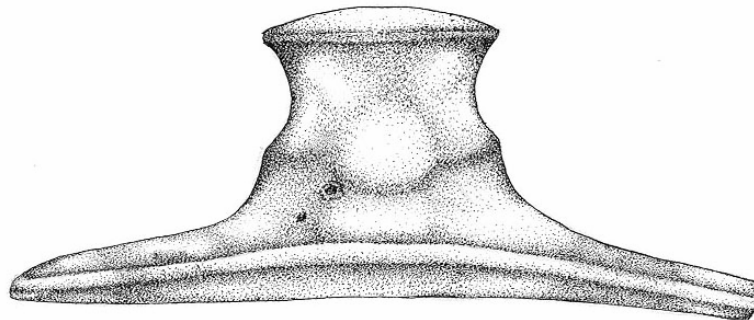
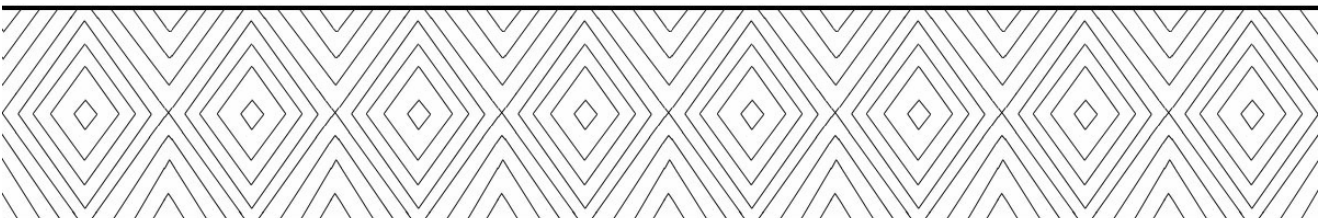


The Archaeology of Anderson Mounds,
Mounds State Park,
Anderson Indiana



by
Donald R. Cochran
Beth K. McCord



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Reports of Investigation 61

June 2001

Archaeological Resources Management Service
Ball State University
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ACKNOWLEDGMENT OF STATE AND FEDERAL ASSISTANCE

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The activity that is subject of this archaeological project has been financed in part with Federal funds from the National Park Service, U.S. Department of the Interior. However, the contents and opinions do not necessarily reflect the view or policies of the Department of the Interior.

ACKNOWLEDGMENTS

Many people have contributed to this book. We are indebted to the archaeologists whose research has contributed to our story: Glenn A. Black, Jeanette Buehrig, E.T. Cox, Diana Conover, David Ellis, Ron Hicks, Eli Lilly, Warren K. Moorehead, B.K. Swartz, Jr., William Wepler, Claude White and Kent Vickery. Many Ball State University students have labored in the field and in the lab to recover and make sense of information from the site. Bill Wepler and Ron Richards of the Indiana State Museum assisted with the loan of collections and the identification of faunal remains. Karen Dalman and Kent Parks from Mounds State Park were always supportive and enthusiastic about our research. Rex Upshaw and Paul Startzman kept a watchful eye on our work and offered helpful suggestions and resources. The Upper White River Archaeological Society has been involved in our research from the beginning. We are grateful for your support and interest. The Division of Historic Preservation and Archaeology of the Indiana Department of Natural Resources has supported our research with the earthworks of east central Indiana through several grants, including one for this document. These funds have made this work possible and we are truly fortunate to have that support. The Archaeological Resources Management Service, the Department of Anthropology, Dean Ronald Johnstone, Academic Research and Sponsored Programs, and the Contracts and Grants Office at Ball State University have provided support and funding for our work. To all of these we extend our gratitude. We greatly appreciate the editorial comments and suggestions for improving the manuscript we received from our informal review committee. Kelly Cox, Karen Dalman, Bill & Sandy Deilkes, Susan Deverall, Steve Marsh, Don Merten, Rex Upshaw, Tom Van Duyne, Bill Wepler, and Mitch Zoll provided valuable insights and support. The authors are responsible for any errors of fact or logic.

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INTRODUCTION

People around the world have created monuments of earth and stone for at least the past 4,000 years. The familiar images of Stonehenge and the pyramids of Egypt and Mexico inspire wonder about when and how the monuments were built, what they were used for, and what they can tell us about ancient societies. Today, as in the past, they arouse our curiosity, but unchecked curiosity has led to the damage and destruction of most of these monuments. Grave robbers have mined them for artifacts, and archaeologists have mined them for information. They have furnished the background for romance and adventure books and movies. They are shrouded in folklore. In modern culture, they are symbolically linked with exotic and far off places.

Many of the monuments contained human burials, indicating an earthly marriage between two realities, the ordinary reality of the physical world and the spiritual reality of the unseen world. The investment of labor and materials leaves no doubt that these monuments were originally created as symbols, constructions of earth and stone that represented something larger in the minds of the builders. And, since people did not live in isolation, monuments were constructed as interconnected parts in a larger network of sites. We assume that complex layers of meaning were invested in their placement, construction and use. Monuments, then, were not built as simple burial places but were physically and symbolically linked to a larger whole. To learn the symbolic vocabulary expressed in these sites, would lead to understanding much about past societies. But the past is obscured by decay. We look at ancient monuments through modern eyes, and not through the eyes of their builders (Heath 1999). How then do we come to some understanding of these sites? We create stories. Stories translate information into an understandable format. The translation and the format depend upon the perspective of the storyteller and the audience.

In this book, we present a story of the Native American earthen monuments that are found in east central Indiana (Figure 1). We are mystified as to their purpose. Why did people pile up these monuments of earth, why did they dig deep ditches and surround them with embankments? What mysterious rituals and ceremonies did they practice there? When were the earthworks built and how did the people live? And, why were they active in east central Indiana, surely not the most hospitable environment? What were the people like and why did they build these places? These are some of the questions we engage in this book.



Figure 1. East Central Indiana region.

The focus of this book is a site called Anderson Mounds (Figure 2). This site contains several earthen monuments (earthworks) about 2,000 years old and is unique because it is so well preserved. The earliest historic settlers of the land, the Bronnenberg family, preserved the site in its original wooded setting. In the 1890s the land passed into the hands of the Union Traction Company who built an amusement park around the earthworks but still managed to preserve them relatively unharmed. They passed into the protective care of the State of Indiana in 1930 and the site was listed in the National Register of Historic Places in 1973. Today the site is within Mounds State Park, the second smallest park in the state park system, but one of the most heavily used. The earthworks have suffered some damage from walking trails, but by comparison with the other earthworks in the area, they are pristine.

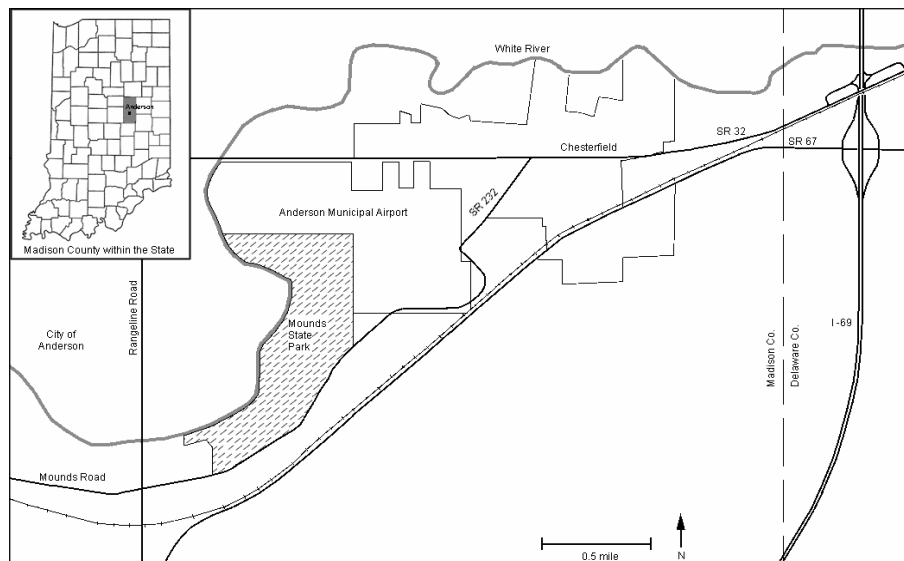


Figure 2. The location of Mounds State Park in Anderson, Indiana.

Historic records show that there were once more than 300 earthworks in east central Indiana alone and several thousand scattered throughout the Ohio Valley. Today, fewer than 100 of the earthworks in east central Indiana remain. Of the sites that are left, almost all have been seriously damaged from farming, uncontrolled excavation, and other earthmoving. Only two large mounds in Randolph County and Anderson Mounds have escaped relatively unharmed. Anderson Mounds appears to be one of the best preserved of all the earthworks remaining in the whole Ohio valley region. For this reason alone, Anderson Mounds holds keys to understanding the other earthworks (McCord & Cochran 1996).

The story of the Anderson Mounds site in Mounds State Park near Anderson, Indiana is a long and interesting one. Actually, there are several stories about the site: the story of the native people who visited and lived in the area for thousands of years before the enclosures were built there; the story of the people who dug the ditches and built the earth embankments, who carried out ceremonies that were vital to their lives so long ago; the story of the Bronnenberg family who purchased the land and protected the earthworks; the story of the amusement park that was

constructed there, and the story of the state park that surrounds the earthworks today; the individual stories of the people who have visited the site over the past 100 years, the individual meanings that the site has represented in their lives; and the archaeological story that encompasses and informs at least parts of the other stories. Indeed, there are very likely several archaeological stories, depending on the background of the various archaeologists who have carried out research with the site.

This book relates one archaeological story, a story with a plot and outcome that is guided by the discipline of Anthropology, the holistic study of human beings. In the pages that follow, our story is based on the archaeological information from Anderson Mounds. The story we tell is at once both personal and a reflection of the pursuit of archaeological knowledge. Our primary objectives in writing this book were to make the information about the Anderson Mounds site accessible to the public and to offer our interpretations of the site.

Sources of detailed information about the site are not readily available to the public. Most of the written materials are from the past 30 years and most of those documents are not published. Manuscript reports of several hundred pages are on file, but without knowing how to acquire them, the general reader is stuck with older written materials. Thus, there is a sizeable lag between the public knowledge about the site and the archaeological knowledge about the site. We have included an extensive bibliography of sources that relate to the archaeology of the site. We have also included a listing of where the various manuscript reports are on file. Our intention in this book is to clearly present the details of the site so that the reader can see how we arrived at the interpretations we have included as well as form their own interpretations.

We have spent the past 10 years investigating the earthworks in east central Indiana. Our investigations have included recording site locations, many small excavations to recover samples for radiocarbon dating and to define features within sites, and analyses of earlier excavations and materials. Through this ongoing work we have developed a respect for the incredible complexity of these sites and the people who constructed them. And the stories we have developed about the site are different from the stories previously told. One discovery that led to new interpretations of the site was witnessing the sun set at the winter solstice along a sight-line that was constructed between two earthworks in the site. This viewpoint provided us with new avenues for investigating the past activities at the site. We also discovered relationships between Anderson Mounds and the other earthworks that are distributed across the east central Indiana landscape. So, rather than viewing the site as an isolated phenomenon, we were able to place it into a broader relationship (Cochran 1988, 1992, 1996, Kolbe 1992, McCord & Cochran 1996, 2000).

This book presents the archaeological story of the Anderson Mounds site through a description of what has been found and our syntheses and interpretations. We have omitted the stories of the recoveries of the data, important in their own right since what is recovered is directly related to how it was recovered. The history of the site has been summarized in an article by Chet Green (1995). We have chosen to direct the reader to the primary sources rather than belabor the text here. In our decade of research with this site and others like it in central Indiana, we have arrived at certain principles that guide our research. These are as follows:

Everything in the site is purposeful.
Events documented in the site were part of evolving cultures.
Everything in the site symbolically expresses the ideas of the builders.
Interpretations are creations of the authors and not necessarily recreations of the past.
The past is far more complex than we can imagine.

Archaeology is the study of the human past from the material remains that have survived. Archaeology is a unique discipline because when we excavate to recover information from a site, we destroy the original context of that information. Only the documentation (notes, forms, photographs, etc.), artifacts, soil and other samples, and the memories of the excavators remain after an excavation has been completed. Unfortunately, there are no sets of purely objective methods for recovering purely objective archaeological facts that can be used to create objective archaeological stories. Every site is different just as every archaeologist is different. Sites vary in complexity. Archaeologists vary in temperament, training and experience. Archaeological goals change through time. Every archaeological project is limited by time and funds. Given these variables, it is oftentimes difficult to compare between different research projects, primarily because archaeologists ask different questions and collect different kinds of information to answer the questions they ask. As our work has evolved, we have realized that we do not reconstruct the past, we construct a view of the past that is based in our current perspective. The archaeological story that we tell is our story, our view of how the details of the site fit together into a framework that is coherent to us. We expect that some of the interpretations in this book will be revised and possibly rejected as more information about the Anderson Mounds site is acquired and studied by archaeologists with different theoretical orientations and as new technologies are developed to gather information from the site.

One of the first problems that confront every archaeologist working on a site is that of order. At Anderson Mounds, establishing order is an ongoing process. For instance, one of the most vital components of site investigation, especially for a site with architecture, is an accurate site map. The map of Anderson Mounds in common usage since the late 1800s appears detailed and looks accurate, but our investigations have shown that the earthworks were not mapped in appropriate relationship to each other. Their orientations were in error and their shapes were misrepresented. An accurate map of the site was only produced within the past 10 years and we are still refining the maps of some of the enclosures. In Chapter 2 we present a description of the site and a summary of what has been found at each of the enclosures.

While an accurate site map provides a basis for understanding spatial relationships between site features, archaeologists must also create a framework whereby artifacts and features can be compared and related to each other and to those from other sites. Thus, archaeological research is an ongoing comparative process that is never complete, but constantly undergoing reevaluation in light of new discoveries and new technologies. In the third chapter of the book we present our interpretations of the information about the site. We establish the sequence of events that occurred at the site and show that construction and ritual use was an ongoing and evolving process. We also investigate who the builders of the site were and what is known about them. We discuss ideas about the symbolism represented in the enclosures and materials used in

site features. Finally, this chapter discusses the implications of the choice of the site location.

In Chapter 4 we relate the Anderson Mounds site to other earthworks in east central Indiana to demonstrate that the site was part of a regional organization that formed a sacred landscape. The implications for social organization are discussed.

The final chapter of the book is a fictional account about the builders of the site. It is our hope that the documentation and interpretations presented in this book will help to fill the void in both the public knowledge of this site and others like it in east central Indiana, and that this information will be useful in gaining an understanding of the relationships between archaeology and the human past.

SITE DESCRIPTION

Introduction

Archaeology is a discipline of details and one can easily get lost in the details. In order to understand any archaeological site, it is first necessary to organize the details of what is known about the site into an understandable and logical description, a story. In describing the Anderson Mounds site and others within Mounds State Park, we have reduced detail as much as possible to carry our story. The descriptions are synthesized from earlier excavation reports and our research at the site.

Mounds State Park contains several kinds of archaeological remains (Figure 3). The most prominent remains are the 2,000-year-old **earthworks**, but the land within the park was used by earlier and later aboriginal people (Table 1). The natural environment of the park was favored by aboriginal

The term **earthwork** refers to any structure made from earth, including **mounds** and **enclosures**. Mounds are artificial piles of earth while enclosures have earth shaped to enclose a space. Most enclosures are made by excavating a ditch and piling the dirt to the outside to form an embankment, although some enclosures are made by building an earthen wall to surround a space. The center of the enclosure is thus isolated and is usually referred to as a **platform**. The platform may have the appearance of an artificial mound because of the surrounding ditch, but most are simply the natural ground surfaces. Sometimes the central platform has an artificial mound on it. Entrance through the embankment to the central platform is usually provided by a **gateway**, an opening through the embankment and across the ditch. Gateways across a ditch are usually assumed to be simply unexcavated areas that were intentionally left intact (Figure 4).

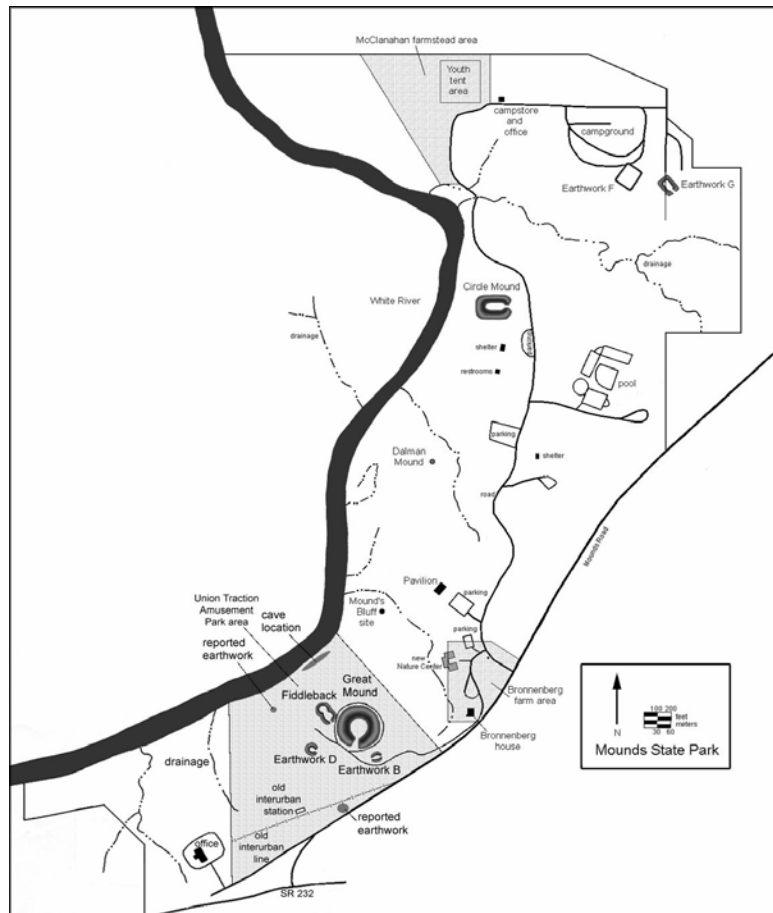


Figure 3. Archaeological sites within Mounds State Park.

people. Archaeological surveys of the park have documented several small sites. None of these sites are large and they represent intermittent and repeated use of the area over at least 10,000 years, beginning by at least 8,000 B.C. and continuing up through at least AD 1400. The traces of aboriginal use are represented in locations

within the park where a few chipped stone tools and fire-broken rocks occur. No large village sites are documented within the park. Only one aboriginal site other than the enclosures has been excavated. That site, called “Mounds Bluff,” was a location where human remains were found eroding out of a hiking trail. In addition to the aboriginal sites, the park contains substantial historic remains. Prominent among the historic sites are the Bronnenberg Farm site and the Union Traction Company amusement park. While the focus of this book is on the circular and rectangular enclosures, we have included descriptions of the Mounds Bluff site and the two historic sites in order to alert the reader to the richness of the archaeological heritage contained within the park. In addition to the recorded archaeological sites, caves are reported in the park that were thought to be associated with the circular earthwork complex. The reports are contained in newspaper accounts and the local lore. None of these have been recently documented and they are not a part of our story.

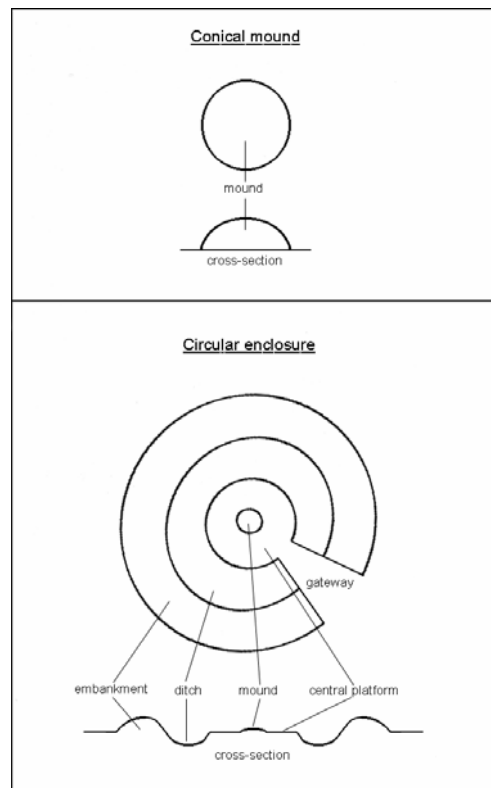


Figure 4. Representation of a mound and earthwork.

Table 1 ¹ Chronological Framework of East Central Indiana		
Chronological Period	Cultural Period	Subdivisions
AD 600 - contact	Woodland	Late Woodland
200 BC - AD 600		Middle Woodland ²
1,000 - 200 BC		Early Woodland
3,000 - 1,000 BC	Archaic	Late Archaic
6,000 - 3,000 BC		Middle Archaic
8,000 - 6,000 BC		Early Archaic
8,000 - 8,500 BC	Paleoindian	Late Paleoindian
10,000 - 8,000 BC		Early Paleoindian
¹ From Fagan 1991, Kellar 1983, McCord 1998, and Swartz 1981. ² The Anderson Mounds were built and utilized during the Middle Woodland.		

In the following presentation, we describe the earthworks and the materials that are found within them. Our goal in this descriptive presentation has been to provide the reader with an understanding of what has been found within each of the earthworks and the order of their construction. The descriptions provide the foundations for the interpretations which are presented in the following chapters. We begin with the circular earthworks since far more is known about them. The rectangular earthworks are then described followed by the isolated small mound that is located between the two earthwork complexes. The chapter concludes with brief descriptions of three other sites in Mounds State Park: Mounds Bluff, The Bronnenberg Farm site and the Amusement Park site.

Circular Earthworks

The circular earthworks are the best known and most often described. As many as eight earthworks are reported in this group, but only four are visible today (Figure 5). Destroyed earthworks may include a small circular enclosure possibly destroyed by Mounds Road and an Interurban line (Figure 5). Another small earthwork, labeled “E” on Figure 5, was investigated on two separate occasions but no evidence of the enclosure was found. Testing of Earthwork I revealed buried historic materials and no evidence of aboriginal modification. Earthwork K is not visible today and has not been excavated. The focus of this

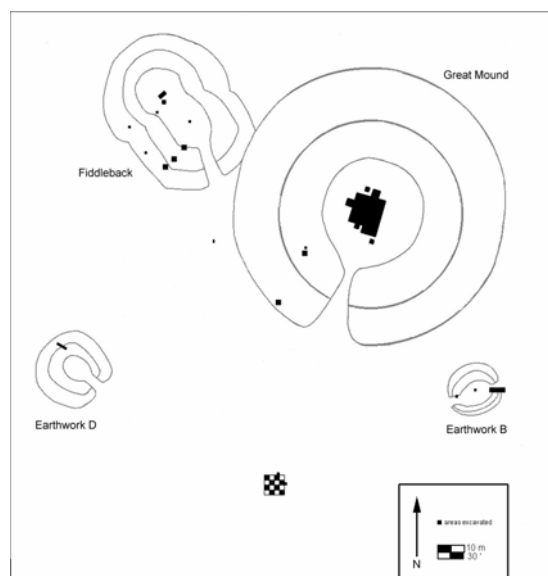


Figure 6. Areas excavated.

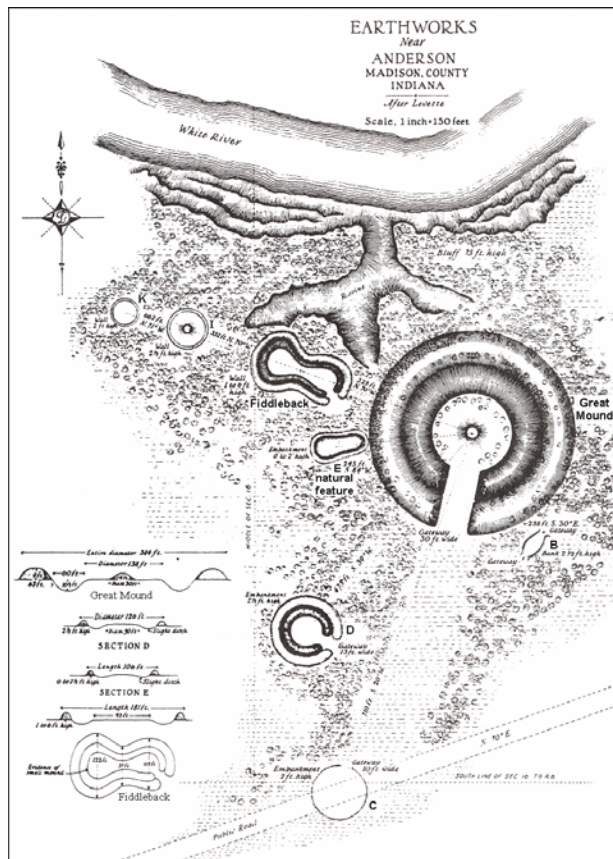


Figure 5. Old map of the southern enclosure complex (after Lilly 1937).

description is on the four earthworks that are visible today: the Great Mound enclosure, the Fiddleback enclosure, and two small circular enclosures. Most excavation has focused on the Great Mound with minor excavations at the other enclosures (Figure 6) (Buehrig & Hicks 1982, Cox 1879, Cochran 1988, Kolbe 1992, Lilly 1937, Vickery 1970, White 1969).

Great Mound

The Great Mound is the largest and most impressive structure in the Anderson Mounds site (Figure 7). This circular enclosure is over 350' across, making it equal to the length of a football field. The ditch is over 60' wide and 10' deep (Figure 8). The embankment is of equal proportions to the ditch. The ditch is so wide and deep that the platform in the center of the enclosure looks like an artificial mound (Figure 9). The platform is actually a small knoll that was isolated by the ditch and the surface is the natural ground surface.



Figure 8. Ditch of the Great Mound.



Figure 9. Interior of the Great Mound.

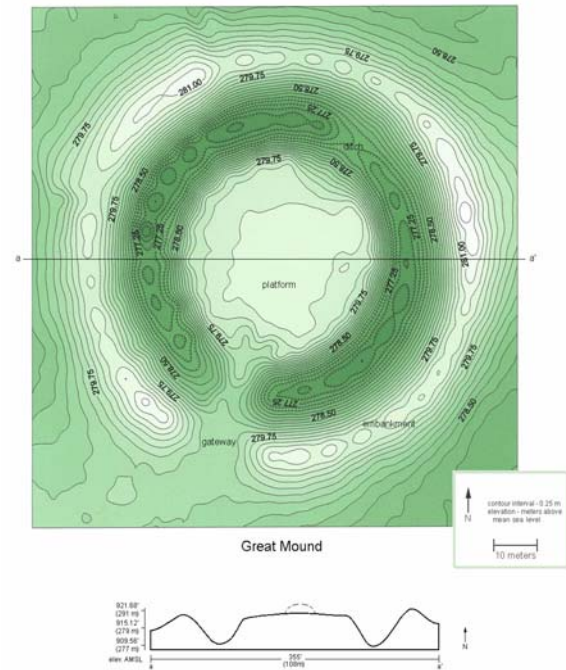


Figure 7. Contour map and cross-section of the Great Mound.

Although no longer visible, a small mound about 4' high with a base about 30' wide was in the middle of the platform (Figure 10). It was removed by an earlier archaeological excavation.



Figure 10. 1931 photograph of the Great Mound with Eli Lilly. Not the mound on the central platform. (Courtesy of the Glenn A. Black Laboratory of Archaeology.)

The small mound was a magnet for diggers, both the merely curious and professional archaeologists. When the mound was excavated by professional archaeologists in 1968 and 1969 (Figure 11), several looters' pits were discovered that had badly damaged the contents of the mound. However, we are fortunate to have detailed records from the professional excavations and we have relied upon them for our interpretation of the events that occurred there (Vickery 1970, White 1969). A detailed reconstruction of the construction and contents of the mound follows (Figure 12).

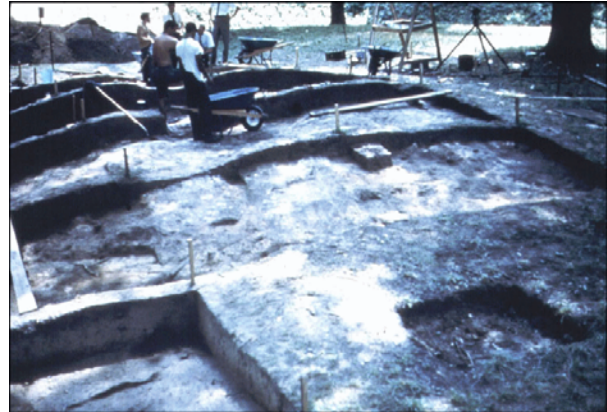


Figure 11. Indiana University's excavation of the mound (photograph by James Kellar).

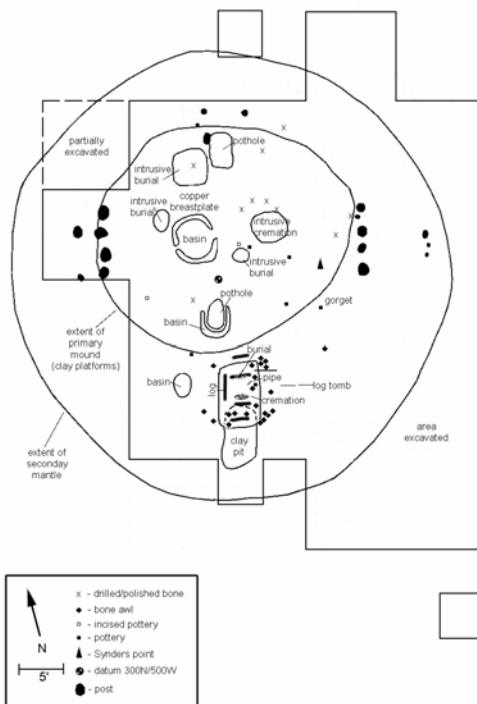


Figure 12. Plan map of the contents found in the mound. The central posts have been omitted (after White 1969 and Vickery 1970).

A small knoll near the edge of the White River Valley was selected as a place for ritual/ceremonial activities. We do not know when this first activity occurred, but based on **radiocarbon dating** of other features in the site, it occurred about 250 B.C. The location was probably chosen for a variety of reasons. The selection of the place was more likely related to its central location for the people living around it and less likely to be based on economic reasons such as its relationship to food sources.

Radiocarbon dating is the most common absolute dating method in the U.S.. The method was developed in the 1940s using naturally occurring radioactive carbon that is found with other forms of carbon in plants and animals. Radiocarbon dating is based on a known half-life for radiocarbon carbon or the time that it takes half of the radiocarbon (^{14}C) to form a stable daughter isotope (^{14}N) which is approximately 5700 years (5730 ± 40). Plants and animals take in forms of carbon until their time of death and then radiocarbon begins to decay. A date is achieved by measuring the amount of carbon-14 still left in an organism, but because of the standard deviation or statistical error in the radioactive decay the date is actually a range of years that can span several decades or even centuries. For example, a sample measured at 2000 ± 60 B.P. is 500 ± 60 B.C. meaning 440 to 560 B.C. The date can be placed on a time scale as either before present (B.P. - for scientific convention present is 1950), before Christ (B.C.) or anno Domini (AD or year of our Lord).

The first documented activity on the knoll was the spreading of a layer of subsoil about 2" thick and just over 25' in diameter (Figure 13). Fires were built on this prepared floor until it was burned hard and brick red to deep purple in color. The red color was from the clay content in the subsoil. We do not know how many fires were built nor how long this floor was in use. At some point in time, the floor was covered with a contrasting layer of powdered white calcite. Sources for calcite include bone, shell, and limestone. Recent chemical analysis of the powdered calcite from Anderson Mounds shows that it was from limestone.

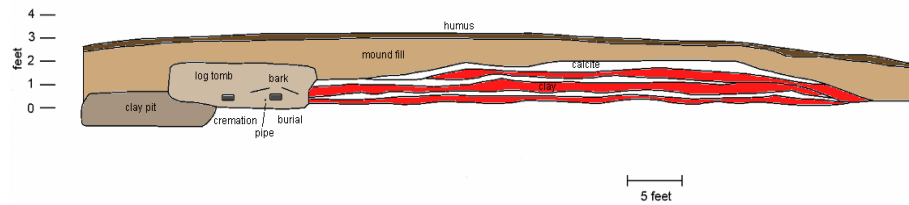


Figure 13. Cross-section of the mound (after White 1968 and Vickery 1970).

After the covering of the floor with the powdered calcite, two lines of posts were erected on the east and west sides of the floor (Figure 12). Six posts were on the west side of the clay floor and nine posts were on the east side. The larger posts ranged between 8 1/2" and 16" across at the base while the smaller posts were around 6-9" across at the base. Additional posts were recorded in the center of the clay floor and at the north end. In general, the posts were filled with dark organic earth containing charcoal and a few artifacts. A fragment of an imitation bear canine made of bone was recovered from one of the post holes

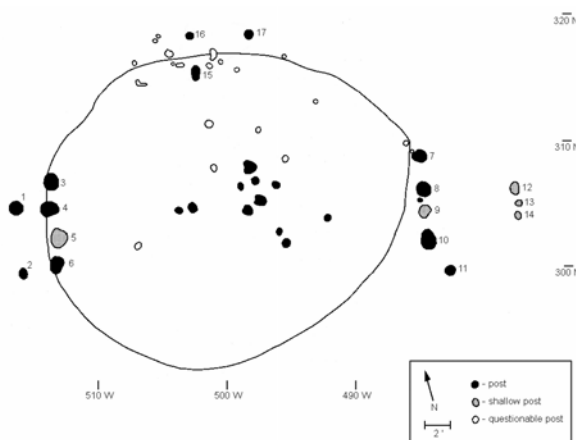


Figure 15. Distribution of posts (after Vickery 1970).

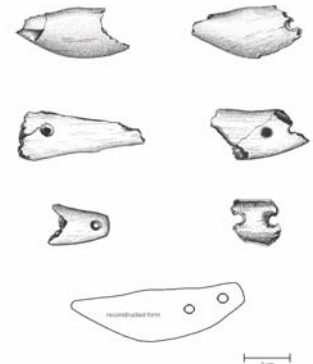


Figure 14. Bone bear canine effigy fragments recovered from the mound.

was recovered from one of the post holes (Figure 14). In the earlier reports, the numbered post holes in Figure 15 were thought to be part of the same pattern. However, it appears that all the identified post holes were related. Additional discussion of post alignments is presented in the interpretation section. Based on radiocarbon dates obtained from three posts, we suspect that the posts were burned about 250 B.C. while the first clay floor was in use (McCord & Cochran 1996).

After the first floor was covered with the powdered calcite, another layer of subsoil about 5" thick was added over it (Figure 13). The second floor was smaller than the first floor. As on the first floor, fires were built and the second floor burned hard and brick red. Following the end of activities associated with the second floor, another capping of powdered calcite was added over it. Subsequently, another floor was added above the powdered calcite capping the second floor. The third floor was about 3" thick and smaller in diameter than the second floor. It was also burned and subsequently covered with powdered calcite. This upper layer of powdered calcite was thicker than on the previous floors and covered the whole mound surface.

Each of the floors had basins and pits of unknown purpose constructed on them (Figure 12). The reconstruction of the mound structure is most likely overly simplistic as extensive disturbance, both prehistorically and historically, blurred the complexity of the mound.

Following completion of this part of the mound, a pit was excavated into the subsoil outside of and to the south toward the gateway to the platform (Figure 12). The pit was 6' 5" north-south and 4' 11" wide and between 1' and 1'3" deep. Artifacts found in the fill in the pit included chipped stone flakes, burned bone, a fragment of shell, fragments of mica and burned clay chunks. This pit was partially underneath the log tomb that was built above it (Figure 16).

The log tomb was constructed on the south side of the mound toward the enclosure gateway (Figure 12, 16). The log tomb measured about 4' 10" wide by 7' 4" long and 1' 7" deep. The long axis of the tomb was aligned with the enclosure gateway. The tomb was built of logs laid on the ground (Figure 13). Inside the tomb were two human burials. One burial consisted of a bundle reburial of an adult male who was more than 50 years old. The burial was placed in the north end of the log tomb and covered with bark. The other burial consisted of the redeposited partial remains of a cremated individual. This burial was placed near the center of the log tomb and also covered with bark. Powdered

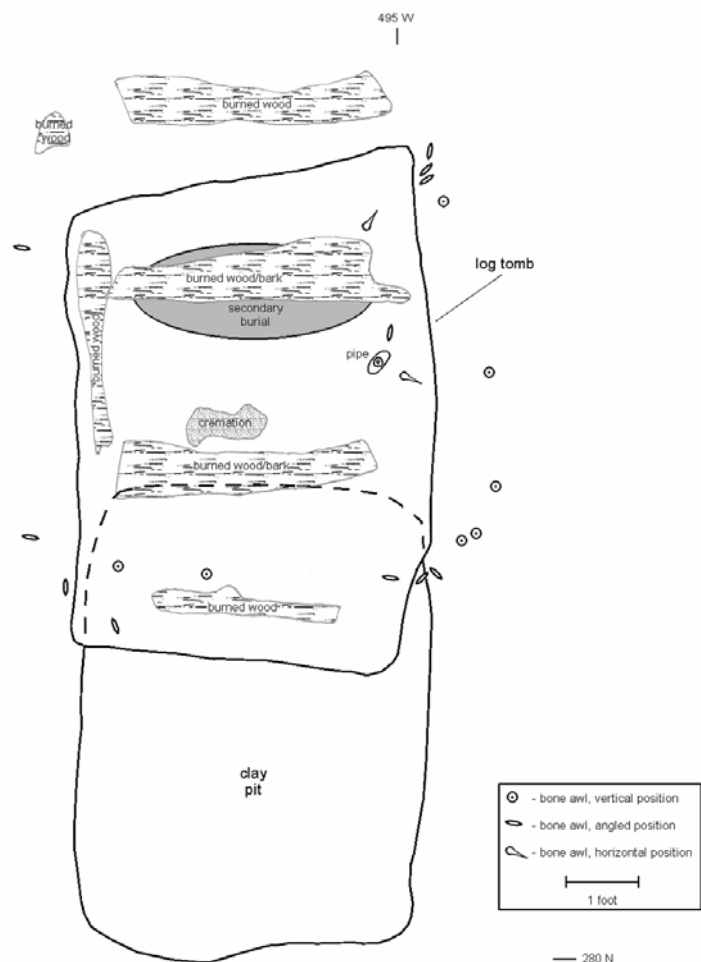


Figure 16. Detail of the log tomb (after White 1969).

calcite covered the bark overlying the burials. Artifacts found within the log tomb included a platform pipe made from limestone (Figure 17), flakes, fire-cracked rocks, mica fragments, a plain piece of pottery, and both burned and unburned bone. Seven deer bone awls were also found within the tomb (Figure 18). Some of the

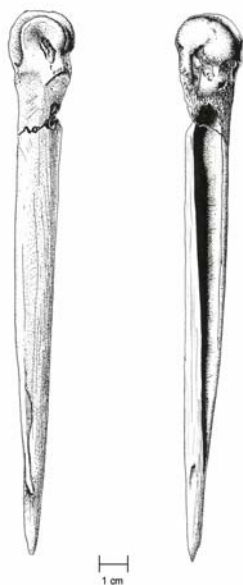


Figure 18. Bone awl.

awls were upright in the ground while others were lying down. Thirteen additional bone awls of the same style were found just outside of and surrounding the log tomb. The platform pipe was of a style that dated to about AD 50, a date consistent with the piece of pottery found within the tomb. A radiocarbon date of AD 50 was obtained from charcoal recovered from one of the burned logs that made up the tomb (McCord & Cochran 1996).

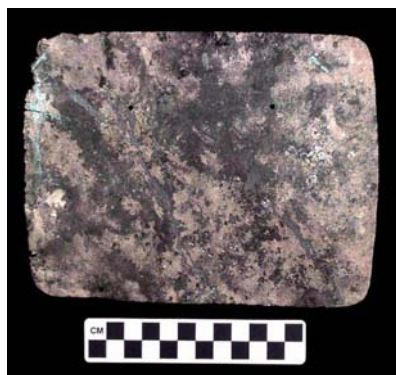


Figure 20. Copper breastplate.

The tomb was covered with a small mound of earth. Rocks were scattered over the mound. The tomb covering was followed by another earth covering over the whole mound. This final covering of earth contained both prehistoric and historic artifacts that had been mixed together by the intrusive burials dug into the mound and historic looting. The numerous pits that were dug into the mound after its completion partially accounted for the mixed nature of the capping. It seems most likely, however, that the capping was already mixed when it was placed over the mound. Most of the artifacts found in the mound were recovered from the capping. These included a

Snyders point (Figure 19) and other chipped stone artifacts, a broken ground stone gorget (Figure 19), mica fragments, a copper breastplate (Figure 20), 10 pieces of pottery, and fire-broken rocks. This capping represented the final building phase of the small mound.

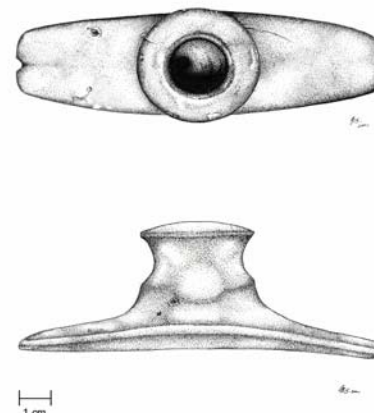


Figure 17. Platform pipe found in the log tomb.

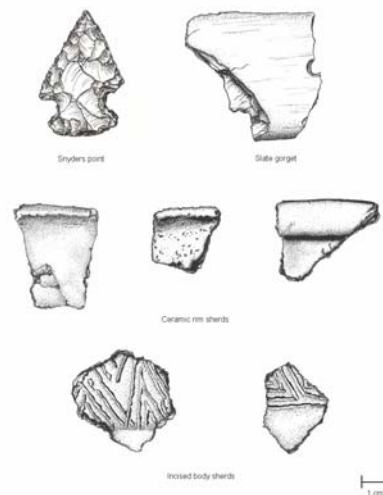


Figure 19. Snyders point, gorget and pottery from the mound.

After the mound was completed, several pits were dug from the surface of the mound and deep enough to penetrate the lower floor. One pit apparently represented looting of the mound during historic times. Two other pits contained human burials, but no artifacts were found with them (Figure 11). The placement of burials into existing mounds was a common feature of people living in the region about 500-600 years after the mounds were built (McCord 1994).

While the small mound was being built and used, the ditch and embankment were constructed around the central platform. This occurred about 160 B.C., or almost 100 radiocarbon years after the posts were erected in the center (Cochran 1988). The embankment of the Great Mound is one of the most interesting visible features of the enclosure. When standing on the platform, the top of the embankment is the visible horizon. At first, the top of the embankment appears irregular and random, but closer inspection shows that the profile was carefully created

(Figure 21). For instance, the embankment on each side of the entranceway is higher, and the top of the embankment opposite the entranceway is lower and flatter than other sections. In addition, the direction to each of the other enclosures is marked by a slight dip in the top of the embankment (Figure 22). While 2000 years of erosion have undoubtedly softened the contours of the embankment, it still retains its original shape.

The only other aboriginal features documented on the platform of the Great Mound were numerous small post holes that encircled the mound. These post holes were interpreted as a brush fence erected to hide the activities carried out on the platform (Vickery 1970). We have been unable to evaluate this interpretation because field notes and photographs of these post holes have not been found.

To summarize, the Great Mound is a large circular enclosure that once contained a small mound on the interior platform. The small mound was built in several stages, including the selection of a natural knoll on the edge of the valley above the White River, the construction of a

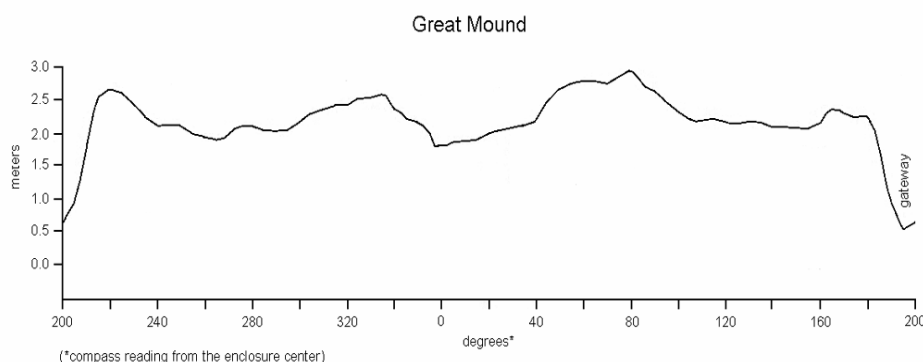


Figure 21. Great Mound embankment profile.



Figure 22. Dip in the embankment.

small mound containing three superimposed floors each burned hard and red and subsequently sealed with powdered calcite, the construction of a log tomb and other features adjacent to the small mound and a subsequent covering of the log tomb and the small mound with a deposit of mixed earth. About 100 years after the mound was started, the ditch and embankment were built. Following completion of the mound, prehistoric people returned to the site approximately 500 years later and placed their dead into holes dug into the mound. During historic times, the small mound was dug into on several occasions which contributed greatly to the disturbance of the original structure.

Fiddleback Enclosure

The Fiddleback enclosure is on the northwest side of the Great Mound (Figure 3). The enclosure is built on a ridge spur and is sandwiched between the embankment wall of the Great Mound and ravines on the north and west sides. The enclosure is named for its oblong shape with a constricted middle, like the back of a fiddle or violin. This is a rare shape for an earthwork.

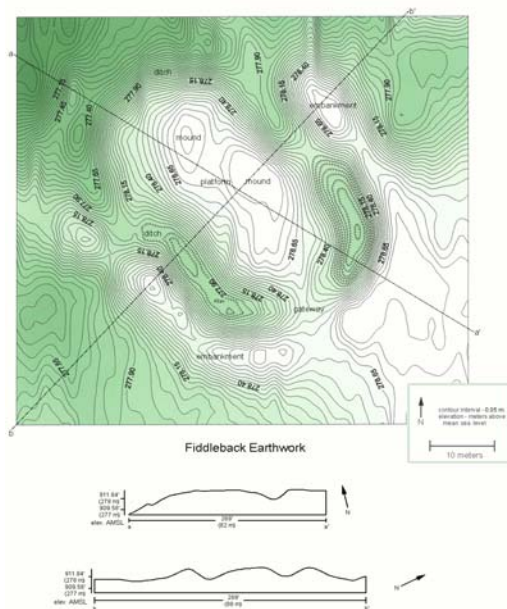


Figure 24. Contour map and cross-section of Fiddleback.



Figure 23. Fiddleback enclosure.

Actually, the Fiddleback enclosure is not truly shaped like a violin. It is a blend of a circular ditch and bank on the west end with a more rectangular ditch and bank on the east end (Figure 23). The gateway of the enclosure is not centered but is offset to one side suggesting that entrance to the structure came from the south along the wall of the Great Mound. The Fiddleback enclosure is approximately 215' long when measured from the outside edges of the embankment wall, approximately 165' wide at its widest extent and 140' wide in the middle at the constriction. The embankment wall varies between 1' and 3' high above the surrounding terrain. The ditch is approximately 3' deep, but appears shallower on the north or ravine side. The central platform is approximately 115' long and 40' wide but somewhat narrower at the constriction (Figure 24).

The embankment around the Fiddleback enclosure is much lower than the Great Mound embankment, although, the top of the embankment is patterned with dips and peaks like the Great Mound embankment (Figure 25). No astronomical observations have been documented from the Fiddleback enclosure, but when one stands in the center of the Great Mound and looks through a dip in the Great Mound embankment toward the Fiddleback enclosure, the location marks the place where the sun sets at the Summer Solstice.

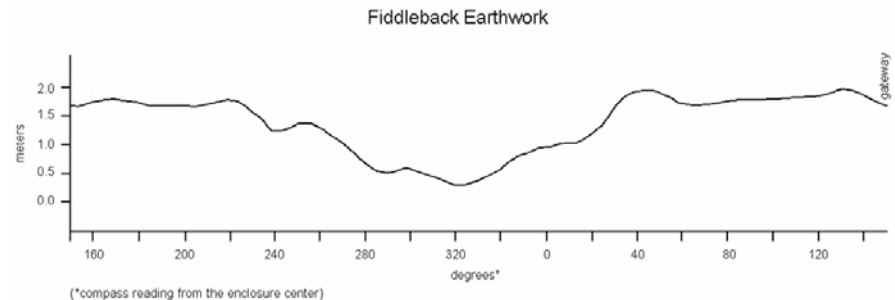


Figure 25. Fiddleback embankment profile.

Two small mounds are evident on the platform, one on the west end and another in the eastern half. Whether or not these two mounds are joined or represent separate mounds is not currently known. A depression from an old park trail crosses the platform and erosion of this trail may create an illusion of two separate mounds. Both mounds are oblong in shape and about 1' higher than the surrounding platform surface.

We know that the construction of the mounds occurred in multiple building episodes. We also know that submound features exist. Excavation of a unit on the eastern mound revealed a multistage construction sequence. First, a small pit was excavated into the subsoil. The contents of the pit have not been sampled, but it was filled with a dark soil. The pit was then capped with silty subsoil and burning occurred in some areas turning the soil red. This is similar to the clay floors of the Great Mound, but apparently not as extensive. The area was capped again with the dark **midden** soil that covers the entire mound surface. Excavations on the western end also show at least two episodes of mound construction. The first was a light colored silt loam soil with some artifacts mixed in the soil and the second was the mantle of dark midden containing large quantities of artifacts. The final mantle of soil represented by the midden on the Fiddleback is somewhat unique since most of the other excavated mounds in the region are capped with a thick mantle of light-colored fine soil that contains very few artifacts.

A **midden** is a trash deposit that is usually dark in color from the decay of organic materials such as food and contains quantities of artifacts such as stone tools, pottery or bone.

More artifacts have been found at the Fiddleback enclosure than from any of the other earthworks at Anderson Mounds in spite of the fact that far less excavation has occurred there than at the Great Mound (Figure 6). Most of the artifacts were recovered from the top of the small mound on the west end of the platform: chipped stone flakes, burned clay chunks, pottery sherds, fire broken rocks, bone, some wood charcoal and chunks of white calcite powder. The earth capping was thoroughly mixed indicating that it originated somewhere else and was

brought to cover the small mound. Its place of origin is not known (Vickery 1970, Kolbe 1992).

The chipped stone artifacts consist of manufacturing waste; no tools have been recovered. A small percentage of the raw materials for the chipped stone artifacts came from sources in Illinois, southern Indiana and Ohio, but the majority of the stone artifacts were produced from locally available chert.

Pieces of burned clay were common. Some of the clay had stick or twig impressions and had apparently been used in **wattle and daub** house construction. The presence of this material would indicate that part of a burned house was included in the earth at Fiddleback. Other pieces of burned clay were rolled like coils used in the manufacture of pottery.

Wattle and daub is a type of wall construction where the spaces between upright posts are filled in with pliable saplings and vines. The surface is plastered with mud. An overhanging roof keeps rain off the sun dried walls. Wattle and daub wall construction is energy efficient, keeping heat in during the winter and helping to keep the interior cool in summer. Daub only survives when the structure burns. The daub is then fired like ceramics and survives in the archaeological record. If the daub is not fired it simply disintegrates.

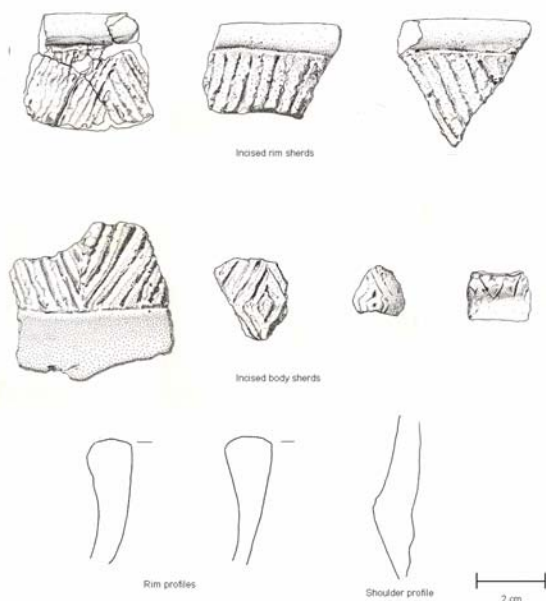


Figure 26. Pottery sherds from Fiddleback.

More than 400 pieces of plain and decorated pottery sherds were found. This number was remarkable because only 11 pieces of pottery were found in all of the Great Mound excavation. Most of the decorated sherds have designs consisting of an incised nested diamond, parallel lines or diagonally filled rectangle (Figure 26). This decorated ceramic is called New Castle Incised for the site where they were first found. No complete vessels of this type have been found, but the sherds suggest that the vessels had a globular body with a rounded base (Figure 27). The vessels also had an angular shoulder.



Figure 27. Reconstruction of a New Castle Incised vessel.

The more than 4000 pieces of bone recovered from the Fiddleback enclosure are the most common artifacts. Most of the bone was very small unidentifiable fragments and most of it was burned. Turkey, white-tailed deer, black bear, squirrel, Canada goose, eastern cottontail and mole were the animals represented in the pieces that could be identified (Vickery 1970, Kolbe 1992). The black bear bones were possibly from a single left paw. All of the animal remains except the mole were potential food resources. The majority of the bone fragments may simply represent the refuse from numerous meals, or they may also indicate ritual feasting (Brown 1979). A few of the bone pieces had been modified, shaped and polished, but were too small to determine the use. Two small bone fragments were decorated with a small incised six-line star pattern (Figure 28). This decoration is unique and not documented elsewhere in the region.

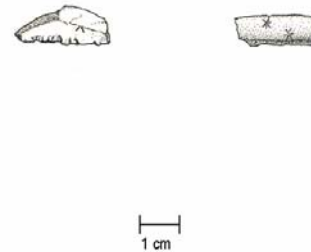


Figure 28. "Star" design on bone.

Some of the bone fragments were identified as human. The human bone is heavily burned, possibly from a cremation. The human bone was mixed throughout the earth capping and did not appear to represent the interment of an individual. The presence of the human remains mixed in the midden suggests that the midden deposit was a product of mortuary ritual where human remains were manipulated before burial.

Several hundred pieces of fire broken rock and deposits of white calcite powder were also recovered. The fire-broken rock could have been produced from several activities including lining hearths, use in sweat lodges, stone boiling, and slow cooking in earth ovens. The white calcite powder was like that found in the mound on the platform of the Great Mound. At Fiddleback, the calcite was mixed in the midden deposit (Kolbe 1992).

The entire platform at Fiddleback was not covered with an artificial mound. A unit excavated on the southeast side of the platform revealed a natural layering of topsoil followed by subsoil just as it appears in the surrounding natural topography. The soil layers showed no indication of artificial construction on this portion of the central platform. A few chipped stone artifacts of undefined age were found in the unit unlike the numerous artifacts found in the midden deposit on the mounds.

Excavations in the Fiddleback embankment demonstrated that it was constructed from the soil removed from the ditch. Remnants of a burned tree were found in one of the units on the embankment suggesting that the area was cleared by cutting down the trees and burning the secondary growth before the embankment was built. Excavations in the embankment and ditch did not produce many artifacts, only a few chipped stone flakes, fire-cracked rocks and charcoal.

Investigation of the ditch showed that the original bottom was approximately 4 1/4' (1.3 m) deeper than it is today, a result of 2000 years of filling from decaying leaves and soil erosion.

Most of the artifacts found in the ditch were historic. One intriguing feature found in the ditch was a post mold. The post mold was found at the original bottom of the ditch. It was 6 to 8" in diameter and it extended 11" below the bottom of the ditch. No post holes have been reported in the ditches of other enclosures in the region, but this may be due to a lack of excavation. The function of the post was not determined (Kolbe 1992).

Radiocarbon dates were obtained for samples of wood charcoal collected from several locations in the Fiddleback enclosure. All the dates center at about 120 B.C. or 2,070 years ago. The post mold in the ditch was dated to 120 BC +/- 150. A sample from the burned tree at the base of the embankment was 80 BC +/- 40. The midden capping of the mound was dated to 120 B.C. +/- 50 (McCord & Cochran 2000). In addition, ceramics similar to those recovered in the mound fill have been dated between 150 BC and AD 1 at other regional sites. The dates obtained from the enclosure cannot give us precise dates on construction, but rather they provide us with a likely span of time that the enclosure was built, used and abandoned.

The information recovered from the Fiddleback enclosure indicates that it was a unique structure within the Anderson Mounds site, but it also contained common cohesive elements with the other enclosures. Fiddleback was built around a small ridge spur, but the platform has been modified through the construction of two mounds that were built in more than one construction episode. The embankment has a unique shape combining circular and rectangular motifs. The top of the embankment appears irregular but is carefully constructed to match the profile of the Great Mound. The location of the enclosure places it within the Great Mound's astronomical observation system. The numerous artifacts recovered from the final earth capping of the mound indicate that the earth originated at another location, that the deposit contains a wide variety of artifacts generally related to domestic activities including manufacture, maintenance, and disposal, and even human mortuary activities. Finally, the enclosure shows a sequence of construction and use during the approximate time period as the Great Mound.

Earthwork D

Earthwork D is a small circular enclosure to the south of the Great Mound (Figure 3, 29). It is situated on the western slope of a knoll and not on top of the knoll. The enclosure is approximately 100' in diameter (Figure 30). The ditch is shallow, only 9" deep, and the embankment just about 1' high. The central platform is approximately 42' across and more of a



Figure 29. Earthwork D.

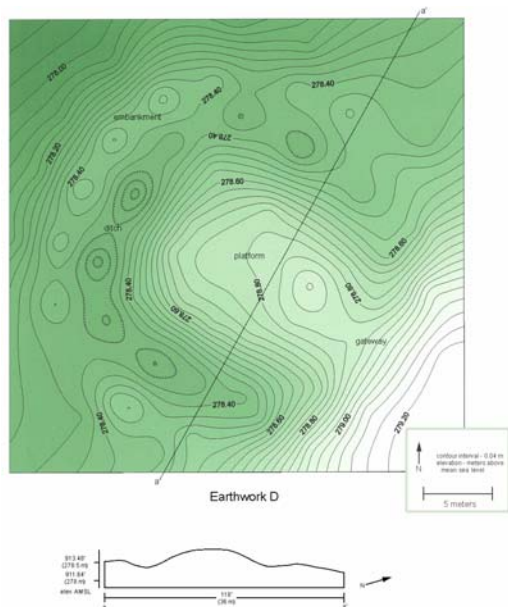


Figure 30. Contour map and cross-section of Earthwork D.

2 1/2' deeper at the location of our unit. Sufficient amounts of charcoal for a radiocarbon date were not recovered in the excavation. Almost 200 prehistoric artifacts primarily from chipped stone tool manufacture were found in the ditch fill. These, however, cannot be clearly associated with the building or use of the enclosure since the ditch fill is an erosional deposit. Numerous historic artifacts were also collected from the upper portions of the ditch fill (Kolbe 1992). We do not know when this enclosure was built in relation to the others in the complex, but since its center is aligned to the center of the Great Mound on the winter solstice sunset alignment, it is likely that Earthwork D was constructed to mark that alignment from the center of the Great Mound. Thus, it is currently our assumption that Earthwork D was constructed during the ongoing activities at the Great Mound.

Earthwork B

Earthwork B is located just southeast of the Great Mound (Figure 3). It is the smallest enclosure at the site being approximately 85' in diameter (Figure 31). The enclosure is easily missed since the embankment is only about 14" tall at its highest spot and ditch varies between 8" and 16" in depth. Test excavations have revealed the original depth of the ditch is over 3' deeper

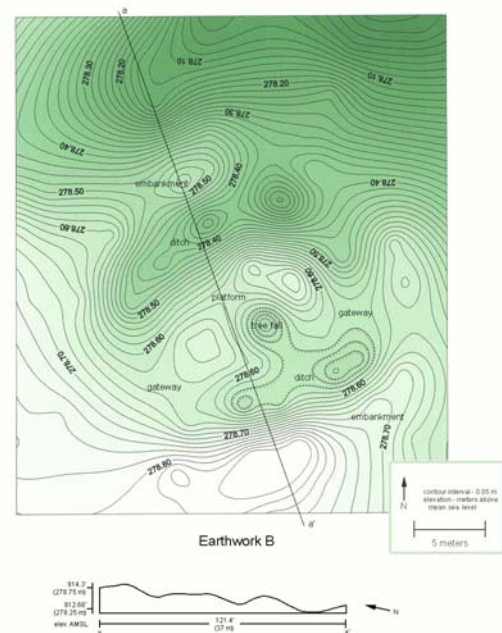


Figure 31. Contour map and cross-section of Earthwork B.

than it currently appears (Figure 32). Decayed forest litter and soil erosion has filled the ditch to its present configuration. The circular platform is only about 25' in diameter. A central "feature" on the platform of this enclosure is a large depression and adjacent "mound." We think the depression and mound are from a tree that fell over. Examples of these depressions and "mounds" are visible in the woods around the site.



Figure 32. Excavation at Earthwork B.

This earthwork is unique because it is the only circular enclosure in the site that has two gateways (Figure 31). In addition to this distinction, the gateway on the east side of the enclosure was built over the ditch. The ditch was first excavated and then earth was used to fill in one portion of the ditch to create a walkway. This gateway is probably later than the other one and is currently the only example of gateway construction like this. The other gateway is an unexcavated portion of the ground surface as is typical for gateway construction. The uniqueness of the eastern gateway may indicate the enclosure was modified at some point after its initial construction (Cochran 1988).

We do not know the age of this enclosure nor when it was built in relation to the other enclosures in the site. Test excavations in the central platform and the ditch did not produce enough charcoal for a radiocarbon date. Only 50 prehistoric artifacts were recovered by excavations in the ditch or platform and none helped to date the construction or use of the enclosure. This is a pattern that has been consistently found on these small enclosures: they contain few artifacts or features and they have only small flecks of charcoal (McCord 1999). This absence of physical evidence of use for these small enclosures indicates that the activities that took place there did not include the deposition of durable artifacts of stone or pottery. Perishable artifacts of wood, feathers, cloth, etc., would have decayed long ago without leaving physical traces.

The earthwork is situated in a somewhat low place and not on any of the more prominent knolls located nearby. From the placement of this earthwork, we can assume that the location was chosen for its relationship to the Great Mound and the other enclosures in the complex. As with the other enclosures, the center of Earthwork B is connected to the center of the Great Mound by a sight line that passes through a small depression in the top profile of that Great Mound embankment. If you were standing in the center of the Great Mound and looking across the small depression in the embankment and through the center of Earthwork B, you would be looking along a line that corresponds to the rising point of the bright star Fomalhaut which is visible in the Fall.

Summary of the circular complex

Most of the excavations in the circular complex were focused on the Great Mound and only minor excavations were conducted at the other enclosures. The Fiddleback enclosure, Earthwork D and Earthwork B have received very limited testing. Sight lines between earthworks were built into the embankment of the Great Mound and it appeared that the other enclosures were directly related to the Great Mound. Alignments for the winter solstice and summer solstice sunset were constructed in the Great Mound embankment and the arrangement of other enclosures. The embankments of the Great Mound and Fiddleback enclosure have a patterned profile, a phenomenon not previously documented elsewhere. Although a combination of stratigraphy with radiocarbon dating has clarified construction events, both within individual earthworks and within the circular complex in general, the sequence was still not entirely clear. An intriguing question can also be raised about the source of the midden used to cover the small mound on the Fiddleback enclosure. While it is suspected that the midden originated in a nearby site, the source has not been identified. Some of these features were also evident in the rectangular enclosures located north of the circular complex. In the following section, we describe this complex.

Rectangular Earthworks

Approximately 1/2 mile north of the circular enclosures are three rectangular enclosures (Figure 3). These enclosures, designated Circle Mound and Earthworks G and F, are more dispersed than the circular complex. The Circle Mound is the largest and most obvious enclosure of the three. Earthwork G is buried in the campground and Earthwork F is damaged by cultivation and construction of a county road. Little archaeology has been accomplished with these enclosures so we know little about the activities that occurred there (Figure 33).

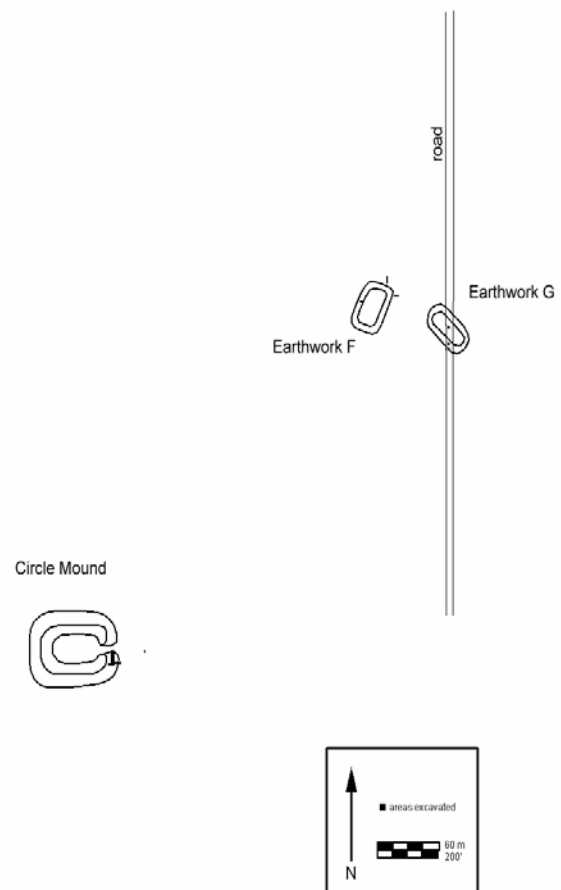


Figure 33. Areas excavated at the northern complex.

Circle Mound

Early drawings of the Circle Mound show it as long and narrow with rounded corners and incurving sides (Figure 34). More recent maps show the enclosure as more rectangular with rounded corners (Figure 35). It measures 285' long and 225' wide. The ditch is about 30' wide and 5-6' deep and the surrounding embankment varies between 4' and 6' in height. The platform is 148' long and 72' wide (Figure 36). The west end of the platform and a small area just to the left of the entrance are higher than the surrounding platform surface. Whether these higher areas represent artificial "mounds" is not currently known. The gateway is at the east end and the long axis of the enclosure is aligned due east and west. A park trail crosses the central platform and west wall of the enclosure. Two small mounds were situated on either side of the entrance and abutting the embankment. Both of these have been badly reduced in height by plowing as they were at the edge of a cultivated field. These small mounds were about 3' high and 25' wide (Figure 35).

The long axis of the enclosure lies on an east to west line. The sun would shine through the gateway and down the central platform at the equinox sunrise (September 21 and March 21). Sunset at these two dates would also fall on a line through the center of the enclosure and the gateway. The enclosure is also constructed in such a way that diagonal alignments through opposite corners mark sunset and sunrise alignments to the winter and summer solstice.

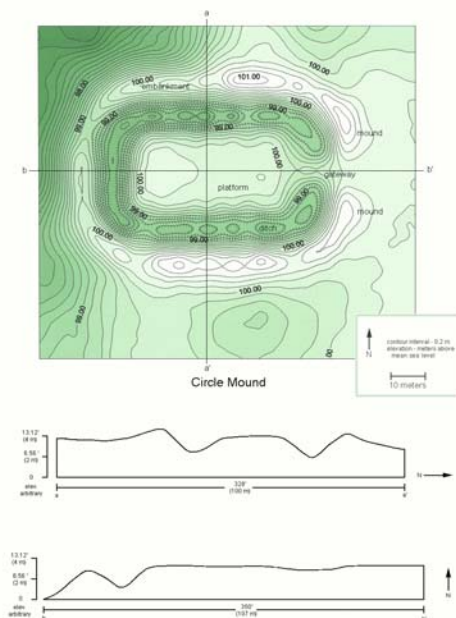


Figure 35. Contour map and cross-section of Circle Mound.

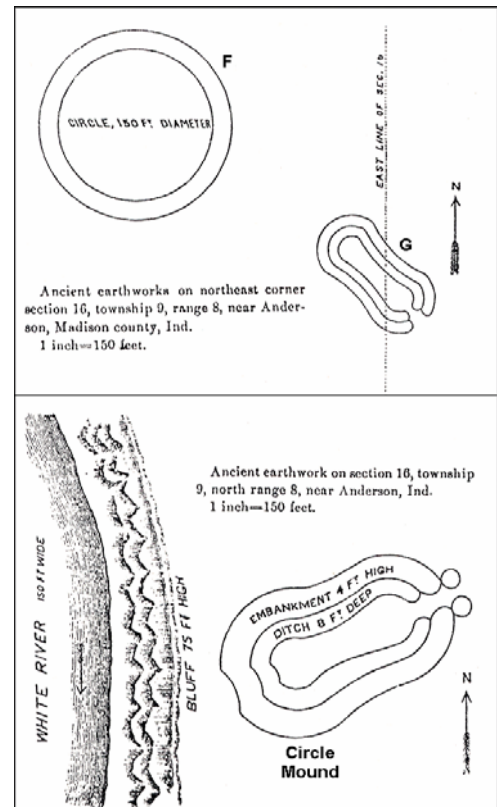


Figure 34. Old map of the northern enclosure complex (after Cox 1879).



Figure 36. Circle Mound.

The embankment of Circle Mound is interesting in two regards. First, the embankment height would only obstruct views to the interior from the north and south sides. The embankment on the east end is not high enough to obstruct views to the interior. The second interesting feature of the embankment is the profile. It contains the same pattern of rises and dips as at the Great Mound and Fiddleback enclosures (Figure 37).

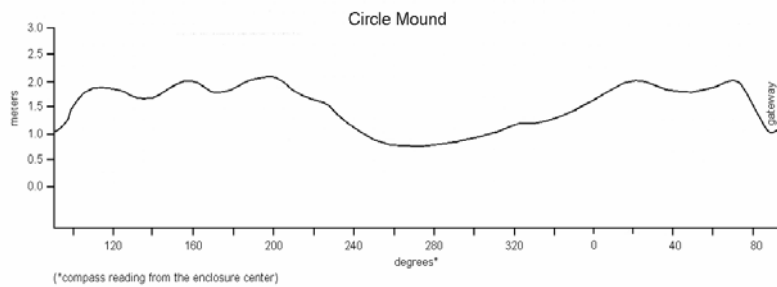


Figure 37. Embankment profile of Circle Mound.



Figure 38. Excavations at Circle Mound (ARMS files).

The small mound on the south side of the gateway was tested by archaeologists from Ball State University in 1980 (Figure 38). The mound contained a complex stratigraphy of different colored sediments, including red and white sands, but no artifacts. At the base of the mound was a large piece of charcoal and a small pit filled with white sand. Stratigraphy showed that the mound was added after the embankment was completed. Radiocarbon dates showed that the base of the mound dated to AD 70 +/- 60 while the base of the embankment had a date of 5 BC +/- 75. The enclosure embankment was therefore contemporary with activities in the southern circular complex, but it was built after both the Great Mound and Fiddleback embankments (Buehrig & Hicks 1982).

Earthwork G

Earthwork G is also a rectangular enclosure and situated just east of Earthwork F (Figure 3). The western part of the enclosure was damaged by cultivation and a gravel road bisects it diagonally through the center. The east side beyond the road is the best preserved and most visible when the vegetation is down in the winter. The enclosure measured approximately 100' long and 50' wide. The embankment is about 2' high and surrounds the internal ditch and platform. The long axis of the enclosure is oriented southeast to northwest. The gateway was apparently on the southeast end, but it is no longer visible (Figure 34).

Test units were excavated in the road over the north embankment, in the middle of the enclosure on the platform and over the ditch at the south embankment (Figure 33). Also, a

profile of the south embankment wall was obtained where it was cut and exposed by the road. The unit on the central platform revealed a burned area that was initially thought to be associated with the original use of the enclosure (Hicks 1981a). However, subsequent investigations showed that the feature was a burned tree stump, probably removed by the road construction (Kolbe 1992). The unit over the ditch showed that considerable filling from natural erosion and road construction had occurred, but the original bottom of the ditch was not reached at 2' below the present surface when the unit was stopped. The profile of the bank and unit over the bank only showed disturbances and did not provide any information on the construction or use of the enclosure (Hicks 1981a). In general, none of the units produced information that was helpful for understanding the aboriginal construction or period of use of the enclosure. Due to historic disturbances and centuries of accumulation of loam on the forest floor, the modern configuration of the enclosure is very unlike its original condition.

Earthwork F

Earthwork F was first reported as a circular enclosure 150' in diameter in a cultivated field (Figure 34). Plowing had reduced the surface features of the enclosure, it was difficult to define, and the location of the gateway had been obscured. A 1930 aerial photograph clearly showed that the enclosure was rectangular and of a bank and ditch construction like the others in the site. It appeared to measure approximately 190' long and 170' wide (Buehrig and Hicks 1982). The enclosure is now located in the park campground and surface indications of the site have been obliterated (Figure 3). Three areas were archaeologically tested in an effort to locate the enclosure. A remnant of the ditch was found in one area and the ditch fill contained a few flecks of charcoal and stone tool manufacture debris (Hicks 1981a). The testing documented that extensive historic disturbances have essentially destroyed this enclosure.

Summary of the Rectangular Enclosures

In summary, very little specific archaeological information has been acquired from excavation of the rectangular enclosures. Essentially they have been mapped and radiocarbon dates have been obtained from the small mound and embankment at the front of Circle Mound. The embankment profile at Circle Mound duplicates the embankment profiles at the Great Mound and Fiddleback enclosures. Radiocarbon dates show that the rectangular enclosures were slightly later in time than the circular earthworks but still contemporary with ongoing use of the southern complex. In addition, Circle Mound was oriented to the sunrise at the equinox and alignments for the summer and winter solstice sunset and sunrise were contained in the enclosures.

Between the circular enclosure complex and the rectangular enclosure complex is a single small mound. The mound falls on a straight line connecting Earthwork D and Fiddleback enclosure in the circular complex and Circle Mound in the rectangular complex (Figure 3). This arrangement certainly suggests its connection to the two complexes. A description of the mound is presented below.

Dalman Mound

Reports of a small mound north of the Great Mound were in the literature on the Anderson Mounds site for many years, but it was only rediscovered in late December 1988 by Karen Dalman, the park naturalist at that time. The confusion over the location of the site was created by references to a small mound located near the pavilion. Many had looked near the current pavilion but without success. Karen finally found the location of an earlier pavilion and tracked down the site. Although the site is small and somewhat poorly defined, it was missed during a survey of the park carried out in 1980. The mound is small enough that it could have fallen between survey transects.

Dalman Mound is a small isolated earthen mound situated on the bluff edge overlooking the White River (Figure 3, 39). The mound is about 30' in diameter and 3' high. A large pothole in the center of the mound measures 6 to 10' across and about 2' deep (Figure 40). Several large stones are exposed around the sides of the pothole.



Figure 39. Dalman Mound.

The mound was dug into prior to the founding of the state park in 1930, and the hole was never backfilled. In a 1934 letter, Glenn Black stated:

The information came to me third hand and has to do with someone who dug a small mound on the river bluff, in the Park, found a stone cist or tomb within the mound, burials, platform pipes and gorgets. I have verified the fact that there is a small mound at that point, that it has been dug and that it had contained a stone structure of some kind. This much being true it is entirely possible that the balance of the story is true but I can't prove it. The fellow who dug did so against the orders of the owner and since the State has taken over the site is scared stiff (Black 1934:2).

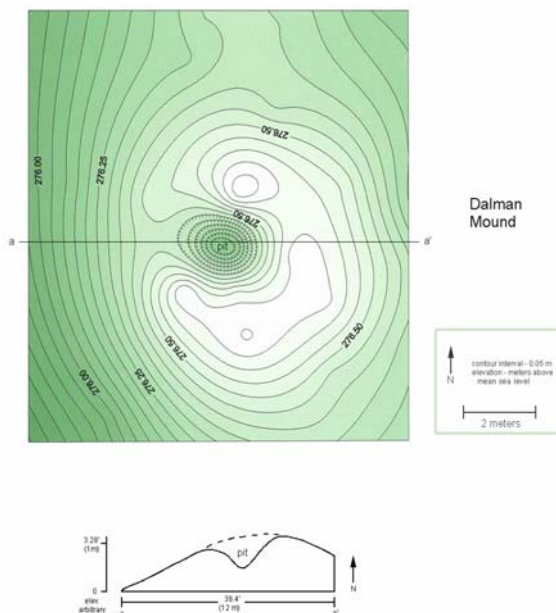


Figure 40. Contour map and cross-section of Dalman Mound.

We returned to the mound in 1999 with the intention of clearing the leaf litter from the pothole to determine whether any stratigraphy or features could be documented. Once the pothole was cleaned out and the walls were scraped, two construction episodes were evident. Near the bottom of the mound was a dark colored clay loam soil and above it was a light-colored silt loam. Both layers of soil appeared to be capping events. The pothole did not reach the bottom of the mound. No indication of a stone structure was documented, but several large rocks were found while cleaning out the pothole and several more were observed on the mound surface around the pothole. One would assume that the rocks were once part of the mound and Black's letter noted that a stone structure was reported in the mound. Either the earlier excavation entirely removed the stone structure or the rocks were not utilized in a patterned construction.

The only artifacts recovered from the mound were in the disturbed soil from the pothole and consisted of only 1 stone flake and 7 fire-broken rocks. We found no carbon to date the construction of the mound. Its location between the enclosure complexes suggests it was linked to them.

While the earthworks in the Anderson Mounds site appear to be linked through dating and spatial arrangement, the other sites in the park do not appear to belong to the same time period. Although prehistoric artifacts representing more than 8,000 years of the human occupation of east central Indiana are scattered throughout the park, none of the locations indicate long term habitation. One site that contained human remains was found eroding out of a park trail. A description of that site follows.

Mounds Bluff

The Mounds Bluff site was found accidentally when erosion of a hiking trail on the edge of the White River bluff revealed human remains (Figure 3). A Ball State University field school recovered the remains and defined the site area. The remains of two children, 19 months and 10-12 years old, were recovered along with one small pit feature and chipped stone artifacts. Neither the human remains nor the small pit was dated, either through association with artifacts or carbon suitable for radiocarbon dating. A chipped stone point found in the immediate vicinity dated to the 8,000-6,000 B.C. period. However, given the lack of clear context and/or direct artifact associations, the age of the remains is uncertain (Ellis 1975). The site was near the southern circular complex, but probably not associated with it.

In addition to the Native American sites in Mounds State Park, extensive historic sites are known as well. Two sites important to the preservation of the earthworks and the history of the park are briefly described below.

Historic Sites

Historic land use within the Anderson Mounds site was primarily related to farming. The southern complex was carefully protected by the Bronnenberg family and was never cultivated. The northern complex was within farm fields and all three of the enclosures were damaged by cultivation as previously noted. In addition, a county road crossed Earthwork G, and Earthwork C in the southern complex may have been obliterated by Mounds Road. The most prominent historic sites in the park are the Bronnenberg Farm complex and the Union Traction Company amusement park, both adjacent to the southern complex (Figure 3).

Bronnenberg Farm Complex

Frederick Bronnenberg, a Madison County pioneer, acquired the land containing the southern enclosures in 1849. He built a brick federal style farmhouse in 1853 (Figure 41) and a complex of farm buildings around it (Figure 42). Many of these buildings remained standing until the property was acquired as a state park in 1930. The only surviving structure



Figure 41. Bronnenberg House.

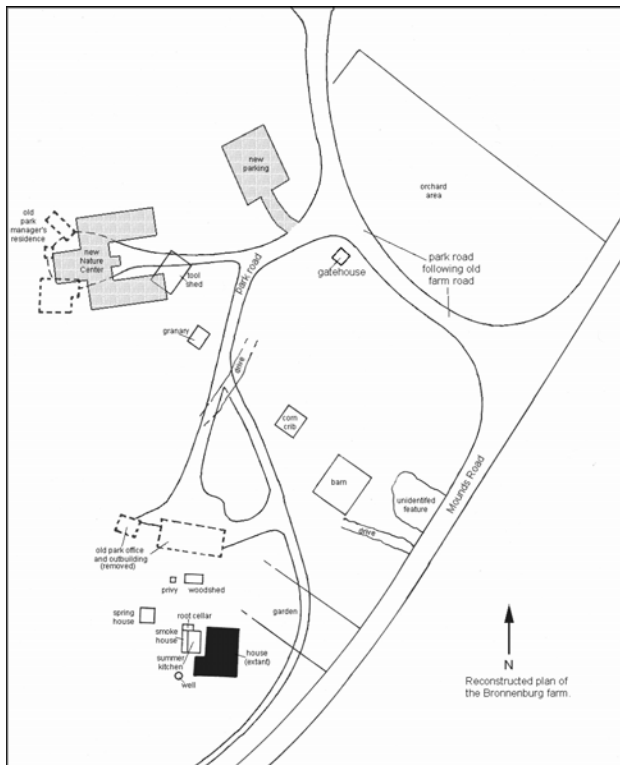


Figure 42. Plan map of the Bronnenberg farm (after Hicks 1979).

is the house. Archaeological investigations of the Bronnenberg Farm complex have been limited to defining and describing site features (Wepler & Hicks 1981). The Bronnenberg family protected the earthworks on their farm until the land was sold to the Union Traction Company in the latter half of the 19th century.

Amusement Park site

The southern enclosure complex was a popular recreation area before it was acquired by the Indiana Union Traction Company for the construction of an amusement park. The amusement park was extensive and contained several structures including an interurban station, pavilion, roller coaster, merry-go-round, skating rink, shooting gallery, bowling alley, penny arcade, public well, boat dock, two miniature railroads and other amusement related activities (Figure 43). Most of these buildings were located around the earthworks, but a miniature train encircled the Great Mound. As with the Bronnengberg Farm, archaeological investigations have been limited to defining the site area and collecting some oral histories (Buehrig & Hicks 1982).

Summary of Sites

The description of the Anderson Mounds site and others within Mounds State Park establishes the background for further investigations. The age of the remains is the framework for interpretations of what the descriptions reveal about the site and the people who built and used it. The site and the objects and features within it do not contain meaning except for those we apply. Archaeology seeks to create logical stories about the site, stories that are based on sound reason. We can never fully know the site from the viewpoint of the people who built it. We are always outsiders looking in and we interpret what we see through our modern eyes, cultural background and individual interests. Obviously this viewpoint indicates that there are many stories that can be created about the site. In the following chapter, our interpretations of the site are presented.

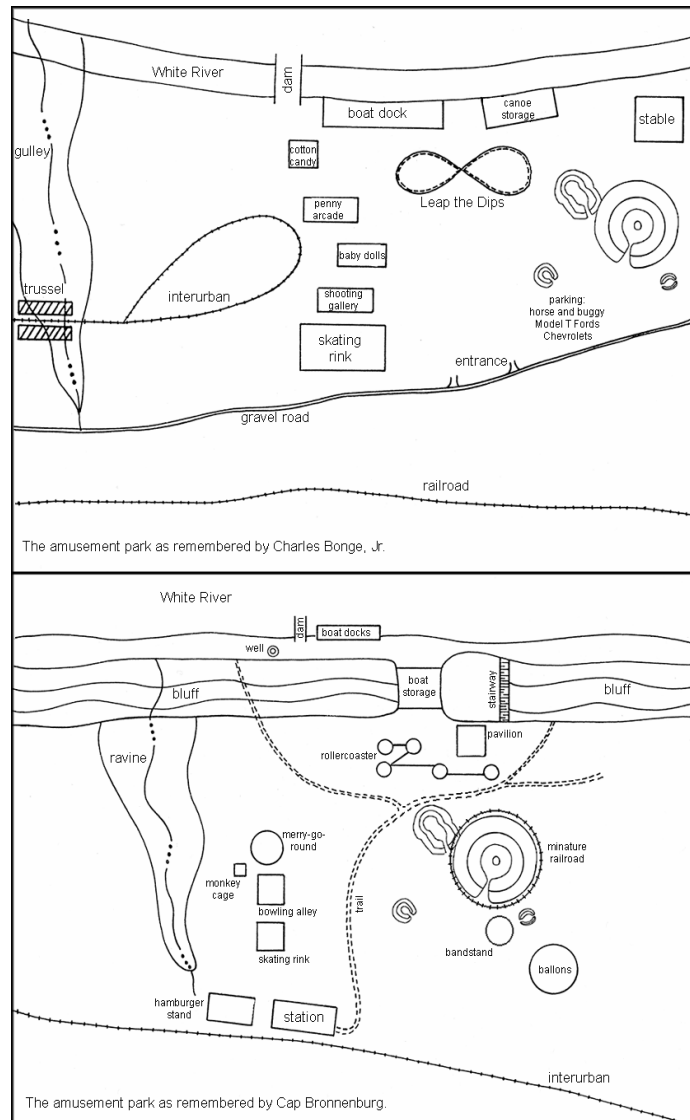


Figure 43. Maps of the amusement park (after Buehrig and Hicks 1982).

INTERPRETATIONS

Introduction

In our decade of research at Anderson Mounds and other earthwork sites in east central Indiana, we have developed new archaeological stories about the sites. We have the advantage of new information that was not available to earlier researchers, but we have also taken a different approach to investigating the sites and their contents. We have meticulously reviewed earlier excavation reports to define precise relationships between features, artifacts, stratigraphy and chronology and we have defined its relationship to other earthworks in the surrounding area. The catalyst for our interpretations was a discovery that occurred in 1988 during a summer field school. That discovery completely changed the way we viewed the site and led to a deeper appreciation of the people who built it. In this chapter, we present the story of that discovery and the interpretations that have come out of it.

Archaeoastronomy

In 1988, during an archaeological field school at the Anderson Mounds site we noticed that the height of the Great Mound embankment blocked our view to students working on the central platform. A rise outside of the embankment had a corresponding rise in height on the embankment itself. But, while standing in the center of the Great Mound, we realized that students standing in the centers of the other enclosures were clearly visible! All work ceased and we gathered in the center of the Great Mound to marvel at the ingenuity of the builders of the embankment. As we brain stormed about the meanings of the sight lines, it became apparent that the top of the embankment had been carefully constructed so that depressions allowed the views across the embankment. We noted that the embankment appeared irregular with many depressions and rises but reasoned that there might be some order which we simply were unable to detect. We were certainly excited as we discussed the possibilities of this seemingly simple discovery. We wondered why earlier investigators had not noticed this phenomenon.

The discovery of the sight lines in the Great Mound embankment was the most intriguing and nagging discovery of the summer. Was there an order or a purpose for the sight lines and the arrangement of the earthworks? We began to investigate the possibilities for astronomical alignments, and through the generosity of Dr. Anthony Aveni (1972) of Colgate University, were able to obtain a computer printout of the rising and setting points for several astronomical events that accounted for the location of the site and changes through time. These tables clearly showed that at least two of the sight lines between the Great Mound and two other enclosures marked the setting points of the sun at the summer and winter solstices.

On December 21, 1988, a few people returned to the site to watch the sun set. The day was clear and cold. Standing in the center of the Great Mound we watched the sun descend

along a deceptive arc, and set directly along the alignment marked by Earthwork D, the dip in the embankment and the center of the Great Mound (Figure 44). Additional research showed that the Great Mound was also connected to the Fiddleback enclosure through an alignment to the summer solstice sunset and to Earthwork B on an alignment to the rising point of Fomalhaut (Figure 45). With further investigation, it became clear that the Great Mound embankment had been carefully constructed as an artificial horizon. The flat landscape of central Indiana did not provide views of distant hills where sunsets could be marked, and the primordial forest that covered the area would have made distant observations almost impossible. The artificial horizon of the Great Mound embankment allowed the people who constructed the site to mark important alignments, whether to the sun, the moon, the stars, or other sites in eastern Indiana. In other words, what had seemed like random dips and rises in the embankment of the Great Mound represented encoded information that could inform us about aspects of the culture of the people who built the site. We learned that the centers of the enclosures were aligned to mark the point where the sun sets at the winter and summer solstice. We also learned that the movement of the sun between summer and winter solstice was bracketed in the embankment profile. Further investigation showed that the posts that were recorded in the center of the Great Mound also appeared to serve as alignment markers, but rather than marking solar alignments, the posts seemed to mark alignments for the rising and setting of brighter stars and the Pleiades constellation.



Figure 44. The sun setting at Winter Solstice.

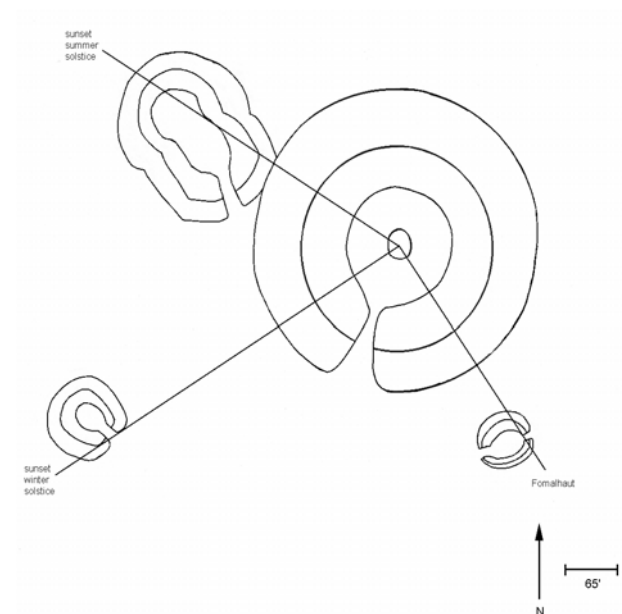


Figure 45. Alignments documented in the southern complex.

It is fair to say that we were somewhat overwhelmed by the discovery that the profile of the Great Mound embankment and the spatial relationships between the Great Mound, Earthwork D and the Fiddleback enclosure contained a clear record of sunset observation and tracking. Our imaginations were stimulated by the discovery and we began to look for astronomical alignments elsewhere within the site, especially in the post pattern recorded in the center of the Great Mound. We drew lines between the posts and compared the degrees of

alignment with the Aveni tables and indeed we found that the posts recorded the rising and setting points for many of the brighter stars shown in the table. One alignment of four posts pointed to the rising point for the Pleiades constellation (Figure 46), a very important constellation in Native American cosmology (Ceci 1978). After publishing some of these data, we began to look at the post alignments more critically. One of the first questions we asked was: Where was the observer standing to view the alignments? The larger posts were between 1' and 2' in diameter, so, we wondered, were observations made over the tops of the posts or along the sides? If the view was over the tops of the posts, then they would have been relatively short. Critics pointed out that two points can align far more easily than three or more and that many of the alignments were possibly purely random rather than intentional. We then began to look for alignments of three or more posts.

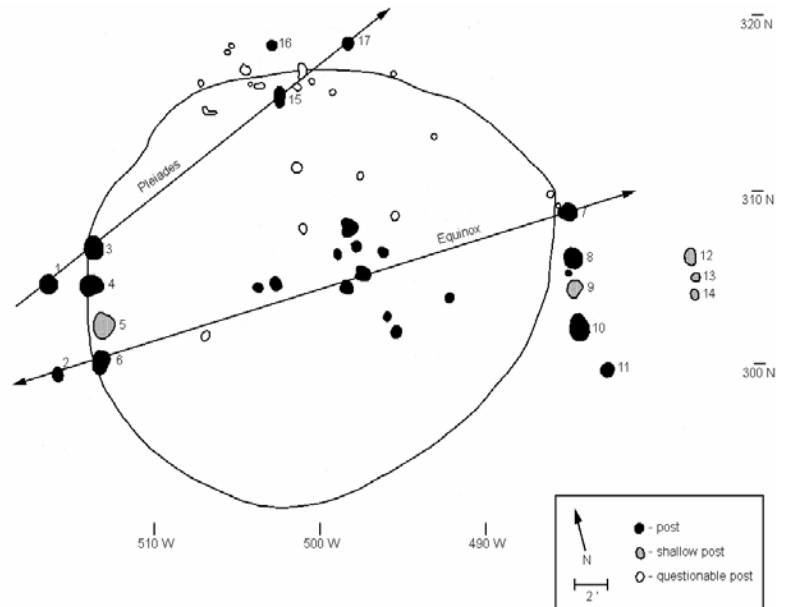


Figure 46. Alignments documented in the posts.

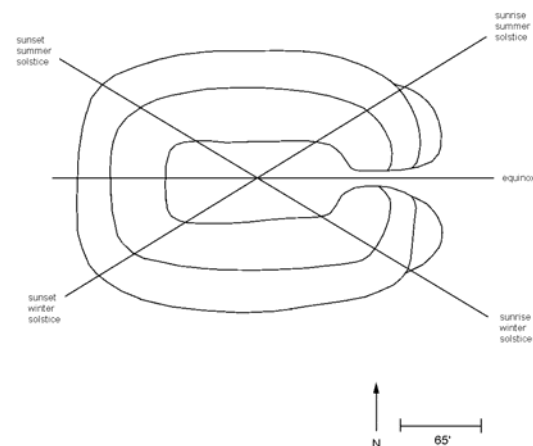


Figure 47. Alignments documented in Circle Mound.

The results are shown in Appendix A. Indeed there were several alignments. One interesting alignment was the line that connects posts 2, 6 & 7 to point due east to the sunrise at the equinox and the reverse alignment to sunset at the equinox (Figure 46). This alignment bisects the post hole pattern in such a way that the western posts are above the line and the eastern posts are below the line. Surely this is not a random placement, but one that was well planned and executed. This orientation to the equinox is also clearly recorded in the layout of Circle Mound as well as an orientation to the summer and winter solstice sunrise and sunset (Figure 47).

As we explored this line of evidence, we began to wonder whether there might not be connections between the sites themselves. Using the Aveni (1972) tables, we checked for alignments between sites across the landscape of central Indiana.

Some of these data were published in "Adena and Hopewell Cosmology: New Evidence from East Central Indiana" (Cochran 1992). After discovering that the maps in use for the Anderson Mounds site were in error, we resurveyed the site and produced an accurate map (Figures 3 &

48). We also realized regional site maps were in error. We then launched a program to field check known and reported mounds and enclosures in order to obtain an accurate map of earthwork sites in the region (McCord & Cochran 1996). This work resulted in a significant increase in data from the region but also some depressing news as well. We found that more than 80% of the earthworks in central Indiana had been destroyed through one action or another. This realization highlighted the importance of sites like Anderson Mounds, where disturbance was minimal. Virtually every other earthwork site in central Indiana has suffered from major damage.



Figure 48. Instrument survey.

The documentation of astronomical alignments in the Anderson Mounds site was not without controversies. Archaeologists have debated the presence of astronomical alignments in Ohio Valley Early and Middle Woodland sites for several years. Currently there are opposing views, supporters and detractors, as well as researchers willing to entertain the possibility of astronomical alignments within these sites. One of the most prominent difficulties of recording alignments in earthwork sites relates to site preservation. Almost all of the sites have been damaged to a greater or lesser extent. Where sites have been preserved in public trust, such as at Newark, rebuilding of the embankment of the Great Circle has certainly modified its original configuration. Also, many of the sites were almost completely obliterated and the only surviving sources of information for defining astronomical alignments were old maps. The best-known record of many of these sites is contained in the maps produced by Squire and Davis (1848). However, in spite of their value, the maps contain many inaccuracies that severely limit their usefulness for research. Our position is that there can be no doubt of the solar alignments at Anderson Mounds, and the post alignments are highly suggestive of additional alignments that are also present. It was not beyond the capabilities of the people who built the Anderson Mounds site to include markers for astronomical events. Even a casual review of the ethnographic literature clearly shows the importance of aligning houses and other site features with the rest of the universe (Nabokov & Easton 1989). In fact, it now seems to us that the lack of alignments in such a site would be highly suspect.

What at first seemed a relatively harmless discovery of alignments between enclosures in Anderson Mounds, became the catalyst for new ways of looking at the site both internally and externally. We developed a whole new appreciation for the people who had built the site, and we marveled at the complexities that were being uncovered. The discovery led us to take a critical look at the existing information and to focus more carefully on the chronology of events in the site, the site structure, and the identity of the people who built the site. We also discovered that these same themes were present in other sites in the region and that we could only appreciate the people whose ideas and values were expressed in these sites through a regional investigation. In the next section, we review the chronology of the construction of the site.

Chronology

All good stories start with "Once upon a time . . ." and archaeological stories are no different. In writing the archaeological story of a site, one of the first things we must establish is when the site was in use, and one of the primary goals of archaeology is the placing of artifacts and sites in time and space. Without this order, we could not compare sites and materials and develop meaningful concepts about the past. Most modern people are familiar with linear time, of keeping track of time with a calendar and placing events somewhere along a time line. However, it is important to remember that many cultures think of time as cyclical and not so much as linear. For them time is a cyclical movement between seasons, and of life, growth, death and rebirth. The emphasis that archaeology places on linear time may not have been so important to the cultures we study. But linear time is an effective way of ordering events for archaeological stories about the past. One of the first priorities for ordering the Anderson Mounds information was to arrange the events documented there on a time line. Basically, we needed to understand the order of construction of the site.

We use a variety of dating methods because we encounter different situations. Not every method can be used at each of the earthworks since the excavations have sampled different deposits, recovered different artifacts, and documented different construction sequences. We have used the layering of different soil deposits (stratigraphy) and changes in artifact styles to define the sequences of events. We also use radiocarbon dates of organic materials to provide us with calendrical dates of activities or associated artifacts. These techniques provide us with a framework for determining the time line for the construction and use of Anderson Mounds. These dating techniques are utilized in the following reconstruction of the site activities.

About 2,000 years ago the landscape at Anderson Mounds was forever altered by the people living in east central Indiana. The first recognizable activity occurred on a small knoll above the White River. An area was cleared of the forest plants and trees. A layer of clay subsoil 25' in diameter and about 2" thick was laid down to initiate the construction of the primary mound. Opposing lines of posts on the east, west and north sides of the floor and perhaps some central posts were erected and then burned circa 250 BC. The clay floor and burned posts were covered with a layer of white calcite powder. Over an indeterminate time period, two more clay floors and layers of calcite were laid down creating a small conical mound. We do not have radiocarbon dates to define the amount of time represented in each floor. We are left to wonder whether the clay floors represent cyclical ritual events that occurred at defined intervals.

While the floors were being built and used, the ditch and embankment surrounding the Great Mound platform were constructed around 160 B.C. We do not currently know whether the embankment was constructed at one time, or whether it was rebuilt over time. With the completion of this construction, the earthwork is recognizable as the Great Mound enclosure.

After the ditch and embankment for the Great Mound were complete, the other earthworks were constructed. We currently do not know the exact sequence in which they were constructed. We know that the Fiddleback ditch and embankment were built at approximately

120 B.C. Earthwork D and B were probably constructed during a similar time frame. Perhaps one enclosure was constructed every 20 years or so by a different generation. Interestingly, there are three clay floors in the mound on the Great Mound platform and three enclosures outside the Great Mound. Was there a relationship between the clay floors and the enclosures outside the Great Mound embankment? Perhaps cycles of ritual activities were associated with the construction of each enclosure and a clay floor in the small mound. At the Fiddleback enclosure, a mound was built on the central platform after the completion of the ditch and bank. The mound was constructed in phases and encompassed the east and west ends of the central platform. The mound construction may have lasted until AD 1, but no later.

To the north of the circular enclosures, the small conical Dalman Mound may have been the next earthwork constructed. We have no artifacts or radiocarbon dates to place this mound on our time line. The mound was constructed in successive stages although we do not have the details to define the precise timing of the stages. Perhaps they were cyclical in nature as suggested for the superimposed clay floors at the Great Mound.

Around AD 1 the northern complex of rectangular enclosures was begun. Circle Mound may have been the first rectangular enclosure constructed. The ditch and bank were built by AD 1 and the two eastern mounds outside the embankment were constructed later around AD 70. The other two rectangular enclosures are believed to post date AD 1.

Near the time that the eastern mounds outside of Circle Mound were being constructed, a log tomb was added on the southern side of the small mound in the center of the Great Mound earthwork. The tomb was constructed for the burial of two individuals. A radiocarbon date from one of the logs surrounding the tomb dates to AD 50 and the platform pipe found in the tomb has been dated to the same time (Seeman 1977). The log tomb was then covered with a layer of dirt which incorporated it into the rest of the mound. The final construction of the small mound occurred just after AD 50.

After about AD 100 activities at the site are uncertain. The earthworks may have still been used for ceremonies but we have no dated evidence for it. Sometime between AD 700 and 900, 4 individuals were buried in pits that were excavated into the Great Mound. No further use of the earthworks by native peoples has been found. The area around the earthworks and within the state park was frequented off and on as native populations used the area for hunting and gathering, but none left as indelible a signature on the land as did the earthworks.

So, in our archaeological story, the Anderson Mounds site started about 250 BC and continued until sometime after AD 50. Now that we have established the time period for the site, we next turn to peopling it. One of the great criticisms of archaeology is: Where are the people? It is easy to become so overinvested in the details that we forget that people were involved. We people sites by reviewing the archaeological literature for comparable sites at comparable times. We resort to the body of archaeological synthesis to identify the cultures with comparable material culture and dating. It is important to remember that archaeology is dependent on the material remains of the past that have survived. It has been estimated that more than 95% of human material culture is perishable, so it is easy to see that archaeology is

constructed on a bare minimum of information. In order to people the Anderson Mounds site, we must turn to the archaeological literature from other parts of the Ohio Valley to acquire a sense of the cultures represented at the Anderson Mounds site.

The Builders

The name of the people who built the Anderson Mounds site more than 2,000 years ago is lost to us. There are no direct and archaeologically traceable lines to historically known native people. While it is possible that the people who built the site were ancestrally related to the Miami or the Shawnee or some other group of native people, we do not currently have the evidence to support the link. Of course, native people do not require the same types of evidence to identify their relationship to the people of 2,000 years ago. Certainly the ancient builders of the Anderson Mounds site were ancestral to the native people of the North American continent. There were formerly stories that the builders of the site and others like it were from a mysterious race of "Mound Builders" with many wild speculations of relationships to lost tribes of Israel, Welshmen, etc. (Silverberg 1968). None of those ideas have even been supported by archaeological data. We have refrained from using the "Mound Builder" term simply for the misbegotten associations that are attached to it. There was nothing really mysterious or special about the people who built mounds except that they focused their energy on creating and using sacred places. In fact, most of what we know about the people of 2,000 years ago is derived from their sacred places.

We know that the time period of about 2,000 years ago throughout the Ohio Valley was one of innovation and change. In central Indiana, people were continuing to live the way their ancestors had learned for adapting to the woodlands that covered the region. They made their living by hunting and fishing and gathering wild plants for food. They were also beginning to cultivate some crops, particularly native plants, although corn horticulture was still several hundred years in the future. They lived in houses situated along the rivers. We know that the people made complicated fabric out of plant fibers and that they made and used plant and mineral dyes. They made a wide variety of tools and ornaments from chert, slate and other stones as well as bone and wood. We know they made pottery, a recent introduction, and that they participated in trading networks that extended from the upper Great Lakes to the Gulf of Mexico and from the Rockies to the Atlantic coast. We do not know whether local products were a part of the exchange (Dancey & Pacheco 1997, Dragoo 1963, Fagan 1991, Seeman 1979, Webb & Baby 1957, Webb and Snow 1945).

Religion was not new to the people of 2,000 years ago. They inherited a tradition of religious expression that spanned many thousands of years, but what separated the people of 2,000 years ago from their ancestors was the construction of religious monuments. They expended great amounts of energy in building earthworks. Some earthworks covered human burials, others defined sacred space, some did both. As with all peoples in all times, their religious expression also symbolized connections between individuals, groups and a greater spiritual power. It seems ironic that we know more about the religious expression of the people of central Indiana of 2,000 years ago than we do about their ordinary lives. Certainly their

religious expression was impressive.

Lacking the original names for these people, archaeologists have attached names to them: Adena and Hopewell. These names were derived from two sites in Ohio that were excavated early in the 20th century, and the names refer more to ceremonial complexes than they do to cultures in a broader sense. In Ohio Valley archaeology it is commonly accepted that the Adena complex was earlier than but related to the Hopewell complex (Dragoo 1963). Adena and Hopewell mounds and enclosures are widely distributed across the Upper Ohio Valley (Figure 49). The center of this distribution seems to be the Scioto River Valley in Ohio with sites concentrated in Ohio, Kentucky, West Virginia and Indiana (Dragoo 1963, Brose & Greber 1977). The Illinois River Valley in Illinois was also a center for mound building (Caldwell and Hall 1977). These sites have left an indelible impression upon the public mind because of their size, complexity and unusual artifacts. Exotic materials such as copper from the Upper Great Lakes, mica from the Appalachian area, marine shells, freshwater pearls and stone from as far away as Wyoming were used to create complex artifacts decorated with images of birds and animals and mythical forms (Seeman 1979). The artistry was highly developed and the level of effort invested in procuring the raw materials and creating the artifacts was prodigious. The same level of effort was expended in constructing the earthworks (Romain 2000).



Figure 49. General distribution of Adena and Hopewell sites.

At Anderson Mounds, both Adena and Hopewell artifacts have been found. This situation was once interpreted to mean that the site was mixed (Griffin 1971, Vickery 1970). After a careful review of the locations of artifacts and with more extensive radiocarbon dating, we have determined that mixing does not occur. Instead, succession from Adena to Hopewell was documented. For instance, the New Castle Incised pottery is usually categorized as Adena while the platform pipe and copper breastplate are defined as Hopewell. Although these artifacts occurred within the same site, their stratigraphic locations and associated radiocarbon dates show a clear succession from one to the other without mixing. In our story, the occurrence of both Adena and Hopewell artifacts in the same site with a clear succession from one to the other reveals that the differences in artifacts represent different parts of the same ceremonial system.

When we applied this approach to the region, we found the same pattern. All the earthworks in the region, regardless of whether they contained Adena or Hopewell artifacts, were in use at the same time. We therefore have concluded that the culture present in east central Indiana 2,000 years ago had a complicated ceremonial system made up of different parts which were expressed in different artifacts and earthwork features (Cochran 1996). Further discussion of this view is contained in the chapter on the regional comparison of earthworks.

Up to now, we have reviewed the chronology and the people in the story of the Anderson Mounds site. But what about the structure of the site itself? Are there other parts of the story to be found there? The chronology demonstrated that the final configuration of the site was the result of building episodes that may have been cyclical although we do not have the precise dating to identify the cycles. The fact that the site evolved over time raises intriguing questions about the meanings we can derive from the construction and arrangement of the earthworks in the site. We explore some of these questions in the next section.

Site Structure and Arrangement

Investigating the structure and organization of the earthworks at the Anderson Mounds site provides us with some interesting material for our story. The chronology of the site construction shows that earthworks and features within earthworks evolved into their final form over several hundred years. If we review the construction and shape of the enclosures, we obtain ideas about the purposes for the constructions and symbols expressed in the site. We begin this exploration through a review of some construction elements.

All the enclosures at Anderson Mounds were made by excavating a ditch and placing the dirt around the outside edge to form an embankment. The shape of the embankment was a matter of choice. For instance, the embankments of the Great Mound and Circle Mound were constructed so that they were high enough to restrict views to the platform and create an artificial horizon for someone standing in the interior. However, the embankments of all the other enclosures were much lower and wider and did not create artificial horizons. Some embankments, therefore, were intentionally constructed to regulate views to and from the enclosure platforms while others were not.

Height was not the only choice exhibited in the embankment construction since we discovered that the profiles of three of the embankments were created in a consistent pattern (Figure 50). In spite of differences in shape and

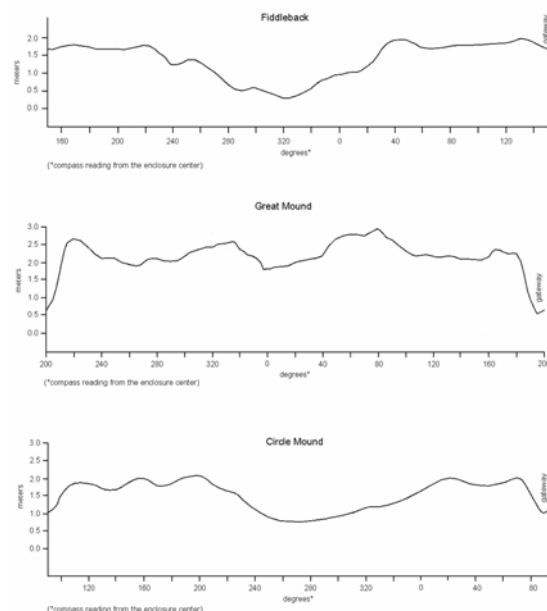


Figure 50. Embankment profiles of the Fiddleback, Great Mound and Circle Mound.

height, the profiles of the embankments of the Great Mound, the Fiddleback enclosure and the Circle Mound were the same. As far as we can tell, this is the first time the pattern has been identified. Obviously the profiles of the embankments have been softened by 2,000 years of erosion, but the similarity of the profiles is not an accident. For some reason, the shape of the embankment profile was important to the people who built and used the site. One clue to the choice of shape lies in the astronomical alignments across the Great Mound embankment, but this does not automatically explain the shape of the Fiddleback embankment since it is too low to form an artificial horizon. In the case of the Fiddleback embankment, the profile can be seen as a symbolic horizon. If we follow this line of reasoning, perhaps we can appreciate the enclosures in a slightly broader perspective.

The earthworks at Anderson Mounds have a variety of geometric shapes. Primary among them are the circle and rectangle and their combination in the Fiddleback enclosure. Circles have many symbolic associations including representations of natural forms such as the earth, the sun, the moon, the stars, etc. Circles have also been linked to wholeness, regeneration, rebirth, etc. (Hall 1997, Nabokov & Easton 1989, Romain 2000). Connections between the symbolic forms and the astronomical alignments in the site are easy to draw. For instance, if the circular enclosures represent astronomical forms, then the connection of two circular enclosures, the Great Mound and Earthwork D, to the winter solstice sunset makes sense (Figure 45). However, solar alignments are also contained in the Circle Mound rectangular enclosure (Figure 47). Rectangles have fewer obvious symbolic associations in the natural world. However, the rectangular form is a common artifact and feature shape in the Eastern Woodlands. The fragment of rectangular gorget, the copper breastplate and the incised designs on the New Castle ceramics recovered from the Great Mound are good examples. In addition, rectangular features such as clay basins and burial tombs are common in mounds. The rectangle has been associated with the four directions which would relate well to the east-west alignment of the Circle Mound (Hall 1997, Nabokov & Easton 1989, Romain 2000). Thus, we can identify a relationship between the forms of the enclosures and symbolic associations with astronomical alignments. This line of reasoning would also indicate that the site was linked to the larger universe through the combination of alignments and symbolic forms. If that is the case, can we then arrive at a better definition of the importance of the site to the builders?

None of the enclosures have banks and ditches that represent actual physical barriers to the central platform. While it has been speculation in the past that the enclosures were defensive, there is no evidence to indicate their use in that way. In fact, it appears that the people of 2,000 years ago lived fairly peaceful lives; group conflicts were rare although interpersonal conflicts certainly occurred (Silverberg 1968). If we narrow our view of the site to a ceremonial or sacred area, then we can envision the enclosures as defining sacred space, space that has been symbolically separated from the rest of the world so that when one enters that space, one enters a different reality from the ordinary reality of everyday activities.

An artificial enclosure separates things inside it from those that are not. ... Because a sacred place is recognized as special, separate from its profane surroundings, it must be set within a divine framework. The boundary ensures that no one can enter the sacred space without being aware that they have left the world of the ordinary and have entered

the realm of the numinous (Pennick 1996:115) .

This view is supported by the evidence for ritual and mortuary activities recorded in the small mounds on the Great Mound and Fiddleback platforms. The enclosure platforms were used as sacred space.

Since the individual enclosures contained sacred space and the enclosures were grouped together to form the site, can we also consider that the site itself represents sacred space, hallowed ground? Two lines of evidence support this idea. The strongest evidence relates to the absence of living sites for the people who built and used the Anderson Mounds. A systematic survey of the whole park did not identify any living sites of the same age as the enclosures. In addition, even the ritual materials deposited in the site were created elsewhere and brought there. The human remains in the Great Mound were reburials. The midden deposit covering the small mound on the Fiddleback platform is another example. The deposit contained a variety of materials associated with fire such as burned bone (including human bone), fire-broken rocks, clay coils, daub (which only survives if a wattle and daub structure is burned), etc. No site has been identified in the park that could be the source for the midden. The conclusion, then, is that the midden originated elsewhere and was brought to the site and ritually deposited. Thus, the evidence for interpreting the Anderson Mounds site as a sacred precinct is supported by the evidence for ritual use of the interior platforms of the enclosures, the lack of living sites around the enclosures and the preparation of ritual deposits outside the site. The view we can gain from this line of thought is that the Anderson Mounds site was reserved for ritual and ceremony, that it was a place set apart expressly for those purposes. Complementary support for this line of thought can be derived from an investigation of the level of effort invested in constructing the earthworks.

The effort that went into excavating the ditches and building the embankments of the Great Mound and Circle Mound was prodigious. The Great Mound ditch is about 50' wide, 10' deep, and 600' long. The sides are steep as are those on the surrounding embankment. Based on evidence from other mound excavations in the Eastern Woodlands, we know that the ditches were dug with digging sticks and the earth removed and piled up on the embankments in baskets. We can even duplicate the size and shape of the baskets based on the individual loads of dirt that have been documented. We can also estimate the amount of time required to dig up and move dirt with these methods based on modern experiments. These data show that it would take 120 people working for about four months to complete the Great Mound ditch and embankment (Cochran 1988). At this time, we do not know whether the Great Mound ditch and embankment, or the other enclosures for that matter, were constructed at one time or through successive stages. Either way, the people were truly motivated to work cooperatively to construct the earthworks. The level of effort expended at the site indicates that sufficient food supplies and leisure time were available to dedicate so much effort to constructing the sacred monuments.

Another example of this effort is demonstrated by the deposits used to construct the mounds in the Great Mound and Fiddleback enclosures. Some of the deposits in the mounds were brought to the site, and some deposits show that a significant investment of effort was needed to produce them. The white calcite powder used to cover the clay floors in the Great

Mound was a good example of the expenditure of effort. We recently discovered that the white calcite powder covering the clay platforms derived from limestone. Limestone bedrock does not outcrop at the Anderson Mounds site, so the limestone must have been selected out of the river gravels if we assume that it was gathered nearby. The limestone must then be burned and water added after burning to produce the calcite powder. Burned limestone crumbles into a white powder upon contact with water, either water poured directly on the limestone or absorbed from the air. After this laborious process, the powder was then transported to the site, no small feat in itself.

Given the amount of time that separated the earliest construction from the final arrangement of Anderson Mounds, it is highly unlikely that the builders worked from a master plan. The 300 + years of the site represents many generations of the builders. The earthworks were most likely built to conform to cultural ideals for these types of sites, some of which included an orientation to the cosmos (arrangement of structures on astronomical alignments), cyclical episodes of activity (clay platforms), relationships with mortuary ceremony (burials in log tomb), symbolic uses of shapes and spaces (circles, rectangles, ceremonial use of space) etc. The change in shape from circular forms to rectangular forms suggests that significant changes occurred in the symbolic system during the history of the site. Thus, the picture that emerges is of an evolving cultural system that incorporated change and not a static culture following a grand design plan. While the end product represents an organic whole, it is the result of an evolutionary process and not one that resulted from a master plan. If the site was not built to conform to a master plan, then how was the location chosen? Were there elements in the natural setting that attracted the site builders to that location?

Natural Environment

In order to determine whether the location of Anderson Mounds was chosen because of the natural environment, we must first establish what the setting was like (Figure 51). The Anderson Mounds site is situated on the eastern edge of the White River Valley. The landscape immediately around the site is broken by small, deep ravines and creek valleys that are v-shaped and deep. The landscape to the east of the site is a flat plain, the predominant landscape of central Indiana except where rivers have carved out valleys. The upper edges of the valleys are rolling because streams and ravines have cut across the valley edges. Similar locations are common along either side of

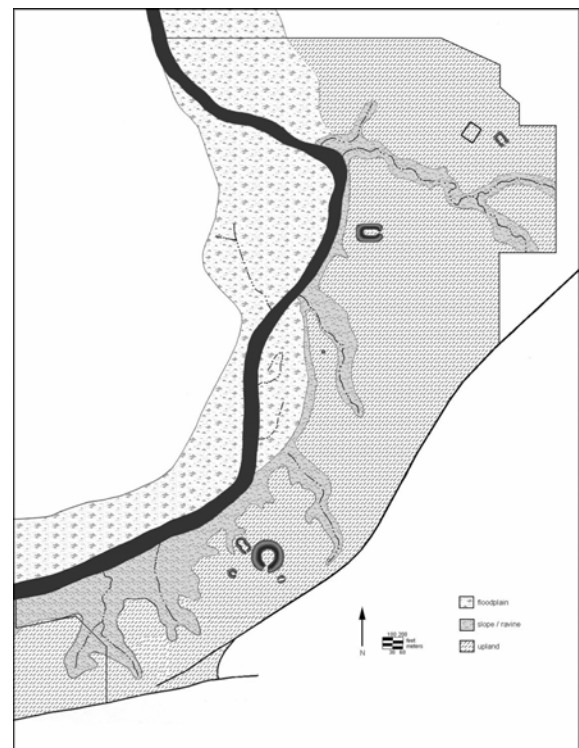


Figure 51. Physiographic and environmental divisions within Mounds State Park.

the White River Valley both above and below the site. The river and the valley are no wider or narrower than is common along the White River. But, if the site setting is typical, are there unique features of the landscape that appear at Anderson Mounds?

Historic descriptions of Anderson Mounds have specifically mentioned two natural features considered relevant to the site: springs and caves. Springs were recorded along the valley wall below the circular enclosures and one spring was developed during the Amusement Park era. But springs were formerly common all along the river valley according to county histories. In fact, upstream from Anderson Mounds larger springs were recorded but they did not have associated earthworks. The fact that springs are no longer so active along the river valley is a direct result of historic reduction of the water table.

The history of the site is peppered with lore about “caves” (Green 1995, Startzman nd). Most accounts are newspaper reports. The most famous of these stories relates to a little girl who was lost in one of the caves for several hours (Anonymous 1968a). There are also stories of “mound builder” skeletons found sitting in a circle and artifacts that were found on the floor of the cave. One cave was speculated to connect with the central platform of the Great Mound while another was reported to contain a bottomless pit. A cave opening was reportedly closed with dynamite and debris piled on top of it to prevent people from getting trapped or lost. There is an interesting carving on a beech tree near the Fiddleback Mound that shows an arrow pointing down a ravine and the inscription “to cave” below it. While the reports of caves at the Anderson Mounds site are intriguing, none of the reported caves have been verified through archaeological or geological investigation.

In addition to the springs and caves, we reviewed the site location for natural features of the landscape that have been associated with other ceremonial sites. These features included intersecting environmental zones, river confluences, river terraces and special soils, and special rock outcrops (Romain 1993). None of these features were found within or near the Anderson Mounds site (Cochran 1999).

Since no unique natural features appear to have been associated with the site, we must consider that the location was chosen for other reasons. Were there abundant natural resources present within the site area that would have attracted people to that location? We have established that there are no identified living sites in the park that are associated with the earthworks, either in time or culture. Other aboriginal people both before and after the construction of the enclosures visited the site area, but their sites are small and dispersed indicating that the park area was repeatedly visited by small groups of people. Based on this information, it appears that there were no abundant natural resources in the park area that attracted people to the location. At the same time, we need to ask whether natural resources would have had much influence on the selection of a location for a sacred site.

The one aspect of the site location that relates to the choice of that particular setting was a clear view to sunset at the winter and summer solstice. Reconstructions of the vegetation of Central Indiana shows that the area was covered by a mature hardwood forest. The forest canopy was so dense that there was very little undergrowth since sun light could not penetrate

the forest cover. The dense forest would have been an impediment for viewing astronomical events, since the most of the sky would not be visible through the trees. After the leaves fell in the fall and until they returned in the spring, a view of the sky broken up by the bare tree limbs would have been possible. In such an environment, the only place where clearer views of the sky could be obtained was along the upland edges of the river valleys where a view across the valley was possible. At Anderson Mounds, the site was situated on the east edge of the valley in order to watch the sun set across the valley to the west (Figure 52). We know that the ability to remove trees was within the technology of the people of 2,000 years ago, and some selective clearing surely took place. So, at least part of the choice of the location for the Anderson Mounds site was related to the topography and to the forest cover.



Figure 52. View across the valley.

Since there are no unique natural features there and similar locations were present up and down the White River Valley, is it possible that the Anderson Mounds site was placed in relation to other sites in the region? In the next chapter, we will expand beyond the site to the region. We will look for similarities between sites in the region and the Anderson Mounds site in order to extend our story to a broader scale.

REGIONAL LANDSCAPE

Our story about Anderson Mounds cannot be contained within the boundaries of the site itself. In our attempt to define the reason(s) behind the site location, we determined that it was not as a result of natural features. We suggested that Anderson Mounds could be placed in relation to other sites in the region in much the same way that earthworks in the site were placed in relation to each other. Do similar earthwork sites occur within east central Indiana, and what is their relationship to Anderson Mounds?

Anderson Mounds is not isolated as there are several other earthworks in east central Indiana (Figure 53). Essentially, we can define three types of earthworks in the region: complexes, isolated enclosures and mounds. Complexes are sites that contain more than one enclosure or a single large enclosure. Isolated enclosures are single enclosures that are not associated with other earthworks. Mounds consist of one or more mounded earthworks that are separate from the complexes. Each of these site types is discussed in comparison with Anderson Mounds in the following section (Cochran 1992).

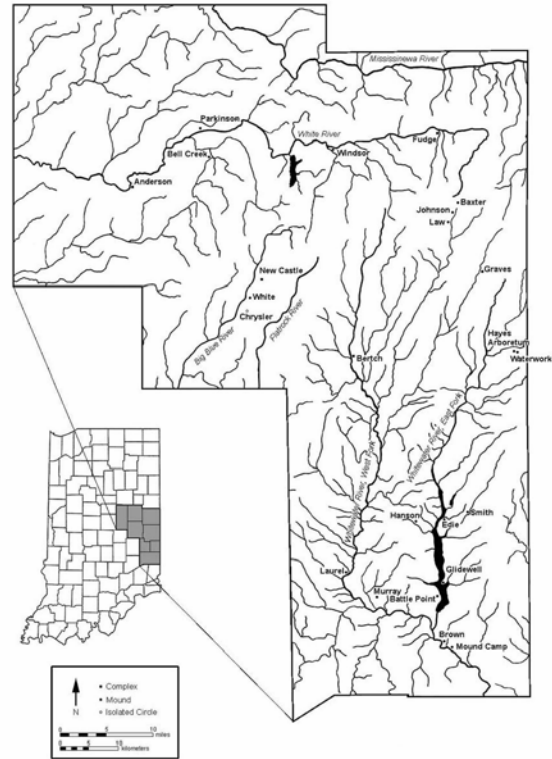


Figure 53. Earthwork sites in eastern Indiana.

There are two sites in east central Indiana that are distinctly similar to Anderson: New Castle (Figure 54) and Bertsch (Figure 55). All three sites are on the east side of a river, contain a large circular enclosure approximately 300' across, a number of smaller circular enclosures, a panduriform or oblong enclosure and a small nearby mound. While the sites contain the same types of earthworks, their arrangement is different in each site.

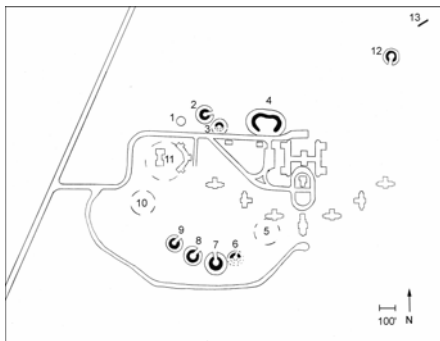


Figure 54. New Castle complex (after McCord 1999).

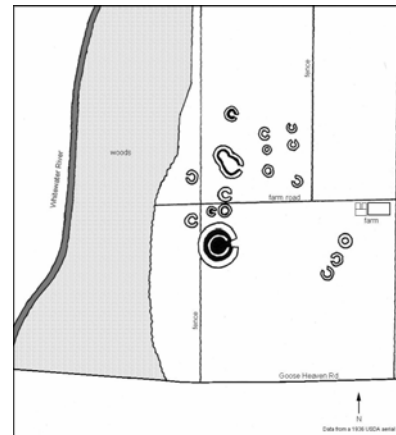


Figure 55. The Bertsch site (after McCord and Cochran).

Artifacts and features from the three sites are distinctly similar and radiocarbon dates show that they were in use at the same time. A unique ceramic vessel from the New Castle site suggests that the site was in use until about AD 300. Neither the New Castle or Bertsch sites have rectangular enclosures as at Anderson Mounds (Heilman 1976, McCord 1998, 1999, McCord & Cochran 2000, Swartz 1976). Astronomical alignments have been documented at the New Castle site (McCord 1998), but not yet at Bertsch. The map for the Bertsch site has not been validated on the ground (McCord & Cochran 1996).

In addition to the circular enclosures, two rectangular enclosure complexes are present in the region: Fudge (Figure 56) and Graves (Figure 57). Both sites contain a single large enclosure, but only one has an associated mound. The embankments at each enclosure are without an associated ditch. We have no radiocarbon dates from either site and artifacts are only known from Fudge. The Fudge enclosure is the largest recorded in Indiana, originally containing more than 31 acres within its walls. The conical mound in the center contained human burials in a rectangular tomb and artifacts similar to the other regional earthworks. The rectangular

enclosures are distributed in the region as they are at Anderson Mounds: the rectangular complexes are placed north of the circular complexes. The rectangular complexes, however, are not situated on the east edge of a river valley like the circular complexes (Figure 53). Astronomical alignments have been documented for them as well (Cochran 1991, McCord & Cochran 1996, McCord & Cochran 2000).

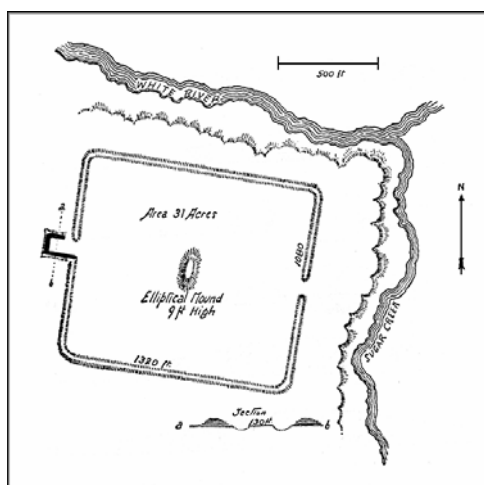


Figure 56. The Fudge enclosure (after Squier and Davis 1848 and Setzler 1931).

Several isolated circular enclosures are reported in the region, but apparently only one has survived. The Chrysler enclosure is situated on a high hill overlooking the Big Blue river valley (Figure 53). The gateway is oriented to the position of sunrise at the Winter Solstice. A small mound is on the central platform. Due to very limited excavation, few artifacts are known from the enclosure, but one radiocarbon date has firmly established its relationship with the other earthworks in the region (McCord 1998).

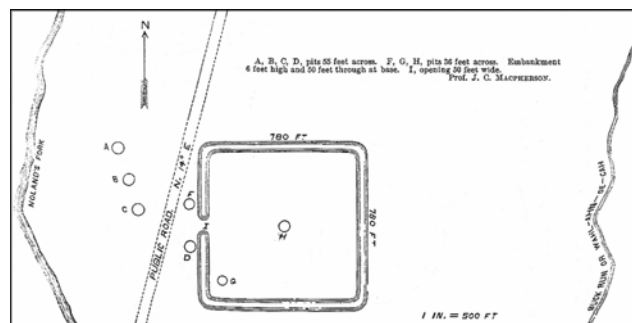


Figure 57. The Graves enclosure (after MacPherson 1879). The enclosure is actually more parallel to the road.

As with the isolated circular enclosures, several mounds were recorded within the region (Figure 53). However, few remain. The mounds were dispersed across the region in a less

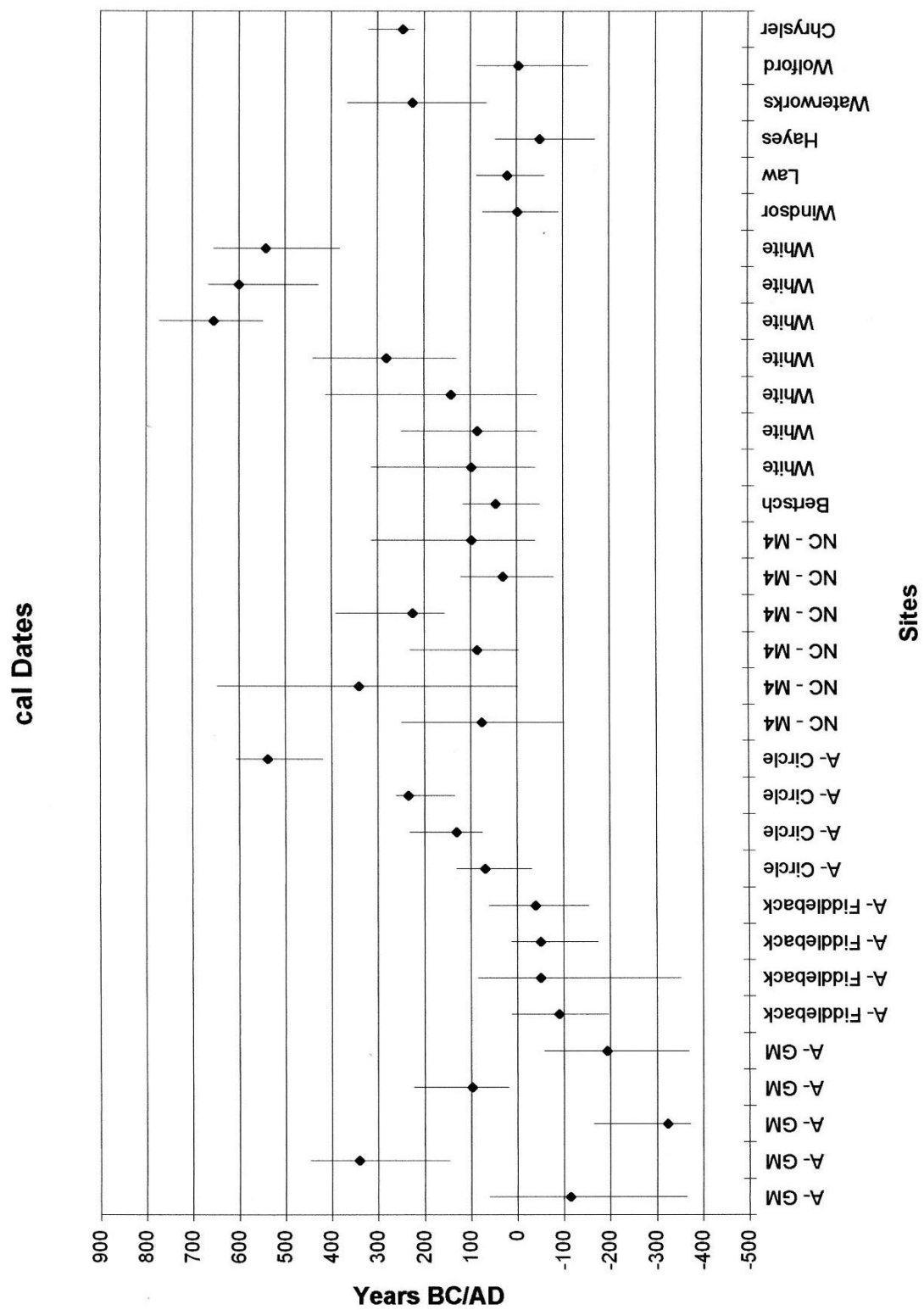


Table 2. Regional radiocarbon dates. A=Anderson Mounds.

apparent pattern than the enclosure complexes. The three largest mounds were each about 15' high and 100' across the base (Figure 58). Where they have been excavated, the mounds show a complex organization with several activity areas. The mounds contain human burials, usually in log or stone tombs. Artifacts found in mounds include chipped and ground stone tools and ornaments, ceramics, copper, shell and mica. The artifacts and radiocarbon dates from these sites demonstrate their use at the same time as the enclosure complexes and the isolated circular enclosures (McCord 1994, McCord & Cochran 1996, 2000).



Figure 58. Johnson Mound, one of the large conical mounds in the area.

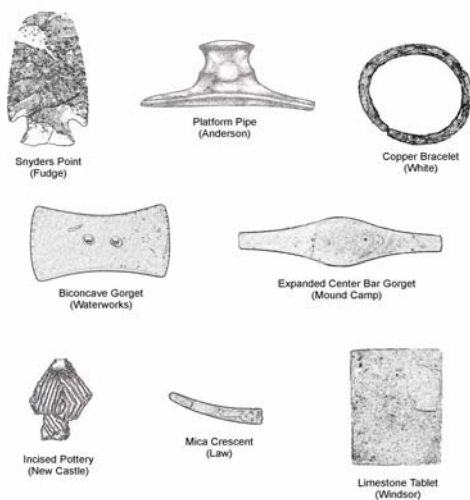


Figure 59. A few of the artifacts from regional earthworks.

people. The different site types suggest that they served different purposes. The spacing of the enclosure complex sites and their location on different rivers suggests that they were central places for the people living up and down the rivers. It seems probable that people gathered at these sites on regular occasions to carry out ceremonies and rituals, at least some of which were related to mortuary practices. Given that there are five of these sites, it seems probable that the regional culture contained five subdivisions, perhaps clans (Figure 60). The division of the rectangular

If we combine the information from all the earthwork sites, it is apparent that they are part of a regional network. The radiocarbon dating shows that the sites were in use between about 200 BC and AD 200 (Table 2). The sites contained similar types of artifacts including ceramics and chipped stone tools as well as artifacts of exotic materials such as copper and mica (Figure 59). Given the similarities and geographic relationship between the sites, we can view them as representing a local population of related

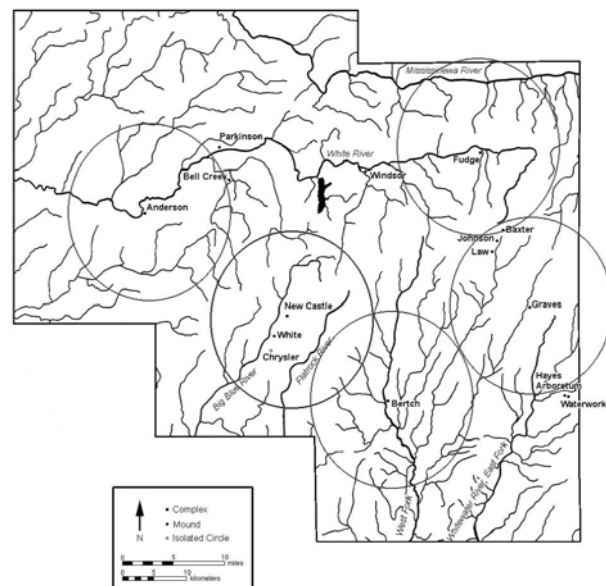


Figure 60. Regional subdivisions.

enclosures from the circular complexes suggests further subdivisions in the society that lived in the region. Within each of the subdivisions, smaller cultural groupings may be represented by the mounds. It is of note that several of the mounds are located about half way between the enclosure complexes. The mounds may represent the mortuary sites of lineages. We are unable to account for the isolated circular enclosures at this time, although it seems probable that they served as ritual meeting places for groups in the region.

The regional connection between sites is also documented in an investigation of astronomical and directional alignments between the earthworks. Twenty-nine sites were examined and 92 astronomical alignments to solar, lunar and stellar positions were found. In addition, 12 alignments to cardinal directions were documented (Waldron 1996). It is also worth mentioning that the three circular complexes line up across the landscape within 3 degrees of the summer solstice sunset. This alignment hardly seems fortuitous.

Overall these observations on the placement of earthworks in east central Indiana shows that the sites were organized in relation to other earthwork sites in the region. We can view the distribution of earthworks in east central Indiana as a map of a sacred landscape as defined by the people living in the area. The spacing of the sites across the landscape and the arrangement of earthworks in relation to astronomical alignments suggests some of the ideas held by the people, ideas about connections with the rest of the universe as well as life, death and rebirth. These same kinds of ideas were clearly expressed in structures built by historic native peoples (Nabokov & Easton 1989). Possibly the most dramatic example of a similar use of orientation and landscape is documented among the Pawnee on the plains of Kansas, where houses, features within houses and village locations were aligned within a complex expression of multiple social and spiritual relationships (Chamberlain 1982, Gartner 1996). This is not to suggest that there were any relationships between the historic Pawnee and the people who built the earthworks in east central Indiana 2,000 years ago, but to show that similar ideas were expressed in similar ways by other people. Anderson Mounds, therefore, represents one site within a network of sites that were carefully placed within east central Indiana to satisfy complex layers of ideas about the organization and relationships between the people who built the site. We cannot ever fully know the culture that produced the earthworks 2,000 years ago, and we are left with a sense of wonder at their accomplishment. We certainly can have a much greater appreciation for the people through a better understanding of the things they left behind.

Our new level of understanding leads to several questions: what happened to that culture? Why did they stop building earthworks? What happened to the people? This part of the story is incomplete. There is no evidence of warfare or cultural genocide. It seems that the ending of mound building was a conscious act and when the earthwork sites were completed, no more were built. It is our view that the people continued to live in the region, but their culture changed. Why the culture changed is not clear. Perhaps an increased reliance on domesticated crops introduced new ideas that were incompatible with earthwork construction. At any rate, the descendants of the people who built and used Anderson Mounds continued to live in the region and they certainly continued to practice their religion. We know that the trend for later peoples was toward a more sedentary lifestyle, one that became increasingly centered on domesticated plants. We also know that around AD 700 descendants of the people who erected the enclosures

sometimes buried their dead in them. But, the mechanisms of the changes in the culture that produced the earthworks in east central Indiana and throughout the Ohio Valley remains a mystery.

The story of the archaeology of Anderson Mounds presented here has taken us on a journey through the site and others like it in east central Indiana. The journey has helped to clarify our understanding of the site and added to our appreciation of the people and culture that produced it. At the beginning of the story, our sense of wonder was stimulated by the mere presence of the site and the questions revolving around who built it, when and why. As we have discovered some answers to these questions, our sense of wonder has been stimulated further. The people of 2,000 years ago were highly sophisticated and used the technology available to them to create monuments to their world view. But, we cannot see through their eyes and we can interpret what we see only through the filter of our cultural lens. Anderson Mounds remains a monument to the people who built and used the site. Our investigation through the medium of archaeology has not resolved the mysteries, but we trust that the story we have told in these pages has deepened the appreciation for the site and the people who built it. In the final chapter we present another story about the site, a story not about archaeology, but about the dreams that archaeology can engender.

A DREAM OF THE PEOPLE

For months we had struggled with this problem: how do we write the story of the people who built the earthworks at Anderson Mounds? We knew the information, 10 years of research had given us more than enough details, and we had written several papers and reports on the archaeology. But, in spite of all this, we couldn't get beyond the comfort of the familiar details and archaeological jargon to bridge the chasm of 2,000 years. Last night I was really wound up, the deadline for the manuscript was approaching and we had yet to sort out this problem. As I went to bed, I didn't expect much sleep, and spent most of the night awake and anxious. Finally, just before dawn, I fell into an exhausted sleep and had an incredible dream.

I am sitting on the ground in a clearing surrounded by towering trees. Sunlight and shade pattern the ground with alternating splashes of light and dark. An ancient man is sitting in front of me, a small fire is between us. The old man's wrinkled face is the color of walnut and his long grey hair is carefully pulled back and tied behind his head. His clothes are dark brown and without ornament. They look very soft. He sits close to the fire. A few sticks radiate from the center and wisps of smoke drift up from the grey ashes. He leans forward and pushes a stick into the core of the fire. He looks up at me with soft, grey eyes. He begins speaking in a low, musical voice. At first I don't understand, because his voice sounds like water flowing through the shallows in the river. But, as I listen, I am amazed that I can understand.

*I am glad you are here, he says.
I have waited a long time
to tell the story of my people.
I was left here as the guardian of this place
a long time ago.
I am very sad to see that the old ways are gone.
But I will not speak of those things now.
It is important that our story is told.
We have chosen you to tell it,
but it will be difficult for you to understand,
because we do not see the world in the same ways.
I hope that through this telling,
your people will have a better understanding of us.
So, I ask that you listen carefully and write down what I say.*

His words create images that float in the air around us. He continues to speak.

*This valley was the home of my people.
Many generations were born and died here
and the bones of our ancestors hold their memories in this place.
We knew the names for everything:
the rivers, the hills, the little prairies where we lived by the river.
Springs and rocks had names*

*as did the great flat places in the deep forest.
We knew the plants and the places where they grew
and we called them by name.
We recognized all the animals.
We knew the names of the seasons,
the sun, the moon, the stars.
We honored the spirits of all these things.
In return, they knew who we were
and they helped us to live.
We were a part of this land
and it was a part of us.*

A raccoon ambles by and I notice that other animals and birds have quietly gathered around, watching us. The musical voice of the old man brings me back to his story.

*We were not a special people,
except to ourselves.
We had no power that other people do not have.
We were not a mysterious race,
but like the plants and animals and rocks and rivers,
we were simply a part of this place.
The Creator put us here and took care of our needs.
The land contained everything for a good life.
There were plenty of plants and animals to eat.
There were plenty of stones for making tools.
The forest contained all the materials for building houses
and keeping us clothed.
The rivers and springs had cool sweet waters and many fish.
We could sing and dance
because we were blessed with such a wonderful home.
We laughed at jokes,
we cried when we were sad,
we loved our families and friends,
we felt pain when we were sick,
we suffered through storms and droughts and winter winds.
We worshiped forces that were greater than us.
We were an ordinary people.*

*My people were always few in number,
and we lived the way our ancestors had learned.
We made stone tools
from the rocks that were plentiful in the rivers and creeks.
We hunted with spear thrower and darts, traps, snares and ingenuity.
With axes and adzes and fire we cut and shaped wood
into many useful things:*

*handles for tools,
posts for houses,
large wooden troughs for cooking.
With digging sticks and baskets,
we collected plants for food
and dug clay from the river banks to make pottery.
With the same tools we moved earth to create our sacred places.
We cooked and stored food in the pottery we made.
We created fine cloth from plant fibers
and made clothes, bags and coverings from animal skins.
Mineral and vegetable dyes
created colorful designs on clothes
and our bodies.
We carved bone and stone into tools and ornaments.
We lived with our families in houses
that were scattered among the small prairies in the river valleys.
We covered our houses with bark taken from the great trees in the forest.
We dried and stored food so we could live through the cold winters.
The land provided everything we needed to live
just as it had for our ancestors.*

*We were not isolated,
here in this valley.
Our relatives lived nearby
and, our river marked the western boundary of our people.
The people who lived west of us,
did not practice our religion.
Their relatives stretched far to the west,
to the land of the great father river.
We visited with all our neighbors
and we often exchanged gifts.
Although there were sometimes little conflicts,
we normally lived peaceful lives.*

He shifts position slightly and leans forward to push another stick into the fire. The animals have gathered more closely around us, but none come near me. I realize that although I am engaged in the multiple stories that are being played out in the dream, I am only an observer. He stares into the ashes as he speaks.

*Our ancestors taught us to live in harmony with the land,
and they also taught us to live in harmony with all of creation.
We understood that everything around us was alive
and that we had a responsibility for all our relationships,
both in the seen and unseen worlds.
We sought the protection of guardian spirits.*

*We prayed and fasted so that helping spirits
would have pity and help us.
We carried out rituals to maintain balance
between ourselves and everything around us.
Our shamans could send their souls into the spirit world
to bring back power to help.
They doctored our illnesses with spiritual power
because we saw all illnesses as spiritual sickness.*

Many images swirl around the old man. Everything about these people and this place is being revealed. There are things for which I have no words and my memory can't contain it. I realize that is as it should be.

*We had always known that the physical world
was a dim reflection of the great mysteries of the invisible world.
Our ancestors treated the dead with great reverence
and provided them with rituals to help them in the spirit world.
They learned that there was great power
in placing the dead in prominent hills
and to include the things they would need
on their journey to the spirit world.
We learned to create places of great power
by sealing the rituals that attended the dead
into artificial hills.
Your people call these "mounds."
Clans and lineages among our people
had their own places to conduct these rituals
and, at the death of one of their members,
would return there to carry out the rituals
that would conduct the soul of the deceased
to the spirit world.*

For the first time I notice that we are sitting in the interior of the Great Mound. The earth of the embankment appears fresh, and very little grass is growing on it. The profile is pronounced. I can see the sun dropping down to the western horizon toward sunset. The old man's story pulls my attention back.

*In addition to the burial places,
we also learned to create places
where our people could gather
to express our connection to all of creation.
These places were built
to reflect the sun, moon, stars and other things.
While burial rituals were sometimes conducted at these places,
they were primarily places where we gathered*

*at specific times of the year
to conduct rituals and ceremonies
that were appropriate to our connections to all of creation.
We watched the movement of the sun, moon and stars to know when to gather.
We learned to connect these places
on the earth into larger reflections
of our connections to the universe.
All across our country
we created sacred places
that were aligned with each other in particular ways.
In this way,
we created a web of power
across our land
and connected our people with the rest of creation.*

He pauses and lets out a great sigh of pure sadness; I can feel his emotion as if it is my own. There are so many questions I want to ask, so much I want to know. But I can't interrupt his grief. The old man continues.

*As I have watched over and protected this place for my people,
I have witnessed many changes.
Our descendants came and placed some of their dead here
because they recognized the power
that was created in this place.
Later, when your people came,
they began to cut down the great trees
and some of them dug into our mounds.
I was very sad to see the trees cut down.
The disturbance of our sacred places
made me angry and sad because I was helpless to stop it.
Now, it makes my spirit soar
when I see people bring offerings here,
when they pray to the great mysteries,
when they marvel at the ingenuity of what we built.
But I want you to tell them that they should not be surprised
that a simple people could create such a place,
but to be impressed with the meaning behind it.
This place keeps its power
and it is still a doorway between this world
and the unseen worlds.
If only they will pay attention to their heart,
they will know the true mystery of this place.*

*I know you have many questions,
and I know this is impossible for you to understand.*

*You want everything to be explained like beads on a string,
but we saw the world as more like clouds.
I am finished now and it is time for you to go.*

I watched the old man carefully spread the dying fire, then place his stick on the ground. Slowly he changed into a great blue heron and flew out over the embankment of the Great Mound toward the west.

As I awoke to the alarm clock by my bed, I was confused by what I had heard and the images I had seen in the dream within a dream. I grabbed the pen and notebook on the night table and wrote it all down. The words seemed so flat in comparison with the experience. Later, over coffee, I wondered how I could tell the old man's story. He told it so that it seemed so ordinary, the story of people who simply lived their lives in the ways they had learned, and yet their ways of living were far from ordinary when viewed from the perspective of the late 20th century. Many thoughts floated through my mind, but I kept returning to the image of the heron disappearing over the embankment of the Great Mound.

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Appendix A

Post Alignments

Appendix A Post Alignments						
From	to	to	to	degrees	Alignment	comment
1	3	15	17	70	Pleides rise @ 68	
1	4	7		80	Procyon rise @ 79	
1	4	10		110	Sirius rise	
1	4	8	12	104	Rigel rise @ 106	
1	4	13		105	Rigel rise @ 106	
1	4	9	14	107	Rigel rise @ 106	
1	4	11		115	Antares rise	
2	5	17		59	Sun Rise @ Summer Solstice	
2	6	7		90	Sun Rise @ Equinox	
2	6	8		94	Epsilon Orionis @ 95	
2	6	9		98		
2	6	10		101		
2	6	13		97		
2	6	14		80	Procyon rise @ 79	
2	5	15		56	Venus/Jupiter/Mars	
3	8	12		107	Rigel rise @ 106	
3	9	14		110	Sirius rise	
3	18	13		106	Rigel rise	
5	18	12		100		
5	9	13		102		
7	6	2		270	Sun Set @ Equinox	
7	8	9	10	192		
8	6	2		274		
9	6	2		277	Altair set	
10	9	8	7	11		Fudge n/s alignment
11	10	17		338		
12	7	15		307	Moon @ 308	
12	8	3		287		

Appendix A (cont.) Post Alignments						
12	8	4	1	284	Aldebaran @ 283	
12	18	5		280	Procyon @ 281	
12	6	2		277	Altair set	
13	7	16		313	Arcturus set @ 312	
13	18	3		289	Pleides set @ 291	
13	4	1		285	Aldebaran set @ 283- 54	
13	9	5		282	Procyon set @ 281/ Aldebaran set @ 283	
13	6	2		278	Altair set @ 277	
14	9	3		290	Pleides set @ 291	
14	9	4	1	287		
14	6	2		280	Procyon set @ 281	
15	5	2		236	Venus/Jupiter	
15	7	12		127	Moon @ 129	
16	7	13		133		
17	10	11		158		
17	5	2		239	Sun Set @ Winter Solstice	

Appendix B

Regional Radiocarbon Dates

Appendix B

This appendix contains all of the radiocarbon dates that have been obtained from earthworks in eastern Indiana. Radiocarbon dates are vitally important to understanding the chronology of prehistory, but radiocarbon dates cannot be used uncritically. Radiocarbon dates are statistical averages of when the organic material that is dated died. Samples can sometimes be contaminated by recent carbon. There is always a chance that a date is not correct and falls outside the given range. Since the 1950s, the technology of radiocarbon dating has improved to provide more accurate dates that have narrower standard deviations and allow for samples of less than 1 gram of carbon to be dated. Calibration tables have also been utilized to help correct the some of the problems with inconsistent decay rates. To help alleviate some of the problems inherent in radiocarbon dates, it is best to get a series of dates. When the dates begin to cluster around a particular time, we can be more certain the chronology is valid.

The use of radiocarbon dates is an interpretation. In our story of Anderson Mounds, we selected which dates seemed to be most valid. Dates with large standard deviations were not used if we had another sample that was analyzed with more recent technology. We did not use dates that fell outside the accepted time period of Adena and Hopewell, since the samples can sometimes be compromised. As with any interpretation, future excavations and radiocarbon dates may alter the chronology of Anderson Mounds presented in this book.

Appendix B Radiocarbon Dates from Eastern Indiana Earthworks					
Site	Sample Location	Conventional Age	Calibrated Age* (intercept date)	Sample No.	Reference
Anderson Complex	Great Mound post 3	2110 +/- 140 BP (60 BC)	365 to 265 BC 265 BC to AD 60 (114 BC)	M-2429	Vickery 1970
	Great Mound post 2	1720 +/- 130 BP (AD 230)	AD 146 to 446 (AD 341)	M-2428	Vickery 1970
	Great Mound post 2	2200 +/- 70 BP (250 BC)	373 to 164 BC (337, 324, 202 BC)	Beta-45955	McCord and Cochran 1996
	Great Mound log tomb	1910 +/- 80 BP (AD 40)	AD 19 to 223 (AD 88, 98, 115)	Beta-52612	McCord and Cochran 1996
	Great Mound embankment	2170 +/- 90 BP (160 BC)	369 to 58 BC (193 BC)	Beta-22129	Cochran 1988
	Fiddleback embankment	2090 +/- 90 BP (140 BC)	196 BC to AD 12 (90, 67 BC)	Beta-22130	Cochran 1988

Appendix B (cont.) Radiocarbon Dates from Eastern Indiana Earthworks					
Site	Sample Location	Conventional Age	Calibrated Age* (intercept date)	Sample No.	Reference
Anderson Complex	Fiddleback ditch	2070 +/- 150 BP (120 BC)	353 to 303 BC 208 BC to AD 84 (50 BC)	Beta-27169	Kolbe 1992a
	Fiddleback mound - W	2070 +/- 70 BP (120 BC)	174 BC to AD 12 (50 BC)	Beta-27170	Kolbe 1992a
	Fiddleback mound - E	2030 +/- 40 BP (80 BC)	155 BC to AD 60 (40 BC)	Beta-133452	ARMS files
	Circle Mound embankment	1955 +/- 75 BP (5 BC)	32 to 16 BC 9 BC to AD 130 (AD 69)	I-11, 848	Buehrig and Hicks 1982
	Circle Mound under s. mound	1880 +/- 60 BP (AD 70)	AD 75 to 231 (AD 130)	Beta-2416	Buehrig and Hicks 1982
	Circle Mound under s. mound	1870 +/- 60 BP (AD 80)	AD 134 to 261 (AD 235)	Beta-2417	Buehrig and Hicks 1982
	Circle Mound embankment	1560 +/- 80 BP (AD 390)	AD 419 to 606 (AD 538)	Beta-24115	Buehrig and Hicks 1982
	Earthwork G platform (tree)	420 +/- 75 BP (AD 1530)	AD 1432 to 1518 (AD 1454)	I-11,849	Hicks 1981
New Castle	east side - ground surface	1980 +/- 50 BP (30 BC)	80 BC to AD 120 (AD 30)	Beta-133450	ARMS files
	west side- burial area	1920 +/- 50 BP (AD 40)	5 BC to AD 230 (AD 85)	Beta-133449	ARMS files
	west side - charcoal	1760 +/-40 BP (AD 190)	AD 155 to 390 (AD 225)	Beta-133451	ARMS files
	Unit 6-1	860 +/- 50 BP (AD 1090)	AD 1155 to 1235 (AD 1195)	Beta-127455	McCord 1999
	Unit 7-1	4070 +/- 60 BP (2120 BC)	2845 to 2820 BC 2670 to 2555 BC 2535 to 2490 BC (2585 BC)	Beta-127456	McCord 1999
	Unit 9-2	modern	modern	Beta-127457	McCord 1999
	east side	1910 +/- 140 BP (AD 40)	41 BC to AD 253 (AD 88, 98, 115) AD 303 to 314	M-1851	Swartz 1976

Appendix B (cont.) Radiocarbon Dates from Eastern Indiana Earthworks					
Site	Sample Location	Conventional Age	Calibrated Age* (intercept date)	Sample No.	Reference
New Castle	west side, bottom	1940 +/- 160 BP (AD 10)	102 BC to AD 249 (AD 76)	M-1852	Swartz 1976
	west side, top	1720 +/- 300 BP (AD 230)	2 BC to AD 647 (AD 341)	M-2045	Swartz 1976
White	fire area	1910 +/- 140 BP (AD 40)	41 BC to AD 253 (AD 88, 98, 115) AD 303 to 314	M-2017	Swartz 1973
	fire area	1920 +/- 140 BP (AD 30)	45 BC to AD 249 (AD 84)	M-2018	Swartz 1973
	primary mound 2	1860 +/- 200 BP (AD 90)	45 BC to AD 412 (AD 141)	M-2015	Swartz 1973
	primary mound 1	1740 +/- 140 BP (AD 210)	AD 129 to 439 (AD 264, 281, 329)	M-2016	Swartz 1973
	log tomb 1	1400 +/- 130 BP (AD 550)	AD 547 to 728 (AD 654) AD 732 to 772	M-2021	Swartz 1973
	timber	1490 +/- 130 BP (AD 460)	AD 427 to 665 (AD 600)	M-2019	Swartz 1973
	timber	1550 +/- 150 BP (AD 400)	AD 381 to 654 (AD 541)	M-2020	Swartz 1973
Chrysler Enclosure	bottom of ditch	1790 +/- 40 BP (AD 160)	AD 220 to 265 (AD 245) AD 290 to 320	Beta-110202	McCord 1998
Windsor	near bottom	2020 +/- 70 BP (70 BC)	91 to 85 BC 68 BC to AD 72 (2 BC)	Beta-25224	Cochran 1992
Glidewell	near bottom	1960 +/- 110 BP (10 BC)	50 BC to AD 147 (AD 66) AD 170 to 194	Beta-50830	Kolbe 1992b
Law Mound	1N1W - pottery	1990 +/- 40 BP (40 BC)	60 BC to AD 85 (AD 20)	Beta-140072	McCord and Cochran 2000
Hayes Arboretum	square 15W3	2050 +/- 40 BP (100 BC)	170 BC to AD 45 (50 BC)	Beta-141810	McCord and Cochran 2000

Appendix B (cont.) Radiocarbon Dates from Eastern Indiana Earthworks					
Site	Sample Location	Conventional Age	Calibrated Age* (intercept date)	Sample No.	Reference
Waterworks	burial pit in 25W1	1820 +/- 60 BP (AD 130)	AD 65 to AD 365 (AD 225)	Beta-141811	McCord and Cochran 2000
Bertsch	posts in 180W20	1970 +/- 40 BP (20 BC)	50 BC to AD 115 (AD 45)	Beta-141813	McCord and Cochran 2000
Wolford	feature 5, 45W5	2010 +/- 50 BP (60 BC)	155 BC to AD 85 (5 BC)	Beta-141812	McCord and Cochran 2000
* Calibrated by CALIB v. 3.0.3, Stuiver and Pearson 1993					

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