



MIDWEST ARCHAEOLOGICAL CONFERENCE



IOWA CITY, IOWA
OCTOBER 1983



MIDWEST ARCHAEOLOGICAL CONFERENCE
October 21-23, 1983
IOWA CITY, IOWA

* * * * *

CONFERENCE CHAIR: Joseph A. Tiffany

PROGRAM: Duane C. Anderson, Joseph A. Tiffany

REGISTRATION/INFORMATION: Debby Zieglowsky

TECHNICAL: Duane C. Anderson, Katherine Spielmann

PUBLICATION SALES: Sara Behrman

PROGRAM EDITOR: Robert Burchfield

* * * * *

SPONSORING ORGANIZATIONS

Office of the State Archaeologist of Iowa

Departments of Anthropology and Geology, The University of Iowa

Iowa Geological Survey

Iowa Archeological Society

Museum of Natural History, The University of Iowa

Social Activities. The traditional pre-conference reception will be held the evening of October 21 from 6 p.m. until midnight in the Main Lounge of the Iowa Memorial Union (IMU) in conjunction with the conference registration. A cocktail hour will be held on the Sun Porch west of the Main Lounge on October 22 between 5:00 and 6:30 p.m. Both affairs include a cash bar.

Registration. The registration table will be open from 5:30 until 10:30 p.m. in the entryway to the Main Lounge on Friday night, October 21. The registration table will be open Saturday from 8:00 until 10:30 a.m. in the lobby area on the third floor of the Iowa Memorial Union. Registration is required for participation in conference activities.

Business Meeting of the Midwest Archaeological Conference will be held Sunday morning in the ILLINOIS ROOM.

Board Meeting of the Iowa Archeological Society will be held Sunday morning in the YALE ROOM.

Publication Sales. Several publishers will set up exhibits/sales areas in the OHIO STATE ROOM on the third floor of the Iowa Memorial Union.

Parking on Campus. Guests at the Iowa House are provided with free parking. Free parking will be available in the University parking lot just north of the IMU on October 22-23 or you may park in the ramp across the street east of the IMU. Parking is tight on campus, so plan to arrive early to avoid difficulty.

Abstracts. The Program and Abstracts booklet is provided at registration. Additional copies are available at the Registration Desk for \$1 per copy and may be ordered prepaid from the Office of the State Archaeologist of Iowa, Eastlawn Building, The University of Iowa, Iowa City, IA 52242.

Poster Papers. Poster papers will be presented in the third floor lobby area on Saturday from 3:30 to 4:30 p.m.

Information Booth. An information booth will be available near the registration table throughout the conference for messages, maps, and bus schedules, and for information on placement, parking, restaurants, and points of interest in the Iowa City area.

PROGRAM AT A GLANCE

Friday Evening

1. Reception and Registration MAIN LOUNGE 6:30-12:00

Saturday Morning

1. Upper Mississippi Valley Symposium ILLINOIS ROOM 8:00-12:15
2. Oneota Symposium HARVARD ROOM 8:00-12:20
3. Geomorphic Research in Midwest Archaeology Symposium YALE ROOM 8:00-12:00

Saturday Afternoon

1. Plenary Session: Kimmwick and Clovis Adaptation to Late Pleistocene Environments of the Midwest - Russell W. Graham, presiding ILLINOIS ROOM 1:30-2:20
2. Historic Sites Archaeology Symposium YALE ROOM 2:30-4:40
3. Weber I Site Symposium ILLINOIS ROOM 2:30-5:00
4. US-31 Mitigation Project Symposium HARVARD ROOM 2:30-3:30
5. General Session I HARVARD ROOM 3:45-4:45
6. Poster Papers Third Floor Lounge Area 3:30-4:30
7. Open House Paleontological Labs and Repository, Trowbridge Hall 4:00-5:00

Cocktail Hour SUN PORCH, MAIN LOUNGE 5:00-6:30

Sunday Morning

1. General Session II ILLINOIS ROOM 8:30-10:45
2. General Session III HARVARD ROOM 8:30-11:30
3. General Session IV YALE ROOM 8:30-11:00
4. Iowa Archeological Society, Board Meeting YALE ROOM 11:00-12:00
5. Midwest Archaeological Conference, Business Meeting ILLINOIS ROOM 11:30-12:00

FRIDAY

RECEPTION AND REGISTRATION

MAIN LOUNGE, Iowa Memorial Union, 6:00-12:00 p.m., Friday, October 21. Cash Bar.

SATURDAY

CULTURAL DEVELOPMENT AND ADAPTATION
ALONG THE UPPER MISSISSIPPI RIVER:
RECENT INVESTIGATIONS

ILLINOIS ROOM, 8:00 a.m. - 12:15 p.m., Saturday, October 22

Chair: William Green (Wisconsin State Historical Society) and
Harold Hassen (Center for American Archeology)

- 8:00 Introduction to the Archaeology of the Upper Mississippi River (William Green)
- 8:10 Geomorphic Study of Pool 10, Upper Mississippi Valley (Peter E. Church and Lawson M. Smith)
- ST 8:25 The Impacts of Burial on Archaeological Sites: Stress Distribution and Soil Consolidation (David Berwick)
- 8:40 Archaeology on the Mississippi Sand Terraces of Carroll County, Illinois (William Billeck and Elizabeth Benchley)
- 8:55 Early Woodland Site Structure at the Ambrose Flick Site in the Upper Mississippi Valley (C. Russell Stafford and Charles R. McGimsey)
- 9:10 The Thompson Causeway Site: Early and Middle Woodland Components (Mark Esarey)
- 9:25 Middle Woodland Summer Subsistence Patterns in the Prairie du Chien Locality: Faunal Remains (James L. Theler)
- 9:40 Middle Woodland Summer Subsistence Patterns in the Prairie du Chien Locality: The Plant Remains (Constance Arzigian)
- 9:55 Break
- 10:15 Late Woodland Ceramics from a Portion of the Upper Mississippi River Valley: Observations Based upon Recent F.A.P. 408 Investigations in West-Central Illinois (David T. Morgan)
- 10:30 Late Woodland Diversity in the Upper Mississippi River Drainage (Harold Hassen)
- ST 10:45 The Middle Mississippian Presence in the Upper Mississippi Valley: The Evidence from Trempealeau, Wisconsin (Katherine Stevenson, William Green, and Janet Speth)
- 11:00 A Comparison of Floodplain Archaeology of Pools 7 and 8 at LaCrosse with Pools 10, 12, and 16 (Robert Boszhardt)
- 11:15 Prehistoric Settlement Patterns as seen from Recent Surveys in the East Bank of the Mississippi River (John T. Penman)
- 11:30 Mortuary Site Structure and Human Biology in the Upper Mississippi River Valley (Jane Buikstra, Karen Atwell, Keith Condon, and Cindy Garner)
- 11:45 Discussants: Lynne Goldstein and Stanley Riggle

- 4 -
ONEOTA SYMPOSIUM

HARVARD ROOM, 8:00 a.m.-12:20 p.m., Saturday, October 22
Chair: Lawrence A. Conrad (Western Illinois University)

- 8:00 Introduction (Lawrence A. Conrad)
- 8:10 Oneota and Upper Mississippi Cultures in Minnesota (Clark A. Dobbs)
- 8:40 The Oneota Occupation of Western Wisconsin (Katherine Stevenson and Robert F. Sasso)
- 9:10 The Archaeology of the Mississippian Period in the Chicago Region (James A. Brown).
- DWZ-9:25 Who's Sioux in Eastern Wisconsin? (Robert Hall)
- JLT 9:40 The Apple River Focus of Northwestern Illinois Revisited (Thomas E. Emerson)
- 10:00 Break
- 10:15 Iowa Oneota Ceramics (Joseph A. Tiffany)
- 10:35 Oneota in West-Central Illinois (Lawrence A. Conrad and Duane Esarey)
- 11:05 Oneota in the American Bottom: A Post-Middle Mississippian Development (Mark W. Mehrer)
- 11:20 The Evolution of Oneota Culture in Central Missouri (Dale R. Henning)
- 11:50 Oneota in Kansas and Nebraska (Carol Raish)

APPLICATIONS OF PEDOLOGIC AND GEOMORPHIC RESEARCH
IN MIDWESTERN ARCHAEOLOGY

YALE ROOM, 8:00-12:00 a.m., Saturday, October 22
Chair: E. Arthur Bettis III (Iowa Geological Survey)

- JLT 8:00 The Interaction of Archaeology and the Earth Sciences in the Midwest (E. Arthur Bettis III)
- 8:15 Geoarchaeological Investigations in the Western Lowlands of Missouri (Michael J. O'Brien)
- 8:35 Surficial Geology and Soils of an Archaeological Site in Central Illinois (Leon R. Follmer)
- JT 8:55 Thermoluminescence (TL) Dating of Loess in Northwest Missouri (Ralph M. Rowlett and John P. Tandarich)
- JT 9:15 Temporal Implications of Archaeological Material in Upland Soils of Iowa (Larry R. Abbott)
- 9:35 Soils and Effigy Mounds: A Regional Perspective in the Upper Midwest (John P. Tandarich and R. Clark Mallam)
- 9:55 Break
- 10:15 Rapid Pedogenesis at the Deer Creek Site: A French-Indian Historic Site in Kay County, Oklahoma (Donald Johnson and D. Watson-Stegner)
- 10:35 Predictive Modeling of Location and Preservation Potentials for Surface and Buried Sites in Major River Valleys: A Landscape Evolution Approach in the Lower Illinois (Edwin J. Hajic)
- 10:55 A Soil-Geomorphic Approach to Locating Buried Late Archaic Sites in Northeastern Oklahoma (Joseph A. Artz)
- JLT 11:15 A Stratigraphic Approach to Archaeological Survey in a Small Western Iowa Drainage (Dean M. Thompson)
- 11:35 Discussants: David W. Benn and E. Arthur Bettis III

PLENARY SESSION

KIMMSWICK AND CLOVIS ADAPTATIONS TO LATE
PLEISTOCENE ENVIRONMENTS OF THE MIDWEST

ILLINOIS ROOM, 1:30-2:20 p.m., Saturday, October 22
Russell W. Graham (Illinois State Museum), presiding

-3-

RECENT CONTRIBUTIONS TO HISTORIC SITES
ARCHAEOLOGY IN ILLINOIS

YALE ROOM, 2:30-4:40 p.m., Saturday, October 22
Chair: Ronald W. Deiss (Illinois State University)

- 2:30 Search for the First Fort de Chartres (Edward B. Jelks and Carl Ekberg)
- DJZ- 2:45 Military Buttons and the Historical Archaeologist (Martin A. Wyckoff)
- 3:00 The Pulaski Pottery: A Study of a 19th Century Pottery Kiln (Cynthia J. Anderson)
- 3:15 Nineteenth Century Proprietary Machines: The Development of a Folk Tradition (Ronald W. Deiss)
- 3:30 The Illinois Public Artifact Pattern (Keith L. Barr)
- JLT 3:45 The Lead Mining Industry of the Upper Mississippi River Valley: An Evaluation of the Historic Archaeological Resources (Floyd Mansberger)
- 4:00 Discussant: Margaret K. Brown

THE WEBER I SITE: NEW LIGHT ON MIDDLE AND
LATE ARCHAIC ADAPTATIONS IN THE SAGINAW VALLEY, MICHIGAN

ILLINOIS ROOM, 2:30-5:00 p.m., Saturday, October 22
Chair: William A. Lovis (Michigan State University)

- 2:30 An Introduction to the Weber I Site (William A. Lovis)
- 2:50 Geology and Deposition of the Weber I Site (William Monaghan and Leslie Fay)
- 3:10 Description and Preliminary Analysis of the Lithic Assemblages at the Weber Site (James A. Robertson)
- 3:30 The Fauna of the Weber I Site (Beverly Smith)
- 3:50 The Flora of the Weber I Site (Nancy Cleland)
- 4:10 Intra-site Organization at the Weber I Site (William A. Lovis and James A. Robertson)
- 4:30 The Saginaw Valley Archaic: The View from Weber I (William A. Lovis)
- 4:50 Discussant: Michael Wiant

LATE ARCHAIC AND EARLY WOODLAND IN SOUTHWESTERN MICHIGAN:
THE U.S.-31 MITIGATION PROJECT

HARVARD ROOM, 2:30-3:30 p.m., Saturday, October 22
Chair: Elizabeth B. Garland (Western Michigan University)

- 2:30 The Late Early Woodland Occurrence of Marion Thicket in Southwestern Michigan (Elizabeth B. Garland)
- 2:50 Natural Harvest: Prehistoric Relationships between People and Plants in Southwest Michigan (Kathryn E. Parachini)
- 3:10 The St. Joseph Complex: A Late Archaic-Early Woodland Lithic Assemblage from Southwest Michigan (Caven P. Clark)

GENERAL SESSION I: LITHIC STUDIES

HARVARD ROOM, 3:45-4:45 p.m., Saturday, October 22
Chair: Duane C. Anderson (Office of the State Archaeologist of Iowa)

- 3:45 Elements of Wyandotte Chert and their Archaeological Application (Kenneth B. Tankersley)
- 4:00 Pipestone Artifacts and Raw Materials at and near the Wittrock Site (130B4) O'Brien County, Iowa (James N. Gundersen and Joseph A. Tiffany)
- 4:15 Native American Gunflints of Hixton Silicified Sandstone: Verification by Experiment (J. Jefferson MacKinnon and Jeffery A. Behm)
- 4:30 Lithics in Ritual Context: A View from the Late Archaic/Early Woodland Transitional Period (Noel D. Justice)

POSTER PAPERS

LOUNGE AREA, Third Floor, Iowa Memorial Union, 3:30-4:30 p.m., Saturday, October 22

IOWA HALL Project (George Schrimper)
Native American Cultigens (Daniel C. Zwiener)
Salvage Excavations at the Sandusky Site (Jonathan Bowen)
Mesquakie Photographic Exhibit

OPEN HOUSE

PALEONTOLOGICAL LABS AND REPOSITORY

TROWBRIDGE HALL, Second Floor (directions available at Information/Registration Desk), 4:00-5:00 p.m., Saturday, October 22
Holmes A. Semken (The University of Iowa), presiding

COCKTAIL HOUR

SUN PORCH, MAIN FLOOR, Iowa Memorial Union
5:00-6:30 p.m., Saturday, October 22. Cash Bar.

SUNDAY

GENERAL SESSION II: MISSISSIPPIAN SITES/PUBLIC ARCHAEOLOGY

ILLINOIS ROOM, 8:30-10:45 a.m., Sunday, October 23
Chair: Katherine Spielmann (The University of Iowa)

- 8:30 The Archaeological Park and Its Use in Public Education (Mary L. Kwas)
- 8:45 The Other Fieldwork: On-line Searching Applications for Archaeologists (Sara Behrman)
- 9:00 An Emergent Mississippian Occupation in the Eastern Ozarks, Southeast Missouri (Mark J. Lynott and Susan M. Monk)
- 9:15 Initial Uses of Xeroradiography in Exploring Techniques Used in Early Mississippian Ceramic Vessel Construction (Michael Adler)
- 9:30 Tempering in Prehistoric Ceramics at the Robinson's Lake Site (James W. Porter)
- WJT 9:45 Structures and People: Mississippian Period Population Size in the American Bottom Area of West-Central Illinois (George R. Milner)
- 10:00 Break
- 10:15 Emerald Mound and the Mississippian Occupation of the Central Silver Creek Valley (Timothy R. Pauketat and Brad Koldehoff)
- 10:30 Mississippianization of the Lower Illinois Valley: The Audry North Village, Greene County, Illinois (Thomas Cook)

GENERAL SESSION III: ARCHAIC AND WOODLAND ARCHAEOLOGY

HARVARD ROOM, 8:30-11:30 a.m., Sunday, October 23

Chair: James L. Theler (Office of the State Archaeologist of Iowa)

- 8:30 Napoleon Hollow Site: A Descriptive Summary of the Archaic Period Components (Michael D. Wiant)
- 8:45 Early and Middle Archaic Settlement Strategies in the Modoc Locality (Steven R. Ahler)
- WST 9:00 Stylistic Analysis of Hardin Barbed Points: Cultural Interaction with the Early Archaic (Jeffrey A. Behm)
- 9:15 The Deere Creek Site: An Early Woodland Camping Locality in Northwestern Illinois (Charles W. Markman)
- 9:30 Pinson Mounds: A Unique Middle Woodland Ceremonial Center (Robert C. Mainfort)
- JLT 9:45 Archaeological Investigations Relating to Mound City Group National Monument (Susan M. Monk)
- 10:00 Break
- 10:15 Human Skeletal Remains from Poor Man's Farrah (47GT366) and Bade (47GT365) Sites in Southwestern Wisconsin (Rodney E. Riggs)
- JT 10:30 The Carter Creek Site: A Weaver Phase Ring Midden in the Interior Uplands of West-Central Illinois (Duane Esarey, Charles Suchy, and Kelvin Sampson)
- 10:45 The Bridges Site: A Multicomponent Late Woodland and Mississippian Settlement in the Central Kaskaskia Drainage (Michael L. Hargrave)
- 11:00 Late Woodland Ceramic Lip Impressions in the American Bottom Area (Fred A. Finney)
- d → 11:15 Archaeological and Geomorphical Investigations at Lake Red Rock, Iowa (Donna C. Roper and Joseph Schuldenrein)
- WIBS

GENERAL SESSION IV: DIETARY STUDIES/HISTORIC SITES
ARCHAEOLOGY/PHYSICAL ANTHROPOLOGY

YALE ROOM, 8:30-11:00 a.m., Sunday, October 23

Chair: Shirley Schermer (Office of the State Archaeologist of Iowa)

- 8:30 The Fallacious Nature of Certain Cultural Trends through Time Based on Changing Counts or Proportions of Paleoethnobotanical Specimens (L. Anthony Zalucha)
- 8:45 Accelerator Radiocarbon Dating Tests Evidence for Early Horticultural Developments in Illinois (David L. Asch and Nancy B. Asch)
- JT 9:00 Human Diet in the Late Archaic (T. Douglas Price)
- JLT 9:15 A Faunal Analysis of Archaeological Households of Historic Indians in Missouri (Jeffery K. Yelton)
- 9:30 The Osage and Missouri Indian Culture Change Project (Robert P. Wieggers)
- 9:45 Frontier Architecture in Information Exchange (Barbara E. Cohen)
- 10:00 Break
- 10:15 Trading Posts along the St. Croix National Scenic Riverway (Melissa Connor)
- 10:30 The P-Flat Site, 47AS47, A Late 17th Century Fishing Station in Northern Wisconsin (Jeffery J. Richner)
- SS 10:45 A Synthetic Approach to the Identification and Description of Trephination (David Fuerst)

IOWA ARCHEOLOGICAL SOCIETY BOARD MEETING

YALE ROOM, 11:00-12:00 a.m., Sunday, October 23

MIDWEST ARCHAEOLOGICAL CONFERENCE BUSINESS MEETING

ILLINOIS ROOM, 11:30-12:00 a.m., Sunday, October 23

ABSTRACTS

Abbott, Larry R. (University of Wisconsin-Madison) TEMPORAL IMPLICATIONS OF ARCHAEOLOGICAL MATERIAL IN UPLAND SOILS IN IOWA

Cultural material found at undisturbed archaeological sites on gently sloping uplands and high terraces in Iowa is buried and incorporated within some soil horizon. Pedogenic processes operating during the Holocene, such as bioturbation, littering, and incremental loess additions, have caused the surface of these soils to accrete and the subsurface soil horizons to gradually move upward. This has resulted in the burial and incorporation of cultural material left on the soil surface following an occupation. The position of this cultural material within a particular soil horizon is a function of the antiquity of the occupation, the youngest occupations occurring toward the top of the soil profile while older occupations occur deeper. A particular age of occupations can be anticipated to be present within a particular soil horizon regardless of the actual thickness of the particular soil. Thus, the age of nondiagnostic cultural material can be bracketed by observing the soil horizon containing that material. Plowing and erosion truncate and collapse the soil profile and mix the once stratified cultural horizons. The quest for earlier occupations will be rewarded by looking deeper in these upland soil profiles, particularly in the loessal soils.

Adler, Michael (University of Michigan) INITIAL USES OF XERORADIOGRAPHY IN EXPLORING TECHNIQUES USED IN EARLY MISSISSIPPIAN CERAMIC VESSEL CONSTRUCTION

Previous analyses of Mississippian ceramics in the Midwest have been concerned largely with questions of typology. The explanations of typological traditions have been based upon observable, repetitive physical characteristics. However, there is not necessarily a synonymy between a typological tradition and a ceramic technological tradition. Description of a technological tradition rests upon the isolation of specific techniques of pottery construction. Thus, different technological traditions can still produce typologically similar vessels. This paper reviews initial attempts to identify ceramic vessel formation techniques possibly used at a Mississippian habitation site in west-central Illinois. Xeroradiography, a form of high-resolution radiological analysis, was performed on a sample of shell-tempered sherds at the Museum Applied Science Center for Archaeology (MASCA). Preliminary results point to the use of both slab and coiling construction techniques. Internal alignment patterns of temper particles suggest paddle and anvil usage. Finally, clues left concerning vessel usage and failure are discussed.

Ahler, Steven R. (University of Wisconsin-Milwaukee) EARLY AND MIDDLE ARCHAIC SETTLEMENT STRATEGIES IN THE MODOC LOCALITY

Systematic surface survey was conducted in the immediate vicinity of the Modoc Rock Shelter, Randolph County, Illinois. The purpose was to integrate the early and middle Archaic occupations at the shelter into local settlement strategies. Based on analysis of shelter materials, and stratigraphy, expected settlement strategies were (1) residential mobility during the early Archaic and (2) logistical mobility during the middle Archaic. Analysis of survey data including site location, site size, artifact density, and functional and morphological diversity of assemblages indicates that these expectations are fulfilled. Settlement shifts from small scattered sites in the early Archaic to large clustered sites in the middle Archaic. The change in settlement corresponds with dryer Hypsithermal climatic conditions. Faunal analysis from Modoc also shows the settlement shift closely tied to increased exploitation of floodplain aquatic species by about 7500 B.P. Both drying of uplands and development of more modern fluvial regimes contribute to this shift in settlement strategies.

Anderson, Cynthia J. (Illinois State University) THE PULASKI POTTERY: A STUDY OF A NINETEENTH CENTURY POTTERY KILN

Very little documentary and archaeological evidence exists on the potteries and potters of nineteenth-century Illinois. The range and variety of wares made, in many cases, can only be assumed since a mere handful of documented examples of these wares exist today. This paper deals with nineteenth-century pottery located in the abandoned townsite of Pulaski in Hancock County, Illinois, and will describe and discuss the site, the types of wares found, and the problems encountered documenting sites of this type.

Artz, Joseph A. (University of Tulsa) A SOIL-GEOMORPHIC APPROACH TO LOCATING BURIED LATE ARCHAIC SITES IN NORTHEASTERN OKLAHOMA

Due to extensive Late Holocene aggradation, archaeological components which predate 2000 B.P. are seldom encountered on the surface of alluvial valleys in northeastern Oklahoma. Investigations in the Little Caney River valley reveal that surfaces dating to ca. 2000 B.P. are largely restricted to the middle reaches of first-order tributaries of the mainstream river. On published maps, these surfaces are indicated as areas of the Mason series, a Typic Argüdüoll. A survey of areas mapped as Mason series resulted in the location of several shallowly buried Late Archaic sites. Analysis of basin morphometry and soil-geomorphology suggests a combination of geologic and hydrologic factors that promote the geomorphic stability of middle-reach surfaces, permitting the formation of moderately developed soils. Elsewhere in the valley, sediments and sites predating 2000 B.P. have been either deeply buried or eroded by subsequent fluvial activity. This soil-geomorphic model apparently applies to several other small drainage basins in northeastern Oklahoma, where Late Archaic sites have been recorded on or beneath surfaces mapped by the SCS as Mason series.

Arzigian, Constance (University of Wisconsin-Madison) MIDDLE WOODLAND SUMMER SUBSISTENCE PATTERNS IN THE PRAIRIE DU CHIEN LOCALITY: THE PLANT REMAINS

A variety of plant remains has been recovered from a number of small, seasonally occupied campsites in the floodplain of the Mississippi River near Prairie du Chien, Wisconsin. The focus in this paper will be on a series of Middle Woodland stage sites that give evidence of summer occupations. Information on seasonality, subsistence, and environment can be derived from these sites. Particular consideration will be given to the use of storable plant resources as reliable indicators of seasonality and to the question of native and tropical cultigens in this region.

Asch, David L. and Nancy B. Asch (Center for American Archeology) ACCELERATOR RADIOCARBON DATING TESTS EVIDENCE FOR EARLY HORTICULTURAL DEVELOPMENTS IN ILLINOIS

Accelerator radiocarbon dating of carbonized, cultivated plant remains from archaeological sites in Illinois establishes (1) that squash was introduced by 7000 years ago, the oldest date yet obtained for plant cultivation in eastern North America; (2) that horticulture based on indigenous species had begun by 4000 B.P. with the domestication of *Iva annua*, a small-seeded annual; (3) that anomalous discoveries of maize from apparent Archaic contexts at the Koster site represent contamination; and (4) that the introduction of maize by Hopewellian times (ca. 2000 B.P.) is questionable.

Asch, Nancy B. (see Asch, David L.)

Atwell, Karen (see Buikstra, Jane)

Barr, Keith L. (Illinois State University) THE ILLINOIS PUBLIC ARTIFACT PATTERN

Stanley South (1977:89-90) identified regularities in patterning in the archaeological record from British Colonial sites occupied over 100 years of time (ca. A.D. 1728-1830) in the Carolinas. This paper presents a classification grouping, quantification, and analysis ala South revealed by the

artifact frequency patterns observed in the collections from five different nineteenth-century sites excavated in Illinois during recent years. All five were public buildings constructed between A.D. 1836 and 1857 and include the Vandalia Statehouse (1836), Jubilee College (1839), the Shawneetown Bank (1839-1845?), Mt. Pulaski Courthouse (1848), and the Illinois State Normal University Building (1857). The first four structures are still extant, but the ISNU Building was razed in 1958.

Behm, Jeffery A. (University of Wisconsin-Madison) **STYLISTIC ANALYSIS OF HARDIN BARBED POINTS: CULTURAL INTERACTION WITHIN THE EARLY ARCHAIC**
Spatial patterning of stylistic variation of artifacts is a potential source of information on social group interaction. This study investigates the stylistic variation within a single Early Archaic projectile point type -- Hardin Barbed. Data were collected on 622 specimens from both sides of the Mississippi River from Arkansas to Wisconsin. The primary database consists of 493 points from Illinois and Wisconsin. Both metric and nonmetric haft attributes were examined in conjunction with their spatial distribution. All comparisons of stylistic variation and spatial distribution produced either random or clinal patterns. Discrete, nonoverlapping patterns were not encountered. These patterns suggest the absence of distinct social territories. Rather, a pattern of equal interaction in all directions resulting in information exchange over a large area is inferred.

Behm, Jeffery A. (see MacKinnon, J. Jefferson)

Behrman, Sara (Office of the State Archaeologist/The University of Iowa) **THE OTHER FIELDWORK: ON-LINE SEARCHING APPLICATIONS FOR ARCHAEOLOGISTS**
Technological changes have revolutionized the world of information and the methods available for literature searching in all fields. This study reviews the basic concepts underlying the compilation of bibliographic and nonbibliographic databases. The advantages and disadvantages of utilizing on-line information systems are compared, specifically with regard to their applicability to archaeology and related disciplines. Principles used in on-line searching are applied in an interdisciplinary approach to a variety of databases available through DIALOG Information Services, Inc. Among those databases evaluated are GEOREF, GEOARCHIVE, BIOSIS PREVIEWS, FOOD SCIENCE AND TECHNOLOGY ABSTRACTS, COMMERCE BUSINESS DAILY, FOUNDATION GRANTS INDEX, and FOUNDATION DIRECTORY. Searches illustrated are those which might otherwise have required expertise in fields peripheral to archaeology, for example, food science, geology, or biology. Sample searches include "The nutritional value of bison, venison, pollen, or turtle"; "A compilation of a bibliography on chert"; "Determination of which foundations specialize in donations to archaeology"; and a search to "Determine what governmental reports are available on midwestern archaeology." This study takes an "how-to" approach to introduce the archaeologist to the vast amount of archaeological information available, as well as the means by which to access that information, either by the archaeologist or through the use of an intermediary, such as a librarian.

Benchley, Elizabeth (see Billeck, William)

Berwick, David (U.S. Army Corps of Engineers, St. Paul) **THE IMPACTS OF BURIAL ON ARCHAEOLOGICAL SITES: STRESS DISTRIBUTION AND SOIL CONSOLIDATION**

This paper presents the results of a computer-generated model on the horizontal and vertical stress distribution which would be produced from the placement of 4 ft. of fill material over an archaeological site. These stresses are then applied to five different soil types for which soil consolidation is calculated. Stress distribution and soil consolidation are then discussed in light of the effects that intentional site burial may have on archaeological data and the desirability of using site burial as a means of preservation.

Billeck, William (University of North Dakota) and Elizabeth Benchley (University of Wisconsin-Milwaukee) ARCHAEOLOGY ON THE MISSISSIPPI SAND TERRACES OF CARROLL COUNTY, ILLINOIS

Archaeological surveys on the sand terraces of the Mississippi River in Carroll County, Illinois, have revealed sites dating from the Middle Archaic through Historic Indian periods. Controlled surface collections and test excavations at two sites (11-Ca-31 and 11-Ca-87) demonstrate that the sand terraces are dynamic landforms. Aeolian redeposition of sand along the terraces has buried and preserved portions of the Middle Archaic and Early Woodland occupations. Discovery of sites on the Mississippi sand terraces may only be possible in settings of localized erosion or modern construction.

Boszhardt, Robert (Mississippi Valley Archaeology Center) A COMPARISON OF THE FLOODPLAIN ARCHAEOLOGY OF POOLS 7 AND 8 AT LA CROSSE WITH POOLS 10, 12, AND 16

Survey of eroding floodplain shorelines in Pools 7 and 8 of the Upper Mississippi River has located several prehistoric archaeological sites. These sites are situated on Pleistocene terrace outliers presenting different conditions from floodplain sites reported from Pools 10, 12, and 16. Despite apparently intense Oneota settlement of the La Crosse area, diagnostic artifacts from the Pool 7 sites document primarily Woodland utilization of the floodplain. This settlement pattern compares favorably with the results from the down river pools.

Bowen, Jonathan (Ohio Historical Society) SALVAGE EXCAVATIONS AT THE SANDUSKY SITE (Poster Paper)

Salvage excavations have been completed at the Sandusky site, an eleventh-century Western Basin Late Woodland settlement in north-central Ohio. About 20 pit features and at least one structure were uncovered. The economy was apparently based on hunting, gathering, clamming, and probably farming.

Brown, James A. (Northwestern University) THE ARCHAEOLOGY OF THE MISSISSIPPIAN PERIOD IN THE CHICAGO REGION

An important record of Mississippian Period (A.D. 1000-1680) archaeology has accumulated for the Chicago region that bears on the cultural-historical forms of technological adaptation on the northeastern edge of the Prairie Peninsula. The basic sequence is one in which a Des Plaines complex is followed by Fisher and Langfort phases and is capped by the Huber phase. The cultural trends represented by this sequence are typical of the Prairie Peninsula as a whole. A period of incorporation of Mississippian maize agricultural technology is accompanied by the appearance and spread of shell tempered pottery and other elements having their origin in the south. After A.D. 1400, pottery becomes more similar to western modes, and the regional distinctiveness of the local tradition becomes submerged within a pan-Prairie Peninsula style. During the late period the semisedentary village system of the bison-hunting tribes of the Historic Period makes its appearance. The distinctive settlement pattern associated with this system is found in the Huber phase.

Buikstra, Jane (Northwestern University); Karen Atwell, Keith Condon, and Cindy Garner (Arizona State University) MORTUARY SITE STRUCTURE AND HUMAN BIOLOGY IN THE UPPER MISSISSIPPI RIVER VALLEY (No abstract)

Church, Peter E. and Lawson M. Smith (U.S. Army Corps of Engineers, Vicksburg, Mississippi) GEOMORPHIC STUDY OF POOL 10, UPPER MISSISSIPPI RIVER VALLEY

A geomorphic investigation of Pool No. 10, Upper Mississippi River Valley, was conducted to identify potential locations of prehistoric cultural resources. Landforms having high and low potential of containing archaeological sites were differentiated on the basis of geomorphic process of formation and relative geomorphic stability through time and delineated on a

series of maps of the Pool No. 10 area. Definition and delineation of geomorphic features of the study area were based on interpretation from pre- and post-lock and dam aerial photographs, topographic maps, and borehole logs. The Mississippi Valley in the area of Pool No. 10 has experienced many episodes of aggradation and degradation in the past two or three million years related to the advance and retreat of continental ice sheets. The net effect of the glacial events was to create a deep bedrock gorge partially filled with a thick deposit of alluvium that possesses a very gentle downvalley surface gradient. A diminished supply of water and sediment since retreat of the last continental glacier approximately 10,000 years ago has resulted in a stable anastomosing channel pattern. Aggradation and associated floodplain instability have been concentrated near the junctions of major tributary rivers. Recent additions of anthropogenically derived silt from tributary streams since European settlement has resulted in shallow burial of many of the floodplain landforms. An understanding of the geomorphic development of Pool No. 10 has allowed potential locations of cultural resources to be identified. Archaeological sites should tend to be preserved preferentially in reaches characterized by floodplain stability. Within stable reaches, archaeological sites are most often found on ridges of lateral accretion deposits. Shallow burial of these sites by the vertical accretion of fine-grained sediment has occurred at an accelerated rate in the past century. The geomorphic maps produced during this investigation at the scale of 1:24,000 delineate areas of high and low potential of containing archaeological sites. These detailed geomorphic maps and their description form an environmental basis for a comprehensive prehistoric cultural resources survey.

Clark, Caven P. (Western Michigan University) THE ST. JOSEPH COMPLEX: A LATE ARCHAIC-EARLY WOODLAND LITHIC ASSEMBLAGE FROM SOUTHWEST MICHIGAN The US-31 project in Berrien County, southwest lower Michigan, has disclosed a Late Archaic-Early Woodland complex which is strikingly different from these periods as they are known from the Saginaw Valley. The St. Joseph complex, dating ca. 1000 B.C. to 200 B.C., embraces the Archaic-Woodland transition with evidence for remarkable continuity and conservatism as expressed in the lithic assemblage. This complex is described and contrasted with the Saginaw Late Archaic and Early Woodland periods.

Cleland, Nancy J. (Aurora Associates, Inc.) THE FLORA OF THE WEBER I SITE Systematic processing of 10 liter flotation samples from the three components of the Weber I site produced a large sample of macrobotanical remains, primarily from the Archaic occupations. Macrobotanical remains from the features at the site, in conjunction with field-collected materials from water screening, reveal extensive use of plant foods at the site. The Middle Archaic occupation is dominated by Chenopodium; the Late Archaic occupation is dominated by Juglans nigra and Chenopodium. Implications in terms of diet, seasonality, and habitat are discussed.

Cohen, Barbara E. (Southern Illinois University-Carbondale) FRONTIER ARCHITECTURE IN INFORMATION EXCHANGE

In recent years, archaeologists have sought to determine the extent of cultural information residing in objects of material culture. A pioneering work in this regard, Glassie's Folk Housing in Middle Virginia (1975), suggests some possible methods for studying architectural forms as a means of recovering intangible cultural information. But the extensive disappearance of early pioneer vernacular structures in the Midwest renders the application of Glassie's method less useful for studying this period here. Archaeology joins forces with historical research as a means to overcome the problems which result from the destruction of these sites. Diaries, letters, old photographs, paintings, and other traditional historical sources have been tapped to provide descriptive data for surveys of early historic vernacular architecture, in lieu of the archaeologist's traditional walk-over reconnaissance survey. In this study of Illinois pioneer vernacular architecture, these same historical sources are used both to test a number

of Glassie's (and others') assumptions about the relationship between architecture and cultural information and to provide new perspectives on the Illinois pioneer experience. This paper concentrates specifically on the kinds of assumptions we traditionally make about the relationship between architecture and culture, the validity of these assumptions as a result of this particular study, and new culture historical interpretations which this research engenders.

Condon, Keith (see Bulkstra, Jane)

Connor, Melissa (National Park Service) TRADING POSTS ALONG THE ST. CROIX NATIONAL SCENIC RIVERWAY

During the 1983 field season the Midwest Archeological Center, National Park Service, tested 11 sites along the St. Croix National Scenic Riverway. These sites included two mid-1800s trading posts, Connor's Goose Creek Post (21CH21) and Samuel's Sunrise River Post, both of which are located in Minnesota's Wild River State Park. A third trading post (47SY22) - supposedly Cadotte's - had been excavated in 1963 by a private collector and was tested in 1982 by the Midwest Archeological Center. In 1983 the Center was granted permission to photograph the Tony Wise Collection, which consisted of the artifacts from the earlier excavations. The recent archaeological work at these sites concentrated on defining spatial and temporal boundaries, as well as evaluating the integrity of the site. This work is useful in more fully documenting the European settlement of the St. Croix-Namekagon waterway.

Conrad, Lawrence A. and Duane Esarey (Western Illinois University) ONEOTA IN WEST CENTRAL ILLINOIS

Three sites in Fulton County evince major Oneota occupations and several others in the central Illinois River valley have yielded small numbers of sherds. W.I.U. excavations at the Charles W. Cooper site have produced materials which allow a detailed discussion of the material culture of an intrusive Oneota group, and surface collections from the Crable and C.W. Cooper sites allow a discussion of the descendants of these people after they settled (not necessarily merged) with Spoon River peoples from approximately A.D. 1400 until 1550(?). Material from a private collection assembled on the Mississippi bottom between Quincy and Warsaw will also be discussed.

Cook, Thomas Genn (Center for American Archeology) MISSISSIPPIANIZATION OF THE LOWER ILLINOIS VALLEY: THE AUDREY NORTH VILLAGE, GREEN COUNTY, ILLINOIS

The Audrey North site, Greene County, Illinois, is a 4-ha area with extensive surface indications that one or more villages existed here between A.D. 600 and 1150. Since 1975 volunteers under professional supervision have excavated over 1,000 m² of the site, including seven house floors, two possible stockade segments, and nearly 100 pit features. The Stirling phase (A.D. 1050-1150) Mississippian occupation is characterized by wall-trench-in-basin type houses, shell-tempered pottery, Ramey-incised vessels, adornos, marine-shell beads, galena crystals, and the like. Similarities in ceramics suggest that the Mississippian Moss cemetery site, 0.5 km to the west, is a burial station for Audrey North site. This paper will describe the Mississippian assemblages at Audrey North and Moss cemetery site and will discuss the Mississippianization of mortuary customs at Moss cemetery as well as everyday technology at Audrey North site.

Deiss, Ronald W. (Illinois State University) NINETEENTH-CENTURY PROPRIETARY MEDICINES: THE DEVELOPMENT OF A FOLK TRADITION

In nineteenth-century Illinois, professional diagnosis and care was primitive, infrequent, and costly; as a result, self-medication was an accepted method of restoring health. Much of this treatment included proprietary medicines which were often distributed in containers that were blown in private molds, then filled with preformulated mixtures or brands for com-

petitive sale. Research has indicated that many of these preparations were influenced by local views of self-medication and identified with folk traditions.

Dobbs, Clark A. (University of Minnesota) ONEOTA AND UPPER MISSISSIPPIAN CULTURES IN MINNESOTA

The late prehistoric occupation of Minnesota is characterized by the presence of both Upper Mississippian and Oneota groups. Upper Mississippian appears to be restricted to the Red Wing locality and may date to the time of A.D. 1050-1250. Oneota groups are at least in part contemporary with Upper Mississippian groups and are widely distributed. Orr phase materials are known from southeast Minnesota, and an as yet undefined Oneota cultural group is known from the Red Wing area. Blue Earth materials are found in southern Minnesota and date between the eleventh and sixteenth centuries A.D. Ogechie is found at Lake Mille Lacs. Recently, Oneota ceramics have been found in extreme northwestern Minnesota in the Red River valley. Settlement patterns of both Upper Mississippian and Oneota groups characteristically are clustered rather than diffuse. However, differences between prairie and woodland patterns are now becoming apparent. Reanalysis of Oneota ceramics is providing the basis for a more refined taxonomy.

Ekberg, Carl (see Jelks, Edward B.)

Emerson, Thomas E. (Center for American Archeology) THE APPLE RIVER FOCUS OF NORTHWESTERN ILLINOIS REVISITED

The Apple River Focus of northwestern Illinois has played a central role in our understanding of the relationship of northern Middle Mississippian and Oneota cultures in the Midwest. Early excavations in the area at such sites as Mills, John Chapman, and the Savannah Proving Ground produced sizeable collections of "Mississippian" materials. These materials have provided the basis for the development of a series of conflicting interpretations on the cultural associations of the Apple River Focus. The focus has variously been viewed as (1) a product of cultural contact between Middle Mississippian and proto-Oneota groups, (2) contact between late persisting Trappist groups and fully developed Oneota cultures, or (3) demonstrating the in situ evolution of a Middle Mississippian group into Oneota. Recent work by CAA for IDOT at the Lundy site (11Jd140) and a reexamination of the University of Chicago collections have provided new information on the nature of the Apple River Focus. It is suggested that the Focus is no longer taxonomically useful and should be abandoned. It is also argued that the Apple River sites are an early northern variant of Middle Mississippian culture which develops in place concurrently with the early Oneota cultures in this region during the period between A.D. 1000-1100.

Esarey, Duane, Charles Suchy, and Kelvin Sampson (Western Illinois University) THE CARTER CREEK SITE: A WEAVER PHASE RING MIDDEN IN THE INTERIOR UPLANDS OF WEST CENTRAL ILLINOIS

Preliminary observations and analyses resulting from investigations on a newly discovered Weaver Phase ring midden are presented. Due to very infrequent episodes of cultivation the site has apparently retained much of its structural integrity and escaped heavy collector predation. Aerial photographs have provided a strikingly clear circular village plan replete with house depressions and a central plaza. This has allowed definitive observations on the community's structure and components, and on the site's formation. Two surface collections and a collector interview provide a large material sample from which data on the ceramic, lithic, and bone tool assemblages, as well as chert usage patterns, are drawn. Observations on the site's location and the area's landforms, vegetation, and special features are also made.

Esarey, Duane (see Conrad, Lawrence A.)

Esarey, Mark (Illinois State University) THE THOMSON CAUSEWAY SITE: EARLY AND MIDDLE WOODLAND COMPONENTS

In December, 1979, personnel of the Midwestern Archeological Research Center (MARC) at Illinois State University (ISU) tested an area to be affected by proposed improvements to recreation facilities at the Thomson Causeway Public Use Area, Carroll County, Illinois. Four 1 m by 2 m tests were excavated along a transect beginning outside a possible mound and extending well into it. These tests revealed that the feature is indeed a mound. Neteler Dentate Stamped and Spring Hollow Plain ceramics in conjunction with the mound suggest either an early or late Middle Woodland date of construction. One major fill episode is present in the mound. In addition, the test placed furthest toward the center of the mound contained a packed clay layer, which may represent a ramp leading to a central tomb. Discovered below the mound were remains of an Early Woodland occupation, including Spring Hollow Incised ceramics. While testing away from the mound in areas to be paved for the proposed rest stop, the crew found that the Early Woodland component extended as far as 110 cm below the current ground surface. Activities and features associated with a late nineteenth-century farmstead disturbed the top 10-20 cm of soil away from the mound. The crew discovered four features at the site. One was a cache of lithic debris from the reduction of a single core, one was a small pit containing Spring Hollow Incised ceramics, and the other two were privies filled about 1940. The Spring Hollow Incised (Early Woodland) component of the Thomson Causeway site is one of the largest and best preserved in the region. Moreover, further investigation of the mound, especially the precise provenience of the Spring Hollow sherds, may relieve a long-standing confusion over the position of Spring Hollow Incised ceramics in the culture history of the region.

Fay, Leslie (see Monaghan, William G.)

Finney, Fred A. (University of Wisconsin-Madison) LATE WOODLAND CERAMIC LIP IMPRESSIONS IN THE AMERICAN BOTTOM AREA

Recent investigations in the American Bottom area have revealed three phases for the Late Woodland period. This paper will examine one aspect of the ceramic distinctions between the phases. While jars with essentially unmodified rims persist throughout the sequence, other jars exhibit chronologically distinct lip impressions. Variation in the lip impression types and locations will be discussed for each phase.

Follmer, Leon R. (Illinois State Geological Survey) SURFICIAL GEOLOGY AND SOILS OF AN ARCHAEOLOGICAL SITE IN CENTRAL ILLINOIS

A study of the geological features and soil characteristics in the area around an archaeological site can contribute to the reconstruction of past cultural activities. A detailed study of geology and soils of a Historic-period Indian Village near Lincoln, Illinois, revealed a probable interrelation between soil resources, geological suitability, and Indian occupation activities. The site is located on glacial outwash terrace along a permanent stream and is adjacent to a glacial kame that rises about 70 ft. above the terrace and about 40 ft. above the general level of the upland. The soils at the site are high quality; they are fertile, well drained, and level, except for the terrace scarp. The character and pattern of the soils indicate that a forest border mosaic of vegetation existed at the site. A deciduous forest covered the kame, and prairie vegetation dominated most of the remaining area. The forest border would be an easy and desirable location for low intensity type of agricultural practices. Food storage pits were found above the scarp of the terrace in a physical-chemical location suitable for such use. Specific soil features were found that indicate an expansion of forested conditions during the last 1000 years or so before interruption by modern agricultural practices.

Fuerst, David N. (Southern Illinois University-Carbondale) A SYNTHETIC APPROACH TO THE IDENTIFICATION AND DESCRIPTION OF TREPHINATION

From an anthropological perspective, trephination represents a complex behavior that occurs within cultural and environmental contexts. This paper presents a synchronic model of trephination which outlines some of the formal and functional elements involved in identifying, describing, and interpreting trephined skulls. It is then used to infer different relationships in the archaeological record. Specific attention is given to the occurrence of trephined specimens in the Wayne Mortuary Complex of the Younger Tradition in southeast Michigan.

Garland, Elizabeth B. (Western Michigan University) THE LATE EARLY WOODLAND OCCURRENCE OF MARION THICK IN SOUTHWESTERN MICHIGAN

A conservative late Marion ceramic complex (ca. 350 B.C. - A.D. 1) has been identified in the lower St. Joseph valley in the southwestern corner of Michigan. These ceramics differ from Shiawassee ware which is restricted to several sites in the Saginaw Valley and occupies a comparable time period. Implications of the lower St. Joseph data relative to an intensive Early Woodland in west Michigan and the Saginaw are discussed. The existence of a generally unrecognized late Early Woodland elsewhere in west Michigan is posited.

Garner, Cindy (see Buikstra, Jane)

Graham, Russell W. (Illinois State Museum) KIMMSWICK AND CLOVIS ADAPTATIONS TO LATE PLEISTOCENE ENVIRONMENTS OF THE MIDWEST

Kimmswick, located approximately 32 km south of St. Louis and 1.5 km west of the Mississippi River, is a stratified multicomponent site. Stone tools characteristic of the Clovis culture have been found in direct association with the bones of the American mastodon, Mammuth americanum, in at least two superimposed horizons. Multiple Clovis components suggest repeated use of the Kimmswick site by Clovis people. Also, detailed analyses of these Clovis horizons permit fine-scaled studies of changes in environment and Clovis adaptations. Evidence of the manufacture and maintenance of chipped-stone armatures as well as a diverse faunal assemblage suggest that Kimmswick served as a mastodon kill and processing site as well as a limited camp site. In general, the vertebrate fauna from Clovis components at Kimmswick indicates a deciduous woodland with meadows. This environmental reconstruction is decidedly different from the spruce forest environment which is usually assumed to characterize mastodon habitat, and it is in marked contrast to environments encountered by Clovis hunters in the Great Plains and Southwest. Faunal remains from Kimmswick suggest that Clovis hunters frequently utilized ecological equivalents along environmental gradients and that their economy may have been more diverse than previously assumed.

Green, William (State Historical Society of Wisconsin) INTRODUCTION TO THE ARCHAEOLOGY OF THE UPPER MISSISSIPPI RIVER

This paper introduces the symposium on Prehistoric Cultural Development and Adaptation along the Upper Mississippi River. The Mississippi River north of the mouth of the Missouri recently has been the focus of a great deal of archaeological and related geomorphological work, and this symposium attempts to highlight some of these studies and the interpretations that are based upon them. The history of archaeological work along this part of the Mississippi is summarized. In addition, this paper briefly discusses the unique environment of the Upper Mississippi River trench, in order to provide a general framework for the following papers.

Green, William (see Stevenson, Katherine)

Gunderson, James N. (Wichita State University) and Joseph A. Tiffany
(Office of the State Archaeologist/The University of Iowa) PIPESTONE
ARTIFACTS AND RAW MATERIALS AT AND NEAR THE WITTRUCK SITE (130B4),
O'BRIEN COUNTY, IOWA

Current investigations by Gunderson involve the recognition of the diagnostic mineral assemblages of pipestone (an argillite rock type) from various provenances of outcrops in South Dakota and Minnesota and of such pipestone materials found in glacial drift as far south as Kansas. The presence (or absence) and relative abundances of chlorite, muscovite, pyrophyllite, kaolinite, diaspore, anatase, quartz, rutile, and hematite are the basis for distinguishing among pipestone type localities. The junior author is involved in interpreting the origin and distribution of such artifact materials in different archaeological site proveniences in this region of the Plains. Only five specimens from the Wittrock site were available for x-ray diffraction analysis. Their mineral compositions were very similar to one another and consisted predominantly of quartz and kaolinite with subordinate amounts of hematite and traces of anatase. This pipestone type is not among the varieties of "catlinite" pipestone occurring at Pipestone National Monument, a commonly assumed source of all pipestone. The material of the Wittrock specimens can be correlated with the variety of kaolinite-rich quartzose pipestones found in outcrop and subsurface cores from Cottonwood County in south-central Minnesota - about 65 miles to the north of Wittrock. A few pipestone specimens were collected from several abandoned river terrace gravel quarries within a mile of the Wittrock site, and about two dozen more were collected from the gravel bars of Waterman Creek which runs immediately adjacent to the site. All except one of these specimens were of the kaolinite-rich quartzose variety of pipestone materials recovered in archaeological context. The exception had diaspore as an additional constituent. This is the rarest variety of all pipestones, heretofore observed only once elsewhere, e.g., in a subsurface core sample from Cottonwood County, Minnesota. It seems clear that the prehistoric Indians of the Mill Creek culture at Wittrock did not have to travel far, nor engage in extensive trade, to obtain their pipestone raw materials. An anticipated, similar study of the pipestones in the Keyes Collection of the State Historical Society of Iowa, which represents a wide geographic and time-stratigraphic distribution of pipestone proveniences, might help reveal when prehistoric groups abandoned the use of local source materials in favor of "catlinite" material now exposed (in Historic times?) at Pipestone, Minnesota.

Hajic, Edwin R. (University of Illinois-Urbana) PREDICTIVE MODELING OF
LOCATION AND PRESERVATION POTENTIALS FOR SURFACE AND BURIED SITES
IN MAJOR RIVER VALLEYS: A LANDSCAPE EVOLUTION APPROACH IN THE
LOWER ILLINOIS

The quality of predictive modeling capability is a direct function of the degree of understanding systematic formational processes of present and past landscapes. For roughly 90 river miles in the lower Illinois Valley, surface and buried archaeological site potentials are evaluated in a stratigraphic and paleoenvironmental contextural framework provided by a dynamic historical model of terminal Wisconsinan through Holocene evolution of the Lower Illinois fluvial system. The reconstruction is based upon data collected from an extensive subsurface coring program and rigorous surficial analyses, and is performed at an absolute time framework sufficiently detailed to be archaeologically significant. A number of spatially and temporally distinct lithostratigraphic units, facies, and paleogeomorphic surfaces are identified which reflect discrete depositional environments and processes. Tables indicating location and preservation potentials for buried and surface manifestations of specific cultural groups for depositional units and geomorphic surfaces are used in conjunction with valley geomorphic maps and numerous transverse valley cross sections to determine potentials at any valley location.

Hall, Robert L. (University of Illinois-Chicago) WHO'S SIOUX IN EASTERN WISCONSIN?

One of the persisting problems in the study of Oneota cultures in Eastern Wisconsin is that of the archaeological identity of the Winnebago. Are there actually any historic sites which have pottery of the Lake Winnebago Phase? What is Orr Phase pottery doing at two historic sites on Green Bay near Red Banks, the traditional home of the Winnebago? What is the significance of the Menominee recollection of making shell-tempered pottery? What can Winnebago social organization tell us about Winnebago prehistory? How does it agree with archaeological inference?

Hargrave, Michael L. (Southern Illinois University-Carbondale) THE BRIDGES SITE: A MULTICOMPONENT LATE WOODLAND AND MISSISSIPPIAN SETTLEMENT IN THE CENTRAL KASKASKIA DRAINAGE

The Bridges site is a multicomponent Late Woodland and Mississippian settlement located on Crooked Creek, in southwestern Marion County, Illinois. Excavation of the entire site in 1982 revealed numerous pit features representing Late Woodland occupations which have been radiocarbon dated between A.D. 750 and 1050. LaMotte, pre-Late Bluff, and Late Bluff components are present. The Mississippian occupations (A.D. 1100-1450) are represented by a number of extensively rebuilt wall trench structure complexes. At least 40 building episodes are present. These are assigned to four components which represent stages in the evolution of the Mississippian settlement. Mean structure floor area increases through the first three components, then decreases during the last. The structures of the third component are distributed in a roughly circular pattern around a plaza, and include a very large (approximately 120 m²) community building. During this time, Bridges appears to have served as a nodal site in the local settlement system.

Hassen, Harold (Center for American Archeology) LATE WOODLAND DIVERSITY IN THE UPPER MISSISSIPPI RIVER DRAINAGE

Previous studies on Late Woodland diversity in the Upper Mississippi River valley have focused on regional ceramic differences. The expansion of contract archaeology in the tri-state area of Illinois, Iowa, and Missouri has increased the number of recorded Late Woodland sites and provides an opportunity to examine Late Woodland settlement in greater detail. Focusing on environmental and artifactual data, this paper characterizes the diversity represented in Late Woodland sites in the tri-state area.

Henning, Dale R. (Luther College) THE EVOLUTION OF ONEOTA CULTURE IN CENTRAL MISSOURI

In 1970, the author published the results of doctoral dissertation research, offering a sequence of Oneota occupations in the Chariton River region in north-central Missouri. Implicit to the methodology employed were the beliefs that: (1) a single group (the prehistoric Missouri Indians) settled and remained there; and (2) the sites dealt with offered an adequate sample of Oneota occupations of the region. Today, neither premise is regarded as verifiable; we know only that the Missouri Indians were the last of the Chiwere speakers to occupy this part of the present state of Missouri. Some alternative models for the evolution of Oneota occupations here are explored.

Jelks, Edward B. and Carl Ekberg (Illinois State University) SEARCH FOR THE FIRST FORT DE CHARTRES

The central Mississippi Valley contained the most intensely occupied French area between New Orleans and Quebec. Surface collections and aerial photographs resulted in the discovery of an early eighteenth-century site near Prairie du Rocher, Illinois, thought to be the first Fort de Chartres. Test excavations have located palisade ditches and other features which correspond favorably with magnetic anomalies mapped from a magnetometry survey in 1981 and with the available documentation of the first Fort de Chartres.

Johnson, Donald and D. Watson-Stegner (University of Illinois-Urbana)
RAPID PEDOGENESIS AT THE DEER CREEK SITE, A FRENCH-INDIAN HISTORIC
SITE IN KAY COUNTY, OKLAHOMA

In the early to mid-1700s the Deer Creek archaeological site, an uncultivated and relatively undisturbed National Historic Landmark, was a village of Wichita-speaking Indians who traded the products of their bison, deer, and bear hunts for goods provided by French hunters and traders. The site, marked by numerous trash mounds and earthworks, was presumably abandoned sometime in the latter half of the eighteenth century. Soil investigations of the site conducted during and since 1979 indicate that relatively rapid rates of pedogenesis have occurred in and between the trash mounds. Illuvial clay maxima occur in well-drained loamy soils at depths ranging from 60 to 90 cm in the mounds and 20 to 30 cm in intermound areas. These maxima occur above several anthropic organic rich layers, one of which yielded a radiocarbon age of 240 ± 80 years before present. Various other laboratory data shed complementary light on the pedogenetic history of the site.

Justice, Noel D. (Indiana University) LITHICS IN RITUAL CONTEXT: A VIEW FROM THE LATE ARCHAIC/EARLY WOODLAND TRANSITIONAL PERIOD
Turkey-tail cache blades are well known for their readily identifiable form, refined manufacture, and consistent association in funerary contexts over a large area of exchange. The characteristics of manufacture of these forms are analyzed to evaluate the notion that material form reflects aspects of ritual behavior and that the ritual context was a guiding principle of manufacture. Specific attributes such as specialized thinning, flake scar morphology, the presence of cortex, and edge abrasion are discussed in light of the nonutilitarian function of turkey-tail cache blades as ritual objects.

Koldehoff, Brad (see Pauketat, Timothy R.)

Kwas, Mary L. (Tennessee Department of Conservation) THE ARCHAEOLOGICAL
PARK AND ITS USE IN PUBLIC EDUCATION

With the growing interest in and responsibility toward public education, archaeologists are seeking a variety of ways to reach the public. Archaeological parks, although not necessarily a new phenomena, are growing in number in the United States and witnessing increasing development. Because they are naturally attractive to the public, these special parks present an ideal environment for educating the public in a variety of ways. This paper examines the valuable educational function of archaeological parks and gives examples from several parks in the eastern United States, including the newly opened facility of Pinson Mounds, Tennessee.

Lovis, William A. (Michigan State University) AN INTRODUCTION TO THE WEBER
I SITE

The Weber I site (20 SA 581), located on the Cass River in Saginaw County, Michigan, was excavated by Michigan State University with funding and authorization by several local, state, and federal agencies. The history of investigations, research design, and excavation strategy employed on this Middle Archaic, Late Archaic, and Woodland site, with stratified deposits 2 m in depth, are presented.

Lovis, William A. (Michigan State University) THE SAGINAW VALLEY ARCHAIC:
THE VIEW FROM WEBER I

Preceding analyses of geology, fauna, flora, lithics, and spatial organization are employed in comparing both the local evolution of the Saginaw Valley Archaic and the broader regional relationships that can be defined. The Middle Archaic of the Saginaw Valley, at a late pre-Nipissing or early Nipissing age, is here termed the Dehmel Road Phase, and related to the side-notched point traditions of the western and southern Midwest ca. 5500 B.P. The Late Archaic component at Weber I is best compared with the Crawford Knoll site in southern Ontario. Both sites have in turn been related to the Riverton culture primarily on the basis of projectile points.

Lovis, William and James A. Robertson (Michigan State University) INTRA-SITE ORGANIZATION AT THE WEBER I SITE

Spatial relationships of the lithic, faunal, and floral assemblages are discussed with respect to relationships both between and among features, and with respect to the riverbank of the Cass River. The Middle Archaic component displays less clear-cut spatial variation due to its more transient nature and the overlapping of activity sets. The Late Archaic occupation appears to be organized in zones paralleling the Cass River. These interpretations are discussed.

Lynott, Mark J., Susan M. Monk (National Park Service), and James E. Price (Southwest Missouri State University) THE OWLS BEND SITE, 23SH10: AN EMERGENT MISSISSIPPIAN OCCUPATION IN THE EASTERN OZARKS, SOUTHEAST MISSOURI

Archaeological testing in 1983 has produced evidence of an Emergent Mississippian occupation in the upper Current River valley in southeast Missouri. The site is located on a major alluvial terrace deep in the Ozark highlands. Testing has revealed the presence of a midden horizon and a variety of sub-surface features. Temporally diagnostic artifacts from the midden indicate that the site is largely single component, with ceramic and projectile point forms that appear to be transitional between Woodland and Mississippian complexes in this region. Faunal remains include a variety of mammals, birds, and fish. Radiocarbon and thermoluminescence dates are being processed to verify the temporal position of the site. The site provides key data about the development of Mississippian cultures in the eastern Ozark region of southeast Missouri.

MacKinnon, J. Jefferson and Jeffery A. Behm (University of Wisconsin-Madison) NATIVE AMERICAN GUNFLINTS OF HIXTON SILICIFIED SANDSTONE: VERIFICATION BY EXPERIMENT

This study supports the identification of several small, steeply edged uniaxially flaked artifacts, made of Hixton Silicified Sandstone, as gunflints of Native American manufacture. Such a coarse grained sediment might logically be expected to function inadequately in a flintlock. However, a series of tests with modern replications of these artifacts have demonstrated the suitability of this material. Its longevity and spark intensity compares favorably to European gunflints. As a result of this study, the identification of the archaeological specimens as Native American gunflints is supported.

Mainfort, Robert C., Jr. (Tennessee Department of Conservation) PINSON MOUNDS: A UNIQUE MIDDLE WOODLAND CEREMONIAL CENTER

The Pinson Mounds site consists of approximately a dozen Middle Woodland mounds; a large, circular earthwork; and associated habitation areas. Most of the mounds are flat-topped and range in height from 6 to 72 feet. Excavations conducted at the site by the Tennessee Department of Conservation during the last three years have demonstrated that the entire mound complex dates to the Middle Woodland period and represents an example of a vacant ceremonial center. Additionally, the recovered ceramics suggest ties with societies throughout the southeast, including southern Georgia, east Tennessee, and the Lower Mississippi Valley.

Mallam, R. Clark (see Tahdarich, John P.)

Mansberger, Floyd THE LEAD MINING INDUSTRY OF THE UPPER MISSISSIPPI RIVER VALLEY; AN EVALUATION OF THE HISTORIC ARCHAEOLOGICAL RESOURCES

The Lead Mine District of the Upper Mississippi River Valley consists of a portion of eastern Iowa, southwestern Wisconsin, and northwestern Illinois. Exploitation of the local lead resources began at least by the mid-eighteenth century by aboriginal groups such as the Fox and Sauk and continued throughout the nineteenth and twentieth centuries by Euro-American settlers. The most widespread and significant mining activity took place between 1825 and 1870; it quickly became of less economic importance during

the post Civil War years. This paper will analyze the various activity sets (lead extraction, ore processing, and smelting) associated with the lead mining industry and will evaluate these activities with respect to their archaeological importance and potential. Several research questions pertaining to the lead mining industry of the early nineteenth century will be formulated, thus establishing a research design for the author. Early documentary resources, as well as preliminary field research, indicate that the archaeological potential for study of the early lead mining industry of northwestern Illinois--as well as the lifeways of the early miners and smelters--is tremendous.

Markman, Charles W. (Northern Illinois University) THE DEER CREEK SITE:
AN EARLY WOODLAND CAMPING LOCALITY IN NORTHWESTERN ILLINOIS

The Deere Creek site, 11-RI-1M, was recently investigated by the Northern Illinois University Archaeological Survey under contract with the Rock Island District Corps of Engineers. The site is located on the eastern periphery of Milan, Illinois, in Rock Island County. The study was initiated because an adjacent area to the west was to be affected by construction activities scheduled as part of the Milan Local Flood Protection Project. Fill material will be taken from a 3.5 acre borrow site east of Mill Creek near the John Deere Warehouse, and the resulting borrow pit will remain as a ponding area when the project is completed. Site 11-RI-1M consists of a surface scatter of lithic debris along the edge of a former channel of Mill Creek. Testing indicated that there is little depth to the cultural deposits. Though the site did not produce Marion Thick ceramics, the occurrence of Kramer points indicates a Marion phase (ca. 700-300 B.C.) occupation. The floodplain setting of Deere Creek is also typical of Marion sites and suggests an adaptation which focused on aquatic resources and resources of the prairie-forest border. A functional analysis of the lithic assemblage suggests that hunting-related activities, light butchering, and hide processing took place at this locality. It is postulated that the linear configuration of debris is the result of repeated occupation, possibly on a seasonal basis, during the Early Woodland period by small groups of hunter-foragers.

McGimsey, Charles R. (see Stafford, Russell C.)

Mehrer, Mark (University of Illinois-Urbana) ONEOTA IN THE AMERICAN
BOTTOM: A POST-MIDDLE MISSISSIPPIAN DEVELOPMENT

The American Bottom area near St. Louis, Missouri, represents the southernmost extension of the Oneota tradition. Archaeological evidence for the Oneota presence in the American Bottom area has come to light gradually during the last 50 years, and until recently no Oneota settlement in the area had been systematically excavated. For these reasons the nature of the Oneota presence in the American Bottom has remained unclear. However, a current reexamination of Oneota materials previously recovered from several sites in the American Bottom area, coupled with the results of recent excavations, suggests a post-Middle Mississippian occupation by Oneota peoples in the heartland of Cahokia.

Milner, George R. (University of Illinois-Urbana) STRUCTURES AND PEOPLE:
MISSISSIPPIAN PERIOD POPULATION SIZE IN THE AMERICAN BOTTOM AREA OF
WEST-CENTRAL ILLINOIS

Determining prehistoric population size and density has proved to be one of the most intractable of archaeological problems. In the Midwest, this is especially true of the Mississippian period Cahokia site; its large size and many mounds have prompted much speculation on the number of individuals that occupied the site and the surrounding area (the American Bottom). However, existing population estimates are based on very little, poorly controlled information. Recently collected data on the distribution and number of structures at eight sites with a combined excavation area of ca. 20 ha provide a basis for estimating population size as well as determining relative changes in population density through the Mississippian period. The results are applicable to the segment of floodplain immediately south of the Cahokia site.

Monaghan, G. William and Leslie Fay (Michigan State University) GEOLOGY AND DEPOSITION OF THE WEBER I SITE

The context of the Weber I site in terms of regional development of the Cass River drainage is discussed. The alluvial deposition of the site, including its cultural strata, is related to late postglacial fluctuations of the Nipissing and Algoma stages of the Huron basin. The Middle Archaic component is elevationally and depositionally pre-Nipissing, and dated ca. 6230 to 4560 B.P. The Late Archaic occupation is post-Nipissing and dated ca. 2900 to 3000 B.P. This is one of the few securely dated deposits of this age from the Huron basin.

Monk Susan M. (National Park Service) ARCHAEOLOGICAL INVESTIGATIONS RELATING TO MOUND CITY GROUP NATIONAL MONUMENT

Mound City is a classic Hopewell earthwork located along the Scioto River in Ross County, Ohio. This site contains at least 24 mounds enclosed within a square embankment of 13 acres. Testing of the site from 1963 until 1975 resulted in the recovery of both prehistoric and historic faunal remains. Approximately 80% of the 838 nondomestic identified specimens are white-tailed deer; other remains include turkey, eastern cottontail, and trumpeter swan. In 1982, the National Park Service tested a 47-acre tract of land north of the monument boundary, recently acquired by the park as surplus land. The evidence indicates that this site does not represent an intensive sedentary occupation related to Mound City but rather an area of short, intermittent use during the Hopewell time horizon. This paper examines the relationship between the Mound City faunal data and the site testing information with regards to the vacant ceremonial center hypothesis as described by Brown (1982). Brown follows Prufer (1964) and suggests that Mound City represents an area used for ceremonial purposes or events of short duration, and not for habitation. The data compiled for this paper suggest the vacant center hypothesis is plausible and merits further research.

Monk, Susan M. (see Lynott, Mark J.)

Morgan, David T. (Center for American Archeology) LATE WOODLAND CERAMICS FROM A PORTION OF THE UPPER MISSISSIPPI RIVER VALLEY: OBSERVATIONS BASED UPON RECENT F.A.P. 408 INVESTIGATIONS IN WEST-CENTRAL ILLINOIS

Until recently, archaeological investigations of that segment of the Upper Mississippi River Valley bordering west-central Illinois have been rather scant. Accordingly, reporting of the ceramics from this area has also been minimal. Within the past five years, through its involvement in the F.A.P. 408 highway project, the Center for American Archeology has been provided the opportunity to examine numerous prehistoric sites within this area. The purpose of this paper is to present the ceramic materials recovered from a portion of these sites, those containing Late Woodland components. Further, the ceramics from these sites will be discussed in relation to temporal sequencing as well as regional associations with surrounding areas with particular emphasis being focused upon sections of Illinois, Missouri, and Iowa.

O'Brien, Michael J. (University of Missouri-Columbia) GEOARCHAEOLOGICAL INVESTIGATIONS IN THE WESTERN LOWLANDS OF MISSOURI

Geomorphological research in the Mississippi Embayment has demonstrated that the dynamic nature of the Mississippi and Ohio River system during the Pleistocene and Holocene contributed heavily to the formation of the modern landscape. One locale in which fossil remnants of the paleolandscape are well preserved is the northern portion of the Western Lowlands, between Crowley's Ridge and the Ozark Escarpment. Pleistocene landforms

within this area, which today is drained by the St. Francis and Black rivers, formed as the Mississippi responded to the advance and retreat of ice sheets during previous glacial episodes and through the reworking of outwash deposits. Extant features include former channels, alluvial plains, as well as extensive areas of dunefields and so-called "prairie blisters." Holocene landforms, which are the result of both erosion of Pleistocene sediments and fluvial processes associated with successive channel changes of the Black and St. Francis rivers, include natural levees, alluvial fans, remnants of cut-off meanders, and ridge and swale topography. Recent archaeological studies have employed these data, together with other paleoenvironmental information, to account for the distribution of archaeological sites across the landscape. These studies show that many elevated Pleistocene landforms in the Western Lowlands were occupied at least intermittently since the Early Archaic period. Current research is directed toward dating individual occupations and defining the functions and activities carried out on the landform.

Parachini, Kathryn E. (Western Michigan University) NATURAL HARVEST: PREHISTORIC RELATIONSHIPS BETWEEN PEOPLE AND PLANTS IN SOUTHWEST MICHIGAN Botanical remains from four prehistoric sites in the St. Joseph River Valley of southwest Michigan are discussed in terms of subsistence patterns. The analysis of plant material recovered from features suggests that subsistence strategies in this region were stable and relatively unchanging from the Late Archaic into the Late Woodland. The early introduction of cultigens, such as sunflower, by the Terminal Archaic and probably maize by the Middle Woodland did not alter a pattern which focused on intensive harvesting of wild plant foods. An abundance and variety of local resources, particularly the late summer and fall ripening fruits and nuts, was assured by unusual climatic factors in this region.

Pauketat, Timothy R. (Southern Illinois University-Edwardsville) and Brad Koldehoff (Southern Illinois University-Carbondale) EMERALD MOUND AND THE MISSISSIPPIAN OCCUPATION OF THE CENTRAL SILVER CREEK VALLEY The close of the FAI-270 Project marks a new phase in our understanding of Cahokia and the American Bottom; however, much of the surrounding Illinois upland remains unknown. Only recently efforts have been made to identify the Mississippian occupation of the uplands and incorporate these sites into a more holistic view of Cahokia. The Emerald Mound site, a major Mississippian center located 24 km east of Cahokia in the central Silver Creek Valley, has received little attention since its discovery, as witnessed by its near absence in the literature of the American Bottom region. An examination of materials excavated and surfaced collected by the Illinois State Museum in the 1960s has revealed that the site was primarily occupied during the Emergent Mississippian and Late Mississippian periods. From a survey of local, private collections, it is evident that an extensive Sand Prairie phase settlement system was in existence in the central Silver Creek Valley. Situated 3 km away from the main valley of Silver Creek in a high prominent area, once a prairie-forest ecotone, the Emerald Mound site appears to represent the upper level of this settlement hierarchy. The central Silver Creek Valley contains the largest concentration of Mississippian mound centers outside the American Bottom, and it may represent a settlement system independent of Cahokia.

Penman, John T. (State Historical Society of Wisconsin) PREHISTORIC SETTLEMENT PATTERNS AS SEEN FROM RECENT SURVEYS ON THE EAST BANK OF THE MISSISSIPPI RIVER

Archaeological surveys conducted in the Upper Mississippi River region have added a sizeable quantity of data within the past two decades. The largest survey conducted within the Mississippi trench is along the Great River Road route in Wisconsin. This survey was conducted from 1979 through 1982 in seven counties. The GRR in Wisconsin is 245 km long, and survey coverage was approximately 49%. Analysis is now complete for the three northern counties covered in the GRR survey. Artifacts from Buffalo, Pepin,

and Pierce counties indicate that the entire cultural sequence from Paleo-Indian to Oneota is represented. Based on site size, and frequency of single component sites, it appears that the Upper Mississippi trench was most intensively exploited during the Middle Woodland, Late Woodland, and Oneota periods. It appears that in the transition from Middle to Late Woodland, subsistence strategies were altered and there was an increase in population as well.

Porter, James W. TEMPERING IN PREHISTORIC CERAMICS AT THE ROBINSON'S LAKE SITE

Over 100 prehistoric vessels were thin sectioned. The vessel forms included pinchpots, jars, bowls, a pan, a waterbottle, a seed jar, and stumpware. The tempering categories observed included grit, shell, and grog as well as one untempered pinchpot. New data on bloated clay products under grog tempering are provided. A major activity at this small hamlet was the production of jars for local distribution.

Price, James E. (see Lynott, Mark J.)

Price, T. Douglas (University of Wisconsin-Madison) HUMAN DIET IN THE LATE ARCHAIC

Analysis of the chemical composition of bone from a number of Late Archaic sites in the Midwest is used to reconstruct human diets. The trace element strontium provides a measure of the importance of plants and animals in the subsistence. White-tailed deer bone composition is used as a baseline measurement for the comparison of spatially disparate sites in Ohio, Kentucky, and Wisconsin. Results of the analysis provide the first reasonably confident estimates of human diet in the Archaic.

Raish, Carol (University of New Mexico) ONEOTA IN KANSAS AND NEBRASKA
The first section of this study presents a review of Oneota research in Kansas and Nebraska. It includes presentation of reference sources and descriptive information on ceramics, other artifacts, features, and structures. Information on dates is given when available. The Fanning (14DP1), Leary (25RH1), Ashland (25CC1), Stanton (25ST1), Spillway (14PO12), and Reany (14PO13) sites are discussed as well as other related sites. Recent conclusions concerning the relationships of these western Oneota sites are also reviewed. The second section presents a critique of western Oneota, primarily as it occurs in Kansas and Nebraska, in terms of its validity as a defined group and its utility as a research tool. Problems concerning reliance on ceramics as a means of Oneota identification and problems concerning the research emphasis on ethnic identification of sites are the main points of this section. Finally, profitable future research directions are discussed.

Richner, Jeffrey J. (National Park Service) The P-FLAT SITE, 47AS47: A LATE SEVENTEENTH CENTURY FISHING STATION IN NORTHERN WISCONSIN
Recent archaeological testing at the P-Flat site has produced evidence of a historic aboriginal occupation on the coast of Manitou Island on the south shore of Lake Superior. The artifact inventory from the site includes a chipped stone assemblage derived from bipolar reduction of small quartz pebbles in association with aboriginal ceramics and a small number of glass and metal trade goods. Site features include several concentrations of fire-cracked rock and a small midden deposit. A large number of well-preserved faunal elements were recovered along with small numbers of aboriginal chipped stone and ceramic materials and trade goods in limited excavation of the midden area. Over 90% of the nearly 6000 faunal elements recovered from the midden are from whitefish and lake trout. Black bear and passenger pigeon are also present. A late fall occupation is interpreted from the faunal remains, which further indicate that the site occupants were participating in the historically documented inland shore

-25-

fishery. Radiocarbon dating places the deposition of the midden after A.D. 1640, and the associated artifact assemblage suggests a late seventeenth century age for site occupation.

Riggs, Rodney E. (University of Wisconsin-Madison) HUMAN SKELETAL REMAINS FROM THE POOR MAN'S FARRAH (47Gt366) AND THE BADE (47Gt365) SITES IN SOUTHWESTERN WISCONSIN

The results of a description and analysis of four burials from two Late Woodland mound groups in southwestern Wisconsin are presented. Even though the burial remains studied were poorly preserved and very fragmented, the identification and analysis techniques utilized yielded a substantial information return making it possible to characterize some of the nature of these Late Woodland groups' burial practices. Using a bone element point count, the minimum number of individuals (13 total) was established for each burial. Using these same data, body part representations in each burial were estimated. Some selection of certain body parts for burial was noted. Analyses of the age and sex of the individuals determined that both sexes and all age classes probably had burial access to these mound groups. Pathologies and traumas are described and discussed. Of note was the discovery of cut marks on many of the bones. In at least two cases, these cut marks resemble closely those produced in trophy scalp removal.

Robertson, James A. (Michigan State University) DESCRIPTION AND PRELIMINARY ANALYSIS OF THE LITHIC ASSEMBLAGES AT THE WEBER I SITE

Excavations at the Weber I site (20 SA 581) produced lithic assemblages from two Archaic occupations unique to Michigan prehistory. The Terminal Archaic assemblage is most notable for its small, notched projectile points comparable to materials from Crawford Knoll in Ontario; typologically these points are best compared with Winters's Merom Expanding Stemmed type. The Middle Archaic assemblage is characterized by two types of projectile points. The first type has deep side-notches and ground haft elements, and is virtually indistinguishable from other such types dated to the Middle Archaic in the Northeast. The second is also side-notched but significantly smaller and often serrated. Both assemblages have significant quartzite industries, and their overall variability can be attributed to site duration and/or function.

Robertson, James A. (see Lovis, William A.)

Roper, Donna C. and Joseph Schuldenrein (Commonwealth Associates Inc.) ARCHEOLOGICAL AND GEOMORPHOLOGICAL INVESTIGATIONS AT LAKE RED ROCK, IOWA

A cultural resources investigation of Lake Red Rock is being conducted for the Rock Island District, Corps of Engineers by Commonwealth Associates Inc. The purpose is to provide guidelines for assessment of the cultural resource base by conducting a literature search; evaluating the context, nature, and present condition of known cultural resources in the reservoir; and outlining the geomorphic history of the area. The cumulative result of these integrated environmental and cultural investigations will be the posing of pertinent research questions for the prehistoric occupation of the Des Moines River valley and formulation of a predictive settlement model. Woodland and Oneota sites comprise the majority of the remains previously known or recorded during the recent fieldwork. The results of the investigations suggest that Woodland settlement strategies are consistent with those documented for other valleys in the Midwest, while the incompletely documented Oneota settlement strategy also replicates that of other Oneota phases. Preliminary assessment of the potential for deeply buried sites revealed a poorly articulated terrace sequence, currently submerged beneath the reservoir waters and differentially exposed as slight exposures above the floodpool. Synthetic models of earlier prehistoric settlement can only be formulated after systematic subsurface investigations of buried deposits are completed.

Rowlett, Ralph M. (University of Missouri-Columbia) and John P. Tandarich
(Callaway County Soil and Water Conservation District-Missouri)

Thermoluminescence (TL) DATING OF LOESS IN NORTHWEST MISSOURI

For some years scientists in the Soviet Union have tried to date Middle Pleistocene Central Asiatic loesses by thermoluminescence. Within the past year laboratories in Britain, Canada, and the U.S. have also attempted to get TL dates by this method. TL age determinations on fine quartz inclusions in late Pleistocene loess of northwest Missouri, interstratified with archaeological assemblages of known radiocarbon ages, provide insight as to the utility of the TL age determinations on dated loesses occurring just over, around, and under a Paleo-Indian Clovis fluted point assemblage dated about 11,500 radiocarbon years ago. The loess beneath the fluted point assemblage contained a stone artifact assemblage which had been dated directly by TL of burnt stones to be slightly more than 15,000 years old. The results of the experiments with the Late Wisconsinan loesses are compared with these baselines to show the feasibility of the TL dating of loess.

Sampson, Kelvin (see Esarey, Duane)

Sasso, Robert F. (see Stevenson, Katherine)

Schrimper, George D. (The University of Iowa) IOWA HALL (Poster Paper)
The design and construction of a new exhibit gallery of Iowa's natural heritage for the Macbride Hall, State Museum of Natural History, is featured.

Schuldenrein, Joseph (See Roper, Donna C.)

Smith, Beverley (Michigan State University) THE FAUNA OF THE WEBER I SITE
The Weber I site, one of the only stratified Archaic components from the western Great Lakes, is found at the northern extreme of oak-hickory habitat and contains the only sealed Middle Archaic component in Michigan. Faunal preservation is extremely good. Both the Middle and Late Archaic faunal assemblages are discussed in terms of subsistence contribution, exploitation patterns, and seasonality. Both components are dominated by cervids. A comparison of the assemblages demonstrates that the Archaic period in the area may be characterized by a stable pattern of animal exploitation. A general comparison of related midwestern sites is included.

Smith, Lawson M. (See Church, Peter E.)

Speth, Janet (see Stevenson, Katherine)

Stafford, C. Russell and Charles R. McGimsey (Center for American Archeology) EARLY WOODLAND SITE STRUCTURE AT THE AMBROSE FLICK SITE IN THE UPPER MISSISSIPPI VALLEY

Previous investigations at the Ambrose Flick site in Pike County, Illinois, had indicated the presence of buried Early Woodland (Marion phase) deposits. Currently, multi-staged investigations, including soil coring, backhoe trenching and hand excavation, have been used to trace the paleotopography of the cultural-bearing strata and determine more precisely the depositional environments in which the cultural remains occur. Determinations are made concerning the geomorphic processes and landform conditions which structured the Early Woodland occupation. In addition, a number of suggestions are made concerning the dynamic relationship between the type of occupation and the surrounding habitat which was being exploited.

An exhibit of Mesquakie Indian photographs taken by Duren Ward in 1905 will be on display. The display is circulated by the State Historical Society of Iowa.

Stevenson, Katherine and Robert F. Sasso (Mississippi Valley Archaeology Center) THE ONEOTA OCCUPATION OF WESTERN WISCONSIN

Oneota sites appear to be strongly clustered around western La Crosse County, which lies along the Mississippi River in western Wisconsin. In this study, the nature of this occupation is summarized and evaluated. First, a brief synopsis is presented of information available on over 80 Oneota sites recorded in La Crosse and surrounding counties. This includes a brief summary of existing data on ceramics and other artifact types, site types and locations, economic practices, chronological placement, mortuary practices, and survey and research biases. New information from recent surveys and excavations in the La Crosse area will be incorporated in this summary. Second, this information is interpreted in terms of relationships to Oneota cultures in other areas, general and local economic patterns, and overall Oneota development. Finally, the existing data gaps and unanswered research questions are used to outline directions for future study in the region.

Stevenson, Katherine (Mississippi Valley Archaeology Center), William Green and Janet Speth (State Historical Society of Wisconsin) THE MIDDLE MISSISSIPPIAN PRESENCE IN THE UPPER MISSISSIPPI VALLEY: THE EVIDENCE FROM TREMPLEALEAU, WISCONSIN

The northern occurrences of Middle Mississippi culture have interested archaeologists for many years. Few single-component Middle Mississippian sites have been identified north of the Apple River locality in northwest Illinois. Several Wisconsin and Minnesota sites contain Cahokia-related material, but such sites, including Aztalan, generally contain a preponderance or at least a mixture of Late Woodland or Oneota material. While these sites are extremely important, their Middle Mississippian relationships are unclear. An unmixed Middle Mississippian assemblage exists in the Upper Mississippi valley at Trempealeau, Wisconsin. Recorded in detail by George H. Squier over 60 years ago, this material has only recently been subjected to archaeological analysis. The Middle Mississippian sites and features of Trempealeau will be briefly described and their implications will be discussed.

Suchy, Charles (see Esarey, Duane)

Tandarich, John P. (Callaway County Soil and Water Conservation District--Missouri) and R. Clark Mallam (Luther College Archaeological Research Center) SOILS AND EFFIGY MOUNDS: A REGIONAL PERSPECTIVE IN THE UPPER MIDWEST

The area in which Iowa, Minnesota, Wisconsin, and Illinois join may be regarded as a region when considering the Effigy Mound Culture (ca. A.D. 650-1250). This region is analyzed from a soil geographic perspective similar to studies made of the Ozark Highland of Missouri by Curtis F. Marbut and Carl O. Sauer. Results of this analysis lead to a reexamination of Mallam's thesis concerning the function of Effigy Mounds.

Tandarich, John (see Rowlett, Ralph M.)

Tankersley, Kenneth B. (Indiana University) ELEMENTS OF WYANDOTTE CHERT AND THEIR ARCHAEOLOGICAL APPLICATION

Wyandotte chert, from southern Indiana/northern Kentucky, has been considered an important raw material for early Paleo-Indians in the midwestern United States. The chemical composition and physical structure of this chert has been compared to "look-a-like" cherts from various stratigraphic and geographic provenienced locations in the region. Microscopic identification and trace element content analyses of the analyzed samples were found to correlate, but the latter technique provided only redundant information. Microscopic analysis recognized distinctive mineralogical properties and fossil inclusions for Wyandotte chert. Using petrographic thin-section analysis and scanning electron microscopy, preliminary analysis of chert samples from fluted projectile points indicates an early Paleo-Indian distribution of at least 200 km from the source area.

Theler, James L. (Office of the State Archaeologist/The University of Iowa) MIDDLE WOODLAND SUMMER SUBSISTENCE PATTERNS IN THE PRAIRIE DU CHIEN LOCALITY: FAUNAL REMAINS

Faunal assemblages recovered from Late Middle Woodland contexts in the Mississippi River trench of southwestern Wisconsin are described and interpreted. The available evidence indicates that Middle Woodland groups focused on the exploitation of riverine resources (e.g., freshwater mussels and fish) during the summer months. It is suggested that this pattern of summer procurement represents one increment in the annual subsistence round. In contrast to the summer pattern, animal procurement during the fall and winter months appears to have been directed towards the harvest of white-tailed deer and a few other terrestrial taxa in the dissected uplands away from the main stem Mississippi.

Tiffany, Joseph A. (Office of the State Archaeologist/The University of Iowa) IOWA ONEOTA CERAMICS

This paper presents an overview of Oneota ceramics in Iowa. Discussion focuses first on general traits which can be used to separate the widely geographic and temporally divergent Oneota pottery classes found in the state and second on key decorative features such as shoulder motifs, which may be useful as horizon markers for establishing local and regional sequences.

Tiffany, Joseph A. (see Gunderson, James N.)

Thompson, Dean M. (USDA-Soil Conservation Service) A STRATIGRAPHIC APPROACH TO ARCHAEOLOGICAL SURVEY IN A SMALL WESTERN IOWA DRAINAGE

The presentation will demonstrate how an existing model of Holocene landscape evolution in the Loess Hills Region of western Iowa has been applied to an archaeological survey. The survey area is a small, ephemeral-stream valley with Late Archaic to Late Woodland house sites and middens buried in alluvial fills of the DeForest Formation. The following points will be illustrated; (1) evolution of the valley landscape has determined where the archaeological record of cultural deposits has been preserved, and (2) the landscape model can be used to conduct archaeological survey in the three dimensions of valley deposits, rather than the two dimensions of modern valley surfaces. This approach to archaeological survey is not predictive. It simply establishes real limits of preservation through time and space.

Watson-Stegner, D. (see Johnson, Donald)

Wiant, Michael D. (Illinois State Museum) NAPOLEON HOLLOW SITE: A DESCRIPTIVE SUMMARY OF THE ARCHAIC PERIOD COMPONENTS

Excavations conducted at the Napoleon Hollow site during 1979 and 1980 revealed a complex stratigraphy of Pleistocene and Holocene sedimentation and a well-preserved record of human occupation, extending from perhaps as early as 8,500 B.P. until 1,150 B.P. The purpose of this paper is to describe the Archaic period components, including their stratigraphic context, extent, age, artifact assemblages, and plant and animal remains. Located where a small stream enters the Illinois River valley, most of the Archaic period deposits are stratified in the body of a large colluvial fan emanating from the river valley bluffline, although all of the units extend into the floodplain of the Illinois River. A sequence of 13 radiometric dates provide a detailed record of Middle and Late Archaic occupation, but geological evidence and the presence of several earlier hafted bifaces suggest older components are present at the site. Of particular significance is the discovery of squash (*Cucurbita pepo*) in an extensive Middle Archaic stratum referred to as the Napoleon component.

Wieggers, Robert P. (University of Missouri) THE OSAGE AND MISSOURI INDIAN CULTURE CHANGE PROJECT

The impact of the Euro-American fur trade on eastern and plains tribes has been explored in numerous publications. Current National Endowment for the Humanities sponsored research investigates this phenomenon as it occurred amongst the Osage and Missouri Indians in the state of Missouri between 1673 and 1822. A multidisciplinary project, utilizing previously excavated artifacts and accumulated knowledge from 1939 to the present, the study hopes to document all aspects of change in Missouri and Osage life brought about by contact and the hide and fur trade. As an introduction to this work an orientation to the six sites included in the study will be given, the research design generating current research will be explained, and future directions of inquiry will be discussed.

Wyckoff, Martin A. (McLean County Historical Society) MILITARY BUTTONS AND THE HISTORICAL ARCHAEOLOGIST

In spite of the fact that military buttons are among the more common artifacts recovered from historic sites, relatively little information is readily available about the buttons actual use. While a good deal of research has been done to determine the periods of official use, these data provide only a *terminus ante quem* for the archaeologist. Four major needs become apparent if military buttons are to be utilized to their full archaeological potential: (1) determination of the probable longevity of use of any given button, apart from actual dates of manufacture; (2) temporal comparisons of specific buttons between different sites, in order to determine the existence of any predictable patterns of distribution; (3) identification of button function (especially militia versus regular army use) through means other than subjective interpretation of design; and (4) the establishment of a scientifically acceptable classificatory system which is analytical as well as ordered. Problems (1), (2), and (3) are discussed individually. In the second half of this paper a classificatory system is proposed, uniquely adapted to military buttons. It is based on the descending order of elements in common. An explanation is presented of why this order was chosen, along with examples of the system applied to specific buttons.

Yelton, Jeffrey K. (University of Missouri) A FAUNAL ANALYSIS OF ARCHAEOLOGICAL HOUSEHOLDS OF HISTORIC INDIANS IN MISSOURI

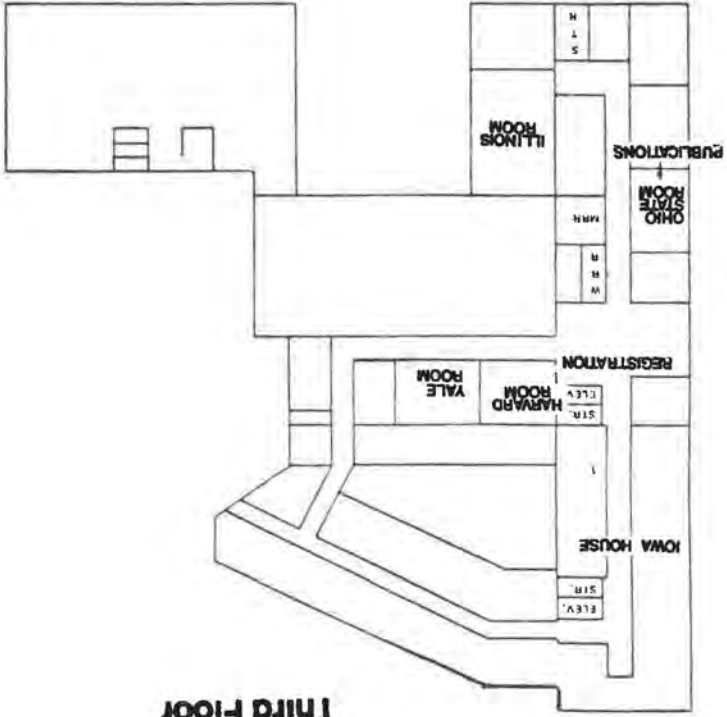
As part of a NEH-funded research project on the acculturation of the Missouri and Osage tribes, faunal remains from several sites have been identified. The emphasis has been on elements from related clusters of features, such as those associated with house outlines. The faunal data, analyzed along with ethnographic and historic information, suggest a transition from a dependence on a wide variety of mammals, birds, turtles, and fish to hunting of a markedly less diverse range of fauna that centered on mammals with marketable hides. However, this shift seems to have been general in nature, since faunal assemblages from within sites are often marked by variation.

Zalucha, L. Anthony THE FALLACIOUS NATURE OF CERTAIN CULTURAL TRENDS
THROUGH TIME BASED ON CHANGING COUNTS OF PROPORTIONS OF PALEOETHNO-
BOTANICAL SPECIMENS

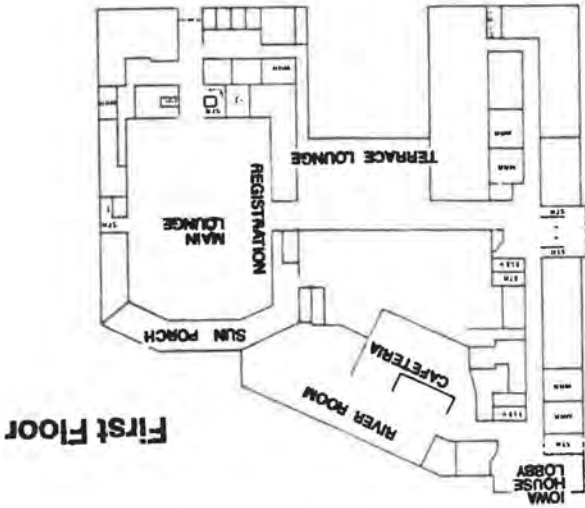
In recent years several investigators have attempted to show that changing counts or proportions of paleoethnobotanical specimens through time are indicative of changing climate and/or cultural change. Although environmental or cultural changes could certainly affect plant availability or utilization, the nature of paleoethnobotanical materials makes such changes difficult to discover. Specimen counts of charcoal or nut fragments mean little since chance factors of specimen production, deposition, and preservation are actually responsible for the observed counts. The use of proportions, an appealing alternative, is no better since the ratios are ultimately based on counts. The comparison of weights is also flawed. Counts or proportions of seeds and whole nuts through time are of some value. However, comparing these remains with charcoal or nut fragments as presently practiced is without merit. Repetition of an earlier "count/proportion-trend" study from the Brewster site, an Iowa Mill Creek component, illustrates the fallacious nature of this approach.

Zwiener, Daniel C. (University of Wisconsin-Madison) AN EXHIBIT OF
CULTIVATED FOOD CROPS FROM THE UPPER MIDWEST, NORTHEAST, AND GREAT
PLAINS (Poster Paper)

The record of New World plant domestication is a crucial factor in understanding the developments of culture history in the upper Midwest. The open pollinated plant varieties of proto-historic Native Americans still occupy an important position in the inventory of cultivated plants in governmental and private collections today, and may provide a key to understanding important aspects of prehistoric horticulture in the region. Current research by this student will attempt to combine the longitudinal aspects of six years of open field trials on 87 varieties of ethnohistorically collected Native American plant varieties with future controlled field trials in an attempt to focus on the environmental and cultural conditions that are represented in current seed collections. Future analysis will use these specimens to reconstruct and predict the conditions of preservation that are likely to occur in archaeological collections as well as the environmental and cultural determinants responsible for special aspects of preservation. On exhibit are selected specimens of corn, beans, squash, gourd, sunflower, and tobacco raised in open field trials during the summers of 1977-1983 in cooperation with public school systems in western Iowa. Special thanks is given to those young people who donated their time and labor for the field work required in the maintenance of these strains, and to the Iowa Archeological Society for supporting my efforts to distribute these seeds to other interested parties.



Third Floor



First Floor

COVER: The artwork on the booklet cover was drawn by Charles Push-e-to-ne-qua, a member of the Mesquakie nation.

