THE OHIO ARCHAEOLOGICAL COUNCIL

NEWSLETTER

Vol. 10 No. 1
May 1998

Editor's Corner

This issue of the OAC Newsletter begins my tenure as your new editor, I trust that it will be a long and happy one. My goal is to provide the membership with a biannual publication containing news and information that are available in few other places. That is, I intend to feature news items and announcements that are of direct relevance to most members whether they hail from the academic, museum, C.R.M., or avocational spheres of our discipline. Among the most essential of these will be reports from OAC officers, trustees, committee heads, and individual members that will help to keep the rest of us updated on Council affairs between the spring and fall meetings. This news-heavy focus will be counterbalanced by short reports of recent research projects by members working in the Ohio region. I am particularly interested in featuring reports on the kinds of C.R.M. projects that rarely make it out of the 'grey literature,' but are, nonetheless, of great potential value to many archaeologists working in the region.

Of course, all these wonderful ideas will never see the 'light' of newsprint if regular submissions from the membership are not forthcoming. I will, therefore, continue the hallowed practice of past newsletter editors--everywhere--and beg for your contributions...consider yourself begged.

Please send your news items, announcements, short articles, etc. directly to me at the address listed on the last page of this newsletter. I am willing to do a little typing, but if you want to contribute anything over 200 words in length, please submit it on disk in ASCII text, Word or Wordperfect formats (version 6.1 or lower). You may also E-mail attached files (in the desired formats) to me at bredmond@cmnh.org. Graphics will be accepted (but just a few) as separate files in .dxf, .bmp, .eps, .tif, .wpg, and .wmf forms among others or send camera-ready copies of line drawings or grey-scale illustrations. Comments and questions--in any format--are always welcome.

Brian Redmond

PRESIDENT'S MESSAGE

Martha Otto

First of all, I want to welcome Brian Redmond as the new editor of the OAC's Newsletter. As we all know, this publication is a vital means of communicating a wide range of information--OAC business, summaries of field/research projects, news on the state, regional, and national levels relating to archaeology--to our members. It is also a major recruiting tool for new members. Consequently, it is important that we all contribute articles and information to Brian for future issues.

Indeed, the energetic participation of all OAC members in the Council's activities is essential to this organization's effectiveness. Participation means recruiting new members. I would like to see an increase in our membership not only from the museum and academic communities, but also from CRM firms, governmental agencies, and avocational archaeologists. Participation also means being willing to work on committees and to serve as officers. This fall we will be electing a new trustee and committee members. You can nominate candidates or volunteer to run for a position at the May membership meeting. These thoughts are certainly

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not original with me--they have been expressed many times by my predecessors. However, if the Ohio Archaeological Council is to have an impact on the future of archaeology in Ohio as we move into the next century/millennium, then we need the efforts of all our members.

Speaking of the May membership meeting (circle May 15 on your calendar), please bring along examples of any educational materials, booklets, or publications directed to public audiences that you have developed. We will display these items in the Archaeology Classroom prior to and during the meeting.

The report from the OAC's Legislative Affairs Committee appears elsewhere in this newsletter. I am particularly interested in H.B. 2893, a bill to amend NAGPRA to allow for "appropriate study" of "remains for which a cultural affiliation is not readily ascertainable." The impetus for this bill comes clearly from the controversy stemming from the discovery of "Kennewick Man" in Washington. The SAA's web site (www.saa.org then click on Government Affairs) includes the text of the amendment, some questions and answers regarding the impact of the amendment, and SAA comment on the bill. It is interesting reading.

I am looking forward to seeing you at the May meeting.

Ohio Archaeological Council Receives Ohio Historic Preservation Office Award

Al Tonetti
Education Coordinator, ASC Group, Inc.

On September 27, 1997, the Ohio Historic Preservation Office (OHPO) awarded the Ohio Archaeological Council (OAC) its Preservation Merit award for its service to the preservation of Ohio's archaeological resources since 1975. Each year the OHPO recognizes achievements in historic preservation by presenting awards in the categories of Public Education and Awareness, and Preservation Merit.

On behalf of the OAC and then President Robert Genheimer, who was basking in the sun on a well-deserved vacation in the climes of the Florida panhandle, then President-Elect and current President Martha Otto graciously accepted the award, noting that the achievements of the OAC are due to the dedication and support of the OAC's members, past and present. Founded in 1975, the OAC is a private, nonprofit corporation registered with the State of Ohio as a charitable scientific, and educational organization promoting the advancement of archaeology in Ohio. The award recognized the OAC's leadership, support, and service to the cause of preserving Ohio's rich archaeological heritage. The nomination was written and submitted by OAC member Al Tonetti and outlines over 20 years of significant achievements by the OAC. For a copy of the nomination, contact the OAC Secretary, Eric Fettman.

Request for Information on Archaeology Education Programs and Activities

Al Tonetti
Education Coordinator, ASC Group, Inc.
Ohio Archaeology Education Network Coordinator,
Public Education Committee, Society for American Archaeology

As many of you know, since January of 1997 I have been working at ASC Group, Inc., coordinating the company's broadly defined internal and external education activities, among other things. However, some of you may not know that I am Ohio's Archaeology Education Network Coordinator for the SAA's Public Education Committee, a responsibility that I was asked to take on a number of years ago when I was working at the Ohio Historic Preservation Office. As Ohio's Network Coordinator, one of my responsibilities is to respond to inquiries received by the SAA from Ohioans about archaeology and archaeology education programs, activities, opportunities, etc.

In order to better respond to such inquiries, I am requesting that you, my colleagues, respond to this request for information concerning the nature of archaeology education programs that you or your institution conduct, if any, and any other information that I might find useful in responding to such inquiries, e.g., copies of handouts, activity instructions, etc. I know that all of you are very busy and that it may not be easy to respond to this request immediately. That is understandable. I would like to receive your information by the Spring OAC membership meeting, May 15. In advance of hearing from you, I want to thank you for your cooperation.

I can be reached at ASC Group, Inc., 4620 Indianola Avenue, Columbus, OH 43202, telephone (614) 268-2514, FAX (614) 268-7881, or by email at atonetti.@aol.com.

OAC Legislative Issues Committee Report

Submitted by Shaune Skinner, Chair.
Prepared by committee member Al Tonetti.

(Other members of this *ad hoc* committee: Kolleen Butterworth, Martha Otto, Kevin Pape, Jeff Reichwein (Board liaison), and Franco Ruffini.)

This report covers legislative activities and issues since the report submitted at the fall membership meeting, November 21, 1997. For copies of bills or for other information concerning any of the items discussed in this report, please contact Al Tonetti at (614) 268-2514, Fax (614) 268-7881, or email atonetti@aol.com.

Federal Legislation

[Note: Al Tonetti is now Ohio's representative to the SAA's Government Affairs Committee. Information about legislative matters concerning archaeology can be found on the government affairs page of the SAA's web site at http://www.saa.org]

You can reach any member of Congress by calling the Capitol at (202) 224-3121 or 1-800-962-3524, or writing to a Representative at the House of Representatives, Washington, DC 20515 or to a Senator at the U.S. Senate, Washington, DC 20510.

A website now exists for members of Congress. The address is www.house.gov.80/MemberWWW.html. Click on the name of the Congressperson and you will access their website.

News about recent decisions and other activities of the Advisory Council on Historic Preservation (ACHP) can be found at their website, www.achp.gov/news.html.

H. R. 1522, Amendments to the National Historic Preservation Act (NHPA)

H.R. 1522 would reauthorize revenue deposits of royalties from offshore oil leases into the Historic Preservation Fund (HPF) through 2002, and amend certain sections of the NHPA. The HPF provides funding for many national and state historic preservation programs, and is critical to maintaining and expanding the capabilities of the Ohio Historic Preservation Office, which represents the interests of the State of Ohio and its citizens. It is important that you contact your federal legislators supporting these programs. This bill has been revised since it was introduced last year, and a substitute bill may be introduced in March into the House Resources Subcommittee. There is no Senate version of this bill.

Although the President's FY 1999 budget request includes a 38% increase for the HPF, from $37 million in FY 1998 to $51 million in FY 1999, the increase in funds would go primarily to Historic Black Colleges and Universities, a 175% increase, a 150% increase for grants to Indian tribes and, for the first time, $2.7 million for the National Historic Landmark Program. Grant funds to state historic preservation offices would remain at the FY 1998 level, $29.39 million.

Revisions to the Section 106 Regulations

On February 11, the ACHP and the Office of Management and Budget (OMB) held the last of their meetings discussing concerns of federal agencies and tribal governments. The Environmental Protection Agency has expressed a desire to exempt some state and local permit programs from the Section 106 process, which is allowed. If approved, however, it may open the door to other agencies doing the same.

Some federal agencies have also expressed concerns about integrating environmental reviews required by the NHPA and the National Environmental Policy Act (NEPA). The major concern is that consideration of historic properties often comes too late in the NEPA process. Also, OMB has received many communications from Indian tribes concerning their desire to require tribal concurrence on Section 106 undertakings both on and off tribal lands, and requiring tribes to be signatories on Memoranda of Agreement.

Native American Graves Protection and Repatriation Act (NAGPRA)/Review Committee

As previously reported, H.R. 2893 was introduced late last year to amend NAGPRA. This bill would provide for increased opportunity for the scientific study of human remains and cultural items, would clarify language concerning the treatment of inadvertent discoveries of human remains and objects, and would remove a provision for the

return of cultural items to tribes lacking cultural affiliation, based only on recent land use. You are urged to read the bill and express your opinion to your federal legislators.

The NAGPRA Review Committee met in late January and heard from representatives of 20 federal agencies about their concerns in complying with NAGPRA, including the lack of cooperation some agencies are experiencing from tribes. The National Park Service's contact for the NAGPRA Review Committee is Dr. Tim McKeown. He can be reached at (202)343-1142.

Intermodal Surface Transportation Efficiency Act (ISTEA)

The Senate passed a six-year renewal of the nation's surface transportation program known as ISTEA. The House is not likely to consider any action on what is called BESTEA, H.R. 2400, until the summer. Both the House and Senate will consider amendments that could kill or make optional all or a portion of the enhancement program of the nation's transportation program. Enhancements include transportation-related historic preservation activities.

H.R. 1534 (Takings Bill)

The Senate Judiciary Committee is scheduled to take up H.R. 1534, the House passed takings bill, in late February. The focus of the bill is to allow direct court access to federal courts in private property takings cases or claims that a state or local government action reduced the value of private property. If enacted, the legislation could overturn state and local statutes related to historic preservation and zoning. You are urged to educate yourself about the takings issue and this bill. This matter is of critical importance to environmental matters, including those involving historic preservation and archaeology.

State Legislation

For information on just about any matter before the Ohio General Assembly or to contact your local legislators call the Legislative Information Office at 1-800-282-0253.

House Bill 429/Senate Bill 136 (revisions to vandalism and desecration statutes)

Substitute House Bill 429 has been unanimously approved by the House Local Government and Townships Committee and by the Ohio House of Representatives. It has been forwarded to the Senate and assigned to the Senate Judiciary Committee. The bill defines the term cemetery for the purposes of the vandalism and desecration statutes, and makes both statutes expressly applicable to cemeteries. The OAC does not object to the substitute bill, and we notified the House committee of this position before their vote. For further information about this bill please consult the November 21 report to the membership.

Proposed revisions to the Ohio Department of Natural Resources' (ODNR's) industrial minerals mining permit process

The bill drafted by Rep. Rose Vesper (R-New Richmond) is likely to be introduced into the Ohio General Assembly this Spring. Revisions to ODNR's industrial minerals mining permit process are badly needed to better protect prime farmland and for other reasons, including significant archaeological sites. Unfortunately, this bill does not address archaeological sites and other historic properties (see November 21 report to the membership). Many significant archaeological sites and other historic properties have been destroyed by industrial minerals mining. [In 1995, OHPO presented oral and written testimony to ODNR concerning the destruction of significant archaeological sites and historic properties caused by industrial minerals mining. To obtain a copy of the written testimony contact Al Tonetti]. This destruction will continue unless this bill includes measures to protect significant cultural resources in areas proposed to be mined for industrial minerals (other than coal, which are covered under federal regulations). You are urged to obtain a copy of this bill and contact your state legislators about providing protection for cultural resources in this bill.

House Bill 645, Farmland Preservation

This bill is the result of the Governor's Farmland Preservation Task Force, and emphasizes local planning and voluntary measures to balance development with the preservation of farmland. Key provisions to this bill include providing tax incentives for the redevelopment of inner cities, the creation of agricultural conservation easements, the creation of Agricultural Security Areas and low-cost loans for farms in such areas, requiring state agencies to preserve farmland whenever possible, making changes in county and township zoning laws and the platting law, and providing for countywide land use plans.

This bill was introduced in January 1998 and assigned to the House Local Government and Townships Committee. Following its introduction, Governor Voinovich issued an Executive Order directing state agencies to examine how

their policies, plans, and land acquisitions affect the preservation of farmland. Agencies are to report their findings to Lt. Gov. Nancy Hollister by June 30.

The bill's chief sponsors were Representatives Krebs (R-Camden) and Logan (D-Lisbon), with cosponsors Harris (R-Ashland), Padgett (R-Coshocton), Miller (D-Cleveland), Ogg (D-Sciotoville), Hodges (R-Wauseon), Wachtmann (R-Napoleon), Garcia (R-Toledo), Jones (D-Cleveland), Brading (R-Wapakoneta), Vesper (R-New Richmond), Bateman (R-Milford), Cates (R-West Chester), Johnson (R-New Concord), Mottley (R-West Carrolton), Opfer (D-Oak Harbor), Boyd (D-Cleveland Heights), Bender (D-Elyria), Terwilleger (R-Maineville), Prentiss (D-Cleveland), Brady (D-Cleveland), and Tavares (D-Columbus).

At this time it is not clear how this bill would affect the preservation of archaeological sites or the conduct of cultural resources management, but the Legislative Issues Committee is researching the matter. Similar types of bills and programs in other states have led to measures protecting significant (National Register eligible) archaeological sites.

ASC Group, Inc. Initiates Public Outreach Program

Eric Fettman
ASC Group, Inc.

In Spring of this year, ASC plans on performing a data recovery on a Woodland site in Delaware County. What will make this project different is that it will be open to the public in various ways. The site, 33Dl27, is a Late Woodland (ca. 1500 B.P.) habitation site with Early and Late Archaic components represented by diagnostic projectile points. It is located along Alum Creek, a tributary of the Scioto River, in Westerville, a rapidly growing area north of Columbus. ASC Group will be conducting a data recovery project on a portion of the site that is threatened by road and bridge construction, and local students will assist in various aspects of the excavation. Tours will be given to students as well as to the public throughout the course of the project. It is ASC Group's hope that not only will the site provide increased archaeological knowledge, but also increase public awareness of archaeology in Ohio.

Over the winter, ASC Group, Inc. has been working on phase II assessment projects throughout Ohio. Site assessments have been performed in Crawford, Fairfield, Ross, and Lawrence counties. Recently a large amount of grit-tempered ceramics were recovered from a feature on a site in Lawrence County. Other sites assessed during this project have produced pitted stones, large amounts of lithic material, and a ceramic pipe.

Ohio's Biennial Historic Preservation Conference June 3-5, 1998 in Toledo

Ohio's biennial conference on historic preservation, *Building Successful Communities: Preservation Strategies*, will be held in Toledo, June 3-5, 1998. Presentation topics will include historic preservation and neighborhood conservation, downtown revitalization, reinvesting in older buildings, preservation of African American heritage, small town issues, rural preservation, planning for natural disasters, and nonprofit management.

One-day workshops on the National Register of Historic Places and the Rehabilitation Investment Tax Credit for income-producing properties listed on the National Register will be held on June 3rd. Special events include a reception at the Toledo Museum of Art and two homes in the Old West End Historic District, and a social hour at downtown landmarks followed by dinner at the Toledo Zoo.

Register by May 7th and get an earlybird discount. For details, call 1-800-854-2371, visit the website at www.ohiohistory.org/resource/histpres, or write Building Successful Communities, Ohio Historic Preservation Office, 567 E. Hudson St., Columbus, OH 43211-1030.

Indiana Call For Papers

The Indiana Division of Historic Preservation and Archaeology (DHPA) requests submissions for Volume 1, Number 2 of *Indiana Archaeology*. This new journal, which is published by the DHPA with funding from the National Park Service, is a collection of scholarly, synthetic, and educational articles related to Midwestern archaeology in general and Indiana in particular. The editors are especially interested in articles dealing with methodology, theory, analysis, and interpretation relevant to the practice of archaeology in Indiana. Submissions from professionals in archaeology and related disciplines as well as from knowledgeable avocationals are welcome. Professional

archaeologists are invited to participate in peer review of submitted articles related to their areas of expertise. The deadline for submissions to the current issue is August 15, 1998 with publication scheduled for November 1998. For more information contact: Dr. James R. Jones III, State Archaeologist, Division of Historic Preservation and Archaeology, 402 W. Washington St., Room W274, Indianapolis, Indiana 46204.

Excavations at Sheriden Cave

Kenneth Tankersley
Kent State University

Sheriden (33Wy252) is a deeply buried and stratified cave site located in northwestern Wyandot County, Ohio. It is part of a cave system that includes Hendricks Cave (33Wy1) and Indian Trail Caverns. The cave entrance is situated near the crest of a low ridge (20 m) of upthrown, Silurian dolomite. The ridge is predominately a resistant fossil reef, repeatedly scoured by Pleistocene glaciation, and covered by a thin veneer of diamicton. While sinkholes and caves are abundant in the area, most are choked with Pleistocene and Holocene sediment.

The cave occurs in a porous, stromatolitic, Silurian dolomite. The surface of the bedrock has a granular appearance and a saccharoidal texture. Massive, cabbage-head shaped stromatolites are exposed along the walls and ceilings of the cave. These structures contain abundant voids that promote the movement of solvent ground waters. Undoubtedly, the cave formed during the late Pleistocene as underground waters widened voids in the dolomite through dissolution.

Between 21,000 to 14,800 b.p., the region was overlain by glacial ice. Shortly after glacial retreat (ca. 14,100 to 12,500 b.p.), meltwater inundated the area immediately north of the site (Lake Maumee) to an elevation of approximately 311 meters above mean sea level. At this time, the surface was within 20 meters of the ground water. Active water circulation at such a shallow depth would have hastened cave development and the caving-in of passage roofs. Thus, most of the development of the cave and its entrance can be ascribed to collapse.

Historically, the cave entrance appeared as an extensive, shallow, circular depression 11 m south of the commercial entrance to Indian Trail Caverns. Vegetation in the depression remained green despite summer heat and periods of drought, a trait common to sediment-choked cave entrances in the area. The late Richard Hendricks, the cave owner, saw this phenomenon year after year. He was also aware that a side passage in Indian Trail Caverns came very close to the depression. Hendricks believed that the commercialized portion of the cave system could be expanded by removing sediments from the sink.

In July 1990, Richard Hendricks employed a crane operator to excavate the unconsolidated deposits of the sink. Like nearby Hendricks Cave, the crane encountered fine-grained sediments rather than glacial drift. Excavations proceeded to a depth of more than 10 m and exposed a 4 m by 10 m, partially sediment-filled, cave passage on the west side of the sinkhole. A bulldozer was lowered into the sink to further open the passage. Unlike the bright yellow-colored silt of the sink, the bulldozer came upon layers of greasy, dark-gray, organic-rich deposits in the cave. Concentrations of charcoal and bone were visible in the backdirt and along the cave walls.

A local caver began exploring the newly opened cave passage. Much to his surprise, he found a large (82 x 51 mm), flaked-stone side-scraper/compass graver in the organic, bone-bearing deposit. The artifact is manufactured from a large bifacial-thinning flake of Wyandotte chert. The source area of this toolstone is located more than 400 km southwest of Sheriden Cave. Richard Hendricks brought this serendipitous discovery to the attention of Jonathan E. Bowen of the Ohio Historical Society. After examining the artifact and its findspot, Bowen notified H. Gregory McDonald, then Curator of Vertebrate Paleontology of the Cincinnati Museum of Natural History.

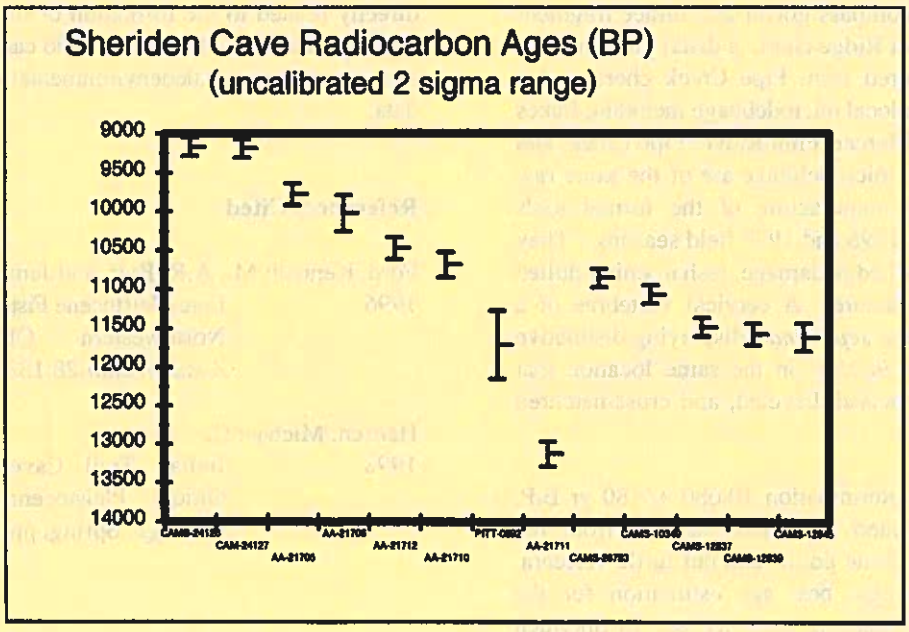
McDonald visited the cave, examined the exposed fossils, and recognized its potential to greatly expand the Pleistocene bestiary of Ohio (Hansen 1992). He established a permanent datum in the cave and initiated a paleontological excavation. With the assistance of volunteers, McDonald began to systematically remove the fossiliferous deposit. All of the sediment was water-screened through a fine mesh. Over the next two years, McDonald recovered the remains of more than 60 species of large and small vertebrates including the extinct or extralimital stagmoose (*Cervalces scotti*), caribou (*Rangifer tarandus*), flat-headed peccary (*Platygonus compressus*), giant beaver (*Castoroides ohioensis*), short-faced bear (*Arctodus simus*), masked shrew (*Sorex cinereus*), pigmy shrew (*Sorex hoyi*), yellow-cheeked vole (*Microtis xanthognathus*), northern bog lemming (*Synaptomys borealis*), redback vole (*Clethrionomys graperi*), heather vole (*Phenacomys intermedius*), porcupine (*Erethizon dorsatum*), ermine (*Mustela erminea*), pine martin (*Martes*

americana), and fisher (*Martes pennanti*) (Ford et al. 1996; McDonald 1992, 1994).

The faunal assemblage is suggestive of a late Pleistocene mosaic habitat consisting of a shallow, marshy pond grading into a open woodland with a grassy ecotonal area (Holman 1997). Interestingly, of the late Pleistocene vertebrate species recovered from Sheriden Cave, only the large mammals are extinct or extirpated from the area. In fact, all of the 18 herpetological species represent extant forms that may be found living in the southern part of the Great Lakes basin today (Holman 1997). McDonald's paleontological excavations at Sheriden Cave ceased in September 1992. However, they resumed the following summer and continued over the next three years under the direction of Kenneth Ford, then a graduate student in geology at Michigan State University. On 16 July 1995, Ford uncovered a carved, incised, and beveled split-bone object (14 x 135 mm) in the fossiliferous Pleistocene deposits. This artifact is comparable to osseous objects recovered from North American Nenana sites in Alaska and Clovis sites in Washington, Wyoming, Arizona, New Mexico, and Florida. Recent x-rays of the split-bone point at the Cleveland Museum of Natural History demonstrate that it is composed of a large section of cortical bone. If it was manufactured from a tibia (a bone that contains the longest, thickest section of cortical bone), then it has to be from a bison or larger animal. If it was manufactured from a rib, then it could only have come from a proboscidean such as a mammoth or mastodon.

Until the discovery of the osseous object, it was assumed that Sheriden Cave was not an archaeological site despite the fact cut and burned bone and chert debitage had been recovered from the water-screened sediment. Although most of the flaked-stone artifacts recovered from the excavations had been thrown away, five specimens were saved. They include a flake fragment and single piece of shatter manufactured from Wyandotte chert, a broken bifacial preform fabricated from Upper Mercer chert, and three bifacial thinning flakes (one with retouched edge) made from Delaware chert. While Delaware is a local chert, Upper Mercer outcrops more than 140 km east of the cave. Paleontological excavations ended in April 1996.

Two months after the termination of the paleontological excavations, the author initiated a geoarchaeological investigation of the cave. The remaining deposits were found intact, well-preserved, and datable. However, they were also threatened by a number of natural and human forces. During the winter months, ice stalactites, stalagmites, and flows form over the unconsolidated deposits. Thus, cryoturbation and erosion is mechanically disintegrating the surface of the exposed profiles. During the warmer summer months, the cave sediments dry out. As they dry, cave beetles and fungi feed on the organic material. These biological processes will eventually destroy all stratigraphic contexts in the cave. Additionally, the ceiling of the cave is unstable and subject to periodic roof-fall. The contexts of the deposits are vulnerable. With the assistance of volunteers from Kent State University, the Cleveland Museum of Natural History, and the Archaeological Society of Ohio, a geoarchaeological survey of the unconsolidated deposits began within the cave. The cave was first cleaned of garbage and debris that had accumulated during the past six years. A transit and tape were used to place a 1-by-1-m grid across the cave floor. The grid was oriented to the cardinal directions and tied to the permanent datum used in the paleontological excavations. A transit and stadia rod were used to map the dimensions of the cave and record the provenience of all visible artifacts, ecofacts, and previous disturbances exposed in the 1-by-1-m units.



With funding from the National Science Foundation, a second season of geoarchaeological field work was conducted at Sheriden Cave by Kent State University and the Cleveland Museum of Natural History. In 1997, an interdisciplinary team exposed and systematically mapped a two-meter standing profile in Sheriden

Cave in order to sample, assess, and radiocarbon date the stratigraphy and material remains laid open in the profile. Brian Redmond and Barbara Barrish (Cleveland Museum of Natural History) excavated trenches to a depth of more than two meters in the area around the cave entrance to permit stratigraphic correlations, identification of facies relationships, and help determine the timing and duration of episodes of deposition, erosion, and stability inside the cave.

The unconsolidated late-Pleistocene cave sediments resulted from sequences of ponding, drainage, drying, freeze-thaw, ceiling and wall collapse, slope wash, and flooding. In contrast, the early-Holocene sediments are exclusively the result of ponding.

A total of 13 radiocarbon samples have been run to date (Figure 1). Four uncorrected radiocarbon dates have been obtained on wood charcoal from the early- Holocene cave ponded sediments: 9,170 +/- 60 yr B.P. (CAMS-24126), 9,190 +/- 60 yr B.P. (CAMS-24127), 9, 775 +/- 70 yr B.P. (AA-21705), and 10,020 +/- 115 yr B.P. (AA-21706). Nine uncorrected radiocarbon dates have been obtained from the late-Pleistocene strata: 10,470 +/- 70 yr B.P. (AA- 21712), 10,680 +/- 80 yr B.P. (AA-21710), 11,710 +/- 220 yr B.P. (PITT- 0892), and 13,120 +/- 80 yr B.P. (AA-21711) on wood charcoal; and 10,850 +/- 60 yr B.P. (CAMS-26783), 11,060 +/- 60 yr B.P. (CAMS-10349), 11,480 +/- 60 yr B.P. (CAMS-12837), 11,570 +/- 70 yr B.P. (CAMS-12839), and 11,610 +/- 90 yr B.P. (CAMS-12845) on selected amino acids extracted from bone collagen.

All of the excavated cave sediments were subjected to flotation. This procedure resulted in the recovery of burned and calcined bone, a compass graver and biface fragment manufactured from Flint Ridge chert, a distal portion of an end scraper manufactured from Pipe Creek chert, and a mixture of local and nonlocal microdebitage including flakes of Wyandotte, Upper Mercer, Flint Ridge, Pipe Creek, and Delaware cherts. The microdebitage are of the same raw materials used in the manufacture of the formal tools documented during the 1996 and 1997 field seasons. They were produced from tool edge damage, resharpening dulled edges, and tool manufacture. A cervical vertebrae of a snapping turtle (*Chelydra sepentina*) displaying distinctive cutmarks was exposed *in situ* in the same location that produced the carved, incised, beveled, and cross-hatchred bone point.

The radiocarbon age determination 10,680 +/- 80 yr B.P. (AA-21710) was obtained on wood charcoal from the stratum containing the bone point and cut turtle vertebra. Presently, it is the single best age estimation for the late-Pleistocene culture-bearing cave deposits in Sheriden Cave. Radiocarbon samples from the underlying stratum suggest that it is also possible that the Paleoindian component dates as early as 10,900 and as late as 10,400 uncorrected radiocarbon years B.P. Future geochronological data will be obtained through a detailed analysis of the sediments, additional radiocarbon dating of species-identified wood charcoal, and fluoride dating of bone and teeth by ion selective electrode.

Excavations in the cave also revealed a number of natural pedoturbation processes including aquaturbation (innundation and drainage), cryoturbation (freezing and thawing), faunalturbation (burrowing rodents, carnivores, and owls), floralturbation (fungal growth), and graviturbation (breakdown of the cave ceiling and walls). The destruction and removal of sediments in 1990 prevented investigations of residential space use or general location of activity areas in and around the cave. Sheriden and its artifact assemblage is, however, geologically similar to sinkhole and cave sites that have been investigated in northern Florida. It is quite likely that Paleoindian activity and land use options in the karstic regions of the Great Lakes were comparable to those in northern Florida during the late-Pleistocene.

The late Pleistocene faunal assemblages from the culture bearing and non-culture bearing strata were compared. Statistically, there are no significant differences in the vertebrate taxons. This finding suggests that the faunal assemblage accumulated naturally and the Early Paleoindian artifacts were in a secondary context. Like other Early Paleoindian sites, the stratigraphy of Sheriden Cave undoubtedly results from a complex and dynamic system of cultural, biological, and sedimentary processes that are directly related to the formation of the surface landscape. The significance of the site for Ohio can be found in the rich and unprecedented paleoenvironmental and geochronological data.

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The White Fort Archaeological Project 1995-96

Brian G. Redmond
Cleveland Museum of Natural History

The White Fort Archaeological Project is a multi-year investigation into the lifeways of one settlement of pre-contact Native peoples living in the central Black River Valley of northeast Ohio. From 1995 to 1997 staff, students, and volunteers from the Department of Archaeology, Cleveland Museum of Natural History conducted test excavations at the White Fort site (33Ln2) located in the Black River Reservation of the Lorain County Metroparks (Redmond 1996, 1997). This report describes the investigations of 1995 and 1996; the results of the 1997 field season will be presented in a future report. All field work was carried out in conjunction with the Department's Archaeology Field Experience and summer Field School programs and was directed by the author with the assistance of Barbara Barrish, Supervisor of Archaeology Field Programs.

The White Fort site (33Ln2) is located on the west bank of the Black River in northern Elyria Township, Lorain County, Ohio (Figure 1). The site lies approximately ten kilometers (6.2 miles) upriver from Lake Erie and is situated at a height of 27 meters (89 feet) above the Black River (207 meters elevation) on a flat, sandy bluff that is a remnant of the glacial Lake Warren beach ridge. Native forest in the vicinity of White Fort was dominated by oak, hickory, chestnut, and tulip, with lesser amounts of black ash, elm, and soft maple in lower, poorly drained areas (Ives 1947:28-29).

The White Fort site was selected for examination in consultation with officials of the Lorain County Metroparks. The dual goals of this research were 1) to acquire information related to the spatial extent and archaeological nature of the site to aid in the long-term planning of Metroparks activities in this area, and 2) to acquire new and detailed archaeological data from what was suspected to be only the second documented late prehistoric village site in the Black River Valley. The other documented site of this kind was the Eiden site (33Ln14) which had been the focus of Museum investigations in the late 1970's (McKenzie and Blank 1976).

In an attempt to identify the spatial limits of the site and to estimate the relative densities of subsurface artifacts and deposits, a series of more than one hundred 50 cm by 50 cm test units were excavated at regular intervals over the non-wooded portion of the bluff top. The results of this work revealed clear and complimentary distributions of chert debitage, grit-tempered pottery, bone, shell, and fire-cracked rock that covered a maximum area of 2.2 hectares (5.5 acres) (Figure 2).

The 1995-96 excavations exposed a total area of 460 square meters or approximately 2.1% of the estimated site area. The initial results of early testing in 1995 revealed that the major archaeological deposits of the site originated with one or more settlements of late prehistoric farming societies affiliated with archaeological complex known as the Sandusky Tradition of northwest and north central Ohio (Stothers and Pratt 1980; Stothers et al. 1994). The block areas exposed by extensive excavations in the summers of 1995 and 1996 provided valuable data on the nature, distribution, and internal configurations of these prehistoric settlements (Figure 3).

Over the first two years of work, more than three hundred small post molds were exposed in various parts of the site. Many of these formed what appeared to be random scatters with little or no associations with other feature types (Figure 3). One linear arrangement of post molds, however, which was exposed in the western section of the village settlement, is believed to represent the western wall and southwest corner of a rectangular dwelling that measured 20 meters in length and at least six meters in width. Two large post molds, that may represent roof support posts for such a structure, were found in the interior of the post mold pattern and along the midline. The rectangular outline and estimated

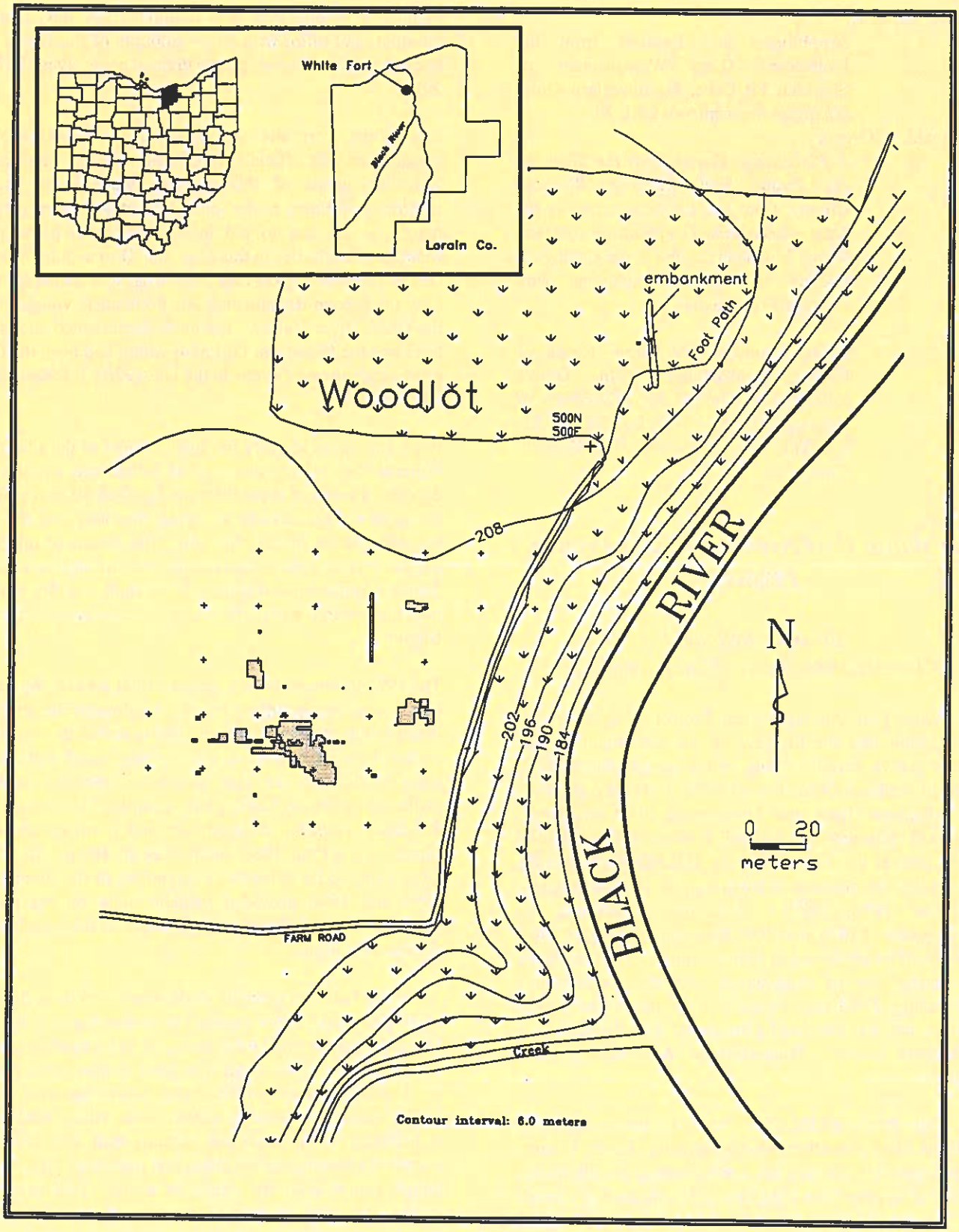

Figure 1: Location and geographic setting of the White Fort site.

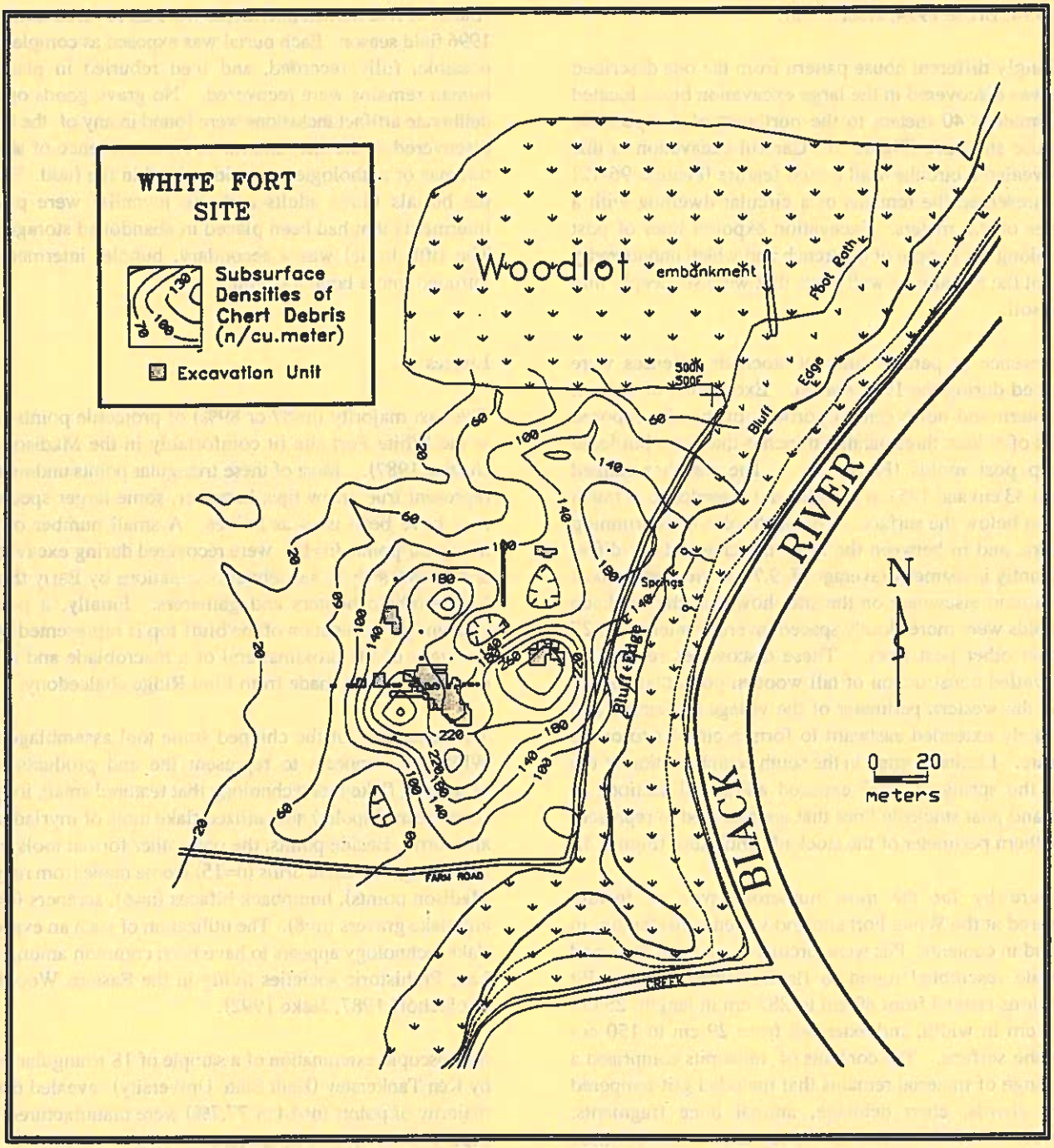

Figure2: Subsurface distribution of chert debitage in relation to 1995-96 excavation blocks.

width of this dwelling closely resembles longhouse-like structures identified at a number of other Sandusky and Whittlesey traditions village sites in northern Ohio (Stothers et al. 1994; Brose 1994; Abel 1995).

A strikingly different house pattern from the one described above was discovered in the large excavation block located approximately 40 meters to the northeast of the possible longhouse structure (Figure 3). Careful excavation in this area revealed a circular wall trench feature (Feature 96-12) that represented the remains of a circular dwelling with a diameter of 4.0 meters. Excavation exposed lines of post molds along the bottom of the trench and which undoubtedly represent the remains of wall posts that were set deeply into the subsoil.

The presence of parallel lines of stockade defenses were confirmed during the 1996 season. Excavation of units at the western and north central portions of the site exposed sections of at least three parallel trenches that were bordered by deep post molds (Figure 3). The trenches ranged between 43 cm and 145 cm in width and extended to as much as 75 cm below the surface. The postmolds found running alongside and in-between the large trenches did not differ significantly in diameter (average of 9.7 cm) from many post molds found elsewhere on the site; however, the stockade post molds were more closely spaced (average interval of 27 cm) than other post lines. These discoveries revealed a multi-walled construction of tall wooden posts that curved around the western perimeter of the village settlement and most likely extended eastward to form a circular to ovoid enclosure. Limited testing in the south central portion of the site in the spring of 1997 exposed additional sections of trench and post stockade lines that are believed to represent the southern perimeter of the stockade enclosure (Figure 3).

Pits were by far the most numerous type of feature discovered at the White Fort site and varied considerably in form and in contents. Pits were circular to ovoid in plan, and in profile resembled round to flat-bottomed basins. Pit dimensions ranged from 40 cm to 282 cm in length, 25 cm to 233 cm in width, and extended from 29 cm to 150 cm below the surface. The contents of most pits comprised a wide range of material remains that included grit-tempered pottery sherds, chert debitage, animal bone fragments, freshwater mollusk shells, and charcoal. All of these materials represent generalized village 'trash' that was used to fill empty pits left over from storage or food-processing activities. No pit features revealed recognizable traces of in-place cooking activities such as lenses of fire-reddened (i.e., heat-oxidized) soils, dense concentrations of charcoal, or large quantities of fire-cracked rock. The only exception to this pattern was a single hearth feature that took the form of a shallow basin of fire-reddened soil.

A total of five human interments were discovered during the 1996 field season. Each burial was exposed as completely as possible, fully recorded, and then reburied in place; no human remains were recovered. No grave goods or other deliberate artifact inclusions were found in any of the burials discovered at the site, and no obvious evidence of skeletal traumas or pathologies were identified in the field. Four of the burials (three adults and one juvenile) were primary interments that had been placed in abandoned storage pits. The fifth burial was a secondary, bundle, interment that intruded into a large trash pit.

Lithics

The vast majority (n=87 or 89%) of projectile points found at the White Fort site fit comfortably in the Madison type (Justice 1987). Most of these triangular points undoubtedly represent true arrow tips; however, some larger specimens may have been used as knives. A small number of non-triangular points (n=11) were recovered during excavations, and these testify to sequential occupations by Early through Late Archaic hunters and gatherers. Finally, a possible Paleoindian occupation of the bluff top is represented by the recovery of the proximal end of a macroblade and a large endscraper, both made from Flint Ridge chalcedony.

The remainder of the chipped stone tool assemblage from White Fort appears to represent the end products of an expedient, flake tool technology that featured small, irregular cores (some bipolar) and utilized flake tools of myriad shape and form. Beside points, the only other formal tools in this assemblage are small drills (n=15) (some made from recycled Madison points), humpback bifaces (n=6), scrapers (n=18), and flake gravers (n=8). The utilization of such an expedient flake technology appears to have been common among most Late Prehistoric societies living in the Eastern Woodlands (Koldehoff 1987; Jeske 1992).

Microscopic examination of a sample of 18 triangular points by Ken Tankersley (Kent State University) revealed that the majority of points (n=14 or 77.7%) were manufactured from Pipe Creek chert, and the remainder (n=4 or 22.3%) were made from Delaware chert. One additional artifact, a trianguloid biface (knife?), revealed the use of Onondaga chert. These results indicate that the inhabitants of the White Fort site obtained suitable raw materials for stone tool manufacture from sources no farther away than 50 kilometers in Erie County (Pipe Creek) and as close (in the case of

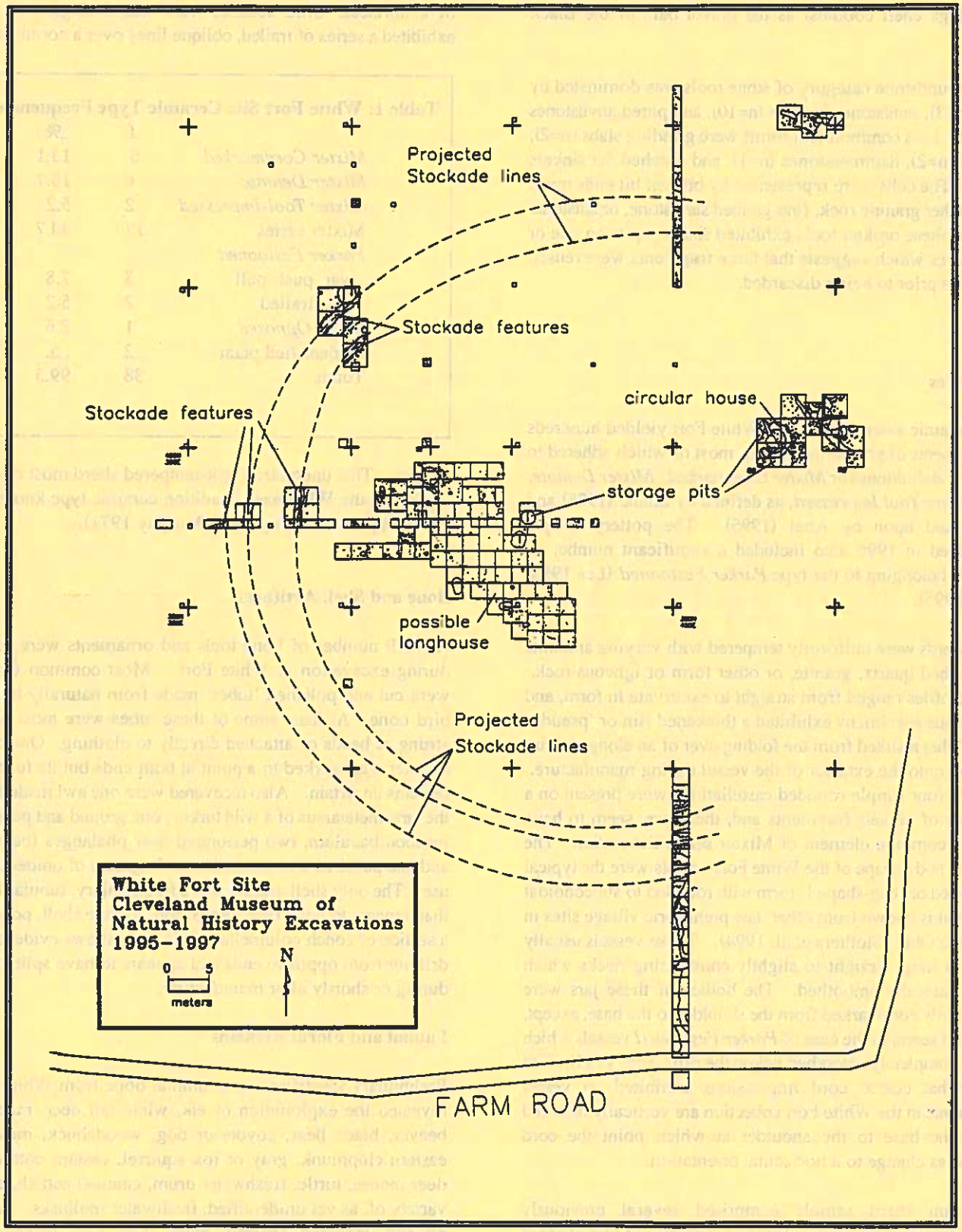

Figure3: Plan of excavation units and features (including 1997 season).

Onondaga chert cobbles) as the gravel bars of the Black River.

The groundstone category of stone tools was dominated by celts (n=3), sandstone abraders (n=10), and pitted anvilstones (n=26). Less common tool forms were grinding slabs (n=2), manos (n=2), hammerstones (n=1), and notched net sinkers (n=1). The celts were represented by broken bit ends made from either granitic rock, fine-grained sandstone, or siltstone. Two of these broken tools exhibited shallow pits on one or both faces which suggests that these fragments were reused as anvils prior to being discarded.

Ceramics

The ceramic assemblage from White Fort yielded hundreds of fragments of grit-tempered jars, most of which adhered to the type definitions for *Mixter Cordmarked*, *Mixter Dentate*, and *Mixter Tool Impressed*, as defined by Shane (1975) and elaborated upon by Abel (1995). The pottery sample recovered in 1996 also included a significant number of vessels belonging to the type *Parker Festooned* (Lee 1958; Abel 1995).

Rim sherds were uniformly tempered with varying amounts of crushed quartz, granite, or other form of igneous rock. Rim profiles ranged from straight to excurvate in form, and numerous specimens exhibited a thickened rim or 'pseudo-collar' that resulted from the folding over of an elongated rim section onto the exterior of the vessel during manufacture. Two to four simple rounded castellations were present on a number of vessels fragments and, therefore, seem to have been a common element of Mixter series decoration. The general body shape of the White Fort vessels were the typical elongated or 'bag-shaped' form with rounded to subconoidal base that is known from other late prehistoric village sites in northern Ohio (Stothers et al. 1994). These vessels usually possess long, straight to slightly constricting necks which were carefully smoothed. The bodies of these jars were commonly cordmarked from the shoulder to the base, except, it would seem, in the case of *Parker Festooned* vessels which were completely smoothed below the rim (Abel 1995). The somewhat coarse cord impressions exhibited on vessel fragments in the White Fort collection are vertically oriented from the base to the shoulder at which point the cord markings change to a horizontal orientation.

The rim sherd sample comprised several previously identified ceramic types (Table 1), and all but one of these have been affiliated with the Sandusky Tradition (Stothers and Pratt 1980; Bowen 1980; Abel 1995). The only evidence of a northeast Ohio ceramic ware was a single rim that exhibited a series of trailed, oblique lines over a cordmarked surface. This uncollared, grit-tempered sherd most closely resembles the Whittlesey Tradition ceramic type known as *Reeve Opposed* (Fitting 1964; Murphy 1971).

Table 1: White Fort Site Ceramic Type Frequencies

	f	%
Mixter Cordmarked	5	13.1
Mixter Dentate	6	15.7
Mixter Tool-Impressed	2	5.2
Mixter series	17	44.7
Parker Festooned		
var. push-pull	3	7.8
var. trailed	2	5.2
Reeve Opposed	1	2.6
unidentified plain	2	5.
Totals	38	99.5

Bone and Shell Artifacts

A small number of bone tools and ornaments were found during excavation at White Fort. Most common (n=13) were cut and polished 'tubes' made from naturally hollow bird bone. At least some of these tubes were most likely strung as beads or attached directly to clothing. One bone splinter was worked to a point at both ends but its function remains uncertain. Also recovered were one awl made from the tarsometatarsus of a wild turkey, one ground and polished raccoon baculum, two perforated deer phalanges (beads?), and one polished and notched bone fragment of unidentified use. The only shell artifact was a fragmentary, tubular bead that appears to have been made from marine shell, possibly a section of conch columella. This bead shows evidence of drilling from opposite ends and appears to have split either during or shortly after manufacture.

Faunal and Floral Remains

Preliminary identification of animal bone from White Fort revealed the exploitation of elk, white-tail deer, raccoon, beaver, black bear, coyote or dog, woodchuck, muskrat, eastern chipmunk, gray or fox squirrel, eastern cottontail, deer mouse, turtle, freshwater drum, channel catfish, and a variety of, as yet unidentified, freshwater mollusks. Avian remains included sparrow hawk, and wild turkey; the presence of other, unidentified bird species are represented by the polished bone tubes described above.

Table 2: White Fort Radiocarbon Determinations

Lab. No.	Conventional Age	Calendrical Date	Calibrated Intercepts	Calibrations (Vogel et al. 1993) 1 sigma	2 sigma
Beta 90565 (Fea. 95-10)	670 +/-50 BP	AD 1280	AD 1300	AD 1285 to 1315& AD 1345 to 1390	AD 1270 to 1405
Beta 110713 (Fea. 95-10)	600 +/-50 BP	AD 1350	AD 1395	AD 1305 to 1410	AD 1290 to 1425
Beta 110714 (Fea. 95-10)	600 +/-40 BP	AD 1350	AD 1395	AD 1310 to 1365& AD 1375 to 1410	AD 1295 to 1420
Beta 107417 (Fea. 95-15)	440 +/-50 BP	AD 1510	AD 1450	AD 1430 to 1475	AD 1415 to 1520 & AD 1570 to 1630
Beta 107418 (Fea. 95-15)	590 +/-50 BP	AD 1360	AD 1400	AD 1310 to 1365& AD 1375 to 1415	AD 1295 to 1430
Beta 90566 (Fea. 95-16)	370 +/-50 BP	AD 1580	AD 1495	AD 1455 to 1535 & AD 1545 to 1635	AD 1435 to 1650

Preserved plant remains from the 1996 excavations were examined and identified by Dr. Frances B. King (Research Associated, CMNH Dept. Of Archaeology). Her analysis identified a wood charcoal sample dominated by oak and hickory with lesser amounts of pine, maple, and ash. Nutshell remains consisted of shagbark hickory, black walnut, and acorn. Seeds from fleshy fruits such a strawberry, blackberry/raspberry, and grape were recovered as well. Maize was identified in ten of the fourteen samples analyzed and consisted of kernels, cupules, and embryos which appeared to belong to the Eastern Eight Row variety. Other cultigens included tobacco, bean, and squash as well as a domesticated variety of chenopod (*Chenopodium berlandieri*).

Radiocarbon Assay

Between 1995 and 1997, a total of six wood charcoal samples were sent to Beta Analytic, Inc. for standard radiocarbon assay (Table 2). Three samples of charcoal (Beta-90565, Beta-110713, and Beta-110714) were taken from a trench (Feature 95-10) that contained a layered deposit of pottery sherds (from a single *Mixter Dentate* vessel), animal bone, and mollusk shell. One large concentration of charcoal was taken from the eastern half of a large trash pit (Feature 96-15) and split in the laboratory to produce two radiocarbon determinations (Beta-107417 and Beta-107418). Finally, a single radiocarbon sample (Beta-90566) came from the fill of a small pit feature (Feature 95-16) located just to the east of Feature 95-10.

The three calibrated intercept dates from Feature 95-10 place its contents--including the reconstructed *Mixter Dentate* vessel--within the fourteenth century AD. This temporal range agrees with previous dated (calibrated or uncalibrated) Sandusky Tradition contexts--including the Eiden site--which contained *Mixter* series ceramics (Stothers et al. 1994). Thus, it would seem that the ubiquity of *Mixter Dentate* or *Tool-impressed* ceramics in the archaeological deposits of the White Fort site strongly indicates that the major occupation of the settlement took place sometime in the 1300's, when these ceramic types were most in vogue.

Summary and Conclusions

The archaeological work at White Fort has provided a wealth of information relating to the cultural affiliation, temporal position, and internal structure of a site for which almost nothing was known previously. These investigations revealed the well-preserved remains of a fourteenth century Native American habitation site of more than two hectares (over five acres) in extent. One important outcome was the realization that the overall site included a circular to ovoid stockade enclosure. The remains of this enclosure, in the form of post mold lines and shallow trenches, encompassed

an area estimated at 0.65 hectare (1.60 acres). The complex nature of these stockade walls demonstrated that great effort was expended in the construction of suitable defenses, which, by their presence alone, testify to the prevalence of warfare during the fourteenth century in northern Ohio.

The remains of what may have been functionally different (round, single family vs. rectangular multi- family) dwellings within the village may minimally reflect a diversity of residential behavior within the White Fort community. At most, these two house forms provide evidence of multi-season or year-round residency by the late prehistoric inhabitants of the bluff top in the fashion observed among some ethnographically documented societies like the Kickapoo. Furthermore, the evidence derived from preserved floral and faunal material depicts a mixed horticultural and hunting-gathering lifeway that was not unlike that recorded for the Kickapoo and other Great Lakes groups of the seventeenth and eighteenth centuries (Kinietz 1940; Callender 1978a, 1978b; Callender et al. 1978).

The diagnostic pottery and stone artifacts of this aboriginal settlement clearly demonstrate that the White Fort villagers were culturally related to Sandusky Tradition societies that lived as far west as the Maumee River and as close as the Eiden site at the mouth of French Creek. The ubiquity of Mixter series pottery in conjunction with the apparent absence of temporally younger (i.e., sixteenth or seventeenth century) ceramic types in the White Fort pottery assemblage strongly indicates that the settled occupation of the site lasted for no more than a generation or two around an estimated median date of A.D. 1350.

Next to the Eiden site, the White Fort settlement is the only other large Sandusky Tradition village to be identified in the Black River Valley. Close similarities in pottery styles, stone tool forms, and radiocarbon dates suggest that Eiden and White Fort were, perhaps 'sister' villages that co-existed during the late prehistoric period or, perhaps, they represented sequential occupations (i.e., village movements) of the same society within a generation or so. Together, these settlements appear to have marked the easternmost extent of Sandusky Tradition culture in northern Ohio and, thereby, stand in contrast to their cultural 'cousins' the Whittlesey Tradition peoples of northeast Ohio.

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CALENDAR OF EVENTS

April 24-26 **The 69th Annual Meeting of the Society for Pennsylvania Archaeology.** Holiday Inn, New Cumberland, Pennsylvania. Contact: Noel Strattan, (717) 772-4519, website: www.cs.pitt.edu/~bev/index/html.

May 1-3 **The 82nd Annual Meeting of the New York State Archaeological Association.** Bonnie Castle Resort Hotel, Alexandria Bay, New York. Contact: Tim Abel, Program Chair, P.O. Box 81, Philadelphia, NY 13673, (315) 642-0202, Email: abeltj@northnet.org.

May 15 The Ohio Archaeological Council semi-annual membership meeting, Ohio Historical Center, Columbus. Contact Program Chair Bill Dancey (614) 292-9770.

June 3-5 **Ohio's Biennial Historic Preservation Conference: Building Successful Communities: Preservation Strategies.** Wyndham Hotel, Toledo. Contact: 1-800-854-2371.

October 9-12 **The Sixth Ohio Archaeological Council Conference on Archaeology: The Archaeology of History in the Ohio Region.** Ramada Hotel and Conference Center, Toledo, Ohio. Contact: G. Michael Pratt, Laboratory of Archaeology, Heidelberg College, 310 E. Market St., Tiffin, Ohio 44883, (419) 448-2070, E-mail: mpratt@mail.heidelberg.edu.

October 14-17 **The 56th Annual Meeting of the Plains Anthropological Conference.** Radisson Inn, Bismark, North Dakota. Contact: Fern Swenson, State Historical Society of North Dakota, 612 E. Blvd. Ave., Bismark, ND 58505, (701) 328-3675, E-mail: ccmail.fswenson@ranch.state.nd.us.

October 21-24 **The 1998 Midwest Archaeological Conference.** Ball State University, Muncie, Indiana. Contact: Ronald Hicks, Dept. Of Anthropology, Ball State University, Muncie, Indiana 47306, (765) 285-2443, E-mail: 00rehicks@bsu.edu.

October 29-November 1 **Annual Meeting of the Eastern States Archaeological Federation.** East Mountain Inn, Wilkes Barre, Pennsylvania. Contact: Dawn Griffiths, Pan Cultural Associates, RR #3 Box 3344E, Moscow, PA 18444, (717) 842-2708, E-mail: baird@icontech.com.

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Schedule For Submissions

Deadline	Issue
February 1st	March
August 1st	September

The Sixth Ohio Archaeological Council Conference on Archaeology

The Archaeology of History in the Ohio Region

October 9-10, 1998
Ramada Hotel and Conference Center
2429 S. Reynolds Road, Toledo, Ohio

The 1998 Ohio Archaeological Council Conference will focus on the archaeologist's contribution in uncovering and interpreting the history of the Ohio region. The Friday night banquet will feature a keynote address by Dr. Douglas D. Scott, National Park Service, regarding his archaeological and forensic investigations of the Little Bighorn Battlefield. Registration materials will be availabe August 1, 1998. For more information contact: G. Michael Pratt, Laboratory of Archaeology, Heidelberg College, 310 E. Market St., Tiffin, Ohio 44883; (419) 448-2070, E-mail: mpratt@mail.heidelberg.edu.