

**Hopewell Archeology:**  
**The Newsletter of Hopewell Archeology in the Ohio River Valley**  
**Volume 4, Number 2, May 2001**

**1. The Hopeton Earthworks: An Interim Report**

By Mark J. Lynott

For anyone with an interest in North American archeology, Ross County, Ohio, has long been a special place. The combination of a great concentration of mounds and earthworks, along with a long history of intensive archeological research, has fascinated archeologists and the general public for more than a century. Through the efforts of legendary archeologists such as E.G. Squier and E.H. Davis, Warren King Moorehead, and William C. Mills, certain sites in Ross County have become very well known.

Recognition resulting from research at these sites has sometimes led to their being intentionally preserved. Many other potentially significant sites have been lost to agriculture or development activities without ever receiving any significant archeological attention. This presentation will describe research at a site that received very little scientific archeological attention prior to its acquisition by the National Park Service in 1990.

Hopeton Earthworks is located on the east side of the Scioto River in Ross County, Ohio. The site is situated on a Pleistocene terrace overlooking a wide floodplain area in a bend of the river. The site is located to the north of the city of Chillicothe and northeast and across the Scioto River from Mound City Group. This presentation represents an interim report on archeological investigations by the Midwest Archeological Center on a small portion of this extensive site. The area that has been investigated is called the Triangle Tract, and it located along the southwest edge of the Pleistocene terrace where two parallel earthen walls extend onto the floodplain.

**E.G. Squier and E. H. Davis**

The Hopeton Earthworks were first described by E.G. Squier and E. H. Davis in their monumental survey of mounds and earthworks in the Mississippi Valley. The site is located only four miles north of their hometown of Chillicothe. They described the earthwork as a rectangle with an attached circle. The rectangle was measured at 900 feet by 950 feet, and the diameter of the circle was 1,050 feet. The walls of the earthworks were not continuous and included twelve breaks or gateways. Two smaller circles were described on the east side of the earthwork, adjacent to the rectangle. These measured 250 and 200 feet, respectively, in diameter. Parallel walls extended southwest from the northwest corner of the rectangle for 2,400 feet to the edge of the terrace. The walls were 150 feet apart. In 1848, the walls of the rectangle were 12 feet high and 50 feet wide at their base. The walls of the great circle were 5 feet high at that time. No evidence of ditches were observed around any of the earthworks.

**From National Historic Landmark to National Historical Park**

Hopeton Earthworks received very little attention during the last half of the nineteenth and first half of the twentieth centuries. With the establishment of Mound City Group as a national monument, park Superintendent Clyde King encouraged action to preserve the Hopeton Earthworks. In 1958, the National Park Service assigned Regional Archeologist John L. Cotter to

evaluate whether Hopeton would qualify for national historic landmark status. Hopeton Earthworks was officially listed as a national historical landmark in July 1964 (Cockrell 1999).

Despite sincere efforts by the National Monument staff and local archeologists, efforts to preserve Hopeton did not begin to bear fruit until the late 1970s. Following an assessment of the condition and significance of the site by David Brose (1976), the National Park Service developed a proposal for acquisition of the site.

On December 28, 1980, the United States Congress authorized the National Park Service to purchase 150 acres of the Hopeton Earthworks. Unfortunately, funding for the purchase of the site was not immediately forthcoming, and none of the site was actually purchased until ten years later. During that decade, the site and earthworks were annually subjected to cultivation.

The extent of damage to the earthworks from agricultural cultivation was significant. In a study of aerial photographs of the site, John Blank (1985) observed that with the introduction of the modern agricultural practices and high-powered tractors in the late 1950s, the earthworks were being reduced at a rate of approximately 1.2 inches per year. At the same time, the earthworks were being widened at a rate of one foot per year. Aerial photographs of the site show that in 1938, many of the features recorded by Squier and Davis were still fairly visible. However, by 1966 all of the minor earthwork features and mounds had disappeared. In that image, the great circle, rectangle, and parallel walls can still be seen.

Agriculture is not the only industry that has eroded the integrity of the Hopeton Earthworks. Commercial gravel quarry operations began along the western edge of the terrace in 1984, under the name of Chief Cornstalk Sand and Gravel Company. This operation was greatly expanded in 1990 following the purchase of the Cornstalk facility and a major portion of the national historic landmark by Chillicothe Sand and Gravel.

Although gravel company officials were sympathetic about the loss of archeological resources from quarrying activities, they had a major investment in this property and began removing topsoil and gravel.

In 1992, Public Law 102-294 renamed the park Hopewell Culture National Historical Park and authorized the expansion of the park to include further lands at Hopeton, plus acquisition of the Hopewell, High Bank, and Seip Earthworks. This legislation provided the National Park Service with the authority to purchase the remaining lands within the National Historic Landmark boundaries that had not been impacted by gravel quarry operations.

### **1994 Test Excavations**

The Midwest Archeological Center initiated archeological testing at Hopeton in 1994. The testing was intended to be the start of a long term program to evaluate the nature of archeological materials and deposits associated with the earthworks. These investigations were designed to contribute to the discussions about the nature of Hopewellian settlement systems and the role that earthworks played in Hopewell society.

The 1994 testing program was conducted on a triangular tract of land at the edge of the terrace southwest of the earthworks. This is the location where the parallel walls described by Squier and Davis terminated, and it is an area where surface collectors had noted evidence of habitation when the site was in cultivation (Brose 1976). Consequently, a Center team spent two weeks excavating at what is now called the Triangle site, 33RO812.

The 1994 testing consisted of 10 test units covering a total of 17 m<sup>2</sup>. Most of the units were 1 m by 2 m, but a single 1-m by 1-m unit was also excavated to expose a feature. Approximately 8.5 m<sup>3</sup> of soil was excavated and screened. Few temporally or functionally diagnostic artifacts were recovered. Although artifacts were found across the entire Triangle Tract area, densities were generally low. The most likely evidence for significant occupation of this area of the site came in the form of a subsurface pit. The pit was approximately a meter in diameter and extended more than 0.5 m below the plow zone. The pit was filled with fire cracked rock, charred macrobotanical remains, and some faunal remains.

At the conclusion of this brief field investigation, it was apparent that evidence for occupation was present in the Triangle Tract, and further research was needed to determine the age, extent, and nature of that occupation.

### **Geophysical Surveys**

Further work at the Triangle Tract was postponed in 1995 and 1996 and funding for that work was shifted to Ohio State University for work at the Overly site, which was likely to be destroyed by gravel quarry operations in the immediate future. When we returned to the Triangle site in the fall of 1997, our plan was to conduct a fairly large size geophysical survey. We hoped the geophysical survey could help us in two ways. First, although no longer visible on the surface, we hoped that the parallel walls might be detected by geophysical survey techniques. Second, in our continuing effort to study prehistoric activities associated with earthworks, we hoped to use geophysical survey to identify potential subsurface features associated with Hopewell use of the site.

In 1997, we were able to survey 9,600 m<sup>2</sup> of the Triangle Tract using an RM-15 resistance meter, a Geometrics G858 cesium magnetometer, and a Geoscan FM-36 fluxgate gradiometer. In this study, the cesium magnetometer and fluxgate gradiometer proved most useful in identifying small anomalies. Field survey and interpretation of geophysical data has been guided by Dr. John Weymouth, University of Nebraska.

### **1998 Excavations**

With geophysical survey data in hand, we returned to the Triangle Tract in the summer of 1998 with the plan to use this data to guide further excavations at the site. Our efforts in 1998 were aided by the archeological staff of Hopewell Culture National Historical Park under the direction of Dr. Bret Ruby, and by students from the Milton Hershey School, under the direction of Mr. Randall Farmer.

The RM-15 resistance meter was less useful in locating smaller features, but it did collect data that may reflect one of the parallel walls. The resistance data indicates a large linear anomaly that corresponds in location and orientation to the southernmost of the two parallel walls mapped by Squier and Davis and visible on aerial photographs until about 1970. In an effort to better evaluate the nature of this anomaly, we excavated a 2-x-20-m trench across this area.

The test trench revealed a large pit or possible cross section of a ditch at this location. The feature is fairly indistinct, but the presence of small amounts of charcoal suggests it is cultural in origin. Further research is needed to better interpret this feature and to determine the nature of the soil resistance anomaly. We still hope to determine whether any subsurface features were associated

with the parallel walls, and whether they were constructed with soils from the terrace or if soils from another landform were used to build the walls.

Our geophysical survey coverage of the Triangle Tract included an area roughly 140 meters north south and 80 meters east-west. The magnetic survey of this area yielded numerous small anomalies that might be related to Hopewellian use of this area of the earthworks. To better understand the nature of these anomalies, we selected five individual anomalies to examine through excavation of 2-m by 2-m test units. We also selected two groups of anomalies to examine through excavation of a 20-m by 20-m block and a 16-m by 14-m block.

Of the 144 possible features that were identified during removal of the plow zone and subsequent scraping, only about 40 were determined to be features that can be attributed to cultural activities. The vast majority of these are small and subtle, and very hard to detect. Most of the features are pits or post molds. These generally exhibit a low density of artifacts, and very few temporally diagnostic artifacts. Overall they are indicative of limited or short-term activities.

Table 1. Radiocarbon dates from the Triangle site, 33RO812, Hopeton Earthworks.

Sample	Provenience	Uncalibrated C-14 Age BP	Method
Beta-147183	Feature 17, pit	3180±40	AMS
Beta-147184	Feature 64, pit with mica sheet	1960±50	AMS
Beta-147185	Feature 44, post mold	210±40	AMS
Beta-147186	Feature 143–144, pit	3360±60	AMS
Beta-147187	Feature 50, post mold	4850±80	Radiom.
Beta-147188	Feature 88, pit	1080±90	Radiom.
Beta-147189	Feature 149, pit	3520±60	Radiom.
Beta-147190	Feature 1, pit (1984)	3260±40	Radiom.

The larger pits are generally circular to oval in plan, with sloping sides and flat bottoms. They range in size from 0.5 to 1.0 m in diameter, and extend 0.5 to 1.0 m below the plow zone. Pit fill typically contains fire-cracked rock, macrobotanical remains, lithic debris, and temporally undiagnostic tools. Charred hickory wood from Feature 17 was processed using AMS and has yielded a date calibrated to two sigma of 1520–1390 BC (Beta- 147183). A sample of charred walnut hulls from Feature 1, another large pit filled with fire cracked rock, was processed using standard radiometric techniques and yielded a date calibrated to two sigma of 1620–1440 BC (Beta- 147190). Dates from four pits and one post mold provide evidence for Late Archaic or Early Woodland activities at the Triangle Tract.

Features which may be definitely associated with the Hopewellian occupation of the site are more limited. Feature 104 is a circular basin that was lined with clay and hardened by heat. Although there were no artifacts or dateable materials associated with this feature, this type of basin has been reported in association with Hopewell mound features at several sites in Ross County.

Feature 64 is also associated with Hopewell activities at the site. The feature is a large and generally amorphic pit that was identified through magnetic survey. Although the feature could not be clearly detected at the base of the plow zone, cord-marked, grittempered pottery and bladelet fragments were collected from undisturbed sediments below the plow zone. The outline of an irregular pit became visible at slightly less than 40 cm below surface.

Excavation of a portion of the pit fill yielded more pottery, bladelet fragments, and a sheet of mica. Conservation and examination of the mica by the Gerald R. Ford Conservation Center in Omaha, Nebraska, indicated that at least one edge of the mica had been cut and shaped. Unfortunately, the fragmentary sheet lacks any identifiable form. An AMS date on charred True Hickory wood from the pit fill yielded a date calibrated to two sigma of 50 BC – AD 130 (Beta-147184). This date is consistent with the radiocarbon date obtained by Bret Ruby from the base of the northwest wall of the Hopeton Rectangle (Ruby 1997).

Late Woodland occupation of the Triangle Tract is best documented at Feature 88. This pit was dark and circular in plan, with sloping sides and a round bottom. Unlike most features at this site, this one was loaded with fire-cracked rock, charred macrobotanical remains, faunal remains, lithic debris, chipped stone tools, and grit-tempered pottery. The pottery is cord-marked with diagonal cord-wrapped-stick impressions on the lip. The presence of substantial amounts of faunal remains makes this pit unique among the features examined thus far at the Triangle Tract. Turtle, raccoon, and elk are present in association with large quantities of deer. Examination of seven deer antler burrs from the pit show that four are still attached to the skull and three have been shed. Assuming that the fill of this pit was from a single year, the pattern of antler shedding and growth would indicate winter occupation (Bozell 2000). A sample of charred basswood from the feature yielded a radiometric date calibrated to two sigma of AD 770– 1160 (Beta-147188). The amount of artifactual material found in this pit contrasts markedly with the relatively impoverished contents of other features at this site and seems to reflect a differing site use in Late Woodland times.

### **Preliminary Interpretations**

The 1994 and 1998 test excavations in the Triangle Tract yielded valuable information about the nature of past activities in this area of the Hopeton Earthworks. Although our investigations were in the immediate proximity of the parallel walls, obvious evidence of Hopewell activities is fairly limited. As might have been predicted, the excavation data indicates that the Triangle Tract landform has been occupied over a considerable time. Of the eight radiocarbon dates from the Triangle Tract, five indicate Late Archaic or Early Woodland activities, one is clearly Hopewell, another one is Late Woodland, and the final one is historic.

Evidence of prehistoric occupation at this site is extensive across the entire Triangle Tract, but none of the areas we have examined are indicative of anything other than short-term use and occupation. During the Late Archaic or Early Woodland, the site occupation is characterized by the presence of circular or oval pits with flat bottoms. The pits contain fire-cracked rock and lithic debris, but very little food remains or temporally diagnostic artifacts.

During the Middle Woodland period, there is evidence for ritual activities in the form of a circular clay basin and a pit with a sheet of cut mica. Although some of the other, more subtle features at the site may eventually be attributed to the Middle Woodland period, there is very minimal evidence in this area for Hopewell occupation. Current data suggests the Triangle Tract was only occupied for short periods of time by the Hopewell, possibly for ritual activities in the proximity of the parallel walls.

Late Woodland use of the site appears limited at this time also. However, the contents of Feature 88 are so different from the contents of earlier pits, the nature of activities at the site must have changed. Food remains, stone tools, lithic debris, and pottery are plentiful in this Late Woodland feature, but they are very minimal in all the earlier features at the site. This may simply be a

product of the limited sample of excavated features at the Hopeton, but it more likely reflects a change in the nature and use of the site.

Our work at the Triangle Tract was initiated in 1994 with the goal of determining whether there is evidence of Hopewell occupation in association with the parallel walls. Thus far, we have found only limited evidence that the Hopewell used the Triangle Tract. While it is possible that the Hopewell used this area for activities that left no physical evidence, it seems more likely that use of the area was reserved for short-term occupations associated with ritual activities. The Triangle Tract data also suggests we must be cautious in attributing all of the archeological remains that are in proximity to large earthworks to the Hopewell.

Clearly, much more work is needed before we can make sense of what appears to be a fairly complex pattern of prehistoric activities in association with the Hopeton Earthworks. In the immediate future, efforts will focus on further analysis of data collected from the Triangle Tract. In 2001, we plan to conduct geophysical survey and limited testing in other areas of the site to determine if the patterns observed at the Triangle Tract are characteristic of the site as a whole.

### **References Cited**

Blank John E.

1885 An Aerial Photogrammetrical Analysis of the Hopeton National Historic Landmark, Ross County, Ohio.

Department of Anthropology, Cleveland State University, Cleveland.

Bozell, John R. 2000 Faunal Remains from the Hopeton Triangle Site, Hopewell Culture National Historical Park, Ohio.

Manuscript on file, National Park Service, Midwest Archeological Center, Lincoln, Nebraska.

Brose, David S. 1976 An Historical Archaeological Evaluation of the Hopeton Works, Ross County, Ohio.

Department of Archaeology, Cleveland Museum of Natural History, Cleveland.

Cockrell, Ron 1999 Amidst Ancient Monuments: The Administrative History of Mound City Group National Monument/Hopewell Culture National Historical Park, Ohio.

National Park Service, Omaha, Nebraska.

Ruby, Brett 1997 Current Research at Hopewell Culture National Historical Park.

Hopewell Archaeology 2(2):1–6.

### **2. Meeting Calendar**

2001 Midwest Archaeological Conference

October 12–14, 2001, Radisson Hotel and Holiday Inn,

La Crosse, Wisconsin

2001 Plains Anthropology Conference

October 31 – November 3, 2001, Holiday Inn

Lincoln, Nebraska

2001 Southeastern Archaeological Conference  
November 14–17, 2001, The Marriott Hotel  
Chattanooga, Tennessee

#### Synopsis of the 10th Annual Woodland Conference

The Tenth Annual Woodland Conference was held in Chillicothe, October 26 – 28, 2000. The conference was sponsored by The Museums at Prophetstown and Hopewell Culture National Historical Park. The conference theme was Hopewell archeology, and the conference included a tour of important Hopewell sites in the Chillicothe area.

Daryl Baldwin, Director, Museum at Prophetstown, gave the Friday evening keynote address. The Saturday program included papers on Ohio Hopewell by William S. Dancey, Richard W. Yerkes, Frank L. Cowan, Mark F. Seeman, N’omi Greber, Robert V. Riordan, Christopher Carr, and Bradley T. Lepper.

Saturday morning’s program included presentations on current research. This was followed by a tour of Hopewell sites in Ross County. James A. Brown, Northwestern University, gave the Saturday evening keynote presentation.

### **3. Land Acquisitions Status At Hopewell Culture NHP**

By Jarrod Burks and Jennifer Pederson

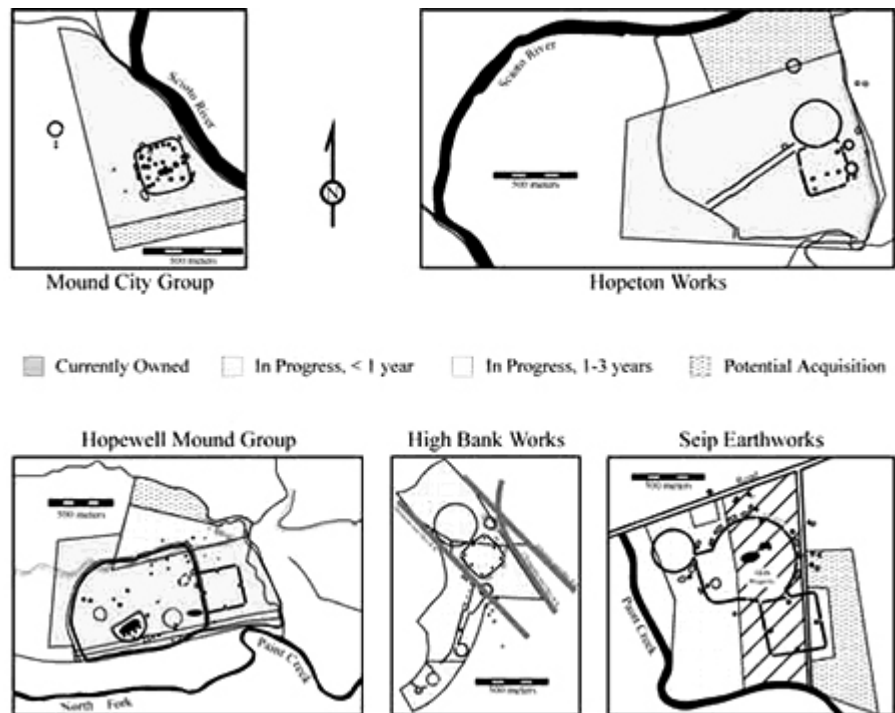
In May 1992, President George Bush signed Public Law 102-294 creating Hopewell Culture National Historical Park (NHP) in Ross County, Ohio. This legislation authorized the purchase of properties that would allow the new park to expand its boundaries beyond those of the existing Mound City Group National Monument. Until this time, the monument consisted of the Mound City Group and portions of the Hopeton Works, which were in danger of being destroyed by a gravel operation.

Since the 1992 legislation, a primary management objective at Hopewell Culture NHP has been land acquisition at Hopewell Mound Group, High Bank Works, Seip Earthworks, and Hopeton Works. The process of building the park has been slow and blocked by many legal hurdles.

Nevertheless, there is much good news to report for the ongoing efforts to acquire and preserve these important Hopewell sites. There are four basic categories of land acquisition status at Hopewell Culture NHP:

- (1) parcels currently owned;
- (2) parcels to be acquired in less than a year;
- (3) parcels to be acquired in one to three years; and
- (4) parcels potentially available for acquisition or addition to the park.

Figure 1 shows how these categories are distributed among the five units of Hopewell Culture NHP.



**Figure 1. Four categories of land acquisition status at the five units of Hopewell Culture National Historical Park.**

The current boundaries of the Mound City Group unit have been in place since the early 1980s. The 120 acres of this unit include the mounds, embankments, and borrow pits of Mound City, as reported by E. G. Squier and E. H. Davis in 1848, as well as the park's visitor center, museum collections, and administration buildings. A narrow, historic easement exists along the western and southern boundaries of the Mound City Group unit. This easement was put in place to protect the park's boundaries from development. The easement parcel along the southern edge of the park, which contains a number of low-density Hopewell artifact clusters, may potentially be acquired at some point in the future.

The last remaining parcel of the 292-acre Hopeton Works unit was officially acquired in October of this past year. This purchase finally brings to an end the over 30 year battle to save this National Register historic site from development and gravel quarrying. While gravel is still actively mined from quarry pits along the edge of the second terrace, the earthworks themselves are now protected from further damage.

Hopewell Culture NHP archeologists continue to survey the bottomlands in this bend of the river and last year documented significant archeological deposits just west of the unit boundaries. One additional parcel north of the unit may become available for purchase in the near future. This parcel contains the eastern extension of a Hopewell settlement found in the Overly Tract, as investigated in 1995 by an Ohio State University field school in conjunction with National Park Service archeologists.

This autumn also officially marked the acquisition of the second of four major parcels at the 300-acre Hopewell Mound Group unit. The first parcel was purchased from the Archaeological



Conservancy in 1997. Together, these two parcels account for the vast majority of the embankments, borrow pits, and the more than 40 mounds at this site. Of the two parcels now in the acquisition process, the large tract that includes much of the northern edge of the main embankment should be purchased within the next year.

The smaller tract that cuts across the site along its southern edge will likely require one to three years for acquisition. An ongoing remote-sensing project by park archeologists at this site has revealed many intact features beneath the plow zone and will play a key role in inventorying this site's extant resources. A small parcel of land north of the unit may become available as an uneconomical remnant once the primary acquisitions are completed.

The two remaining park units, High Bank Works and Seip Earthworks, are in the early stages of acquisition. Of the 197 acres projected for acquisition at the High Bank Works, approximately half will probably be acquired within the next year. The remaining portions will likely take one to three years before they become part of the park. Recent remote-sensing surveys at this little known earthwork site by Dr. N'omi Greber have also proven useful in defining the location and nature of the earthworks.

Seip Earthworks, the final park unit, has the furthest to go in the acquisition process. A third of this Hopewell earthwork complex is currently owned and managed by the Ohio Historical Society. The remaining sections of the earthwork will most likely be acquired within the next one to three years. A large tract to the southeast of the unit will likely become an uneconomical remnant upon the completion of the initial purchasing at Seip Earthworks. Thus, after an archeological survey, this tract may also be purchased as part of the Seip Earthworks unit.

Together, the five units of Hopewell Culture National Historical Park will provide for the protection of some of the best-known Hopewell earthwork complexes in the world. We anticipate that the ongoing archeological programs for research and resource inventorying will provide much needed information on Hopewell use of these earthwork sites. At some units, such as Hopewell Mound Group, concentrations of habitation debris will also provide valuable insight into Hopewell domestic life.

Unfortunately, many more Hopewell earthworks in Ross County and the rest of the middle Ohio Valley have been or will soon be completely destroyed. The mass wasting of the archeological record across much of the Midwest U.S. makes these recent and upcoming acquisitions all the more critical.

#### **4. Book Review: Mysteries of the Hopewell: Astronomers, Geometers, and Magicians of the Eastern Woodlands.**

By William F. Romain, The University of Akron Press, Akron, Ohio

Reviewed by Mark J. Lynott, Midwest Archeological Center

Many archeologists consider the work of E.G. Squier and E.H. Davis to be the first scientific archeological investigation in the United States. Whether we agree with that or not, it is interesting to note that Squier and Davis were attracted to study the same mound and earthwork sites that today are the core of Ohio Hopewell. Exploration of Hopewell mounds produced

substantial evidence that the mounds and earthworks were associated with highly developed mortuary rituals and artistic objects of material culture. For about a century, the Hopewell mortuary complex was the primary focus of research in this area. In the last forty years, researchers have turned their attention to a broader understanding of Hopewell culture.

Archeoastronomy became a part of North American archeology following Warren Wittry's discovery of a series of woodhenges at Cahokia, near East St. Louis, Illinois, in the early 1960s. Wittry demonstrated that these wooden features were solar observatories. This discovery, and subsequent discoveries throughout North America, have led archeologists to believe that symbols in the art, artifacts, and architecture of prehistoric North America are a reflection of the world-views of their creators.

*Mysteries of the Hopewell*, by William F. Romain, represents a summary of the long-term research interests of the author into the mound and earthwork sites of Ohio. Many of the ideas presented in this volume have been presented elsewhere as a series of short papers (e.g. Romain 1991, 1992, 1994, 1995). *Mysteries of the Hopewell* is a well written, well-illustrated, and easy-to-read volume that discusses many of the well-known sites in southern Ohio. The basic thesis of this work is that the world-view of the Hopewell people is reflected in the orientation and symbolism of artifacts and earthworks they left behind. In the first section of the book, Romain notes the proximity of all the important southern Ohio Hopewell earthwork sites to water. He also notes that they are concentrated in an ecotonal area of great environmental richness, with several of the earthworks located in proximity to important stone resources (e.g., Newark to Flint Ridge, Tremper to Pipestone).

Chapter Two is entitled "Sacred Geometry" and includes a description of many of the possible relationships between circles and squares as exhibited in Hopewell earthworks, including examples of nested squares, inscribed triangles, and truncated squares. This chapter also argues that components of individual earthworks are interrelated

Chapter Three is entitled "Measuring and Counting" and includes a discussion of possible standard units of measure as reflected in Hopewell earthworks and architecture. In this section, the author argues that the Hopewell used a basic unit of length that was 2.106 feet, which he believes is the arm length of an average adult Hopewell male. Multiples of this basic unit and fractions of this unit were used to lay out the earthworks and houses in Hopewell society.

Chapter Four is entitled "Hopewell Astronomy" and includes discussions about selected earthwork sites. The discussion is intended to show that the major features in the earthworks are aligned with important solstice events dating to A.D. 250. The author argues that his measurement of the earthwork alignments show that they are consistent with A.D. 250 solstice events with an accuracy of less than one degree.

In Chapter Five, "Azimuths to the Otherworld," the author presents his argument that some of the earthworks and many of the Hopewell charnel houses were aligned according to lunar events. The author uses examples of mound and earthwork alignments at Newark and High Bank and alignments of excavated houses at Mound City and Seip to support this interpretation.

Part Two of the book is "The Hopewell Worldview" and includes three chapters. Chapter Six, "Symbols of Earth and Sky," presents the author's view of the role of geometric shapes in Native American culture. This is a consideration of the relationship of ethnographic data to the Hopewell archeological record. Chapter Seven, "Sacred Ceremonies," looks at the ritual objects of

Hopewell culture as symbols and notes some ethnographic analogies for their interpretation. The eighth and concluding chapter is a recap and summary.

My impressions of this book are mixed. It is clear that the author is very familiar with Hopewell archeology, and he has been able to interpret many features of the archeological record in terms of ethnographic data. This is a valuable and important contribution. On the other hand, I found his interpretation that the orientation of individual sites was related to solstice events as unconvincing. To some extent, the author tries to prepare the reader to ignore the absence of precision in orientation and length of earthwork features by pleading a case for “fuzzy geometry.” The book also makes assumptions that cannot be substantiated by current archeological data.

One of the most notable shortcomings of this book, and many other interpretations of Hopewell culture, is that it fails to satisfactorily address time. By the most conservative estimates, Ohio Hopewell spans at least four hundred and more likely five hundred years. Mysteries of the Hopewell fails to address this great span of time and treats Hopewell culture as essentially a single event. This is most evident in the author’s effort to relate Hopewell earthworks to solstice and lunar events in the year A.D. 250. This theme is the basis of Chapters Four and Five. Granted, we need more direct radiocarbon dates for construction of the earthworks, but is it reasonable to assume all of these earthwork sites were built in one or two generations? If in fact, each earthwork were laid out and constructed by a single generation, wouldn’t we expect to find less “fuzzy geometry”? The author notes that many of the circles and squares are not true forms. For example, the north-south diameter of the Hopeton circle is 960 feet, and the east-west diameter of the same circle is 1018 feet (page 37). Certainly, the Hopewell knew how to make a perfect circle. Is it unreasonable to assume this variation may be the product of a construction interval that spans several generations? Although I am not familiar with all of the earthworks addressed by this book, I have had some experience working at Hopeton.

The author argues that a line from the southeast to the northwest corner of the rectangle is an azimuth of 301 degrees, which would align with the summer solstice sunset in A.D. 250 to within 0.75 degrees. On the surface, this seems like reasonable precision. However, since the northwest “corner” of the rectangle is rounded and the southeast corner is an open gateway, there is considerable margin for error in drawing this particular alignment. An alternative alignment of the two “corners” of only one or two degrees would diverge greatly with the proposed A.D. 250 solstice event. If the alignment of these points with the summer solstice sunset in A.D. 250 had been important to the Hopewell, I believe they would have done a better job of actually marking the points along the azimuth of the sight-line.

In a review of other works by William Romain and others interested in archaeoastronomy, James A. Marshall (1999) has presented a detailed criticism of trying to interpret these earthworks without precise field surveys. Marshall also notes that archaeoastronomers are selective in the potential azimuths they choose to emphasize. In Figure 5 of his paper he illustrates dozens of potential azimuths at the Hopeton Earthworks that are ignored by Romain.

In this book, and in at least one other published paper (Romain 1991), the author presents evidence and his interpretation that the basic Hopewell unit of length is 2.106 feet. He then looks at the spacing of post holes in houses at Mound City and Seip and notes where they occur at intervals of 2.106 feet or 1.053 feet, which he defines as the sub-unit of the basic unit of length. The author proposes that 2.106 feet would likely be the arm length of an average Hopewell male. In looking more closely at the patterns of posts, I noted that the spacing is far from precise, and the author has not quantified the variation in post spacing from the hypothesized standard. I

would also note that while a standard unit of measure is possible, most societies did not bother with this level of precision until mass manufacturing was adopted.

While I found many of the arguments in this new book unconvincing, I also found it thought provoking. Mr. Romain has written a book that deserves to be read and debated. Although I am not convinced that the Hopewell built their earthworks and houses according to standardized units of measure, and along alignments with solar and lunar events, I am certain they had the knowledge and ability to do this if they wished. Mr. Romain is to be congratulated for presenting his interpretation in the form of a series of testable models. Anyone interested in Ohio Hopewell archeology should read this book.

### **References Cited**

Marshall, James A.

1999 A Rebuttal to the Archeoastronomers: Science Begins with the Facts. *Ohio Archaeologist* 49(1): 32-49.

Romain, William F.

1991 Evidence for a Basic Hopewell Unit of Measure. *Ohio Archaeologist* 41(4): 28-37.

1992 Hopewellian Concepts in Geometry. *Ohio Archaeologist* 42(2): 35-50.

1994 Hopewellian Geometric Enclosures: Symbols of an Ancient World View. *Ohio Archaeologist* 44(2): 37-42.

1995 In Search of Hopewell Astronomy. *Ohio Archaeologist* 45(1): 35-41. continued on next page

### **5. News and Announcements**

Dean K. Alexander to Assume Top Post at Hopewell Culture National Historical Park

The National Park Service has selected Dean K. Alexander, Superintendent at Kalaupapa National Historical Park in Hawaii, as the next superintendent of Hopewell Culture National Historical Park near Chillicothe, Ohio. Alexander replaces John Neal, who transferred to Apostle Islands National Lakeshore, Bayfield, Wisconsin, in June.

“Dean Alexander’s proven ability to work with a wide variety of constituency groups and partners, and his extensive planning experience position him well to deal with lands and trails issues at Hopewell Culture,” said David Given, the National Park Service’s deputy regional director for the 13-state Midwest Region.

While superintendent at Kalaupapa for the past five years, Alexander managed a variety of sensitive cultural, historical, and natural resource issues at the complex and developing park. Kalaupapa is an isolated location that can only be accessed by airplane or hiking down a 2,000-

foot cliff. The park is primarily known as the historic isolation settlement for Hawaii's victims of Hansen's Disease, or leprosy.

To protect the privacy and lifestyle of 50 or so remaining residents, there are special restrictions on visitation, and employees' families may not live in the settlement. Alexander is "pleased to be returning to the Midwest and to be working at Hopewell Culture in this transitional period as the park grows to fulfill the intent of the 1992 legislation."

A 13-year veteran of federal service, Alexander served two years as an outdoor recreation planner in the NPS's Mid-Atlantic Regional Office in Philadelphia, Pennsylvania. He was brought to the Midwest Regional Office in 1988 to lead the Rivers and Trails Conservation Assistance Program and was subsequently promoted to Chief of the Planning Branch in 1990.

Alexander later assumed the role of Chief of the Division of Park Planning and Environmental Quality for the Midwest Region. Alexander is a graduate of the University of Florida, Gainesville. He earned a Bachelor of Arts in Geography in 1973 and continued his graduate studies in geography there.

Hopewell Culture National Historical Park was originally proclaimed Mound City Group National Monument on March 2, 1923. It was transferred from the War Department to the Department of the Interior on August 10, 1933. It was renamed and redesignated on May 27, 1992. The 1,244.84-acre park, of which 750 acres are federally owned, contains 23 burial mounds in the Mound City Group unit and large geometric earthworks at four other units that provide insight into the social, ceremonial, political, and economic life of the Hopewell people. Finely crafted artifacts of the Hopewell culture (200 BC to AD 500) show that highly skilled artisans and craftsmen used an extensive trade network east of the Rocky Mountains.

#### NPS Park Archeology Project Excellence Recognized

The annual John L. Cotter Award for Excellence in National Park Service Park Archeology was made to Jeffrey F. Burton, staff archeologist at Western Archeological and Conservation Center, Tucson, for his recent work at Manzanar National Historic Site in eastern California. A presentation was made on April 18, 2001, during an annual meeting of NPS archeologists in New Orleans.

The unofficial award, begun by NPS archeologists in 1999, was established to honor the long and distinguished career of Dr. John L. Cotter for his pioneering contributions to archeology within the National Park System and to inspire NPS employees to continue his model of excellence. Dr. Cotter's career included significant 'Early Man' and other studies on North American prehistory and major historical archeological projects at Jamestown (1953– 1957), Philadelphia (1960– 1998), and other NPS field units. He was the first President and journal Editor for the Society for Historical Archeology, which also honors his career with an award as well.

Jeff Burton as the choice for this year's award is based on a committee's review of his accomplishments in 2000 regarding the archeological resources at Manzanar National Historic Site located near Independence, California. He led his colleagues and volunteer photographers in completion of the first comprehensive overview of the remaining structures, features, and artifacts at wartime relocation camps in the United States. The overview was published by the NPS as *Confinement and Ethnicity: An Overview of World War II Japanese-American Relocation Sites*. Fieldwork and historical research formed the basis for this special initiative study that has been reprinted to meet thousands of requests.

In addition, Jeff led multiyear field archeological research at Manzanar NHS to document Native American occupation, the pre- WWII town of Manzanar, and the subsequent relocation camp. Results of these projects were earlier reported in *Three Farewells to Manzanar*, which Jeff edited.

This study was crucial to additional White House funding and for congressional boundary expansion during 2000. Jeff also assisted the Coronado National Forest in 2000 to dedicate a campsite complex in honor of an internee who led civil rights resistance against interment policies but was detained at the same forest location.

Jeff's work during the last year involved a wide spectrum of former internees and their families, students, volunteers, agency officials, and leaders of Japanese- American community organizations. His exemplary work at Manzanar NHS is recognized for interdisciplinary research design, scientific historical archeological analysis, broad public involvement, and sharing of research results in a variety of media — hallmarks of John Cotter's NPS career.

Workshop:

Non-Destructive Mound and Earthwork Research in the 21st Century  
May 14–18, 2001

Hopewell Culture NHP hosted a workshop on the practical application of geophysical equipment and aerial photographic techniques available for the identification, evaluation, and ultimately, the conservation and protection of cultural resources. The field exercises associated with the course were conducted at the Hopeton Earthworks and concentrated on the application of these techniques to archeological investigation of mounds and earthworks. Instruction emphasized the use of and the interpretation of data from magnetometers, conductivity meters, resistivity meters, ground penetrating radar, metal detectors, and magnetic susceptibility and their applications to non-destructive subsurface investigations. Workshop sessions also included the use of and interpretation of aerial photographic techniques, and in the use of low altitude large-scale aerial reconnaissance.

Course participants included Federal, State, and Local governmental cultural resource managers and specialists, as well as private contractors, university professors, and students. More than 50 students and 12 instructors participated in this annual NPS training session.

Fieldwork in 2001

A flurry of fieldwork is planned this summer at Hopewell Culture NHP.

Jennifer Pederson, Hopewell Culture National Historical Park, and William Dancey, Ohio State University, will direct the Ohio State University Field School at the Hopewell site. This research stems from a multiyear program to document cultural resources in no mound areas inside and adjacent to the site's enclosures. Geophysical testing followed by limited subsurface testing will aid in determining the nature and extent of no mounded activities. Last year's field work located the remnants of a sub-mound structure and other recorded and unknown features at the site using this field strategy.

Mark Lynott and Bruce Jones, Midwest Archeological Center, will be directing work at the Hopeton Earthworks. The 2001 Hopeton project will include field schools from the University of Nebraska in Lincoln, and the Milton Hershey School in Hershey, Pennsylvania. The 2001 research program at Hopeton will focus on the area around the southern end of the earthworks,

and it will include geophysical survey, strategic testing, and topographic mapping. About 18 students and 7 staff are expected to participate in the project, which will begin about June 14 and continue through the end of June.