Test Excavation Conducted at the Breeden Site 12 Hr 11, in Harrison County, Indiana

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Introduction

The Breeden Site (12 Hr 11) is located in Harrison County, Indiana and extends along the bank of the Ohio River for a distance of 500 feet in the NW 1/4 of Section 35, T4S, R2E, approximately midway between mile 657 and mile 658, some 3500 feet below the mouth of Indian Creek.

The site has been known for many years by collectors in the area, but was first officially reported in July, 1964, by John Dorwin, then a graduate student at Indiana University. Dorwin was at that time conducting an archaeological survey for Indiana University, under contract with the National Park Service in areas of the Ohio River Valley that were to be affected by the construction of a new system of navigation dams. The site is a shell midden, and is located on the right bank of the Ohio River in an area that has been progressively eroded away during periods of high water. The new navigational dam at Cannelton was to raise the pool level at this point some 12 feet, and would likely cause erosion to that place more rapidly than it had before. The site is located farther up the Ohio River than other shell middens which had been investigated at the time of the excavation, the summer of 1966.

This threatened destruction of the site by erosion together with the geographically marginal position it held in the Shell Midden Archaic complex of the Ohio Valley made it desireable that this site be examined by a limited test excavation. A major goal of the excavation was to determine the potential significance of the site. Therefore, assessments of midden depth and the recovery of controlled samples of comparative cultural material were important considerations.

At the location of Site 12 Hr 11, the river flows almost due north. When the greater three or four mile stretch of river centering on this location is taken into account, it is noticed that it is the beginning of a long, gentle left curve in the river course, causing the direction of flow to change gradually to the northwest. It is on such long bends in a river that extensive sand bar development takes place, and in turn, these sand bars provide excellent habitats for freshwater clams. It is presumably because of the presence of these optimal conditions for this form of clam that the prehistoric populations responsible for the midden accumulation chose such sites for long term and/or recurrent habitation in this area.

The site is located in the Crawford Upland physiographic region in its most southeastern corner, closely bordered by the Mitchell Plain on the East. The Crawford Upland, is described as an extensive region of stratified sandstones, shales, and limestones of the Chester Series (Upper Mississippian) which is overlain by the highly resistant sandstones and other rocks of the Mansfield Formation (Lower Pennsylvanian). Topographically the region is marked by an extremely diverse terrain with acute local variation in relief, producing what is probably the most "rugged" and scenic area in Indiana (Schneider 66:47). The site is located in an area where, as one proceeds downriver, the flood plain on the Indiana side of the river changes abruptly to high limestone bluffs overlooking the river, while correspondingly the floodplain on the Kentucky shore expands.

Excavation

An area was selected for excavation which was at the location of the deepest deposit of shell, as judged by the shell level exposed on the eroded bank. A trench was staked paralleling the bank of the river on a north-south axis which was five feet wide, 45 feet long, and marked off in five feet sections. As is indicated in Figure 1, the stakes are numbered south from grid line 100-S, and east from grid

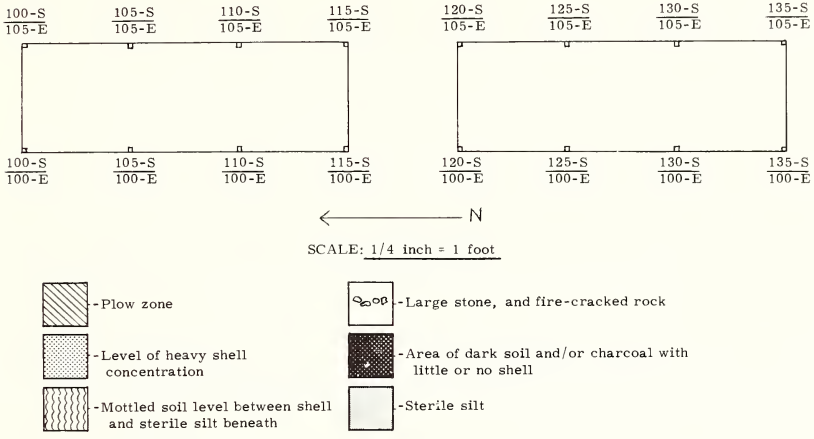

FIGURE 1. (*key to grid system and legend to symbols used in Figure 2.*)

line 100-E. A temporary bench mark was established by driving three 60-penny spikes in the bases of three large elm trees on the bank of the river. Each five feet section is designated herein by the S and E grid values of the stake in its SE corner. By this system, then, the northermost grid section of the excavated trench is designated as 105-S/105-E. Depth was calculated from a datum established at stake 100-S/105-E which was arbitrarily designated as "0" elevation.

The excavation was conducted using 1 foot arbitary levels, except where the conditions required greater controls, at which point the levels removed were reduced to 0.5 foot. Cultural material was recovered above and below the level of heavy shell concentration using ¼ inch mesh hand screens, but the coarseness of the shell-bearing strata, together with the extremely moist conditions at the site, made the use of screens in this level impractical. Instead, midden material was removed with spade and trowel, and was systematically sorted by hand.

Unfortunately, at the time of the excavation, the present writer as principal investigator was unfamiliar with the techniques of water screening and flotation. Both of these techniques could have been rather easily, and most certainly productively used at the site. An effort to return to the Breeden Site in 1973 to re-excavate it with the use of the improved field methods did not materialize because of a failure to obtain permission from the property owner. Therefore, only the larger artifactual and faunal material were recovered.

In all, 7 five feet grid units were excavated. Five were taken down to 6 feet below datum (105-S/105-E, 115-S/105-E, 125-S/105-E, 130-S/105-E, 135-S/105-E), one was taken to 7 feet (110-S/105-E), and one was excavated to 2 feet (145-S/105-E). The trench was removed in two units of 15 feet each, leaving one five feet section stand-

ing unexcavated between the excavated sections. A profile of the stratigraphy of the trench is presented in Figure 2, which accounts for 30 feet of the excavated trench. Seciton 145-S/105-E was only excavated to the 2 feet level due to the limitation of time. Because this depth has barely reached the upper surface of the shell-bearing level, it is excluded from the profile drawing as insignificant in relation to the total depth of the test.

Additionally a five inch soil auger was used to test for possible buried cultural horizons to a depth 3 feet below the 7.0 feet floor of square 110-S/105-E. It was found that the yellow sterile silt extended homogeneously from approximately 5.3 feet to the 10 feet level.

Stratigraphy

In total, five distinct strata were observed throughout the extent of the excavation. The uppermost level was the disturbed plow zone. This zone could be readily distinguished in the trench walls, and averaged seven inches in depth. The second level was a stratum of silt between the top of the shell-bearing level below it and the plow zone above. This deposit produced relatively large amounts of cultural debris in all forms, and it was distinguishable from the other levels in that: 1) there was virtually no fresh-water clam shell present; 2) it was the only level producing ceramic material; 3) it was characterized in the walls of the trench by the presence of extensive amounts of large fire cracked rock. The third level is the shell midden proper, or the stratum which was characterized by an extremely heavy and virtually uninterrupted deposit of the fresh-water clam shells. The soil within this level was very dark brown to black in color, which, along with the visible

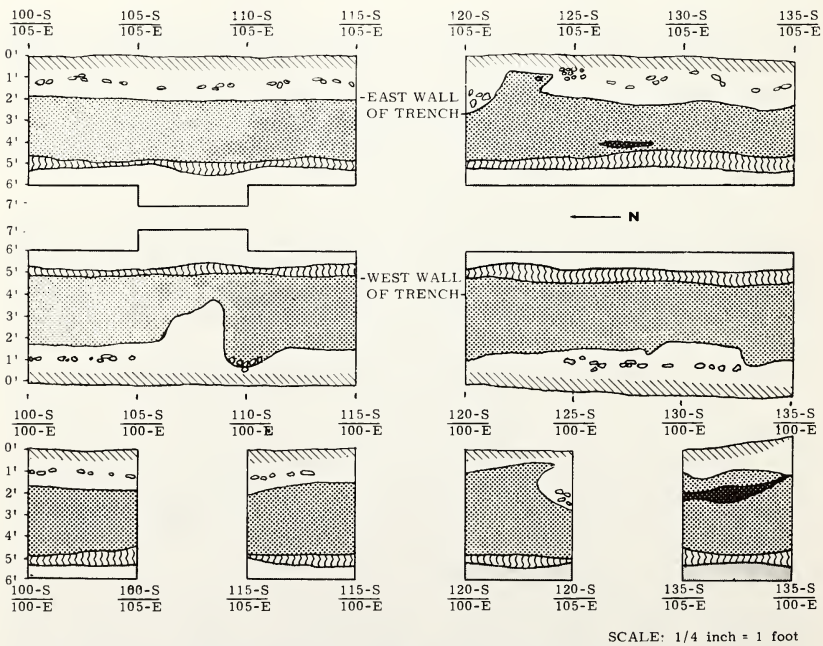

FIGURE 2. *(profile view of test trench walls)*

cultural remains (e.g. lithic debris, bone, etc.), indicated the high organic content of the soil from long and/or repeated occupation of the site. This level ranged from 3.0 feet to 3.5 feet in thickness and changed abruptly to the next lowest level, a stratum of mottled dark and light soils which bore only scant amounts of cultural debris and again virtually none of the clam shell. Immediately below this mottled stratum, a level of yellow-brown sterile silt marked the prehabitation level of the site.

Materials Recovered from and Features Recorded in the Site

Three features were observed and recorded in the excavation.

Feature 1: This feature is a pit which is represented in the profile of the west wall, square 110-S/105-E, in Figure 2. It was obvious that this pit was a late intrusive feature since the fill of the pit was the same soil as that in the pottery-bearing level which overlaid the shell midden. Also, no shell was present in the fill. The feature was only partially excavated because it extended into section 110-S/100-E, an unexcavated unit. The pit appeared to be ovoid in horizontal section, and was bordered on its south side by a mounding of shell and stone which arose above the general upper margin of the shell. This mounded material appeared to be the fill accumulated from the original digging of the pit. The late intrusive nature of the feature is a conclusion based solely on the relationship it had with other strata in the site, and was not confirmed by the presence of late cultural debris in the pit itself; the only debris recovered was undiagnostic lithic debitage.

Feature 2: This feature also was a pit, located in the NE corner of section 125-S/105-E. This pit is given the same interpretation as Feature 1, (i.e., a late intrusive pit). Also like Feature 1, this pit is marked by a mound of back fill material on its southern margin, and its content was almost exclusively fire cracked rock. This feature also was only partially excavated since it extended into unexcavated portions of the site.

Feature 3: This feature was a small (one foot in diameter) area of bured soil with a high concentration of fire cracked rock mixed with clam shell. It was located in almost the exact center of section 130-S/105-E, 3.3 feet below datum. A radiocarbon specimen (C 14 #1) was recovered from this feature, and has been sent for dating.

Burials: No human burials were found in the site, though one isolated human ulna was found in section 125-S/105-E at the 5 feet level without associations or other human remains.

Artifact Inventory: The following is a description of the various artifact types employed in the analysis of the material.

Projectile Points

A wide variety of projectile points were recovered during the excavation. The majority of these points are side-notched varieties common to the later periods of the general Eastern Archaic. Munson and Cook (1980:495) have analyzed the projectile points from the Breeden Site, and have published the following distribution of point types by level (note: Munson and Cook have combined the 6 excavation levels into 3 for purposes of their analysis).

Type	Breeden		
	Lower	Middle	Upper
Matanzas			
Modal	3	7	2
Deep Side Notch	0	2	4
Faint Side Notch	0	1	2
Straight Stem	0	0	2
Flared Stem	0	0	3
Matanzas Other	0	0	2
Sub Total	3	10	15
Godar/Big Sandy II	1	1	1
Brannon Side Notch	2	0	0
Salt River Side Notch	2	1	1
Sub Total	5	2	2
Miscellaneous	2	2	6
Grand Total	10	14	23

A representative sample of these points is illustrated in Plates 1-4.

Drills

Eight drills and drill fragments were found. Three are only point fragments and are virtually useless for identification. Of the five identifiable drills, three distinct types are present.

Type I—Expanded base-three of the drills of this type, frequently called a "T" base drill.

Type II—Expanded base, side notched-like Type I with side notching.

Type III—Globular base—a small drill point (1.0 cm.) extending from a dislike globular base or handle which is roughly 4.5 cm. in diameter. One of this type is present.

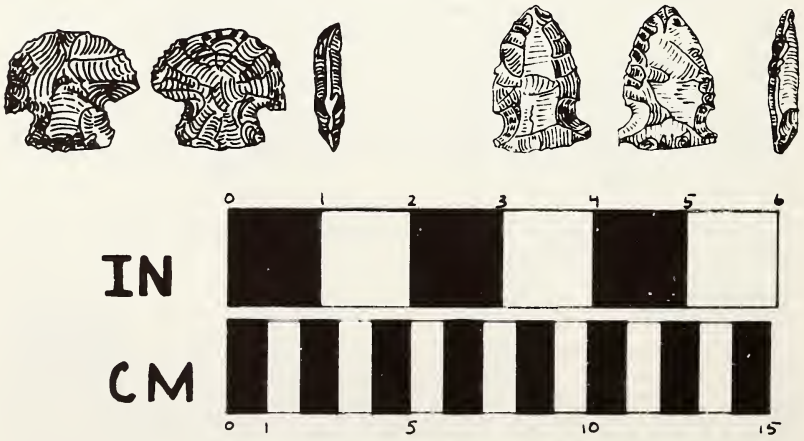

PLATE 1: *Hafted end scraper (Middle Woodland Corner-Notched) and projectile point (Matanzas, Deep Side-Notched) from 0-1' Level (Plow Zone).*

PLATE 2: *Projectile points from 1'-2' level: typological identifications are, left column, from top to bottom, Late Archaic Stemmed, Matanzas-Flared Stem, Matanzas-Faint Side Notched, Matanzas-Cluster, Matanzas-Deep Side Notched, type undetermined; center column, top to bottom, Adena Contracting Stem, Matanzas-Modal, Matanzas-Faint Side Notched, Rehafted blade, Middle Woodland Corner Notched, Matanzas-Straight Stemmed, Matanzas-Flared Stem; right column, top to bottom, Matanzas-Deep Side Notched, Matanzas-Faint Side Notched, Matanzas-Deep Side Notched, type undetermined, corner notched undetermined, Matanzas-Flared Stem, Matanzas Cluster.*

PLATE 3: *Projectible Points: top group from 2'-3' level; the typological identifications are from left to right, Palmer-Corner Notched, Barbed Blade of undetermined type, Godar-Raddatz; bottom group from 3'-4' level, and the typological identifications are upper point, left of center, type undertermined; upper point, right of center is Matanzas-Modal; left column, top to bottom Matanzas-Modal, Matanzas-Modal, Matanzas-Deep Side Notched; center column, top to bottom, Matanzas-Modal, Matanzas-Modal, Matanzas-Modal, Matanzas-Modal; left column, top to bottom, Salt River Side Notched, Matanzas-Faint Side Notched, Matanzas-Modal.*

PLATE 4: *Projectile points from 4'-5' level: the typological identifications are left column from top to bottom, Brannon-Side Notched, Matanzas-Modal; center column from top to bottom Rectangular Lanceolate of undetermined type; Salt River-Side Notched, Matanzas-Modal; right column from top to bottom Matanzas-Modal, Big Sandy II.*

Scrapers

A representative sample of the scrapes is illustrated in Plate 5.

Type I—side-notched end scraper—most easily described as a side notched point with a tip either broken and retouched or originally manufactured to be used as a hafted end scraper. Twelve of this type were recovered.

Type II—End scraper—This is a scraper from, usually rectangular or long ovoid in shape, with a scraping edge usually finished on one or both ends. In 13 of the 18 end scrapers represented, they were made from a long unshaped blades with a retouched scraping end unifacially flaked.

Type III—Side scraper, unifacially worked—This type is represented by a limitless variety of basic flake shapes with one or more edges retouched on one face as a scraping or planing edge.

Type IV—Side scraper, bifacially worked—basically the same as Type III with the addition of bifacial working on the scraping edge. These scrapers often appear to be fragments of large points or pre-form blades, with one or more edges showing the wear and polish of scraping activity.

Type V—Notched scraper—Scraper type commonly referred to in Old World prehistory as a "spoke shave." The scraping edge of this tool has a distinct and well-worn notch in the scraping edge, possibly for use in scraping and polishing a shaft of some sort.

Cores

No basic form or pattern can be discerned among the 12 cores recovered. Any piece of chert or flint from which basic flakes have been intentionally and repeatedly removed has been so designated.

Worked Flint

This category is used as the proverbial "catch all" category into which I have placed all chipped stone artifacts which have unidentifiable shapes.

Utilized Flakes

These are small and highly variable flakes which show evidence of being used as cutting or scraping tools but which show no evidence of having been intentionally shaped or worked for this purpose.

PLATE 5: *Top group, hafted end scrapers, all levels; bottom group, side and end scrapers on flakes, and one "spoke shave" in lower left corner, all levels.*

Ground Stone

Bannerstone—The single bannerstone is a fragmentary find, approximately ¾ missing. It is drilled, made in the pique shape, and is of banded slate.

Nutting Stone—This is a single large piece of sandstone which on one surface exhibits a small depression which appears to have come from a pecking activity.

Worked Antler and Bone

Antler projectile points—Five points, made of antler tines with ground points and hollowed bases, were found.

Utilized, undrilled antler tine—Four tools were found which showed some blunting on the tips from use as a kind of blunt-ended awl or punch. Possibly they were used as flint knapping tools.

Cut and engraved bone—Pieces of bone artifacts exhibiting engraving and/or cutting activity. Six pieces were present.

Bone pins—Long polished pieces of bone with almost parallel sides and gently rounded tips. Eleven fragments are represented.

Bone awls—Pieces of bone, both bird and mammal worked to a sharp point.

Unidentifiable worked bone—Pieces showing shaping or working, but with not enough detail for analysis.

Faunal Remains

Large quantities of bone and shell were recovered from the site, and a preliminary analysis of the bone indicates the following:

". . . There are a total of 1590 items, of these 409 are (tentatively) identifiable deer. Two hundred and forty-eight (248) are from other species with (at this point in the analysis) four species of turtle, 94 items; 14 aves items; 23 drum items, 9 other fish, including a number of cats; also in the assemblage are 2 (or more) racoons, dog-foxes, squirrel, elk and between 8 or 15 deer. . . ." (W. Fred Limp, personal communication)

Ceramic

The ceramic material recovered from the site is represented by a total of 10 pot sherds from the top two feet of the site. Three types have been identified.

Type 1—A course, heavy, grit-tempered ware with the inside surface smudged. The temper appears to consist mostly of large pieces of crushed quartz which are irregular in size. The outer surface is plain, rather open and porous, and light red-brown in color, while the inner surface is burnished and black. The wall of this ware varies in thickness from ½″ to ¾″. Only one sherd of this variety was recovered.

Type 2—A course grit-tempered ware. This ware has thinner walls (¼″) than Type 1 (above) and on one scherd, the outer surface is fingernail impressed. Other than these two characteristics of surface treatment and wall thickness, however, Type 2 is very similar to Type 1. Three sherds of this variety were recovered.

Type 3—A delicate, thin-walled cord-marked ware. This ware is thin-walled (1/8″) and grit tempered. The temper is very fine and the surface of the vessel has a fine "sandy" feel in texture. The color is uniformly

black throughout the sherd wall and the exterior is marked by fine, parallel cord impressions. Six sherds of this variety were recovered.

Radiocarbon Specimens

In all, six specimens were recovered from the 1.5 feet level to the 5.0 feet level. These specimens have been evaluated in the laboratory, and only one is thought to have a sufficient mass to serve for dating purposes. This specimen consists primarily of wood charcoal collected from the dark lens of charcoal approximately 4.5' below 0' in Section 130-S/100-E (see Figure 2). This sample was processed by Dicarb Radioisotope Company and dated by their laboratory with a radiocarbon age of 4210 ± 200 yearsB.P. (DIC-2367) or approximately 2260 B.C.

The following is a listing by quantity and level of the various materials described above.

Artifact Inventory

Artifact	Level Totals					
	0-1′	1-2′	2-3′	3-4′	4-5′	5-6′
Lithic, chipped						
Projectile points	4	21	7	13	8	1
Drills						
Type I	2	1	–	–	–	–
Type II	–	1	–	–	–	–
Type III	–	1	–	–	–	–
Scrapers						
Type I	1	6	–	1	3	1
Type II	–	6	2	8	2	–
Type III	13	16	5	6	5	2
Type IV	1	4	–	1	1	–
Type V	1	–	–	1	3	–
Cores	–	5	1	–	3	2
Hammer Stones	–	4	–	–	1	–
Worked Flint	16	101	35	35	29	7
Utilized Flakes	30	164	46	53	47	–
Lithic, ground						
Bannerstone	–	–	–	1	–	–
Abrading Stone	–	2	–	–	1	–
Nutting Stone	–	1	–	–	–	–
Lithic Debris	658	3181	1131	1619	1651	992
Worked Bone and Antler						
Antler Projectile Points	–	5	–	–	–	–
Antler Flaking Tool	–	1	–	1	2	–
Cut and Engraved Bone	–	2	2	–	3	–
Bone Pins	–	1	3	5	2	–
Bone Awls	–	2	3	4	2	–
Unclassified Worked Bone	–	2	1	1	2	–
Faunal Remains						
(Bone, shell, antler, teeth, turtle shell)	30	586	314	528	489	53
Ceramic						
Type 1	1	–	–	–	–	–
Type 2	–	3	–	–	–	–
Type 3	–	6	–	–	–	–

Conclusions

As was earlier stated, the goal of this excavation was twofold. First, it was the intent of the investigation to recover enough of a sample of the cultural material of the site to be able to make a comparison with that which has been recovered from other shell middens in the Ohio Valley. Though the extent of this excavation was not thorough enough to permit a statistical statement, some brief but useful observations can be made.

The site is clearly a multi-component site with Late Archaic the predominating cultural presence, but with a fair representation of Early Woodland cultural materials (e.g. contracting stem points and heavy grit tempered pottery) and some small presence of Middle Archaic and perhaps Early Archaic. These components were also found to be generally in the proper stratigraphic sequence. The Early Woodland materials were confined to the upper two excavated levels (0'-1' and 1'-2'), and the levels below 2', the shell midden proper, produced exclusively Archaic materials.

Though the lithic debitage has not been systematically analyzed, a rough sorting suggests several interesting patterns. The lithic waste contains a large number of decortication flakes, and primary flakes removed from decorticated cores. At least one blank and several preforms are present, therefore on-site knapping for preform and artifact production was definitely one of the activities undertaken by the inhabitants of the site.

The raw material represented by the debitage is almost exclusively of the classic Harrison County variety, a chert which is of an excellent quality and which is readily available at several sources near the site. However, over half (56%) of the projectible points from the site are of non-Harrison County cherts. This suggests that either the inhabitants and/or the projectile points were relatively mobile within the Ohio Valley and were not confined to the immediate vicinity of the site.

Certain artifact types and features often associated with the shell midden Archaic complex are either poorly represented or absent at this site. Examples of these artifacts would be the bannerstone, atlatl hooks and handles, and other bone tools such as the fish-hook.

Throughout the midden level, large quantities of fire cracked rock were recovered, suggesting that this was more than a temporary camp site for shell fish collecting. The relatively large size of the midden, over 500 feet, when measured along the river bank, also would indicate an extensive occupation at the site. In general, however, none of the features which one would expect to record in a village situation were present, save the two pits, Features 1 and 2. No evidence of either prepared house floors, post molds, or burials were observed in the site, though collectors have reported burials from the area.

The most likely explanation for the absence of evidence for village development is the small size of the excavation. The exposed shell in the bank of the river indicates a NS length of over 500 feet. Though the EW distance is unknown, it is safe to estimate this distance as averaging not less than 20 feet, and quite likely as much as 30 to 40 feet. From this perspective, the 1966 excavation opened an area of 150 square feet in a site of potentially 10,000 to 20,000 square feet, or approximately 1.0%. This limited sample may well explain the absence of some of the more common traits of the shell midden Archaic complex.

In the upper two levels of the Breeden Site there is a small representation of both Middle Woodland corner-notched points and the Early Woodland Adena-like

contracting stem point (See Plates 1 and 2). Also in the upper three levels there are several corner-notched points, two of which appear to be of an Early Archaic type similar to the Palmer or Kirks point (only one is illustrated in Plate 3, top group). However, the projectile points are on the whole dominated quantitatively by a variety of Late Archaic side-notched forms, most notably of the Matanzas group.

In contrast to the Late Archaic Riverton-like cultures of the last two millenia B.C., there are no microtools present on the Breeden Site. This observation plus the dominance of the side-notched points often associated with the Indian Knoll phase in Kentucky suggests that the Breeden Site should date somewhere in the third millenium B. C. Jansen (1971:377) has published three radiocarbon dates from the Old Clarksville Site, a shell midden near the Falls of the Ohio in Clarksville, Indiana. Two of these date are identical, 2510 B.C. ± 180 and the third one in 2230 B.C. ± 180. These three dates from similar sites some 75 miles upriver agree nicely with the date of 2260 B.C. for the Breeden Site. Together, these dates suggest that the Breeden Site was occupied during the second half of the third millenium B.C.

The second, and originally the primary, goal of the excavation was to test the extent of the shell deposit to determine if this site is significant enough in size to merit a more complete salvage effort before it is more extensively damaged by high water. In general, the shell layer itself averaged approximately 3¼ feet in thickness. The configuration of this shell layer suggested that it was a part of a lens-like deposit with its heaviest deposition on the west side of the trench (where it has already eroded away) in that it is consistently thicker on the west side of the trench than it is on the east side. Yet, it is, with present knowledege, impossible to say if the lens development viewed in the test is the major deposit in the site, or even if there is a single major area of deposit. The central ½ of the midden, as surveyed along the bank, seems to be equally heavy in its shell deposit in all places. The tenant farming the adjacent field claimed that some ten years ago shell had been plowed to the surface in areas where stumps had been removed over 200 feet back from the bank. As one walks this field when it is freshly mowed, it is impossible to discern a single rise or mound configuration that would indicate a center or high point for the midden, but gentle undulations in the surface topography of the field do suggest the possibility of several lenses of shell accumulation. At present, it is impossible to judge accurately if this midden is constructed of many small "mounds" or represents one extensive shallow deposit.

A recent (January 1981) visit was made to the Breeden Site to investigate the extent to which erosion has progressed since the excavation in 1966. The results of progressive erosion have been truly disastrous. The bank of the river formerly sloped from the site (40′ above water level) down to the river's edge at a 45° angle. This sloping bank was also formerly covered with trees and thick brush. Now the bank drops precipitously from the edge of the remaining site down to the river's edge. The shore line is now littered with the trunks of huge trees (2′ to 3′ dia.) and cultural debris. It is unfortunate that one must conclude that what now remains of an extremely rich and well preserved multi-component site will be totally destroyed within the next decade.

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Finally, I would like to point out that the total number of projectible points listed in the citation from Munson and Cook differs in total number from the later artifact inventory. The more refined count is that of Munson and Cook and indicates that some of the bifacial material I originally classified as projectile points were not acceptable to their later analysis.