

56th Annual **Plains Anthropological Conference**

Bismarck, North Dakota • October 14-17, 1998

**Hosted by: State Historical Society of North Dakota and
the University of North Dakota**



Fort Clark Mandan Village, Drawing by Sitting Rabbit, aka Little Owl, ca.1900
(State Historical Society of North Dakota #800)

**Program
and Abstracts**

William V. Neelash

Program and Abstracts

56th Annual Plains Anthropological Conference

**Bismarck, North Dakota
October 14-17, 1998**

Conference Co-Chairs and Host Organizations

**Fern Swenson, Conference Chair
State Historical Society of North Dakota**

**Fred Schneider, Program Chair
University of North Dakota**

Conference Facilities Organization

**Fern Swenson
Paul Picha**

**Jeani Borchert
Kent Good**

Program Scheduling and Preparation

**Dennis Toom
Fred Schneider**

**Mary Jane Schneider
LoAnn Hirsch**

Sponsoring Organizations

**U.S. Bureau of Reclamation
North Dakota Department of Transportation
North Dakota Archaeological Association
Metcalf Archaeological Consultants
IMA Consulting
Jeff Kinney & Associates
Larson-Tibesar Associates
Ethnoscience, Inc.
Falkirk Mining Company**

ACKNOWLEDGMENTS

The Conference Co-Chairs (Fern Swenson and Fred Schneider) thank the following individuals and organizations for making the 56th annual Plains Conference possible:

Paul Picha and Jean Erickson, State Historical Society of North Dakota
Dennis Toom and LoAnn Hirsch, Anthropology Research, University of North Dakota
Mary Jane Schneider, Department of Indian Studies, University of North Dakota
Signe Snortland and Kimball Banks, Dakotas Area Office, U.S. Bureau of Reclamation
Jeani Borchert, Kent Good, Robert Christensen, Terry Wiklund, and Barb Christie,
North Dakota Department of Transportation
Suzanne Nelsen, Metcalf Archaeological Consultants
Ed Stine and Andrea Kulevsky, IMA Consulting
Membership of the North Dakota Archaeological Association
Radisson Inn, Bismarck
Bismarck Chamber of Commerce

In particular, we are most appreciative of the generous financial contributions from the following: IMA Consulting, Jeff Kinney & Associates, Larson-Tibesar Associates, Ethnoscience, Inc., and Falkirk Mining Company. These businesses contributed substantially towards a lowering of the conference registration and operation costs. The Conference Chairs encourage the membership to acknowledge this support. Thanks also go to Ed Stine, Bismarck, for the donation of the pots for a fund raiser.

Thanks also to previous Plains Conference hosts for developing conference guidelines and procedures; to the symposium organizers and other participants for submitting abstracts under somewhat rushed conditions; and to the membership for their support in attending the conference.

The conference logo is the work of Lisa Wermers, Belfield, ND.

GENERAL INFORMATION

Conference Accommodations and Headquarters

The Radisson Inn, Bismarck, will serve as the Conference Headquarters.

Parking

There is free parking for Radisson Inn guests. The Kirkwood Shopping Mall has a large parking lot immediately across the street from the Radisson.

Registration

Registration is required for attendance and participation at the Plains Conference. The on-site registration fee is \$70 (\$45 for students). Included in the fee is the program and abstracts.

Registration Tables

Registration tables will be set up across from the Dakota Ballroom on Wednesday, October 14, from 5:00 to 8:00 p.m., and on Thursday, October 15 and Friday, October 16, from 8:00 a.m. to 5:00 p.m.

Information

The Governor's Room will contain a message board, sign-ups for luncheon discussions, information and sign-ups for field trips, job notices, and daily posting of sessions and papers.

Board Meeting

The Plains Anthropological Society Board of Directors will meet Wednesday, October 14, at 8:00 p.m. in Room 3130 and again on Thursday, October 15, immediately following the business meeting.

Books and Exhibits

Book publishers and new and used book sellers will have items for sale in the Courtyard on Thursday and Friday from 8:00 a.m. to 5:00 p.m. and on Saturday from 8:00 a.m. to noon.

Early Bird Party

The Early Bird Party will be in the Dakota Ballroom from 7:00 p.m. to 1:00 a.m. on Wednesday, October 14. A cash bar and free beer will be available.

Luncheons

Luncheons will be arranged at the conference. Those wishing to lead a luncheon discussion are requested to post notice on the appropriate bulletin board announcing the topic, place of meeting and time. Those interested should sign-up. There are several restaurants nearby as well as the restaurant in the Radisson Inn.

Business Meeting

The annual business meeting of the Plains Anthropological Society will take place on Thursday, October 15, at 6:00 p.m. in the Lamborn Room.

Banquet

The banquet will be on Friday, October 16, in the Dakota Ballroom. A cash bar will be available from 6:00-7:00 p.m. with the banquet to begin at 7:00 p.m. Tickets for the banquet are \$20 and must be purchased by 10:00 a.m. Thursday. Entertainment to follow announcements.

Banquet Entertainment

Following the banquet on Friday night, Jack Gladstone, a Native American entertainer-folk singer, will entertain in the Dakota Ballroom with his traditional stories and songs accompanied by a display of images projected on a screen beside the stage. The banquet entertainment is open to all conference registrants.

Dance

A dance with music provided by the rhythm and blues band THE BIG DOGS will be held at 9:00 p.m. Thursday in the Dakota Ballroom.

Poster Papers

Contributed poster papers will be exhibited in the Sheyenne Room. They may be set up Wednesday evening and may remain exhibited through Saturday morning.

Slide Preview Room

A slide projector will be available in Room 2160. The room will be open Thursday, Friday and Saturday.

Workshops**Public Education Issues - Interpreting Archaeology and American Indian Culture at Prehistoric/Historic Sites**

This roundtable/workshop is being co-chaired by Marcia Wolter Britton and Erik Holland and will meet at 9:00 a.m. on Friday morning in the Cannonball Room. After short presentations by the participants, there will be discussion with the audience. The group will then take box lunches and travel to the Double Ditch Earthlodge Village to eat lunch and brainstorm about planning for site interpretation. The group will return to the Radisson by 1:30 p.m.

Workshop on Subsurface Survey Methods - Large Area Resistivity and Magnetic Field Gradient Survey

This workshop is chaired by Lewis Somers, GeoScan Research. Instruction will be by means of case study-topic demonstration using Geoplot Software with LCD projector. Handouts will be provided. The workshop will meet on Friday from 3:30 to 5:30 in the Cannonball Room and, depending upon participant interest, again on Saturday from 9:00-11:00. It is hoped that this workshop/discussion will result in plans for a more extensive symposium or workshop at next year's Plains Conference.

Public Session

This year the Plains Conference is sponsoring a Free Public Education Session somewhat along the lines of the SAA. This session contains presentations designed for the public audience, to better educate the public about anthropological, archaeological, and/or historical topics. This session will be on Saturday morning and features four speakers: Dr. Mary Jane Schneider, Dr. William Hunt, Dr. John Williams, and Dr. Michael Michlovic (see program for descriptions of their presentations). Special announcements have been sent to state teacher education centers as well as to the press not only about the conference but particularly about the Free Public Education Session. Of course, conference registrants are also welcome to become "educated". It is hoped that similar sessions will be offered at future Plains Conferences.

Tours and Field Trips

On Thursday and Friday mornings, a van will leave at 9:00 a.m. for Ft. Lincoln State Park to visit the George Custer House, On-A-Slant Indian Village, and the Ft. Lincoln Museum. These trips will be lead by Dr. Richard Fox and by Kent Good. There will be a sign-up sheet posted in the Governor's Room for this trip. The cost will be \$5.00. Participants will return to the Radisson by noon.

On Thursday and Friday afternoons, a van will leave at 2:00 p.m. for the North Dakota Heritage Center. There are two special temporary exhibits - one on quillwork and the other on North Dakota clay and pottery. There will be a sign-up sheet posted in the Governor's Room for this trip. There is no cost. Participants will return to the Radisson by 4:00 p.m.

On Saturday a bus will depart at 11:00 a.m. to visit Double Ditch Earthlodge Village, the Lewis & Clark Interpretative Center, and the Knife River Indian Villages. The trip will be lead by Drs. Wood and Ahler, and should return by approximately 6:00 p.m. For those who have not pre-registered, you should inquire to see if there is still room on the bus. There may be private vehicles which accompany the bus. The pre-registrants will have a box lunch and the cost of the trip is \$20.00. Information will be posted in the Governor's Room.

Conference Souvenirs

T-shirts, caps, and mugs sporting the 56th Plains Conference logo will be available for purchase.

Request to Symposium and Session Chairs

The conference is tightly scheduled. Please adhere religiously to the established schedule in fairness to persons planning to attend specific presentations; pause for the period allotted in the program if a scheduled speaker fails to appear. Note that some of the papers are only 10 minutes long, while others are scheduled for 20 minutes. Be sure to issue a 2 minute warning to each speaker. Be "ruthless" in adherence to the schedule!

SUMMARY SCHEDULE

Wednesday, October 14

5:00-8:00 p.m. Registration, Radisson Inn, Dakota Ballroom

7:00 p.m.-1:00 a.m. Early Bird Party, Radisson Inn, Dakota Ballroom

8:00 p.m. Plains Anthropological Society Board of Directors Meeting, Radisson Inn, Room 3130

Thursday, October 15

8:00 a.m.-5:00 p.m. Registration, Radisson Inn, Dakota Ballroom

8:00 a.m.-5:00 p.m. Book Sale and Exhibit, Radisson Inn, Courtyard

8:30 a.m.-5:30 p.m. Concurrent Sessions

9:00 a.m.-12:00 p.m. Fort Abraham Lincoln State Park Field Trip, Sign-up Sheet in the Governor's Room

2:00-4:00 p.m. North Dakota Heritage Center Field Trip, Sign-up Sheet in the Governor's Room

6:00 p.m. Plains Anthropological Society Annual Business Meeting, Radisson Inn, Lamborn Room
Board of Directors Meeting Immediately Following

9:00 p.m. Dance, Radisson Inn, Dakota Ballroom

Friday, October 16

8:00 a.m.-5:00 p.m. Registration, Radisson Inn, Dakota Ballroom

8:30 a.m.-5:30 p.m. Concurrent Sessions

8:00 a.m.-5:00 p.m. Book Sale and Exhibit, Radisson Inn, Courtyard

9:00 a.m.-12:00 p.m. Poster Session, Radisson Inn, Sheyenne Room

9:00 a.m.-12:00 p.m. Fort Abraham Lincoln State Park Field Trip, Sign-up Sheet in the Governor's Room

9:00 a.m.-1:30 p.m. Public Education Issues Workshop, Radisson Inn, Cannonball Room

2:00-4:00 p.m. North Dakota Heritage Center Field Trip, Sign-up Sheet in the Governor's Room

3:30-5:30 p.m. Subsurface Survey Methods Workshop, Radisson Inn, Cannonball Room

6:00-7:00 p.m. Cash Bar, Radisson Inn, Dakota Ballroom

7:00 p.m. Banquet, Radisson Inn, Dakota Ballroom
Entertainment Following, Radisson Inn, Dakota Ballroom

Saturday, October 17

- 8:30-11:45 a.m. Public Session, Radisson Inn, Lamborn Room
- 8:30-11:50 a.m. Concurrent Sessions
- 9:00-11:00 a.m. Subsurface Survey Methods Workshop, Radisson Inn, Cannonball Room
- 11:00 a.m.-6:00 p.m. Double Ditch Earthlodge Village, Lewis & Clark Interpretative Center, and Knife River Indian Villages Field Trip, Information Posted in the Governor's Room

PROGRAM

Thursday Morning

Session No. 1 Room: Lamborn
General Session: *Historic Archeology*

Chair: Richard Fox

- 8:30 **Judson Finley and Rick L. Weathermon**
The Shaft: Scams, Shams, and Broken Dreams of the Black Hills Gold Rush, an Archaeological Interpretation
- 8:50 **Kate Maxfield and Rick L. Weathermon**
Historic Prospect Pits in the Black Hills and Their Potential for Archaeological Interpretations
- 9:10 **Dudley Gardner**
A Brief Comparison of Activity Areas in Nineteenth Century Chinese Communities in Alberta, British Columbia, Montana, and Wyoming
- 9:30 **Wade Haakenson**
Beads of North Dakota
- 9:50 **Wm. Lane Shields**
Glass Trade Beads from Northwest Colorado: Ute Trading Networks and Formiportation
- 10:00 Break
- 10:20 **Michelle J. Lundeen**
Home on the Range: Settlement Patterns, Homestead Claims and the Archaeological Record in Dawes County, Nebraska
- 10:40 **Todd D. Threet, John G. Hedden, and Mary J. Adair**
Sketches of a Frontier Mercantile: Continuing Analyses of the 1992 KAFS Excavations at Shannons Dry Goods Store
- 11:00 **Ardeth Vineyard**
Women in the Black Hills: Documents and Archaeological Remains
- 11:20 **Danial R. Watson**
'Chicken Glass' and Other Curiosities...
- 11:40 **Jamey Zehr**
An Initial Analysis of Faunal Remains from a Chinese Community in Wyoming

Thursday Morning

Session No. 2 Room: Grand Pacific General Session: *Paleo-Indian*

Chair: Matthew J. Root

- 8:30 **Leslie B. Davis, Christopher L. Hill, Robert G. Dundas, and David C. Batter**
Blacktail Cave Late Pleistocene/Holocene Geoarchaeology and Paleontology: First Montanans
Research in the South Dearborn Drainage, Montana
- 8:50 **Matthew Glenn Hill, Robert F. Boszhardt, Daniel S. Amick, and Thomas J. Loebel**
The Gail Stone Fluted Point Site (47TR351), Trempealeau County, Western Wisconsin
- 9:10 **Michael L. Kunz**
The Good, The Bad, and The Ugly - Ancient Radiocarbon Dates, Chronologies, Mysteries, and
Applications: A Paleoindian Example From Arctic Alaska
- 9:30 **Jason M. LaBelle**
Rediscovering the Nall Site (34CI134): Late Paleoindian Archaeology on the Central/Southern
Plains
- 9:50 **David J. Meltzer**
Recent Investigations at the Folsom Type Site (29CX1), New Mexico
- 10:10 Break
- 10:30 **Mike Peterson, Marcel Kornfeld, and George C. Frison**
Folsom Occupation Out West: The Krmpotic Site
- 10:50 **Jack H. Ray and Neal Lopinot**
The Big Eddy Site: A Deep, Stratified Multicomponent Paleoindian Camp on the Plains-
Woodlands Border
- 11:10 **Matthew J. Root**
Cultural Stratigraphy and Dating of Folsom Occupations at the Bobtail Wolf Site, North Dakota
- 11:30 **Laura L. Miotti and Roxana Cattaneo**
Piedra Museo Locality: A Late Pleistocene Occupation in Southern Patagonia, Argentina

Thursday Morning

Session No. 3 Room: Heart General Session: *Southern Plains*

Chair: Susan Vehik

- 8:40 **Kenneth C. (KC) Kraft and Warren K. Lail**
Geomorphology in the Upper Reaches of Sergeant Major Creek, Roger Mills County, Oklahoma
- 8:50 **Leland C. Bement and Kent Buehler**
Confirmation of a Southern Plains Late Archaic Bison Jump
- 9:10 **Susan Vehik, Rain Vehik, Pam Leader, and Lesley Rankin-Hill**
The Mackey Site (34LF29): Relative Chronology, Paleodemography, and Associated Funerary Objects
- 9:30 **James Wettstaed and Michael Chalfant**
Savage Bliss: A Preliminary Report on Archaeological and Geomorphological Investigations at a Multi-Component Site in Southeast Missouri
- 9:50 **C. Tod Bevitt**
The Lundeen Site (14MD306): Preliminary Results of the 1998 Kansas Archaeology Training Program in Mead County, Kansas

Thursday Morning

Session No. 4 Room: Cannonball General Session: *Student Papers*

Chair: William Green

- 9:30 **C. Tod Bevitt**
Cache or Trash? The Characteristics of Two Wilmore Complex Lithic Features for the Booth Site (14CM406), Comanche County, Kansas
- 9:50 **Don Ray Larson**
Issues of Field Data Collection for Eventual Geographic Information System (GIS) Use
- 10:10 **James J. Wendt**
Pride, Prejudice, and Historic Preservation: A Case Study of the Bighorn Medicine Wheel
- 10:30 **Trevor R. Peck**
Archaeological Iniskims on the Northwestern Plains
- 10:50 **Jesse A. M. Ballenger**
Paleoindians, Lithics, Southern High Plains
- 11:10 Break
- 11:30 **Donita Carlson**
A Quilling Society of the Cheyenne Women: A Conflict Approach to Change in Female Status
- 11:50 **Kristina K. Lee**
Native American War Veterans

Thursday Afternoon

Session No. 5 Room: Heart General Session: *Central Plains*

Chair: Lauren W. Ritterbush

- 1:30 **Mary Adair**
Great Bend Paleoethnobotany: A.D. 1500-1750
- 1:50 **Lowell Blikre**
Hafting Characteristics of Middle Archaic Side-Notched Points
- 2:10 Open
- 2:30 **Steven R. Holen and David W. May**
An Archaeological Survey of Sherman Reservoir and the Arcadia Diversion Dam Area in Central Nebraska
- 2:50 Break
- 3:10 **Joseph E. Herman**
Smoky Hill Silicified Chalk: More Information Regarding Spatial Distribution, Geologic Provenience, and Mode of Occurrence as a Function of Prehistoric Procurement and Reduction Strategies
- 3:30 **Jeff Overturf**
Of Cows, Cactus, and Corrals: Investigating the Prehistory of Northeastern Colorado
- 3:50 **Christopher Charles Prillwitz**
Settlement Patterns and Site Distribution Within Western and Central Arapahoe and Adams Counties, Colorado, as Determined by 3 Large Block Surveys
- 4:10 **Lauren W. Ritterbush**
Expanding our Understanding of White Rock
- 4:30 **Stephanie A. Spars and Dr. David May**
~~Archaeological Survey and Test Excavations at the Enders Reservoir in Chase County, Nebraska~~
- 4:50 **Joe B. Thompson**
Hematite Utilization as Seen at the Eddyville Locality in South-Central Iowa
- 5:10 **Chris Widga**
A Nutritional Basis for Processing Variability in the Central Plains

Thursday Afternoon

Session No. 6 Room: Grand Pacific General Session: *Ethnography and Ethnohistory*

Chair: Dale R. Henning

- 1:30 **Dr. Greg Gagnon**
Eighteen Years Among the Oglala Lakota: Politics, Values, Culture and Romance on the Pine Ridge Reservation
- 1:50 **David M. Gradwohl**
The Grave of Painter and Poet T. C. Cannon: Cemetery Symbols and Contexts of American Indian Identity
- 2:10 **William Green**
Ioway Cartography, Ethnohistory, and Archaeology
- 2:30 **Birgit Hans**
Karl May: Popular German Images of Native Americans
- 2:50 Break
- 3:10 **Susan S. Hughes**
The Sheepeater Myth of Northwestern Wyoming
- 3:30 **Adam R. Kaul**
"Vikings in Minnesota in 1362: Fact, Fiction, or Folklore?"
- 3:50 **Mark Mitchell**
Plains Biographic Rock Art from the Lower Purgatoire River Valley, Southeastern Colorado
- 4:10 **Robert W. Neuman**
Some Curious Imagery of the Bison During the Early Historic Era in North America
- 4:30 **W. Raymond Wood**
The Mackay-Evans Expedition of 1795-1797
- 4:50 **Dale R. Henning and R. Eric Hollinger**
The Cultural Contexts of Oneota Portable Art
- 5:10 **E. Leigh Syms and Kevin Brownlee**
Recent Educational Displays for Northern Manitoba Cree Schools: Returning Their Ancient Heritage for Tomorrow's Pride in Native Heritage

Thursday Afternoon

Session No. 7 Room: Cannonball

Symposium: *Archaeological and Paleoenvironmental Research at the Makotchi-Ded Dontipi Locale in Southwestern Manitoba*

Chair: B. A. Nicholson

- 1:30 **Matthew Boyd**
The Paleoecology of Drought: Opportunism in Prairie Sandhill Ecosystems
- 1:50 **B. A. Nicholson and Scott Hamilton**
Vickers Focus Ceramics at the Vera Site
- 2:10 **B. A. Nicholson and Scott Hamilton**
Preliminary Evaluation of the Stratified Cultural Sequence at the Vera Site
- 2:30 **Scott Hamilton and B. A. Nicholson**
Métis Occupation of the Lauder Sandhills of Southwestern Manitoba
- 2:50 Break
- 3:10 **Scott Hamilton and B. A. Nicholson**
Proto-historic Mortlach Use of European Technology at the Twin Fawns Site Within the Lauder Sandhills
- 3:30 **Tomasin Playford**
Archaeological Recoveries from Flintstone Hill: A Holocene Sequence in the Lauder Sandhills of Southwestern Manitoba
- 3:50 **Garry L. Running IV**
Geomorphology and Physical Setting of the Makotchi-Ded-Dontipi Locale, Southwestern Manitoba
- 4:10 **Richard E. Morlan**
The Canadian Archaeological Radiocarbon Database: Establishing Conventional Ages

Thursday Afternoon

Session No. 8 Room: Lamborn Symposium: *Stone Circle Research in the 1990s: Some Things Old, Some Things New*

Chair: **Steve J. Dasovich**

- 1:30 **William Ferris**
Preparing the Way: The Use of GIS at the Pawson Site, DgMr-152
- 1:50 **Beth Nodland and Antone Mathys**
Magnetic Prospecting for Tipi Rings at Site 24CH917 in Montana and Site 32PI401 in North Dakota
- 2:10 **Lynelle A. Peterson**
Statistical Analysis of Stone Feature Sites Located Within 20 Counties of Central Montana
- 2:30 **Brian L. Molyneaux**
Questions of Scale: Two Perspectives on Stone Circles at Lake Sakakawea
- 2:50 Break
- 3:10 **Alison Landals**
Tipi Ring Distribution and Variability Along the Canadian Portion of the Express Pipeline
- 3:30 **Meg McDonald**
Rock Features, Quarrying, Rock Art, and Other Prehistoric Activities at Pisgah Crater Lava Flow in the Mojave Desert
- 3:50 **Jim Finnigan and Terry Gibson**
Tipi Rings and Other Tent Sites as Habitations: Determining and Identifying Occupation Structures
- 4:10 **Margaret G. Hanna**
Landscape and Land Use: The Role of Operational and Cognitive Models at Chambéry Coulee, Saskatchewan
- 4:30 **Steve J. Dasovich**
A Critique of Stone Circle Research Methodology: The Search for Baseline Data
- 4:50 **Thomas F. Kehoe**
Discussant
- 5:10 **Leslie B. Davis**
Discussant

Friday Morning

Session No. 9 Room: Grand Pacific Symposium: *Freshwater Mussels in the Great Plains: Ecology and Prehistoric Utilization*

Chair: Kerry Lippincott

8:30 **Kerry Lippincott**
Introduction

8:50 **Doug Backlund**
Freshwater Mussel Surveys in South Dakota

9:10 **Donald J. Blakeslee**
Mussels, Bison Kills, and Pots: Clarity in the Archaeological Record

9:30 **Karen J. Couch**
The Unionid Mussels of the Osage River System in Kansas: Past and Present

9:50 **Alan M. Czacora**
Floating Mussels in the Upper Mississippi River, Minnesota and Their Implications for Dispersal in Paleontology and Archaeology

10:10 Break

10:30 **Ron Dorsey**
Archaeological Interpretation of Freshwater Mussel Assemblages in the Central Plains
*- small year-round gathering (indicates year-round occupation) - cycles of 4-7 yr
- sites occupied 7, 10, 17-22 years
+ large cyclical gathering events 36-62 years*

10:50 **Michael M. Gangloff and Daniel L. Gustafson**
Brief Synopses of the Freshwater Mussels (Bivalvia: Unionidae) of Montana

11:10 **Ellet Hoke**
The Unionid Mussels of Nebraska

11:30 **K. Kris Hirst**
Freshwater Mussels from Nebraska Phase Sites Along the Missouri River Drainage in Southwestern Iowa

11:50 **Kerry Lippincott and Leslie B. Davis**
A Prehistoric Freshwater Mussel Collection from the Schmitt Chert Mine Site (24BW559) Near Three Forks, Montana

(Session 9 continues in afternoon)

Friday Morning

Session No. 10 Room: Lamborn General Session: *Plains Village*

Chair: William Billeck

- 8:30 Stanley A. Ahler, Kenneth L. Kvamme, W. Raymond Wood, Fern E. Swenson, and Paul R. Picha**
Challenging the Myth: New Investigations at Menoken Indian Village State Historic Site, North Dakota
- 8:50 William O. Angelbeck**
Excavations at the Crabtree Site: A Mississippian House in Eastern Clay County, Missouri
- 9:10 William Billeck**
William Duncan Strong's Excavations at Leavenworth (39CO9)
- 9:30 Scott D. Brosowske and Leland C. Bement**
Plains Interaction During the Late Prehistoric: A View From Some New Sites in the Oklahoma Panhandle
- 9:50 Richard R. Drass**
A Survey of the Washita River and Plains Village Settlement in Central Oklahoma
- 10:10 Break**
- 10:30 Eric J. Feiler, Michael D. Metcalf, Robert C. Christensen, Fern E. Swenson, Kent M. Good, and Stanley A. Ahler**
Recent Excavations at Scattered Village (32MO31), A Traditional Mandan Settlement Beneath the City of Mandan, North Dakota
- 10:50 Fred A. Finney**
Mill Creek and Oneota Chipped Stone Utilization in Northwest Iowa
- 11:10 Michael B. Chidley**
Filling in a Hole: The Formation Processes and Stratigraphy of a Nebraska Phase Earthlodge
- 11:30 Eric Kaldahl**
Abandonment Behavior, Artifact Distributions, Formation Processes, and the Stratigraphy of a Nebraska Phase Lodge
- 11:50 Erin L. Richardson**
Taphonomic Study of Bone and Shell Preservation in the Loess Hills of the Missouri River Valley: Case Study of a Nebraska Phase Earthlodge

Friday Morning

Session No. 11 Room: Sheyenne
General Session: *Poster Papers*

9:00 - 12:00

Danny N. Walker, J. D. "Sam" Drucker, and Steven De Vore
Searching for Fort William on the Laramie

David L. Maki, Geoff L. Jones, and Scott D. Brosowske
A Preliminary Report of a Geophysical Investigation at a Southern Plains Village Site in Western Oklahoma

Matthew Glenn Hill
Paleoindian Transport Decisions and Secondary Processing of Bison at Clary Ranch, Nebraska Panhandle

Tomasin Playford and Suyoko Tsukamoto
Preliminary Archaeological Investigations from Flintstone Hill: A Place Right Out of History

Jeani L. Borchert and Robert C. Christensen
North Dakota Department of Transportation: Village Excavations

Garry L. Running IV, Matthew J. Boyd, Scott Hamilton, Bev Nicholson, Matthew Bloom, William C. Lazarz, and Timothy D. Morrell
Geoarchaeology of Flint Stone Hill: Implications for Holocene Landscape Evolution in the Makotchi-Ded-Dontipi Locale, Southwestern Manitoba

Tim E. H. Jones
Recent Research on Northern Plains Red Pipestone "Tablets" and "Pendants" and Related Artifacts

Isaku Owada
Lithic Raw Material Utilization at 25FT39

Friday Morning

Session No. 12 Room: Heart Symposium: *Sandman: A Cooperative Venture in the Analysis and Repatriation of a Cheyenne/Arapaho Burial*

Chair: Robert L. Brooks

- 8:30 **Robert L. Brooks**
History of the Sandman Burial
- 8:50 **Kent J. Buehler**
Analysis of Funerary Objects from the "Sandman", 34WD47, an Historic Burial in Northwest Oklahoma
- 9:10 **Robert L. Brooks, Kent J. Buehler, Douglas W. Owsley, and Karen Bruwelheide**
Bioarchaeology of the Sandman Burial
- 9:30 **Candace S. Greene**
Warrior or Dude? An Analysis of Clothing and Culture From a Historic Plains Burial
- 9:50 **Robert L. Brooks**
Seeking the Identity of Sandman
- 10:10 **Gordon Yellowman**
Sandman Burial: A Cheyenne-Arapaho Perspective
- 10:30 **Gordon Yellowman**
Discussant

Friday Morning and Afternoon

Session No. 13 Room: Cannonball Symposium: *Public Education Issues--Interpreting Archeology and American Indian Culture at Prehistoric/Historic Sites*

Chairs: Marcia Wolter Britton and Erik Holland

- 9:00-10:00 a.m. Ten minute presentations by moderator Marcia Wolter Britton and presenters Erik Holland (planning), Gerard Baker (stakeholders), Ernest Walker (physical facilities), and Linda Ehreth (program/activities).
- 10:00-11:00 a.m. Audience questions/discussion and summary.
- 11:00-11:30 a.m. Travel to Double Ditch Indian Village State Historic Site.
- 11:30-1:15 p.m. Box lunches and brainstorming about planning interpretation for Double Ditch State Historic Site with panelists as well as audience.
- 1:15-1:30 p.m. Return travel to conference headquarters.

Friday Afternoon

Session No. 9 Room: Grand Pacific
Symposium: *Freshwater Mussels in the Great Plains:*
Ecology and Prehistoric Utilization
(continued from Friday morning)

Chair: Kerry Lippincott

- 1:30 **Paul R. Picha and Fern E. Swenson**
Freshwater and Fossil Mollusk Tool-Ornament Production and Resource Use in the Middle Missouri Subarea: Replication Experiments and Archaeological Diversity in Plains Village Sites in North Dakota.
- 1:50 **Robert E. Warren and James S. Oliver**
Zoogeographic and Cultural Implications of Freshwater Mussel Shell from Northern Plains Archaeological Sites
- 2:10 **Steve Dyke**
Freshwater Mussel Management in North Dakota
- 2:30 **Thomas P. Myers and Keith Perkins III**
An Interpretation of Mollusca Utilization at the Child's Point Site, Nebraska
- 2:50 Break
- 3:10 **Alan M. Cvancara**
Discussant
- 3:30 **W. Raymond Wood**
Discussant

Friday Afternoon

Session No. 14 Room: Cannonball General Session: *Geophysical and GIS Issues*

Chair: Kennneth L. Kvamme

- 1:30 **Marjorie Duncan**
A GIS Application to Archaeology: The Two Sisters Site
- 1:50 **Joe Alan Artz**
Modeling Prehistoric Site Location in Central Iowa: A GIS Approach
- 2:10 **Charles A. Geisel**
Pit Hearths in Northwestern Nebraska: Utilizing GIS to Predict the Location of Critical Resources
- 2:30 **Kennneth L. Kvamme**
Multidimensional Remote Sensing at Plains Village Sites
- 2:50 **JoAnn Kvamme**
Resistance in the Plains
- 3:10 **A. Holly Mead and Michael D. Glascock**
Chemical Characterization of Pipestone by Neutron Activation Analysis

Friday Afternoon

Session No. 15 Room: Heart General Session: *Northern Plains*

Chair: Tom E. Roll

1:30 Open

1:50 **Marcel Kornfeld, Judson Finley, Jonathan Durr, and Casey Dukeman**
Rock Shelters and Chipped Stone Procurement in the Upper Spring Creek Drainage of the Bighorns

2:10 Open

2:30 **Laura B. Niven**
Paleoecological and Anthropological Implications of Dental Enamel Hypoplasia in Bison

2:50 **William C. Prentiss, Janis L. Bouma, and Susan S. Hughes**
The Late Prehistoric Period in the Big Horn Basin, Wyoming: A View from the Little Buzz Site (48BH1467)

3:10 Break

3:30 **Tom E. Roll and John W. Fisher, Jr.**
The Yonkee Bison Trap 1998

3:50 **Craig S. Smith**
Technological Organization and Obsidian Use in Wyoming

4:10 **Rick L. Weathermon**
Exploitation of Bison Behavior: An Interpretation of Prehistoric Procurement Strategies Based in Ethology

4:30 **E. Leigh Syms**
Seven Recently Recovered Ancient Caches from Northern Manitoba: Their Implications for Elaborating Upon Northern Plains Developments

4:50 **Wendy Sutton**
Preliminary Report on Investigations at 48SH885: A Late Prehistoric/Protohistoric Campsite in the Big Horn Mountains

5:10 **Tim E. H. Jones**
Preliminary Report on the Camp Rayner Site (EgNr-2), Saskatchewan

Friday Afternoon

Session No. 16 Room: Lamborn **Symposium: *A Rock Art Tribute to Stuart W. Conner***

Chair: Larry Loendorf

Organizers: Larry Loendorf and Mavis Greer

- 1:30 Larry Loendorf and Mavis Greer**
Symposium Introduction: A Rock Art Tribute to Stuart W. Conner
- 1:50 Julie Francis**
Stu Conner and Archaeological Research in the Bighorn Basin of Wyoming
- 2:10 J. Claire Dean**
Pictographic Lessons from a Photographic Album
- 2:30 Mavis Greer and John Greer**
A Review of Montana Rock Art Recording Methods
- 2:50 Michael T. Bies and Linda Olson**
Detailed Rock Art Recording in the Big Horn Basin
- 3:10 Break**
- 3:30 Alice M. Tratebas**
Spatial Differentiation of Early Hunting Petroglyphs
- 3:50 Linea Sundstrom**
Gender and Rock Art in Western South Dakota
- 4:10 James Keyser, Michael Klassen, and Larry Loendorf**
Bird Rattler's Petroglyphs at Writing-On-Stone: Continuity in the Biographic Rock Art Tradition
- 4:30 Larry Loendorf**
"Thrown Behind the Tipi Lining" is Found Among the Stars
- 4:50 David S. Whitley**
The Vision Quest in the Far West

Friday Afternoon

Session No. 17 Room: Cannonball

Workshop: *Resistivity and Magnetic Survey Methods, Part 1*

Chair: Lewis Somers

3:30 - 5:30 p.m. Workshop on Resistivity Survey Methods
 Resistivity Survey Design
 Field Procedures
 Data Processing
 Data Display
 Data Interpretation
 Survey Contracting

Saturday Morning

**Session No. 18 Room: Heart
General Session: *Government Issues***

Chair: Halcyon LaPoint

- 8:30 **R. Peter Winham**
Village Sites of the Middle Missouri Subarea A.D. 1000-A.D. 1887 National Historic Landmark Theme Study
- 8:50 **Stephen A. Chomko**
Curation of Federal Archeological Collections: A Case Study from Fort Carson
- 9:00 **Halcyon LaPoint and Mervin Floodman**
Passport in Time and Heritage Management on the Custer National Forest
- 9:20 **Myra J. Giesen and David W. Graham**
Repatriation Across Borders
- 9:40 **William Kurtz and Tim Mentz**
Sacred Sites, Repatriation, and American Indian Religious Freedom
- 10:00 **Tim Mentz and William Kurtz**
Preservation...a Reservation Issue

Saturday Morning

Session No. 19 Room: Grand Pacific General Session: *Plains Village and Plains Woodland*

Chair: Dennis L. Toom

- 8:30 **Elizabeth Prine**
Household Lithics at Three Hidatsa Village Sites
- 8:50 **Donna C. Roper**
Just When We Thought We Knew the Place This Shows Up: The 1998 Excavations in the Medicine Creek Valley, Nebraska
- 9:10 **Cindy B. Ball**
A Ceramic Analysis of Two Northern Kansas Sites
- 9:30 **Marie Huhnke**
Close Analysis of the Projectile Points from Waconda Lake, Nebraska
- 9:50 **Alex Kurota**
Ceramic Remains Determine Geographical and Cultural Relationships
- 10:10 **Donna C. Roper**
Earth Lodge Deterioration: A Case Study from Nebraska
- 10:30 **Jim Watson**
Hunting Patterns in a Hamlet Village on the Upper Solomon River
- 10:50 **Brad Logan**
Steed-Kisker, Whence and Whither?
- 11:10 **Michael Scullin, Jason K. Weinrich, and Andrea J. Torgerson**
The Jones Site (21BE5): Terminal Cambria Focus
- 11:30 **Dennis L. Toom and Matthew J. Root**
The Sonota Complex Occupation at the Doaks Butte Site, Southwestern North Dakota

*ask Donna about
her question regarding
Polishans*

Saturday Morning

Session No. 20 Room: Lamborn
General Session: *Public Education*

Chair: Fred E. Schneider

- 8:30 **Fred E. Schneider**
 Introduction
- 8:40 **Mary Jane Schneider**
 Three Myths About Northern Plains Indian Art
- 9:35 **Bill Hunt**
 The Historical Archeology of Fort Union, "The Vastest and Finest of the Forts" on the Upper Missouri
- 10:20 Break
- 10:40 **John Williams**
 Dead Men Do Tell Tales - Forensic Anthropology in the Dakotas
- 11:25 **Michael G. Michlovic**
 Why People Believe in the Past

Saturday Morning

Session No. 21 Room: Cannonball
Workshop: *Resistivity and Magnetic Survey Methods, Part 2*

Chair: Lewis Somers

- 9:00 - 11:00 a.m. Workshop on Magnetic Field Gradient Survey Methods
 Magnetic Field Gradient Survey Design
 Field Procedures
 Data Processing
 Data Display
 Data Interpretation
 Survey Contracting

ABSTRACTS

Adair, Mary (University of Kansas) [5]

Great Bend Paleoethnobotany: A.D. 1500-1550

For approximately 250 years (ca A.D. 1500-1750) the Great Bend aspect people, recognized as the historic Wichita, occupied an area within present day central and southern Kansas and northern Oklahoma. Archaeobotanical data from 15 sites within this region are currently being analyzed to determine pre-contact gardening and gathering practices and potential changes to these practices due to the introduction of new foods and changes in economic adaptations associated with European contact and increased trade relations. Archaeobotanical recovery techniques and volume of data are presented for each site and preliminary findings are discussed.

Ahler, Stanley A. (PaleoCultural Research Group), Kenneth L. Kvamme (Boston University), W. Raymond Wood (University of Missouri-Columbia), Fern E. Swenson, and Paul R. Picha (State Historical Society of North Dakota) [10]

Challenging the Myth: New Investigations at Menoken Indian Village State Historic Site, North Dakota

The hypothesis that the fortified settlement on Apple Creek known as Menoken Village (32BL2) was the site of first historically recorded contact between the Mandans and Euroamericans has remained untested for more than 50 years. Fieldwork in 1998 gives us new information which both dispels this idea and opens the door for study of Northern Plains Village origins. Geophysical studies have provided a huge information base useful for many years of hypothesis development and testing, excavation planning, and public site interpretation. Excavations have revealed two architectural forms with similar artifact associations. Rather than originating in the eighteenth century, the site should date well before AD 1200, just as suggested by J. J. Hoffman from his assessment of old site collections. Ceramics are Late-Woodland-like, predominantly cord-roughened, with simple decoration and rim forms. Occasional sherds indicate contact with Middle Missouri tradition populations. Lithics reveal a high selection for Knife River flint and bipolar reduction technology. Shell and ochre remains suggest wide-ranging external contacts. No evidence for horticulture has yet been seen. Continuing work should reaffirm the National Historic Landmark status of Menoken Village, but for reasons quite different from those originally proposed.

Angelbeck, William O. (MoDot Cultural Resources) [10]

Excavations at the Crabtree Site: A Mississippian House in Eastern Clay County, Missouri

In the summer of 1998, Cultural Resources Section of the Missouri Department of Transportation (MoDOT) conducted excavations on the Crabtree Site, 23CL164. The site is on an alluvial fan within the Missouri flood plain in eastern Clay County, Missouri. The site contained a Mississippian house and associated pit features. The excavation was preceded by Ground Penetrating Radar (GPR) techniques in order to ascertain anomalies in the paleosol, which helped determine placement of excavation blocks, units, and trenches. This paper will discuss the nature of the site and its relation to Mississippian phases and complexes in the Kansas City area and the eastern Central Great Plains.

Artz, Joe Alan (Office of the State Archaeologist, University of Iowa) [14]

Modeling Prehistoric Site Location in Central Iowa: A GIS Approach

Surveys of a 30 km highway corridor identified only one high density site cluster, on sandy, forest-derived soils on Indian Creek in Jasper County. A geographic information systems (GIS) approach is used to determine whether -- and where -- similar site clusters might occur in unsurveyed portions of the surrounding region. A suite of environmental factors that characterize the vicinity of the known site cluster is identified. Digital maps of soils, GLO vegetation, streams, and topography are used to determine the frequency with which this suite of factors co-occurs across a larger region. The analysis

is a first step in identifying and classifying Iowa landscapes according to their prehistoric occupational potential.

Backlund, Doug (South Dakota Department of Game, Fish, and Parks) [9]
Freshwater Mussel Surveys in South Dakota

A summary of past and recent survey work on the freshwater mussels of South Dakota is presented. Twenty-eight species of freshwater mussels are known from South Dakota. Recent survey work in eastern South Dakota and in the Missouri River has provided new information on the status and distribution of freshwater mussels in South Dakota.

Ball, Cindy B. (Wichita State University) [19]
A Ceramic Analysis of Two Northern Kansas Sites

Approximately 200 rim sherds from two northern Kansas sites were analyzed in detail. Various factors such as decoration style, rim form, temper and paste were considered when placing the sherds into approximately 20 categories per site. The evidence suggests that multiple batches of pots are represented. The implications of this are discussed.

Ballenger, Jesse A. M. (Oklahoma Museum of Natural History, University of Oklahoma) [4]
Paleoindians, Lithics, Southern High Plains

Although large numbers of late Paleoindian projectile points are known from the Oklahoma panhandle, significant description or interpretation has lagged since William (Uncle Billy) Baker and others summarized the Nall collection. This paper compares the Plainview-like and Frederick/Allen points from Nall with those collected from Goff Creek. Although located only 40 km from the headwaters of Goff Creek, where Alibates dominates the Paleoindian sample, the Nall assemblage demonstrates a strong reliance on western lithic sources. This, as well as other salient distinctions such as breakage types, tool use-life, and site function, are discussed.

Bement, Leland C., and Kent Buehler (Oklahoma Archeological Survey) [3]
Confirmation of a Southern Plains Late Archaic Bison Jump

Testing of a bison bone deposit at the base of a 25m sandstone cliff at the Certain Site, 34BK46, western Oklahoma, yielded resharpening flakes and a butchering tool. These artifacts, plus the density of bison remains suggest this cliff was used as a bison jump. Bone from this deposit was radiocarbon dated to 2200 ybp, some 300-400 years older than the bones in the arroyo kills for which the site is best known. In addition, we found another bison bonebed two meters deeper than the first. Although little excavation has been accomplished in this lower bonebed, we did recover a chert chip suggesting it too is the result of a bison jump. The two deposits at the base of the cliff make the Certain site the second confirmed bison jump on the southern Plains. Bonfire Shelter in SW Texas is the only other known bison jump on the southern Plains. All other bison kills employed deadend gullies, other trapping methods, or were the result of ambush hunting.

Bevitt, C. Tod (Wichita State University) [4]
Cache or Trash? The Characteristics of Two Wilmore Complex Lithic Features for the Booth Site (14CM406), Comanche County, Kansas

The Wilmore Complex is a poorly defined cultural complex located in southwest Kansas dating to a period of A.D. 1150-1500. Excavations conducted at the Wilmore complex Booth site in 1989 identified what were then recognized as 2 lithic caches composed primarily of Alibates flakes. Caches are typically identified as features isolated from habitation sites. These settings offer advantages

particularly related to identifying the flintknapping characteristics of an individual knapper. In the context of habitation sites this becomes more difficult, but no less rewarding if the opportunity presents itself. In addition, the habitation site cache allows comparisons with the general debris of the habitation. This paper seeks to determine the validity of the cache designations of the two features through analysis of their respective settings within the site and comparison of the characteristics of the individual lithics within each feature. Brief comparisons with the lithics from elsewhere in the site is also planned though these conclusions will be tentative as formal analysis of the artifacts from the site is ongoing at this time.

Bevitt, C. Tod (Wichita State University) [3]

The Lundeen Site (14MD306): Preliminary Results of the 1998 Kansas Archaeology Training Program in Meade County, Kansas

The Kansas Archaeology Training Program (KATP) was held June 6 through the 13. The focus of the program consisted of excavations at a Late Prehistoric (AD 1000-1500) habitation site north of the town of Fowler in southwest Kansas. Preliminary testing in August of 1997 and late March/early April of 1998 revealed a significant amount of intact cultural remains extending over 1.5 meters below ground surface. Excavations conducted during the training program revealed a number of features containing well preserved evidence of a prehistoric culture which bears distinct relationships to the previously defined Wilmore complex of southwest Kansas. Cultural features include shallow basins, cylindrical and bell shaped storage pits, and semi-subterranean structures. A portion of a deep and extremely complex midden area was also extensively investigated. Materials recovered from the general excavation include a large sample of ceramics, including several reconstructable vessels or vessel fragments, numerous bone tools, and a diverse faunal assemblage. Preliminary discussion of these features and artifacts from the investigation and their implications toward a better understanding of the Late Prehistoric on the Southern Plains will be the focus of the paper.

Bies, Michael T. (Bighorn Basin Resource Area, Bureau of Land Management), and Linda Olson (Minot State University) [16]

Detailed Rock Art Recording in the Big Horn Basin

The basis for the study and analysis of rock art is a detailed record of what is actually present on the rock face. Since 1988 efforts have been underway in the Big Horn Basin to produce a detailed record of the known rock art localities. These efforts involve several stages of recording including initial photographs and mapping of the general panel location, the second level of recording is the production of measured drawings, scaled photographs, and panel forms including maps showing the relationship of the panels. The third level of recording is the production of 1:1 tracings of the panels, this entails an exact reproduction of all elements of the panel which can then be reduced for publication and reporting. Having complete drawings of all elements of the rock art at life size allows comparison to be made with other sites with assurance that all factors are being considered. A chronological sequence is also being established to facilitate linkage with the ethnographic or archaeological records as appropriate.

Billeck, William (Smithsonian Institution) [10]

William Duncan Strong's Excavations at Leavenworth (39CO9)

While working for the Bureau of American Ethnology in 1932, William Duncan Strong undertook a program of site excavation in the northern Plains, including excavations at Leavenworth, an earthlodge village that was occupied by the Arikara from about 1800 until 1833. This site and others were critical in Strong's use of the Direct Historical Approach. While other excavations at Leavenworth have been reported upon, Strong's 1932 excavations have not been adequately described.

Blakeslee, Donald J. (Department of Anthropology, Wichita State University) [9]
Mussels, Bison Kills, and Pots: Clarity in the Archaeological Record

This paper argues that the mussel shell assemblages from the Central Plains share important attributes with bison bone beds and (to a lesser extent) with pottery. These attributes are ones which allow the archaeologist to read the archaeological record with exceptional clarity. They include two attributes of the events which created the assemblage (brevity and frequency), five features pertinent to any kind of assemblage (primary context, separation, large size, completeness, and chronometric potential), and four features usually considered only in biological populations (cohort structure, catastrophic mortality profile, environmental sensitivity, and markers of seasonality).

Blikre, Lowell (Bear Creek Archeology, Inc., Cresco, Iowa) [5]
Hafting Characteristics of Middle Archaic Side-Notched Points

Recent excavations by Bear Creek Archeology, Inc. have produced a number of side-notched points from Middle and late Archaic contexts. These points can be grouped by simple characteristics into a few named types (i.e. Godar, Raddatz). However, a closer examination suggests that additional sub-groups based on more subtle haft element characteristics may exist. These variables include notch morphology and angle, basal grinding, and degree of basal thinning. Side-notched points including those from the Lost Creek locality in the Des Moines River valley, south-central Iowa, and from the Eisele's Hill locality in the Mississippi Valley, southeast Iowa, are examined and compared.

Borchert, Jeani L., and Robert C. Christensen (North Dakota Department of Transportation) [11]
North Dakota Department of Transportation: Village Excavations

In the last 3 years the North Dakota Department of Transportation (NDDOT) has been involved in excavations at 4 village sites. 32MO291 and 32MO292 were located on the Highway 1806 Fort Lincoln bypass. These sites had been disturbed by past leveling to facilitate irrigation. During construction ~90 features, typical to Plains Village occupations, were discovered but no living surface appeared to remain and no houses were identified. 32MO66 was tested in conjunction with the repair of a slide on old Highway 10. NDDOT testing revealed a Plains Village component with hearths, post molds and a possible midden area. Analysis and reporting are still in progress. The site dates to ~A.D. 1400. 32MO31, Scattered Village, was found during construction on the Mandan First Street project. Will and Hecker reported every stage of Mandan cultural progress at the site and believed it was also the location occupied by the Hidatsa at the time of the Crow Hidatsa separation. Houses, cache pits, hearths, post molds, burials, and middens were exposed in the boulevard area and are being excavated. Metcalf Archaeological Consultants has yet to analyze this material, but it is clear that both pre and post contact occupations are represented.

Boyd, Matthew (University of Calgary) [7]
The Paleoecology of Drought: Opportunism in Prairie Sandhill Ecosystems

Severe drought is often seen as a 'prime mover' in explanations of certain key demographic/cultural changes on the Precontact northern Plains. Arguments of this sort usually take for granted the notion that drought is associated with a significant reduction in biodiversity. In certain prairie sandhill ecosystems, however, it is argued that the effects of drought on the landscape - primarily, the destabilization of dunes - represent times of opportunity for plant taxa (mostly grasses) adapted to these circumstances. By way of illustration, microbotanical analysis of the 1930s "Dustbowl" sediment sequence in the Lauder Sandhills suggests that aeolian influx is associated with the rapid colonization of this new substratum by *Andropogon hallii* (sand bluestem) across a drying lake edge. The idea that dune destabilization may result in the expansion of bison forage has obvious implications for the study of Plains hunter-gatherer economies of these areas.

Britton, Marcia Wolter (State Historical Society of North Dakota), Erik Holland (Minnesota Historical Society), Gerard Baker (National Park Service), Linda Ehreth (State Historical Society of North Dakota), and Ernest Walker (University of Saskatchewan) [13]

Public Education Issues--Interpreting Archeology and American Indian Culture at Prehistoric/Historic Sites

Objectives: 1. To facilitate dialogue about the interpretation of archeology and American Indian interpretation at prehistoric/historic sites. 2. To foster communication between archeologists, public educators, and museum professionals. 3. To create a forum for sharing specific program ideas about archeology education at prehistoric/historic sites. 4. To demonstrate the need for the involvement of American Indians and constituency groups in planning interpretation at prehistoric/historic sites. 5. To utilize a case study approach with an undeveloped site, Double Ditch Indian Village State Historic Site.

Brooks, Robert L. (Oklahoma Archeological Survey) [12]

Seeking the Identity of Sandman

Early in our discussions with the Cheyenne/Arapaho tribe, we learned of their desire to establish the identity of the individual from the Sandman burial. This paper details the social, spatial, and temporal parameters used in the analytic process of researching this person's identity. Following sections of this paper address the multiple scenarios and the difficulties in linking oral history, historical accounts, and the archaeological record. Concluding comments point to the most parsimonious path to identity based on the analytic process used in this study.

Brooks, Robert L., and Kent J. Buehler (Oklahoma Archeological Survey) [12]

History of the Sandman Burial

The Sandman burial was excavated in July, 1973 by the Oklahoma Archeological Survey. Because of the exceptional preservation of the remains and wealth/elaborateness of the goods accompanying the individual, specialized procedures were used in removing the remains. Specialized studies of Sandman were also undertaken in the fall of 1973. This paper traces the history of the Sandman burial, the previous investigations, and conclusions reached by previous researchers.

Brooks, Robert L., and Kent J. Buehler (Oklahoma Archeological Survey), Douglas W. Owsley and Karen Bruwelheide (National Museum of Natural History, Smithsonian Institution) [12]

Bioarchaeology of the Sandman Burial

In July, 1973, the Sandman burial was removed from a partially disturbed context on private property near Woodward, northwestern Oklahoma. Analysis of the burial attests to cultural practices as well as post-depositional events affecting the contextual integrity of the remains. Recent reexamination of the individual has provided new insights into Sandman's age, health, and physical activities within a society of equestrian bison hunters – the Cheyenne and Arapahos.

Brosowske, Scott D., and Leland C. Bement (University of Oklahoma/Oklahoma Archeological Survey) [10]

Plains Interaction During the Late Prehistoric: A View From Some New Sites in the Oklahoma Panhandle

Early ethnohistoric accounts of European explorers to the Great Plains have documented the existence of far reaching exchange networks among Native American populations. These accounts demonstrate that groups throughout the Plains were regularly in contact with one another, as well as with groups residing in neighboring regions. Recently, a series of Plains Village (A.D. 1200-1500) sites have been recorded in the panhandle of Oklahoma that have yielded an extraordinary abundance of exotic trade materials compared to other sites in the region. Among these villages, the Odessa Yates site stands out in terms of the number and variety of nonlocal items present. Materials recovered include

obsidian, olivella shell beads, nonlocal ceramics, turquoise, greenstone celts, mica, red pipestone, conch shell, Catlinite, and a variety of nonlocal lithic materials. The presence of these items indicate that although interaction was primarily between Plains and Puebloan groups, other groups to the north, south, and east were also involved as well. This paper discusses preliminary results from the documentation of private collections and material sourcing. These results are discussed in terms of current interaction models proposed for the region.

Buehler, Kent J. (Oklahoma Archeological Survey) [12]

Analysis of Funerary Objects from the "Sandman", 34WD47, an Historic Burial in Northwest Oklahoma

First excavated in 1973, the "Sandman" burial (34WD47) from Woodward County, Oklahoma is one of the few historic burials recovered intact from the Southern Plains. Tentatively dated to the 1840s-50s, this burial and its abundance of associated artifacts have only recently begun to receive in-depth, multi-disciplinary analysis. The array of funerary objects includes conchos, shell hairpipes, mirrors, arrows with metal points, a variety of brass bracelets, elaborate earrings, and many other items. One particularly notable artifact is an umbrella or parasol. A considerable amount of organic material was preserved including hair, blanket and other cloth fragments, along with wooden items. The individual was also accompanied by thousands of trade beads including beadwork preserved *in situ* in the burial matrix. An analytical and contextual overview of these materials is presented to provide the basis for subsequent interpretation.

Carlson, Donita (University of Minnesota) [4]

A Quilling Society of the Cheyenne Women: A Conflict Approach to Change in Female Status

Around 1700 the Cheyenne gave up a semi-sedentary horticultural lifestyle in favor of a nomadic lifestyle centered around buffalo hunting. This change in the group's subsistence practices gave rise to other changes within their culture. This study contends that one of these changes was a deterioration of women's status among the Cheyenne. Utilizing the ethnohistoric method and the comparative method, data was compiled on the Mandan, Comanche, and the Cheyenne. Fourteen variables were used to produce indices in an attempt to measure the status of women within the three tribes. The results show that female status among the Cheyenne declined after their move to the plains, becoming less like that of the horticultural Mandan and more like that of the nomadic Comanche. Using a conflict model, this study looks at the possibility that the Quilling Society was formed as a response to the decline in female status among the Cheyenne. Marxist theory predicts that a change in the mode of production brings about a concurrent change in the relations of production. Conflict and resistance by women to these changes may have played an integral part in the organization of the Quilling Society.

Chidley, Michael B. (University of Nebraska-Lincoln) [10]

Filling in a Hole: The Formation Processes and Stratigraphy of a Nebraska Phase Earthlodge

Fontenelle Forest located in Bellevue, Nebraska was recently the location of the University of Nebraska-Lincoln Archaeological Field School. The Forest is an ideal location for a close examination of Nebraska Phase populations along the Missouri River. The Forest has been held as a preserve since the very early 1900's and contains no less than 54 depressions representing Nebraska Phase earthlodges. In the course of the UNL archaeological field school, Depression 32 was excavated and has presented an excellent opportunity to understand the formation processes of an undisturbed Nebraska Phase earthlodge. Depression 32, located within a large cluster of other depressions, is located on a stable ridge line overlooking the Missouri River and has never been subjected to mechanical or agricultural disturbance. The stratigraphy present included a complete representation of the original wall of the structure, collapse of the roof, and several erosional episodes. This paper is a description and interpretation of the stratigraphy and formation processes evident in the earthlodge.

post-abandonment
compact floor + artifacts

loess

midden

above structure
32

Chomko, Stephen A. (Fort Carson) [18]

Curation of Federal Archeological Collections: A Case Study from Fort Carson

Concerns regarding the storage and maintenance of cultural resources collections is not a new issue. Two positions consistently appear in the dialogue over the best way to store materials. One position argues for local curation facilities to facilitate research access and for public educational purposes. The second position, relying on cost-benefit arguments, leans toward archiving collections in large central or regional facilities. In 1997, Fort Carson completed construction of a curation facility to house the collections from Department of the Army lands in Colorado. A cost-benefit analysis demonstrates that a local curation facility may be cost efficient given the size of a collection and the requirements for access to and use of the materials.

Couch, Karen J. (Author/Illustrator (Freelance)) [9]

The Unionid Mussels of the Osage River System in Kansas: Past and Present

The Osage River basin drains all or parts of 13 counties in eastern Kansas. Five main tributaries, numerous small streams, and one large wetland area converge in western Missouri to form the Osage River which flows through two large reservoirs, from there to the Missouri River.

Thirty-six unionid mussels species are presently recognized from the Kansas portion of the Osage River system, out of 45 species known to occur statewide. Determination of which mussel species are declining or extirpated within a particular locality is possible by examining depositional areas and erosional sections of stream banks. Weathered shell material can be collected, identified, then compared with living mussels and recently dead shell collected from the same locale. This method has yielded eight examples of mussel species and forms, rare or now extirpated from the Osage River drainage in Kansas. One additional species is extirpated, but known only from literature reports. Remaining species occurring in the drainage exist as living populations in all or part of the system in Kansas. Collecting and studying long-dead and living specimens can be a useful tool in discerning changes in the mussel fauna, although determining the causes are much more difficult.

Cvancara, Alan M. (Professor Emeritus of Geology, University of North Dakota) [9]

Floating Mussels in the Upper Mississippi River, Minnesota and Their Implications for Dispersal in Paleontology and Archaeology

Two species of freshwater mussels, *Lampsilis siliquoidea* (Barnes 1823) and *L. cardium* (Rafinesque 1820), were observed floating in the Upper Mississippi River near Libby, northeastern Minnesota in May 1977. Fifteen collected shells of *L. siliquoidea* are 54 to 73 mm long (mean=66 mm) and weigh (dry) 5.5 to 20.0 g (mean=14.1 g). A single collected shell of *L. cardium* is 86 mm long and weighs 45.3 g. Flotation of the mussels was possible because of trapped decomposition gases. Death by abrupt drop in river level and subsequent loosening and lifting of the mussels by rapid water level rise may account for the floating event. Postmortem floating should be considered as an additional dispersal mechanism when evaluating the occurrence of mussels at fossil and archaeological sites.

Dasovich, Steve J. (University of Missouri) [8]

A Critique of Stone Circle Research Methodology: The Search for Baseline Data

Stone circle researchers have generated numerous conclusions about individual circles, individual sites, local groupings of circles, and region, and sometimes statewide distributions of circles. These conclusions can be chronological, functional, or ecological, to name a few. Most of these conclusions are based on initial surveys of sites and some resultant testing of individual circles. However, is there enough research being conducted on stone circle sites to generate anything more than conclusions for individual circles? In the Dakotas, the answer is usually "No."

This paper questions the validity of generating conclusions for stone circles based on surface survey and testing alone. General evidence based on a complete survey of South Dakota stone circles, and more specific evidence from purposeful complete excavations of circles highlight the argument.

Davis, Leslie B., Christopher L. Hill, Robert G. Dundas (Montana State University, Museum of the Rockies) and David C. Batter (Eastern New Mexico University) [2]

Blacktail Cave Late Pleistocene/Holocene Geoarchaeology and Paleontology: First Montanans Research in the South Dearborn Drainage, Montana

Situated above the South Fork of the Dearborn River in west-central Montana, at the southern outlet of the hypothetical Ice-Free Corridor in an unglaciated area between the Dearborn Glacier and Glacial Lake Great Falls, Blacktail Cave was discovered in 1946. Paleontologists have since recovered remains of woodland musk-ox (*Bootherium bombifrons*), big brown bear (*Ursus arctos*), bison (*Bison occidentalis*), wolf (*Canis lupus*), and other fossil and Holocene vertebrates from a specific cavernous locality. The Museum of the Rockies' stratigraphic investigations of Blacktail Cave (site 24LC151) (1995, 1996, and 1998) were designed as an independent test of the possible coassociation of locally extinct Late Pleistocene vertebrates with Paleoindian projectile points previously indicated by artifacts reported by paleontologists in 1978, and thereafter superficially elsewhere in the cave. Deepened and widened Museum excavations conducted in that locality yielded remains of additional fossil and modern species, but no artifacts in indubitable association. Provenienced musk-ox, big brown bear, Ice-Age horse (*Equus* sp.), and marmot (*Marmota flaviventris*) bones recovered below a layer of travertine yielded uncorrected CAMS radiocarbon ages ranging from 37,000 to 10,000 B.P. This Late Ice-Age faunal assemblage contributes a significant radiocarbon-dated paleofaunal record to Northern Rocky Mountain prehistory.

Dean, J. Claire (Dean and Associates, Portland, Oregon) [16]

Pictographic Lessons from a Photographic Album

In 1992 I was asked to carry out a condition assessment of Pictograph Cave, near Billings, Montana, in an effort to solve the puzzle of the pictographs that seemed to have started to "fade" rapidly over recent years. The research led to a project that continues today, but was initiated in large part by Stu Conner. Stu also provided an invaluable kick-start to the venture in the form of a photographic archive of his own and other collected photographs of the cave spanning nearly 80 years. This paper explains the importance to a conservator of such a visible record of a site's history.

Dorsey, Ron (Department of Anthropology, Wichita State University) [9]

Archaeological Interpretation of Freshwater Mussel Assemblages in the Central Plains

This paper examines and interprets bivalve mussel assemblages associated with the Solomon River phase of the Central Plains. Approximately 15,000 individual shells from seven sites in the Waconda Lake area are included in the investigation. The results of minimum number of individuals (MNI), paleohabitat reconstruction, and cross section analysis of the most common species, *Quadrula pustulosa*, provide insight into the gathering behaviors of early occupants.

Site occupants collected the mussels from the Solomon River or its tributaries at the end of the growing season and used the animals for food. The resulting concentrations suggest two distinct gathering behaviors. Casual collection produced small assemblages as dietary supplements and the inhabitants harvested the larger concentrations every four or five years for social events or from stress in the horticultural cycle.

anytime
of year

fall

Drass, Richard R. (Oklahoma Archeological Survey) [10]

A Survey of the Washita River and Plains Village Settlement in Central Oklahoma

A 1997/1998 survey of parts of the Washita River basin in central Oklahoma has revealed evidence of occupation from Clovis times to the present. Examination of 4.1 square miles of the river basin in Garvin County resulted in the discovery of 46 sites. There is evidence of deeply buried Archaic camps and early Chickasaw and Cherokee farmsteads and settlements along the river. Of particular interest is the documentation of five late prehistoric villages related to Paoli and Washita River phase people, A.D. 1000 to 1450. Examination of other sites in this area of the river basin reveals 47 additional

villages, many buried in river terraces. Site density estimates for the river valley range from 1.1 village per river mile in the county to 7.3 per square mile in the surveyed sections. Villages are confined to river terraces and ridge toes adjacent to the river; the survey revealed no permanent occupation of tributary streams and upland settings away from the river valley. Testing of villages indicates subsistence based on river basin resources such as the hunting of deer and rabbits, fishing, the gathering of mussels and wild plants, and the cultivation of corn, beans, and marshelder on the low river terraces.

Duncan, Marjorie (Oklahoma Archeological Survey) [14]

A GIS Application to Archaeology: The Two Sisters Site

The Two Sisters site is an Antelope Creek Phase site in the Oklahoma Panhandle that was occupied between about A.D. 1330 and 1420. Excavations conducted in the summers of 1972 and 1973 by University of Oklahoma field school participants generated 96,020 items from this site. In this paper, artifact location and attribute data have been combined with Geographic Information Systems (GIS) program, *Arc/INFO*, to provide clues about subsistence strategies. Because GIS have the unique capacity of linking vast amounts of spatial information with non-spatial attributes, the hypothesis was that by analyzing the distribution and quantities of hunting tools and horticultural implements, trends may become evident about subsistence behavior through time. General tendencies in the number of hunting and horticultural tools and where they were recovered on the site support the idea that hunting was a more important subsistence strategy than horticulture.

Dyke, Steve (North Dakota Game and Fish Department) [9]

Freshwater Mussel Management in North Dakota

This presentation will provide a cursory view of freshwater mussels in North Dakota. Emphasis will focus on the recent commercial clam interest in harvesting mussels. For example, in 1990, the state experienced a sudden influx of nonresident commercial mussel pickers (commonly referred to as clammers). Information will be presented on how the state dealt with the issue and what changes have taken place as a result. Additional information will be provided on the North Dakota Game & Fish Department's views on the present status of clams, their habitat and vulnerability to commercial harvesting.

Feiler, Eric J. (PaleoCultural Research Group), Michael D. Metcalf (Metcalf Archaeological Consultants, Inc.), Robert C. Christensen (North Dakota Department of Transportation), Fern E. Swenson (State Historical Society of North Dakota), Kent M. Good (North Dakota Department of Transportation), and Stanley A. Ahler (PaleoCultural Research Group) [10]

Recent Excavations at Scattered Village (32MO31), A Traditional Mandan Settlement Beneath the City of Mandan, North Dakota.

Disturbance from the First Street Project in Mandan, North Dakota, resulted in discovery, documentation, and archaeological mitigation within part of a once prominent earthlodge village known in Mandan and Hidatsa traditions and historic records as Scattered Village or Crying Hill Village (32MO31). A two-block segment of First Street NE intersects the village in an area heavily modified by 100 years of residential development. Previous to this work, the site was well-known to local residents but poorly known to archaeologists who had all but written it off as obliterated by Euroamerican development. Excavations have focused on portions of at least two earthlodge structures (one burned), stratified middens, and numerous storage features. Although George Will and Thad Hecker stated that the village as a whole encompassed every period of Mandan cultural development, our excavations encountered deposits apparently dating only post-AD 1500. This is thought to be a period during which Hidatsas as well as Mandans resided near or within the village. A large artifact sample will be studied during the next three years. Research will focus on site formation processes, site chronology, changes in material culture, and far broader understanding of both Mandan and Hidatsa archaeological records.

Ferris, William (Western Heritage Services, Inc.) [8]

Preparing the Way: The Use of GIS at the Pawson Site, DgMr-152

Analysis in archaeology has always depended on the use of graphic representations of field data. Through the use of GIS technologies this analysis can now grow beyond the traditional methods to new areas of visual representation. A case study on using various GIS techniques at the Pawson site, a tipi ring site located in a mine development along Long Creek is used to illustrate how GIS can provide the archaeologist with new analytic tools to accomplish this task.

Finley, Judson, and Rick L. Weathermon (Pochteca Archaeology/University of Wyoming) [1]

The Shaft: Scams, Shams, and Broken Dreams of the Black Hills Gold Rush, an Archaeological Interpretation

The discovery of gold in the Black Hills of South Dakota during the 1870's opened this area to a major historical settlement and economic development. Subsequently, archaeological sites located during resource inventories of the area are commonly related to mining activities. Within the historical literature exists a wealth of information concerning this topic which can be applied to specific archaeological sites with a variety of interpretations. Extant throughout most investigations is the fact that grifters and con artists were often successful and the common man more than likely not. This paper explores how few participants in the Black Hills Gold Rush got the gold and many got only the shaft.

Finney, Fred A. (Institute for Minnesota Archaeology) [10]

Mill Creek and Oneota Chipped Stone Utilization in Northwest Iowa

Permian
Flint Hills green
Shokey flint
Florence
" P
Plattsmouth
Jasper
20%
B 19%
tools high
in Flint Hills

Recent investigations at the Phipps (Mill Creek) and Dixon (Oneota) sites in Northwest Iowa included a close scrutiny of the associated chipped stone assemblages. The Mill Creek peoples living at Phipps used at least 20 different raw materials. Aside from a few cherts with Iowa sources, the materials came from north, northwest, west, or southwest of Phipps. This covers an extensive portion of the Plains ranging from North Dakota to Nebraska, other parts of Iowa, and the Upper Mississippi River Valley. The most common nonlocal types at Phipps imply a stronger connection existed with Central and Southeast Iowa.

At least 27 identifiable nonlocal materials occur at Dixon. Aside from a few Iowa cherts, other raw materials had sources north, northwest, west or southwest of Dixon. The external connections were triangular-shaped from the Plains, other parts of Iowa, and the Upper Mississippi River Valley. The notable extent of the nonlocal materials at Dixon from Kansas implies procurement through bison hunting excursions on the Central Plains.

In summary, the chipped stone types map the external relations of the Phipps and Dixon peoples. This data involves seasonal movements of some individuals east toward central and southeast Iowa and the Mississippi Valley, particularly for Phipps; and west to the Missouri Valley and central Plains for the subsequent Dixon peoples.

Finnigan, Jim, and Terry Gibson (Western Heritage Services, Inc.) [8]

Tipi Rings and Other Tent Sites as Habitations: Determining and Identifying Occupation Structures

Bushfield West is a spring and fall aggregation site in central Saskatchewan. Approximately 600m² were excavated here as part of mitigation for the Francois Finlay Dam and for research for a Ph.D. (Gibson). Also there was no physical evidence for structures. Using detailed mapping techniques, Gibson was able to demonstrate evidence for the remains of shelters (hide tents) and outdoor workshops at what is interpreted to be a protohistoric Cree campsite.

DgMr-152 is a tipi ring site located in a coal mine development along Long Creek. Excavations were completed at 14 tipi rings of which 5 were completely excavated. This is interpreted as a Mortlach campsite and it dates to approximately the same time as Bushfield West. This paper looks at the archaeological evidence for site structure and history of occupation as derived from these two different sites.

Francis, Julie (Wyoming Department of Transportation) [16]
Stu Conner and Archaeological Research in the Bighorn Basin of Wyoming

Stu Conner has long been known for bringing important sites to the attention of the archaeological community and for sharing information about those sites through letters, field notes, and photographs. He has been doing this in the Bighorn Basin of Wyoming for more than 30 years and continues to do so today. Through personal experiences with Stu, this paper will review some of Stu's contributions to archaeological research in the Bighorn Basin, focusing especially on his work with rock art sites, for which he has developed meticulous documentation techniques.

Gagnon, Dr. Greg (University of North Dakota) [6]
Eighteen Years Among the Oglala Lakota: Politics, Values, Culture and Romance on the Pine Ridge Reservation

Since the 1960s, the people of Pine Ridge Reservation have been developing a political culture as they adjust behaviors to the greater autonomy for tribal governments released by the Great Society's programs and the cultural trappings of Native American assertiveness. Recent ethnographies about Pine Ridge's Oglala Lakota by Wagoner, Kurkiala, Biolsi, Feraca and Robertson have described various facets of the development and/or continuation of Oglala culture. Senese, Castile and Nagel, among others, have examined the context of the American Indian policy designated as Tribal Self-Determination. The author draws upon eighteen years as a participant-observer on Pine Ridge Reservation to elaborate the political culture of the Oglala Lakota as it is played out in a variety of areas: cultural creation and maintenance, political applications, external relations and education. He describes some of the contrasts between declared cultural values and their implementation. This ethnographic narrative derives from the author's role as an administrator-teacher at Oglala Lakota College, one of the dynamic instigators and beneficiaries of the current political culture on Pine Ridge Reservation. He concludes that the present is molded by a perception of the past which has been modified by a number of contributors into an advantageous political culture for external relations. However, this perception contains contradictory and potentially harmful elements which may undermine the Oglala Lakota society in the future. The culture is replete with contradictions and inconsistencies as are most cultures. These are not deliberate nor do they interfere with pursuit of autonomy in the short run. Further studies based on lengthy analysis of the interaction of culture and practice are needed.

Gangloff, Michael M., and Daniel L. Gustafson (Department of Biology, Montana State University) [9]
Brief Synopses of the Freshwater Mussels (Bivalvia: Unionidae) of Montana

Freshwater mussels in Montana are poorly known. They have received little attention since Junius Henderson's reports of 1924 and 1936. Our own mussel research is limited, but spans the last 18 years. Montana has at least five recent species; *Margaritifera falcata* (Gould), *Lampsilis siliquoidea* (Barnes), *Ligumia recta* (Lamarck), *Lasmigona complanata* (Barnes), and *Pyganodon grandis* (Say). *Pyganodon grandis* occurs in lakes and streams, but the remaining species appear to be limited to streams. *Ligumia recta* and *Lasmigona complanata* are new state records and both species may be fairly recent immigrants into Montana. These two species and *Lampsilis siliquoidea* appear to be expanding their range as the range of their fish hosts expands in Montana. In contrast, the range of the trout stream species, *Margaritifera falcata*, may be contracting with stream degradation. This species appears to have crossed the continental divide in Montana from west to east with its salmonid host, the westslope cutthroat trout, *Oncorhynchus clarki lewisi*. This is the only native trout in the Missouri headwater. Reports of the eastern *M. margaritifera* in Montana are apparently due to the simple assumption that a mussel could not cross the continental divide. All Montana mussels are currently protected from commercial harvest by state law.

Gardner, A. Dudley (Western Wyoming College) [1]

A Brief Comparison of Activity Areas in Nineteenth Century Chinese Communities in Alberta, British Columbia, Montana, and Wyoming

The manner in which Chinese immigrants lived in the nineteenth century has been described by a variety of historians and archaeologists. This presentation builds on some of these various descriptions and examines activity areas from the perspective of how Chinese miners and merchants arranged themselves in living spaces in Wyoming, and then compare what was found in Wyoming Chinatown's to similar spacial arrangements in Montana, Alberta, and British Columbia. The primary focus will be on the material culture evidence for household arrangements found in excavations of Chinese homes in Evanston and Rock Springs, Wyoming - but the comparison will extend into southwest Canada and western Montana where similar patterns of household arrangements are evident. By analyzing the archaeological signature and the distinct remains found in activity areas within households, some tentative conclusions are forwarded regarding how Chinese immigrants ordered their private space in the interior western United States and southwest Canada.

Geisel, Charles A. (University of Nebraska-Lincoln) [14]

Pit Hearths in Northwestern Nebraska: Utilizing GIS to Predict the Location of Critical Resources

This paper explores the potential locations of cooking hearths frequently discovered throughout the badlands of northwest Nebraska and southwest South Dakota. These hearths are being exposed because of severe erosion and will eventually be destroyed. A considerable data set of 60 pit hearths was constructed and applied to the GIS program TNT Mips in order to identify areas with a high potential for earth ovens. Discovering where the five critical resources for cooking starchy foods were located together on the prehistoric landscape allows researchers to predict possible locations for future research. These necessary resources include bunchgrass, sandstone cobbles, timber, cooking materials and water. These were applied to two different predictive models: potential timber and historic timber. The potential timber model uses lithostratigraphic maps, which indicate where both timber and lithic resources were present on the prehistoric landscape. The historic timber model utilized historic land survey reports from the late nineteenth century. These provide information about the location of timber resources, which can be applied to the mapping of prehistoric landscapes. The results reveal that prehistoric hunters and gatherers existing between AD 500-1000, considered other factors when constructing pit structures.

Giesen, Myra J. (U.S. Bureau of Reclamation), and David W. Graham (University of Kansas) [18]

Repatriation Across Borders

Since the passage of NAGPRA in 1990, repatriation of cultural items to federally recognized tribes has occurred throughout the United States (US). However, repatriation of human remains and cultural objects to nonfederally recognized tribes or tribes that reside outside the US has been less frequent. Issues related to international repatriation are complex and include many philosophical, ethical, and political questions. This paper will look at various aspects of international repatriation with special emphasis being placed on what is happening across the US and Canadian border.

Gradwohl, David M. (Iowa State University, Ames) [6]

The Grave of Painter and Poet T. C. Cannon: Cemetery Symbols and Contexts of American Indian Identity

T. C. Cannon, renowned Kiowa/Caddo Indian painter and poet, lived a short life but made his lasting mark among American artists of the twentieth century. Partly influenced by his childhood in Native American communities in Oklahoma and additionally shaped by his training at the Institute of American Indian Arts in Santa Fe, New Mexico, Cannon's artwork combined traditional themes and symbols with the techniques of European and American impressionists. The gravestones of T. C. Cannon, his parents, and other Native Americans in the municipal cemetery at Anadarko, Oklahoma,

provide enlightening insights into contemporary American Indian identities in terms of their contexts and mortuary symbols.

Green, William (University of Iowa) [6]

Ioway Cartography, Ethnohistory, and Archaeology

Indian-made maps are valuable historical, geographical, and anthropological records. Like virtually all maps, those drafted by indigenous peoples also can be viewed as political documents. Maps that include a temporal dimension by showing changes in settlement locations or other population movements through time are called flow maps. A map produced by Ioway tribal leaders in 1837 depicts numerous village locations and routes of movement over a period of nearly 200 years. This map constitutes one of the continent's premier examples of an indigenous flow map. Previous geographical research identified many of the physical features shown on the map but neglected the cultural features. New analysis of the map has built upon the work of Martha Royce Blaine and Mildred Mott Wedel, integrating ethnohistoric and archaeological data. This research permits: (1) identification of most of the indicated occupation locales, (2) estimation of occupation dates, (3) interpretation of routes of movement between settlements, (4) revised identification of some physical features, and (5) greater understanding of early historic Ioway settlement geography. This analysis shows that the Ioways mapped their traditional territories in a way that not only attempted to serve their land and treaty interests but also effectively chronicled their history.

Greene, Candace S. (Smithsonian Institution) [12]

Warrior or Dude? An Analysis of Clothing and Culture From a Historic Plains Burial

A historic burial from Woodward County, Oklahoma, contains a remarkable assemblage of material culture, allowing reconstruction of the man's clothing from his abalone shell earrings down to the beadwork designs on his moccasins. Beads and other trade items suggest that the burial dates between the late 1830s and the 1850s. Southern Plains materials from this era are poorly known and the site provides important information about Native ways of using trade items such as shell hairpipes and silver hairplates at a time when they were relatively scarce. Preconceived notions of the original excavation team led to the erroneous identification of various items, such as "burial moccasins", which, in turn, supported an assumption of Cheyenne affiliation. Reexamination of the material opens up wider possibilities of tribal affiliation and presents new avenues for discussion of potential descendants.

Greer, Mavis, and John Greer [16]

A Review of Montana Rock Art Recording Methods

An examination of the history of rock art recording methods as reflected in the SHPO Record's Office indicates that recorders in Montana generally followed national and international trends through the years, moving toward more and better use of technology in an effort to obtain more precise replicas of sites. The different interests of recorders and the time and money available to them influenced the kinds of methods they used and resulted in a range of records from single-page site forms to file folders of information. The 1980s brought an increase in rock art recorders, the development of new dating and pigment analysis methods, and an increase in recreational visitation to rock art sites. These increases in attention and visitation prompted movements to attempt reduction of impact to the rock art from all avenues, including recording, and intensive evaluation of recording methodology has resulted in continued controversy over acceptable procedures and techniques. Rock art recorders can no longer approach the task without knowledge of current methods and theory and must be able to support the methods they choose to use.

Haakenson, Wade [1]
Beads of North Dakota

By the eighteenth century the Venecians were noted to have produced over one hundred thousand varieties of beads. Only a fraction of these made it to the Upper Missouri River Village Sites and Trading Posts. The trade beads found in North Dakota represent every known manufacturing style. By knowing how beads are made one can get a better idea of where it was made and when it was made.

Hamilton, Scott (Lakehead University), and B. A. Nicholson (Brandon University) [7]
Métis Occupation of the Lauder Sandhills of Southwestern Manitoba

The Lauder Sandhills has long attracted humans because of the localized biotic richness of this forest/wetland area. In the 1800s this included the Métis who initially operated fur trade outposts. Some of the larger and more sustained trade posts likely became rendezvous and wintering localities for commercial bison hunters: first for pemmican, and later for hides. As bison became locally extinct by the late 1850's, some Métis remained, and established small subsistence farmsteads. By the mid 1880's with the homestead era, some Métis again adapted and gained title to their land. These farmsteads were on sandy land adjacent to localized wetlands, consistent with the land use strategy of previous Aboriginal occupants. While the soil is quite sandy, the high water table ensured microhabitats suitable for a mixed foraging, trapping and farming economy, and offered shelter, hay lands, firewood, and prairie fire protection. In contrast, Euro-Canadian homestead settlement was focused upon finer sediments where they specialized in dry land agriculture. By the turn of the 20th Century most of the Métis had sold their claims and moved on. Perhaps this abandonment was a consequence of declining water tables that forced the abandonment of the sand hills farmsteads.

Hamilton, Scott (Lakehead University), and B. A. Nicholson (Brandon University) [7]
Proto-historic Mortlach Use of European Technology at the Twin Fawns Site Within the Lauder Sandhills

The Twin Fawns site has recently revealed evidence of the early use of European technology by its Mortlach occupants. The site reveals an intact repertoire of traditional technology that includes lithic debitage and tools, ceramics, bone tools, and faunal food waste. Also recovered was a hand-made knife composed of brass sheet metal (probably derived from a trade kettle) that was mounted in a bone handle, a glass tube bead and several fragments of ferric metal. Preliminary examination of some of the faunal materials also indicated butchering marks produced by metal cutting instruments. The sparse array of European technology, and the use of soft brass sheet metal for a cutting instrument indicates limited access to European technology. This suggests that it was indirectly acquired through the Middleman trade system. This likely resulted in intensive curation of the exotic foreign technology, and contributes to its relative scarcity in the archaeological record. This site may represent the earliest stages of culture contact, and indicates that such early non-directed culture change was not immediately disruptive of traditional technologies and economies. At issue is how long such minimal impact lasted, and what additional phases of direct contact and culture change can be archaeologically examined.

Hanna, Margaret G. (Royal Saskatchewan Museum) [8]
Landscape and Land Use: The Role of Operational and Cognitive Models at Chambery Coulee, Saskatchewan

Site location cannot always be explained solely by resource to ecological principles because landscape consists of layers of stories, ceremonies, and ritual as much as it does of layers of rock or extractable resources. People perceive landscape as a combination of both belief systems (cognitive models) and of ecological systems (operational models). Sites, therefore, are simultaneously foci of activity and loci of meaning.

The author has mapped several stone circle sites in the Frenchman River Valley in southwestern Saskatchewan. The variety of features associated with these stone circles suggests that this locality was

a focus of settlement as much because of its perceived spiritual and sacred qualities as because of its ability to support the temporary settlement of large numbers of people.

Hans, Birgit (University of North Dakota) [6]

Karl May: Popular German Images of Native Americans

Karl May (1842-1912), a prolific and extremely popular German writer, has shaped the German perception of Native American peoples. Twenty of his seventy-three published novels are set in the Americas and among the various tribes that Whites encountered. His characters come from a range of Indian tribes and seemingly complex cultures. His novels have remained in print and have had a significant impact as the published volumes of his work have reached a staggering two hundred million. Even today many German travelers expect to encounter his Indians rather than Native peoples from contemporary cultures.

This study will analyze some of Karl May's novels set on the Plains and discuss his range of Indian characters as well as the Indian-White relationship. May's seeming range of cultures remained generic but romantic stereotypes, and he argues that tribal cultures could not survive contact with civilization without degenerating. Slides will illustrate the paper.

Henning, Dale R. (Illinois State Museum), and R. Eric Hollinger (University of Illinois, Urbana-Champaign) [6]

The Cultural Contexts of Oneota Portable Art

Large numbers of incised artifacts with representations of bison, birds, humans, serpents, watermonsters, and other stylized creatures and elements have been found on late Prehistoric sites across the midcontinent. Many of these representations are found on pipestone tablets, although other media were used. Our study, of which this is an interim report, is focused on tablets and tablet fragments, most of which are derived from an Oneota context. As more information becomes available and as the sophistication of our analytical techniques improves, we expect to better understand the derivation and distribution of specific elements and to gain better control of the time, places and cultural contexts in which these items and elements are commonly found. We hope that some insights to the religious and social functions of these items will also be revealed as the study evolves.

Herman, Joseph E. (University of Nebraska State Museum) [5]

Smoky Hill Silicified Chalk: More Information Regarding Spatial Distribution, Geologic Provenience, and Mode of Occurrence as a Function of Prehistoric Procurement and Reduction Strategies.

Detailed study of the diagenesis of Smoky Hill silicified chalk facilitates more accurate geological modeling of its spatial distribution. Specific information of silicification, occurrence within the landscape, and regional geologic structures allows identification of outcrops outside of the defined spatial distribution. Color and mode of occurrence have the potential of extrapolating subareas of procurement. These macroscopic properties can sometimes be utilized to more accurately trace the procurement of archaeological materials. Mode of occurrence can be a limiting factor in the choice of reduction strategies. The shape and size of nodules can place constraints on the use of this material.

Hill, Matthew Glenn (Department of Anthropology, University of Wisconsin) [11]

Paleoindian Transport Decisions and Secondary Processing of Bison at Clary Ranch, Nebraska Panhandle

Much of what is known about Paleoindian bison butchery is from kill site assemblages. Archaeologically visible evidence of butchery at these sites is rare, often consisting of several cut marks and impact notches, and has been inferred to reflect the behavior of a highly-mobile population. The bison assemblage from Clary Ranch is one of only several assemblages that is interpreted as a processing area near a kill. The bone is in exceptional condition, and more than 2,500 cut marks and

100 impact fractures have been recorded. Element representation and butchery modifications indicate that mostly upper limb bones of mature animals were transported to Clary Ranch for secondary processing of within-bone nutrients. Meat-bearing bones such as scapula, ribs, and vertebrae, and low utility distal limb elements are noticeably under-represented. Ultimately, these data contribute to our understanding of the dynamics of Paleoindian subsistence strategies.

Hill, Matthew Glenn (Department of Anthropology, University of Wisconsin), Robert F. Boszhardt (Mississippi Valley Archaeology Center, La Crosse, WI), Daniel S. Amick (Department of Sociology and Anthropology, Loyola University of Chicago), and Thomas J. Loebel (Department of Anthropology, University of Illinois-Chicago) [2]

The Gail Stone Fluted Point Site (47TR351), Trempealeau County, Western Wisconsin

Early Paleoindian fluted points are reported as isolated finds in the Driftless Area and southern Wisconsin, but only several sites have yielded multiple specimens. Except for diagnostic projectile points it has been difficult to identify additional gear in the lithic tool kit because of later occupations. This paper describes field work and results of analysis of the lithic assemblage from the Gail Stone fluted point site, Trempealeau County, Wisconsin. The site is significant because evidence of later occupation is extremely limited. Represented are 8 fluted preforms, 6 channel flakes, 20 scrapers, several bifaces and other tools, and a small amount of debitage. One finished point is also present. Most specimens are made of locally-available red and/or yellow Cochrane chert, a material rarely used by Early Paleoindians. Implications are offered for Early Paleoindian strategies of lithic raw material procurement, chipped-stone tool production, and land use in the western Great Lakes region.

Hirst, K. Kris (Office of the State Archaeologist, University of Iowa) [9]

Freshwater Mussels from Nebraska Phase Sites Along the Missouri River Drainage in Southwestern Iowa

In 1990, James Theler reported on the mollusk assemblage from nine Nebraska phase archaeological sites in Southwestern Iowa. Theler investigated 275 mollusks and identified 13 species. Since that time, 419 mollusks from an additional nine sites have been examined. A total of 18 species are now identified within the molluscan collection for southwestern Iowa, including the 13 species identified by Theler, and five additional species found in the most recently studied collections. The mollusks represent both a food source and a source of raw material for shell tools, as shown by the extensive collection of utilized shell from these sites.

Hoke, Ellet (Museum of Biological Diversity, Ohio State University) [9]

The Unionid Mussels of Nebraska

The documented unionid fauna of Nebraska consists of at least 33 taxa and may include as many as 37 taxa. Two other species, reported but apparently unvouchered, probably occurred in the state at one time. At least 26 additional taxa have been reported for the state erroneously or are otherwise unsubstantiated at this time. Possibly as much as 49% of the unionid fauna of Nebraska has been extirpated from the state, and five of the remaining extant species are extremely rare and probably should be considered endangered in Nebraska.

Natural distributional ranges are severely constricted in central and western Nebraska by the presence of unfavorable shifting sand substrates, and increasingly, by the lowering of water tables. Diversity once was greatest in the rivers and large creeks of the extreme eastern portion of the state; habitats which have been drastically altered since settlement. Channelization, siltation, agricultural and other pollution, and heavy grazing have resulted in the extermination of many bivalve populations in the state. Presently, the largest remaining populations survive in relatively unspoiled reaches of some creek and creek-like habitats, the Missouri River, reservoirs, and in restricted sectors of some canals.

Holen, Steven R. (University of Nebraska State Museum), and David W. May (University of Northern Iowa) [5]

An Archaeological Survey of Sherman Reservoir and the Arcadia Diversion Dam Area in Central Nebraska

An archaeological survey of 5,800 acres of Bureau of Reclamation property at Sherman Reservoir and the Arcadia Diversion Dam area recorded sites of potential National Register eligibility. These sites include a Central Plains Tradition hamlet and a historic dugout at Sherman Reservoir. Ten sites at the Arcadia Diversion Dam area on the Middle Loup River have been recommended for a National Register District. Two historic sites include the Snell/Dowse dugout used as a residence in 1873-74 and the probable location of the Manchester Post Office started in 1879. Prehistoric sites include several temporary occupations on the east bank of the Middle Loup River. These sites include Pawnee, Central Plains Tradition and Woodland. On the west bank, one deeply stratified site in Terrace 3 alluvium contains a minimum of six occupation levels with an Early Archaic component buried 2 meters deep. Four lower components are buried by up to 7 meters of alluvium, the lowest being 9,000-10,000 year old Paleoindian component. The basal soil of this fill remains to be tested. Another site is a probable Middle Archaic occupation in Terrace 2 fill that contains features and appears to be a longer term occupation.

Hughes, Susan S. (University of Washington/BLM) [6]

The Sheepster Myth of Northwestern Wyoming

The historical literature of the 19th and 20th centuries describes the Sheepsters of northwestern Wyoming as a timid and destitute Indian race inhabiting high mountain recesses. Today, high altitude conical timbered lodges and sheep drive structures are often attributed to these Indians. Considerable mystery shrouds the Sheepsters because historical and ethnographic references are scarce. Most problematic is that Sheepsters vanished from the mountains by the time Yellowstone Park was established in 1872. Through a detailed examination of 19th century literature, this paper explores two ideas: 1) that the Sheepster image is predominantly a myth derived from the Medieval Wild Man and age-old Indian stereotypes, and 2) that Sheepsters as a distinct "race" in northwestern Wyoming may never have existed.

Huhnke, Marie [19]

Close Analysis of the Projectile Points from Waconda Lake, Nebraska

Initial analysis of projectile points from fifteen sites from the Glen Elder locality, during the Solomon River phase included overlaying the point outlines using simple computer graphics. The overlays showed a morphological similarity which suggested the potential for identifying individual flint knappers. To this end, the points were subjected to metrical and microscopic close analysis. Metrical analysis demonstrates that knappers repeatedly obtained an exceptionally high degree of consistency in overall proportions. Furthermore, these similarities in addition to a lack of impact fractures in collection specimens suggests the reuse of broken projectile points. Comparison between finished projectile points and other items in the tool kit again serves to demonstrate a high degree of cultural similarity amongst the various sites. Finally, microscopic analysis revealed traces of ochre on more than 10% of the sample.

Hunt, Bill (U.S. National Park Service) [20]

The Historical Archeology of Fort Union, "The Vastest and Finest of the Forts" on the Upper Missouri

National Park Service archeologists with the Midwest Archeological Center have been conducting research at and about Fort Union Trading Post National Historic Site since 1968. The most recent large scale work at the site was carried out in 1986-1988. Since that time, archeologists from across the country have used Fort Union's artifacts and excavation records in a broad range of research.

Those results combined with future research products will provide a better understanding of the trading post's people, history, and development.

Jones, Tim E. H. [15]

Preliminary Report on the Camp Rayner Site (EgNr-2), Saskatchewan

Reservoir shoreline erosion since 1968 into a stabilized sand dune area near The Elbow of the South Saskatchewan River in south-central Saskatchewan has exposed surface cultural remains revealing a more-or-less unbroken sequence dating from Clovis to Fur Trade times, and a very large occupation site. Since 1987 the Saskatchewan Archaeological Society has carried out a "sampling excavation" program as part of an annual field school for amateurs, resulting in the opening of fifty-four 1 x 1 meter units. A likely Early Middle Prehistoric or later Early Prehistoric component has been identified in the excavations, as well as a complete cultural sequence up to the end of the prehistoric period.

Jones, Tim E. H. [11]

Recent Research on Northern Plains Red Pipestone "Tablets" and "Pendants" and Related Artifacts

Two distinctive but apparently related classes of portable art objects made of red pipestone (most of Minnesota catlinite?) are known from some two dozen localities in Manitoba, Saskatchewan, and the Dakotas. They would appear to date from Late Prehistoric times and be possibly part of trade networks or other relationships between Plains nomads and villagers. Tabular objects termed "tablets" or "plaques" and axe head-shaped and flat-sided objects with similar incised figures have been found chiefly as surface finds, but at least two of these artifacts appear to be clearly associated with human interments. This poster compares and contrasts this body of Northern Plains red pipestone artifacts with comparable artifacts found further south, especially in terms of iconography, and draws comparisons with other archaeological art phenomena in the region.

Kaldahl, Eric (University of Arizona) [10]

Abandonment Behavior, Artifact Distributions, Formation Processes, and the Stratigraphy of a Nebraska Phase Lodge

Excavation at Fontenelle Forest in Bellevue, Nebraska, uncovered a relatively undisturbed Nebraska phase earthlodge. Excavation proceeded by digging within the natural stratigraphic units of the earthlodge deposit, yielding a record that is ideal for the study of the natural and cultural formation processes which operated on this lodge since the time of its abandonment. Artifact distributions were recorded for all material types throughout the stratigraphic column, allowing us to examine material cultural densities for each deposition episode. Beyond the usefulness of this work to the study of the formation processes which operate on abandoned earthlodges, this work allows us to make inferences concerning the abandonment and the relocation behaviors of the household which resided in this particular structure. By combining our record of the area's settlement patterns with extant ethnographic and archaeological abandonment studies, this research can shed light on household building behaviors in a Missouri river valley earthlodge cluster.

Kaul, Adam R. (Moorhead State University) [6]

"Vikings in Minnesota in 1362: Fact, Fiction, or Folklore?"

This paper explores the cultural and ethnohistorical phenomena that have surrounded the Kensington Runestone and its related artifacts for the last one hundred years. The runestone states that thirty Vikings sailed into Minnesota in 1362. Its discovery in west central Minnesota in 1898 resulted in a 100-year-old debate between people who accept it as an authentic historical document and those who debunk it as a nineteenth-century fraud. Interest in the subject has waxed and waned in a cyclical manner throughout the last century. Amateur Viking researchers currently attempt to identify Viking sites in Minnesota, and the folk in the west central Minnesota region actively celebrate the story of the

runestone and the Viking visit of 1362 through tourism, museums, businesses, churches, the Internet, parks, festivals, humor, and poetry. Although many works have been written on various aspects of the subject, an ethnographic and folkloristic analysis is nonexistent. Through this approach, one discovers the means for and the meaning behind the perpetuation of Minnesota's Viking and runestone lore. The lore satisfies various issues of identity: ethnic, religious, and regional. Finally, this lore complex provides a salient avenue for exploring the theoretical differences between the "scientific establishment" and "folk science."

Keyser, James, Michael Klassen, and Larry Loendorf (New Mexico State University) [16]
Bird Rattler's Petroglyphs at Writing-On-Stone: Continuity in the Biographic Rock Art Tradition

Writing-On-Stone is well-known for its Plains Biographic rock art, characterized by distinctive motifs and narrative compositions. Biographic rock art flourished from the Late prehistoric period throughout the 19th century. Although related images were drawn on hides and paper well into the 20th century, it was unclear whether Biographic rock art also persisted this late. The recent discovery of photographs and narrative of a 1924 trip by amateur ethnographer Roland Wilcomb and Piegan elder Bird Rattler demonstrates that a well-known historic petroglyph at Writing-On-Stone was carved by this Plains warrior as part of the Biographic rock art tradition.

Kornfeld, Marcel (George C. Frison Institute, University of Wyoming), Judson Finley (Pochteca Archaeology), Jonathan Durr, and Casey Dukeman (University of Wyoming) [15]
Rock Shelters and Chipped Stone Procurement in the Upper Spring Creek Drainage of the Bighorns

Chipped stone procurement and rock shelters have a history of intensive research in the Bighorn region, so, one may ask, what more can be learned from further studies? First, very few primary procurement areas have been intensively investigated and second, cutting edge field methods have the potential to yield insights into rock shelter formation and occupation unreachable through previously used conventional studies. Black Mountain Archaeological District, at the head of Spring Creek Drainage in the foothills of the Bighorns, is a chipped stone raw material procurement area with rock shelters. The University of Wyoming has been investigating Black Mountain since 1994. In this paper we review the excavated rockshelters in the Bighorn region and present the preliminary results of both the chipped stone procurement and rock shelter excavation at Black Mountain.

Kraft, Kenneth C. (KC), and Warren K. Lail (Oklahoma Museum of Natural History, Archeology) [3]
Geomorphology in the Upper Reaches of Sergeant Major Creek, Roger Mills County, Oklahoma

Sergeant Major Creek is one of many tributaries of the Washita River in western Oklahoma. Like Brokenleg, Plum, Dry, and Big Kiowa creeks, Sergeant Major Creek drains the north slope of the upland divide separating the Washita basin from the North Fork basin. The proximity of the mainstems of the North Fork and the Washita rivers to the crest of the divide creates unique drainage morphology on either side of the divide. The Washita River is much closer, therefore its tributaries are of shorter length and of stronger gradient. Hence, the Washita River's feeders are highly erosive and more active. On a hilltop adjacent to the modern course of Sergeant Major Creek an 18 meter long and 3-4 meter high profile was exposed. The profile was mapped, photographed, and radiocarbon dated. Several pollen samples were submitted for examination and aquatic and terrestrial snail species were identified. We conclude that Sergeant Major Creek has shifted its course and character considerably over the past 16,000 years. As the course and character has shifted, the biodiversity of the drainage has followed suit. This research is part of a larger project undertaken by Thurmond and Wyckoff (n.d.) to examine the alternating mesic/xeric cycle that has shaped western Oklahoma.

Kunz, Michael L. (Bureau of Land Management - Alaska) [2]

The Good, The Bad, And The Ugly - Ancient Radiocarbon Dates, Chronologies, Mysteries, and Applications: A Paleoindian Example From Arctic Alaska

In the High Plains and the arid southwest, where numerous sites spread across a wide geographic area and 70 years of research has demonstrated a consistent relationship between terminal Pleistocene cultural horizon markers and temporal spans, there is little confusion about the time period diagnostic Paleoindian artifacts represent. Whether found in situ in an undisturbed context, lying on the bottom of a blowout, or eroding out of redeposited materials in an arroyo, these artifacts represent human use of the area during a specific period of time. However, there are other areas within the Northern Hemisphere where ancient cultural/temporal associations are in question. Usually three circumstances work in concert to produce this situation: a lack of dateable material in undisturbed terminal Pleistocene cultural deposits, inconsistent interpretation and application of radiocarbon dates, and the often inexplicable vagaries of radiocarbon analysis. While little can be done about the lack of dateable material in ancient cultural deposits and where ancient cultural chronologies are in the discovery and building stage radiocarbon anomalies often go unrecognized, inconsistencies are usually the result of archaeological bias and misapplication. The Mesa site and Beringia provide an excellent backdrop for a cautionary tale of the good, bad and ugly aspects of terminal Pleistocene radiocarbon, dates, chronologies, mysteries, and applications.

Kurota, Alex (Wichita State University) [19]

Ceramic Remains Determine Geographical and Cultural Relationships

This paper is focused on determining whether two archaeological sites at Waconda Lake located next to each other are parts of a single community. A comparative analysis used such variables as temper composition, rim shape and size of the sherds, decorative motifs and thickness of the walls both to identify batches of vessels made at the same time and to identify the products of individual potters.

Kurtz, William, and Tim Mentz (Standing Rock Tribal Historic Preservation Office) [18]

Sacred Sites, Repatriation, and American Indian Religious Freedom

Sacred sites are an essential feature to the practice of American Indian religions. Sacred sites are usually related to cultural origin stories, individual or tribal ceremonies, gathering areas for medicinal plants or objects, and important events. The 1978 American Indian Religious Freedom Act (AIRFA) has not adequately protected sacred sites. Without access to sacred sites that maintain their integrity, many traditionalists will be denied the opportunity to practice their religion. In 1996 the President signed Executive Order 13007 pertaining to American Indian sacred sites. At this time it is not known how well this will protect these sites. This paper will discuss American Indian religious issues as they pertain to cultural resource management.

Kvamme, JoAnn [14]

Resistance in the Plains

The summer of 1998 saw the first two Plains Village sites totally mapped through electrical resistivity, a near-surface geophysical remote sensing method. The first site, Menoken Village (32BL2), is an early fortified village manifestation located near Bismarck, North Dakota, that may date to AD 1100. The second village, Whistling Elk (39HU242), represents an Initial Coalescent occupation near Pierre, South Dakota, that dates to approximately AD 1300. A total of 29,000 resistivity measurements were recorded in the .81 ha of Menoken at a prospection depth of 0.5 m while about 34,000 measurements were taken in the 1.7 ha of the more deeply buried Whistling Elk site at a sensing depth of one meter. The impressive results reveal the locations of houses, bastions, fortification ditches, trails, and other cultural features. These results are compared to test excavations made at these sites by the University of Missouri (Menoken) and University of North Dakota (Whistling Elk) field schools. Field methods and

the theory behind electrical resistivity are reviewed and the advantages of this less popular geophysical survey method are emphasized.

Kvamme, Kenneth L. (Boston University) [14]

Multidimensional Remote Sensing at Plains Village Sites

During the summer of 1998 large scale geophysical remote sensing projects were undertaken of two complete Plains Village sites. The first site, Menoken Village (32BL2), is an early fortified village manifestation located near Bismarck, North Dakota, that may date to AD 1100. The second village, Whistling Elk (39HU242), represents an Initial Coalescent occupation near Pierre, South Dakota, that dates to approximately AD 1300. The former, shallower site contains numerous surface indications of the occupation in the microtopography (house depressions, fortification ditch, bastions) while the latter contains none, being deeply buried under a meter or more of sediment. At Menoken magnetic gradiometry, electrical resistivity, and metal detector surveys were undertaken in a 0.9 ha area. A detailed EDM survey of the microtopography provides additional information as does historic aerial photography. In the 1.7 ha of Whistling Elk, magnetic gradiometry, electrical resistivity, and electromagnetic conductivity surveys were undertaken, and historic aerial photography shows details of the village through subtle vegetation markings. Taken in combination the nearly half million geophysical measurements and other data reveal a wealth of new detail about these sites including the locations of houses (and details within houses), fortification ditches, bastions, trails, burned areas and other cultural features. Findings are overviewed and results are compared with test excavations made at these sites by the University of Missouri (Menoken) and the University of North Dakota (Whistling Elk) field schools.

LaBelle, Jason M. (Department of Anthropology, Southern Methodist University) [2]

Rediscovering the Nall Site (34CI134): Late Paleoindian Archaeology on the Central/Southern Plains

The Nall site (34CI134) is located on the northwestern margin of a large playa in Cimarron County, Oklahoma. Two discrete blowout localities (collected in the 1930's) yielded Clovis, Folsom, and a very large number of late Paleoindian Frederick points, as well as scrapers, graters, other tools and debitage - all from the surface. These remains have been the subject of recent detailed study, as reported by LaBelle (1997, 1998). In 1998, field investigations were begun in an effort to document the geological context of the surface collection and assess the potential of *in situ* deposits at the two localities. This involved surface survey, machine coring, profiling of exposed sections, and test excavations. Charcoal, large mammal bone, and lithics (Frederick point base, debitage) were recovered from a distinctive surface within an early Holocene paleosol at the northern locality. This paleosol extends laterally from the blowout and thus the potential for additional intact Paleoindian remains is very high. Fieldwork is planned for the site in 1999.

Landals, Alison (University of Calgary) [8]

Tipi Ring Distribution and Variability Along the Canadian Portion of the Express Pipeline

The Canadian portion of the Express Pipeline Project resulted in the assessment of over 140 stone feature sites, containing in excess of 460 stone circles. Ultimately, 159 stone circles on the right-of-way proved unavoidable and were mapped and tested. Approximately 30% of the stone circles were found to contain moderate to rich quantities of cultural material, whereas less than 20% proved sterile. Express represents one of the largest samples of tipi rings ever assessed using a consistent methodology in the Canadian Plains. Strong, statistically significant correlations were documented between artifact richness and certain architectural and geographical variables. The implication of the Express stone circle study for stone circle models in the Northern Plains will be evaluated.

LaPoint, Halcyon, and Mervin Floodman (Custer National Forest) [18]

Passport in Time and Heritage Management on the Custer National Forest

The Custer National Forest has utilized the PIT program over the last seven years in a variety of means to accomplish Heritage Program goals. Three projects, each with different goals and methodologies, were used as a means of accomplishing management priorities on the forest. The Custer Trail project ran from 1992-94 and was geared to locate and map segments of the 1876 military trail and associated camps as it crossed the Little Missouri Grasslands in advance of an oil and gas leasing EIS. Amateur historians and metal detector buffs were invaluable in the location and identification of historic artifacts and resulted in the unexpected discovery of previously unknown portions of the 1864 Sully Battle of the Badlands as well as the 1876 trail and camps. From 1995-96, the Boots Site project test evaluated a multi-component, stratified camp for eligibility to the NRHP. Volunteers were used to excavate this site revealing several dated hearths, diagnostic artifacts and a detailed environmental and pollen record for the site and cultural occupations dating from ca. 5500 B.C. to A. D. 1943. In 1997-98, a rock art survey and monitor project was utilized in the North Cave Hills of South Dakota as part of the preparation of an oil and gas leasing EIS. Volunteers recorded over 50 sites and monitored and mapped by GPS over 40 previously recorded rock art sites. Each of these projects would have been impossible to implement and fund without the participation of the volunteers available through the PIT program. It has resulted in contact with several local amateur groups dedicated to historic preservation and volunteerism.

Larson, Don Ray (University of Wyoming) [4]

Issues of Field Data Collection for Eventual Geographic Information System (GIS) Use

As while many states are beginning to implement Geographic Information Systems (GIS) to manage their cultural resource management information field archaeologists need to consider how they gather and record their field information. GIS is still a relatively new tool for archaeology and its potential has not been fully examined. As with any new tool there is a period where it influences and affects some who do not completely understand it and who don't work with it on a regular basis. This paper will focus on the issues the archaeologist in the field should consider while recording sites or conducting data recovery which will eventually be managed by a GIS database system. Some topics and considerations that will be examined are precision of site location, dealing with previously recorded sites and the effects of time on them, and what information categories will be stored by the system.

Lee, Kristina K. (University of Nebraska-Lincoln) [4]

Native American War Veterans

Native Americans have participated in every United States war of the twentieth century. Preliminary research has indicated that Native Americans enlisted at higher rates, often two to three times higher, as compared to the general United State population. Why do Native Americans have such a high enlistment rate? The focus of this research is to explore potential explanations of Native American military enlistment with an emphasis on Native American veterans in Nebraska. Other areas to be investigated include the prevalence of Native American soldier stereotypes and the benefits (if any) of military service after Native Americans were discharged. Native American veterans in Nebraska will be interviewed and their military experiences compared to other published accounts. Information gained from these oral histories will be combined with archival research and will explore Nebraskan Native American involvement in World War I, World War II, the Korean War, the Vietnam War, and the Persian Gulf War.

Lippincott, Kerry (Consulting Archaeologist) [9]

Introduction to the Symposium "Freshwater Mussels in the Great Plains: Ecology and Prehistoric Utilization"

Freshwater mussels may be some of the last species to which Great Plains specialists give their attention. As a "land of sun and wind and grass" the Great Plains are not noted for their aquatic habitat or organisms. Nevertheless, freshwater mussel utilization has been a pervasive and persistent pattern in the present and in the prehistoric past. Freshwater mussel ecology is the very basis for understanding the who, what, and where of current mussel species. Both modern and prehistoric samples are used to understand local and past environments and conditions. Prehistoric utilization includes mussels as a food source and mussel shells as the raw material for pottery temper, for tools, and for ornaments.

Lippincott, Kerry (Consulting Archaeologist), and Leslie B. Davis (Museum of the Rockies, Montana State University) [9]

A Prehistoric Freshwater Mussel Collection from the Schmitt Chert Mine Site (24BW559) Near Three Forks, Montana

The Schmitt Chert Mine Site is a Late Middle Period open-pit mine quarried into Mississippian-age limestone at the headwaters of the Missouri River. The site was excavated by students from Montana State University from 1972 through 1989. The quarrying activity took place during the Pelican Lake Phase. In addition to the collection of lithic, bone, and antler artifacts, an impressive number of freshwater mussel valves were recovered. Mussel shells were recovered from throughout the horizontal and vertical limits of the site. These valves were identified to two species as well as to side, portion, and sex, where possible. There were 1,186 Number of Identified Specimens with 273 Minimum Number of Individuals for *Lampsilis siliquoidea* and 49 for *Margaritifera falcata*. These mussels are most readily explained as the remains of miners' meals gathered from the Missouri River, east of the mine. Mussel shell artifacts included valves with perforations in a variety of locations, a shell bead and a bead blank, valves with ground and utilized edges, and a serrated-edge shell "comb".

Loendorf, Larry (New Mexico State University) [16]

"Thrown Behind the Tipi Lining" is Found Among the Stars

The twin culture heroes of the Crow Indians, Thrown Behind the Tipi Lining and Thrown into the Spring, are directly related to the Hidatsa twins known as Lodge Boy and Spring Boy. Using depictions of the Hidatsa twins in the Lion Boy ledger book, Mike Cowdrey was able to identify the twin heroes on Crow Indian shields, including the shields of significant Crow chiefs like Rotten Belly and Wraps up his Tail. The twin figures are easy to identify by their bulbous ears, grinning expressions, and the rib-like pattern on their chests. One of these figures made as a petroglyph is among a group of stars, a place where the twins undertook many of their exploits.

Loendorf, Larry (New Mexico State University), and Mavis Greer [16]

Symposium Introduction: A Rock Art Tribute to Stuart W. Conner

In the 1960's Stuart W. Conner recognized that the rock art on the northwestern Plains was rapidly disappearing through erosion and vandalism, and as an important cultural resource, it was mostly ignored by other archaeologists. Throughout the past 30 years, Conner has photographed and recorded hundreds of rock art sites and he has guided visiting scholars from all over the world to the rock art sites in Montana and Wyoming. Klaus Wellmann, Dale Ritter, David Lewis-Williams, Colin Taylor, Christopher Chippendale, and Paul Bahn are a few of those taken to sites by Conner. More importantly, and the reason we are presenting this symposium, Stu Conner encourages any and every person who will show a genuine interest in rock art. To these individuals Stu will give freely of his time, knowledge, research records, photographs, and his booze. The papers in this symposium represent a small number of the researchers he has helped in the study of rock art.

Logan, Brad (University of Kansas) [19]
Steed-Kisker, Whence and Whither?

The Steed-Kisker phase has generally been described as a Mississippian or Mississippian-influenced culture in the Kansas City locality ca. A.D. 1000-1250. Its origins have been attributed to migration from Cahokia; its disappearance has never been adequately explained. This paper discusses alternative explanations of its origin and presents new data concerning its settlement pattern variability, formal content, and chronological placement. Radiocarbon dates that suggest the phase persisted to the 14th century raise the issue of relations between Steed-Kisker and Oneota developments in the Central Plains. Oneota expansion may have been a factor in the Steed-Kisker "disappearance".

Lundeen, Michelle J.(University of Nebraska-Lincoln) [1]
Home on the Range: Settlement Patterns, Homestead Claims and the Archaeological Record in Dawes County, Nebraska

The Oglala National Grassland of western Nebraska preserves an interesting representation of the lands settled by nineteenth century Plains homesteaders. This paper focuses on two townships in Dawes County, Nebraska using landscape attributes including land, timber, vegetation, soil and creeks to conduct exploratory analysis of historic settlement patterns. In addition, homestead claims were utilized to identify which lands the homesteaders chose to settle first and how extended families expanded across the native grassland environment. The archaeological record also reveals information about homestead claims. Both historic documents and archaeological data demonstrate that the homesteaders of northwestern Nebraska intentionally chose parcels of land to inhabit.

Maki, David L., Geoff L. Jones (Archaeo-Physics Ltd.), and Scott D. Brosowske (University of Oklahoma) [11]
A Preliminary Report of a Geophysical Investigation at a Southern Plains Village Site in Western Oklahoma

A geophysical investigation was conducted at the Odessa-Yates Site (34BV100), a late prehistoric plains village site in Beaver County, Oklahoma. The objectives of the survey were to test the suitability of geophysical methods in detecting subsurface cultural features at this and other southern plains village sites as well as provide a methodology for verification of geophysical anomalies.

The investigation consisted of two phases. Phase one involved a magnetic gradiometer and electrical resistance survey of the site. Phase one was successful in identifying several geophysical anomalies of a possible cultural origin. Phase two further investigated anomalies identified in phase one. This was carried out using a combination of non-invasive and invasive techniques. Ground penetrating radar (GPR) was used to provide further evidence of intact subsurface features. Limited invasive exploration, or "ground truthing", which consisted of systematic soil coring and test excavations was used to investigate anomaly sources. Phase two confirmed the intact remains of at least two prehistoric structures.

In this paper we will review the geophysical survey and data processing techniques employed, present the data with initial interpretations, discuss the methodology and results of the "ground truthing", as well as discuss how this information will be used to construct a more comprehensive research design for the site.

Maxfield, Kate, and Rick L. Weathermon (Pochteca Archaeology/University of Wyoming) [1]
Historic Prospect Pits in the Black Hills and Their Potential for Archaeological Interpretations

One of the most ubiquitous archaeological features in the northern Black Hills of South Dakota is the prospect pit, yet these features have generally been treated as unworthy of in-depth research. This paper presents some of the research potential of these pit features using historic documentation of early mining methodology and standard archaeological data analysis. Data were collected on over 700 mining prospect related features on Forest Service lands south of Deadwood and Lead in the Black Hills. The

data were analyzed for size, shape, volume and spacial considerations, estimated work hours invested, and calories expended by the prospectors and miners.

McDonald, Meg (ASM Affiliates, Encinitas, California) [8]

Rock Features, Quarrying, Rock Art, and Other Prehistoric Activities at Pisgah Crater Lava Flow in the Mojave Desert

A complex of 124 sites at Pisgah Crater includes quarries and lakeside camps with a connecting trail. Among these sites are a petroglyph site, and large complex rock alignments, including a 50m diameter circle, an alignment of four parallel, branched lines, a closed-cell feature, and a curvilinear alignment. Abundant artifact assemblages are indicative of daily subsistence activities. Some sites have structural features, including small rock rings, rock cairns, rock clusters, and cleared circles with berms and borders. General assemblage characteristics indicate Gypsum period (3500-1500 B.P.) occupation, but some evidence suggests general use may span 8000-1500 B.P.

Mead, A. Holly (Office of Anthropological Research, Idaho State University), and Michael D. Glascock (University of Missouri Research Reactor) [14]

Chemical Characterization of Pipestone by Neutron Activation Analysis

This paper describes the recent application of neutron activation analysis to archaeological pipestone at the Missouri University Research Reactor (MURR). We reject the generally accepted notion that pipestone, specifically catlinite, argillites, and marlstones, cannot be chemically differentiated. Sixty-one stone pipe samples from the Fort Union Trading Post National Historic Site and one source sample from Pipestone National Monument were prepared and irradiated at MURR in the fall of 1997. Using principal components analysis to group the data by their similarities in element composition, two major source groups and several outliers emerged. One major source group was identified as Pipestone National Monument catlinite, due to the tight clustering of samples around the sample from that type locality. Several elemental differences contributed to the separation of the source groups, however calcium concentrations appear to be the primary divisor. The results of this study justify recommendations made by two independent reports submitted to the Midwest Archeological Center in Lincoln, Nebraska in 1997, which suggested that an attempt to chemically characterize argillite using neutron activation analysis in 1972 was seriously flawed. The chemical characterization of pipestone will help unravel archaeological and cultural questions concerning the utilization and distribution of catlinite, argillite, and marlstone.

Meltzer, David J. (Department of Anthropology, Southern Methodist University) [2]

Recent Investigations at the Folsom Type Site (29CX1), New Mexico

The Folsom type site is one of the most famous sites in North America; it is also one of the least known. Excavations there in 1926-8 focused largely on demonstrating the association of fluted points with the remains of *Bison antiquus*. As knowledge of Folsom Paleoindians has grown, knowledge of the type site has not. Questions remain about its stratigraphy and geology, paleoenvironmental setting, site structure and taphonomy, butchering patterns, and the like. To address such issues, fieldwork was undertaken there in 1997 and 1998. It showed the bonebed - significant portions of which are still intact - lies in a tributary headcut and partly in the main channel of the paleo-Wild Horse Arroyo. The bones are well preserved, having been buried almost immediately by aeolian sediments, then capped by a lens of shingle gravel. Skeletal elements so far recovered include crania, mandibles, and a variety of postcranial elements, generally those yielding little meat. These excavations - in what appears to be the bone-discard pile - have yet to yield artifacts larger than tiny flakes. The environment at the time of the Folsom occupation is not yet well known (analysis is ongoing), but preliminary results suggest a cool, dry, and treeless landscape. Additional work is planned at the site in 1999.

Mentz, Tim, and William Kurtz (Standing Rock Tribal Historic Preservation Office) [18]
Preservation...A Reservation Issue

NAGPRA (Native American Graves Protection and Repatriation Act) and the 1992 amendment to the National Historic Preservation Act have effected cultural resource management. The Tribes are now able to form their own Tribal Historic Preservation Office which enables them to take over SHPO responsibilities. Today the tribes are becoming much more involved in cultural resource issues. This paper will describe these effects to cultural resource management and what it may mean for the future.

Michlovic, Michael G. (Moorhead State University) [20]
Why People Believe in the Past

Many people today hold beliefs about the past which fly in the face of established facts and seem designed to celebrate racial and ethnic group membership. Many archaeologists and anthropologists feel that those who believe them are either racist or not rational, referring to these ideas as myths, fantasies, and frauds. Using claims about Europeans in prehistoric America to illustrate my case, I hope to show that as incredible as some of these beliefs are, they are not necessarily irrational or motivated by blatant racism or ethnocentrism. The best way to understand these claims is to examine them in terms of the social compensation that believers obtain from their membership in a community of believers. Understood this way, seemingly irrational claims about the past, their persistence and popularity, make sense as rational decisions made by people who regard the past, as professional scholars do, as something that has meaning to us today.

Miotti, Laura L., and Roxana Cattaneo (CONICET-UNLP, Buenos Aires, Argentina) [2]
Piedra Museo Locality: A Late Pleistocene Occupation in Southern Patagonia, Argentina

The first occupation of the site AEP1 of Piedra Museo Locality corresponds to stratum 6, where several lithic artifacts and extinct megamammals were recovered. An associated charcoal sample was dated by AMS, at ^{14}C to $12,890 \pm 90$ yr. B.P., (AA-20125). This occupation corresponds to a brief event relating to the butchering of extinct fauna. The assemblage indicates an internal variability as to technological choices, combining unifacial and bifacial modes of production along an expedient-curved continuum.

Overlaying strata 4 and 5, document occupations dating at $10,400 \pm 80$ yr. B.P., broken fluted projectile points Fell's Cave stemmed or fishtail projectile points (FPP) were found in these layers, as well as unifacial scrapers, endscrapers and knives. As such, it is probable that the initial occupation (colonization stage) of Southern Patagonia was by forager groups with a broad knowledge of lithic technology. Production of FPP as well as of expedient tools (unifacial scrapers and knives) on a simple large flake, were both functionally efficient for different situational tasks.

The documented antiquity of human occupation at PML provided through the reliable archaeological record, suggests that the colonization of the extreme southern part of the continent was indeed unique and probably independent and previous from the one related to the Clovis phenomena.

Mitchell, Mark (Comanche and Cimarron National Grasslands) [6]
Plains Biographic Rock Art from the Lower Purgatoire River Valley, Southeastern Colorado

Although the lower Purgatoire River valley is well-known for the richness and diversity of its Late Prehistoric rock imagery, relatively few Protohistoric- or Historic-period panels have been recorded. During the summer of 1998, Forest Service Passport in Time volunteers recorded a single panel of finely incised petroglyphs which depict a hunting or combat scene. Known as the Box Canyon Site, the panel included a variety of zoomorphic and anthropomorphic motifs in addition to the horses and riders typically associated with Plains Biographic style rock art. Preliminary comparisons with both Southern and Northern Plains rock art, ledger art, and hide painting suggest that the Box Canyon Site may date to the middle of the 19th century. Comparisons with previously-recorded Plains Biographic style rock art panels in the lower Purgatoire River valley are also discussed.

Molyneaux, Brian L. (University of South Dakota) [8]

Questions of Scale: Two Perspectives on Stone Circles at Lake Sakakawea

The common dearth of cultural material at stone circle sites is sometimes a matter of perspective. During a National Register evaluation of stone circles in a National Guard training area at lake Sakakawea, North Dakota, for the Corps of Engineers, the Archaeology Laboratory at the University of South Dakota obtained some positive results at the opposite ends of the scale: microdebitage analysis and site area analysis.

Morlan, Richard E. (Canadian Museum of Civilization) [7]

The Canadian Archaeological Radiocarbon Database: Establishing Conventional Ages

An electronic database now being constructed includes 5707 radiocarbon dates, including 5402 from archaeological sites and 305 from vertebrate paleontological sites in Canada. This paper addresses the need to establish conventional ages before considering reservoir effects and calibration of the dates. The term "conventional" commonly appears in the archaeological literature, often with different meanings. Some writers use "conventional" to distinguish proportional counting dates from accelerator mass spectrometry dates. Some use "conventional" to mean that the stated age has not been calibrated.

The formal meaning of "conventional radiocarbon ages" was defined by Stuiver and Polach in 1977. This term implies: (1) the use of the 5568 year half-life; (2) the use of oxalic acid as a standard; (3) the year 1950 as the base year for ages given in years BP; (4) the assumption of constancy of the ^{14}C atmospheric level during the past; and (5) the isotopic fractionation normalization of all sample activities to the base of $\Delta^{13}\text{C} = -25\%$ relative to the PDB standard. Of the 5707 dates in the Canadian database, only 670 have ^{13}C measurements. This paper presents a series of rationalized age corrections with which to normalize many of the other dates. Insofar as possible the Canadian Archaeological Radiocarbon Database will present normalized ages for all of its dates.

Myers, Thomas P. (Nebraska State Museum), and Keith Perkins III (University of Sioux Falls) [9]

An Interpretation of Mollusca Utilization at the Child's Point Site, Nebraska

Clam shells from the Child's point site, a Nebraska Culture site on the Missouri River in eastern Nebraska, reveal that the prehistoric inhabitants were collecting species typically found in several different habitats including large rivers, small rivers or streams, and soft bottom lakes. The size and species distribution is not dissimilar from current ranges though there seems to have been some selection for smaller examples of *Quadrula quadrula*.

Though the relatively small number of shells found at Child's Point and other archaeological sites might suggest minimal utilization, it corresponds with historic processing patterns in eastern North America where the meat was removed from the shell, then smoked on the river's edge before the preserved meat was taken to the village. Under these circumstances, shells transported to the village are more likely to have been preserved for use as artifacts than simply as by-products of the food producing process.

Though the Nebraska culture is classified as a Plains Village culture, Child's Point and some other sites are well situated to exploit a riverine environment that included a large river with annual floods that left extensive silt-covered fields and oxbow lakes. Distinctive toggle-head harpoons demonstrate the degree to which the Nebraska Culture did indeed have a riverine orientation. Though the plains region is normally construed as grasslands crossed by rivers, the eastern plains in particular might be better characterized as rivers separated by grasslands. The areas between the rivers on the plains was far more productive than the interfluvial uplands of the eastern United States.

Neuman, Robert W. [6]

Some Curious Imagery of the Bison During the Early Historic Era in North America

Certain drawings of Bison in colonial North America may have their prototype in the muskox of Europe. The one-eyed bison is a case in point.

Nicholson, B. A. (Brandon University), and Scott Hamilton (Lakehead University) [7]

Preliminary Evaluation of the Stratified Cultural Sequence at the Vera Site

In 1996, shovel testing identified the Vera site as a late Precontact Vickers Focus occupation. In the spring of 1997, extensive excavations were initiated to study this group. As excavations proceeded, it became evident that, in addition to a scatter of mid-nineteenth century materials overlying parts of the site, underlying strata held much earlier materials. We believe that the historic occupation results from post fur-trade subsistence activities of Métis families formerly associated with Fort Mr. Grant and Fort Desjarlais. Below the Vickers Focus materials, Besant/Samantha artifacts were encountered. These recoveries indicated several Besant occupations at this site. Below the Besant level there is a trace of Pelican Lake materials overlying a McKean occupation found in a relatively thin, dark soil lens approximately one meter below surface. The McKean occupation is localized and may represent a dwelling and associated activities. These are the first Middle Period Precontact occupations to be identified in the *Makotchi-Ded Dontipi* locale, where the authors have been conducting research since 1992.

Nicholson, B. A. (Brandon University), and Scott Hamilton (Lakehead University) [7]

Vickers Focus Ceramics at the Vera Site

The ceramics which have been recovered from two years of excavations at the Vera site fall within the range of variation described for the Vickers Focus elsewhere. The majority of the vessels can be identified through comparison with specimens from the Lowton Site type collection, as well as shown to bear a close affiliation to vessels recovered from the Vickers Focus occupation at the nearby Jackson Site. A few rims are similar to vessels found in the later Mortlach material assemblages. It may be that there is some kind of continuity between the Vickers Focus wares and the sequential Mortlach culture.

Niven, Laura B. (University of Wyoming) [15]

Paleoecological and Anthropological Implications of Enamel Hypoplasia in Bison

Bison (*B. bison bison*) lower dentitions from the Late Plains Archaic site of Buffalo Creek, Wyoming contain a significant number of enamel hypoplasias, a tooth defect believed to reflect nutritional status information for individual animals. This condition suggests periods of seasonal nutritional stress over a minimum of two consecutive years which may have represented a period of drought leading to reduced forage capacity in conjunction with pressure brought on by human predation. If bison responded to this stress in part through seasonal migrations to patches of more abundant water and forage, such behavior would have allowed human groups to predictably locate herds in or near these patches during certain times of the year. The seasons of nutritional stress indicated by the hypoplasias correspond to each of the three kill events at Buffalo Creek, suggesting that the predictability of bison in this location was a critical factor in influencing the seasonal timing and location of multiple procurement operations. These data have implications for modeling the subsistence and settlement strategies of prehistoric human groups in the Powder River Basin region of Northeastern Wyoming during the Plains Archaic.

Nodland, Beth, and Antone Mathys (Institute for Minnesota Archaeology) [8]

Magnetic Prospecting for Tipi Rings at Site 24CH917 in Montana and Site 32PI401 in North Dakota

Archaeological geophysics complements research associated with stone circles. Modern equipment can quickly collect both magnetic and resistance data over large areas. The more promising method is the use of magnetics to detect ferri-magnetic cultural features concealed under aeolian deposited soils, sod, and prairie grasses. Graphic representation of magnetic data provides archaeologists with image maps revealing locations of anomalies possibly associated with cultural features, and shows ring distribution patterns and sizes at a site. The paper discusses magnetic results from gradiometer surveys conducted at site 24CH917 in Chouteau County, Montana, and at site 32PI401 in Pierce County, North Dakota.

Overturf, Jeff (Arapaho - Roosevelt National Forests and Pawnee National Grassland) [5]

Of Cows, Cactus, and Corrals: Investigating the Prehistory of Northeastern Colorado

Located on the rolling plains of northeastern Colorado, the Pawnee National Grassland contains a rich variety of prehistoric cultural resources. Over the past four field seasons, National Forest Service archaeologists have conducted intensive surveys on the Pawnee in order to evaluate the effects of livestock grazing on this important record of the human past. Dozens of prehistoric sites, ranging from large stone circle sites to primary lithic procurement areas, have been located and documented. This project also included a controlled experiment designed to quantify the trampling effects of cattle on chipped stone artifacts, and preliminary testing of subsurface components exposed by livestock grazing. Notably, preliminary testing at the Willow Bunker Site produced an Early Archaic radiocarbon date (ca. 7,000 years B.P.). Initial results from this testing project will be presented.

Owada, Isaku (Kansas State University) [11]

Lithic Raw Material Utilization at 25FT39

Lithic raw materials recovered during the 1998 excavation at 25FT39 included ample quantities of the local Republican River jasper, but also an unusually large proportion of material from primary sources in eastern Colorado. Flattop chalcedony is the most common, but not the only Colorado material represented in the collection. This presentation quantifies raw material use for all chipped stone tools and a systematic sample of the debitage, and discusses the implications of the analysis.

Peck, Trevor R. (University of Calgary) [4]

Archaeological Iniskims on the Northwestern Plains

Iniskim is a Blackfoot word meaning 'buffalo stone'. Blackfoot oral tradition records an ancient origin for the use of *Iniskims*. Originally, *Iniskims* were used as part of a pre-hunt ritual that produced the power to insure a successful hunt by charming bison. The power associated with *Iniskims* resulted in their customary inclusion in Blackfoot personal, healing, sacred tipi, and ceremonial bundles. Although there are examples of other aboriginal groups possessing *Iniskims* and similar objects, none of these groups exhibit as strong a tradition surrounding these items as the Blackfoot.

In geological terms an *Iniskim* is a fossilized ammonite or baculite resembling a bison. In North America, excavated ammonites and baculites from cultural contexts are almost invariably associated with the archaeological culture called the Old Women's Phase. Interestingly, archaeologists usually consider the Old Women's Phase to represent ancestral Blackfoot. The repeated association of ammonites and baculites with archaeological material of the Old Women's Phase in contexts suggesting bison charming and ceremonial significance, coupled with the evidence for the antiquity and pervasive traditional use of these fossils as *Iniskims* among the Blackfoot, is argued to support the Blackfoot-Old Women's Phase correlation.

Peterson, Lynelle A. (Ethnoscience, Billings, Montana) [8]

Statistical Analysis of Stone Feature Sites Located Within 20 Counties of Central Montana

In 1996, Express Pipeline constructed a buried 24 inch oil pipeline from western Canadian sources to existing lines near Casper, Wyoming. The pipeline enters Montana near the Port of Wild Horse and continues southward for 305 miles. As part of the mitigation strategy, Express developed an extensive database for stone feature sites in 20 counties through central Montana. Surface visible stone features were located in 4,286 sites. Of these, 3,286 contain stone ring features, 2091 contain cairns, and 552 contain other stone features. The results of selected statistical analysis are presented, as well as recommendations for future investigations.

Peterson, Mike (University of Wyoming), Marcel Kornfeld (George C. Frison Institute, University of Wyoming), and George C. Frison (University of Wyoming) [2]

Folsom Occupation Out West: The Krmpotic Site

Long term monitoring of an erosional face of a sand dune, followed by a small scale testing program has revealed a buried Folsom period occupation stratum in southwest Wyoming's Green River Basin. Folsom sites generally occur in the Plains east of the Rocky Mountains, although a few are known in the Rocky Mountain high country and surface occurrences have been reported from farther west. The Krmpotic site in southwest Wyoming is the westernmost Folsom site ever excavated. A four year testing program has revealed a rich Folsom period occupation horizon in a sand dune on the western end of the Killpecker Dune Field. Preliminary results suggest camping, bison processing, and projectile point manufacture comprised the main activities at this location.

Picha, Paul R., and Fern E. Swenson (State Historical Society of North Dakota) [9]

Freshwater and Fossil Mollusk Tool-Ornament Production and Resource Use in the Middle Missouri Subarea: Replication Experiments and Archaeological Diversity in Plains Village Sites in North Dakota

Freshwater and fossil mollusks served as stock material used in the production of tools and ornaments at Plains Village (A.D. 1100-1870) sites in the Cannonball, Heart, and Knife River drainage basins of North Dakota. Mussel richness and evenness as reflected in archaeological samples suggests that a common suite of thick-shelled species were collected. Shell tools and ornaments comprise patterned and expedient forms made by Plains Villagers, including ancestral and later Mandan and Hidatsa peoples. Limited replication experiments suggest that shell qualities of selected molluscan genera affected the production strategies used--percussion, groove-and-splinter, groove-and-snap, perforation, and edge-margin modification--in fabrication. Tool kits used to fashion shell items can be hypothesized based on (1) experimental replication data, (2) comparative analyses of archaeological data sets involving morphology, and production traces, residues, and use-wear, (3) recovery context and site-formation processes, and (4) taphonomic considerations of the shell remains.

Playford, Tomasin (University of Saskatchewan) [7]

Archaeological Recoveries from Flintstone Hill: A Holocene Sequence in the Lauder Sandhills of Southwestern Manitoba

Flintstone Hill consists of semi-stabilized sand dunes located on the north bank of the Souris River in southwestern Manitoba. The river is presently eroding the southern edge of Flintstone Hill. Investigations began in 1997 when local collectors informed Drs. Nicholson and Hamilton of the site where numerous Knife River Flint artifacts had been collected. The geological importance of Flintstone Hill was recognized, as it is the only known site in southwestern Manitoba with a continuous depositional sequence dating from the early Holocene (10 500 B.P.) to the present. During 1997 and 1998 field seasons, both archaeological and paleontological remains were recovered. From the recovered archaeological materials, it is inferred that Flintstone Hill has been reoccupied at least three times, with the oldest occupation dating to 4 250 B.C.

Playford, Tomasin, and Suyoko Tsukamoto (University of Saskatchewan) [11]
Preliminary Archaeological Investigations from Flintstone Hill: A Place Right Out of History

Flintstone Hill is a stratified site located in the Lauder Sandhills of southwestern Manitoba. The sand dunes which constitute Flintstone Hill are geologically and geographically significant because they make up a continuous depositional sequence dating from the early Holocene (10 500 B.P.) to the present. Two field seasons at Flintstone Hill has recovered a scattered quantity of archaeological materials. Initial investigation of the site in 1997 was restricted to the southern edge of Flintstone Hill where erosional activity of the Souris River had exposed archaeological and paleontological materials. During the 1998 field season, the southern edge was further examined, and areas to the north of Flintstone Hill were tested for archaeological materials. The recoveries from these two field seasons indicated that Flintstone Hill itself was occupied as early as 4 250 B.C., and the surrounding area was inhabited during the historic period.

Prentiss, William C., Janis L. Bouma, (University of Montana), and Susan S. Hughes (University of Washington) [15]
The Late Prehistoric Period in the Big Horn Basin, Wyoming: A View from the Little Buzz Site (48BH1467)

The Little Buzz Site is a small Late Prehistoric archaeological site, located in the Big Horn Basin of northwestern Wyoming. Excavations were undertaken at the site in 1990 by the Bureau of Land Management, and in 1991 by Simon Fraser University. These efforts revealed radiocarbon dated sequence of occupations spanning approximately 1800 to 1000 BP. This paper will review excavation conducted at the site, stratigraphic sequences, dating, and analyses of artifacts and features. Site features associated with the earliest occupation falling within the late Neoglacial climatic episode include slab-lined hearths and boiling pits while those of later occupations associated with the Little Climatic Optimum consist of shallow hearths and post-holes. This mirrors patterns recognized elsewhere in the Big Horn Basin during this time frame. We argue that this change reflects a fundamental shift in subsistence economies from an earlier pattern emphasizing a narrower range of high ranking resources to a post-Neoglacial strategy of resource diversification.

Prillwitz, Christopher Charles (Center for Plains Archaeological Research) [5]
Settlement Patterns and Site Distribution Within Western and Central Arapahoe and Adams Counties, Colorado, as Determined by 3 Large Block Surveys

Since 1987, there has been several large block surveys conducted within western and central Arapahoe and Adams Counties, Colorado. The results of these surveys allow us the opportunity to: 1) examine the settlement patterns of the Native Americans, 2) plot the site distribution of Native Americans sites within the western Great Plains of Colorado, and 3) allow us to start to work on a predictive model for site location. In this paper, the various factors in regards to the distribution of the sites identified by three of these large block surveys, the Comanche Creek Archaeological Project Phase I, the Aurora Undeveloped Lands Archaeological Survey Project, and the Academic Model Juvenile Facility Project will be examined and various conclusions will be drawn.

Prine, Elizabeth (University of Wisconsin at Oshkosh) [19]
Household Lithics at Three Hidatsa Village Sites

This paper describes research developments regarding the differential use of lithic raw materials by households in three protohistoric/historic period villages at the Knife River Indian Villages NHS. Materials from the Lower Hidatsa (32ME10), Sakakawea (32ME11), and Big Hidatsa (32ME12) villages will be discussed.

Ray, Jack H., and Neal H. Lopinot (Center for Archaeological Research, Southwest Missouri State University) [2]

The Big Eddy Site: A Deep, Stratified Multicomponent Paleoindian Camp on the Plains-Woodlands Border

Recent investigations at the Big Eddy site discovered stratified Early and Late Paleoindian materials deep in Late Pleistocene alluvium in the Sac River Valley, southwest Missouri. Contemporaneous Dalton and San Patrice artifacts were found in a buried A horizon stratigraphically distinct from an underlying Early Paleoindian horizon. Limited excavations below the Early Paleoindian deposits also provide strong evidence for the presence of a pre-Clovis horizon. The discovery of several intact knapping features and a suite of AMS dates from all three horizons indicate that the depositional integrity of alluvial deposits is high. The Big Eddy site contains information crucial to interpreting the transition from Early to Late Paleoindian on the Plains-Eastern Woodlands border. Procurement and reduction of high-quality chert resources was a major activity at the site. Patterns of lithic procurement and use, reduction techniques, and technological adaptations made by distinct groups of Early and Late Paleoindian knappers are discussed.

Richardson, Erin L. (University of Nebraska-Lincoln) [10]

Taphonomic Study of Bone and Shell Preservation In the Loess Hills of the Missouri River Valley: Case Study of a Nebraska Phase Earthlodge

Excavation of Depression 32, a Nebraska Phase (AD 1000-1400) earthlodge within the Fontenelle Forest, Nebraska, showed remarkable artifact preservation of all types, particularly with regard to small faunal remains and shell. Located in the loess hills of the Missouri river valley, this site offers an excellent window of opportunity for understanding the taphonomic processes at work in the bluff top sediments of the midwest. Soil acidity tests of the site support this result, and demonstrate that this remarkable preservation setting gives dietary and paleoenvironmental reconstructions a great deal of reliability, relative to other depositional contexts. This excellent preservation also provides us the opportunity to make some strong inferences about the abandonment behaviors at work in this particular household. Subsurface features did not result in large artifact densities normally expected from earthlodge cache pits. Results of the excavation concluded that the DP32 earthlodge site was not inhabited for its entire potential use life.

Ritterbush, Lauren W. (Kansas State University) [5]

Expanding our Understanding of White Rock

The White Rock phase, a Late Prehistoric migrant Oneota population in the Central Plains, is best known from localities in Jewell and Mitchell counties in north-central Kansas and Harlan County in south-central Nebraska. Sites outside these areas can be identified as White Rock on the basis of ceramic attributes and lithic raw material types. Preliminary data from these little known sites suggest a large area of utilization for bison hunting and lithic procurement. Further understanding of White Rock lifeways and, potentially, the processes of migration and adaptation may develop from further study of these outlying White Rock sites.

Roll, Tom E., and John W. Fisher, Jr. (Montana State University) [15]

The Yonkee Bison Trap 1998

The Yonkee Site (24PR5) has figured prominently in the literature of Northwestern Plains prehistory. Most discussions of bison procurement in eastern Montana include a reference to the site. More recently, archaeologists have begun to question certain interpretations contained in the original Powers-Yonkee report. Work conducted at the Yonkee Bison Trap in 1986 and 1998 have provided additional information on the structure and chronology of this important site. We interpret the stratigraphic profiles of the bone bed in the vicinity of the 1961 excavations as consistent with those to be found in a shallow valley rather than a steep-walled arroyo. This suggests that the trap required some form of containment beyond the natural arroyo configuration. Spatially segregated bone beds support the possibility of multiple cultural events. Five radiocarbon dates suggest the kill events took place

sometime near the beginning of the first millennium B.C. Butchering patterns at other Yonkee sites suggest muscle stripping which left numerous articulations. The most recently excavated bone bed at the Yonkee Site reveals a similar pattern, with some variation suggested by the relatively low frequencies of some high utility elements (femora and humeri). The Yonkee Site continues to contribute to our understanding of Late Middle Prehistoric/Late Archaic human adaptations.

Root, Matthew J. (Plateau and Plains Research) [2]

Cultural Stratigraphy and Dating of Folsom Occupations at the Bobtail Wolf Site, North Dakota

Excavations at Bobtail Wolf revealed evidence of multiple Folsom occupations. Four site areas are present, covering just under 1 ha. Block excavations in three areas provide evidence for vertically stratified Folsom occupations. The fourth area is eroded, but may have been the location of repeated Folsom occupations as well. Total population estimates indicate that 6,000 tools broken in manufacture and over 6,000 tools used for maintenance or extractive tasks are present in subsurface Folsom deposits. These numbers represent minimum estimates for the total number of Folsom tools because some Folsom deposits are eroded, forming a dense surface lag of artifacts. Functional and technological analyses of tools indicate that different site areas show complementary patterns of tool manufacture and use, suggesting that some areas were occupied contemporaneously. Radiocarbon dates, mostly on bone and Leonard Paleosol sediments, suggest that Folsom occupations date from ca. 10,000 to sometime before 10,500 radiocarbon years ago. The relatively large area of Folsom deposits and the large number of Folsom tools suggest substantial, repeated occupation by Folsom groups over at least several centuries. Bobtail Wolf occupations may have been part of a Folsom range that extended from North Dakota to the southern Canadian Plains.

Roper, Donna C. (Kansas State University) [19]

Earth Lodge Deterioration: A Case Study from Nebraska

It is easy to find speculation about what decay processes must have been within earth lodges; it is difficult to find hard data on what they really were. The piece-by-piece demolition of the Dancing Leaf Earth Lodge in Nebraska provided an excellent opportunity to obtain such data. All parts of the lodge were closely examined and evaluated for the kind and extent of damage sustained over the twelve years the lodge stood. The outer portions (earth, grass, willows) of the lodge showed little decay. The structural elements, however, had begun to deteriorate. Detailed analyses are summarized, showing that deterioration was differential, depending on exposure, position within the lodge, and tree species of the various poles used in the structure.

Roper, Donna C. (Kansas State University) [19]

Just When We Thought We Knew the Place This Shows Up: The 1998 Excavations in the Medicine Creek Valley, Nebraska

The Medicine Creek valley of southwest Nebraska has a decades-long history of investigations into Upper Republican phase sites. We therefore have long thought we had a pretty fair understanding of that phase's basic parameters. The 1998 excavations, however, indicate that substantial surprises remain. A feature at 25FT39 appeared at the time of testing to represent a house. The block excavation indicated otherwise. While it clearly represents a living surface, the lack of post molds, cache pits, and a discrete floor, together with its large size, indicate that it is not a typical house. Additionally, the tool assemblage is depauperate, tool morphology is anomalous, the technology of stone tool production somewhat departs from the norm, and an unusually large amount of raw material derives from sources in eastern Colorado. The pottery includes some atypical variations on the usual Medicine Creek ware theme. This is an Upper Republican site, but it is anomalous within the phase as it is normally expressed within this valley. Could this site help shed some light on the nature of the interaction between the Upper Republican people in the valley and those on the High Plains to the west?

Running, Garry L. IV (University of Wisconsin-Eau Claire) [7]

Geomorphology and Physical Setting of the Makotchi-Ded-Dontipi Locale, Southwestern Manitoba

The Makotchi-Ded-Dontipi Locale (M-D-D) in the Lauder Sandhills is a cluster of mid to late-Holocene archaeological sites associated with low-relief dunes and wetland edges. The Lauder Sandhills and adjacent eolian landscapes, a tight mosaic of high and low-relief dunes and intervening wetlands, provided past human groups with a unique and rich environment. Presented here are results of research to determine, 1) if site distribution at M-D-D reflects a true relationship with existing landforms or partial burial by recent deposition, and 2) if the rich archaeological record at M-D-D is typical of the broader study area. A consistent stratigraphic sequence is observed across the study area. Basal sediments (glaciolacustrine), acting as an aquitard, perch groundwater in overlying sediments. Deposition of eolian sandsheets began after 10,500 but before ~7000 BP. Subsequent periods of eolian deposition (brief)/landscape stability (extensive) reflect landscape response to changing groundwater levels (lower/higher respectively). Groundwater levels were generally: low prior to ~7000 BP, higher from ~7000-4000 BP, and lower again until ~3600 BP. Large dunes formed and stabilized beginning about 3600 BP as groundwater levels rose. Site distribution at M-D-D reflects a true relationship with modern landforms, a relationship widely observed across the broader study area.

Running, Garry L. IV (University of Wisconsin-Eau Claire), Matthew J. Boyd (University of Calgary), Scott Hamilton (Lakehead University), Bev Nicholson (Brandon University), Matthew Bloom, William C. Lazarz, and Timothy D. Morrell (University of Wisconsin-Eau Claire) [11]

Geoarchaeology of Flint Stone Hill: Implications for Holocene Landscape Evolution in the Makotchi-Ded-Dontipi Locale, Southwestern Manitoba

Flint Stone Hill is a few miles east of the main archaeological investigations at Makotchi-Ded-Dontipi. As with other cutbanks along the Souris River, where it flows across the Glacial Lake Hind basin, terminal late-Pleistocene through recent sediments and buried soils are exposed. The basal unit includes glaciolacustrine silts and clays, gyttja (~10,500 BP), and glaciodeltaic sediments. Disconformities and buried soils, common above this unit indicate oscillations from episodic sedimentation (brief) to landscape stability (extended) occurred throughout the Holocene. Above the glaciolacustrine unit is an eolian sandsheet deposited subsequent to subaerial exposure of the basin (sometime after 10,500 but before 7000 BP). The upper sandsheet exhibits substantial enrichment in carbonate and other soluble minerals, and buried soils indicating groundwater discharge saline shallow wetlands and wet meadows were present in the center of the basin. This "evaporite" development suggests increased effective precipitation from ~7000-4000 BP. The "evaporite" was partially eroded and buried by additional eolian sandsheets by ~4000 BP indicating local water table fell substantially before rising again in the late-Holocene. Large-scale, crescentic parabolic dunes migrated to the site from the west by ~3600 BP, stabilized upwind of wetlands, and have since been modified by repeated episodes of erosion and redeposition.

Schneider, Mary Jane (University of North Dakota) [20]

Three Myths About Northern Plains Indian Art

This paper uses slides to critically examine three popular ideas about Plains Indian art. The first idea is that Plains Indians used geometric designs while Woodland or eastern Indians created floral designs. Objects from various tribes show that geometric and floral designs were often mixed. The second idea is that moccasins with beaded soles were made and used for burials. Photographs and specimens with dirt in the beaded soles show that some of these moccasins were worn for special occasions. Finally, the paper discusses the use of bird quills instead of porcupine quills to create designs.

Scullin, Michael (Mankato State University), Jason K. Weinrich and Andrea J. Torgerson (Office of the State Archaeologist, University of Iowa) [19]

The Jones Site (21BE5): Terminal Cambria Focus

The Cambria Focus consists of three sites on the south bank of the Minnesota River about 15 miles northwest of Mankato, Minnesota. Both associated ceramics and radiocarbon dates place occupation between roughly 1100 and 1300 AD. The Cambria Focus has affiliations both with initial Middle Missouri sites and the Over Focus to the west and with Red Wing Area Sites to the east. Cambria also has an especially high percentage of Sanford or Sanford like ceramics. The largest of the three sites is the Cambria Site (21BE2). It could easily have had a population of 200 and perhaps more, but there are no data to substantiate or contradict this guess. The Price Site (21BE36) appears to me to be a family or small cluster of families who perhaps broke away from (but not too far from) the main population for a period of a few years. The Jones Site (21BE5) seems to have been occupied by a small group of hold-outs who remained in the vicinity of the old village after the majority of inhabitants had left. Their occupation seems to have been impoverished and brief. Cambria peoples left a trail of sites and broken pottery along the Minnesota River to the north and west. The last trace of them as an identifiable cultural group is in southeastern North Dakota near Lisbon. A recently obtained series of radiocarbon dates confirm the late occupation of Jones and an analysis of lithics from the site provides a further indication of the impoverishment and isolation of its inhabitants.

Shields, Wm. Lane (Office of the Iowa State Archaeologist) [1]

Glass Trade Beads from Northwest Colorado: Ute Trading Networks and Formiportation

Glass beads recovered from 5MF1915 (datum B) appear to have been manufactured between 1840 and 1850. Based on a distinctive type known as Russian beads, the Ute were apparently engaged in aboriginal trade originated in the Northwest Plateau known as the Pacific-Plateau trading system. The beads were thus acquired prior to the 1850 collapse of that system. This research thus indicates that Utes were utilizing more trade networks than just those associated with Spanish or American traders and at least sporadically used an area north/northwest of their documented historical range. The beads also offer insights into the formiportation (Latin stem forms = ants) of non-food items by Western Harvester Ants; the beads were primarily recovered from an abandoned ant mound. Several observations into such ant behavior indicate that non-food items on nest mounds can be collected from at least 3 meters below the surface and at least 10 meters from a mound entrance. Thus, the presence of cultural materials on ant mounds cannot be solely construed as indicating buried cultural deposits.

Smith, Craig S. (TRC Mariah Associates, Inc., Laramie) [15]

Technological Organization and Obsidian Use in Wyoming

Studies have shown that the quality and distribution of raw material is a major factor in the organization of flaked stone tool technology. How mobile hunter-gatherers used, transported, and curated nonlocal materials is an important aspect of this organization. Because obsidian can be sourced to at least general locales, the examination of obsidian use at locations at various distances from its source provides a means to understanding the role of nonlocal materials in the overall system. The recovery of obsidian from 12 excavated sites situated across Wyoming and northern Colorado provides an excellent opportunity to learn more concerning nonlocal materials in the organization of technology. The recovered obsidian was sourced using x-ray fluorescence to locales mostly in eastern Idaho and northwestern Wyoming located approximately 110 km to 675 km from the excavated sites. It appears that the hunter-gatherers inhabiting the locations nearest the sources brought blanks from the source to the site for further reduction. The occupants of sites farther from the sources probably obtained completed tools by exchange with groups encountered during their annual subsistence movements. The obsidian at all sites was highly curated.

Somers, Lewis (Geoscan Research) [21]
Workshop: Resistivity and Magnetic Survey Methods

In the 1997/1998 Plains Conferences a number of excellent papers reporting on the use of large area Resistivity and Magnetic Field Gradient surveys have been/are presented. Each demonstrates the value and cost-effectiveness of these methods. Recently, they have also been used successfully in the sedentary southwest as well as in the great basin.

Given the nature of our prehistoric archaeological record, if we are to find expanded use of these surveys both rewarding and cost-effective it is essential that they be well designed, implemented and interpreted. Toward this end, Geoscan Research would like to offer a workshop.

Spars, Stephanie A. (University of Nebraska State Museum), and Dr. David May (University of Northern Iowa) [5]
Archaeological Survey and Test Excavations at the Enders Reservoir in Chase County, Nebraska

This paper will summarize a 3,900 acres Cultural Resource Survey and geomorphological survey of the Enders Reservoir in Southwestern Nebraska. This survey in the Frenchman Creek Valley yielded 71 previously unknown archaeological sites, one architectural site and one paleontological site. Evidence indicates the presence of archaeological sites dating to the early archaic period. Limited testing was performed on selected sites, searching for multiple or buried components. Six previously known sites were relocated and resurveyed.

Sundstrom, Linea (University of Wisconsin, Milwaukee) [16]
Gender and Rock Art in Western South Dakota

The rock art of the Black Hills and north Cave Hills contains numerous references to gender, both in the context of human figures and as free-standing vulvaform and phallic designs. The occurrence of such gender signs in the context of early hunting scenes suggests that both women and men were considered important to the success of the hunt and the renewal of the herds. A similar idea is expressed in later rock art in which vulvas, animal tracks, and abraded grooves co-occur. Archaeological and ethnographic evidence raise the possibility that at least some of this rock art was produced by women or girls.

Sutton, Wendy (Columbia University) [15]
Preliminary Report on Investigations at 48SH885: A Late Prehistoric/Protohistoric Campsite in the Big Horn Mountains

48SH885 was evaluated, and limited excavations were conducted at the site during the summer of 1996. These investigations were conducted by Columbia University, under the supervision of the US Forest Service. The site itself is located along a prehistoric trail, known historically as the Crow Trail. The site was ceramic, multiple vessels are represented in the assemblage. In addition to tipi rings, a number of cairns and potential vision quest beds were recorded. Findings of these preliminary investigations will be summarized and related to other Late Prehistoric/Protohistoric cultural manifestations in the Big Horn Mountains.

Syms, E. Leigh (Manitoba Museum of Man and Nature) [15]
Seven Recently Recovered Ancient Caches from Northern Manitoba: Their Implications for Elaborating Upon Northern Plains Developments

Since 1990, numerous ancient caches have been recovered from Manitoba. This paper presents the inventories of seven caches dating from 4,150 years B.P. to ca A.D. 1650. These caches range from five to forty bone and antler tools to over 100 items of a variety of materials. These caches include the largest cache (40 items) and oldest cache from the Boreal Forest of northern Manitoba. 1600 beads

made from ground pincherry seeds, and a wide range of tools never recovered locally before and of unknown use. These caches demonstrate direct links to Plains developments such as catlinite beads, a Sonota style antler atlatl weight, elk incisor pendants, and localized lithics such as Gronlid chert/siltstone. More importantly, the wide range of bone and antler tools, many dating back to the Middle Precontact or Intensive Diversification Period ("Archaic"), indicate the great diversity, excellent craftsmanship, and pride in workmanship that is demonstrated when organic materials are recovered.

Syms, E. Leigh, and Kevin Brownlee (Manitoba Museum of Man and Nature) [6]

Recent Educational Displays for Northern Manitoba Cree Schools: Returning Their Ancient Heritage for Tomorrow's Pride in Native Heritage

Since 1990, there have been yearly recoveries of archaeological materials from the shorelines of the Churchill River Diversion in northern Manitoba. The recoveries have resulted in the discovery of over 400 new sites and approximately 60,000 artifacts representing a phenomenal range of items that are requiring the complete re-assessment of cultural developments in the Boreal Forest, in particular, and archaeology in general. However, even more exciting are the activities involved in returning the materials to the communities in several educational displays, returning to take part in school heritage week activities, building links between archaeologists and the people of the communities, seeing the ancient heritage being incorporated into the local value system, and making new friends. The educational displays range from table top displays to free-standing, multi-drawer units with artifacts or replicas, numerous illustrations, and rich variety of information on heritage.

Thompson, Joe B. (Bear Creek Archeology, Inc.) [5]

Hematite Utilization as Seen at the Eddyville Locality in South-Central Iowa

Hematite commonly appears on prehistoric archeological sites throughout the upper Midwest, although rarely constituting a significant part of a site's artifact assemblage. A brief review of the archeological literature reveals that hematite is commonly analyzed as a pigment source, with little discussion presented on specific material form, possible sources, and its alternative uses on prehistoric sites. In an attempt to help rectify this lack of attention, this paper will open with the presentation of simple model for describing hematite materials, the broadly defined types based on simple material descriptions such as color and hardness, possible material sources, and type-specific uses. The model is subsequently tested using data recovered from recent excavations at three multi-component prehistoric sites in Mahaska County, Iowa. At these sites, a sizable assemblage of hematite and limonite materials was recovered, including specimens exhibiting evidence for pigment production, groundstone tool manufacturing, and knapping.

Threet, Todd D., John G. Hedden (University of Iowa), and Mary J. Adair (University of Kansas) [1]

Sketches of a Frontier Mercantile: Continuing Analyses of the 1992 KAFS Excavations at Shannons Dry Goods Store

The 1992 KAFS excavations focused on the 1856-1866 location of the Shannon Dry Goods Store. This area is part of the proposed Town of Kansas Urban Archaeological Park within Kansas City, Missouri. The recovered artifact assemblage included many local objects which had never before been documented in an archaeological context. The on-going analysis has concentrated on the identification and interpretation of personal artifacts recovered from primary and secondary contexts. This paper integrates the analysis of these items with previous studies of the site.

Toom, Dennis L. (University of North Dakota), and Matthew J. Root (Plateau and Plains Research) [19]

The Sonota Complex Occupation at the Doaks Butte Site, Southwestern North Dakota

The Doaks Butte site is located between the confluence of the Little Missouri River and Box Elder Creek in extreme southwestern North Dakota. Excavations were conducted at the site over a period of two years, in 1990 and 1991, by the University of North Dakota archeological field school, in cooperation with the U.S. Bureau of Land Management. Besant-type projectile points, distinctive ceramic types, and radiocarbon dates are indicative of a Sonota complex occupation, making Doaks Butte the westernmost recorded Sonota site. The site most likely functioned as a short-term residential base camp. Radiocarbon dates place the Sonota occupation of the site at ca. A.D. 200. Two remarkable aspects of the site assemblage are the stylistic variation in projectile point form relative to what is thought of as the basic Besant type, and the use of locally occurring, albeit poor quality, Knife River flint.

Tratebas, Alice M. (Bureau of Land Management) [16]

Spatial Differentiation of Early Hunting Petroglyphs

Early hunting petroglyphs are in canyons on the perimeter of the Black Hills. A major concentration of over 135 panels stretches along 6 kilometers of one canyon. Other canyons within 60 kilometers of the main petroglyph cluster have isolated locations of one to six panels. A statistical analysis shows that only the main location contains the full temporal sequence and thematic range of the petroglyph tradition. The smaller sites focus on a subset of younger themes found at the main site. Themes also differ between the north and south ends of the main site cluster, although both areas include the full temporal span of the tradition. The reason why people started to use additional sites will be difficult to interpret. One explanation might be increasing population size and splitting into groups that developed their own ceremonial sites.

Vehik, Susan, Rain Vehik, Pam Leader, and Lesley Rankin-Hill (University of Oklahoma) [3]

The Mackey Site (34LF29): Relative Chronology, Paleodemography, and Associated Funerary Objects

Numerous midden mounds were excavated by Works Progress Administration crews along Fourche Maline Creek in eastern Oklahoma between 1940 and 1942. These sites were selected on the basis of their organic content, possibility of substantial cultural remains, and occurrence of human burials. The Mackey site is one of these sites excavated in 1940. A substantial amount of cultural remains and a number of human burials were recovered in the excavation of 9,750 square feet, and over 10 feet of deposits were revealed in parts of the site. A relative chronology spanning Early and Middle Archaic through Woodland and early Caddo periods is developed by analyzing chipped stone tools from non-burial squares. Funerary objects of bone, shell, and chipped or ground stone are associated with nearly 31 percent of the burials. These are briefly described and chronological placement is discussed. Paleodemography suggests that Early Archaic adults have a longer longevity than those from later occupations. Finally, there is evidence that status differences are achieved and an egalitarian system of social organization is posited.

Vineyard, Ardeth (Pochteca Archaeology) [1]

Women in the Black Hills: Documents and Archaeological Remains

By the 1870's, the Black Hills of South Dakota were alive with miners and prospectors. Soon after the men arrived, women followed, bringing with them items that would be left behind in the archaeological record. Using historic accounts of women pioneers, historic trash scatters in the Black Hills, and local histories of towns located in the Black Hills, I have attempted to discover when women entered the Black Hills, and what historic archaeology they left behind.

Walker, Danny N. (Wyoming State Archaeologist's Office), J. D. "Sam" Drucker (University of Wyoming), and Steven De Vore (National Park Service) [11]
Searching for Fort William on the Laramie

Fort William on the Laramie was established near the confluence of the North Platte and Laramie Rivers in June 1834 by William Sublette and Robert Stuart. The log-stockaded trading post was in use from that date until 1841, when it was replaced by the adobe-walled Fort John, which was later purchased by the U.S. Army in 1849 and renamed Fort Laramie. Alfred Jacob Miller painted two views of Fort William in 1836. These are the only on-site paintings or other visual documentation available for this early fur trading post. Following construction of Fort John, Fort William disappeared from view. The original location of Fort William has long been a major research question for the National Park Service at Fort Laramie National Historic Site. In 1998, the National Park Service Long Distance Trails Office funded an archaeological search on an area of Fort Laramie felt to hold the greatest potential for Fort William's location. Two areas were tested but neither were found to hold Fort William, whose location thus remains a mystery. However, at least eight previously undocumented army features, dating from the 1850s-1880s were recorded, including four root cellars, two water pipelines, Officer Quarters backyard landscaping and an ice house.

Warren, Robert E., and James S. Oliver (Illinois State Museum) [9]
Zoogeographic and Cultural Implications of Freshwater Mussel Shell from Northern Plains Archaeological Sites

Freshwater mussel shells from northern Great Plains archaeological sites shed light on the zoogeography of mussel species and the human utilization of mussels in this area. Twenty-five species of mussels are represented in faunal collections from a sample of 90 archaeological sites located along or near the Missouri River in North Dakota, South Dakota, and Nebraska. Most of the sites are associated with the Plains Village cultural tradition and date to the past one-thousand years. The three most abundant species are the fatmucket (*Lampsilis siliquoidea*), the white heelsplitter (*Lasmigona complanata*), and the giant floater (*Pyganodon grandis*), which together account for 77% of the 3,165 identified valves. Species diversity gradually decreases upstream along the Missouri River, perhaps in response to large-scale climatic gradients, decline of suitable habitat, or decreases in the diversity of fish hosts necessary for survival of the mussels larvae. Variation in species composition evidently reflects regional clines in species diversity and also local differences in aquatic habitats. Mussels may have been used as both a food resource and as a source of raw material for making shell artifacts. Many of the shell artifacts were used as tools or ornaments; others appear to represent birds with supernatural powers.

Watson, Danial R. (University of Nebraska State Museum) [1]
'Chicken Glass' and Other Curiosities...

It is the observation of the author, shared by select colleagues, that certain categories of historic artifacts are often unrecognized or improperly identified in both the field and laboratory. It is the intent of the author to examine the reason for this oversight, to introduce and illustrate at least two of these artifact types, and to discuss briefly their meaning in the archaeological context.

Watson, Jim (Wichita State University) [19]
Hunting Patterns in a Hamlet Village on the Upper Solomon River

Site 14OB27, located on the north fork of the Solomon River, was excavated by Dick Krause in 1996 and yielded over 2,000 bone artifacts--as yet not analyzed. The intention of this paper is to examine the faunal remains recovered from site 14OB27, and extract any questions or conclusions about the hunting subsistence and associated life patterns of the individuals that once occupied this area. The majority of the identifiable material consisted of deer specimen. Bison material was highly underrepresented for the area and time of occupation. Plausible explanations account for this lack of

bison material through taphonomic processes and a compensatory increase in avian, rodent and rabbit remains. The opportunist habits of the Central Plains Mosaic peoples is represented by the faunal remains of 14OB27, which reflect the generalist adaptive nature of their hunting patterns.

Weathermon, Rick L. (Pochteca Archaeology/University of Wyoming) [15]

Exploitation of Bison Behavior: An Interpretation of Prehistoric Procurement Strategies Based in Ethology

Interpretation of bison procurement methodologies on the prehistoric plains has generally centered around the archaeological analysis of kill sites. The postulated methods usually involve multiple bison being driven over precipices or into corrals, dunes, or other natural features that could have been quickly blocked to prevent escape. Observations of modern bison herds during culling and harvesting situations and historic accounts of hide hunters during the 19th century strongly suggest that bison exhibit specific behaviors that may have been exploited by prehistoric hunters without the construction of traps or restraining structures. These behaviors may also have required the killing of multiple animals by the hunters.

Wendt, James J. (Colorado State University) [4]

Pride, Prejudice, and Historic Preservation: A Case Study of the Bighorn Medicine Wheel

The last decade has seen an increase in Native American traditional use of sacred sites and in Euro-American tourist use of these same sites. This trend has led to concern as to how these nonrenewable resources should be properly managed so that all are afforded access which suits their needs and expectations. In September of 1996 an agreement was adopted which addresses this issue in regards to the Bighorn Medicine Wheel in Wyoming. The focus of this paper will be to explore both the roots of preservation efforts and the conflict of cultural view points which made adoption of an acceptable Historic Preservation Plan difficult. As a tool to manage the site the preservation plan is admittedly not perfect, but it does represent the efforts and concerns of those involved in the struggle. As a case study it reflects the larger societal need to preserve the monuments and cultural traditions of this lands indigenous populations for all to appreciate and understand. The issue of historic preservation will arise again wherever Euro-American curiosity and traditional Native American practices meet. As an interested party in both experiences it will be archaeologists who may best be suited to mediate the conflicts of interest that will arise.

Wettstaed, James (Mark Twain National Forest), and Michael Chalfant (Missouri Department of Natural Resources) [3]

Savage Bliss: A Preliminary Report on Archaeological and Geomorphological Investigations at a Multi-Component Site in Southeast Missouri

Located in the St. Francis Mountains in southeastern Missouri, the Savage Bliss site (23MO138) was occupied intermittently for at least 3,000 years. Archaeological and geomorphological investigations sponsored by the Mark Twain National Forest uncovered components associated with the Late Archaic, Early Woodland and Late Woodland periods. Recovered cultural materials include over 150 stone tools, ceramics and thousands of flakes, as well as a number of rock features. Also present was an oval-shaped hardpan layer, an anthropogenic soil surface. The geomorphological investigations suggest that similar geomorphic processes may have occurred in stream valleys throughout the northern Ozarks. Both the soil and landform at Savage Bliss correlates well with the model proposed in recent studies conducted at Fort Leonard Wood in central Missouri.

Whitley, David S. (W&S Consultants) [16]

The Vision Quest in the Far West

The impact of Stu Conner's research has extended beyond the Plains into the far west, where his work on the vision quest has provided a model for recent archaeological studies. The ethnographic and

archaeological evidence for vision questing in the Great Basin and California is reviewed. Various lines of independent empirical evidence are used to infer that vision questing was a ritual practice with great time depth in the region, extending back into the early Holocene, if not latest Pleistocene.

Widga, Chris (University of Nebraska at Lincoln) [5]

A Nutritional Basis for Processing Variability in the Central Plains

Proposed climate changes between AD 500 and AD1500 in the Central Plains offer implications for grassland ecosystems and the health of bison populations, respectively. Of interest in this study is the relative intensity of processing patterns used by groups in the central plains area. This paper reanalyzes bison fauna from two middle Woodland and two Central Plains Tradition sites. It is proposed that during periods of high nutritional stress on bison populations, bison remains from archaeological contexts will exhibit evidence of more intense processing than bison material from periods of low nutritional stress. This suggestion is evaluated according to observations on four central plains sites spanning a period of approximately 1000 years.

Williams, John (University of North Dakota) [20]

Dead Men Do Tell Tales - Forensic Anthropology in the Dakotas

Bioarchaeology is often accused of having no practical value. Yet today advancements in forensic anthropology and human identification would not be possible without the study of prehistoric skeletons. Using examples from various prehistoric skeletons the connection between the past and the present will be explored. Specific topics will include the determination of age, sex, and race from the human skeleton. Particular emphasis will be placed on paleopathology and the application of bone disease in modern forensic cases.

Winham, R. Peter (Archeology Laboratory, Augustana College) [18]

Village Sites of the Middle Missouri Subarea A.D. 1000-A.D. 1887 National Historic Landmark Theme Study

Begun in 1992 and completed in 1994, this National Historic Landmark Theme Study was submitted to National Park Service, Washington D.C., accompanied by two individual site Landmark nominations for the Huff site in North Dakota and the Vanderbilt site in South Dakota. After reviews, the Theme Study was accepted, and the two sites were officially designated National Historic Landmarks in February 1997. This paper details the process by which this Theme Study was developed, presents an overview of the Theme Study, and discusses the role the study can play in the future.

Wood, W. Raymond (University of Missouri) [6]

The Mackay-Evans Expedition of 1795-1797

The Scotsman James Mackay chose Welshman John Thomas Evans as his second-in-command to conduct an expedition up the Missouri River in 1795. This was the third excursion sent up the river by the Missouri Company, a consortium of Spanish St. Louis businessmen. Leaving St. Louis with a company nearly equal in size to that of Lewis and Clark, but almost nine years earlier, they were to build trading posts for the Indian trade, expel the Canadians from their post among the Mandans, and make their way to the Pacific coast. Mackay was chosen for this command because he knew more of the geography of the northern Plains than anyone else in contemporary St. Louis, having traveled widely in central Canada, and having visited the Mandans in 1787. Although Mackay and Evans's efforts on behalf of the Spanish were short-lived, they left a brief but powerful legacy for others: the maps they prepared were vital in planning and executing the Lewis and Clark expedition. Furthermore, Mackay's directions to Evans for reaching and documenting his voyage to the Pacific coast appear to have helped shape Thomas Jefferson's directions for the conduct of Lewis and Clark's Corps of Discovery.

Zehr, Jamey (Archaeological Services of Western Wyoming College) [1]
An Initial Analysis of Faunal Remains from a Chinese Community in Wyoming

Historic Chinatown in Evanston, Wyoming, was occupied from 1870 to 1922. The 1998 excavations encountered a concentration of faunal remains. A preliminary study of this material yielded evidence of mammal, bird, and fish remains, some of which have butchering marks. Faunal identification focused on element and size grade, continuing when possible to genus-species identification. Finally a discussion of Chinese food processing practices is presented.



Hidatsa Indian Camp, Drawing by Bear's Arm, ca. 1910
(State Historical Society of North Dakota #12004)