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EXPERIMENTAL FISHING AT THE AMANA FISH WEIR

By John Whittaker
Dept. of Anthropology
Grinnell College

For as long as anyone can remember the Amana fish weir, or Indian Dam, has spanned the Iowa River near the bridge between Homestead and Main Amana. It is a low barrier of piled glacial cobbles that stretches in a V across the river, pointing downstream. On the downstream side of the north wing, there is a further line of rock that forms a roughly circular enclosure with the wing as one wall.

The Indian Dam was known to early Iowa archaeologists and was reported to Charles Keyes by Dr. Noe of Amana as early as 1924 (Keyes n.d.), but was only recorded as 13IW100 in the official site records in 1973 (Weichmann and Tandarich 1974). In 1988 the fish weir was put on the National Register of Historic Places, largely through the efforts of Lanny Haldy of the Amana Heritage Museum, and there is now a nature trail that leads through woods to a fine view from the bluff above.

It is hard to tell when the weir was built (Weichmann and Tandarich 1974, Whittaker 1986). Comparing maps of today with those of the 1840s shows that the Iowa River has changed its course a good deal even in the last 150 years, so it is unlikely that the structure could have existed for more than a few centuries without being obliterated. It could be late prehistoric, although there is no good evidence of Oneota use of the area, and the Late Woodland is far enough in the past that we might expect the river to have moved. Poweshiek's band of Mesquakie apparently occupied a plot of land not far from the site for a few years in the 1840s (Lillie 1984). They could have built the fish weir.

Ethnographic accounts of Native American fishing (see Connaway 1982) mention similar stone or post weirs. They normally had an opening in the point of the V where the fish were speared, netted, or caught in a basketry trap. Alternatively, they were speared as they came up against the barrier of the weir itself. Sometimes the river flow brought the fish; in other cases they were driven by people swimming or wading down the river.

The Indian Dam also could be a historic fish trap. In the 19th century these were common features on many rivers (Cobb 1978). In various forms, they were basically like the spillway on a dam, directing water and fish onto a wooden grate. Water and small fish went through while larger fish were caught on the grate and could be collected daily by an attendant, who often lived nearby. This is merely a European version of the trap system at the apex of native fish weirs, and 19th century fish traps also used a V of rock, apparently with an opening at the apex. According to Cobb, who has examined a number of fish trap remains, the rock weir and sometimes timber foundations are usually all that remain. A good many fish traps were used well into this century, although most have now been destroyed by maintenance of river channels and by Fish and Game departments.

The Amana fish weir as it now exists could equally well be historic as prehistoric, but there are a couple of arguments against a historic date. There is no memory of documentation of historic use, nor does there seem to have been as early as 1924. At this time, Dr. Charles Noe, an Amana physician who was interested in archaeology, wrote to Charles Keyes (Keyes n.d.) to inform him of this unusual archaeological site.

The first survey maps from the early 1840s (of which I have seen only a Xerox) have a mark on the river with a notation that appears to read Fall, suggesting that an obstruction of the river existed even at this time.

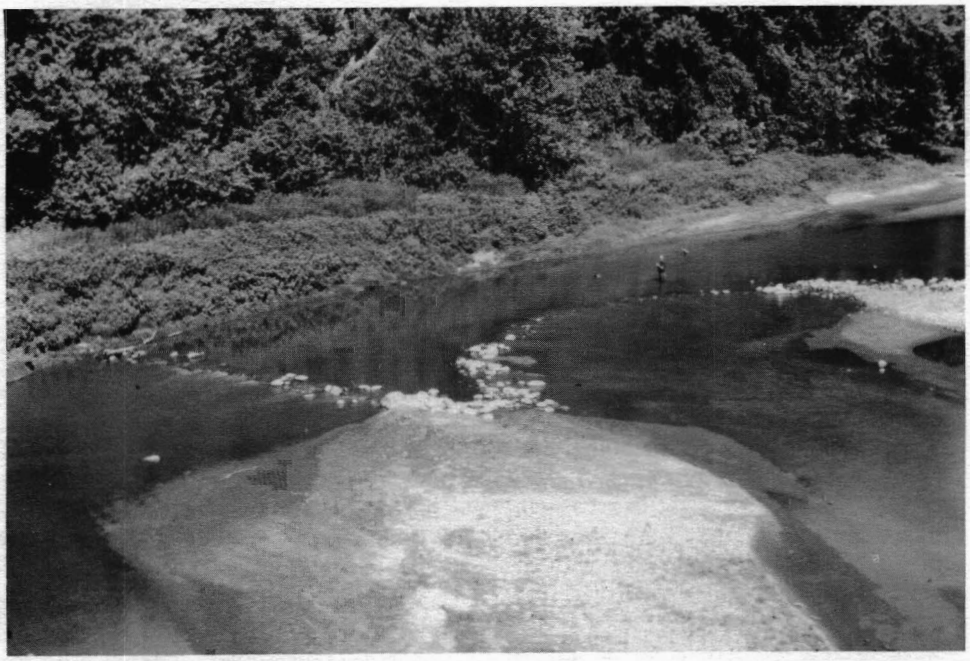
The fish weir structure itself can not be dated directly, unless there are wooden remains in the river bed that could be located by careful archaeological excavation. This would only be a good idea if it avoided or restored any damage to the weir. For the moment then, the balance of evidence suggests that the Amana fish weir is prehistoric.

The Amana weir has no visible opening at the apex of the V, and I and others have suggested that as a prehistoric weir it would have been used as a barrier against which fish could be driven by a line of beaters wading down the river. At the weir the fish could be speared or netted, and possibly tossed into the circular enclosure at the north end, alive and fresh but unable to escape.

Formerly the fish weir was much more visible, but in recent years the Coralville Reservoir has raised water levels and slowed river flow, so the weir is now under water most of the time and appears to be silting over. The drought of the summer of 1988 provided an unusual opportunity to inspect the structure closely, and Lanny Haldy and I decided it would be interesting to try a fish drive. We had no intention of actually capturing fish at the weir, as this would be illegal except for carp, but we felt that we could at least arrive at some informed opinion about the use of such structures and how well they might have worked.

Our team of fishers gathered at 5:00 pm on July 17. The water, air, and human participants were all about the same temperature and humidity. The river was not only warm, but sluggish and muddy, only knee-deep in the main channel, and no more than waist-deep in holes. These conditions seemed even less comfortable for fish than for us; nevertheless, several live carp were seen in the water.

FISHING WEIR STUDIED



Amana Fish Weir as it appeared during the lower water of 1988. Photo by James M. Collins, OSA.

We drove the fish downstream first, on the theory that what current there was would help keep the frightened fish from swimming between us and escaping. Eight people armed with branches line up across the river and beat the water and splashed with feet as we moved downstream. There was never more than a yard or two between beaters, and in places we stood almost shoulder to shoulder.

We began about 100 yards upstream, and when we began, we knew that there were fish downstream of us. With high hopes we splashed toward the weir, expecting to see at least a few fish flopping cornered at the rocks, but alas, there were none at all. We tried a second drive upstream, where the last 20 yards before the weir was extremely narrow, and we saw a couple of carp as we approached this stretch. We could not see how they could escape us, but again, they did. We admitted defeat and retired, wet but neither refreshed nor enlightened.

Several possibilities suggest themselves. The carp we saw may have been smarter or braver than the norm. This seems unlikely. There may have been something wrong with our technique, although we could hardly have packed more people into the river, or splashed more vigorously than we did. If this is how it was done in prehistoric times, the fish must have been more easily driven, or the people knew something we do not.

Alternatively, we could be all wet about how the structure was used. There could have been an opening, no longer visible, for a basket or wicker trap. River conditions would have been quite different, with more water most of the time, a deeper channel and deeper water behind the weir, and certainly more fish than we encountered. Under better conditions a permanent weir to which a trap could be added as needed might have been able to rely on river flow alone to produce a good supply of fish.

Whether prehistoric or historic, the Amana fish weir deserves its place on the National Register as a rare trace of an activity that was once common on American rivers. It will continue to attract attention and speculation. Meanwhile, if conditions allow again, I would like to try fishing at the weir once more, to see if we can improve on our first catch.

Without a dedicated team of hopeful fish drivers and photographers the experiment would not have been possible. The team included Lanny Haldy, Kathy Kamp, April Kamp-Whittaker, Ralph Luebben, Sarah DeLong, Cathy and Karen Oehl, Marcia Schutterle, Mike and Susan Shoup, and Randy Graesser.

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1974 An Overview of Known Archaeological Resources in the Iowa River Valley: Coralville Reservoir to the Cedar River. Environmental Research Company Report 10. On file, State Historic Preservation Office, Des Moines.

Whittaker, John C.
1986 An Archaeological Overview of the Amanas, Eastern Iowa. Manuscript on file, State Historic Preservation Office, Des Moines.

MINES OF SPAIN TO NATIONAL REGISTER

The Historic Preservation Bureau of the State Historical Society announced the November 21, 1988, listing of the Mines of Spain Archaeological Property Group on the National Register of Historic Places. The 218 sites within the Mines of Spain property nomination include such prehistoric archaeological sites as camps, villages, rock shelters, and mound groups, primarily dating to the Archaic and Woodland cultural periods. Historical archaeological sites comprise such as a Mesquakie village and the trading post of Julien Dubuque. Historic sites including mine shafts, adits, pits, and smelters, lead mining communities, and a rural community containing farmsteads and a lumber mill. The property also contains a commemora-

tive property, the Julien Dubuque Monument.

Dr. Joyce McKay, Cultural Resources Consultant, Bellville, WI, prepared the nomination under a Historic Preservation Fund grant through the Bureau of Historic Preservation, State Historical Society of Iowa.

FINAL LIST OF NEW MEMBERS 1988:

M. Jess Fields - Baldwin
Kent Frank - Des Moines
Alan Greedy - Iowa City
Timothy Holter - St. Paul, MN
Art Hoppin - Decorah
Kathy Ormand - Lisbon
Tom Powers - Iowa City
J.B. Rieber - Iowa Falls
Leah Rogers - Decorah

NEW MEMBERS TO FEB,1989

Bill Anderson - Richland
Carol Becker - Iowa City
Ken Benda - Grinnell
Barbara Borg - Waterloo
Robert Bowman - Iowa City
Dan Brandon - Cedar Rapids
Robert Bray - Des Moines
Jareen Carney - Conesville
Donnabelle Casey - Cedar Falls
Ann Cunning - Des Moines
Mr. & Mrs. Jack Charter - Cedar Falls
Denise Dial - Eddyville
Marti Friest & Ken Wendt - Osage
N.N. Gower - Charles City
Vic Groze - Iowa City
Kelly Kistler - Decorah
Linda Lampe - Olathe, Kansas
Cristina Leonard - Iowa City
Janet Lesan - Cedar Rapids
Luther College Anthropological Society
Mary Lyons and Family - Waverly
Matt McNamer - Iowa City
Steven C. Miller - Newton
Byron Preston - Iowa City
Theresa Schmitt - Cedar Falls
Nathan Specht - McGregor
Laura Thomsen - Ames
Lorraine Tromanhauser - Cedar Falls
Mike Redenius - Parkersburg

NATURE CHANGES HUMAN RECORD

By E. Arthur Bettis III and David W. Benn

Landscape changes affect the archaeological record in two ways. First, man chooses where he will live and work because of the shape of the landscape. This means that human settlement patterns must be placed within the setting of their contemporary landscape to comprehend the meaning of the patterns. Second, major changes in the fluvial system can wipe out or bury the record of past human occupation. It follows, then, that archaeologists must consider the bias of differential site preservation in reconstructing the human past.

In the following pages the interactions between the changing landscape and the archaeological record are considered for a stretch of the Mississippi River valley between Muscatine and Burlington, IA.

This discussion is organized into five time periods spanning the last 18,000 years. Each of the periods was a time of significant evolution of the valley landscape that affected the preservation and/or visibility of the past human record.

The information summarized here came from a geomorphological and archaeological survey of navigation Pools 17 and 18 in Iowa and Illinois (Benn, Bettis and Vogel 1988) accomplished for the U.S. Army Corps of Engineers, Rock Island District under terms of contract number DACW25-87-C-0017.

18,000-12,000 BP: Early Man period

Evidence for cultural remains that predate the Paleo-Indian period in the Americas is scarce and controversial. None has been found in the Midwest, and no evidence of this sort was recognized in the Pools 17-18 project area. For Early Man evidence to rise above doubt of its authenticity, it must have a secure stratigraphic context with radiocarbon dating. Context is most important because the types of industries thought to belong to this period, such as chopper/heavy flake technology or blade core/flake technology, are elements of later cultural traditions as well. Essentially, the documentation of Early Man sites is a geological issue.

During Woodfordian times, about 22,000-12,000 BP, the project area was a radically different environment than today (Figure 1). At about 18,000 B.P. this portion of the Mississippi valley had just been formed by a channel diversion at Andalusia, IL. Periodic floods of meltwater filled the valley, carving new shapes in the bluffline and depositing enormous piles of sand and gravel. During the winter season and at other times of low flow, winds blowing across the wide floodplain carried silts and clays from the valley and deposited them as loess (Peoria Loess) on the adjacent uplands.

The Woodfordian floodplain became a terrace, and loess deposition virtually ceased when the river downcut about 12,000 B.P. The Yellow Banks terrace on the Illinois side, the Sand Mound on the Iowa side and the terrace at the Iowa River mouth are remnants of this Woodfordian floodplain. Following the downcutting a new sandy floodplain was constructed at lower elevations. Remnants of this latest Wisconsinan floodplain exist today as low terrace remnants in the middle of the valley (Figure 1).

The vegetation of this period consisted of white spruce and some aspen covering well drained locations, while wetter areas may have had black spruce, willows, boxelder and black ash (Wendland 1978: Richard Baker, personal communication). Chenopods and other herbs grew on the shifting river banks and channel bars.

Big game animals must have utilized the valley floor as a source of food and water, and human hunters, if present, surely preyed on these animals. It is doubtful that man camped permanently in the unstable floodplain environment, preferring instead to reside on the high terraces and blufftops. Most of the evidence for hunting forays into the valley would have been destroyed by episodes of meltwater flooding. The high terraces and blufftops are poor places to anticipate finding stratified deposits where human campsites could be preserved, *unless* they were in windblown deposits. The logical place for archaeologists to look for Early Man sites is within the loess on blufftops and beneath dunes on the Woodfordian terraces.

(To be continued in the next issue, Editor.)

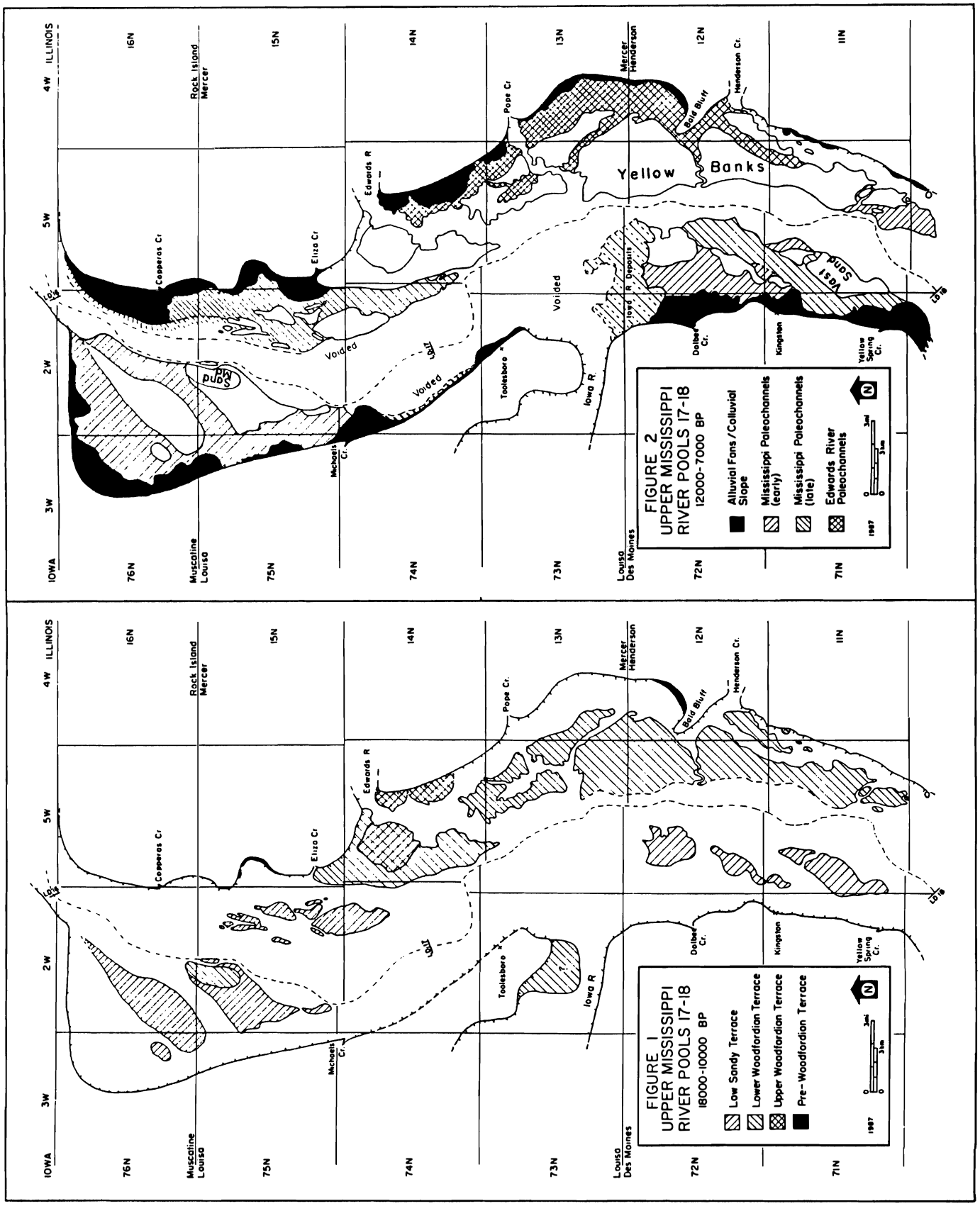
FIGURE 1
UPPER MISSISSIPPI
RIVER POOLS 17-18
18000-10000 BP
Low Sandy Terrace
Lower Woodfordian Terrace
Upper Woodfordian Terrace
Pre-Woodfordian Terrace
FIGURE 2
UPPER MISSISSIPPI
RIVER POOLS 17-18
12000-7000 BP
Alluvial Fans/Colluvial Slope
Mississippi Paleochannels (early)
Mississippi Paleochannels (late)
Edwards River Paleochannels
Yellow Banks
Voided
Loess
Sand
Rock Island
Mercer
Muscatine
Louisa
Des Moines
Henderson
IOWA
ILLINOIS
Copperas Cr
Eliza Cr
Edwards R
Pope Cr
Bald Bluff
Henderson Cr
Toolesboro
Iowa R
Dolbee Cr
Kingston
Yellow Spring Cr
Mcheals Cr
Iowa R Deposits
16N
15N
14N
13N
12N
11N
76N
75N
74N
73N
72N
71N
5W
4W
3W
2W

1989 FIELD SCHOOL TO BE IN STORY COUNTY

John Bower, professor of Anthropology at Iowa State University, will conduct archaeological excavations at the Buchanan site (13 SR 153) June 5-July 14, 1989. The site is located on the northeast edge of Ames, and the excavations will focus on Middle to Late Archaic occupations (approximately 7000 to 4000 years ago). Preservation is excellent in these levels, and data from them are being worked into a collaborative research program with the Polish Academy of Sciences, aimed at comparing prehistoric hunter-gatherer adaptations in Poland and the U.S. For this reason, at least one Polish archaeologist is expected to participate in the dig.

IAS members interested in working at the Buchanan site next summer should write or call Professor John Bower at:

Anthropology Program
319 Curtiss Hall
Iowa State University
Ames, IA 50011
(515) 294-8033

AND MORE SUMMER ACTIVITY!

ARCHAEOBOTANY COURSE TO BE AT LAKESIDE LAB

Iowa Lakeside Laboratory, a northwest Iowa biological field station operated by the State Board of Regents, will offer a new course on Archaeobotany by State Archaeologist William Green.

Bill described the coursework:
"We will study the relationships between ancient peoples and plants, especially the cultivated and wild plants used by northwestern Iowa Indians of the last 1000 years. Projects will consist of fieldwork complemented by lab work and conceptual synthesis. We will collect, process, sort, analyze and interpret botanical remains from archaeological sites. Visiting several sites will heighten awareness of the vaarious natural settings in which ancient peoples lived. Course is intended for students with some background in anthropology or botany, especially those interested in human ecology or economic botany."

The archaeobotany course will consist of five weeks of intensive work between July 10 and August 11. Students will receive five hours of college credit. IAS members who are now enrolled in a college or university are encouraged to apply.

For additional information and applications, contact:
William Green, State Archaeologist
Eastlawn
University of Iowa
Iowa City, IA 52242

FORT RANDALL ARCHEOLOGICAL PROJECT IN FINAL SEASON

The 1989 field season of the Fort Randall Archeological Project marks the final session of excavation at the 19th century military post, reported the December 1988 issue of The Volunteer, Newsletter of the Fort Randall Archeological Project. Excavation is planned for August 3-13.

Further information and application blanks may be obtained by writing to:
Ft. Randall Project
P.O. Box 109
Pickstown, SD 57367

KEYES CHAPTER REVITALIZED

The Keyes Chapter of the IAS is based in Iowa City. In the past, the Keyes Chapter coordinated excavations at the Keystone rockshelter (reported by Duane Anderson in the last IAS *Journal*) and distributed its own newsletter, The *Keyestone*.

After a period of somewhat lower levels of informal activity, the Keyes Chapter returned to life last fall. Monthly programs are now being presented at Macbride hall on The University of Iowa campus.

Named for Charles Reuben Keyes, the Chapter's goal is to increase communication among all persons in the Iowa City area who are interested in archaeology. The Chapter's sponsors are the University of Iowa Department of Anthropology, the Museum of Natural History, and the Office of the State Archaeologist.

Programs presented in the fall of 1988 were:

"Charles Reuben Keyes and the Keyes Archaeological Collection" by Bill Green, State Archaeologist.

"Wooden Teeth and Other False Fronts: Archaeology at George Washington's Mount Vernon" by Dennis Pogue, Chief Archaeologist at Mount Vernon.

"Site-seeing in the Eastern Arctic" by Mary Whelan, Assistant Professor of Anthropology at UI.

A field trip to the Mines of Spain near Dubuque was rained out but may be rescheduled for the spring. Other spring activities will include evening slide programs and (we hope) surface survey of local archaeological sites. The Chapter also will assist in hosting the Midwest Archaeological Conference, October 13-15, 1989, in Iowa City.

Scheduled upcoming meeting programs include:

February 13 - Steve Lensink, OSA, will talk about "Historical Archaeology at Plum Grove."

March 13 - George Schrimper, UI Museum of Natural History, topic to be announced.

April 17 - Bill Green, OSA, will conduct an artifact identification workshop.

For more information on meeting dates and times (which are variable), contact Bill Green or Deb Zieglowsky 33319-335-2389 or Mary Whelan 319-335-0529.

SOCIETY NEWS;

NEW CHAPTER IN BURLINGTON?

Southeastern Iowa and western Illinois members may soon participate in the IAS through a new chapter in Burlington.

Des Moines County Naturalist Sharon Kaufman reported an enthusiastic response to two recent public archaeology meetings at the Starr's Cave Nature Center. Ferrel Anderson inaugurated the program on December 3 and Bill Green presented a workshop entitled "Artifact identification and Recording" on February 11.

Volunteers are needed in the Burlington area to assist coordination of meetings, publicity, and refreshments. To volunteer or to request more information on future meeting dates, call Sharon Kaufman in Burlington: 319-753-5808.

CALENDAR:

April 1-2, 1989 - Iowa Archeological Society Annual Meeting, Cedar Falls.

MEETINGS

April 5-9, 1989 - Society of American Archaeology meetings, Atlanta, GA.

April 21-22, 1989 - Iowa Academy of Science, Storm Lake

October 13-15, 1989 - **Midwest Archaeological Conference**, hosted by the Office of State Archaeologist and The University of Iowa. Abstracts for symposia (and all symposium paper abstracts) due August 4, 1987; abstracts for contributed papers due September 8, 1989. For further information, please contact William Green or Stephen Lensink, OSA, Eastlawn, University of Iowa, Iowa City 52242; 319/335-2389.

ANNUAL MEMBERSHIP DUES

VOTING:

1.Active	$10
2.Household	$17
3. Sustaining	$25
4. Benefactor	$250 minimum

NON-VOTING:

1.Student(under 18)	$7
2.Institution	$10

SEND DUES TO:
Deb Zieglowsky
310 Haywood Drive
Iowa City, IA 52240-1051

HAVE YOU PAID YOUR DUES YET THIS YEAR?

The Iowa Archeological Society is a non-profit, scientific society legally organized under the corporate laws of Iowa. Members of the Society share a serious interest in the archaeology of Iowa and the Mid-west.

The Newsletter is published four times a year. All materials for publication should be sent to the editor:

Sheila Hainlin, 1434 44 St., Des Moines, IA 50311

IOWA ARCHEOLOGICAL SOCIETY TO MEET AT UNI

The Iowa Archeological Society will conduct its annual spring meeting April 1-2, 1989. The meeting will be at University of Northern Iowa in Cedar Falls. The banquet speaker is scheduled to be Ken Farnsworth of the Center for Archaeological research in Kampsville, Ill.

Plan to attend and bring a friend. Also, bring your stories and your finds for us all to share.

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IOWA ARCHEOLOGICAL SOCIETY

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