NPS Form 10-900
(Rev. 8-86)

OMB No. 1024-0018

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations of eligibility for individual properties or districts. See instructions in *Guidelines for Completing National Register Forms* (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, styles, materials, and areas of significance, enter only the categories and subcategories listed in the instructions. For additional space use continuation sheets (Form 10-900a). Type all entries.

1. Name of Property

historic name: Sunwatch
other names/site number: Incinerator Site, 33 My 57, Vance Farm Site

2. Location

street & number: [redacted] ☐ not for publication
city, town: Dayton, Ohio ☐ vicinity NA
state: Ohio code: OH county: Montgomery code: 113 zip code: 45418-2815

3. Classification

Ownership of Property	Category of Property	Number of Resources within Property	
		Contributing	Noncontributing
☒ private	☐ building(s)		buildings
☒ public-local	☐ district		sites
☐ public-State	☒ site	1	structures
☐ public-Federal	☐ structure		objects
	☐ object		Total

Name of related multiple property listing:

Number of contributing resources previously listed in the National Register 1

4. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this ☐ nomination ☐ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property ☐ meets ☐ does not meet the National Register criteria. ☐ See continuation sheet.

Signature of certifying official — Date

State or Federal agency and bureau

In my opinion, the property ☐ meets ☐ does not meet the National Register criteria. ☐ See continuation sheet.

Signature of commenting or other official — Date

State or Federal agency and bureau

5. National Park Service Certification

I, hereby, certify that this property is:

☐ entered in the National Register.
☐ See continuation sheet.
☐ determined eligible for the National Register. ☐ See continuation sheet.
☐ determined not eligible for the National Register.
☐ removed from the National Register.
☐ other, (explain:)

Signature of the Keeper — Date of Action

6. Function or Use See additional sheets

Historic Functions (enter categories from instructions)	Current Functions (enter categories from instructions)
Domestic-Fort Ancient Village Site	Recreation & Culture - Museum
Agri/Subsistence - fields storage	
processing	
Funerary - Burials	
Defense - Fortification	

7. Description

Architectural Classification (enter categories from instructions)	Materials (enter categories from instructions)
N/A	foundation
	walls
	roof
	other

Describe present and historic physical appearance.

SunWatch, 33-My-57, formerly known as the Incinerator Site, is an open village site. Ceramics, radiocarbon dates, and other evidence indicate that SunWatch is a discrete Fort Ancient period Anderson phase village probably occupied for not more than 25 years during the late 12th and early 13th Centuries A.D. (Essenpreis, 1982; Griffin, 1943 and 1978; and Heilman, Lileas, and Turnbow, 1988).

[redacted]

Excavations conducted at SunWatch since 1964 indicate that the site was laid out in concentric rings of activity areas within an oval-shaped encircling stockade (Appendix 7.2). This stockade, [redacted], encloses an inner ring of post mold patterns and other archeological deposits indicating the presence of square to rectangular houses. Site excavations thus far have uncovered 18 houses within this zone.

These houses surround an inner ring of storage/trash pits, which, in turn, [redacted] a central plaza. The center of the plaza is dominated by a feature consisting of several post molds surrounding the remains of a large red cedar post.

Features arrayed around the central plaza are not symmetrically distributed. The largest houses, most elaborately stocked storage/trash pits, [redacted] village compound. No intact deposits have yet been found beyond the stockade walls.

[x] See continuation sheet

8. Statement of Significance

Certifying official has considered the significance of this property in relation to other properties:

[x] nationally [ ] statewide [ ] locally

Applicable National Register Criteria [ ] A [ ] B [ ] C [x] D #6 NHL

Criteria Considerations (Exceptions) [ ] A [ ] B [ ] C [ ] D [ ] E [ ] F [ ] G

Areas of Significance (enter categories from instructions)	Period of Significance	Significant Dates
Prehistoric Archeology	12th & 13th	
NHL Themes: IB15 Cultural Developments:	centuries A.D.	
Post Archaic Pre-Contact Developments		
Eastern Farmers - C1 Prehist. Archeology:		
Topical Facets, Architecture/Shelter/Housing	Cultural Affiliation	
C2 Technology C3 Social & Political Organiz.	Fort Ancient Period - Anderson Phase	
5 Arts/Handicrafts 7 Diet/Health 8 Economic/		
Trade 9 Warfare 10 Religion, Ideology &		
Ceremonialism 11 Social Differentiation		
Significant Person 12 Settlements & Settlement	Architect/Builder	
Patterns 16 Agri/Plant Domestication/Horticulture		
17 Animal Domestication/Husbandry		
24 Human Remains		

State significance of property, and justify criteria, criteria considerations, and areas and periods of significance noted above.

The SunWatch site possesses exceptional value and quality in illustrating and interpreting the heritage of the United States in archeology, and possesses a high degree of integrity of location, design, setting, materials, workmanship, feeling, and association.

National Historic Landmark criteria exceptions do not apply to this property.

SunWatch satisfies the following Criterion of National Significance:

Criterion 6 -- SunWatch has yielded or may be likely to yield information of major scientific importance by shedding light upon the lifeways of the people of the Fort Ancient culture whose settlements extended over a large area of the United States around the central Ohio River Valley from A.D. 1000 to 1750.

No site primarily designated for its association with the Fort Ancient period is presently represented in the NHL thematic framework. SunWatch contains one of the most extensively analyzed bodies of data recovered from any known Fort Ancient site. Dietary and Stable Isotope Ratio Analysis (SIRA) studies conducted at SunWatch are among the most extensive analyses of their type in American archeology (Krueger, 1989). The site is one of the best preserved of known Fort Ancient occupations. Its extensive and well controlled suite of radiocarbon dates provides excellent temporal controls facilitating analysis of resources associated with SunWatch and contemporary sites.

SunWatch has yielded, and may reasonably be expected to yield, data affecting theories, concepts, and ideas to a major degree within the following National Historic Landmark Thematic Framework categories:

[x] See continuation sheet

9. Major Bibliographical References

Allman, John C.
1968 The Incinerator Village Site. Ohio Archeologist 18 (2): 50-55.

Barber, Michael B.
1974 Fort Ancient Settlement Patterns. Unpublished M.A. thesis, Department of Anthropology, Kent State University, Kent, Ohio.

[x] See continuation sheet

Previous documentation on file (NPS):
- [ ] preliminary determination of individual listing (36 CFR 67) has been requested
- [x] previously listed in the National Register
- [ ] previously determined eligible by the National Register
- [ ] designated a National Historic Landmark
- [ ] recorded by Historic American Buildings Survey # _____
- [ ] recorded by Historic American Engineering Record # _____

Primary location of additional data:
- [ ] State historic preservation office
- [ ] Other State agency
- [ ] Federal agency
- [ ] Local government
- [ ] University
- [x] Other

Specify repository:
Dayton Museum of Natural History
2629 Ridge Ave., Dayton, OH 45414

10. Geographical Data

Acreage of property [redacted]

UTM References

	Zone	Easting	Northing
A	[redacted]		
B	[redacted]		
C	[redacted]		
D	[redacted]		

[ ] See continuation sheet

Verbal Boundary Description [redacted]

[ ] See continuation sheet

Boundary Justification [redacted]

[ ] See continuation sheet

11. Form Prepared By

name/title J. Heilman-Curator of Anthropology, Christopher Turnbow and Robert S. Grumet
organization Dayton Museum of Natural History & SunWatch date January 23, 1990
street & number 2629 Ridge Avenue telephone (513) 275-7431
city or town Dayton, Ohio state Ohio zip code 45414

ENVIRONMENTAL SETTING

Physiographically, the catchment area of SunWatch is located in an area radically altered by the Wisconsin glaciation. The present day Great Miami River is a remnant of a glacial meltwater valley cut into Ordovician limestone strata. Soils gradually developed atop the deep gravel outwash deposits left by the Wisconsin glaciers. After the retreat of the Wisconsin icesheet, the Great Miami River became what geologists call a misfit stream cutting a meandering course through this broad valley of glacial origin.

[redacted]. Dams built by the Miami Conservancy district after the 1913 flood and rechanneling, riverbank erosion control, and landfill projects transformed ancient landforms, altered earlier water levels, and changed the river's course.

[redacted]

Late 18th and early 19th Century land surveys record that bottomlands around SunWatch supported a mixed forest of hickory, ash, buckeye, hackberry, elm, honey locust, walnut, oak, sugar maple, sassafras, ironwood, and dogwood (Cooper, 1800). These records also show that uplands to the west of the village were

covered by beech-sugar maple forest containing hickory, oak, and ash. Farther away, uplands 1.5 km. to the east of Sunwatch supported an oak-hickory-ash forest. These differences can be attributed to variations in slope, underlying geological soil parent materials, soil porosity, and water availability (Wagner, 1987).

SITE COMPOSITION

STOCKADE

[redacted] linear post mold patterns surrounding the village area indicates that the SunWatch settlement was surrounded by a stockade (Appendix 7.2). Portions of this stockade line have been uncovered in excavations of the northern, southern, and western portions of SunWatch. Excavations of generally parallel lines of post molds in these areas suggest either separate building episodes, a multiple-wall stockade, or the presence of screen-like walls partitioning off or concealing certain village areas. Shallow post molds comprising the stockade generally are 15 cm. to 23 cm. deep. Individual posts generally are set 30 cm. apart from one another. No evidence of wattle or daub associated with the stockade wall has thus far been discovered.

Bastions or other outerworks also have not been identified at SunWatch. A rectangular post mold pattern directly abutting a series of slightly more widely spaced stockade posts at the northwestern apex of the village may represent the remains of a gate house. The presence of a gateway is suggested by the slighter wider than average spacing of stockade post molds beyond the gate house's north wall. Large post molds adjoining the house's corner posts, moreover, may represent the remains of flanking gate posts (Appendix 7.3).

The function of the two earlier mentioned parallel lines of post molds uncovered at the northwestern apex of the village is not fully understood. They may represent two building episodes, a multiple wall, or an outer wall and inner screens. Excavations in this area reveal that the inner post mold lines do not extend for great distances to the east or west. The discontinuous nature of these post mold lines suggest that they were either screens

standing at the same time as the outer wall or another wall whose remains were partially obliterated by excavations conducted by SunWatch villagers.

HOUSES

The first band of features within the stockade primarily consists [redacted] of square or rectangular post mold patterns of houses (Appendix 7.2). Excavations have uncovered the remains of 18 houses. Postmolds associated with house plans average 20 cm. in depth. The largest main supporting house posts found in the largest structures are between 46 cm. and 58 cm. deep (Barber, 1974). SunWatch's smallest houses [redacted] The largest structure, known as the "Big House," [redacted]

Plowing has damaged the upper portions of most hearths and post molds. A few hearths, however, retain remnants of their clay rims. All hearths, except the Big House and Women's House fireplaces (see below), are located at or near the center of house floorplans. Hearths in both of the latter-mentioned houses contain deep fire pits. Most hearths in residential structures are equipped with shelves capable of holding coals pulled from the fire for cooking.

SunWatch hearths generally are oval in shape and average 55.8 cm. in diameter. Many have several small postmolds believed to be the remains of cooking spit posts. Patterns revealed by these hearths and post molds indicate floor plans consisting of central hearths within single central rooms ringed by benches set into house walls.

Excavations indicate that houses cluster into 3 groups roughly corresponding with what appear to be north, south, and west village quadrants. These patterns may reflect distinct village socio-political boundaries or activity areas. [redacted] distant from the other. Houses within the northern and southern quadrants generally [redacted] Most houses within these quadrants [redacted] Houses in these quadrants are thought to be small residential structures.

Excavation of larger and deeper postmolds, and the use of red cedar posts, a unique building material, in the Men's Lodge, indicate the presence of larger and more specialized buildings in the western

site quadrant. Discovery of unusually wide and deep post molds in the Men's Lodge and the Big House suggests that both structures also may have been taller than other village buildings.

Analysis of materials excavated from post molds and burned house floors suggest that ring porous hard woods were utilized for wall posts in most SunWatch houses (Wagner and Heilman, 1987). Walls were covered with a lathe core of prairie grass supporting clay daub. Impressions of prairie grass found on several mud dauber wasp nests suggest that thatching served as roofing material.

A structure identified as a Women's House has been excavated in the northern village quadrant. Postmolds delineating this structure are the smallest postmolds relating to main structural elements thus far encountered at SunWatch. Other post molds identified as interior benches suggest that this structure contains the widest known features of this type in relation to floor space found in the village. Several isolated posts within the central area of the floorplan may represent "birthing poles." The absence of hearth shelves and excavation of the remnants of a possible medicine bag indicated by mink forepaws and a modified mink skull from a pit in front of the structure's doorway suggesting ritual activity provide further support for the identification of this building as a Women's House.

STORAGE/TRASH PITS

Over 250 storage/trash pits have been excavated [redacted] 7.2). The majority of these pits are bell shaped. Most are 1 m. in depth and length at their widest and deepest points. Discovery of corn and the remains of grass linings within several pits indicates that they served as storage places for corn and other agricultural produce. Mills's excavations at Gartner Mound (Mills, 1904:26) and ethnographic documentation of similar pit types and functions among the Hidatsa of South Dakota (Wilson, 1917:87-93) support this inference.

All pits were reused for trash disposal of broken pottery, animal bone, floor and hearth sweepings, and by-products of such activities as flint knapping, bone tool manufacture, butchering, and food processing. Rapid filling of pits is indicated by discovery of generally homogeneous deposits and floral and faunal

remains associated with specific seasons (Shane, 1980). Rapid deposition is also indicated by frequent discoveries of parts of single vessels scattered throughout pit fill (Heilman, 1975). Excellent preservation conditions within these pits has resulted in recovery of fish scales, egg shells, crawfish pincers, and other highly perishable organic remains normally not present in archeological deposits.

Most of the over 50,000 pottery sherds found at SunWatch have been recovered from backfilled storage pits. Ceramics also have been found in post molds, on house floors, and with burials. Analysis of more than 37,000 of these sherds indicates that SunWatch was exclusively occupied during the Anderson phase of the Fort Ancient period (Griffin, 1943 and 1978). Most of these sherds were typical Anderson ceramics possessing thickened rim strips and clay bodies generally decorated with incised rectilinear and curvilinear guilloche designs and line-filled triangles or chevrons. SunWatch potters did not share the Fort Ancient predilection for shell and grit tempered vessels. Nearly 92% of all sherds excavated at SunWatch are exclusively grit tempered. Mica tempering is present in 5% of the sample. Shell tempering has been identified in 2.4% of analyzed sherds. Quartz is found in 0.7% of the SunWatch sample.

Ceramic spatial distribution within the village reveals significant patterns. Patterns revealed by plotting locations of sherds from single vessels in different features support identification of the 3 abovementioned village quadrants (Heilman, 1975; Heilman, Lileas, and Turnbow, 1988). These cross-feature fits also reveal different stylistic preferences within each quadrant (Appendix 7.4).

Stone tools in every stage of production and use have been excavated at the site. Debitage occurs within most features. Unifacial tool types found at SunWatch include endscrapers, sidescrapers, denticulates, notches, and gravers. Bifacial tools at SunWatch include triangular projectile points, triangular knives, shouldered knives, ovate or leaf-shaped knives, projectile points or knives with prepared haft elements, drills, and more generalized bifaces (Nass, 1987; Robertson, 1980). A drill modified from an Early Archaic biface and other curated stone tools associated with earlier cultures have been found at the site. Hammerstones, anvils, and other pecked stone tools are found in

great numbers. Needles, awls, knives, hoes, and other bone, antler, or shell tools and ornaments also have been found at SunWatch (Appendices 7.5 - 7.7).

Most technological artifacts recovered at SunWatch were domestically produced by craftspeople using locally available raw materials. Exotic Flint Ridge and Mercer cherts from formations located in eastern Ohio constitute less than 1% of all lithics. Sherds associated with 2 locally-produced negative-painted vessels represent the only evidence of external cultural influence on ceramic vessel style thus far identified at SunWatch.

Cross-feature fits of ceramics believed to be associated with women within house clusters, inverse widespread distribution of lithics and artifacts thought to be associated with men throughout the village, and pathological regularities observed within burial populations in each quadrant suggest the possible existence of a matrilocal post-marital residence pattern (Heilman, 1975; Knick, 1977; Robertson, 1984; Robbins, 1972 and 1975).

Pits are the primary source of faunal remains at SunWatch. Bones found in these pits indicate that deer constituted 76% of the pounds of usable meat eaten by SunWatch villagers (Shane, 1988). Elk (10%), turkey (4%), raccoon (3%), fish (3%), and other animals make up the rest (Shane, 1988; Shane and Barber, 1975). Over 100 vertebrate taxa are represented in the Sunwatch sample. These include over 15 species of fish, 3 species of amphibians, 7 reptile species, over 50 species of birds, and at least 29 species of mammals.

These data suggest that Sunwatch villagers seasonally exploited a variety of nearby environments. Low levels of winter garbage indicate that SunWatch's inhabitants either moved away from the village during winter months or butchered and consumed winter kills away from the village. It is thought that most villagers moved to the uplands near game and convenient wood supplies during colder months. No such winter camps, however, have thus far been found.

Over 3,300 soil flotation samples have been collected from storage/trash pits, burials, post molds, and other features at SunWatch. Flotation of these samples has resulted in recovery of remains of beans, squash, gourds, purslane, sunflower, 8-, 10-, and

12-row flint or flour corn, and popcorn (Wagner, 1977, 1987, 1988a, and 1988b). Walnut, butternut, hazel nut, hickory nut, and the seeds of plum, cherry, grape, and sumac represent flora gathered from the woodlands. These materials indicate the range of plants and environments exploited by Sunwatch villagers.

Corn kernels and cobs have been found in Sunwatch pits. Differential preservation, however, makes it difficult to quantify the role of corn in the Sunwatch diet. Stable Isotope Ratio Analysis (SIRA) of C 4 carbon in human bones from SunWatch (Corn was originally a tropical plant producing C 4 carbon; Indigenous plants produce C 3 carbon) indicates corn constituted over 50% of the village population's diet (Conard, 1985). High human bone C 4 rates may be caused by consumption of cornfield-fed deer and other game. Preliminary analyses showing low C 4 rates in deer bone, however, suggest that SIRA tropical cultigen evidence in human bone at SunWatch indicates that corn was directly consumed by SunWatch villagers.

BURIALS

[redacted] Burials generally cluster together and may reflect family burial plots (Dunn, 1988; Knick, 1977; Paquette, 1981; Robbins, 1972 and 1975). Grave goods have been found in 25% of excavated burials. Marginella shells imported from the Gulf of Mexico are the most common item found in these graves. Most have been sewn into necklaces, bracelets, earrings, or hair wraps. Pairs of perforated shell discs also have been found in many graves. Many of these discs, found near the tops of sternums, may have been used as closures for garments. The most elaborately finished graves contained pipes associated with large marine shell ear discs, and head gear adorned with marginella shells, lightning whelks, or cut animal jaws (Coovert, 1988; Heilman and Hoefer, 1981). Such grave goods probably were symbols of high status (Appendix 7.7).

In general, graves thought to be those of higher status individuals were found [redacted]. Burials containing the remains of individuals thought to be members of the village elite were [redacted] Lower ranking

individuals were generally buried [redacted] All but one of the higher status interments were covered with limestone slab vaults. The single exception was interred under cedar bark. Lower status individuals were covered with earth. Some burials also were recovered [redacted] may have been shot with stone arrowpoints. Tooth marks found on the bones of this individual indicate that animals chewed on his unburied body as he lay exposed for an unspecified period of time. Another individual found with arrowpoints in his chest was buried under a cedar-bark covering with a pipe at his right elbow.

[redacted] contained the bodies of infants. Green-bone fractures found on many of these children's skulls indicate that they may have been victims of infanticide (Robbins, 1975). Many of these individuals also exhibit abnormalities such as spinabifida and malformed long bones. Burial # 10/1976 contained the remains of a hydrocephalic child. Remains of children under 6 years of age constitute 54.6% of all burials thus far recovered from Sunwatch (McNeely and Bohn, 1989). Few graves of individuals older than 35 years of age have been recovered.

Virtually all SunWatch villagers show some sign of pathology. Arthritis and dental disease have been found in all individuals above 15 years of age. Forty five percent of adults examined show signs of genetic anomaly. Sacral anomalies are identified in 33% of this group while 20% exhibit evidence of tumors. Gall stones have been discovered in 2 individuals (Knick, 1977; Paquette, 1981).

Spinabifida is most commonly found among infants buried in the [redacted] Indented shovel-shaped incisors also occur with greatest frequency [redacted] Twins are only found together in [redacted] Differential distribution of individuals bearing these traits and pathologies within the village provide further support for the hypothesis that SunWatch was divided into social or political quadrants (Knick, 1977; Paquette, 1981).

PLAZA AND SWEAT LODGES

[redacted] (Appendix 7.2). Excavations indicate that few features or artifacts are located within it. Excavations at SunWatch, the Buffalo site in West Virginia (Hanson, 1975), and the Slone site in Kentucky (Dunnell, et al., 1971) show that cleared plazas are often found in Fort Ancient phase villages.

Three archeological deposits identified as sweat lodges have been [redacted] The presence of a sweat lodge to the [redacted] One of these pits, 61 cm. deep, is the probable receptacle for fire-cracked rocks found within it. A narrower pit directly adjacent to it is thought to be the remnants of a bench structure. The two pits are separated from one another by a ridge of sterile soil. Large quantities of fire-cracked rocks of types ideally suited for use in such structures also have been found to the east and northeast of the feature closest to the Big House.

[redacted] This structure is bisected by the Winter Solstice sunrise alignment. [redacted] Excavations have uncovered a fourth sweat lodge in the area [redacted] The 2 pits, which make up each sweat lodge, are each 61 cm. deep.

CENTER POST COMPLEX

The basal portion of a large eastern red cedar post measuring 71 cm. in diameter and set 1.2 m. into the ground was recovered in the center of the plaza. Discovery of 2 ramps leading into the hole indicates that a post was set into this place at least twice. Four other poles were placed in a parallelogram-shaped arrangement framing the center post (Appendix 7.8). Excavation also revealed four additional post molds and the presence of the abovementioned [redacted]

The pattern of the 4 poles around the center post comprises a parallelogram [redacted] with angles of 66 degrees and 114 degrees at the corners. Precise alignment of these post molds with each other and the center pole indicates careful and deliberate placement.

CENTER POST COMPLEX ALIGNMENTS

Extension of the abovementioned center post pattern to the southwest (Appendix 7.8) aligns it with the doorway of the Big House (see below). A relatively large post hole located within the Big House is on the center line of the parallelogram extending from the center post. The Big House hearth is located between the center line and the extension of the line from the southern side of the parallelogram. The placement of a hearth away from the geometric center of the house is unusual and thus far has only been found in one other structure at SunWatch. The Big House hearth is also the largest feature of its type found to date on the site.

Twice yearly, approximately on April 29 and August 19, the center pole and the Big House doorway/interior post and hearth are in alignment at the time of the rising sun. This pattern suggests that the alignment was used to schedule frost-free corn planting dates and "Green Corn Ritual" harvest dates. Support for this hypothesis is found in Witthoft's observation (1949:68) that advanced setting of harvest dates by male officials was a common theme in historically chronicled Green Corn Rituals (Witthoft, 1949:68). Excavations near the Big House of relatively large quantities of burnt corn associated with pipes historically associated with Green Corn Ceremonialism further supports the hypothesis that the Center Pole Complex and the Big House were used in ceremonies similar or identical to historic Green Corn Rituals.

Astronomical alignments have been the subject of intense archeological interest since the first discovery of "Woodhenge Circles" at Cahokia (Wittry, 1964). Ohio Hopewell alignments have been tentatively identified near SunWatch at the Newark Group, the High Bank site, and the Fort Ancient site (Horn and Hively, 1982). Two flagstone "Sun Serpent" effigies recently discovered near the Hopewellian Fort Ancient site have been radiocarbon dated to Anderson phase times (White, 1987).

WINTER SOLSTICE ALIGNMENTS

Four post molds, [redacted] frame an alignment for the winter solstice rising sun. The back sight for this alignment is the doorway, interior post, and hearth of Solstice House II [redacted].

A trapezoidal post mold pattern has been identified as Solstice House I. This unusual trapezoidal floorplan prevents the southeastern corner of the structure from blocking the winter solstice alignment path. This pattern suggests a functional relationship between the house and the Center Pole Complex. A screen-like line of post molds beginning behind the Big House continues north to the southwest corner of Solstice House I. Posts on this line are set at approximate 30 cm. intervals. The northern terminus of this post mold pattern is separated from the rest of the line by a 91.4 cm. gap. The line's northernmost post is situated on the winter solstice rising sun alignment with the centerpost.

WEST SIDE AREA

As mentioned earlier, ceramic cross-feature fit patterns, house clusters, and groups of burials possessing similar pathologies indicate that SunWatch was divided into pie-shaped quadrants (Appendices 7.2 and 7.4). It has further been suggested that these quadrants reflect social or political village divisions.

The central core of the West Side Area [redacted] contains several unique features not found in other areas of the site. Relatively large structures identified as the Big House and the Men's Lodge physically dominate this area. The unusually close placement of these structures to the central plaza emphasizes their exceptional height and size.

BIG HOUSE

The Big House has the largest floor area of any structure thus far excavated on the site. It and the Women's House are also the only structures possessing hearths located at the south end of the floor

plan. This placement allows the alignment of the Big House hearth with the Center Pole Complex. Post mold patterns found within this house also indicate that it contained a chamber at the south end of the building with a centrally located door leading into the main room.

Remains of a broad single bench set against the east and west walls and post molds indicating the existence of a double tiered bench located against the north wall have been identified within the Big House main room. The hearth and doorway to the abovementioned chamber behind it can be seen from any seat in the lodge. Individuals standing in front of this doorway would have been well illuminated by the oversized hearth. The hearth is the central focal point of the room. This large room may have served as a council chamber and is reminiscent of similar meeting halls documented during historic times throughout the southeast (Hudson, 1976:218-219).

MEN'S LODGE

The floor plan of the Men's Lodge is smaller than that of the Big House. Exterior wall post molds, which average 23.8 cm. in diameter and 41.8 cm. in depth, are more than twice the depth of other residential houses at SunWatch and are deeper than those associated with the Big House. These factors indicate that larger, and perhaps taller timbers were used to construct an unusually high structure. Use of eastern red cedar as the main housing material in this structure also is unique at SunWatch. Historic documents indicate that cedar is considered a sacred wood by Indian groups throughout the eastern United States (Speck, 1931). Ritual use is also indicated by unusual concentrations of woodpecker, songbird, hawk, owl, and falcon bones near the walls of this structure.

Excavation of the Men's Lodge indicates that its original floor was situated 15 cm. below ground level. The sunken floor was gradually raised by accumulated debris. Excavations reveal that this accretion contained large amounts of debitage and preforms of tools historically associated with men. The absence of artifacts and other remains at the topmost portion of this floor indicates that it was cleaned before the structure was burned - presumably at the time the village was abandoned. These findings indicate that this structure served a ritual role and may have been a Men's Lodge (Harold, 1985; Robertson, 1980).

SOLSTICE HOUSES

Two structures identified as Solstice Houses are located at the [redacted] These structures, smaller than the Big House and Men's Lodge, frame the winter solstice rising sun alignment (Appendix 7.8). As mentioned earlier, Solstice House I is built in a trapezoidal manner so that its south wall parallels the winter solstice alignment. Solstice House II is evidently the back sight for this alignment. Solstice House II [redacted] Its narrow side faces toward the plaza in the same direction as Solstice House I and the Men's Lodge. Posts comprising the north and south walls generally are spaced at 30.4 cm. intervals. This structure's eastern and western wall posts are placed 61 cm. apart between its corner posts.

The hearth within Solstice House II is 61 cm. in diameter. It is equidistant from the structure's side walls and positioned slightly closer to the front wall. A small limestone-covered pit has been found 30.4 cm. behind the hearth. Both the hearth and the pit are situated on the alignment path of the winter solstice rising sun. A solitary post mold located 91 cm. to the interior of the eastern doorway also may be associated with this alignment. The rear of this building is truncated by partitions forming small closet-like rooms (Heilman and Goss, 1989).

WEST SIDE BURIALS

Burials containing individuals accompanied by elaborate grave goods are thought to have higher status. Many such graves are located [redacted]

Several people [redacted] were interred with unusually elaborate grave goods. One individual was adorned with an arrangement of shell beads that may have been the base for a roach headdress. Another had a hairpin positioned as if it were holding a bun of hair at the back of the head. A triangular mosaic of fresh water drum teeth and a large lightning whelk was suspended

from the hairpin. Laboratory analysis indicates that this person also wore shell disc earrings apparently made of the outer whorl of the same lightning whelk associated with the hair pin.

WEST SIDE STORAGE/TRASH PITS

West side storage/trash pits generally have the same shape and dimensions of those found within the same concentric zone in other areas of the village. Trash found within these pits, however, contains different and more exotic materials than generally found elsewhere at SunWatch. [redacted] contain single 15 cm. deep lenses of burnt corn associated with pipes or other exotic objects. These deposits may represent the residue of the Busk or Green Corn Ceremony (Heilman and Hoefer, 1981; Prufer and Shane, 1970:27-29; Witthoft, 1949).

The largest amounts of burnt corn found at SunWatch have been recovered from the western quadrant of the village. Nearly 70% of West Side Area pits contained burnt corn. Much smaller amounts have been found in some pits in the northern and southern village quadrants. Preliminary analysis of corn found at SunWatch suggests that larger numbers of different types of corn were located in the West Side Area than in the other quadrants (Wagner, 1987:74-77). Shane has noted that remains of different bird species are found in western sector deposits (Shane, 1988). Bones of large raptors such as hawks, owls, falcons, and other birds such as cuckoos, blackbirds, song birds, and red bellied, downy, hairy, pileated, and ivory-billed woodpeckers not normally found in other village deposits are found in pits near the Men's Lodge. Many of these birds have been associated with historically documented southeastern Indian war rituals (Hudson, 1976:130).

Unusually large amounts of lithic debris have also been identified in the western core sector (Robertson, 1984). Soil accreted onto the sunken floor of the Men's Lodge contained many waste flakes. The vast quantity of lithics recovered from trash pits [redacted]

Spatial placement of the Big House, Men's Lodge, and the Solstice Houses suggests that these structures collectively comprised a specialized activity area. The size, placement, and floorplans of these structures. [redacted]

suggest that ritual activity took place in this sector. Their putative relationship with the Center Pole Complex further emphasizes their possible ritual role in the SunWatch community.

The West Side Area generally contrasts with the northern and southern village quadrants. Features located in the inner core of the West Side Area contrast with the more everyday materials found at the southwest and northwest ends of the quadrant. Suggested astronomical alignments and extensive concentrations of possible ritual debris also only occur in this inner core area.

RADIO-CARBON DATES

Nine SunWatch radiocarbon samples have been analyzed. Seven of these samples represent the most reliable date range. These samples, comprising wood charcoal from 4 trash pits, 3 post molds, and a hearth, were analyzed by Dicar Radioisotopes Laboratory. Dates from these samples range from A.D. 1050 +160 to 1180 +310, -330. The greater error range of the latter date may be attributed to the minimal size of the sample. A full listing of the Dicar dates appears below.

Lab No.	RC Age	Feature No.	Feat. Type	Quadrant	Square No.
CWR-148	900+/-160 BP	F# 18/1972	trash pit	west	W180-S80
CWR-151	890+/-100 BP	F# 11/1973	trash pit	south	W130-S140
CWR-153	830+/-120 BP	F# 3/1973	trash pit	south	W170-S120
CWR-145	820+/-150 BP	H# II/1972	hearth	north	W120-N190
CWR-140	820+/-110 BP	F# 10/1973	center post	plaza	W100-N0
CWR-141	800+/-180 BP	F#11S/1972	trash pit	west	W190-N100
CWR-156	770+/-310 BP	H# I/1973	posts	south	W140-S160

Problems associated with sample size or type have compromised the reliability of the two other radiocarbon samples drawn from SunWatch. The A.D. 1328+/-100 date provided by the University of Michigan is based upon a very small thumbnail-sized charcoal sample collected from 2 pits. Sample F# 11/71 consists of corn kernels

excavated from a trash pit in square W120-N130. Analysis by Teledyne Isotopes, Inc. produced the anomalous date of A.D. 1555 (395+/-80 BP). Identical dates for corn kernels recovered from similar features at the Mitchell site have been corrected to dates ranging between A.D. 1075 and A.D. 1200 (Hall, 1967).

SITE HISTORY

Artifacts have been collected from this site by local collectors for more than 100 years. Property records show that the site was first formally purchased by the Recher/Vance families in 1804 (Lileas, 1988: 25-27). Maude Vance received the field in which Sunwatch is located upon the death of Mary Ann Vance in 1919. Excavations reveal that Maude Vance and her husband, Bill Marietta, constructed their house directly atop the remains of the [redacted]

Construction of the Vance/Marietta House minimally damaged subterranean deposits directly below it. The house had no basement, and its foundation trenches and plumbing lines did not seriously disturb the archeological deposit. Construction of a septic tank, however, damaged a small area [redacted]

Virtually all known structures built by the Vance/Marietta family and subsequent landowners have been located. Only a chicken coop, [redacted] House, has not yet been found. The minimal amount of documented disturbance caused by these structures indicates that family building activities have not had an appreciable impact upon SunWatch archeological deposits.

In 1925, the City of Dayton began acquiring land in this area for [redacted] The Vance/Marietta property was among their later acquisitions. The Vance/Marietta House was purchased by the City of Dayton during the early 1940's and burnt to the ground during a fire-fighters training exercise.

[redacted]
of Dayton during the 1950's. Survey of this area conducted in 1987 indicates that construction excavations exceeding 41 cm. in depth have disturbed deposits [redacted]. Much of the area to the east of the village site beyond the SunWatch stockade [redacted]
Concrete and building debris fill has been dumped into the area affected by gravel and soil removal.

[redacted] undisturbed by the abovementioned undertakings were inadvertently damaged [redacted]
southeastern unexcavated portion of the village deposit, however, may yet be intact.

These activities, affecting 7% of SunWatch, probably have destroyed most shallow features at the edge of the unexcavated eastern village quadrant. Deeper post holes, storage/trash pits, burials, and other features or deposits, however, probably remain and may yet be discovered [redacted]

The City of Dayton currently owns the land [redacted]
(Appendix 7.9).

Archeological interest in SunWatch was stimulated during the 1960's [redacted]
site. John Allman, a local amateur archeologist, began the first excavation of the village in 1964. He and Charles Smith discovered the first known Anderson phase house at the site in 1968 (Allman, 1968).

Dayton Museum of Natural History Curator of Anthropology J.M. Heilman conducted the first systematic surface collection at SunWatch during 1969 and 1970. These walkover surveys identified components and determined approximate site boundaries. Local collectors had removed most readily observable artifacts from the surface. As a result, DMNH crews found only small numbers of

artifacts during this phase of investigation. Most material found at this time was recovered from areas excavated [redacted].

DMNH began salvage excavations in 1971 following the City of Dayton's announcement of plans to develop the property. Museum excavations through 1974 primarily were concerned with recovery of the maximum amount of data possible from features, burials, houses, and stockade lines. These excavations provided sufficient data to support designation of the village, then known as the Incinerator Site [redacted] as an archeological district on the National Register of Historic Places in 1975.

A program of limited site excavation focused upon specific research questions continues to the present day. In 1981 the City of Dayton turned the site over to the DMNH for construction of a museum and interpretive park facility. Since that time, an Interpretive Center, opened in 1988, and a portion of a reconstructed village, have been erected at SunWatch.

SITE INTEGRITY

Flooding has deposited nearly 20 cm. of ph. neutral soil atop the village floor since SunWatch was abandoned. The depth and coverage of this overburden, the excellent drainage afforded by underlying village deposit soils and gravels, and the neutral ph. of site soils have contributed to the extraordinarily high level of preservation at the site. Excavations indicate that plowing, which has damaged many Fort Ancient sites, generally has not exceeded a depth of 20 cm. at SunWatch. In most areas, the original prehistoric occupation surface is at or immediately below the bottom of the plow zone. In areas to the north, plowing and erosion toward the stream has cut away the tops of some features. These findings show that plowing has minimally disturbed archeological deposits at SunWatch (Appendix 7.9).

Amateur surface collecting has had little impact on the overall integrity of this site. Most collecting was restricted to the surface of the site. Little evidence of clandestine excavation beyond the discovery of a reported disturbed double burial has been found. Limited excavations conducted by Allman and Smith, moreover, were systematically conducted with well documented and mapped

controlled field surveys and excavation units. Some of Smith's materials are presently curated by DMNH. Most of Allman's collection is presently located at the Ohio Historical Society in Columbus. Limited amounts of other material gathered at or near SunWatch by other collectors also are in the DMNH collections.

More than 60% of the site has been systematically excavated by DMNH archeologists. Construction activities probably have disturbed or destroyed another 7% of the site. These disturbances probably have affected those portions of the eastern village quadrant located [redacted]

More than 30% of the remaining village deposit within the stockade has been "banked" for future research. Testing results indicate that well preserved deposits located in the eastern portion of SunWatch and more limited deposits in other already examined village areas remain for future study. Unexcavated areas within already excavated portions of the village area within DMNH property are higher than the excavated village floor and are clearly marked.

The area surrounding the palisade to the north, west, and south is largely intact and awaits systematic investigation. Extensive surface testing in these areas has recovered substantial amounts of lithic and ceramic material associated with Fort Ancient occupation. These materials suggest the presence of extensive buried deposits capable of providing significant information on the culture and history of SunWatch in the immediate area surrounding the stockade wall.

The commitment of the City of Dayton and the DMNH to preserve SunWatch is graphically illustrated by construction of fencing, maintenance of signage, and development of the Interpretive Center and village site at SunWatch with its attendant security system. These measures show that the site will be protected from vandalism, development, and other threats.

THEME I. CULTURAL DEVELOPMENTS: INDIGENOUS AMERICAN POPULATIONS

SUB-THEME B. POST-ARCHAIC AND PRE-CONTACT DEVELOPMENTS

FACET 15. EASTERN FARMERS

SunWatch is one of the best-preserved and most completely excavated and analyzed archeological village sites associated with Post-Archaic Eastern Farmers. It is also among the most thoroughly studied examples of a Fort Ancient period village. The site represents a discrete occupation of not more than 25 years dating to the Anderson phase between the 12th and 13th Centuries A.D. SunWatch typifies Fort Ancient lifeways and has yielded, and has the potential to yield, nationally significant information of major scientific importance by shedding light upon a period of occupation, the Fort Ancient Period (A.D. 1000 to 1750), over a large area of the United States centering around the Middle Ohio River Valley regions of Ohio, West Virginia, Kentucky, and Indiana (Appendix 8.1).

SunWatch provides information bearing upon the major shift in subsistence patterns that substantially changed Native American life throughout much of eastern North America from the end of the first millennium A.D. to the period of initial contact with Europeans during the 1500's. Earlier Ohio Valley Woodland people followed a generally egalitarian semi-sedentary subsistence pattern based upon hunting, gathering, and the planting of starchy seeds (Wymer, 1989).

Introduction of corn, beans, and squash agriculture, coupled with hunting of deer, elk, turkey, raccoon, fishing, and gathering of wild plants and shellfish, stimulated development of larger and increasingly sedentary farming villages (Essenpreis, 1978 and 1988; Shane, 1988; Wagner, 1988b; and Wymer, 1989). Located near major waterways, situated on fertile soils, and nearby different ecozones, such settlements were often planned. Many Fort Ancient sites also were fortified.

Fort Ancient sites were first excavated during the 1800's (Foerste, 1885; Giauque, 1876; Moorehead, 1892). Systematic scientific excavation of Fort Ancient sites became more widespread during the first quarter of the 20th Century (Mills, 1904, 1906, and 1922; Shetrone, 1926). In 1906, Mills identified the first distinct

Central Ohio Valley archeological complexes, the Hopewell and the Fort Ancient cultures (Mills, 1906). The Fort Ancient complex was named after a since-identified Hopewell earthwork associated with later Fort Ancient occupations in Warren County, Ohio.

The first comparative analysis of Fort Ancient materials was begun in 1933 (Griffin, 1943). Museum collections and archeological literature were surveyed to "find and isolate smaller groupings within the larger cultural whole" (Griffin, 1943:2). Griffin identified what he considered to be 4 broadly contemporary "foci" on the basis of comparative ceramic trait lists. These included the:

Baum Focus, [redacted]

Feurt Focus, [redacted]

Anderson Focus, [redacted]

Madisonville Focus, [redacted]

Introduction of radiocarbon dating and the increased tempo of archeological investigation since the end of World War II has resulted in a veritable explosion of new data bearing upon Fort Ancient culture. These data have been used to develop Fort Ancient temporal and cultural frameworks (Cowan, 1986; Dunnell, 1972; Essenpreis, 1982; Graybill, 1984; Mayer-Oakes, 1955; and Prufer and Shane, 1970; Rafferty, 1974; and Turnbow and Jobe, 1984). Despite these efforts, no agreement has yet been reached among specialists. As Griffin points out;

> The pitifully few dates from Fort Ancient sites and the almost complete lack of stratigraphic data or carefully compared site or site segment complexes make significant temporal subdivisions of Fort Ancient an interesting game, but the results cannot be definitive (Griffin, 1978:557).

Most studies find that Fort Ancient cultures tend to follow individual cultural trajectories within river valleys. Many suggest

that earlier Fort Ancient sites possess diverse regionally expressed settlement patterns and ceramic types. This high degree of variability is thought to diminish after A.D. 1400 during the late Fort Ancient Madisonville Horizon (Essenpreis, 1988; Griffin, 1978; Prufer and Shane, 1970).

Many aspects of Fort Ancient material culture resemble late prehistoric assemblages identified throughout eastern North America. Fort Ancient people and their neighbors used the small triangular projectile points associated with the bow and arrow that have since come to be regarded as diagnostic markers for late prehistoric occupations throughout the eastern woodlands. Both Fort Ancient and other Post-Archaic Eastern Farmers used similar types of scrapers, drills, knives, flake tools, and other stone artifacts. Most prehistoric peoples living along the lower Ohio and Middle Mississippi River Valleys also made or used similar types of pottery and bone, antler, and shell tools or ornaments.

Ceramics are one of the most common diagnostic artifacts associated with Fort Ancient sites. Earlier Fort Ancient ceramics closely resemble Late Woodland forms. Occasional use of decoration, appendages, and shell tempering, however, differentiates these wares from those produced by Late Woodland potters.

Fort Ancient ceramics are characterized by shell or mixed shell and grit tempered jars bearing incised decorations, lug appendages, handles, and thickened lips. Bowls and salt pans appear in later Fort Ancient assemblages.

European trade goods have been found in very late Fort Ancient sites. Discovery of these materials has shown that the later Fort Ancient Madisonville Horizon extended into the historic period.

Earlier Fort Ancient settlements tended to consist of groups of small houses scattered over relatively large areas. Later Fort Ancient people tended to build more nucleated planned permanent communities. Some Fort Ancient village plans consisted of lines of houses situated along ridgetops or terraces. Villages spaced 20 to 30 miles apart from one another such as SunWatch is from its neighbors gradually became a widespread Fort Ancient settlement pattern.

Burials occur in cemetery areas, under houses, around plazas, or in mounds. Randomly scattered inhumations also are encountered. Individual interments, multiple burials, and bundle burials are documented. Bodies were placed in extended, semi-flexed, or flexed positions. Stone box graves or stone or wooden slab-covered burials also occur.

SUB-THEME C. PREHISTORIC ARCHEOLOGY: TOPICAL FACETS

SunWatch contains archeological materials providing nationally significant information in the following NHL Thematic Framework facets;

FACET 1. ARCHITECTURE/SHELTER/HOUSING

SunWatch contains the most extensively documented body of evidence relating to Anderson phase Fort Ancient architectural plans and house styles. Extensive village plans have been excavated at Buffalo, Hardin, and other Fort Ancient sites (Hanson, 1966 and 1975). Many, like the Buffalo and Hardin sites, are associated with later Fort Ancient occupations. Both are larger than SunWatch and contain bigger and longer houses. Neither these, nor any other Fort Ancient site, however, is as comprehensively studied as SunWatch.

SunWatch contains one of the most complete and best preserved assemblages of house types associated with a single period of Fort Ancient occupation. SunWatch houses are associated with well-preserved pits, hearths, and other features. Meticulous excavation and analysis of these features has enabled researchers to make one of the few identifications of specialized structures at any Fort Ancient site.

SunWatch contains the only clearly identified group of Anderson Phase houses. The site also contains the only known evidence of Fort Ancient period sweat lodges. These and the other structures described in Section 7 constitute one of the largest known arrays of Anderson phase Fort Ancient architectural types. The probable preservation of structural post-mold patterns in unexcavated portions of the village can potentially challenge or confirm functional interpretations of house use at SunWatch. Future excavations also have the high potential to reveal the full range of building types and styles at the site.

FACET 2. TECHNOLOGY

The tens of thousands of artifacts excavated in situ at SunWatch represent a virtual catalogue of Anderson phase Fort Ancient technology. The SunWatch assemblage represents a fine example of Post-Archaic technology. The large number of well-preserved shell, bone, and antler artifacts found at SunWatch represents an important comparative database for the understanding of Post-Archaic cultural development. SunWatch's combination of meticulous excavation, precise data location, and excellent preservation conditions provide the basis for identification and analysis of the function, form, and context of Fort Ancient technology.

FACET 3. SOCIAL AND POLITICAL ORGANIZATIONS

The unique degree of in situ preservation of features and artifacts at SunWatch suggests the existence of specific forms of social and political organization thusfar unidentified in any other Fort Ancient site. Clusters of house patterns within excavated areas of the village area and morphological and pathological regularities shared by burials within specific areas indicate that SunWatch was divided into at least 3 quadrants.

Each quadrant may have been occupied by an exogamous unilineal corporate kinship group. Cross-feature fits of ceramic sherds associated with women's activities within specific village quadrants and widespread distribution of stone tools associated with male activities across village quadrants suggest that SunWatch villagers practiced a matrilocal post-marital residence pattern. Such a locality pattern, like many other matrilocal systems, may have been organized by a matrilineal descent system. Evidence of central planning and discovery of specialized structures, elaborately furnished burials, and other features within the western village quadrant, moreover, suggest that SunWatch was politically organized (Knick, 1977; Robertson, 1984; and Robbins, 1972 and 1975).

FACET 5. ARTS/HANDICRAFTS

SunWatch contains one of the best preserved and most complete known assemblages of Fort Ancient period arts and handicrafts. The later Fort Ancient period Madisonville, Buffalo, and Hardin sites contain larger samples of shell, antler, and bone ornaments. Analysis of

shell, antler, and bone artifacts preserved in their original depositional contexts at SunWatch has facilitated the only known identification of Fort Ancient hair wraps or roach headdresses.

FACET 7. DIET/HEALTH

The well-preserved assemblage of human burials and faunal remains excavated at SunWatch provides unique insights into Fort Ancient dietary preferences and health patterns. Excellent preservation conditions and extensive site excavation and analysis have enabled analysts to identify more animal taxa at SunWatch than at any other Fort Ancient site (Shane, 1988). SunWatch also has furnished one of the largest and most extensive bodies of data for Stable Isotope Ratio Analysis (SIRA). By analyzing evidence of relative amounts of dietary corn in the bones of both people and the animals they hunted, SIRA has determined that corn made up more than 50% of the SunWatch diet. The extraordinarily high degree of preservation of SunWatch biological remains further provides excellent evidence of seasonality.

The Madisonville, Hardin, and Buffalo sites contain the largest known Fort Ancient burial populations. Burials in these sites and many other cemeteries, however, have not received the intensive study devoted to the SunWatch mortuary population. Nearly all burials discovered at SunWatch are undisturbed and located within their original context. These conditions have facilitated identification of osteological pathologies, morphological characteristics, and such rarely preserved phenomena as gall stones, kidney stones, and inner ear incus and stapes bones.

Results of analysis of the SunWatch burial population also have challenged prevailing views of prehistoric Native American health and nutrition. It has been widely believed that Fort Ancient and other Post-Archaic Eastern Farmers were generally healthy well-fed agriculturalists. Analysis of the SunWatch burial population, however, has revealed a well-fed population in generally poor health (Knick, 1977; Paquette, 1981; Robbins, 1972 and 1975).

SunWatch mortuary materials also hold the promise for future medical discoveries. The unusually large and well preserved mortuary population of infant burials, for example, may shed important light on presently poorly understood patterns of pediatric health and disease.

FACET 8. ECONOMICS/TRADE

The vast amount of technological and dietary information recovered at SunWatch affirms that Fort Ancient people followed an economic pattern of seasonal farming, foraging, fishing, and hunting. Artifact styles and raw materials identified at SunWatch typify Fort Ancient exchange patterns. Shells from the Gulf of Mexico, Mercer and Flint Ridge flint from east central Ohio, and locally produced copies of Middle Mississippian negative painted ceramics, and the earliest dated "Weeping Eye" motif found within a securely dated Fort Ancient context have been recovered at SunWatch. Discovery of these materials indicates that SunWatch residence participated in long and short range exchange systems.

FACET 9. WARFARE

The existence of warfare in Fort Ancient society is suggested by the presence of stockades. Antler and triangular chipped stone projectile points, some found within human bodies, also may reflect patterns of corporate or personal violence. The stockade at SunWatch and the discovery of many triangular projectile points indicates that village people probably participated in the Fort Ancient warfare pattern. Additional evidence of this may be provided by discovery of 4 projectile points within the chest cavities of 2 burials.

FACET 10. RELIGION, IDEOLOGY, AND CEREMONIALISM

Burials excavated at SunWatch document Anderson phase Fort Ancient interment practices and probably reflect Fort Ancient culture spiritual beliefs. Excavation of large numbers of infants bearing green-bone fractures and the unique discovery of burials of twins bearing the same type of fractures indicates the possible practice of infanticide (Robbins, 1975). No other examples of infanticide have been clearly identified in any other Fort Ancient site.

Discovery of the Big House, Men's Lodge, Sweat Lodges, and the cleared central plaza area provide further indications of ceremonialism at SunWatch. Central plazas have been discovered in many Fort Ancient sites. A larger Big House has been excavated at the Cleek-McCabe site (Rafferty, 1974). SunWatch, however, is the only Fort Ancient site at which a wide range of specialized structures has been identified.

The SunWatch Center Pole Complex and the "Sun-Serpents" located near the Fort Ancient site at Lebanon, Ohio are examples of archaeo-astronomical planting, harvesting, and winter/summer solstice alignments identified in Fort Ancient, Hopewellian, and the contemporary Middle Mississippian cultural complex sites (Essenpreis, 1978; Hively and Horn, 1982; White, 1987). Ongoing research on the form and function of features identified at SunWatch has the high potential to provide vital information useful in identifying and analyzing similar configurations in other Fort Ancient sites and Post-Archaic farming communities (Goss, 1988; Heilman and Goss, 1989; Heilman and Hoefer, 1981; Williamson, 1984).

SunWatch contains one of the few "Weeping Eye" pipes found within a securely dated Fort Ancient context. Discovery of stone and ceramic smoking pipes, recovery of tobacco seeds from western quadrant pits, and excavation of ritually significant red cedar from house posts and burials thus far found only at SunWatch, provide further indications of ritual or ceremonial activity (Wagner, 1988).

FACET 11. SOCIAL DIFFERENTIATION

The high state of preservation of features and artifactual distribution patterns at SunWatch has preserved many aspects of Fort Ancient intra-village organization, diet, and burial. These data provide potentially significant data necessary for the understanding of Fort Ancient and Post-Archaic social stratification patterns. Excavation of larger, better furnished, more specialized houses and other features in the western village quadrant suggests social differentiation within this zone. Discovery of storage/trash pits containing more extensive remains of foods and materials in this area and excavation of a number of unusually well-furnished burials adds further weight to this interpretation.

Presence of a concentrically organized planned village community within an encircling stockade further suggests central direction. Discovery of village quadrants and identification of evidence suggesting matrilocality also supports the possiblity that each quadrant represented an matrilineal habitation area (Heilman, 1975).

FACET 12. SETTLEMENTS AND SETTLEMENT PATTERNS

The well-preserved and intact archeological deposits at SunWatch provide detailed information on intra-site Fort Ancient settlement patterns. SunWatch is an excellent example of a Post-Archaic fortified site laid out in concentric rings of activity surrounding a central plaza. Village quadrants and other evidence of social differentiation identified at SunWatch also provide significant insights into Fort Ancient settlement patterns.

Materials reflecting seasonal resource exploitation in different ecozones found in SunWatch storage/trash pits and other deposits provide indirect evidence of Fort Ancient settlement patterns. Winter camps and other more ephemeral temporary settlements directly associated with SunWatch, however, have not yet been identified.

FACET 16. AGRICULTURE/PLANT DOMESTICATION/HORTICULTURE

Excellent preservation conditions at SunWatch have facilitated extensive analysis of floral materials. SunWatch is one of the most intensively SIRA tested sites in North America. More types of corn have been found at SunWatch than at any other Fort Ancient site. Comparative analysis of these findings indicates that SunWatch villagers may have had a greater dependency on corn than their Mississippian neighbors (Wagner, 1980). Similar architectural, demographic, and technological patterns identified at Hardin, Buffalo, and other sites suggest that agricultural developments at SunWatch reflect those of other Fort Ancient societies.

FACET 17. ANIMAL DOMESTICATION/HUSBANDRY

Evidence from sites throughout North America indicates that dogs were the only fully domesticated animals in pre-contact North America. Six dog burials have been recovered in SunWatch excavations. Further evidence of canine domestication has been found in the form of possible canid tooth marks on bones found in garbage pits or within fecal remains (Shane, 1985).

Faunal analysis of turkey remains from SunWatch storage/trash pits indicates that the majority represent the remains of poults and adult males. Few represent adult females. Shane states that this

pattern may suggest maintenance of a breeding population within SunWatch (Shane, 1985). Speculation has been fueled by discovery of a relatively high C 4 count in one turkey bone. Similar C 4 counts, however, have been detected in the bones of some elks, deer, raccoons, and squirrels. No evidence of wing pinioning or tether damage to legs has been discovered. Present evidence for turkey domestication at SunWatch, therefore, is tantalizing but inconclusive.

FACET 24. HUMAN REMAINS

SunWatch contains a large and well preserved assemblage of Fort Ancient burials. Most of all of therse burials are probably associated with a single period of occupation. The largest known Fort Ancient mortuary population has been found at the Madisonville site. Excavation procedures at Madisonville were not as rigorous as those employed at SunWatch. Human remains at Madisonville also represent individuals from many time periods. Analysis of the 141 interments thus far excavated at SunWatch has revealed uniquely detailed information on diet, health, genetic anomalies, life expectancy, village demography, differential social status, and possible activities such as infanticide.

RESEARCH QUESTIONS

Extensive scientific excavation and analysis of more than 60% of the well-preserved intact archeological deposits at SunWatch has helped scholars address the large number of research issues described in the abovementioned facets. Analysis of existing research collections and future excavation of the remaining 30% of intact deposits at the site can potentially address many questions raised by earlier research. Such questions would include;

> How did SunWatch villagers schedule seasonal activities? Do these activities relate to the site's astronomical alignments?
>
> What seasonal activities occurred at SunWatch? Did the population vary seasonally? Did SunWatch villagers utilize seasonal camps, and, if so, where were they and how were they organized and used?

What was the social organization at SunWatch? Do village quadrants reflect matrilocality? Can clans, moieties, and other social units be identified?

Did SunWatch villagers have equal access to status items?

Was SunWatch an egalitarian, ranked, or stratified society? Is status reflected in burials? Can preliminary SIRA findings suggesting higher amounts of meat in higher status male diets be corroborated?

What is the precise distribution of floral and fauna remains in SunWatch quadrants? Do villagers have equal access to food or goods? Are different varieties of corn grown in different village quadrants?

What was the nature of warfare at SunWatch? What was the precise configuration of the stockade, and how did it function? Do burials at SunWatch provide evidence of warfare? How does the SunWatch stockade compare with contemporary Fort Ancient, Monongahela, or Middle Mississippian fortifications?

Can the form and function of non-residential structures other than those previously identified be definitively established?

Does a fourth village quadrant exist in the unexcavated eastern portion of the site? If so, does it reflect known intra-site patterns? Are features in this quadrant aligned with the Center Post Complex? Are they arranged so that they do not obstruct suggested West Side alignments?

Fuller explication of these and other questions will provide illuminating details of life at SunWatch. The exceptionally preserved deposits located within this extensively studied site potentially can furnish information addressing these and other nationally significant questions. Findings from past and future research at SunWatch will provide increased understanding of Fort Ancient lifeways, Post-Archaic and Pre-Contact adaptations of Eastern Woodland Indians, and Native American cultures.

Conard, Anthony R.
1984 Experimental Duplication of the Fort Ancient Shell Hoe. Ohio Archeologist 34 (4):18-19.

1985 A Preliminary Report on Incinerator Site (33My57) Stable Carbon Isotope Ratios Used in Dietary Reconstruction. Unpublished M.A. thesis, Department of Anthropology, University of Cincinnati, Cincinnati, Ohio.

Cooper, Daniel C.
1800 Field Notes, General Office Survey, Township 1, Range 6, East of the Meridian, Vol. 3, and Congress Lands Between the Miami Rivers, Vol. 3, Office of the State Auditor, Columbus, Ohio.

Coovert, Gary A.
1988 A Preliminary Analysis of the Molluscan Remains of Incinerator Site (33My57). In A History of 17 Years of Excavation and Reconstruction - A Chronicle of 12th Century Human Values and the Built Environment, Vol. 1, edited by J.M. Heilman, M.C. Lileas, and C.A. Turnbow, pp. 261-297. Dayton Museum of Natural History, Dayton, Ohio.

Cowan, C. Wesley
1986 Fort Ancient Chronology and Settlement Evaluation in the Great Miami Valley: Volume 2, Excavations and Chronology. Cincinnati, OH: Cincinnati Museum of Natural History.

Cunningham, Dorothy
1987 Personal Communication.

Davis, Paul E., Norbert Lerch, Larry Thornes, Joseph Steiger, Neil Smeck, Howard Andrus, John Trimmer, and George Bottrell.
1976 Soil Survey of Montgomery County, Ohio. U.S. Department of Agriculture, Soil Conservation Service.

Dunn, Martha D.
1988 Burials - The Human Factor. In A History of 17 Years of Excavation and Reconstruction - A Chronicle of 12th Century Human Values and the Built Environment, Vol. 1, edited by J.M. Heilman, M.C. Lileas, and C.A. Turnbow, pp. 299-313. Dayton Museum of Natural History, Dayton, Ohio.

Dunnell, Robert C.
1972 The Prehistory of Fishtrap, Kentucky, Yale University Publications in Anthropology 75.

Dunnell, Robert C., L.H. Hanson, Jr., and D.L. Hardesty
1971 The Woodside Component of the Stone Site, Pike County Kentucky. Southeastern Archeological Conference Bulletin 14.

Essenpreis, Patricia Sue
1978 Fort Ancient Settlement Differential Response at a Mississippian - Late Woodland Interface in Bruce D. Smith, ed., Mississippian Settlement Patterns, pp. 145-167. Academic Press, New York.

1982 The Anderson Village Site: Redefining the Anderson Phase of the Fort Ancient Tradition of the Middle Ohio Valley. Unpublished Ph.D. dissertation, Department of Anthropology, Harvard University, Cambridge.

1988 An Introduction to the Fort Ancient Cultural Complexes of the Middle Ohio Valley, In A History of 17 Years of Excavation and Reconstruction - A Chronicle of 12th Century Human Values and the Built Environment, Vol. 1, edited by J.M. Heilman, M.C. Lileas, and C.A. Turnbow, pp. 1-22. Dayton Museum of Natural History, Dayton, Ohio.

Foerste, August A.
1885 Ancient Relics at Dayton, Ohio, Annual Report of the Smithsonian Institution.

Giauque, Florien
1876 The Mound Builders, Harvest Home Magazine, August, 1876.

Goss, Arthur F.
1988 Astronomical Alignments at Incinerator Site. In A History of 17 Years of Excavation and Reconstruction - A Chronicle of 12th Century Human Values and the Built Environment, Vol. 1, edited by J.M. Heilman, M.C. Lileas, and C.A. Turnbow, pp. 314-335. Dayton Museum of Natural History, Dayton, Ohio.

Graybill, Jeffrey
1984 The Eastern Periphery of Fort Ancient. Pennsylvania Archeologist 54 (1-2): 40-50.

Griffin, James B.
1943 The Fort Ancient Aspect: Its Cultural and Chronological Position in Mississippi Valley Archeology. University of Michigan Press, Ann Arbor.

1978 Late Prehistory of the Ohio Valley. In Northeast, edited by Bruce G. Trigger, pp. 547-559. Handbook of North American Indians, Vol. 15, William G. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Hall, Robert
1967 Those Late Corn Dates. Michigan Archaeologist, Volume 12, Number 4, pp. 171-180.

Hanson, Lee H. Jr.
1966 The Hardin Village Site. Studies in Anthropology, 4. University of Kentucky Press, Lexington.

1975 The Buffalo Site: A Late 17th Century Indian Village Site (46 PU 31) in Putnam County West Virginia. Report of Archeological Investigations No. 5, West Virginia Geological and Economic Survey, Morgantown, West Virginia.

Harold, Jeanne Marie
1985 An Analysis of House II/78, The Incinerator Site, Montgomery County, Ohio. Unpublished M.A. thesis, Department of Anthropology, Kent State University, Kent, Ohio.

Heilman, J.M.
1975 Ceramics and Spatial Patterning at the Incinerator Site - (33My57). Paper presented at the 40th Annual Meeting of the Society for American Archeology, Dallas.

Heilman, J.M., and Arthur F. Goss
1989 Sunrise at SunWatch. Paper presented at the 54th Annual Meeting of the Society for American Archaeology, Atlanta.

Heilman, J.M., and Roger R. Hoefer
1981 Possible Astronomical Alignments in a Fort Ancient Settlement at the Incinerator Site in Dayton, Ohio. In Archaeoastronomy in the Americas, edited by Ray Williamson, Ballena Press.

Heilman, James M., Malinda C. Lileas, and Christopher A. Turnbow (editors)
1988 A History of 17 Years of Excavation and Reconstruction - A Chronicle of 12th Century Human Values and the Built Environment. 2 Vols. Dayton Museum of Natural History, Dayton, Ohio.

Hively, Ray and Robert Horn
1982 Geometry and Astronomy in Prehistoric Ohio. British Journal for the History of Astronomy, Vol. 13, No. 4.

Hudson, Charles
1976 The Southeastern Indians, University of Tennessee Press, Knoxville, Tennessee.

Knick, Stanley G. III
1977 Paleopathological Evidence of Familial Relationships in a Prehistoric Population. Paper presented at the 46th annual meeting of the American Association of Physical Anthropologists, Seattle, Washington.

Krueger, Harold
1989 Personal Communication.

Lileas, Malinda C.
1988 History of the Dayton Museum of Natural History's Involvement with the Incinerator Site. In A History of 17 Years of Excavation and Reconstruction - A Chronicle of 12th Century Human Values and the Built Environment. Vol. 1, edited by J.M. Heilman, Malinda C. Lileas, and Christopher A. Turnbow, pp. 36-54. Dayton Museum of Natural History, Dayton, Ohio.

McNeely, Donald and Charlene Bohn
1989 Personal Communication.

Mayer-Oakes, William J.
1955 Prehistory of The Upper Ohio Valley. Annals of the Carnegie Museum, Vol. 34, Pittsburgh.

Meeker, Ralph L., W.H. Brug, R.L. Goggins, and G.M. Schaffer
1973 Soil Survey of Fayette County, Ohio, U.S. Department of Agriculture Soil Conservation Service, Washington, D.C.

Mills, William C.
1904 Excavation of the Gartner Mound and Village Site, Ohio Archeological and Historical Society, Vol. XV, No. 1. Columbus, Ohio.

1906 Explorations of the Baum Prehistoric Village Site, Ohio Archeological and Historical Society, Vol. XV, No. 1, Columbus, Ohio.

1922 Exploration of the Feurt Mounds and Village Site, In Certain Mounds and Village Sites in Ohio, Vol. III, No. 1, Columbus, Ohio.

Moorehead, Warren King
1892 Primitive Man in Ohio, G.P. Putnam's and Sons, New York.

Nass, John P.
1987 Use-wear Analysis and Household Archeology: A Study of the Activity Structure of the Incinerator Site, An Anderson Phase Fort Ancient Community in Southwestern Ohio. Unpublished Ph.D. dissertation, Department of Anthropology, Ohio State University, Columbus.

Paquette, Steve
1981 The Demography of Pathology: An Analysis of Demographic and Pathological Correlations at Incinerator Site, Fort Ancient Culture, Montgomery County, Ohio. Ms. on file, Dayton Museum of Natural History, Dayton, Ohio.

Prufer, Olaf, and Orrin C. Shane, III
1970 Blain Village and the Fort Ancient Tradition in Ohio. Kent State University Press, Kent, Ohio.

Rafferty, Janet
1974 The Development of the Fort Ancient Tradition in Northern Kentucky. Unpublished Ph.D. Dissertation, Department of Anthropology, University of Washington.

Robbins, Louise M.
1972 The Prehistoric People of the Fort Ancient Culture of the Central Ohio Valley. Anthropological Papers 48, Museum of Anthropology, University of Michigan, Ann Arbor, Michigan.

1975 The Investigation of Infanticide in an Ohio Fort Ancient Site: A Demonstration of Archeological/Physical Anthropologist Field Synergy. Paper presented at the 40th Annual Meeting of the Society for American Archeology, Dallas, Texas.

Robertson, James A.
1980 Chipped Stone and Socio-cultural Interpretations. Unpublished M.A. thesis. Department of Anthropology, University of Illinois, Chicago.

1984 Chipped Stone and Functional Interpretations: A Fort Ancient Example. Midcontinental Journal of Archeology 9(2): 251-267.

Shane, Orrin C., III
1980 Personal Communication.

1985 Personal Communication.

1988 An Interim Summary Report of the Vertebrate Faunal Remains from the Incinerator Site, (33My57), Montgomery County, Ohio. In A History of 17 Years of Excavation and Reconstruction - A Chronicle of 12th Century Human Values and the Built Environment, Vol. 1, edited by J.M. Heilman, M.C. Lileas, and C.A. Turnbow, pp. 157-213. Dayton Museum of Natural History, Dayton, Ohio.

Shane, Orrin C. III, and Michael Barber
1975 Analysis of the Vertebrate Fauna from the Incinerator Site and Its Implications for Fort Ancient Settlement Patterning. Paper presented at the Annual Meeting of the Society for American Archeology, Dallas.

Shetrone, Henry C.
1926 The Campbell Island Village Site and the Hine Mound and Village Site. In Certain Mounds and Village Sites in Ohio. Columbus, Ohio.

Speck, Frank G.
1931 The Study of the Delaware Indian Big House Ceremony. Vol. 2, Publication of the Pennsylvania Historical Commission, Harrisburg, Pennsylvania.

Turnbow, Christopher and Cynthia E. Jobe
1984 The Goolman Site: A Late Fort Ancient Winter Encampment in Northern Kentucky. In Late Prehistoric Research in Kentucky, edited by David Pollack, Charles Hockensmith, and Thomas Sanders, pp. 25-49. Kentucky Heritage Council, Frankfort, Kentucky.

Wagner, Gail E.
1977 The Dayton Museum of Natural History Flotation Procedure Manual. Manuscript on file, Dayton Museum of Natural History, Dayton, Ohio.

1980 Personal Communication.

1987 Uses of Plants by the Fort Ancient Indians. Unpublished Ph.D. Dissertation, Department of Anthropology, Washington University, St. Louis.

1988a Comparability Among Recovery Techniques. In Prospects and Problems of Methods and Interpretation in Paleobotany, edited by C.A. Hastorf and V. Popper, University of Chicago Press, Chicago.

1988b Paleoethnobotanical Research at the Incinerator Site. In A History of 17 Years of Excavation and Reconstruction - A Chronicle of 12th Century Human Values and the Built Environment, edited by J.M. Heilman, M.C. Lileas, and C.A. Turnbow, pp. 72-111. Dayton Museum of Natural History, Dayton, Ohio.

Wagner, Gail E., and James M. Heilman, III
1987 Recreating an Indian Community (Ohio). Restoration and Management Notes 5(1):45-46.

White, John R.
1987 Kern Effigy #2: A Fort Ancient Winter Solstice Marker? Mid-Continental Journal of Archaeology, Vol. 2, pp. 225-242.

Williamson, Ray A.
1984 Living the Sky. Houghton Mifflin, Boston.

Wilson, Gilbert
1917 Agriculture of the Hidatsa Indians - An Indian Interpretation, Studies in the Social Science, No. 9, Minneapolis, Minnesota.

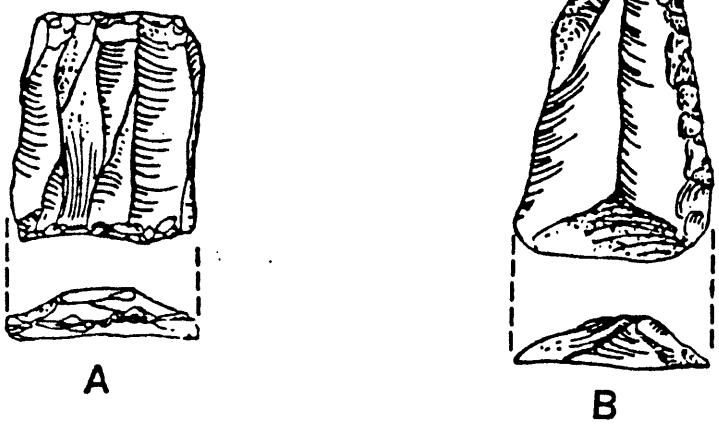
Witthoft, John
1949 Green Corn Ceremonialism in the Eastern Woodlands, Occasional Contributions from the Museum of Anthropology of the University of Michigan, No. 13, University of Michigan Press, Ann Arbor, Michigan.

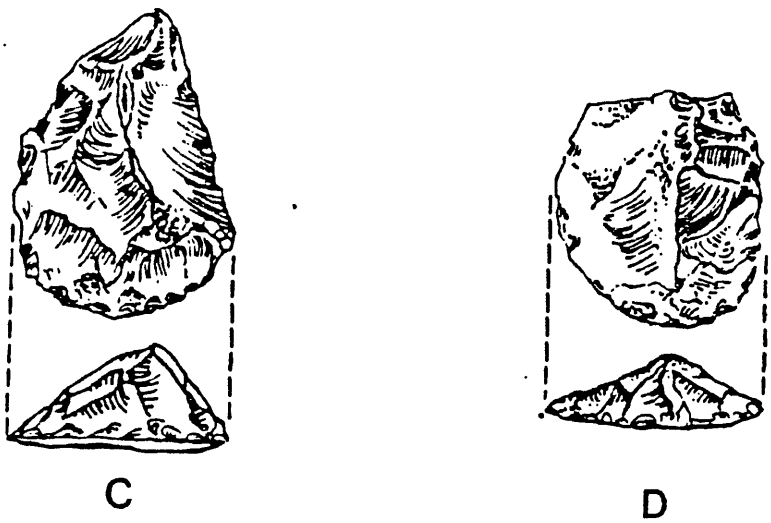
Wittry, W.L.
1964 An American Woodhenge. Cranbrook Institute of Science Newsletter, Vol. 33, No. 9, pp. 2-7.

Wymer, Dee Anne
1989 Trends and Disparities: The Woodland Paleoethnobotanical Record of the Mid-Ohio Valley, Paper presented at the Society for American Archeology Annual Meetings, Atlanta, Georgia, April, 1989.

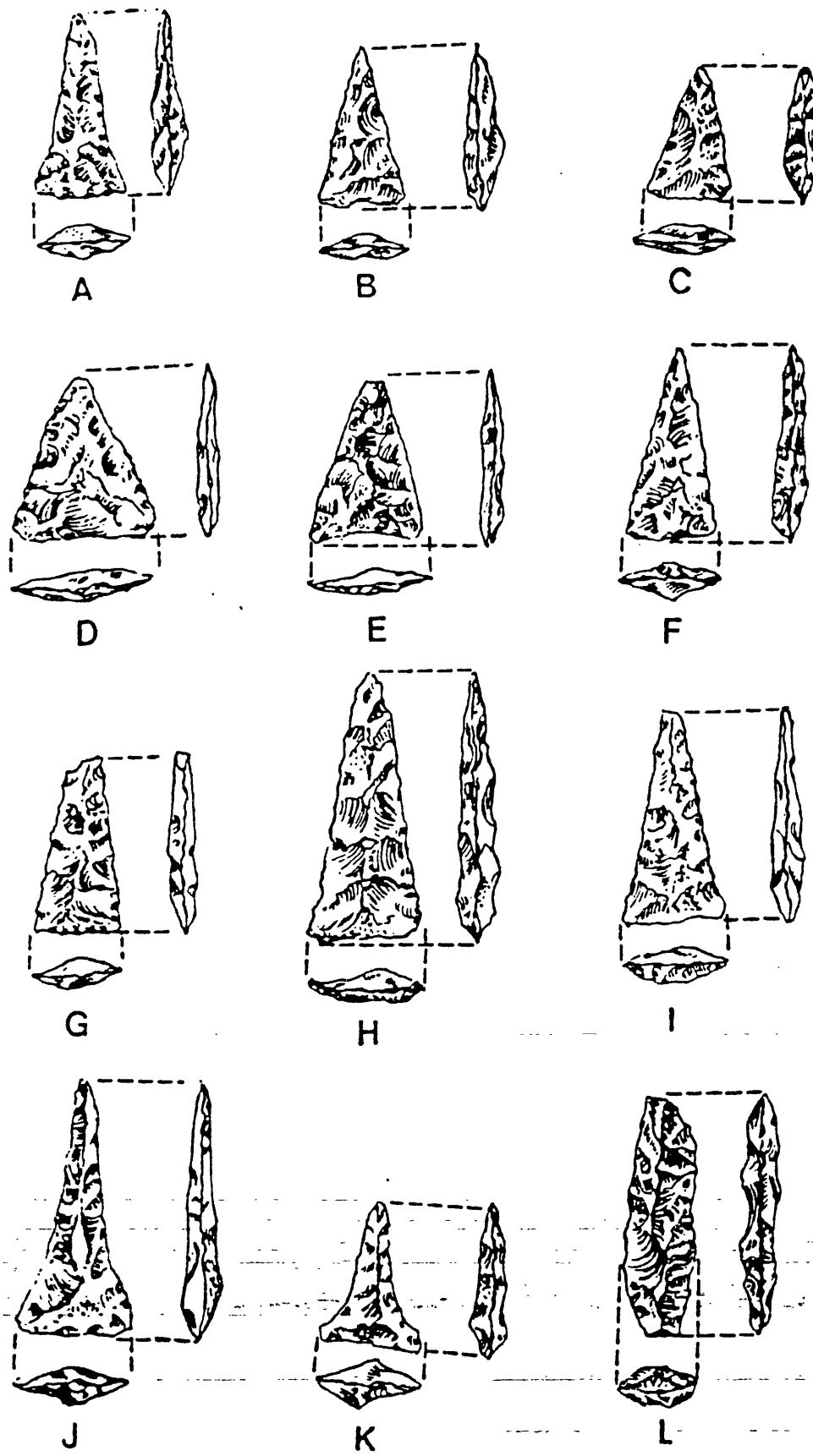
Appendix 7.5

SUNWATCH LITHICS

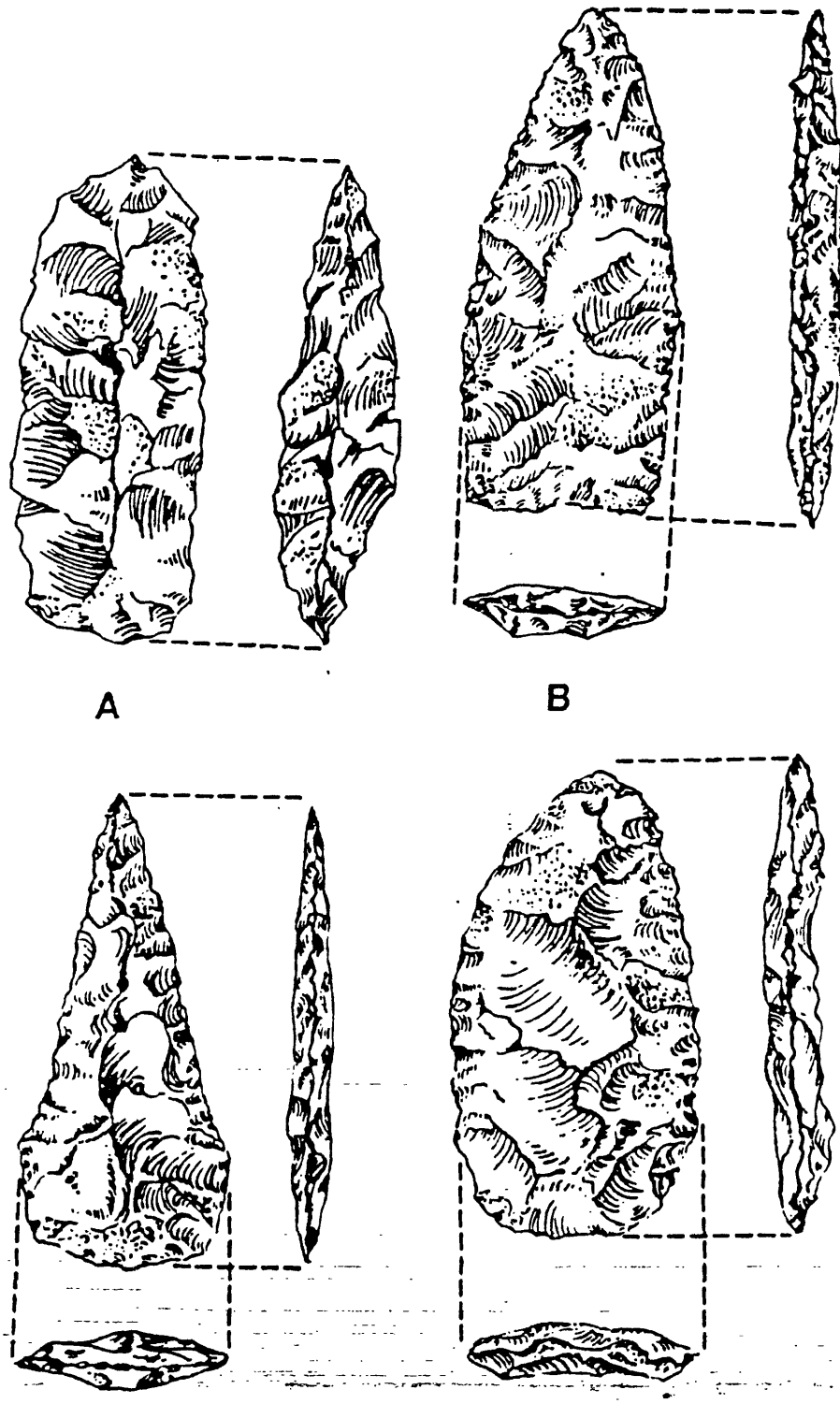




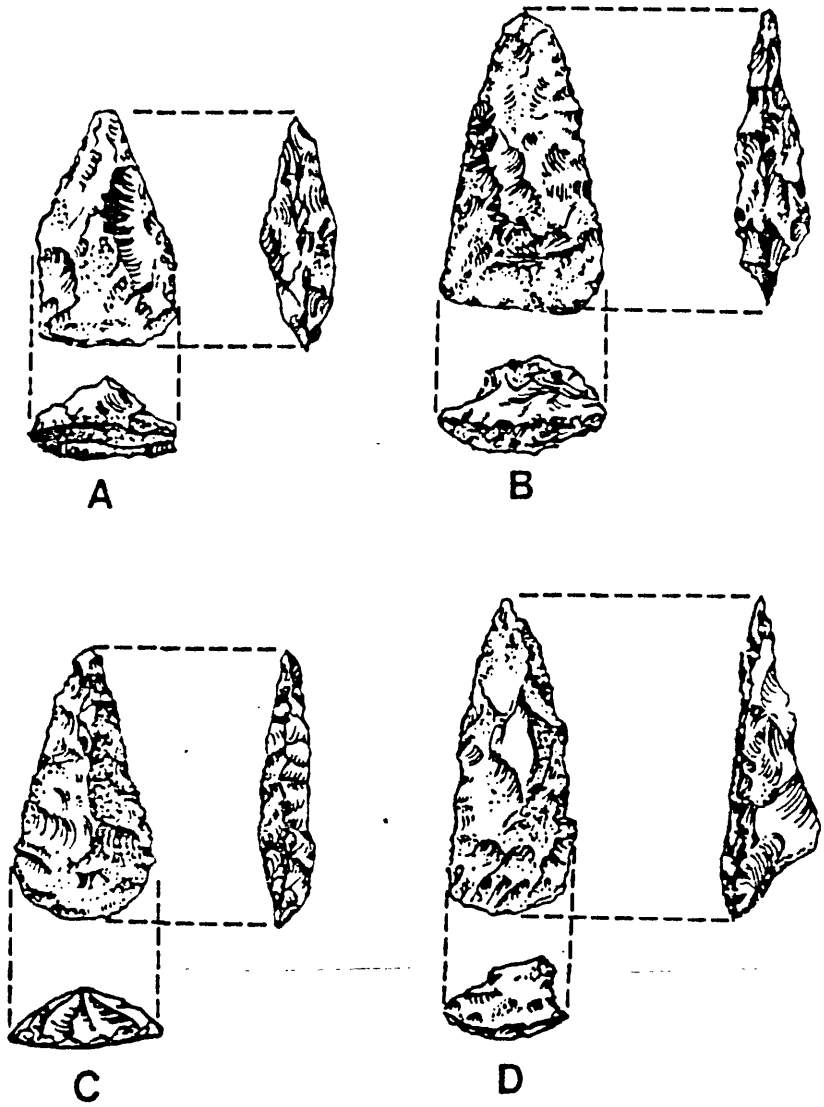
Chipped Stone Artifacts from Site 33My57: Pieces Esquillees (a), Unifacial Sidescraper (b), Unifacial Endscrapers (c-d), Denticulate (e), and Graver (f) (drawn to scale).



Projectile Points (a-i) and Drills (j-l) from Site 33My57 (drawn to scale).



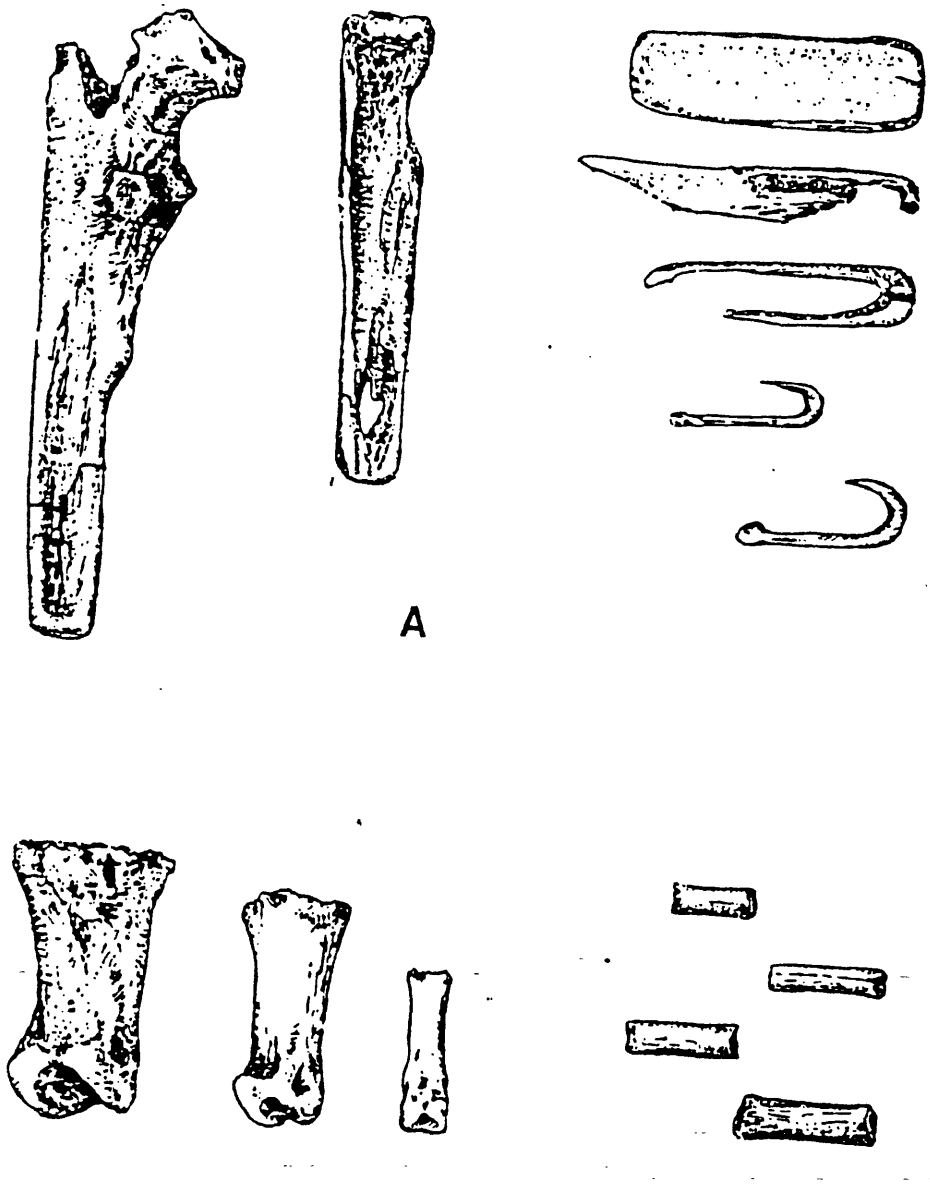
Bifaces from Site 33My57: Preform (a), Triangular Knife (b), Shouldered Knife (c), and Ovate Knife (d) (drawn to scale).



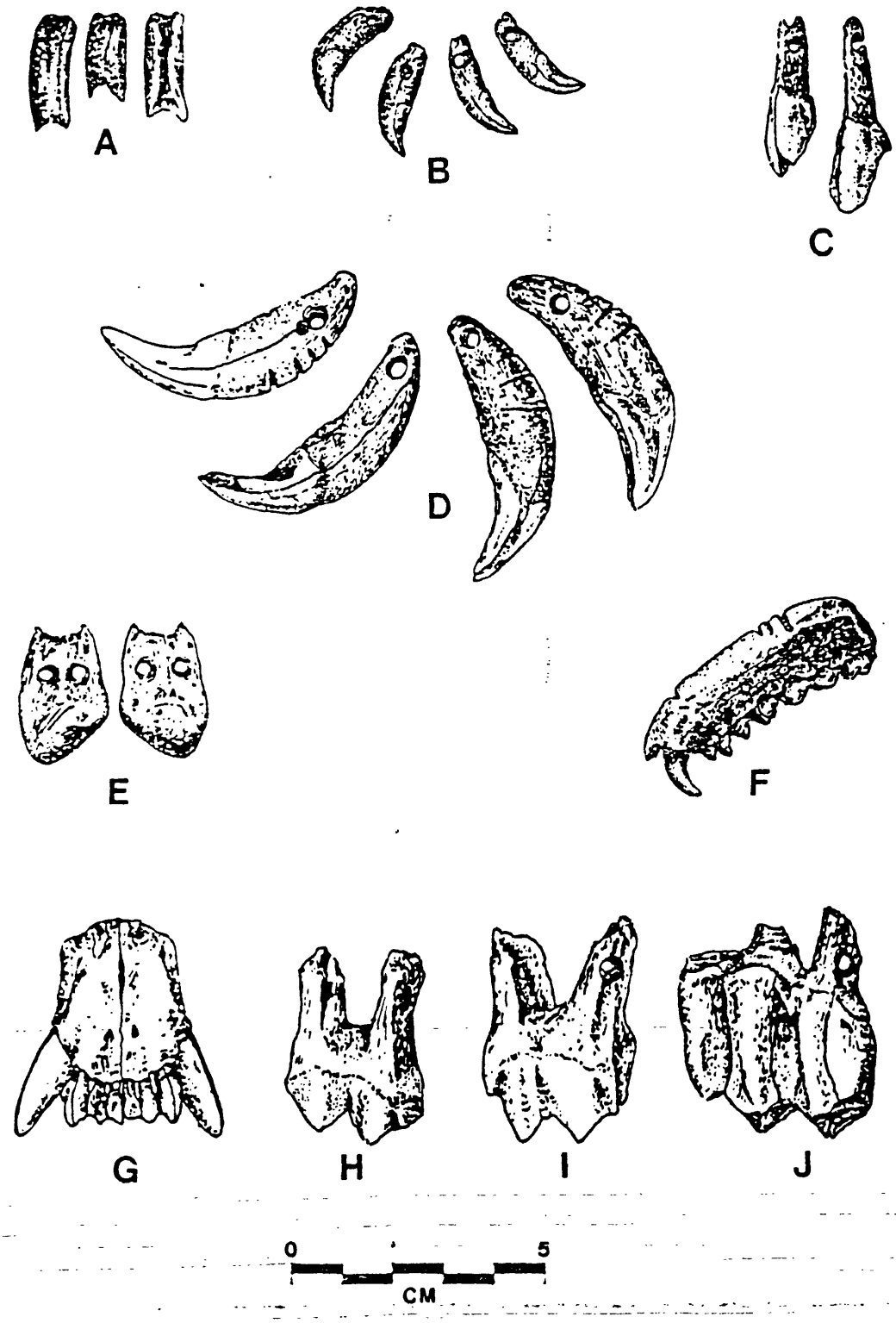
Humpbacked (a-b, d) and Keeled (c) Bifaces from Site 33My57 (drawn to scale).

Appendix 7.6

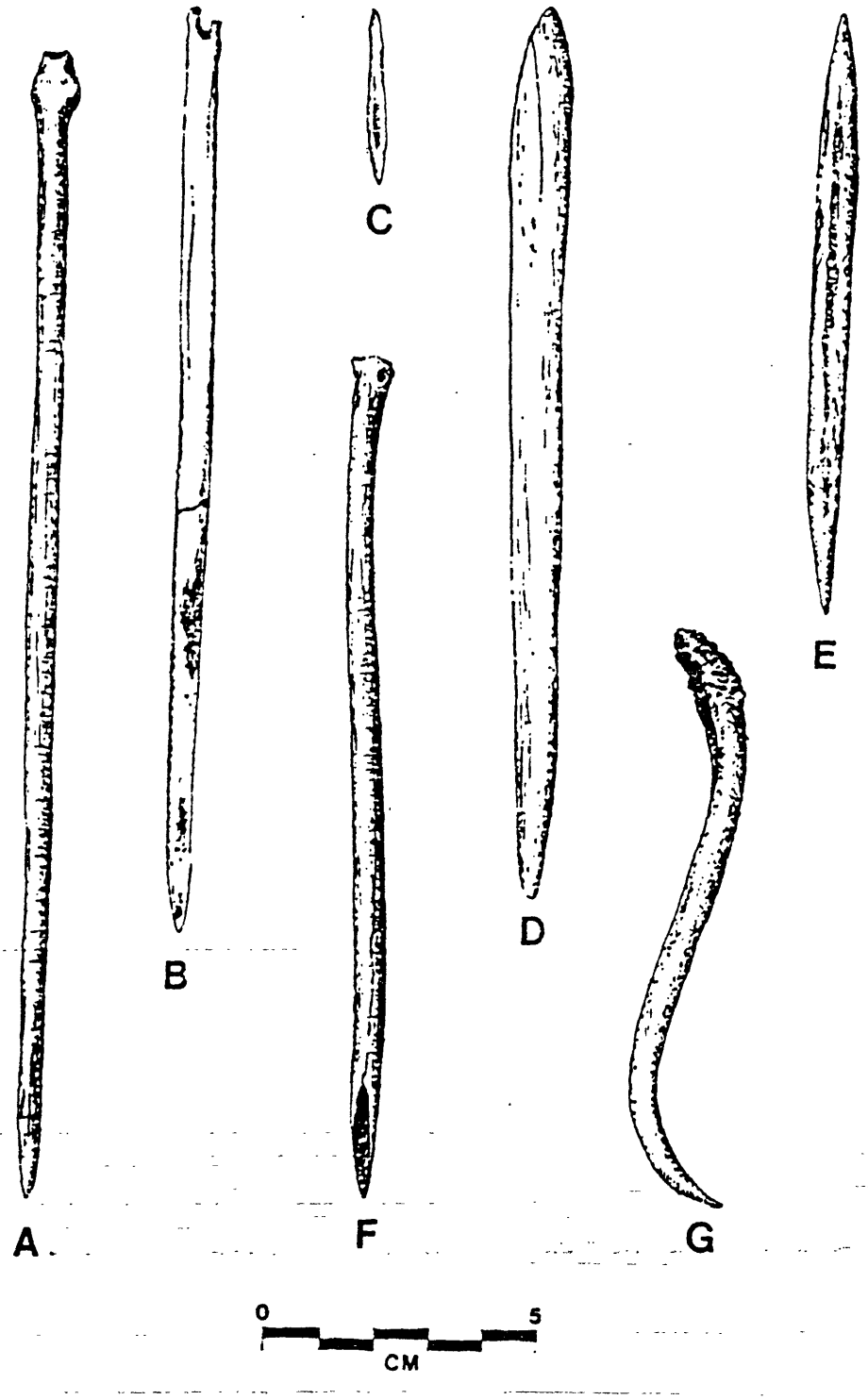
SUNWATCH BONE AND ANTLER TOOLS



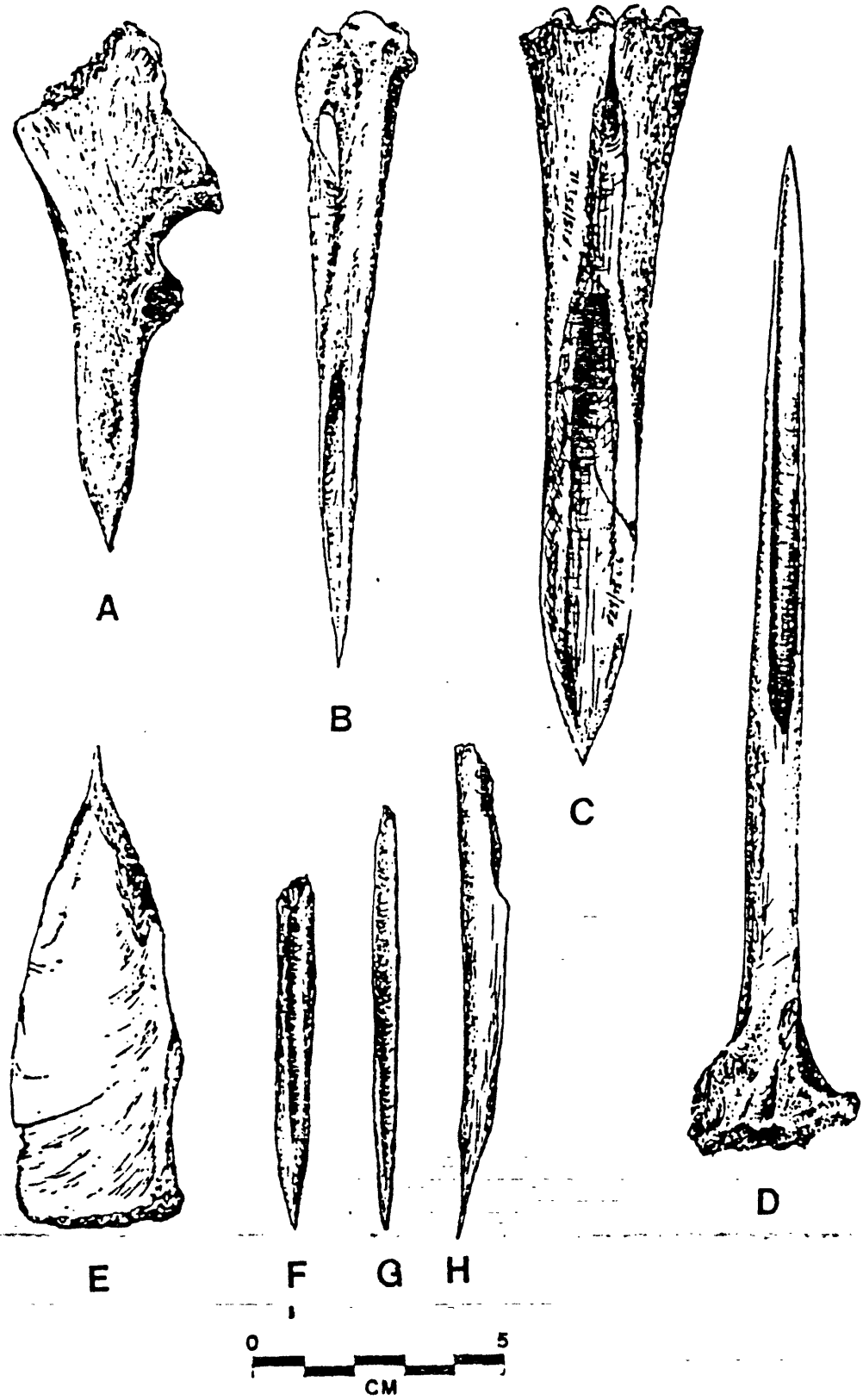
Bone Fishhooks and Biproducts (a), Drill Deer and Elk Toes (b), and Bird Bone Beads (c).



Worked Teeth and Mandibles: Beaver Incisor Tooth Chisels (a), Drilled Raccoon Teeth (b), Drilled Deer Teeth (c), Drilled Wolf Teeth (d), Drilled Elk Teeth (e), Ground Raccoon Mandible (f), Ground Wolf Man dible (g), and Drilled Elk Molars (h-j).

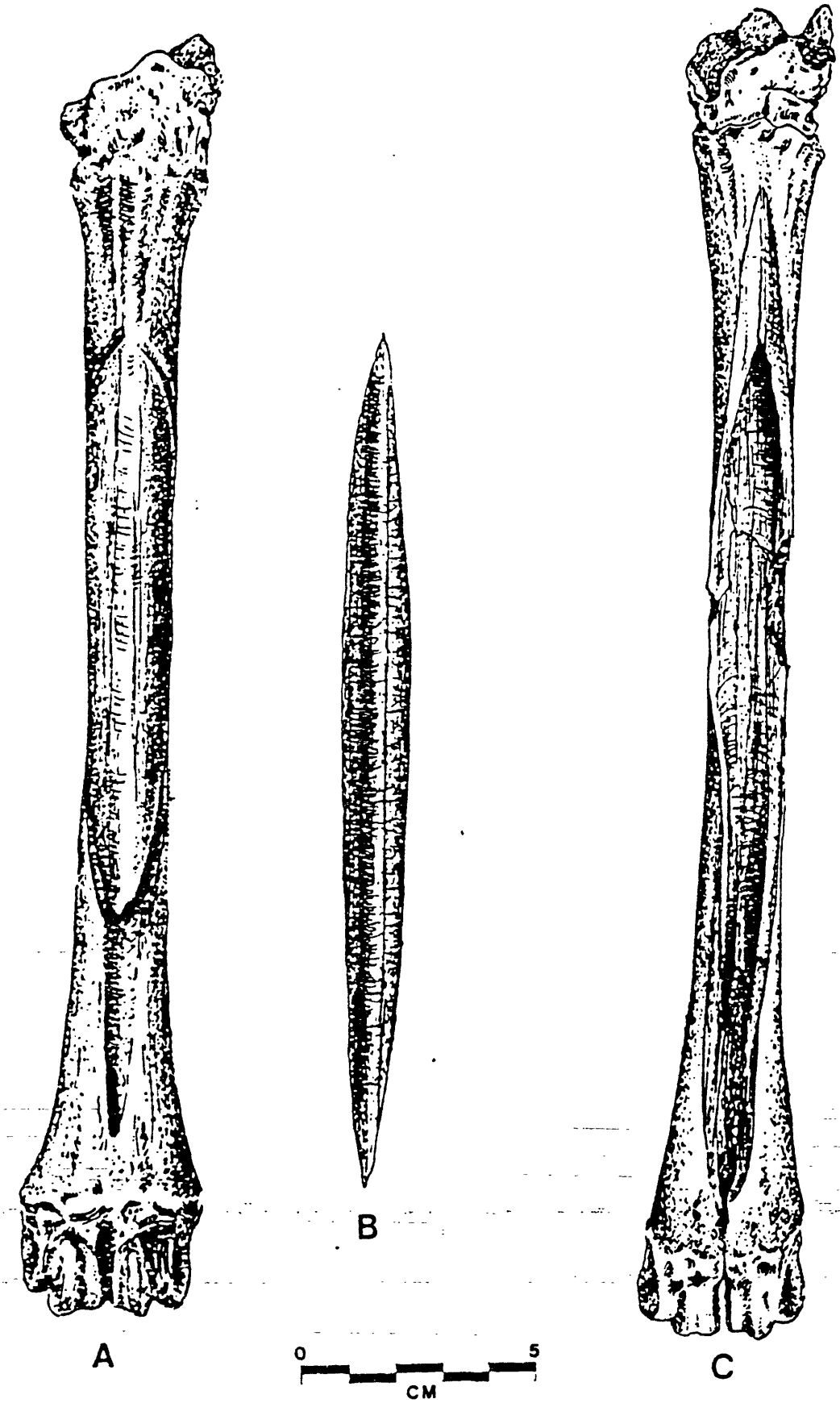


Bone Hairpin (a,f), Matting Needle (b), Pins (c-e), Worked Raccoon Penis Bone (g).

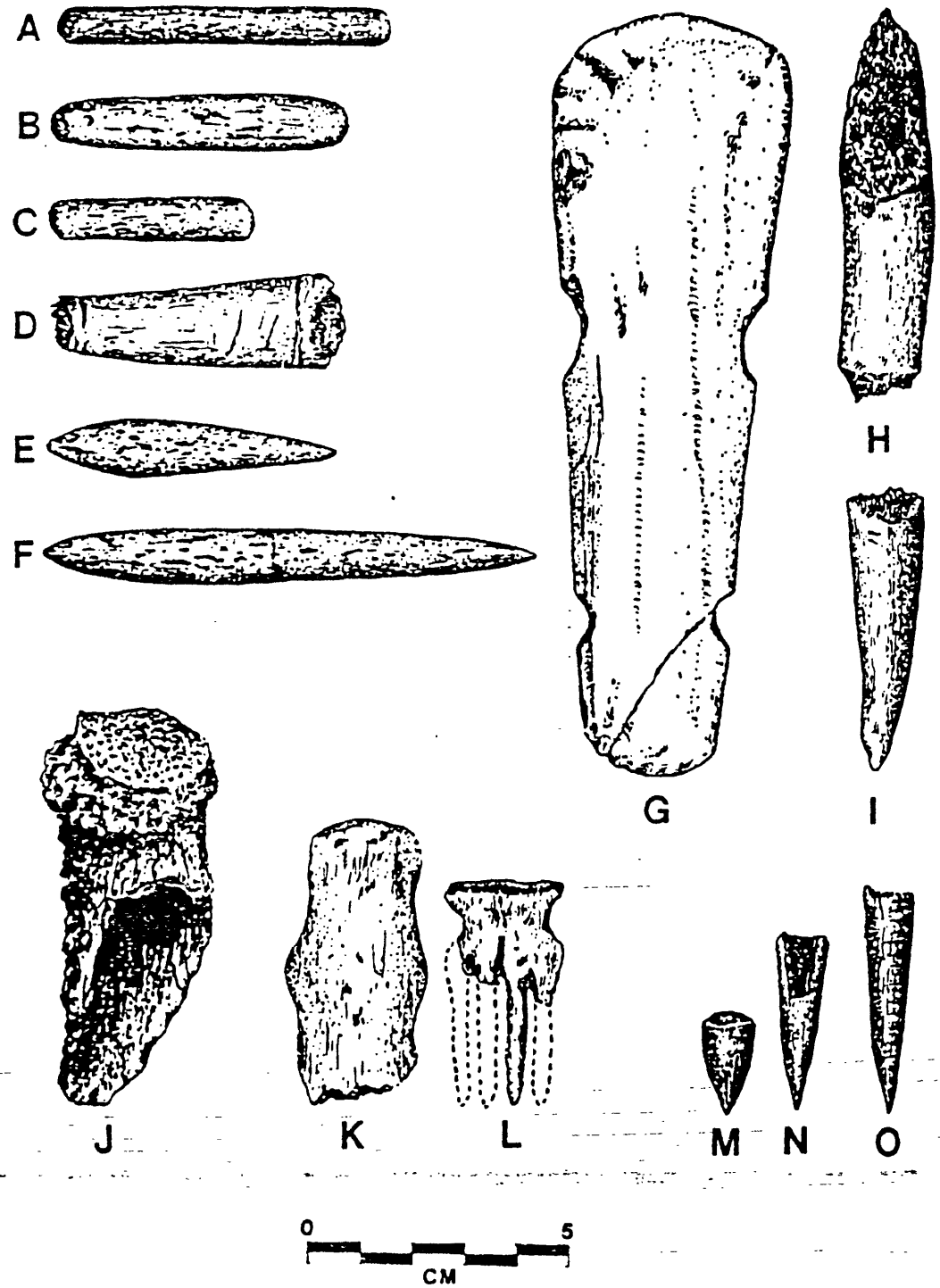


Deer Ulna Awl (a), Turkey Metatarsal Awl (b), Deer Metatarsal Awl (c), Bird Bone Awl (d), Scapula Awl (e), Splinter Bone Awls (f,g,h).

. Elk Scapula Squash Knife (a) and Squash Knife Pre form (b).



Stages of Beamer Manufacture: Replica Showing Cuts (a) and Piece Removed (b) and Actual Deer Metatarsal Beamer from 33MY57 (c).

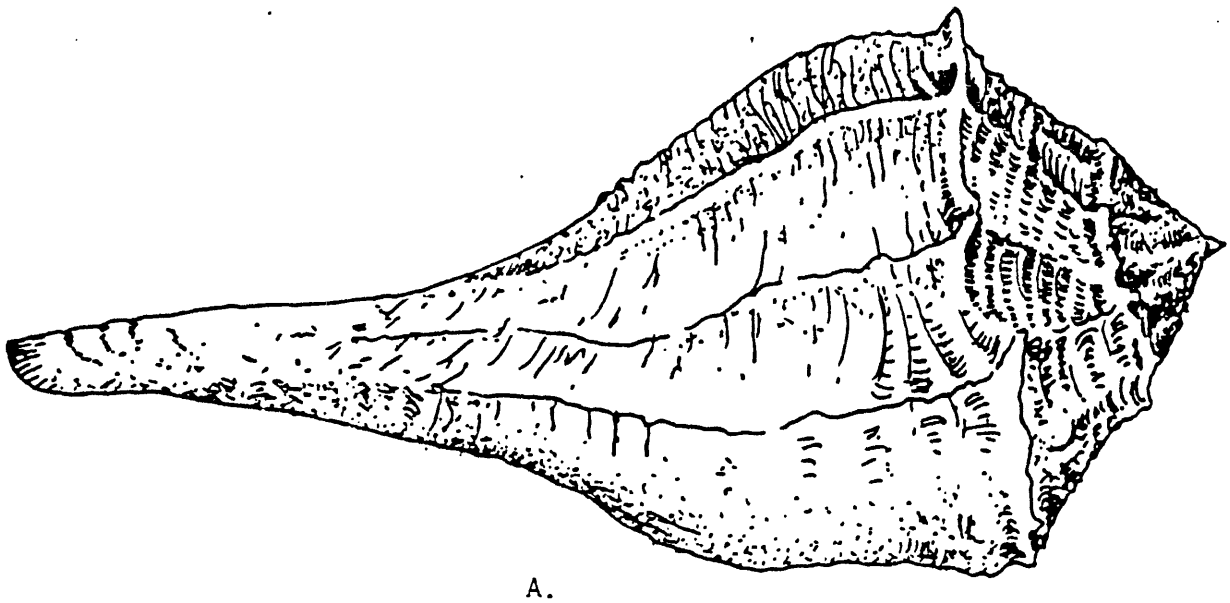


Antler Tools: Drifts (a-c), Snapped and Scored Ant ler Preform (d), Bipointed Tool (e-f), Elk Antler Gouge (g), Stages of Antler Point Manufacture (h-i), Stages of Hair Comb Manufacture (j-l), and Antler Points (m-o).

Appendix 7.7

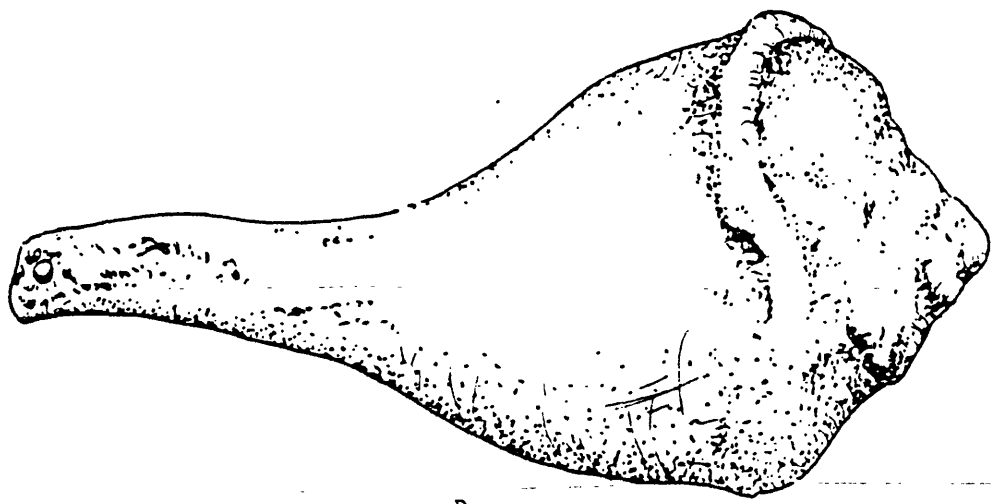
SUNWATCH

MARINE AND FRESHWATER SHELL ORNAMENTS AND TOOLS



A.

Unmodified



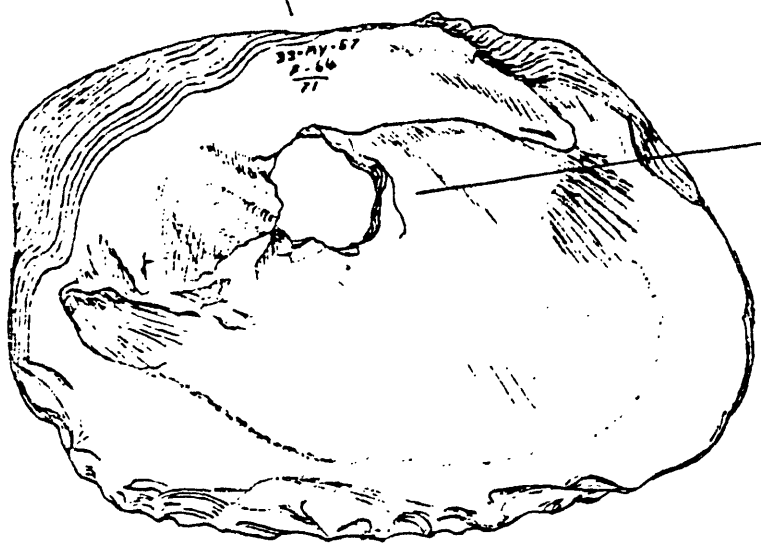
B.

Modified (B# 5/78)

Lightning Whelks-(Busycon contrarium)

Abrasion and small chips removed from forceful binding of the rawhide haft. This is the least noticeable form of shell hoe wear.

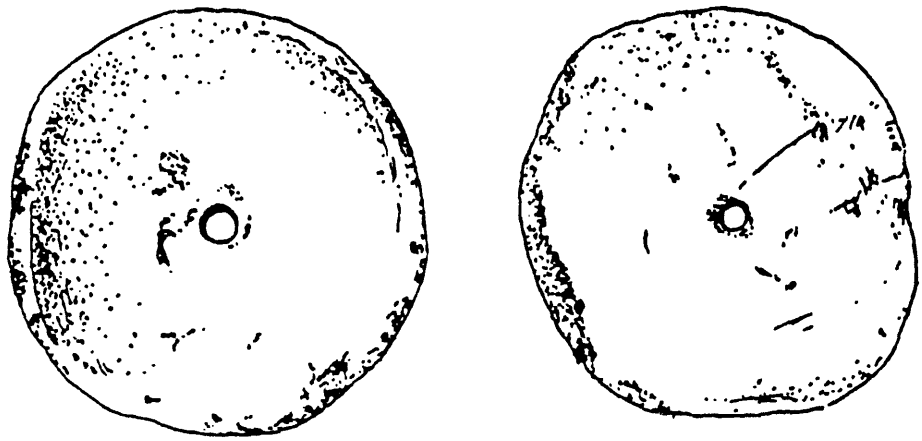
Polished and pecking on rim of perferation from pecked rather than drilled hole. The margin is polished from contact with the wood of the handle.



Heavily battered polished edge with parallel striations, conchoidal fractures, and step fractures due to contact with the ground in cultivation.

Features on a shell hoe excavated from f# 64/71 at the Incinerator Site. This specimine Cyclonaias tuberculata (Raf.) exhibits classic wear patterns on three portions of the blade.

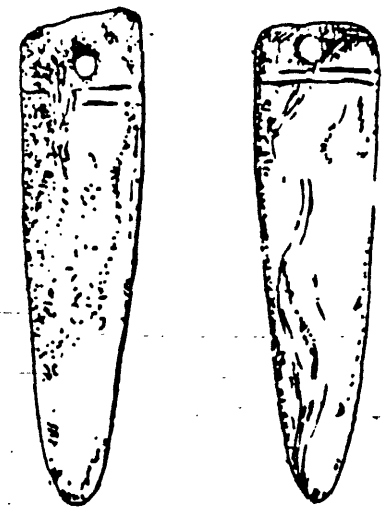
adapted from Conard 1984



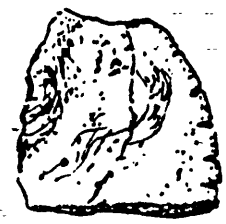
A.

B.

C.



D.



Shell Ornaments from SunWatch Village