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Hopewell Archeology: Volume 2, Number 2, October 1997

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Hopewell Archeology:

The Newsletter of Hopewell Archeology in the Ohio River Valley

Volume 2, Number 2, October 1997

1. Current Research at Hopewell Culture National Historical Park By Bret J. Ruby, Hopewell Culture National Historical Park, Ohio

Archeological research is an essential activity at Hopewell Culture National Historical Park. An active program of field research provides the information necessary to protect and preserve Hopewellian archeological resources. The program also addresses a series of long-standing questions regarding the cultural history and adaptive strategies of Hopewellian populations in the central Scioto region.

Presented below are preliminary notices of recent field projects conducted by park personnel with the assistance of the National Park Service's Midwest Archeological Center, Lincoln, Nebraska. These recent efforts are focused on three Hopewellian centers in Ross County. Two of these centers, the Mound City Group and the Hopeton Earthworks, are administered by the National Park Service as units of Hopewell Culture National Historical Park. The third center, the Spruce Hill Works, is privately owned and is being considered for possible inclusion in the park.

Research at the Mound City Group

Work at the Mound City Group was prompted by plans to install a set of eight new interpretive signs along a trail encircling the mounds and earthworks at the site. Although the Mound City Group has been the focus of archeological investigations for almost 150 years, previous research has focused almost exclusively on the mounds and earthworks themselves (Figure 1), with little attention paid to identifying archeological resources that may lie just outside the earthwork walls.

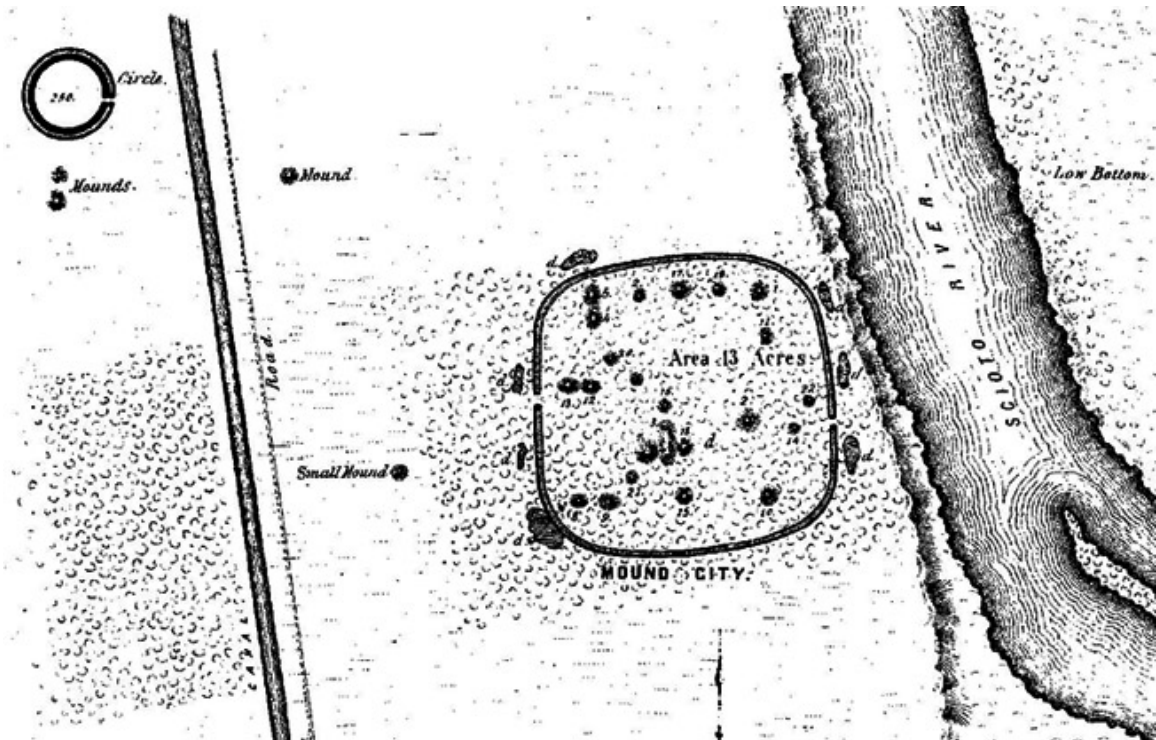


Figure 1. A portion of the Mound City Group as mapped by Squier and Davis in 1846. Note that the canal shown west of the main mound group is the Ohio and Erie Canal

As a result, existing documentation was insufficient to determine if archeological resources might be disturbed by the sign installations. Furthermore, the earlier focus on mound explorations has limited the availability of data that would permit an evaluation of the extent to which these mound and earth-work centers served non-mortuary functions, whether in the domestic or corporate-ceremonial spheres.

A 50-x-50-cm test unit was excavated at the proposed location of each interpretive sign. The test units were distributed along the west, south, and east sides of the earthwork enclosure, at distances ranging from about 5 m to 50 m from the earthwork walls. Each test unit disclosed archeological evidence of the use of the Mound City Group as the site of Camp Sherman, a U.S. Army training camp used during World War I. All test units contained debris relating to this occupation (especially nails, glass, coal, and cinders). Several locations produced evidence of grading, cutting, and filling resulting from the construction and demolition of the camp. In some cases, prehistoric chert debitage and ceramic vessel fragments were recovered from these disturbed contexts. However, at one location a railroad bed constructed during the Camp Sherman era had effectively sealed and protected a prehistoric midden deposit from further disturbance. The artifact assemblage contained in this deposit (chert debitage, undecorated ceramics, wood charcoal, animal bone) suggests that activities including food processing, consumption, and discard were conducted nearby. Future research should seek to determine whether these activities indicate a nearby domestic habitation, or whether they represent corporate-ceremonial activities associated with the construction or use of the mound and earthwork complex. These limited investigations demonstrate that significant archeological deposits from both the Hopewellian and Camp Sherman occupations remain intact outside the earthwork walls at the Mound City Group.

These deposits hold tremendous potential for problem-oriented investigations into the nature, variability, chronology, intensity, and duration of Hopewellian activities at the site.

Research at the Hopeton Earthworks

The Hopeton Earthworks, located across the Scioto River opposite the Mound City Group, has been a unit of Hopewell Culture National Historical Park since 1980. The main features of the site consist of conjoined circular and square earthen enclosures, each encompassing nearly 20 acres, and a set of parallel linear embankments stretching for nearly half a mile toward the Scioto River (Figure 2).

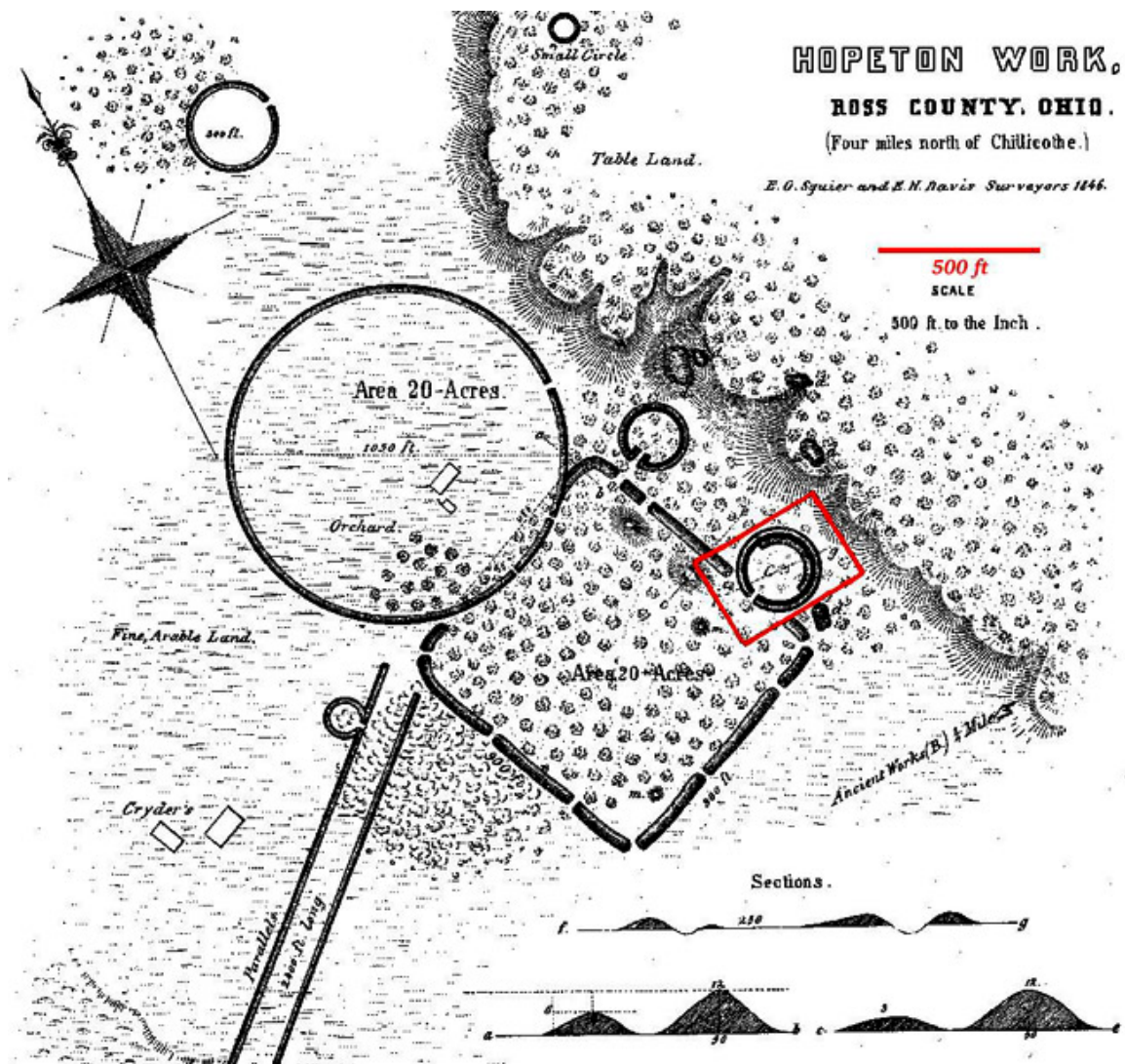


Figure 2. Part of the Hopeton Earthworks mapped by Squier and Davis in 1846. The resistance survey area (discussed in the section entitled "Remote Sensing") is in the red rectangle around the southernmost circular enclosure. Areas in red are alterations made to the original map.

Originally, the walls of the square enclosure stood nearly 12 feet high, and the circular enclosure and linear embankments stood between two and five feet high. Altogether, the site ranks among

the largest of the Hopewellian earth-work centers and represents a truly monumental investment of labor in public architecture.

Despite the great size and complexity of the Hopeton Earth-works, the site has received little archeological attention. There are a series of important 19th century maps of the site, but little else is known about the age, duration, or function of the site, or the range of activities that may have been conducted there. Very little of the surrounding landscape has been systematically surveyed to identify nearby habitations and other activity areas. The nature and chronology of earthwork construction at the site remains undocumented.

Surface Collections

During the spring of 1996, an intensive survey was conducted on about 65 acres in the cultivated fields surrounding the earthwork walls. The survey discovered and mapped the locations of numerous habitation sites and other activity areas representing at least 6,000 years of Native American and Euroamerican occupation. By far the greatest density of cultural debris relates to Hopewellian occupations. Hopewellian artifacts (primarily projectile points and lamellar blades) were found at many scattered locations, with one notable concentration just southwest of the earthwork walls. This location is not associated with any particular topographic or hydrologic feature, suggesting that proximity to the earthwork walls was the primary determinant of its location. This further suggests that this activity area may be associated with the use or maintenance of the earthworks rather than a domestic habitation. Test excavations in this area conducted during the summer of 1997 will be reported in a future issue of Hopewell Archeology.

Remote Sensing

Early maps and aerial photographs of the Hopeton Earthworks show two small circular enclosures along the eastern edge of the square enclosure (Figure 2). Cultivation and erosion have obliterated any surface traces of these features.

An earth resistance meter (Geoscan Research RM-15) was used over the past year to search for buried remnants of the southernmost circular enclosure. Resistance measurements were recorded at 1 m intervals within an 80 m by 120 m grid. The measurements disclosed a region of low electrical resistance that corresponds in shape and size to an interior ditch depicted on early maps running parallel to the circular embankment (Figure 3). Excavations designed to "ground truth" the resistance data are planned for 1997.

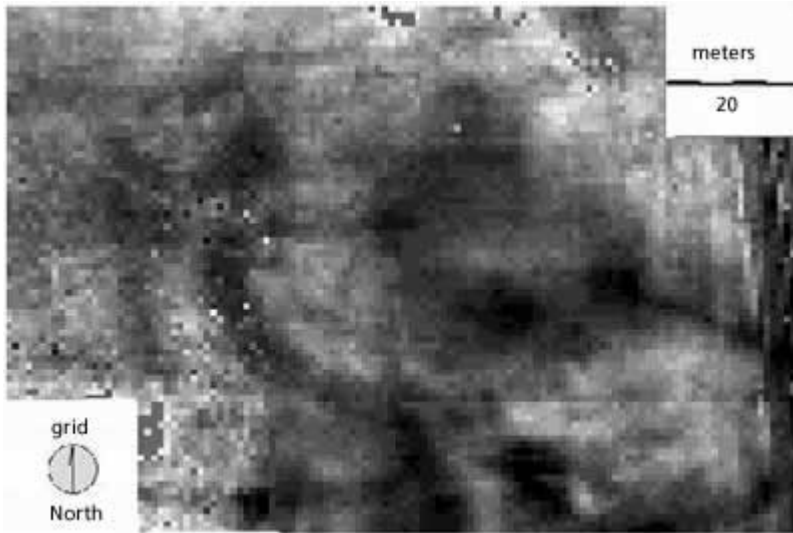


Figure 3. Resistance map of the area around a circular enclosure shown in Figure 2. Low resistance areas (dark) correspond to an interior ditch.

The preliminary results suggest that remote sensing can be an efficient and non-destructive means of documenting earthwork features at the Hopeton Earthworks and similar sites.

Excavations

During the summer of 1995, the National Park Service and Ohio State University began a cooperative salvage investigation of a Hopewellian occupation located just outside the park on lands owned by the Chillicothe Sand and Gravel Company (see Hopewell Archeology, Vol. 2, No. 1). The first season's investigations employed remote sensing (magnetic and resistance surveys), surface collection, and excavation to identify and recover data from a series of refuse-filled pit features that likely represent a household-scale Hopewellian occupation. Subsequently, Dr. John Weymouth (University of Nebraska, Lincoln) conducted further analysis of the remote sensing data in light of the information revealed through excavation. This further analysis suggested that several additional pit features may have gone undetected during the excavations. During the summer of 1996, additional excavations were targeted at these anomalies and successfully identified several additional refuse-filled pits.

Near-surface geophysical remote sensing greatly aids in the identification of buried archeological deposits. The findings underscore the necessity of truly inter-disciplinary cooperation between geophysics and archeology.

Further processing and data analysis are continuing under the direction of Dr. William S. Dancy (Ohio State University). Results will be summarized in a future issue of Hopewell Archeology and elsewhere.

Earthwork Construction

Monumental geometric earthwork enclosures have long stood as a testament to the remarkable scale and complexity of Ohio Hopewell corporate-ceremonial life. Nevertheless, few investigations have specifically targeted earthwork walls as a focus for archeological investigation. During the summer of 1996, a wall segment at the Hopeton Earthworks was explored by means of a 1 m x 14 m hand-excavated trench located near the northwest corner of the large square enclosure (Figures 2, 4).

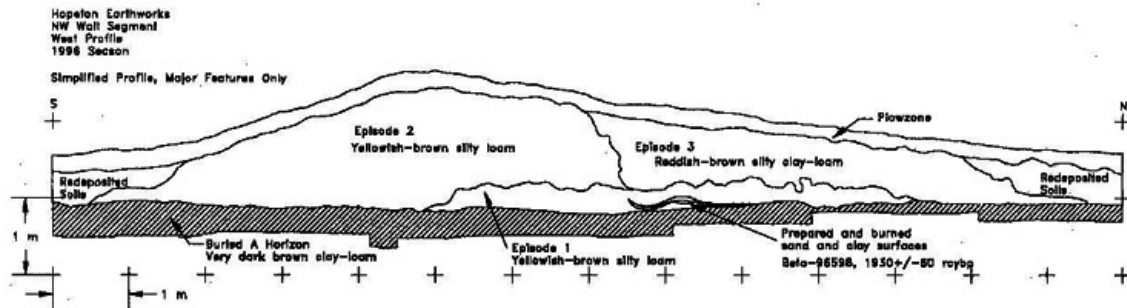


Figure 4. Profile of the trench dug along the northwest wall segment of the Hopeton Earthworks. This is the west profile and represents data recorded in the 1996 field season.

One goal of the investigation was to establish a baseline assessment of the current condition of the earthworks. The excavations demonstrated that almost half of the wall segment's original 4 m of relief has been lost to plowing and erosion. The wall retained a high degree of integrity below the disturbed surface. Future management will seek to maintain a stable vegetative cover and monitor the earthwork for change from this baseline condition.

A second goal of the investigation was to document earthwork construction methods and assess the intensity and frequency of construction episodes. The excavations encountered a deep, highly organic, undisturbed A horizon consistent with a prairie soil beneath the wall. This suggests that a prairie opening in the bottomland hardwood forest was selected for earthwork construction to avoid extensive forest clearance. At least three principal construction episodes were identified. A prepared surface composed of thin (ca. 1 cm) strata of sand and clay atop an irregular deposit of silt loam soil lay on the original ground surface. This surface was overlain by a deposit of wood charcoal that had burned in situ. Flotation processing of this charcoal deposit yielded many small flecks of mica but no other cultural materials, suggesting a ceremonial context.

The first construction episode concluded when this deposit was capped with a low (ca. 20 cm) mantle of yellowish-brown silt loam soil. The second episode raised the wall to at least 2 m in height with a massive unit of yellowish-brown silt loam soil. The final episode added another massive unit of reddish-brown clay loam soil to the exterior aspect of the wall. The pace and timing of these three episodes remain unclear. Individual basket loads were occasionally evident throughout the wall.

A final goal of the investigation was to begin to build intra-site and intersite chronologies of earthwork construction and use in the central Scioto region. Wood charcoal from the deposit at the base of the wall was dated to 1930 ± 60 radiocarbon years before the present (Beta-96598, A.D. 20 ± 60, uncalibrated). Interestingly, the calibrated date of this sample is contemporary with four samples drawn from sub-mound and sub-earthwork features at the Mound City Group, located only 3 km west of the Hopeton Earthworks. If this chronology proves accurate, it suggests

that these two mound and earthwork complexes may have functioned together as a single closely related unit.

These investigations at Hopeton provide several important insights. Site selection may have been influenced by the distribution of open, prairie environments. Earthwork construction was conducted within the context of a non-mortuary ceremonialism as evidenced by the prepared surface, burning and exotic raw materials (mica) associated with the initial construction episode. The color and placement of various soils may also bear symbolic significance. Earthwork construction involved multiple episodes, an observation that must be taken into account when estimating the pace and intensity of labor investment in monumental architecture. The apparent contemporaneity of geographically proximate mound and earth-work centers such as Mound City and Hopeton has significant implications for reconstructions of the regional Hopewellian social landscape.

Spruce Hills Works

The Spruce Hill Works site was described as early as 1811 as a stone-walled fortification ringing the brow of a prominent hill overlooking the Paint Creek valley southwest of Chillicothe (Figure 5). Later investigations at other hilltop enclosures in southern Ohio such as Fort Ancient, Fort Hill, and the Pollack Works have determined that many of these were built during the Hopewell period for ceremonial rather than defensive purposes. In 1987, the National Park Service began to consider whether the Spruce Hill Works might be significant enough to warrant protection and preservation, either as a unit of Hopewell Culture NHP or perhaps by some other means.

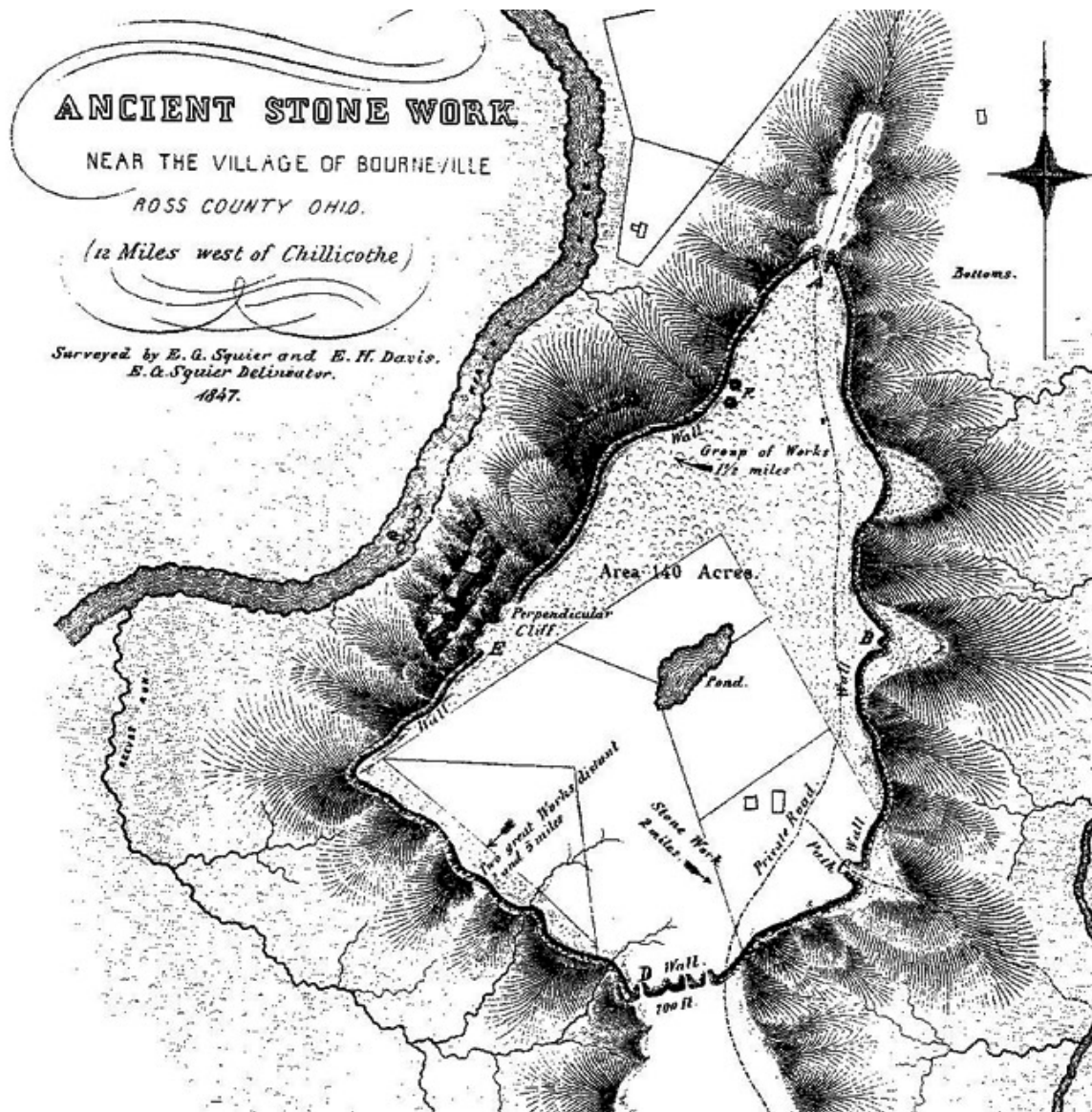


Figure 5. A map of the Spruce Hill Works made by Squier and Davis in 1847. One of the gateway features at the south end of the site was test excavated in 1995.

However, virtually no systematic scientific investigations had been conducted at the site, and some questioned whether the "stone walls" were man-made at all. Legislation enacted in 1992 directed the National Park Service to conduct further studies of the site to answer these questions and to explore options for preservation, if warranted.

During the fall of 1995, personnel from Hopewell Culture NHP surveyed the site and conducted limited test excavations near one of four opening or gateways at the southern end of the site. The encircling band of loose sandstone blocks was found to be in much the same condition and configuration as described and mapped by the earliest observers.

The stratigraphic position of the gateway features above bedrock exposures confirms their anthropogenic origin, though much of the remainder of the "wall" is coincident with a natural sandstone outcrop and may in fact be natural. Test excavations recovered fragments of a single plain, grit-tempered ceramic vessel and a diagnostic Hopewell bladelet manufactured from Vanport (Flint Ridge) flint in association with one of the southern gateway openings.

These results suggest that the Spruce Hill Works site does, in fact, represent one of several Hopewellian hilltop enclosures in southern Ohio.

Additional excavations were conducted during 1996. An excavation trench placed across one of the gateways along the southern margin of the site produced conclusive evidence for a Hopewellian authorship. The stones making up the gateway were stratigraphically separated from the underlying sandstone bedrock by more than 3 m of Wisconsin-age loess deposits.

Furthermore, the size and distribution of the stones used to construct the gateway provide evidence of intentional design: the bulk of the feature is constructed of small, rubble-sized stones while the outer surfaces are faced with large tabular blocks, perhaps to stabilize the structure or modify its outward appearance. A diagnostic Hopewell bladelet of Vanport flint was found embedded approximately 40 cm deep within the structure.

All of the early accounts of the Spruce Hill Works attest to the occurrence of considerable quantities of burned, fused, or glazed sandstones and vitrified soils at several locations along the enclosure wall. The temperatures needed to produce these effects (in excess of 1100° C) have led many to speculate that these may relate to some high temperature technology such as iron ore extraction. There is no evidence that prehistoric Native Americans ever experimented with these technologies. However, 18th and 19th century Euroamericans are known to have constructed simple iron furnaces in southern Ohio and elsewhere.

During the present investigations, test excavations at three locations documented vast quantities of these burned materials. In all three cases, the materials appear to be in secondary, redeposited contexts. The nature, origin, age, and affiliation of these materials remain uncertain.

Thanks:

A special note of appreciation is due to Edward and Mary Emily Steel, the present stewards of the Spruce Hill Works, for their friendship, hospitality, and efforts to protect and preserve the Spruce Hill Works for future generations.

2. Meeting Calendar 1997 Southeastern Archaeological Conference

Radisson Hotel and Conference Center, November 5-8, 1997. Contact Rebecca Saunders, Museum of Natural Sciences, Louisiana State University, Baton Rouge, LA; phone 504-388-6562, fax 504-388-3075.

55th Annual Plains Anthropological Conference

University of Colorado, Boulder, Colorado; November 19-22, 1997. Contact Douglas Bamforth, University of Colorado, Boulder; phone 303-492-7586, fax 303-492-1871, email: bamforth@spot.colorado.edu

1998 Conference on Historical and Underwater Archaeology

Crown Plaza Ravennia Hotel, Atlanta, GA, January 7-11, 1998. Contact TRC Garrow and Associates, Atlanta, GA; phone 404-651-2255, fax 404-651-1718.

63rd Annual Meeting of the Society for American Archaeology

Seattle, WA, March 25-29, 1998. Contact Society for American Archaeology, Washington, D.C.; phone 202-789-8200, fax 202-789-0284, email: meetings@saa.org.

3. New Publications

Two new publications of interest to Hopewellian scholars are now available:

A View from the Core: A Synthesis of Ohio Hopewell Archaeology, edited by Paul J. Pacheco, Ohio Archaeological Council, Columbus. Copies may be obtained through Eastern National, a non-profit cooperating association that supports scientific and educational programs at Hopewell Culture National Historical Park and other eastern National Parks. Eastern National, 16062 State Route 104, Chillicothe, OH 45601; 614-774-1125. \$32.95 plus shipping and handling.

Ohio Hopewell Community Organization, edited by William S. Dancey and Paul J. Pacheco, Kent State University Press, Kent. The volume is available at bookstores or from the Kent State University Press, P.O. Box 5190, Kent, OH 44242; 1-800-247-6553. \$45 cloth.

4. Notes and News

The Bellinger Site and the Goodall Tradition

In 1941, George Quimby defined the Goodall Focus and brought attention to Hopewellian sites in northwest Indiana and southwest Michigan. The Goodall focus was defined on the basis of ten sites, all with mounds, which produced pottery similar to that found in the Illinois River Valley. The Goodall Focus has been generally regarded as a regional variant of Havana Hopewell.

Mark R. Schurr has recently published a paper titled "The Bellinger Site (12SJ6) and the Origin of the Goodall Focus." The paper appeared in *Archaeology of Eastern North America* (1997), Volume 25, pages 125-142. The paper describes field investigations by the Department of Anthropology, University of Notre Dame, at the Bellinger site. The field investigations included geophysical survey using a Geoscan FM36 gradiometer and an RM15 resistance meter. The study also included excavations of a mound and a habitation area associated with the mound. The paper describes the field investigations and artifacts that were collected. Schurr offers interpretations about the sequence of mound construction, the nature and affiliation of ceramics from the site, and the nature of Middle Woodland occupation in the Kankakee Valley.

Aboriginal Use of Metals

A recent issue of *The Michigan Archaeologist* (Volume 41, Number 1, March 1996), contains a paper by John R. Halsey titled "Without Forge or Crucible: Aboriginal Native American Use of Metals and Metallic Ores in the Eastern Woodlands." The paper explores Native American use of metals and ores prior to European contact. Much of the paper is devoted to prehistoric uses of copper, which are well documented in the literature about Hopewell and the midwestern United States. However, the paper also presents useful discussion and references regarding aboriginal uses of gold, silver, lead, and iron. Many of the sites from which these latter metals have been reported are either Hopewell or more general Middle Woodland contexts. The paper is a useful summary of the evidence for aboriginal uses of metal, and it has an extensive bibliography.