Prehistoric Geometrical-Based

Art Work on the Ground:

WISCONSIN'S EFFIGY MOUNDS

Moonrise at Maximum Southern Moonswing (once in an 18.6 year cycle)

Maximum Southern rise of the sun at Winter Solstice - approximately 21 Dec. (once in a 365 day cycle)

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INTRODUCTION

This brochure illustrates a few of the many precise maps produced of Indian Mounds in Wisconsin over the past decades by students and volunteers of the Ancient Earthworks Society, working under the direction of Professor James P. Scherz, Department of Civil and Environmental Engineering, University of Wisconsin-Madison.

The first part of this document addresses some of the basic facts concerning the unique effigy mounds of Wisconsin. Figure 1 shows some typical types of effigy mounds. Figure 2 shows the area where effigy mounds can be found.

Figure 3 shows an index of some of the mounds you can visit near the University of Wisconsin campus at Madison. You will see basic geometry (like 30\degree, 60\degree, 90\degree) as used in modern drafting triangles; along with solar calendar functions and unit distances of layout that relate to 600 ft. and 660 ft. (land measure units found world-wide). Other aspects are self-explanatory.
I. THE EFFIGY MOUND REGION

(By Patricia A. Arntsen)

The southern part of Wisconsin is often called the "Effigy Mound Region" because most of the Indian mounds of this unique type are found here. However, someone not familiar with the Indian mounds of southern Wisconsin is apt to have some basic questions about mounds in general. This annex asks such questions and attempts to provide some of the answers.

What are "mounds"?

Mounds are earthen structures created by early peoples around the world for a variety of purposes.

Why were they built?

The main reasons ancient societies built mounds were: (1) burial, (2) religious or ceremonial functions, (3) directional or other marker, (4) possibly to tell a story and (5) for reasons yet unknown.

Who built the mounds?

Many ancient societies built mounds in the form of a dome of earth in which they interred their dead. These types of mounds are called "conical mounds". Some peoples, such as the Middle Mississippian Aztalanian Indians, built high pyramidal mounds on which they placed their temples or other structures related to the practice of their religion. This type of mound is called "pyramidal" or "temple" mounds. The people of the Effigy Mound Culture built mounds in the shapes of animals and birds as well as conical and linear forms. Figure 1 shows some of these typical shapes.

Who were the Effigy Mound People?

The Effigy Mound Culture flourished mainly in the southern two-thirds of Wisconsin from about 600 A.D. to about 1300 A.D. They were a hunting and gathering society, had a distinctive style of pottery and probably lived in wigwams as other Woodland Indians of the period. The most unique feature of their culture was the effigy mounds.

Where are effigy mounds found?

The vast majority of effigy mounds were built in the southern two-thirds of Wisconsin but extending into Minnesota, Iowa and Illinois. They were usually built on high ground near lakes and rivers and were usually in groups.

What shapes did the Effigy Mound People use?

The most common forms, besides the linear and conical, were water birds or birds of prey (geese, eagles, etc.), amphibians (frogs, turtles, lizards), mammals (panthers, deer, buffalo, bears, etc.) The names assigned to these forms apparently were given by white men who discovered them long after the Effigy Mound People were gone so the names do not necessarily correlate with the intent of the builder.
Figure 1  Outlines of typical mounds found in Effigy Mound Groups

1 = Violin-shaped mound known as "Turtle Mound"
3,6 = Bird Mounds.  13 = Goose Mound
10,14 = Panther Mounds.  7 = Linear Mound
12 = Conical Mound
**How were effigy mounds built?**

It is not known for sure exactly how the mounds were designed and built. It is known that some mounds were built by first digging out an impression of the form, an intaglio, then filling it in and building it up to form the mound. A cremation site, rock altar, or burial pit was often placed in the position of the head or heart of an animal effigy, in the center of a conical or along the longitudinal axis of a linear mound. The intaglio form may have been lined with clay or sealed with clay after several layers of soil were placed over the base. Some mounds were intricately layered with a variety of soils, some had soil possibly brought in from far distant areas and some were built up of "fill" from a nearby "borrow pit" then sometimes covered with topsoil. In any event, the vegetation on mounds often varied significantly from that nearby and made the mounds more visible during the growing season.

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Map of Effigy Mound Distribution.
(Milwaukee Public Museum)

*Figure 2.*
How big are effigy mounds and how many are in "a group"?

Effigy mounds vary in size but are generally 50 or more feet in length or width and from several inches to about four feet or more in height. The largest existing effigy mound is said to be the bird effigy on the grounds of the Mendota Mental Health Institute with a wingspan of 624 feet. There may be as few as three to as many as over 300 mounds in a group.

Why were effigy mounds built?

It is believed that the mounds were used for burial of important people in the society and thereby the mound served the function of a modern day tombstone. They also may have been designed as markers of important places or to tell a story. They probably served important social and religious functions as well.

How many were built? How many remain?

It is estimated that there once were about 20,000 mounds in Wisconsin and that less than 10% of them remain today. Many of the remaining mounds have been partially destroyed.

How are mounds destroyed?

Mounds are destroyed primarily by cultivation and construction. Grave robbers and pot hunters are also very destructive of mounds and therefore any activity of this sort should be reported to the police.

Why preserve mounds?

Mounds are sacred to the Native American in the same way the cathedrals of Europe are important to Euro-Americans. They are ancient burial sites and they are an important part of our cultural heritage. For these reasons it is important to preserve the mounds.

How can we as individuals help to protect mounds?

Individuals can become aware of where mounds are likely to exist are report locations of mounds or suspected mounds to the State Historical Society and organizations such as the Ancient Earthworks Society and local historic preservation groups for assistance in getting them documented and officially protected under the state burial sites law. ALL mounds are protected under the statute but if mounds are not documented it is difficult to invoke this protection. If you become aware of the disturbance of a mound, contact your local law enforcement department for investigation and prosecution under the burial sites law which forbids any disturbance of a burial site without a permit from the State Historical Society or any construction within 5 feet of a burial site. All mounds are considered to be burial sites under Wisconsin law.
Angles of 30°, 60°

There is definite geometry in the bird mound atop Observatory Hill on the University of Wisconsin-Madison campus at Madison.

Sketch of Bird Mound and other Related Features on Observatory Hill, U. of W. Campus, Madison.

For Detailed Maps see "Observatory Hill" File in U. W. Air Photo and Map Library, Science Hall, U. W, Madison.

Figure 4.
Preliminary Map of Features in U. of W. Arboretum.

Angles measured from Large-Scale Compilation Maps.

Note interplay between 30°, 60°, 38°.5°, 51°.5° and 85° with Mounds #1, #2, and #3.

- Crescent is 120 ft in diameter.

Milky Way which is visible in this part of sky south to Capella when crescent Moon is located as shown?

Castor and Pollux?

Canis Minor?

Sirius?

Betelgeuse?

Pleiades?

Large Rock Crescent (Representing Crescent Moon)?

Aldebaran?

Planet or New Star?

Rigel? #4

Legend:

- #: Mounds
- O: Pit; o: Rocks

0 100 200
Scale: Ft

J.P.S. May 1990

Figure 5.
Figure 6. Eagle Heights Mound Group.
Figure 7. Mendota Site
On and Around the Grounds of the Mendota Institute of Mental Health.
Figure 8. Mendota Site - Middle Group,
III. The old Baskerville Park mound group on the north shore of Lake Mendota
(sacrificed to development for exclusive housing the last few years).
Figure 10. Baskerville Park site sacrificed to development within last few years.
Figure 11. Winter Solstice Sunset at Baskerville Site.

Winter Solstice Sunset down the wings of the Bird Mound at former Baskerville Mound Park
Madison, Wisc

Combination Map From Surveys in 1988 of remnants still existing then, and Map made from Notes of F.H. Lewis, who surveyed the Mounds in 1888.

Summer Solstice Sunset

= From Survey by Lewis 1888

Jan P. Seky
May 20, 1988
Figure 12. Archeologist's map produced for developers — is not accurate enough to show important geometry used in mound layout.
Step 1: Use tail of conical mound to indicate initial direction of search.

Step 2: On line, find pit. This refines the line (it relates to moonswing).

Step 3: Confirm alignment out mouth of lynx mound.

Step 4: See where lynx is looking (indirect alignment to Jupiter at max swings).

Mars: Rise at Max South Swing

Moon Set at Max Southern Swing

Sun Set at Max Southern Swing (winter solstice)

Rocks

Rock Pile

Rock Crescent

Large Prehistoric Pit

Probable Original Mound

Tailed Conical Mound #1

True North

Summer Solstice Sunrise

40.5°

Step 1 Use tail of conical mound to indicate initial direction of search.

Reading the geometry of the mounds from South to North using the tail of Mound #1 as the initial key.

Figure 13. Precise maps show sophisticated geometry used in mound layout.
IV. Mounds around the State Capitol and Lake Monona, destroyed by development from mid-1800s to mid-1900s.

Figure 14. Index map of mound group around Lake Monona.
Figure 15.

Madison

High Hill
Great Many Mounds

From here all the
12-34 9th Lakes
Can be seen
Mounds

appearance of many
low flat broad monuments

Low Ground
between the hills

Descending
descending
descending

High Natural
Ground

All the
Lakes can
be seen here

TODAY'S
STATE
CAPITAL

3rd Lake
Figure 17.
Legend

- Buildings
- Road
- 860 = Contour Line (MSL, ft)
- = Destroyed Mound
- = Remaining Mound Remnant

Hudson Park
Mound Group

F.N. Lewis and Madison Survey data overlay on a topographic map produced from 1986 Aerial Photos.

Figure 18.

Map of a portion of the city of Madison showing location of another mound group mapped by F.N. Lewis in 1888.

Figure 19.
V. Some Solar Calendar Functions.
Figure 20. Spring Equinox Sunset,

Goodland Park, Dane Co., Wis.

Latitude = 43°0'

Figure 21. Winter Solstice Sunrise.
Figure 22. Equinox and Winter Solstice Sunrises.
VI. Some distances relating to fractions and multiples of 600 ft. (the ancient unit called the "stade").
Figure 23. Long-range Alignments at Aztalan Park, Wisc which correspond to winter Solstice Sunrise, a 1-month or lunation, count-down to winter solstice (29 days), and a non-sun related alignment of 51.5° from North-South (or 38.5° from East).

G is tallest round mound (and highest elevation at Aztalan). It supposedly once had a single pole protruding from its top. CH is a single mound on Christmas Hill to the South East.

Sketch: Angles taken from large-scale compilation maps

J.P. Schoen May 1990
Winter Solstice
Sunrise Alignment
at Aztalan, Wisc
(Short Alignment
A to C)

Christmas
Hill is a
very high
hill to S.E.
(about 1 mile)

Figure 24,

A is tall 2-tier Temple Mound

"C" is moon-shaped crescent Mound
on highest elevation on hill
across river towards the southeast
Figure 25: Eastwest Base Line at Lizard Mound Park.

$400 \text{ ft} = \frac{2}{3} \times 600$

$200 \text{ ft} = \frac{1}{3} \times 600$

An East-West Base Line From Mound #26 to Mound #19, An Alignment Shifted 1.6° North of West, and Repeating Distances. (all distances ± 2 ft)
Figure 26. The Unit of 200 ft. at Lizard Mound Park.
VIII. Two similar crescent rock structures in separate parts of the state indicate that mound art work was done according to a plan.

Lizard Mound Park in Washington Co, Wisc.

Old "Baskerville Mound Park" Mound Group in Dane County, Wisc.

(Rock Crescent at Baskerville Park Site)

- Igneous Rock
- Limestone

(Same Scale)

Mound #31 and Rock Crescent at Lizard Mound Park.

Rock Crescent at Lizard Mound Park Compared to Rock Crescent at Baskerville Mound Park.
IX. The People who built the mounds were real people like you and I, but in the artwork, seem to have long ears or horns.

Overlay of Modern Survey Data with Historical Data

Modern Data:

° = Visible Mound with approximated 1 ft. Form Lines

= Boundary of Area with Anomalous Soil Profiles

Survey by William Wenzel, Pat Arnsen and James Scherz, 1989

Historical Data:

From Survey by Wm. H. Canfield 1859

TEST OF SOIL PROBE MAPPING at

Man Mound Park
Baraboo, Sauk Co., Wisc.

Map Sheet 571-2
James P. Sch взгляд Dec 1989