century agricultural sites. Cultural resource managers, academics, and state archaeologists are challenged by the ways that the "cultures of agriculture" can be archaeologically examined, and have brought a variety of methodologies, goals, research questions, and interpretive strategies to bear in their study of these prevalent sites. Cognizant of the negative to ambivalent attitude of some agencies concerning the significance of farmstead sites ("down on the farm"), Delaware archaeologists have sought to infuse their studies with historical contexts and interpretations that make their research more than just another study of life "down on the farm." This paper reviews Delaware's management studies that provide rich historical contexts, summarizes inventoried sites associated with the period, and discusses the research questions that have guided archaeological investigations. Examples of survey and site specific projects will serve to illustrate the successful integration of historical context and archaeological evidence in the study of Delaware agricultural households and material life, agricultural landscapes, and agricultural technology.

Introduction

The noted American historian Richard Hofstadter reminds us that, "the United States was born in the country and moved to the city, "(Hofstadter 1955:23) and indeed you could substitute for "U.S." the names of any state in the Middle Atlantic, for the rural roots of the region are ubiquitous. According to the U.S. Census, until 1900 the majority of Americans resided in the country, and in Delaware the population was largely rural until after World War II (Passmore 1978:7). The ideas presented here about the agricultural properties of Delaware are grounded in this understanding of the significance of the state's rural heritage.

This paper covers a century and one-half, from 1800 to 1950, a time when Delaware agriculture and farm life underwent profound and lasting changes. This is by no means unique to Delaware, since during the same period agricultural communities throughout the Middle Atlantic were grappling with economic, social, technological, and other cultural changes (Clark 1991; Fitzgerald 1991; Hart 1991;

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Hofstadter 1955:38-46; Swierenga 1983:93). By 1800, farmers in Delaware's agricultural regions had been raising field crops, orchard fruits, vegetables, and livestock for their own use and for local, regional, and international exchange for more than a century. Rapid population growth in the late eighteenth and early nineteenth centuries forced many new farmers to clear and farm lands of poor or marginal quality, especially in the northern regions. Then, beginning in the second decade of the 19th century, erosion, exhausted land, and decline in staple crop prices led many to migrate to better lands in the west. By 1830, abandonment and redistribution of land remade the state's agricultural landscape. Throughout the region, labor shortages caused by the Civil War's need for manpower were exacerbated by the mechanization of farms, and during the second half of the century changes in farm technology altered patterns of labor, farmstead layouts, crop production, and the composition of livestock herds (Lee 1982:57-77; Rasmussen 1965). Over the next 100 years, industry, urbanization, and transportation developments helped transform the Delaware farmers' world, albeit in different ways and at different times in different regions (De Cunzo and Garcia 1992,1993). The transformation took various forms across the regional landscapes in struggles over land, credit, labor, and religion; renegotiation of the constellation of farm products; reforms and advances in farming practices, technologies, exchange, and markets; and in the manipulation of the material world.

Historical archaeology at Delaware agrarian properties is illuminating the agricultural traditions, transformations, and "cultures of agriculture" that formed the lifeblood of the majority of Delawareans for three centuries (De Cunzo and Catts 1996). Especially in the last decade, archaeologists working in Delaware have been confronted by issues of research, significance, and context posed by the state's thousands of nineteenth and twentieth century agricultural sites. Cultural resource managers, academics, and state archaeologists are challenged by the ways that the "cultures of agriculture" can be archaeologically examined, and have brought a variety of methodologies, goals, research questions, and interpretive strategies to bear in their study of these prevalent sites. Cognizant of the negative to ambivalent attitude of some agencies concerning the significance of these sites ("down on the farm"), archaeologists working in Delaware have sought to infuse their studies with historical contexts and interpretations that make their research more than just another study of life "down on the farm." This paper reviews Delaware's management studies which provide rich historical contexts, summarizes inventoried sites associated with the period, and discusses the research questions that have guided archaeological investigations. Examples of survey and site specific projects will serve to illustrate the successful integration of historical context and archaeological evidence in the study of Delaware agricultural households and material life, agricultural landscapes, and agricultural technology.

Management Studies and Cultural Inventories

To date (1996), the Delaware state cultural resource inventory contains data produced by more than 60 reconnaissance surveys that have located sites related to the "cultures of agriculture" in Delaware dating from the nineteenth and twentieth centuries. It is no surprise that areas of intense and/or potential development have received the most attention, particularly the state's western Piedmont, northern Upper Peninsula (or Upper Coastal Plain), central Lower Peninsula (northern Lower Coastal Plain), and Atlantic Coast. Through planning studies for large-scale highway projects (such as those conducted for State Routes 1, 7, 41, 301, 113, 404, and 18), archaeologists have examined broad swaths cutting through diverse environmental and thus cultural regions. Over 40 intensive surveys have tested identified sites to determine their boundaries, integrity, and National Register eligibility. Tied to highway construction schedules, more than one-half of these intensive surveys, along with most of the approximately 20 data recovery archaeological investigations of nineteenth and twentieth-century agricultural places, have focused on project areas in the Upper Coastal Plain of New Castle County.

By early 1995, Delaware archaeologists had identified 415 agricultural complexes, farm tenant dwellings, slave quarters, migrant workers houses, farm outbuildings, and agricultural and mill complexes occupied between 1830 and 1940 in New Castle and Kent Counties, and beginning as early as 1770 in Sussex County (based on temporal parameters of completed historic contexts). Of these, 30 sites (7.2%) lay in the Piedmont, 95 (22.8%) in the Upper Coastal Plain of New Castle County, 70(16.7%) in the Lower Coastal Plain in Kent County, 100 (24.1%) in the Sussex Lower Coastal Plain, 70 (16.7%) in the Delaware River and Bay coastal, tidewater region, and 50 (12.5%) in the Atlantic coast region (De Cunzo, n.d.).

Unfortunately, this inventory embodies several survey and recording biases that limit its utility for the kinds of regional analysis we're seeking. First, in compliance with National Park Service Guidelines, the inventory includes only sites with **demonstrated** intact archaeological remains. Historical and architectural studies show that the inventory currently excludes thousands of **potential** archaeological sites of agricultural places. For example, the initial planning study for the New Castle and Kent County portions of the State Route 1 corridor recorded almost 1,200 nineteenth through mid-twentieth-century agricultural sites with archaeological potential — in a **single** corridor (albeit a large one). Second, the inventoried sites cluster in areas of intense development, especially along highway and sewer corridors where Federal mandates have required cultural resource surveys. Finally, for a variety of reasons, including historical differences in regional farming practices, the site inventories reflect temporal biases. In New Castle and Kent counties, very few agricultural properties established after 1880 appear in the inventories, and farms, farm tenant houses, and other agricultural sites used for comparatively short time-spans are poorly represented. In Sussex County, sites representing short-term early nineteenth-century occupations and long-term agricultural establishments postdating 1830 are under-represented. In sum, archaeologists in Delaware have identified only a very small proportion of the state's agricultural places rich in archaeological potential.

Historical Contexts and Research Questions

In 1990, archaeologists from the University of Delaware Center for Archaeological Research prepared a *Management Plan for Delaware's Historical Archaeological Resources* (De Cunzo and Catts 1990) that built-on and elaborated on over 30 years of existing research at historical sites in Delaware. Discussion and consultation with Delaware archaeologists from state agencies, consulting firms, and academia during preparation of the *Plan* demonstrated the need for better guidelines and criteria to guide decision-making regarding individual sites' significance, research potential, and treatment. As a result, fully-developed Historic Contexts were completed for the archaeology of agriculture and rural life in nineteenth and twentieth-century Delaware (De Cunzo and Garcia 1992,1993). Funding for the *Plan* and the Historic Contexts was provided by the State Historic Preservation Office with support from the National Park Service's Historic Preservation Fund.

The Historic Contexts have proven important in defining the "cultures of agriculture" in Delaware. Their cultural-historical narratives draw not only on archaeological research, but on the work of our colleagues in Delaware history, vernacular architecture, and rural landscape studies, and on additional, although limited, forays into a variety of primary historical records, such as federal agricultural and population censuses, Delaware Department of Agriculture publications, and local court records.

These studies opened a window on the rich regional diversity and character of "agricultural cultures" in Delaware during this period, a product of ecological variation and differences in production strategies, market orientation, and social orders influencing and embedded in historically-constituted cultural

differences. Foremost among these regional cultures are those that developed, from north to south, in the hilly, rocky, though generally fertile Piedmont; on the low, rolling topography of the Upper Coastal Plain, featuring the state's finest agricultural soils, bisected by broad waterways, and fringed with extensive wetlands; in the less fertile southern end of the Upper Coastal Plain, in southern New Castle County; in the sandy, flat, relatively featureless landscape of the Lower Coastal Plain of Kent County; in the Lower Coastal Plain of Sussex County, geographically and culturally more distant from the urban- and industrial-influenced north; and in the forested Cypress Swamp of southern Sussex County.

The *Management Plan* outlines a **contextual** historical archaeology of these "cultures of agriculture," useful in building frameworks for assessing site significance (De Cunzo and Catts 1990b; Lees and Noble 1990; Wilson 1990). The material world, people, and their ideas and actions have meaning only in their cultural and societal contexts. Recovering the past must therefore proceed from constructing and reconstructing a multitude of contexts—in sum, the contexts of people, culture, histories, and places. In order to develop historical contexts for the "cultures of agriculture" in Delaware, the *Management Plan* outlined four broad research domains that could be applied diachronically and synchronically in the examination of archaeological sites. The research domains were purposefully broad so that a wide range of theoretical orientations and methodologies could be used by archaeologists working in the state. The interdependent research themes of Landscape, Domestic Economy, Manufacture and Trade, and Social Group Identity, Behavior and Interaction have been applied with some success to the study of nineteenth and twentieth century sites in the state (De Cunzo and Catts 1990a; 1990b; 1996).

Finally, multiple connotations underlie our research. The archaeological site has always been the essential building block of historical archaeology. We begin with places where people have left material traces of their lives. The agricultural place is viewed as the totality of the farmstead, not simply the dwelling house and its immediate surroundings, but the complete farm, including fields, woodlots, fencelines, orchards, and water courses. Excavations may not, indeed rarely do, occur in these places, but knowledge of these environmental and cultural features is imperative (Ingold 1993; Moore and Witham 1996; Rodman 1992). Analyzing the multitude of details these places offer, we first reconstitute the relationships between things and reconstruct the material world of the place at discrete moments in time; we also document the ways people, animals, and physical phenomena and processes change it across time. Short-term or limited site occupations often make this reconstruction easier, but it is also possible at many sites with long occupation spans. We then contextualize the place in its settlement system, moving out from the site landscape to the neighborhood, community, region, and beyond.

Next, de-centering the material world, we refocus on the people, placing them into the places they inherited and recreated. Technological and economic contexts influence the form and utility of the landscapes and material culture people create. But people also intend the material world to communicate; in a myriad of arenas, including architecture, dress, and diet, it must express cultural values and actively facilitate social performance and the processes of constructing, contesting, and transforming social identity and order. To comprehend this dialogue "in the active voice" requires attention to the total material world of the place, once again ranging from the dwelling house and its immediate environs to the fences, orchards, and fields that comprise the totality of the farmstead. Through and in the material world, cycles and systemic contexts of people's choices are perceivable; we chart their material consequences and the ways they channel subsequent action and interaction. Finally, seeing the cultures that inform people's choices we come full circle.

Reconstituting the "Cultures of Agriculture"

Sites that can contribute to this process of elucidating the cultures of Delaware agriculture are **significant** sites, eligible for listing on the National Register of Historic Places, and candidates for Phase III investigations in the CRM context. Seven agricultural property types are proposed by the Historical Contexts, as follows: Agricultural Complexes; Dwellings; Outbuildings; Quarters; Transport Facilities; Structures; and Commercial/Industrial Outbuildings (De Cunzo and Garcia 1992:234). Delaware's Historical Contexts for agricultural sites described above offer criteria for evaluating integrity and significance grounded in this approach. For example, the "Agricultural Complex" property type — defined as a farmstead, or the main compound of the farm, encompassing at least one dwelling along with domestic and agricultural outbuildings and yards, gardens, and activity areas associated with them — must exhibit physical integrity in the archaeological expressions of their defining components, such as buildings, landscapes, archaeological strata and features, soil chemical signatures, material culture assemblages, faunal and ethnobotanical assemblages. Temporal integrity can be either short or long-term, provided the occupation of an identifiable period(s) can be explored. For agricultural complexes dating from the nineteenth and twentieth centuries, historical documentation and oral history are important in the determination of site significance, provided that the site is extensively represented in a diverse array of these sources. However, the lack of documentation may be equally significant, particularly if the site represents a unique type of agricultural place, a type not already archaeologically investigated, and/or a type that typically is poorly documented, such as those occupied by poorer and often African American tenants. The level of "representativeness" of a particular farmstead also plays a role in the determination of significance, including such criteria as farm type, geographical zone, temporal period, tenure, ethnicity, and household composition. The goal is to study archaeologically a representative sample of agricultural places that are both typical and atypical, when measured by these criteria. Association with a person or event significant in local, regional, or national history or culture should also be considered, provided that intact archaeological resources directly associate with the significant person or event. Finally the Historic Contexts suggest that agricultural complexes are significant if research questions related to **at least one** of the research domains outlined above can be addressed, keeping in mind that the complexes potential to address research questions must be measured in the context of the farm of which it was historically a part (De Cunzo and Garcia 1992:311-315).

Research vectors in the examination of Delaware's agricultural places are as numerous as the theoretical viewpoints and methodological considerations that have been brought to bear by archaeologists working in the state. The early nineteenth-century crisis in Delaware agriculture, the subsequent impact of agricultural reform in the middle decades of the century, the reorganization of the labor force after the Civil War, and an intensification of industrial processes in some sectors of Delaware agriculture are a few examples of issues that can be examined through detailed case studies of agricultural places. Architectural historians working in the state have identified architectural rebuilding cycles occurring at patterned intervals throughout Delaware, intervals that parallel significant social and economic changes (Herman 1987:128). Consisting of three distinct components (replacement, transformation, and new construction), these rebuilding cycles are adaptable to archaeological investigations, providing ways of examining changes across time and space. Such an approach provided information not only on standing structures from the period, but also on the farmsteads that do not survive, or as Dell Upton has termed them, the "winners" and the "losers" (Upton 1983).

The abandonment and reorganization of farmsteads in the early years of the nineteenth century has been observed at archaeological sites in New Castle and Kent Counties. At the Stewart Farm, the owner-occupied farmstead established in the eighteenth century was vacated in favor of a newer brick house and farm complex located nearby; the original farm became a tenant-occupied site sheltering seasonal laborers who worked the grain fields of the land owner (Shaffer et al. 1988). In some cases, such as the John Darrach store and tenancy, agricultural places that had been created several generations earlier were obliterated and razed during the reorganization of the agricultural landscape, plowing under and planting over all vestiges of the buildings, work yards, wells, refuse dumps, and gardens (De Cunzo et al. 1992).

After the Civil War, farm machinery advances spurred landholding farmers' need for additional arable land, a trend apparent at the Cazier tenancy, where archaeologists documented the gradual encroachment of fields over the work yard around a small brick tenant house during the second half of the nineteenth century and into the first decades of the twentieth century (Hoseth et al. 1994). Here fencelines, gardens, and privies were shifted closer to the house, mirroring changes in farming technologies that allowed for the cultivation of more land and the harvesting of more produce than in previous years. At the same time the labor force of rural areas was reorganized to keep pace with agricultural reforms. The archaeological investigation of the Sidney Stump Site revealed the remains of an African American homelot on the outskirts of Glasgow during the last quarter of the nineteenth and first quarter of the twentieth centuries. An African American laborer's home, the site contained evidence of organizational and spatial division of the homelot in the context of a capitalist agricultural community, and produced an assemblage of artifacts that illustrated the careful incorporation of the products of consumer industries into the family, religion, and identity of the Stump family (Catts and Custer 1990; De Cunzo n.d.).

Rural industries based on agricultural society expanded in Delaware in the second half of the nineteenth century. Besides obvious places such as blacksmith and wheelwright shops (cf. Catts et al. 1994), Delaware archaeologists have investigated other, less familiar, industrial sites such as agricultural implements works and canneries. Canneries, like the Collins, Geddes factory in Lebanon, operated in many small Delaware towns, employed hundreds of skilled workers in the packaging of fruits and vegetables and in the manufacture of tin cans, and were directly related to changes from grain to market garden production. The archaeology of the Collins, Geddes factory recovered the remains of the factory and tinsplate trash, providing evidence of the transition from craft production to mass production in the manufacture of tin cans (Heite 1990).

Archaeological studies of single sites such as those summarized here are of course insufficient to elucidate the broad cultural contexts and consequences surrounding the issues raised above. We need to assemble studies of sample farms; farms which survived the crisis in agriculture and farms that did not. They must represent farmsteads, residences, and agricultural industries; the diversity of periods of occupation, property type, and ownership; different geography and environment.

Conclusion

In 1976, agricultural scholar James Malin called for an integrated multi-disciplinary approach for the study of rural America, where rural histories (or narratives) examine and explore the interrelationship between the countryside, market towns, and urban centers (Swierenga 1983:94). Archaeological sites of farmsteads represent parts of larger rural communities, and scholars in archaeology, geography, and history should seek to focus their research on the "tale of the development — and often, decline — of

rural communities as they have interacted with expanding urban centers" (Swierenga 1983:93). Although archaeologists working in Delaware have recognized the importance of community, we have yet to fully explore the concept of community, the nature and range of rural communities, and their transformation over time (De Cunzo n.d.: 30). Archaeology can play a significant role in the creation of these agricultural narratives, through the development of explanatory studies about rural communities as ecological, social and cultural systems.

Delaware historical archaeologists have begun to construct richly-textured, contextual studies of particular agricultural places, viewed through the multi-refracting prism of material culture and material life. In Delaware and throughout the Middle Atlantic, the "cultures of agriculture" formed the basis for patterns of rural life during the nineteenth and early twentieth centuries. The archaeological study of farmsteads and rural sites dating from 1800 to 1950 is as equally revealing about American society and culture as are studies of seventeenth century plantations or prehistoric base camps, perhaps more so in that development and suburbanization are rapidly erasing the rural roots of our most recent past. Many scholars, managers, and policy makers have inherited the cultural biases of the last century which denigrated the importance of farmers in society at large; in effect they are "down on the farm" (Hofstadter 1955:23-59). The view of agriculturists as "hayseeds" and uneducated "rubes" has persisted to the present, and with it the comments that "we can't learn anything from late 19th-century farmsteads", or "we've got thousands of these!" (Wilson 1990). The research in Delaware suggests otherwise; excavations at nineteenth-century sites has included tenant house lots, the properties of wealthy and marginal farmers, sites of different ethnic groups and identities, and the locations of rural industries that formed crucial parts of the larger agricultural community. More historical archaeological work is needed at agricultural places dating from this period, so that we can construct and reconstruct life "down on the farm."

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