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FRONT COVER

Six outstanding birdstones from the collection of Steve Fuller, Stow, Ohio. Birdstone of slate, top left, was found in Seneca Co., Ohio. The long necked specimen below it comes from Wood Co., Ohio. Top right is a gneiss birdstone from near the Maumee River in Henry Co. Third from bottom is a Michigan bird. Next to bottom is an extremely fine example from Butler Co., Ohio. Bottom bird was found with a northwestern Ohio Glacial Kame burial. It is particularly interesting in that it is one of the few birdstones in Ohio which has been broken and repaired by the Indian with both halves surviving. Close examination shows that it is incrusted with a heavy grave deposit.

Back cover

Gem-like points of exotic Flint Ridge flint. Some of the most beautiful stone from Flint Ridge is found in these small points of various types.

Presidents Page

February 7, 1978

Gazing from the window at the massive snow drifts, a grim reminder of the worst blizzard in Ohio history, I cannot help but wonder in amazement how primitive man was able to survive the elements. Even with modern technology, we found ourselves paralyzed for hours, some of us days and yet primitive man weathered similar storms, a fact, if we reflect for a moment, that remains almost beyond belief.

The study of his survival through the centuries is endless and provides us with many fascinating experiences. With Spring just a matter of weeks away, I anxiously anticipate the reality of that survival in the form of relics, as I tramp the freshly tilled fields.

1978 should be an exciting year for our society. Due to its accessibility, Columbus, Ohio was again chosen as the site of our four regular meetings. Memberships, in 1978, should reach an all time high, surpassing the 1835 members in 1977. Having met with great approval last year, we are once again providing our members with a schedule of this year's meetings on the reverse side of our membership card. We have scheduled an excellent roster of speakers, along with several special exhibits for these meetings. With a larger budget to work from, our members can expect a more indepth and larger magazine. Bob Converse our managing editor, welcomes articles from you, so please feel free to share if you have an exciting experience to relate.

Remember, The Ohio Archaeologist is an excellent tool in which to catalogue and preserve the survival of primitive man. We also hope to publish an interpretation of House Bill 418 which should hopefully clear up any questions our members might have concerning this legislation.

As your president, I would like to extend a hearty invitation to each of you to attend a 1978 meeting ... hope to see you!!

Jan Sorgenfrei
President
A Late Prehistoric Female Effigy Pipe
by D. R. Gehlbach

One of the more interesting pipes crafted from Sandstone is this "pregnant" woman effigy found near Logansport, Indiana. The detail depicting a nearly full term pregnancy in nude form is outstanding in relation to similar Ft. Ancient examples. This pipe form is typically dated somewhere in the 1200 to 1500AD period.

Fig. 1 (Gehlbach) Female effigy pipe in Sandstone.
An Alternative Application of the Prehistoric Celt in Ohio

by

Stanley W. Baker
Ohio Historical Society
Columbus, Ohio 43211

In 1976 and 1977, the Ohio Historical Society's Department of Archaeology was involved in two archaeological surveys along relic beach ridges in northern Ohio (Baker 1977A, Baker 1977B). In both cases, the primary habitation patterns appear to involve transient hunting groups passing along these ridges. Camps were identified but were usually associated with major tributaries. This pattern was defined by the study of the local environment and the functional interpretation of the artifacts recorded during these studies. Typical objects recovered or viewed in local collections were knives, scrapers and projectile points which were considered to have been lost or discarded artifacts from a hunting tool kit. The identification of a high percentage of celts in the Lorain County study posed an interesting problem, since these tools are usually considered as woodworking equipment. This report will define an alternative function of these artifacts.

The two archaeological studies of primary interest in this report are both closely associated with Lake Maumee Beach ridges. Forsyth (1959) has previously described their development. When compared to the surrounding areas, beach ridges composed of sorted sands and gravel would have provided a much dryer habitat than the lake bottom deposits formed on the surrounding ground moraine. These well drained situations, aside from providing the only feasible location for sites, affected the forest canopy by providing situations favorable for dryer beech-maple and oak-hickory stands. This canopy would have been attractive to both large and small animals. Carnivores naturally would have been attracted by small herbivores like mice and squirrel, who were utilizing the food source present. Larger fur bearers would have found the beach ridges more hospitable. Smith (1975) relates that deer, which is known to be the primary food supply of native groups, preferred acorns when available in the fall.

Otto (1975: 2) suggests the attractiveness of these stands for fall nut collection, but from a total of 165 light occupation sites in the Delphos area, plant food processing equipment, i.e. pestles, pitted stones, etc., only amounted to 4 artifacts (Baker 1977A: 25). Other researchers have also commented on settlement patterns in northern Ohio. Brose (1977: 143-144) has found that upland areas "... supported little intensive prehistoric occupation, except along fossil or modern lake beach ridges and bluffs where they were cut by reasonable mature drainage systems". The presence of tools such as celts, not usually associated with hunting, was immediately questioned under these conditions. Converse (1973: 2) comments that pecked and polished stone tools found their way into Ohio at sometime early in the Archaic period. Present identification suggests that the predecessor of Ohio celts and adzes can be found in New York. Converse also suggests (Ibid.) that they were "probably used for woodworking". Semenov (1964) has completed intensive experimental and wear pattern studies on tools found on Old World Palaeolithic sites. He indicates (1964: 125) "... in our view every axe (or celt) is connected with woodworking". He has also found evidence to suggest that mammoth tusks, shoulder blades, ribs, long bones, and antlers from various species show signs of hewing and chopping which "... leads one to think that wood was not the only material worked with an axe" (1964: 125).

Similar evidence has been found in the Ohio valley. Fauna analysis by Guilday and Tanner (1968: 45-46) describes both cutting marks and evidence of axe blows. Tanner (1977) concludes that axe blows were employed to remove antlers from frontal bones of deer and to render the whole carcass into manageable units. Evidence of these marks are found on the axis vertebra at the base of the skull. All distal tibiae and radii were also snapped. Finally, behind the head of the scapulae and various weak points along the pelvis, massive blows separated fore and hind quarter elements. These blows or "... attempts result in broad dull, V-shaped impressions that cannot be ascribed to a metal axe, but match the cross section of a stone axe or celt..." (Tanner 1977). Guilday and Tanner (1963: 45) compare hind quarter butchering from a historic Indian site in Pennsylvania with the Middle Woodland Fairchance site in West Virginia. At both sites, cut marks were absent around the acetabu-
lum or head of the femur. The ilium of the pelvis just anterior of the joint is very weak. Blows inflicted to this point as well as the femoral shaft would remove a quarter. These authors imply that prehistorically a tool similar to an iron axe was used to inflict these blows. It would seem that the hafted celt would be the logical instrument. The use of a celt or axe by hunting parties is also substantiated by evidence to suggest that larger mammals were field dressed (Guilday and Tanner 1968: 47).

Recently, Winters (1969: 30) has found that archaeological reports were only producing descriptive data, but rarely any functional interpretation. In his work, by including both descriptive and functional analysis, Winters was able to evaluate the mechanics of settlement more clearly. In the Riverton material, celts were included in the category of woodworking tools (1969: 65). Work in northern Ohio has produced an alternative explanation for their use. This author believes celts should be considered as general utility tools. Previously included in this category are knives and scrapers, which "... could have been associated with hunting, domestic, fabrication, or even woodworking activities" (Ibid.: 32). Celts may have also served a variety of functions but the association of celts with hunting and butchering tools in a primeval environment advantageous to hunting would seem to indicate that their primary function is related in this instance to butchering.

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"Flying Bird" drills are small, thin, notched flint drills, usually made of white, tan, gray or black chert. Along the east side of the Scioto River in Scioto County and Pike County, Ohio, the authors are aware of three surface sites in the river bottomland which produce these drills. All these sites are situated on sandy ridges or knolls, with some rock on the surface, and occasional black ash firepits after plowing. One site is located either adjacent to or in conjunction with a site which produces Hopewellian features, while the two remaining sites are solitarily situated, producing the characteristic drills and thin side-notched and corner-notched points of the same material as the drills. There is either very little or no grinding on these drills and points which are 1 to 1-1/2 inches in length.

(Kuhn and Miller) "Flying Bird" drills and associated points shown actual size.
Square Flint Scrapers
by
David W. Kuhn
2642 Shawnee Road
Portsmouth, Ohio 45662

Flint scrapers were created by Prehistoric Man in varying shapes, sizes and materials. They exist as hafted scrapers, circular and crescent scrapers and many other varieties. This article discusses those flint scrapers which are approximately 1 inch to 1-1/2 inches square.

Although square flint scrapers occur occasionally on a majority of surface sites in Scioto County, the author has experienced only one group of sites, all within a mile of each other, upon which square flint scrapers occur with frequent regularity. The sites are in Scioto County in the river bottomland along the Ohio River, and are high solitary prominences of land (not ridges) covered with abundant broken or crushed rock and Flint Ridge chips and spalls. It is on these sites that birdpoints comprise 90%-100% of the projectiles. (Kuhn and Miller, 1976). The square flint scrapers produced by these sites are all made of Flint Ridge material, some with solid colors and others with stratified colors. Some are slightly ground on the edges, but most are not ground at all.

Surface Finds from the McKibben Site

Thomas R. Pigott
840 Buckeye St., NW
Warren, Ohio

In the accompanying illustration are two 1977 surface finds from the McKibben site (Prufer and Sofsky 1965) in Trumbull County, Ohio. “A” is a Charleston Corner Notched, a type previously unreported from the site which, based on a radiocarbon date at the St. Albans site in West Virginia, Bettye Broyles (1971: 56-57) assigned to the time period around 7900 B.C. “B” illustrates both faces of a fluted point from which unfortunately both the tip and the base are broken. It is fluted on one side only with double channels which run approximately half the length of what remains of the point. Typologically this point should predate the Charleston. Both points serve to further demonstrate the early occupation of this site.

Broyles, Bettye J.

Prufer, Olaf H. and Charles Sofsky

Fig. 1 (Pigott): Charleston Corner-notched and a broken fluted point from the McKibben site, Trumbull County.
A Walhonding River Valley Multicomponent Site

Arthur J. Allen
Alexander Revnik
Canton, Ohio

The area for miles around the confluence of the Kokosing and Mohican rivers, which form the Walhonding, has long been known as a rich source of Indian artifacts. However, only recently have professional archaeologists studied this area and published their findings, e.g. the McConnell site (Prufer 1963), the Honey Run site (Pi-Sunyer, Blank and Williams 1967), the Welling site (Prufer and Wright 1970; Blank 1970). Of these, only the Welling site was excavated and only its Paleo-Indian and Archaic artifacts described. While McConnell and Honey Run were recognized as multicomponent sites, only their Paleo-Indian artifacts were studied. Thus the paucity of published information concerning this area prompted this report and hopefully it will contribute to a better understanding of prehistoric man in the Walhonding River valley.

While surface hunting in the general vicinity of the Honey Run site, one of the authors (A.R.) discovered a small area covered with flint chips which had been bulldozed to the surface preparatory to erecting oil storage tanks. Ultimately the tanks were located elsewhere leaving the area available for surface exploration. During the past 5 years the authors and several other members of the Sugar Creek Valley chapter of the Archaeological Society of Ohio have examined more than 5,000 pieces of flint debitage showing evidence of human modification. As might be expected from its location near the Upper Mercer flint quarries, most of the debitage consisted of various shades of brown-to-blue-to-grey-to-black flint. A much smaller amount of chert was obtained from the nearby Nellie quarries. Only a very small amount of Flint Ridge flint was found, probably because relatively few Hopewell artifacts were recovered. Over 80% of the projectile points examined were broken or unfinished indicating the area's primary use as a workshop from the Paleo-Indian through the Woodland periods. While fabrication of projectile points seems to have been the principle occupation of the inhabitants, complete or pieces of drills, scrapers, hammerstones, knives, and sherds of Adena pottery were also found, the latter suggesting that the site was occupied by women as well as men.

Prufer (1963) pointed out that complete projectile points are uncommon at workshops (approximately 20% at the McConnell and Honey Run sites), the majority of the debitage consisting of flakes, cores, preforms, and projectile points broken during knapping. This breakage is usually due to imperfections in the flint (fossils) or errors in execution. Many places at the site contained a profusion of debitage (5-10 pieces per square meter). This abundance provides an excellent opportunity to study how a finished point was obtained from an amorphous mass of quarried flint. Although the early stages of projectile point fabrication are similar for many types of points, it is usually possible to identify the type only after the maker has brought it to the so-called "preform" stage as illustrated by Brennan (1975: 23) who defines a preform as "... the intermediate form between cores and the finished tool". Obviously this term includes many intermediate forms, but Brennan's illustrations suggest that the penultimate stage occurs when: 1. The point has reached its desired thinness, and 2. The base is undefined, i.e. neither straight, stemmed, or notched. The authors believe that the study of preforms, usually ignored or discarded by the collector, presents an additional opportunity to observe the skill and craftsmanship of the prehistoric Indian. Example of preforms and their intended ultimate morphology are shown in Figure 1. The remaining artifacts recovered at the site can be described in the conventional chronological sequence of prehistoric cultural horizons.

Paleo-Indian

Since the site is located within a few miles of the McConnell, Honey Run, and Welling sites, the presence of Paleo-Indian artifacts is not surprising. Large numbers of unfluted-fluted, stemmed, and unstemmed lanceolate points, mostly broken or in the preform stage, were found. Like the McConnell and Honey Run sites, but unlike the Welling, not a single broken or unbroken fluted point was picked up. Figure 1b and d shows two types of Paleo-Indian points. The site also yielded a few "planes" similar to those found at the McConnell and Honey Run sites, as shown in Figure 2a-d. It is generally believed that these turtle-shaped artifacts were used as...
scrapers by the Paleo-Indian but were not made by subsequent cultures. The majority of the projectile points were unstemmed, approximately 50% having a narrow, concave base and 50% having a wide, straight base, reflecting a type distribution similar to that found at the Honey Run site. Only a relatively small number of different kinds of Paleo-Indian stone tools were described for the McConnell, Honey Run, and Welling sites compared to the 55 types reported by Kraft (1973) at the Paleo-Indian Plenge site in New Jersey. It seems likely that the Paleo-Indians of the Walhonding River valley employed a similar number of different tools that were not recognized or reported by the investigators of these sites (Table 1).

Archaic

The Archaic horizon in Ohio has not been clearly or extensively described even though it includes a wider time-span than the preceding or succeeding horizons. In addition to C-14 dating, the usual method of identifying an Archaic site is by the types of projectile points and/or other artifacts recovered. A further qualification of "early", "middle", or "late" is applied if the points or artifacts resemble types that have been found in a known provenience during excavations in neighboring states. As most of the points were made from local flint or chert, it seems reasonable to assume that Indians from various sections of Ohio and the Ohio valley remained at the site long enough to equip themselves with a supply for future use. Occupation of the Welling site by Archaic Indians seems to have been similar to the one described in this report. Fabricated from local flint or chert, the following types of points were found at both sites: Pentagonal, Big Sandy, Kirk Corner-notched, Kanawha, and Like Erie Bifurcated. Obviously, many of the other artifacts found such as scrapers, knives, drills etc. were probably contributed by the Archaic occupants but are listed in Table 1 as "unidentified". Figure 3 shows some of the various kinds of artifacts unidentifiable by precise culture. Figure 4 depicts the various types of Archaic projectile points recovered.

Woodland

Table 1 shows that more artifacts identified with the Woodland horizon than any other period were found. In fact, artifacts produced by the Adena people accounted not only for the majority in the Woodland period but for the entire prehistoric occupation at the site. Whether this represents more occupants at a given time or more frequent visits by a small number of Indians cannot be deduced. With the exception of a single Ft. Ancient sherd, only Adena ceramics were found (approximately 300 pieces in different locations), suggesting that the Adena people visited the site many times. The negligible number of Hopewell artifacts can only mean that their makers were infrequent visitors. Figure 5 illustrates the different types of Adena projectile points that were found.

Mississippian

The discovery of but a single rim sherd with the classic handle is the only evidence that Ft. Ancient Indians had been at the site. However, since Ft. Ancient artifacts have been found at the nearby Honey Run site, this finding is not unexpected.

Comment

Based upon the artifacts recovered by the authors and the publications describing the McConnell, Honey Run, and Welling sites, the following resume of the prehistoric Indians in the Walhonding River valley appears reasonable: around 6,000 to 8,000 B.C., the Paleo-Indians appeared in the Walhonding River valley from a presently unknown location where they found an abundance of big and small game, several navigable rivers, and an inexhaustable supply of excellent flint. Some 3,000 to 4,000 years later, the area was frequented from time to time by many different groups of Indians coming from what were to become the neighboring states (suggested by the finding of the same projectile point types that are also found in these states and assigned to the Archaic period). However, the largest group of occupants at the site under study, whom we now call Adena, appeared about 1000 B.C., but like the inhabitants before and after them, they probably took refuge in the numerous and spacious rock shelters in southeastern Ohio during the winters. Contemporaneously, a distinctly different culture of Indians, subsequently called the Hopewell, made a brief passage through the valley, possibly on their way to live in western New York state. This presumed page in the prehistory of the Walhonding River valley closes with a fleeting visit by people of the Mississippian horizon we now identify as the Ft. Ancient Indians. *The location of the site is not specified because the authors want to complete their survey before revealing it. The authors are indebted to Tom Grubb of Mt. Vernon, Ohio for the photographs.
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Prufer, Olaf H. and N.L. Wright  

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Table 1: Chronological Distribution of Artifacts

<table>
<thead>
<tr>
<th>Horizon</th>
<th>Artifact Type</th>
<th>Quantity</th>
<th>%</th>
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<td>Paleo-Indian</td>
<td>Plano</td>
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<td>22</td>
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<td></td>
<td>Lanceolate</td>
<td>100</td>
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<td>Lake Erie bifurcate</td>
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<td></td>
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<td></td>
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Fig. 1 (Allen, Revnik): a. Lanceolate preform; b. Lanceolate finished point; c. unfluted fluted preform; d. unfluted fluted finished point; e. Early Adena preform; f. Early Adena finished point; g. Woodland preform; h. Woodland finished point; i. Woodland preform; j. Woodland finished point; k. Late Adena preform; l. Late Adena finished point.
Fig. 2 (Allen, Revinik): “Planes” (upper row); Flint hammerstone (lower row).

Fig. 3 (Allen, Revinik): a. “T” drill; b. pin drill; c-e. expanded base drills; f. stemmed drill; g. graver; h. side scraper; i. hafted scraper.
Fig. 4 (Allen, Revnik): a. stemmed Archaic; b. Vosburg; c. Kirk Serrated; d. Big Sandy; e. St. Albans side notched; f. Pentagonal; g. Kanawha stemmed; h. Kirk Corner notched; i. Le Croy Bifurcated base; j. Bottleneck; k. Fishspear; l. Ashtabula.

Fig. 5 (Allen, Revnik): a-c. Early Adena; d. Middle Adena; e-f. Late Adena.
Rare Insight into the Fluting Technique of a Paleo Point

This example (Figs. 1 and 2) of an uni-facially fluted Convex-Parallel-Sided point provides insight into the rare Folsom fluting technique (Prufer and Baby 1963). After the blade had been bifacially flaked to the desired shape a striking platform, in the form of a hump or "nipple", was chipped and ground into the base. This step was basically accomplished by the removal of five flakes, two from the obverse, two from the reverse, and one down the "nipple" itself (arrows in Fig. 2). The flake on the "nipple" provided a notch that might have acted as a guide for an intermediate chip, which in turn was used in removal of the fluting spall. In this particular case removal of the spall resulted in a hinge fracture breaking the blade. The specimen exhibits basal grinding and slight lateral grinding. Collateral flaking is evident on the reverse and further defined by slight median ridge, but the flaking on the obverse is partially obscured by the removal of the spall (Fig. 2). Pressure flaking is absent on this specimen.

I. Descriptive Data
1. Owner
   Charles Vrotney
2. Found
   Ash Cave area, Hocking State Forest, Hocking County, Ohio
3. Found by whom and when
   Charles Vrotney
   June 23, 1977

II. Metric Data
1. Maximum length
   63mm (broken)
2. Width
   a. maximum
   34mm
   b. distance from point of maximum width to base ('ears')
   35mm
3. Width at base ('ears')
   25mm
4. Thickness
   a. maximum
   14mm
   b. distance to base ('ears')
   20mm
5. Depth of basal concavity
   2mm
6. Length of flute from 'ears'
   62mm
7. Number of flutes
   one
8. Lateral grinding from 'ears'
   a. right side
   23mm
   b. left side
   40mm
9. Basal grinding
   present
10. Constricted above base
    no
11. Basal nipple
    present
12. Weight
    25.06gr

Prufer, Olaf H. and Raymond S. Baby 1963 Paleo-Indians of Ohio. The Ohio Historical Society, Columbus.

Fig. 1 (Glover et al.): Obverse and reverse views of a convex-paralleled-sided fluted Paleo point made of glossy black Zaleski flint.

Fig. 2 (Glover et al.): Arrows show chips removed from blade in the construction of striking platform.
One of the rarer shaped gorgets is the Adena quadriconcave. They usually show fine workmanship and have one faced conical drilling.

In the photograph is a quadriconcave gorget, typical of this style with the classic shape and drilling. The large size and the interesting coloring makes this an exceptionally fine example. The side indentations are quite deep allowing the points to project out further than average. The slate material has changed in coloring to a light tan on both sides. In the areas of abrasions a darker brownish undercoloring is visible. Reasons for this tone change could be soil stain, burial association, or wheathering. The odd coloring has added charm to a classic artifact.

This large quadriconcave gorget had reposed in the Hall collection for more than 65 years and was one of the more outstanding pieces. An early member of the Hall family found it about the beginning of the century in the north east corner of Rockport Township, Cuyahoga County, Ohio. (Lakewood)

References:
CONVERSE, ROBERT N.—Ohio Slate Types.
HALL, JOSEPH.—Verbal commutation.
Crude Blade Cache
by John R. Heath,
Box #82, Sullivan, Ohio

While plowing virgin land on a terrace above Aldrich Creek in section 3, lot 5, Penfield township, Lorain Co., Ohio, this cache of blades (Fig. 1) was found by the author. These eleven crudely chipped blades are made of grey and tan chert. The darker blades have a brownish hue.

No other artifacts or chippage was found with these blades but this site, which is about two acres, has produced many Archaic and Woodland blades. Two uniface hafted scrapers and two crude ground stone celts were also found here.

Correct dating of this cache is difficult to determine. Any comment on these blades would be welcome by the author.

Fig. 1 (Heath) Crude blade cache, obverse and reverse.
The Laurel Leaf Blades illustrated in Figure 1 were discovered within six hundred feet of the Ft. Ancient village described in the Summer, 1976 Ohio Archaeologist (Kelley 1976: 27-29). The cache was found by the author on May 7 and 8, 1977. They range in length from three and three-eighths inches to four and three-quarter inches. All were made from the same core of Brassfield Flint and each had been ceremonially broken or "killed". The material is off-white in color with pink and gray mottling and appears to be heat treated. The cache had apparently been buried approximately ten to twelve inches below the surface in very hard yellow subsoil. The field in which the blades were found had never been plowed more than eight inches deep. In the spring of 1977, however, a new tenant farmer dropped his plows into previously undisturbed subsoil and brought part of the cache to the surface. Four blade fragments were found on the evening of May 7. The remainder of the cache was recovered the following afternoon by tediously sifting through the freshly plowed soil. Fragments of seven complete blades and three incomplete blades were found which indicates the original number in the cache included at least ten. Laurel Leaf Blades are presently dated at 1,000 B.C. and are classified as either late Archaic or early Adena. Both Archaic and Adena artifacts have been recovered in the immediate vicinity.

Fig. 1 (Kelley) Cache of blades made of Brassfield flint.

Two interesting artifacts found by the author on the surface of the Ft. Ancient village are featured in figures 2 and 3. Figure 2 is a very small Hematite Celt which is less than one inch square. Figure 3 is a very small concretion that has a natural flange or "lip" on one side. This flange has been drilled from both sides. The concretion is approximately three-eighths inch in depth and was probably used as a child's toy.

The Fractured Base Dovetail Type

By Robert N. Converse, Plain City, Ohio

I have seen less than a handful of specimens of this curious type. It appears to be a variation of the large based dovetail with the addition of basal side fracturing. The burin like flakes which modify the lateral edges of the base were directed from the notches toward the base—the resultant flat fracture scar can still be seen even after subsequent heavy grinding. So few of these genuinely rare points have been observed that it is difficult to detect any pattern in accompanying attributes in the type.

Neither the use of basal fracturing nor the mechanics which produce it are clearly understood. It of course is present on the well known fractured base points and is found at random on some of the bifurcates. These types made their appearance well back in the Archaic period. But I have also seen burin fracturing on Hopewell points and Middle Woodland tools which would indicate that the prehistoric flint knapper carried burin fracturing in his bag of tricks over an enormous span of time.

Fig. 1 (Converse) A dovetail on which the sides of the base have been removed by burin fracturing. The point is made from Flint Ridge chalcedony and is in the collection of Ernie Good, Grove City, Ohio. It is approximately 5 inches long.

Fig. 2 (Converse) Closeup view showing the scar left after flake removal.
Gneiss is a stone rarely used in utility artifacts. The roller pestle and three-quarter grooved axe are made of this unique stone the lines of which coincide with the contours of the artifacts producing a symmetry of design and color. From the collection of Jack Hooks, Mansfield, Ohio.
Three Hopewell points and six Adena points, all of high quality and colorful Flint Ridge material.
Pentagonal Points and Hafted Scraper

by Marybeth Albin
Dublin, Ohio

Fig. 1 (Albin) Shown are pentagonal points and hafted scrapers with the same basal design. These hafted scrapers are always sharpened from one side only and seem to be made from reworked pentagonal points. The material of very often colorful Fling Ridge flint. Pentagonal, especially smaller ones, are a well known type in Ohio.
Two Remarkably Similar Effigy Pipes from Ohio
by D. R. Gehlbach

Another of the fascinating aspects of Pre-Columbian art forms is the remarkable similarity between two late Woodland human effigy pipes found nearly 100 miles apart. The example on the left is crafted in a dense mudstone and was found in Champaign County, East of Conover. The pipe to the right was found in Ross County and is made of Steatite.

Of special interest is the mongoloid-type facial characteristics in both examples, another instance of the purported Asiatic influence in ancient North American sculpture. The finding of strikingly similar effigies gives further credence to the theory that aboriginal styles were both copied and disseminated as resident populations moved from one locale to another.

Bob Converse is the proud owner of the Ross County pipe. Its "twin" sits in the author's display case.

Fig. 2 (Gelbach) Human effigy pipe in the Converse collection from Ross Co. It is made of a gray steatite and is partially covered with an incrustation from fire.

Fig. 1 (Gelbach) Human effigy pipe found east of Conover, Champaign Co., Ohio. It is made of tan mudstone. In the Gelbach collection.
Archaeology Update 1: Aspartic Acid Racemization Dating

Thomas C. Grubb
1017 Newark Road
Mt. Vernon, Ohio

When did the Paleo-Indians cross the Bering Sea land bridge? Archaeologists and anthropologists have long argued that it was anywhere from 10,000 to 100,000 years ago. Since 1952 the most useful method of estimating when man moved into the New World has been to determine the radiocarbon date of pieces of bone, shell, wood, etc. unearthed in context with Paleo-Indians. But since the radiocarbon method is reliable only up to 25,000 years ago, how can we prove that man was here before that time? Now Bada and his colleagues (Bada, Schroeder and Carter 1974) have not only developed a method for measuring the age of shell and bone up to 100,000 years old, but they also have used it to show that human bones uncovered in California were 48,000 years old! Therefore we now know that Paleo man possibly crossed the bridge at least 48,000 years ago and perhaps earlier. Before describing the new method it is necessary to review the basic physico-chemical principles involved.

In 1845, Louis Pasteur, the famous French chemist, discovered that when the plane of polarized light (all rays travelling in the same direction) was passed through tartaric acid crystals, some crystals rotated the light rays to the right and others to the left. Pasteur found that the structures of these two types of crystals were mirror images of each other; crystals that rotated the light to the right were called dextrorotatory (D) and those rotating it to the left were called levorotatory (L). If a D crystal changes to an L crystal or vice versa, the process is called racemization. Figure 1 shows a diagram of a polarimeter used to determine the optical rotation of substances.

All proteins are composed of small chemical units called amino acids which for some presently unknown reason are always levorotatory. However, when Bada and his colleagues at the Scripps Institution of Oceanography in La Jolla, California, discovered that most amino acids change very slowly from their original L form to the D form over a period of 5,000 to 100,000 years, they recognized that this change could be used to measure the age of dead substances which contained proteins while living. Preliminary experiments indicated that aspartic acid was the most useful of all the amino acids for dating purposes. It can be used to date substances beyond the range of radiocarbon because it has a racemization half-life of 15,000 years while radiocarbon has a half-life on only 5,600 years.

The technical details of the analysis by which the degree of change from L to D aspartic acid (D/L ratio) are too involved for this report, but there is one phase of the method which is very critical—the correlation of the radiocarbon date of a substance with its D/L ratio. This correlation or "calibration", as the La Jolla scientists call it, is necessary because the temperature to which the substance (bone, shell, etc.) was subjected after death determines the rate of change from L to D, and since it will differ in various parts of the world, the D/L ratio must be correlated with the radiocarbon date of the same object in each general area (Europe, Asia, Africa, etc.) where the racemization test is to be used. For example, in California the D/L ratio of a human bone was found to be 0.154 and its radiocarbon age was 6,700 years. Another California human bone and a D/L ratio of 0.142 and a radiocarbon age of 8,360 years. Once the D/L ratio is calibrated with the radiocarbon age in a given area, the age of shell, bone, and other materials containing proteins up to 100,000 years old may be determined.

Since their first publication in 1974 Bada and his colleague (Bada and Masters 1977) have reported the aspartic acid racemization dates from more than 25 sites around the world including the Olduvi Gorge, Rhodesia, Egypt, Israel, etc., and the majority have been in essential agreement with the radiocarbon dates, geological interpretations and historic records.

The racemization technique offers several advantages over radiocarbon dating, e.g. much smaller samples are required—100 grams of bone for a radiocarbon assay versus 5-10 grams from racemization; the possibility of introducing a dating error by contamination of the sample which has so frequently produced erratic radiocarbon dates in the past is largely eliminated in the racemization method. Although this method is available in only a few research laboratories, it promises to provide a very useful tool to supplement the radiocarbon method, especially for ob-
jects more than 40,000 years old or where the sample is too small for a radiocarbon dating.

Bada, Jeffrey L. and Patricia M. Masters 1977 Evidence for an approximately 50,000-year antiquity of man in the Americas derived from amino acid racemization of human skeletons. In press.


Fig. 1 (Grubb): Schematic diagram of the elements of a polarimeter used to determine the optical rotation of various substances. (Reproduced by courtesy of the Wadsworth Publishing Company, Belmont, California).
The Spillman Mound, Muskingum County, Ohio

by

Jeff Carskadden
Zanesville, Ohio

One of the few sojourns by professional archaeologists into Muskingum County occurred in 1934 when Emerson Greenman of the Ohio Historical Society tested the Spillman Mound. The report of this excavation occurred as a brief note by Greenman in Guthe's "Archaeological Field Work in North America During 1934" (Guthe, 1935-36: 127):

Excavations near White Cottage in Muskingum County in what was believed to be the second largest Hopewell type of mound in Ohio revealed this mound to be what the geologist call a "hill of circumdenudation." This had been known as the Spillman Mound, and a photograph sent to the Ohio State Museum in 1914 led to the examination.

The photo mentioned was taken on October 10, 1914, by Clark Sturtz, a local Zanesville bicycle repairman and amateur archaeologist. However, the photo was actually not sent to the museum until 1918, or shortly thereafter, along with 57 other photographs and notes on mounds and other archaeological sites in Muskingum County. This material, still in the Muskingum County file at the Ohio Historical Center, was copied for this writer by James Morton in September, 1976. Sturtz describes the Spillman Mound (his site no. 1) as located in "section 16, Newton Township, in valley of Jonathan Creek, height 32 ft, 300 ft N and S, including a graded way 30 ft long and 50 ft wide on S side, width of mound 210 ft, picture of east side."

Additional notations on the back of the photo include: "Visited on July 27, 1934, by E. F. Greenman. Flint chips and fragments found on top of mound, and report of arrowpoints etc, in vicinity. Cannot be certain this is a mound, however. Slope very abrupt on right end in picture. Now on farm owned by Carlos Spillman or his father." The author of these statements in unknown. A further note was "unable to locate 1976" apparently referring to a survey of the county made by several Muskingum College students.

The Spillman Mound was destroyed by quarry operations sometime after 1934. It was probably located about 1/4 to 1/2 mile east of White Cottage along Jonathan Creek, about 4 and 1/2 miles up this creek from its confluence with the Muskingum River at Zanesville. Jonathan Creek and its tributaries drain much of southwestern Muskingum and northeastern Perry counties, including the area south of Flint Ridge, and a number of important archaeological sites are found in the valley, including a number of Hopewelian sites.

Mills' Archaeological Atlas of Ohio (1914) shows a mound in Section 16 on the south side of Jonathan Creek in Newton Township, in the general vicinity of the Spillman Mound, though the Atlas was published before Sturtz submitted his information to the Historical Society. However, the site shown on Mills' map may also represent the hilltop Sidwell Mound which directly overlooks the site of the Spillman Mound. The Sidwell Mound was opened in the 1960's by local amateurs and found to contain Adena material. This latter site was also noted and photographed by Sturtz. J. F. Everhart (1882), who was one of the first to record a number of mounds in the county, shows none for the Jonathan Creek valley.

Thus, because of the Spillman Mound being just a natural formation, Muskingum County did not gain the distinction of having the second largest Hopewell mound in the state. However, the accounts of this site provide some interesting, however brief, data on early Muskingum County archaeological research.

References

Everhart, J. F.
1882 History of Muskingum County, Ohio.
   A. A. Graham, Columbus.

Guthe, Carl E.

Mills, William C.
1914 Archaeological Atlas of Ohio. The Ohio State Archaeological and Historical Society, Columbus.
Award Winners

January 16, 1977: Howard Johnson's Motor Lodge, Columbus, Ohio
Trophies:
Best of Show, Don Gehlbach, tubular pipe collection
Best Site, Merel Pickenpaugh, Gutridge Cave site, Muskingum Co., Ohio
Best Type, Steve Balazs, axes
Special Awards: Best Personal Surface Find of the Year 1976 (plaques)
Flint Artifact, Richard Simpson, dovetail point
Ceremonial Artifact, Billy Hillen, butterfly bannerstone
Ornamental Artifact, John Adams Jr., Quadriconcave Adena gorget
Utilitarian Artifact, Dick Green, quartz plummet

March 13, 1977: Howard Johnson's Motor Lodge, Columbus, Ohio
Trophies:
Best of Show, Jan Sorgenfrei, general collection
Best Site, Stephen Parker, Parker-Kim site, Fairfield Co., Ohio
Best Type, Ken Black, groundstone artifact collection
Special Awards: Best Personal Surface Find of the Winter of 1977 (rosettes)
Flint Artifact, Bud Galloway, Archaic Kirk point
Ceremonial Artifact, Beth Corwin, pipe
Ornamental Artifact, Robert Myers, pendant
Utilitarian Artifact, Frank Gill, celt
Best Collection (Winter of 1977), Doug Farris
Best Chapter Display, Six River Valley

May 15, 1977: Howard Johnson's Motor Lodge, Columbus, Ohio (Annual Meeting)
Trophies:
Best of Show, John Baldwin, general collection
Best Site, Larry Lowe and John Unrue, Ralph Lee site, Mason Co., W. Va.
Best Type, Ensil Chadwick, hematite plummets
Special Awards: Best Personal Surface Find of the Spring of 1977 (rosettes)
Flint Artifact, William L. Miller, dovetail point
Ceremonial Artifact, Kenneth Downing, spine-back gorget
Ornamental Artifact, Mike Sedler, pipe (drilled for pendant)
Utilitarian Artifact, Robert Converse, full grooved axe
Best Collection (Spring of 1977), Mary and Jim Reed
Best Site Collection (Spring of 1977), Paul Ross, River Terrace site, Franklin Co., Ohio
Best Chapter Display, Sugarcreek Valley Chapter, Hunt site

June 19, 1977: Bloomingdale, Ohio, picnic meeting, Aboriginal Explorer Club, host
Trophies:
Best of Show, Richard Thompson, general collection
Best Site, Richard Gregory, Hawks Nest site
Best Type, Gene Cline, pipe collection

July 17, 1977: Devou Park, Covington, Ky., picnic meeting, Behringer-Crawford Memorial Museum, host
Trophies:
Best of Show, Mike Sedler

Continued on page 39
Prehistoric Pipes, A New Fascination
by D. R. Gehlbach

As the result of the dispersal of several major Ohio Indian Relic collections containing rare and exotic prehistoric smoking pipes, considerable interest has been generated in this unique and highly individualistic art form. Since many of the highly prized examples remain in a handful of private collections and since many of the museum pieces are not readily accessible for study purposes it seems useful to discuss the largely undocumented story of prehistoric pipe technology in Ohio.

Basically, each Ohio pipe form is associated with a specific "culture" or "horizon" and can be generally described as a distinctive type which can be dated within a general time frame. It should be noted that these artifacts although classified as pipes were not necessarily used for smoking purposes. In fact, many examples either do not bear evidence of being "fired" or seem to have been useful in other applications. These may range from a primitive medical instrument such as a type of syringe to a device for inhaling intoxicants.

What makes this category of prehistoric art most desirable from the collector's standpoint is the seemingly endless variety of pipe forms, shapes and unique characteristics. For this reason there is considerable challenge for further study to help identify developmental stages in pipe forms within known archaeological families such as the Adena and Hopewell.

The value of pre-columbian pipes has escalated dramatically in the past ten years as buyers rushed in to absorb the jewels from the well known Copeland, Meuser and Mayne Ohio-based collections. Based on these recent sales this writer would estimate that the finer examples in terms of condition, workmanship and form have at least doubled in retail value during the past five years. As with other scarce and highly attractive forms of prehistoric indian art these relics should continue to improve their position as valued additions to individual collections.

Shown below is a brief listing of diagnostic Ohio pipe forms by horizon and approximate time frame:

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<tr>
<td>(Iroquoian)</td>
<td>Trumpet Shaped Elbow</td>
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Fig. 1 (Gehlbach) Left. Archaic; Center, Glacial Kame; Right, Adena; Above. Hopewell. All Ohio-based pipe forms.

Fig. 2 (Gehlbach) Left, Ft. Ancient; Right, Late Woodland—Cole; Above, Iroquois. All Ohio-based pipe forms.
My interest in the geometrical knowledge of the American Indian began in high school one day, when I read a magazine article on the mysteries of the linear earthworks at Nazca in Peru. In that desert, prehistoric peoples had piled windows of rocks and sand to form bird effigies, parallel lines, rhomboids, and other figures, geometrical and non-geometrical, extending for thousands of feet in all directions. To the author of the article, the mystery was who built these works and why. However, to me the mystery was what mathematical and astronomical knowledge was evident in these constructions. Of these matters the author said nothing.

Years later as an adult I asked leading professional archaeologists, among them Pedro Armillas and Stuart M. Streuver, what was known of the American Indians' geometry. Pedro Armillas' answer was, "No one knows if anyone knows. No one is talking or thinking in these terms." I pointed out that the works at Nazca and other ancient New World and Old World constructions could be analyzed to determine the unit of measure and the specific geometrical knowledge of the builders. Such analysis could be done even in the absence of written records by methods that are standard procedure among civil engineers. The ancient city of Benin and the art work from Camaroons on the Gold Coast of Africa showed geometric knowledge of Black Peoples, the specifics of which could be determined. Streuver indicated that the archaeological community was not aware of these possibilities because archaeology is a very undeveloped science. New World archaeology is probably the least developed branch of this undeveloped science because about one hundred times as much archaeological research is done on the antecedents of Western Civilization as on the prehistory of the American Indian. Therefore, if I were interested in this question, I had best research the answers myself. He pointed out that I need not go to Peru, Mexico, or to the pueblos of the Southwest to research this geometry, I could start right in Ohio. Mostly in southern Ohio, Hopewell people, in the three or four centuries before and after Christ, had built more than one hundred circles, squares, octagons, ellipses, parallel lines, rectangles, etc., many of them a thousand feet or more across. A few earthworks such as at Newark, Ohio had been preserved intact. About fifty of these works had been surveyed in the 1840's by E.G. Squire and Ephriam Davis and the results published by the Smithsonian. Their book, which is a classic among archaeologists, has an introduction by the then president of the United States, James K. Polk. Not much research or even attention had been paid these works since then. In fact, Streuver predicted that I would have considerable difficulty even locating them. Most of them had been plowed over and obliterated in the past one hundred years.

I met other archaeologists, amateur and professional. All were profoundly skeptical and some even derisive in their judgment that there was mathematical knowledge utilized by prehistoric peoples in the layout of these works. The stones and bones of Hopewell people that had been studied indicated that Hopewell were particularly grubby people compared to other American Indian cultures.

And so in December of 1965, I drove to Newark, Ohio, to look at these earthworks. There I found a regular octagon about 1,500 feet across connected to a circle more than 1,000 feet in diameter. A mile or so from these was another larger circle called Mound-builders. If you will imagine the embankment of a narrow-gauge railroad you will have some idea of the appearance of these works. One embankment is three feet, another six feet, and the third eleven feet high. Both embankments are about three feet wide on top with slides sloping outward at about 45°. Each embankment curves to form a large circle. The octagon's sides are each about 625 feet long, very straight, and discontinuous at seven of the eight corners.

I obtained these drawings of the works at Newark city hall. As I drove around town I reflected on the drawings and earthworks. Having practiced civil engineering and land surveying for some years, I realized that it is impossible to lay out such large figures as these unless one has considerable knowledge of geometry and land surveying. But no where is the Red Man represented as
having such knowledge. His image conveyed by all the communications media cannot be reconciled with the careful thinking and layout evident in these works. Secondly, I concluded that these geometrical earthworks are probably the highest achievement of the prehistoric American Indian north of the Rio Grande.

If the facts of the dimensions and configurations of these earthworks were determined and published, those of Indian ancestry would be provided with a prehistoric achievement in which they could take considerable pride. And the public's image of the Red Man would undergo a profound improvement from his present characterization.

At that time I wondered to what extent this race issue, which has been concerned with differences in average intelligence quotients between the races, is actually based on two unspoken, unwritten, never questioned premises: first, that the Red Man or the Black Man could not count his fingers and toes before benevolent conquest by the White Man; second, that these peoples accomplished nothing of any importance compared to the achievements of European civilization. These premises are supported by the American history book which begins in 1492 and also says nothing about Black African civilizations that were raided by the slave traders.

And I realized that anthropological research confirms these premises by default. The stones and bones extracted by the archaeologist are not likely to throw light on the mathematical knowledge of these peoples. Ethnologists, who study living primitive peoples have very rarely said anything about the mathematical knowledge of the people they are studying, confirming the prejudgment that such people can count only one, two, or many.

I concluded that I should research and publish precise data and analysis of these earthworks in order to provide a basis from which to challenge these premises which sum to the statement that all progress came from the White Man. The publication of such an atlas of American Indian Geometry would stimulate interest in tackling the formidable task of researching Black African geometry. And I was certain at that time that these research results would eventually be chapters in the American history book.

I then considered the research task before me. The value of these works as subjects for determining mathematical and astronomical knowledge of their builders is that their linear form and great size make it possible to determine their original alignment and dimension with precision. Earthen pyramids such as those at Cahokia, Illinois, are all so badly eroded that the original forms cannot usually be determined with certainty. Not so with these linear earthworks. On intact works the centerline of the curved or straight embankment is easily determined. Assuming another surveyor would call the centerline several inches different from where I would call it, this would cause a reduction or increase in a 500 or 600 foot radius of only about one part in a thousand. On the badly eroded works an unlikely error as great as 5 feet would still yield data accurate to about one per cent.

The earthworks would be difficult to locate because the maps I had from Squire and Davis' 1852 publication showed cow paths and Indian trails which disappeared long ago. When I had found the specific field in which an earthwork had existed before 1852, it would be unlikely that the earthwork could be traced except in areas that had not been ploughed, such as orchards, woodlots, and fence rows. However I thought that most of these earthworks would show on aerial photographs even when not visible in the field. By surveying fence rows that crisscrossed the earthwork, its image could be scaled precisely off the air photo. The surveys of these works done in the 1840's I was certain contained big errors as do nearly all land surveys from that time, and therefore would have to be verified at various points against my air photo surveys.

For two important reasons at least fifty of these Ohio works would have to be surveyed and mapped. I had for several years attended lectures at the Chicago Academy of Sciences. The director, Dr. Beecher, had on occasion talked about his research on birds. He had said that if you want to speak authoritatively on a subject you must study and analyze more of the relevant facts than any other person. He himself had dissected more than 1,000 species of birds of about 9,000 known species, more than any other researcher.

A second reason why I would have to survey, map, and analyze fifty of these geometrical earthworks was the almost unanimous skepticism of professional and amateur archaeologists that there was mathematical knowledge utilized in these works. If I had mapped only a few or even ten or twenty of these works, my conclusions would be disregarded because I would be charged with
And I felt the full weight of a research task. There are thousands of pseudo-scientific archaeological books that examine a few preselected facts to support the wildest speculations.

These were my thoughts back in December of 1965 as I proceeded from Newark, Ohio, to Columbus and Chillicothe to pick up more data and look at other earthworks. And I felt the full weight of a research task that would be at least 10 years in finishing. In the next few months I collected the maps, the aerial photographs, and surveying and calculating equipment.

The aerial photographs taken by the Department of Agriculture during the 1930's and now in the National Archives are of central importance in mapping these works. The Indians built the earthworks from soil brought in from elsewhere, which soil shows a different shade on the aerial photograph. Since about 1941, farmers in Ohio have replaced their horse drawn plows with machines which plow several furrows at once and plow deeper, churning the soil, obliterating the earthwork in the field and its image on the air photo.

Often times the aerial photographs show works visible in 1852 but not now visible at all. A person on the ground is usually too close to detect the subtle differences in soil color that show on the photograph. In 1887 the Smithsonian Institution sent a party to Ohio to survey as many works as they could trace in the field. The large circle at Harness Works in Ross county they could not trace at all because it had been ploughed down. However, nearly all this circle was visible on air photos taken as late as 1964. On many farms an earthwork is visible on the aerial photograph but the farmer working the land "never knew it was there and never heard that there was an earthwork on the premises," even though "his family has been working this land for more than 100 years."

The Smithsonian 1887 surveys of two octagons, three squares in Ross county, and several circles show the careful regularity of these works. The squares, for example range in dimension from 1,103 feet, 1,108 feet, 1,113 feet, up to 1,140 feet on a side. Destruction of these earthworks continues. Farmers today are moving to more powerful ploughing equipment which requires bigger, more level fields for efficient operation. And so the fence rows that showed these mounds a few years ago are now being obliterated and with them all trace of the earthworks and a loss of any chance to scale off the earthwork image on the air photo with great precision.

Racist interpretations of geometric earthworks continue and are enormously popular. Books and movies interpret such works as the constructions of people from outer space for the never stated reason that the American Indian could not have been intelligent enough to have built them himself.

Twelve years have gone by and I am pleased to report that I have finished surveying and mapping 48 of these earthworks of which 35 are geometrical. Each earthwork is different and each geometrical earthwork can be considered a separate page in the American Indian's book of geometry. From the data, some preliminary conclusions can be drawn. In the 1960's, Rene Millon surveyed Teotihucan, a well-known prehistoric city near Mexico City containing the Pyramid of the Sun and Pyramid of the Moon. He found that this city, having dimensions of about 3 by 5 miles, is laid out on a grid of 57 meters, which equals 187 feet. If you take this grid and place it over any of the Ohio geometric earthworks, it is obvious that key points on the earthwork coincide with the grid, showing that the same unit of measure was used in Ohio as in Teotihucan. Thus some small group of American Indian geometers must have made the trip from Mexico to Ohio as early as 400 B.C.

Undoubtedly the geometrical knowledge utilized in these works was rule of thumb in contrast to that of Euclid and Archimedes who were contemporary with the Hopewell builders and whose work is rigorous and theoretical. Simple right triangles were the basis for the layout of these works. The 3, 4, 5 triangle was their favorite but other right triangles such as base 1, hypotenuse 2, which we would recognize as the draftsman's 30, 60, 90 degree triangle and base 1, altitude 1, which we would recognize as the draftsman's 45, 45, 90 degree triangle also occur.

The evidence is that Hopewell people could determine true north by the North Star and could run straight lines cross-country for distances greater than 2 miles. None of these works seem to be aligned to spring or fall equinox or summer solstice sunrise or sunset. Nor is there evidence that any work is a computer as one researcher has claimed for Stonehenge.

And thus the goal of producing an atlas of American Indian geometry is within sight and with it the demonstration that an atlas of
Black African geometry could be researched and produced also.

Over the years various people in Ohio have made surveys of the geometric earthworks. Perhaps such information is filed away in attics or the dusty recesses of some land surveyors' or civil engineers' office. All such data should be placed in one of the state archives where it can be preserved for posterity. If you have such data or the specific data below, I would appreciate hearing from you to that effect.

1. Survey notebooks and copies of original plats of the following Ohio towns: Chillicothe, Cincinnati, Circleville, Frankfort, Marietta, Newark, Piqua, Portsmouth.
2. Survey notes to the old Ohio canals through these counties: Licking, Miami, Montgomery, Ross, Shelby.
3. Any survey that shows how the Circleville work was situated with respect to platted streets.
4. Newspaper or magazine accounts of any of the earthworks, especially before 1900.
5. The survey notes of Messrs. Newton, Wilson, Henry Reynolds, and M.T. Norman who independently mapped the Newark earthworks, before 1900.
6. The survey notes and map of R.A. Bryan, civil engineer of Portsmouth, Ohio, who made a survey of the earthworks in that vicinity in 1874.
7. The survey notes and maps of Henry Dana Simkins, born after 1883 and who mapped the Newark earthworks prior to 1913.
9. Near the city hall of Enon, Ohio, there is an Indian mound. Air photos taken about 1930 show a formation like a race track centered on the mound. Can any of you old timers tell me if there actually was a race track so situated or am I to assume that this formation was an Indian earthwork?
10. The survey notes and maps of Mr. Shinn of Dayton, who surveyed the ancient work in what is now Calvary Cemetery southwest of Dayton and other works in the 1830's.
11. Survey notebooks and maps of the earthworks produced by any of the following persons who were prominent in Ohio before 1850: Dr. William Blanding, F. Cleveland of Portsmouth, L.K. Dills of Green Co., J. Dille of Newark, J.W. Erwin of Cincinnati, W.B. Fairchild of Xenia, Rev. S. Harris of Marietta, Dr. S.P. Hildreth of Marietta, James Hough of Hamilton, S. Kyle of Greene Co., Dr. John Locke of Cincinnati, General Lytle of Cincinnati, S.T. Oweins of Greene Co., Joseph Sullivan of Columbus, P.N. White of Ross Co., G.B. Hempsted of Portsmouth, Mr. Shiel, engineer at Portsmouth.
12. Survey notes of Ralph Ware and Mack Porter who measured a square and a circular earthwork at Frankfort, Ohio, about 1885.

Fig. 1 (Marshall) City engineer's map showing Newark Octagon and Circle, Newark, Ohio, 1959. Numbers show dimensions in feet to various intersecting lines. These were added by the author.
Am. Sub. H.B. No. 418—A Review
by Dwight Shipley

Amended Substitute House Bill No. 418, dealing in the main with the subject of archaeology and archaeological sites within the state of Ohio, has been effective since August 24, 1976. Its passage by the Ohio General Assembly and subsequent approval by the Governor amended a number of existing sections and enacted several new sections of the Revised Code of Ohio.

Considerable uncertainty seems to prevail as to the major provisions of the bill and, even, its wording. This paper has been prepared at the request of the President of the Archaeological Society of Ohio, and is intended to be a simple exposition of the basic parts of the act. It is not to be considered a critical or analytical review, except to the extent that criticism and explanation is unavoidably necessary to an understanding and explanation of any particular part of the bill.

While not without its own interest, the legislation history of Am. Sub. H.B. No. 418 is not very helpful in understanding the legislative intent. At the time of its original introduction little organized support was evident but during its progress through the legislature it attracted the attention, and the support, of part of the Ohio archaeological community professing professional stature.

During the year and more it was under legislative consideration, the bill was amended and rewritten a number of times, major changes taking place in House committees and subcommittees, as well as in those of the Senate.

The stated purposes to be served by the new legislation include the rather general objective of ensuring that scientific knowledge about both prehistoric and historic North American Indian cultures is made available to the public and is not willfully or unnecessarily destroyed or lost.

The means by which that general objective is to be accomplished include identification of significant archaeological sites, and voluntary imposition of controls over such sites, including restraints upon persons who may be desirous of conducting survey or salvage work thereon.

The Ohio Historical Society is designated as the authority having responsibility for carrying out the provisions of the bill, and is charged with the administration of the entire program throughout the state.

The scheme for preservation set forth in the final version of the bill establishes two procedural plans, either of which may be used by the Society, depending on the circumstances, and the degree to which a private owner of the title to the land on which the site is located is willing to cooperate and to give up part or all of his interest in the title without compensation.

The first, as set forth in Sec. 149.51, establishes a system for registration of significant archaeological landmarks, under written agreement with the owner of the land on which the site is situated.

The second procedure, provided by Sec. 149.52, establishes a method by which archaeological preserves are created by a voluntary dedication of some interest in the title to the land, either by a legal transfer of an interest in the title to the state or to one of its agencies, to be held in trust for the benefit of the general public, or by the device of a self-declaration by the owner that he holds title for the benefit of the general public. The reasons for the lack of preciseness in describing the latter procedure will be made more apparent hereafter.

Under the first plan, the Ohio Historical Society is charged with maintaining a State Registry of Archaeological Landmarks. The prime criteria for consideration for placement on the State Registry is that the site be found by the Society to have archaeological significance.

No standards are established by the statute itself, and it could be argued that all sites have some degree of significance and are therefore eligible to be included on the Registry. Since the legislature used language calling for a finding of archaeological significance, however, it is assumed that some measure of selectivity will take place and not every possible site in the state will be considered eligible for inclusion in the State Registry. Perhaps in time the Society will promulgate objective standards by which possible sites may be judged on the merits of each.

Once having found the site eligible for placement on the State Registry the next step will be that of negotiation with the owner of the title to the land. No payment to the owner is contemplated and if he is not interested the matter is quickly ended at that point.

If the owner can be persuaded to give up an interest in his land and voluntarily agrees to place controls and restrictions upon his title, including, even, the possible uses to which he puts it himself, Sec. 149.51 requires that the title holder and the Ohio Historical Society enter into a written agreement, to be executed and recorded in the same manner as a deed or conveyance of an interest in real property.

The agreement must contain the legal description of the parcel of land upon which the archaeological landmarks are located, a reference to the deed book and page of the deed record by which the owner claims title, and an accurate location of any known Indian mounds, earthworks, or burial or settlement sites on the land.

In addition, the agreement must subject the title to the provisions of Sec. 149.51, and must be filed with the County Recorder of the County in which the land is situated, and be recorded in the deed records. This requirement for filing is necessary in order to impart constructive notice to all persons thereafter dealing with the title in question that there are limitations and restrictions on the use to which the land can be put. Once recorded, future title examiners will be able to pick up the agreement and make due report thereof, for the benefit of purchasers, lenders, and others interested in the title.

Provision is also made for a means by which the agreement may be terminated by any subsequent owner of the land within sixty days after coming into title, either by deed or other transfer of title. Termination by the owner consists of sending notice of termination by certified mail to the Director of the Ohio Historical Society. The owner must also file an affidavit with the County Recorder for recording in the deed records, in accord with the provisions of Sec. 5301.252, which section generally provides for recording of affidavits in aid of title.

When filed and recorded the affidavit is conclusive evidence of the termination of the agreement, and the landowner is free to do with his land what he wishes, his title thereafter being free and clear of any controls or restrictions that may have been imposed upon it by the agreement and the operation of Sec. 149.51.

When placed upon the State Registry the accurate location of each registered archaeological landmark must be indicated, and the Registry must be made available for public inspection.

While it remains on the Registry no person or governmental entity may " . . . dig, excavate, remove, or otherwise destroy any Indian mounds, earthworks, burial or settlement sites, or other recognizable evidence of prehistoric or historic Indian settlement or occupation, or remove skeletal remains or artifacts from within
the earth . . . " without prior notification to the Director of the Society of intent to commence work.

There must also be afforded to the Director's duly authorized representatives access to the site for purposes of assisting in planning and to observe or record the methods of excavation and the finding of artifacts, and other archaeologically significant information or data.

Notwithstanding some degree of ambiguity, this predisturbance notification requirement, and the subsequent procedures involved, appears to mean that if the owner intends to do anything that would have the result of disturbing archaeological sites on his land, such as excavating or digging for building foundations, for example, or plowing or cultivating land for crop or garden purposes, he must comply with the requirements of Sec. 149.51. That would include advance notification to the Director, and a written report of findings after the excavation or other soil disturbance has been concluded.

In addition, Sec. 149.51 forbids the formal process of conducting an archaeological survey or doing salvage work upon lands on the Registry unless and until a permit has been issued by the Director. This prohibition extends to the owner of the land, as well as to others who may desire to do survey or salvage work. Criteria for issuance of permits will be discussed later inasmuch as that subject is pertinent to another category of archaeological sites, as well as to registered landmarks.

No person may sell, or offer for sale, or possess artifacts, or skeletal remains removed from registered archaeological landmarks without privilege to do so, and any one doing so is declared to be in violation of Sec. 149.51 and guilty of desecrating an archaeological landmark which is a misdemeanor of the second degree.

Violations or threats of violations may be enjoined. The owner of the title to the land can be guilty of desecrating an archaeological landmark, as well as others not in title.

It may be of interest to know that the maximum permitted penalty for a misdemeanor of the second degree, provided in Sec. 2929.21, is imprisonment for not more than ninety days, or a fine of not more than $750.00, or both.

The second category of archaeological sites included in H.B. 418 are those that have been "dedicated" as archaeological preserves under the provisions of Sec. 149.52. Under this plan the instrument by which the dedication is to be accomplished is called Articles of Dedication. This term is not a legal word of art and has no certain or accepted legal meaning and consequently has within it the seeds of future difficulty.

While recommendations were made that more precise terminology having an accepted legal meaning be substituted, such as Deed of Dedication, the legislative committees considering the matter retained the language, ostensibly because a statute enacted several years ago dealing with nature preserves had used the same unfortunate terminology. The legislative logic may have been that there is more virtue in consistency than in correct and precise use of language. Perhaps a more plausible explanation lies in the intimation that it was desirable to have a blurring and obscuring of the exact consequences of the document in order to avoid an adverse psychological reaction by the landowner when asked to sign.

Sec. 149.52 authorizes the Director of the Ohio Historical Society to accept "Articles" dedicating as archaeological preserves real property upon which significant archaeological sites are located. An important condition precedent is that funds and services be available for preservation and protection.

As with the category of registered archaeological landmarks, the site is to have archaeological significance, but no standards are established to measure such significance. Sec. 149.52 does, however, define "archaeological site" to mean any mounds, earthworks, burial or settlement sites, or other place where evidence of prehistoric or early historic settlement or occupation lies on or below the surface of the ground.

As with the registration of archaeological landmarks, any areas suitable to be archaeological preserves that are situated upon privately owned property must be acquired by negotiation. If the landowner is not interested in donating his land or an interest therein, there is nothing more the Ohio Historical Society can do under Sec. 149.52 and the matter is ended.

The instrument creating articles of dedication is required to be executed by the owner of the title to the land in the same manner and with the same effect as a deed or conveyance of an interest in real property. The County Recorder of the County in which the land is situated is authorized to accept articles of dedication only in the event that the Director of the Ohio Historical Society has accepted the dedication. While not spelled out in the statute, it would appear probable that such acceptance would be signified by endorsement on the original instrument.

The effect of filing articles of dedication is the establishment of an archaeological preserve when such filing has been made by the owner, or at his direction, or by a governmental agency owning or controlling the land.

The Director may accept a dedication only if restrictions are placed upon the use of the property to provide for its preservation and protection, and for restoration where appropriate, and for archaeological research and study. While not a mandatory condition for acceptance, the statute also provides that whenever possible the dedication shall provide for public access to the site.

Further, there may be included in the dedication provisions for management, custody, and transfer of title to real property or any estate or right therein to the state or to the Ohio Historical Society, and additional and necessary provisions to carry out the terms and provisions of the dedication. Terms under which the owner and the society may agree to rescind the dedication may also be included.

Sec. 149.52 prohibits the taking of a dedicated archaeological preserve for any other use or purpose, except upon a finding by a court of common pleas of an existing imperative and unavoidable public necessity.

All departments and agencies of the state, and other political subdivisions of the state, to include counties, townships, municipal corporations, park districts, conservancy districts, colleges and universities, and school districts may, under the statute, dedicate as archaeological preserves lands "... under their jurisdiction."
The use of the word "jurisdiction" in this context is meaningless unless it is intended to mean ownership of the title to real property or control over it, as is provided in an earlier paragraph of the same section.

Violation of any of the terms or conditions of "articles" of dedication, or selling or offering for sale, or possessing artifacts or skeletal remains removed without privilege to do so, from an accepted and dedicated archaeological preserve, constitutes a misdemeanor of the second degree, with the same penalty as set forth earlier. The owner of the title to the land may be guilty of a violation, as well as others.

While it is not the purpose of this article to dwell upon the legal intricacies of title to real property, it is necessary to point out that the statute is silent as to the interest in the title that is intended to be dedicated, or in what entity title to that interest vests.

Usually, a dedication means a vesting of the title in a legal entity (most generally a public entity) who holds the title in trust for the benefit of the public, in accord with the terms and conditions set forth in the instrument creating the dedication. For
example, title to lands may be conveyed to a municipal corporation for park purposes. The title is said to be held by the municipality in trust for the benefit of the public, to use the land in the manner prescribed.

Under Sec. 149.52 it seems to be contemplated that the owner of the title may execute an instrument in the nature of a self-declaration of trust, under which he holds title in trust for the benefit of the public, thereby establishing an archaeological preserve upon lands to which he still holds legal title. The extent and the exact nature of the interest he is divesting himself of is not clear, nor is it clear the extent to which he may retain control over part, or all, of the lands included within the area where the preserve is to be established.

If a person owns a two hundred acre farm, for example, and there is a significant archaeological site situated upon about three acres in the most remote portion of the farm, would the owner include the entire farm in the dedication, or would it be necessary to have the site surveyed, together with an appropriate easement for ingress and egress over the remainder of the farm holdings of the dedicatee, in order to qualify it for consideration as an archaeological preserve?

Answers to these questions will be essential in determining whether or not the exemption from taxation of dedicated archaeological and historic preserves under Sec. 149.52, as such, is constitutionally valid. The promise of tax exemption reputedly will be one of the means by which landowners will be persuaded to dedicate their lands as archaeological preserves.

It is also contemplates that on occasion the title, or some interest in the title, may be conveyed to the Ohio Historical Society, in which event the title would be held in trust by that entity for the benefit of the public, in accord with the terms and conditions of the conveyance.

If the dedication is accomplished by a conveyance of the fee simple title to the state or to the Ohio Historical Society, the tax exempt status would result without need of the special provision in Sec. 5709.18.

If the owner desires to retain title to the two hundred acre farm, as in the example above, but nevertheless wishes to dedicate it as an archaeological preserve in order to claim tax exempt status for the entire farm, or for even a small portion of the total acreage, taxing officials at all levels are likely to invoke the constitutional rule that all real property must be taxed equally, unless within one of the constitutionally permitted classifications.

In an effort to spur cooperation by various levels of government, Sec. 149.53 provides that all departments, agencies, units, instrumentalities, and political subdivisions of the state shall cooperate with the Ohio Historical Society and the Ohio Historic Site Preservation Advisory Board in the preservation of archaeological and historic sites and in recovery of scientific information from such sites.

Part of that cooperation is to provide, whenever practical, by contract or otherwise, for archaeological and historic survey and salvage work during the planning phases, before any work on a public improvement begins, or at other appropriate times. Contracts may include provisions requiring contractors performing work on public improvements to cooperate with archaeological and historic survey and salvage efforts, and to notify the Society or the Board of archaeological discoveries, with the Director determining disposition of artifacts and skeletal remains discovered on lands other than state lands that is not disclosed. In the absence of legislative expression it is assumed that the agency or political subdivision owning or controlling the lands will exercise control over the disposition of any such archaeological discoveries.

Sec. 149.54 attempts to provide for coordination and control over all archaeological survey and salvage effort within the entire state by providing that the Director of the Ohio Historical Society shall have authority to grant or deny permission to engage in archaeological survey or salvage work on any land that is contained within a dedicated archaeological preserve or any archaeological landmark on the State Registry.

The section also provides that the Director shall have similar authority over any land that is owned, controlled, or administered by the state, or by any political subdivision of the state, even though the land has not been designated as an archaeological landmark, or dedicated as an archaeological preserve.

This latter broad reach for control could be self-defeating, inasmuch as political subdivisions of the state, such as counties, municipal corporations, park districts, and the like, very well may challenge this purported diminution of their basic authority and responsibility to control and administer their own lands.

Also overlooked entirely are any conditions or restrictions that may be imposed upon the title by the original instruments under which various governmental agencies or political subdivisions hold title to lands, or any other legal conditions upon which they are authorized to acquire title to real property.

In any event, assuming the Director has appropriate control over lands upon which a person wishes to engage in survey or salvage work, Sec. 149.54 provides that application shall be made to the Director for permission to engage in archaeological survey or salvage work.

The application shall set forth the location of the site upon which the work is to be conducted, the qualifications of the personnel to be engaged in the work, the methods of survey or salvage proposed to be used in the work, and other information as may be required by the Director by rule.

Under the procedures, and within the rules prescribed by the Administrative Procedures Act of Ohio (Chapter 119, Ohio Revised Code) the Director of the Ohio Historical Society is empowered and directed by Sec. 149.54 to adopt, amend, or rescind, rules prescribing minimum education, training, and experience requirements for personnel in charge of or otherwise engaging in archaeological survey or salvage work, on lands over which he exercises authority, and to prescribe scientific methods for undertaking such activities. Under the statute, the Ohio Archaeological Council and the Archaeological Society of Ohio are to be consulted prior to the adoption by the Director of any rules. The nature and extent of such consultation is not clear, but presumably any recommendations made by those organizations would only be advisory in nature.

Upon application being made to engage in survey or salvage work, the applicant would be required to demonstrate qualifications commensurate with the requirements of the rules. A failure to show qualifications equal to those required by the rules would be one reason for disapproval of the application for a permit.

Establishment of minimum requirements for education, training, and experience for persons in charge of or otherwise engaging in archaeological survey or salvage work would not appear to be an attempt to establish professional standards for archaeologists. Standards for accreditation of professional archaeologists have not yet been promulgated by any authority, so far as is known.

Under Sec. 149.54, as in other sections of the bill, one who violates the requirements for issuance of a permit, or who violates the rules prescribed by the Director for survey or salvage work,
may be found guilty of a misdemeanor of the second degree, with the attendant penalties.

Provisions of the bill that deal with the establishment of a State Registry of Historic Landmarks under Sec. 149.55 largely parallel the provisions for the State Registry of Archaeological Landmarks under Sec. 149.51. Only passing mention is made to that aspect of the total bill, however, inasmuch as this paper is intended to deal only with those parts having to do with archaeology. Suffice it to say that Sec. 149.55 was tacked on to the bill at the last minute as an afterthought.

The costs of administering the various aspects of the total bill will be included as part of the biennial budget submitted by the Ohio Historical Society. But among other miscellaneous provisions of the bill of note is the amendment of Sec. 149.30 to authorize the state controlling board, at the request of the governor, to release additional funds for survey or salvage work.

Funds will be made available for staff personnel, but nowhere in the bill is there anything to indicate that the landowner upon whose land archaeological landmarks are to be recognized, and archaeological preserves are to be established, is to be paid anything for giving up part or all of his ownership in the title to the land.

Landowners are apparently expected, without compensation, to agree to impose limitations upon their title, or to impose restrictions upon their use of their own land, or to execute instruments, by whatever name they may be called, that will have the legal effect of conveying away an interest in their title or even their entire title.

The Ohio Historical Society has long had the authority, under the provisions of Sec. 1743.07, to acquire by purchase or by appropriation, any historic or prehistoric site in the state that it deemed to be of sufficient significance to require preservation. In the event of appropriation under that section, the action is required to be filed in the name of the state, with the attorney general representing the state as plaintiff.

The noteworthy difference between Sec. 1743.07 and the procedures under the newly enacted sections are, of course, that the older statute contemplates payment to the landowner of fair compensation, either by negotiated sale-purchase agreement, or by legal action leading to the appropriation of the land, with payment being made. Am. Sub. H.B. 418 seeks to acquire control over private lands, either by agreement or by deed of conveyance in one form or another, without any payment to the landowner.

In summary, many of the goals and objectives intended to be attained by this new legislation could have been accomplished long since under prior law. Making a comprehensive inventory of known archaeological sites within the various counties has not been dependent upon statutory authorization.

The time to have acquired archaeological sites of any magnitude may already have passed. When land values were ridiculously low major sites in all categories could have been acquired for minimal expenditures of money.

Newly enacted Secs. 149.51 through 149.55 are badly organized and have within them major areas of ambiguity and lack of clarity that are the hallmark of poor legislative drafting. The major conceptual scheme that evolved, however, is rather good, but marred by the means employed to bring it into being.

It is more than a little naive to expect that there will be a major rush of private landowners eager to give to the public part or all of their land. While state owned lands may be able to be controlled most of the land in Ohio is in private ownership and land values have soared spectacularly in the last decade or two.

Only when the state of Ohio decides to make a major financial commitment to the preservation of the remaining significant archaeological sites in the state can the desired results be reasonably expected to be achieved.
Fig. 2 (Marshall) Four geometric earthworks in Ross county, Ohio, surveyed by Squire and Davis in the 1840's.
Notes on Material from the Jack Hooks Collection

by Robert N. Converse,
Plain City, Ohio

Fig. 1 (Converse) Three banded slate pendants, two trapezoidal and one bellshaped, are shown. The first two are from Huron Co. and the third from near Willard, Ohio. These interesting specimens are like other rare pendants with heavy notching at the proximal end. Quite often these are thick in cross-section with large perforations. The notching is usually irregular and deeply cut. The material is green banded slate, red slate, and gray slate.

Fig. 2 (Converse) The knobbed gorget is of gray banded slate and was found in northern Richland Co. These have occasionally been associated with Glacial Kame burials.

Fig. 3 (Converse) Two interesting pieces from near the Licking Co. Muskingum Co. line. The gorget is an expanded center Adena type and was found in a mound when a farmer leveled it for farming operations. The granite celt was found in the mound fill after leveling. These pieces were found near Gratiot, Muskingum Co.
An Early Late Woodland Man
Jonathan Bowen
The Ohio State University
Columbus, Ohio

About 1893 a burial was found by Harvey Bunn while he was plowing the Sandusky Site (33-Se-5) in Pleasant Township, Seneca County, Ohio. It is now displayed in the Jones Museum at Heidelberg College.

The man who left his bones at the Sandusky Site was about 5 feet 3-1/2 inches tall. He lived along the Sandusky River in the period of ca. A.D. 1000-A.D. 1200. He probably trapped small game such as squirrel and mink, and killed larger animals such as deer, elk, and turkey with arrows tipped with antler tines. Mussels furnished about 10% of his meat diet. He also ate some corn.

When this man was about 38-45 years of age he died of a meningioma, a tumor which pressed on his brain. Although his maxilla was not recovered, only the right canine tooth was left in his lower jaw at the time of his death. When he was buried, a pottery vessel was put in his grave just behind his head (Fig. 1).

The reconstruction of the burial was made from data provided by Edith Zink, who saw it unearthed. The data about the man's life was gained through the excavation of the Sandusky Site, which was carried out by the author in 1976 under the guidance of Dr. William S. Dancey and supported by the Ohio Academy of Science.

Acknowledgements
I would like to thank Mr. Donald Wise for allowing me to excavate on his property. I would also like to thank Mrs. Joy Hintz, curator of the Jones Museum, for loaning me the material, and Mr. Dick Townsend of the R. B. Hayes State Memorial for the photographic work.

Bowen, Jonathan
1977 The Excavation of the Sandusky Site. MS on file with the Dept. of Archaeology, The Ohio Historical Society, Columbus.
Glacial Kame Gorgets
by Robert N. Converse, Plain City, Ohio

Besides the classic shell sandal sole gorgets which have been found on a number of occasions with Glacial Kame burials, there are stone gorgets of probable Glacial Kame origin. These are found in the northwestern Ohio Glacial Kame area as stray surface finds and few of them have been documented as having been found in burial association. They share a number of attributes with their shell counterparts and can be roughly divided into three variations.

The first is ovate in outline with no pointed or angular corners. It is pierced with three holes, two in the "toe" end and one near the center in the same manner as shell gorgets. These are also concavo-convex, a design which duplicates the contours of the sandal sole gorgets. They are never shaped like the sole of a shoe but are usually elongated ovals. This type is probably the scarcest of stone Glacial Kame gorgets.

The second variant is somewhat similar to the first except that it is not concavo-convex. It sometimes is drilled with two holes instead of three and is usually fairly thick in cross-section. In few cases are they finished with the skill of the first variant and some are even crude.

The third style is pointed at one end and squared at the other and has the general outline of a gothic window. There are the usual three holes although some are found with only two or even one. On some of the finer specimens the upper surface is gently rounded while the bottom is flat. Others are flat and tabular. Generally this category contains some outstanding specimens of excellent workmanship and symmetry.

Material used in the concavo-convex type is always banded slate and I have never seen one of another material. Variant two may be made of slate, cannel coal, or even sandstone. The Meuser collection had an example of this type made of flint. The third variant is made of slate or cannel coal.

Variants one and two are usually around 5 inches long. The third is the largest and some specimens are 9 inches long.

Fig. 1 (Converse) Obverse and reverse of first variant.
Fig. 2 (Converse) Two examples of first variant.

Fig. 3 (Converse) Two examples of second variant.

Fig. 4 (Converse) Examples of third variant.
Book Reviews


A collection of twelve papers originally presented at the 1972 meeting of the Central States Anthropological Society, this symposium provides an adequate description of the "state of the art" as it existed five years ago.

Unfortunately, comparison with the original papers distributed at the meeting discovers few signs of revision and no traces of editing. Only one contribution, Fitting and Zurel's paper on the Detroit and St. Clair River area displays substantial revision, and more than 40 of its references are omitted from the combined bibliography. Errors of spelling and grammar abound throughout the introduction and first two papers (Sulpitian, anomolies, lacunae, e. f., repertoire, Fuert, terra incognito, Youghegheny, to cite only a few) and occur in other papers as well. Factual errors that have been noted in print years ago go uncorrected.

Format of the publication is attractive, though single-spaced typing would have been more economical, reducing the size of the volume by nearly one-half. Reproduction of illustrations is excellent, but 14 of the 31 photographs of artifacts lack scales and many lack captions. In one instance, all of the artifacts presented in one plate are reproduced in the following plate.

More substantive criticism is the fact that five of the twelve papers have already been published elsewhere or have been supplanted by more detailed published reports. Virtually all of Brose's "Initial Summary" of the Late Prehistoric period in northeastern Ohio is a reiteration, much of it verbatim, of his "Preliminary Analysis of Recent Excavations at the South Park Site, Cuyahoga County, Ohio" (Pennsylvania Archaeologist, Vol. 43, no. 1), published in 1973. Dragoo's paper on prehistoric Iroquoian culture of the Upper Ohio Valley appears verbatim in the "Researches and Transactions of the New York State Archeological Association" volume honoring William A. Ritchie. Stothers' report on the Princess Point complex of southwestern Ontario is contained within and supplanted by his Ph. D. dissertation published in Archaeological Survey of Canada Paper No. 58 (1977). The data and hypotheses put forth by Prahl, Brose, and Stothers for the "Western Basin of Lake Erie" have been presented in more detail in various site reports and articles published in the Toledo Area Aboriginal Research Club Bulletin, notably Stothers' "Radiocarbon Dating the Culture Chronology of the Western Basin" (1973). McKenzie and Blank's summary of the Eiden Site, Lorain Co., Ohio, has been replaced by the complete study published in 1974.

The remaining papers, notably the Canadian contributions, do present information not yet (to the reviewer's knowledge, at least) published. Keenlyside, Fox, Prufer and Shane, Schock, White, and Fitting and Zurel present relatively detailed synopses of their work in, respectively, the north-central Lake Erie shore, the Point Pelee area, the southern and western Lake Erie shore, the western New York region, and the Detroit-St. Clair river area.

It is convenient to have all of these papers gathered together in one volume, but the collection is much less useful now than it was five years ago, the subtitle "A 1972 Symposium Revised" is certainly a misnomer, and editorial negligence greatly reduces the value of the extensive but incomplete bibliography.

INFORMATION WANTED

Your Editor is attempting to secure information about the Glacial Kame culture. In particular I would like to know of burials found in glacial deposits either by our members or anyone else. I would also like to know of any discoveries of shell gorgets or ornaments, birdstones, or three hole slate gorgets, either from burials or from the surface. In short, any sort of information which might possibly relate to Glacial Kame or gravel burials, particularly in western and northern Ohio. Please write or contact Robert N. Converse, 199 Converse Drive, Plain City, Ohio 43064.

This massive compilation lists 3138 books and articles dealing with Ohio archaeology that are not included in Morgan and Rodabaugh's 1947 Bibliography of Ohio Archaeology. Nearly all of the entries include detailed annotations of the contents, and the work is thoroughly indexed by site, county provenience, artifact type, and other subject headings. It is the most thorough and complete bibliography on the archeology of a single state ever compiled and is far more complete for Ohio than the recently issued Eastern States Archeological Federation's Archaeological Bibliography for Eastern North America, which contains less than 500 of the Ohio entries.

Murphy's bibliography serves as a complete index to the Ohio Archaeologist, since every article and photograph appearing in the Ohio Archaeologist through 1974 is included.

Unfortunately, the volume's high price will make it unobtainable to all but the professional archeologist, libraries, and the serious amateur archeologist. (The paper-covered book has been printed as economically as possible, and the author has even underwritten part of the cost of publication himself.)

The thorough index makes this bibliography particularly useful in tracing the distribution of various artifact types. There are, for example, 270 index entries for "Birdstones," each annotated for county provenience. Book reviews and newspaper articles are not included. Numerous items missed or excluded by Morgan and Rodabaugh are included, and the two volumes together provide the most complete finding aid in existence for the archeology of a given geographic area. The book is highly recommended. If you cannot afford it, urge your public library or local archeological chapter to buy a copy.

Jeff Carskadden

Editor's Note:
A genuine vote of thanks to Jim Murphy must be added to the above review. Until the reader opens this book he will not realize the tremendous amount of work which went into its publication. My copy is already one of the most used books in my library. On behalf of the Archaeological Society of Ohio, congratulations for a job well done.

Robert N. Converse
Editor

AWARDS Continued from page 27

Best Site, Allen Sanders
Best Type, Charles Trader

August 14, 1977: High Banks Park, Columbus, Ohio, picnic meeting, Six Rivers Chapter, host
Trophies:
Best of Show, Jack John, general collection
Best Site, Mr. and Mrs. George Morelock, D.G. Scott farm site, Union Co., Ohio
Best Type, Don Gehlbach, pipe collection

Rosettes:
Most Educational, Charles Stout, sand box display
Best Collection (Summer of 1977), Okla Marquita R. Staab
Best Documented Site, W.A. Riese, M51 site, Muskingum Co., Ohio
Best Documented Site, Joy Jones, Snider site

September 18, 1977: Schoenbrum State Memorial, New Philadelphia, Ohio, picnic meeting, Sugarcreek Chapter, host
Trophies:
Best of Show, Dr. John and Buddy Haney, general collection
Best Site, Thomas Kuhn, Weed rockshelter, W. Va.
Best Type, Mr. and Mrs. William Reise, Flint Ridge cores

Correct site number for the Burdge Site has been changed to 33-Wa-184.
The Archaeological Society of Ohio is organized to discover and conserve archaeological sites and material within the State of Ohio, to seek and promote a better understanding among students and collectors of archaeological material, professional and non-professional, including individuals, museums and institutions of learning, and to disseminate knowledge on the subject of archaeology. Membership in this society shall be open to any person of good character interested in archaeology or the collecting of American Indian artifacts upon acceptance of written application and payment of dues.