THE WYOMING ARCHAEOLOGIST

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THE WYOMING ARCHAEOLOGIST
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Please send a minimum of two (2) hard copies of each manuscript submitted. A third copy would speed the review process Please contact the Managing Editor for instructions if the manuscript is available in electronic form. Readers should consult the articles in this issue for style and format. Deadline for submission of copy for spring issues is January 1 and for fall issues July 1. Reports and articles received by the Managing Editor after those dates will be held for the following issue.

Membership period is from January through December. All subscriptions expire with the Fall issue and renewals are due January 1 of each year. Continuing members whose dues are not paid by March 31 of the new year will receive back issues only upon payment of $5.00 per issue. If you have a change of address, please notify the Executive Secretary/Treasurer. Your *WYOMING ARCHAEOLOGIST* will not be forwarded unless payment is received for return and forwarding postage. Back issues in print can be purchased for $5.00 each, plus postage. Back issues out of print are available at $0.15 per page plus postage.

Checks for chapter subscriptions and renewals should be sent to the chapter secretary involved. Al other checks, subscriptions, and renewals should be addressed to the Executive Secretary/Treasurer. Correspondence and orders for back issues should be addressed to the Executive Secretary/Treasurer.

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Society yearly subscription rates are as follows:

Individual Associate Member -$10.00
Institutional Member- $15.00
Canada and Foreign - $19.00

Other memberships, including supporting and contributing, are available. Contact the Executive Secretary/Treasurer for information. Local chapter dues are in addition to state society dues. The Wyoming Archaeological Society is a Nonprofit Organization.

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THE WYOMING ARCHAEOLOGIST

VOLUME 42(1), SPRING 1998

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NEWS REPORTS

UW INSTITUTE HONORS GEORGE FRISON

Creation of the George C. Frison Institute of Archaeology and Anthropology was approved Saturday, July 25, 1998 by University of Wyoming Trustees.

The Frison Institute provides a focus for the Department of Anthropology for the study of cultural dynamics and prehistory in North American, and an emphasis for interdisciplinary approaches to studies of the early settlement and occupation of the Americas. Its organization will like the university's off-campus field projects, research and public education.

Frison is a UW professor emeritus of anthropology. His career contributions to the discipline of archaeology created an internationally recognized foundation for the institute, particularly in the area of Paleoindian research. Through the Frison Institute, UW will facilitate the use of the Department of Anthropology's extensive archeological and osteological collections, which include more than 1 million artifacts from about 35,000 archaeological sites.

The Frison Institute, to be administered by UW assistant professor Marcel Kornfeld, also provides a more efficient and effective venue of research in Wyoming by visiting scholars and scientists from throughout the United States and the world. No additional personnel or resources are required for the anthropology department's budget.

Frison has a distinguished career in unlocking the secrets of prehistoric Wyoming. In 1997, he was among 60 new members elected to the National Academy of Sciences (NAS) in recognition of their distinguished and continuing achievements in original research. NAS membership is considered one of the highest honors accorded to United States scientists or engineers as these professionals represent the best in their fields. Members are part of a private organization established by Congress in 1863 to act as an official adviser to the federal government, on request, in any matter of science or technology.

A Worland native, Frison first came to UW in September 1942. He stayed one semester before joining the Navy during World War II. After discharge in 1946, Frison ranched near Ten Sleep until 1962 when he returned to UW and received a B.S. degree in 1964. He received M.S. (1965) and Ph.D. (1967) degrees from the University of Michigan, where he held a Woodrow Wilson Fellowship. In 1967, Frison returned to UW and was named the first chairman of the Department of Anthropology at the College of Arts and Sciences.

"This institute is a fitting tribute and legacy," said Audrey Shalinsky, UW professor and head of the Department of Anthropology. "His guidance clearly established the department's emphasis and reputation as a leader in studies of the four basic fields of anthropology: archaeology, and biological, cultural, and linguistic anthropology."

Although Frison officially retired in 1995, he remains an active faculty member at UW. During his career, he has served his home state as a professor, scholar, scientist, department head and state archaeologist.

Frison has written more than 80 journal articles, seven books, including Prehistoric Hunters of the High Plains, and presented almost 100 papers at professional meetings. Support for his research has included grants from the National Science Foundation, Bureau of Land Management, National Park Service, and National Geographic Society. Additional honors include the Asa Hill Award for outstanding archaeological research, UW's George Duke Humphrey Distinguished Faculty Award, and a Smithsonian Senior Postdoctoral Fellowship.

From: Laramie Daily Boomerang; July 26, 1998

WYOMING ARCHAEOLOGICAL SOCIETY, INC.
1998 ANNUAL MEETING MINUTES

6:30 p.m. -- Sheraton -- Billings MT
Friday, May 8, 1998

PRESIDING: Cher Burgess, President

CALL TO ORDER: 6:35 p.m.

ROLL CALL AND CERTIFICATION OF DELEGATES: Secretary/Treasurer Carolyn Buff certified the voting delegates: Absaroka, Jackie Anthony and Barbara Nahas; Ancient Trails, Cher Burgess and Alice Tratebas; Casper, Carolyn Buff and Jim Curkendall; Cherokee Trail, Dave and Susan McKee; Cheyenne,

Richard and Eileen Lappe; Fremont, Ray Gossett and Eva Peden; High Plains, Dewey and Janice Barrs; Platte, absent; Rawlins, George Brox; Sheridan/Johnson County, absent and Sweetwater, absent.

Roll call showed seven chapters represented: Absaroka, Ancient Trails, Casper, Cheyenne, Cherokee Trail, Fremont, High Plains, and Rawlins. Not represented at the meeting was Platte County, Sheridan/ Johnson County, and Sweetwater County.

MINUTES OF LAST ANNUAL MEETING: April 28, 1997: Approved as printed in the fall 1997 issue of *The Wyoming Archaeologist.*

TREASURER'S REPORT: Secretary/Treasurer Carolyn Buff gave the treasurer's report showing a total net worth as of March 31, 1998 of $29,098.24, an increase of $1,243.95. Motion by Ray Gossett, second by Eva Peden to file the treasurer's report for audit. Carried.

AUDITOR'S REPORT: George Brox, Mark Miller, and Julie Francis performed the annual audit and found the accounts in order.

EDITOR'S REPORT: Mark Miller for Danny Walker: There is only one manuscript on file for the Spring 1998 issue; more are needed. Anyone can submit a manuscript -- amateur or professional. Amateur submissions receive editorial review by the editor and submissions by professionals get outside review. Any information of interest is acceptable.

LIBRARIAN'S REPORT: Mark Miller for Danny Walker reporting nine exchange journals on file in the Wyoming State Archaeologists's Office.

SCHOLARSHIP COMMITTEE: Carolyn Buff announced that the committee would have a breakfast meeting to evaluate scholarship applications and choose recipients.

CHAPTER REPORTS: Motion by Ray Gossett, second by Susan McKee to print the chapter reports in *The Wyoming Archaeologist* if there is enough room. Carried. Chapter reports attached.

STATE ARCHAEOLOGIST'S REPORT: Mark Miller: The 1998 legislature has adopted the Wyoming Business Council, resulting in privatization of many of the activities formerly in state government dealing with tourism and economic development and were attached to the Wyoming Department of Commerce (one such is the Office of the State Archaeologist). By changing that and moving those activities into the private sector, the OWSA is faced with becoming a new organization and will involve all of the cultural resource programs in state government as well as Wyoming State Parks and Historic Sites.

The archaeological collections inventory, initiated approximately three years ago, is in the process of systematizing all of the record-keeping of the archaeological collections which are in the repository, with the process being about 25% completed. Upon completion, there will be a complete inventory of all collections gathered over the past several decades by numerous investigators. The process will result in properly caring for the materials and making them available for exhibits and research.

Bob Kelly has been appointed to the faculty of the University of Wyoming, replacing Dr. Larry Todd, and is available to present programs to the chapters.

The deaths of two very active, long-time WAS members was announced: Helen Bryant of Casper served for many years as chair of the Scholarship committee, and John Bryan Fisher, a professional archaeologist who worked in Wyoming for many years in the late 1970s and 1980s. A memorial for Helen Bryant has been established in WAS, with donations going to scholarships.

OLD BUSINESS: Council of Affiliated Societies/Society for American Archaeology (COAS/SAA) Representative: Mary Lou Larson for Marcel Kornfeld: There are 30 archaeological societies which are members of COAS. Several of the member societies expressed a great deal of concern with the drastic drop in membership and how societies can increase their memberships. The discussion centered around COAS creating a web page and possibly becoming server to member societies. The other suggestion was to develop a strategic plan which would identify the goals of each society and decide on actions to meet that goal. Next year a table will be provided to display and distribute Society brochures.

Society dues paid to SAA help defray meeting room expenses, the COAS newsletter, and the poster competition.

Hester Davis, COAS newsletter editor would like WAS to send her news for the bulletin. Reports can be sent to

Marcel, who will forward it on to Davis. Appropriate information could be what the society is doing, what are chapter projects, speakers, or anything pertinent to WAS.

Archaeology Awareness Month: Dave McKee announced that the 1998 posters and brochures of upcoming events were available. On September 19, Dr. Tom Dillehay, University of Kentucky at Lexington, will present the keynote address on Pre-Clovis Culture, at Casper College, Wold Physical Science Building, Room 103 at 7:00 p.m.

Each chapter was asked to distribute posters and information to the schools in their communities in an attempt to increase membership. Other locations suggested were the colleges, libraries, museums, etc.

Motion by Dewey Baars, second by Susan McKee to donate $200 to Wyoming Archaeology Month. Carried.

Wyoming History Day - $100 was awarded to Kandi L Glause from Natrona County High School for her paper on the peopling of the new world. The consensus of the group was to develop criteria in cooperation with WAPA to forward to the appropriate people who would then forward the information to the public school teachers. WAS members were also encouraged to volunteer at schools in their communities on History Day and forward the teachers' names to Ranel Capron, Judy Wolf, or Karen Kempton in Cheyenne in an effort to make the teachers aware of the role of archaeology in history.

NEW BUSINESS: Web Page - Dewey Baars and Carolyn Buff will check with Marcel Kornfeld and report back to the executive committee as soon as possible.

Fall Workshop - Mark Miller announced that it is tentatively scheduled for November 7, with the theme "Celebrating 50 Years of Archaeological Research at the University of Wyoming."

George C. Frison Institute for Archaeology and Anthropology - Ray Gossett reported that on April 17 a planning meeting was held. The mission of the Institute is to enhance Wyoming archaeology, the appreciation of Wyoming archaeology, and the department's already high international profile. The specific research focus

Kandi Glause receiving History Day Award from Wyoming Governor Jim Geringer, Wyoming Superintendent of Public Instruction Judy Catchpole, and Wyoming Assistant State Archaeologist Danny Walker.

of the Institute will be on paleoindian studies and peopling of the Americas; to enhance the student and public education through recruiting the best possible graduate and undergraduate students and by providing research opportunities, training and jobs for them; to facilitate research opportunities for visiting scholars to enhance the value of Wyoming archaeology. The Institute is designed to promote strengths of the anthropology department, especially the Wyoming archaeology program. Consequently, to maintain the strength of the natural ties between the department, the Institute, and the Wyoming Archaeological Society, we would like to have one or two more people as members of the Friends of the Institute. The WAS membership list will be sent to the Institute from which additional members will be selected.

The purpose of the Friends of the George C. Frison Institute is to promote and publicize the Institute, telling people of its existence, what it does, and how it is good for Wyoming, archaeology, education, and students, etc. It also facilitates fund raising for the Institute by identifying potential donors and putting the director in touch with such individuals. A guest lecturer will be sponsored each year at the annual meeting of the Friends (November 7-Laramie).

Membership will be a three-year renewable term, with the first set staggered on a one- to three-year term. Specific terms will be decided at the November meeting. At the present time Marcel Kornfeld is the Director of the Institute, George Frison is the honorary president of the board, and other members are Jean Auel, author; Cher Burgess, WAS;. Forest Fenn, Ray Gossett, Riverton, Jim Hageman, Ft Laramie, legislator, Debra Healy-Hamond, Worland, and Mike Massey, Laramie, Legislator.

Rocky Mountain Conference - Mary Lou Larson - The conference will be held September 30-October 3, 1999 in Glenwood Springs, CO. A request was made for a donation to the conference. Motion by Barbara Nahas, second by Richard Lappe to table the request until a policy can be written regarding donations. Carried. A committee of Carolyn Buff, Julie Francis, and Barbara Nahas will research the situation and write a donation policy to be voted on at the November 7 fall workshop.

Room Reimbursement - Motion by Eva Peden, second by Dewey Baars to donate $150 to the Montana Archaeology Society for conference costs. Carried.

WYOMING ARCHAEOLOGICAL FOUNDATION:
Julie Francis relayed a thank-you to the WAS for awarding them the 1997 Golden Trowel.

The Foundation will meet Sunday at 7:30 a.m. in the Sheraton restaurant.

Joe Kramer donated $10,000 with a Foundation match for the 1997 field school work at Hell Gap.

George Frison - No work will be done at Hell Gap this summer so that analysis, interpretation and publication can begin on work done thus far. A trench has been dug up the hill with approximately 100 carbon dates taken. Three have been returned at 11,125, 11,250, and 11,215, indicating encouraging research results. Some work will resume in the summer of 1999.

ELECTION OF OFFICERS: Motion by Ray Gossett, second by Dave McKee to cast a unanimous ballot to retain the current officers for the 1998-1999 year and to elect Milford Hanson to a three-year term on the Foundation board. Carried.

1999 NOMINATING COMMITTEE: Jim Stewart, chair, Barbara Nahas, and Alice Tratebas.

1998 SUMMER MEETING: Motion by Dewey Baars, second by Susan McKee to meet at Fort Laramie on any of the working dates: June 4-8, June 12-16, June 19-23, or June 26-30. Carried.

1999 ANNUAL MEETING SITE: Will be in Newcastle or Sundance, with the Ancient Trails chapter hosting.

INTRODUCTION OF OFFICERS:

President - Cher Burgess
1st Vice President - Gail Gossett
2nd Vice President - James Stewart
Milford Hanson - Wyoming Archaeological Foundation (term expires 2001)

ANNOUNCEMENTS: Carolyn Buff mentioned that she has membership cards and brochures available.

The field trip to Pictograph Cave will be held from 10:00 a.m. -12:00 p.m. on Sunday.

The 1997 Wyoming Archaeology Month poster won first place in the Society for American Archaeology

Poster Contest and won a bronze prize from the Council for the Advancement and Support of Education. A thank-you was read from Judy Wolf for financial support for WAM.

A thank-you was read from Sam Drucker for the scholarship award.

The need for current names, address, phone numbers, and e-mail addresses from chapters was reiterated.

ADJOURN: 8:35 p.m.

BANQUET: The banquet address was presented by Dr. Alice Kehoe, who spoke on "Trowel Scratches Paper: One Researcher's Experiences of the Overlap of Archaeology and History in Montana."

GOLDEN TROWEL AWARD: Dave Eckles

/s/ Carolyn M. Buff
Carolyn M. Buff
Executive Secretary/Treasurer

/s/ Cher Burgess

Cher Burgess
President

WYOMING ARCHAEOLOGICAL SOCIETY, INC. SCHOLARSHIP COMMITTEE MINUTES - May 9, 1998

PRESIDING: Carolyn Buff, Chair

PRESENT: Carolyn Buff, Cher Burgess, Gail Gossett, Mary Lou Larson and Mark Miller.

Motion by Gail Gossett, second by Cher Burgess to award the Frison Scholarship to Beth Ann Camp, and the Mulloy Scholarship to Nicole Waguespack, both in the amount of $400. Carried.

/s/ Carolyn M. Buff

Carolyn M. Buff
Scholarship Committee Chair

CHAPTER MEMBERSHIPS

Total memberships as of March 31, 1998 - 318 (down from 349 In 1997 - a decrease of 31)

Absaroka = 13 family, 10 single
Ancient Trails = 5 family, 3 single
Fremont County = 10 family, 10 single
Associate = 53
Casper = 9 family, 15 single
Cheyenne = 6 family, 8 single
Cherokee Trail = 12 family, 6 single
Department of Commerce = 3
Exchange = 9
Family = 1
High Plains = 35 family, 29 single
Honorary = 12
Institutional = 44
Platte County = 0
Rawlins = 7 family, 14 single
Sheridan = 0
Single = 0
State Archaeologist = 2
Sweetwater County = 3 family, 17 single

Of Chapters: Single = 112
Family = 100

Chapter Officers:

Absaroka - Philip Anthony, President
Barbara Hahas, Vice President
Joann Harris, Treasurer

Ancient Trails - Cher Burgess, President
Angle Cregger, Vice President
Mary Capps, Secretary
Carol Martel, Treasurer

Casper - Kerry Lippincott, President
Cathy Lantis Secretary
Gloria Boyce, Treasurer

Cheyenne - George Durako, President
Donna Durako, Vice President
Dick Lappe, Secretary/Treasurer

Cherokee Trail - Dave McKee, President
Bernel McCord, Vice President
Susan McKee, Secretary/Treasurer

Fremont County - Eva Peden, President
Ray Gossett, Vice President
Loucille Adams, Secretary
Dot Sanderson, Treasurer

High Plains - Jim Hageman, President
Dewey Baars, Vice President
Geri Zeimens, Secretary
Sharon Humberson, Treasurer

June Frison - Mark Miller, President
Bonnie Johnson, Secretary
Paul Joy

WYOMING ARCHAEOLOGICAL SOCIETY, INC.			
Treasurer's Report for Fiscal Year Ending March 31, 1997			
CHECKING ACCOUNT - NC SCHOOL EMPLOYEES FEDERAL CREDIT UNION	**INCOME**	**EXPENSES**	**BALANCE**
Beginning Balance	$ 2,764.49		
Deposits	$ 4,757.60		
Interest Earned	$ 36.24		
TOTAL INCOME - CHECKING	$ 5,460.66		$ 2,097.67
EXPENSES			
Builders Mart - Trowel		$ 18.98	
Casper Star Tribune - AD - Spring Meeting - reimbursable		$ 72.56	
Merback Awards - Trowel Engraving		$ 33.95	
History Day Award		$ 100.00	
Natrona Printing - Spring Meeting - reimbursable		$ 71.31	
James Platt - Banquet Refund		$ 15.00	
James D Drucker - Scholarship		$ 400.00	
Orin Shanks - Scholarship		$ 400.00	
SHPO - Archaeology Awareness Month - Donation		$ 200.00	
Frison Institute - Donation		$ 100.00	
Adrein Hannus - Honorarium		$ 200.00	
Albertson's - Spring Meeting - Field Trip Lunch - 1/2 reimbursable		$ 133.83	
Casper College - Postage		$ 32.00	
Wyoming Archaeological Foundation - Annual Dues Payment		$ 306.50	
Sheridan Chapter - Overpayment		$ 3.50	
Augustana College - Hannus Airfare		$ 279.00	
Casper College - Food Service - Spring Meeting - Refreshments - reimbursable		$ 243.50	
USPS - Bulk Permit		$ 85.00	
Casper College - Postage		$ 32.00	
Kinko's - Printing - Archaeology Awareness Month		$ 10.50	
Bonnie Johnson - Editor Expenses		$ 100.00	
David Kathka - Archaeology Awareness Month - Evaluator		$ 100.00	
Larry Zimmerman - Archaeology Awareness Month - Honorarium		$ 300.00	
Roger Echo-Hawk - Archaeology Awareness Month - Honorarium		$ 300.00	
Kinko's - Printing - Archaeology Awareness Month		$ 26.53	
Roger Echo-Hawk - Archaeology Awareness Month - Expenses		$ 169.89	
Larry Zimmerman - Archaeology Awareness Month - Expenses		$ 337.35	
Davis Kathka - Archaeology Awareness Month - Expenses		$ 231.08	
Wyoming Public Radio - Archaeology Awareness Month		$ 75.00	
Laramie Newspapers - Archaeology Awareness Month		$ 187.20	
KCGY - Archaeology Awareness Month		$ 40.00	
KOWB - Archaeology Awareness Month		$ 40.00	
Socity For American Archaeology - Dues		$ 30.00	
USPS - Bulk Permit		$ 250.00	
Casper College - Postage		$ 32.00	
Wyoming Tribune-Eagle - Archaeology Awareness Month		$ 175.68	
Casper Star Tribune - Archaeology Awareness Month		$ 201.30	
USPS - Bulk Permit		$ 85.00	
Secretary of State - Incorporation Fees		$ 10.00	
Casper College - Postage		$ 32.00	
TOTAL EXPENSES		$ 5,460.66	
ENDING BALANCE			

SAVINGS ACCOUNT			
BEGINNING BALANCE	$ 106.29		
Deposits			
Interest Earned	$ 3.01		
ENDING BALANCE			$ 109.05
MONEY MARKET ACCOUNT			
BEGINNING BALANCE	$ 2,803.54		
Deposits	$ 366.00		
Interest Earned	$ 131.04		
ENDING BALANCE			$ 3,300.58
CERTIFICATE OF DEPOSIT			
BEGINNING BALANCE	$ 22,180.22		
Interest Earned	$ 1,410.72		
ENDING BALANCE			$ 23,590.94
TOTAL NET WORTH AS OF MARCH 31, 1998			**$ 29,098.24**
Total Income	$ 6,704.61		
Total Expenses		$ 5,460.66	
Net Increase			$ 1,243.95
SCHOLARSHIP ACCOUNT			
Balance			$ (5,261.00)
ARCHAEOLOGY WEEK ACCOUNT			
Balance	$ 1,377.75		
Subsidy to 1997 Archaeology Awareness Week		$ 10.23	
Balance			$ 1,367.52
/s/ Carolyn M Buff			
Executive Secretary/Treasurer			

Platte County - unknown
Rawlins - William Scoggin, President
Sheridan - Jackie Spainhower, Contact Person
Sweetwater County- Russ Tanner, President
Kevin Thompson, Vice President
David Johnson, Secretary/Treasurer
Wyoming Archaeological Foundation -
Julie Francis, President
Milford Hanson, Secretary/Treasurer
Robin Perdue, Immed. Past President WAS
George Frison, Member
Rich Adams, Member
Mary Lou Larson, ex officio
Mark Miller, ex officio

AUDITING COMMITTEE REPORT

March 31, 1998: In compliance with the bylaws, the Auditing Committee has reviewed the Treasurer's books and records for the Wyoming Archaeological Society, Inc. for fiscal 1997.

AUDITING COMMITTEE SUMMARY

March 31, 1998:

Balance on hand March 31, 1997 - $27,854.29
Receipts:
Interest Earned - $1581.01
Deposits- $5,123.60
Disbursements- $5460.68

Balance on hand March 31, 1998 - $29,098.24
includes 0 outstanding check(s) for $____ , ____ to _____.

Audited and found correct.

/s/ Mark E. Miller
/s/ George W. Brox
/s/ Julie Francis

1998 WAS CHAPTER REPORTS

ABSAROKA

Survey: Papypo Butte - The chapter explored this site of an early 1800s battle between the Crow and Blackfoot tribes. The battle took three days, with the Blackfoot around the base of the butte and the Crow on the top. Evidence of stone barriers on the only side accessible by foot were still visible. It was reported that burial platforms covered the top of the Butte after the Crow came back for their dead. The flattened rocks which would have helped support the platforms were still lying about. This site has been publicized in the 1970s; hence, no evidence of artifacts was found.

War Lodge/Shoshone National Forest - The chapter members walked into the site of an old pole war or hunting lodge. This site does not appear to have been used for many years. The poles, although very weathered, were still supporting each other. To the chapter's knowledge, no formal investigation of this site has been undertaken.

Petroglyph Site/Oregon Basin - Chapter members drove to a known site outside of Cody in Oregon Basin located on BLM land. While this site has been known for some time, its access by road was previously limited. The site seems still to have some traffic. While the glyphs seemed relatively intact, evidence of bullet holes and more 'modern' glyphs were also present on and adjacent to the site.

Kirwin - Chapter members traveled a four-wheel drive road to the Kirwin mining and town site. A self-guided map and historical literature was obtained for individual exploration. This site is well known by the pubic. Determination of site degradation was not possible due to the lack of experience by members present.

Platt Site/South Fork - The Platt Site was visited for inspection of additional items which may have made that way to the surface. Several arrowheads were discovered and logged. The excavation site appears to be undisturbed since it was reburied. Evidence of some use by dirt bikes or four-wheelers was obvious.

Other: An initial contact was made to representatives of the Big Horn Canyon Recreational District and the anthropology department at Northwestern Community College regarding possible chapter interaction with a mapping project of archaeological sites within the Recreational District. This will be a long-term project with specific projects yet to be determined.

CASPER

Programs Presented - Richard Adams, OWSA,"Pipes and Bowls -- Carved Steatite Artifacts Found Around Wyoming;" Kerry Lippincott - Site 48CA1366, also known as the Harriet Nest Site, a village site located on the Belle Fourche River; Mark Miller, OWSA, "Historic Archaeology on the Oregon and Mormon Trails, Register Cliff, and Salt Wells"; Danny Walker, OWSA and under the auspices of a mini-grant from the Wyoming Council for the Humanities,"Baldwin Trading Post in Downtown Lander" and the Sand Draw Dump

Site (48FR3123)."

FREMONT COUNTY

Testing/Excavation - Several members of the chapter participated in the excavations at the Sand Draw Dump Site (a prehistoric site), as well as participating in the Baldwin Trading Post (historic site).

Vandalism Report - In March 1997, Dr. Danny Walker spoke to the chapter and the public concerning vandalism of our prehistoric sites.

Programs Presented - The Fremont County Chapter of WAS has had a wide variety of programs in the last year. We have had videos on sites around Wyoming and other parts of the country, as well as speakers who presented programs on vandalism of Wyoming sites and preservation of the Casper Site.

Other - During the summer months we had some great outings. Our members accompanied Dr. Frison to a possible fire pit along the Sweetwater. We took a trek to a stone arrow on Green Mountain and some rock alignments in the Bison Basin area.

HIGH PLAINS

Testing/Excavation - Lingle Mammoth Site - testing Maneater Cave - Fisher Site - Meyers Homestead Site - Latham Creek Site (1400 point, 4500 base)- Jewel Mammoth Site (11,430 tusk)- Ten-Mile Stage Stop

Pubic Education - Dr. Brown - Petticoat Prisoners of Wyoming; tours: Fisher Site, Meyers Homestead Site, Government Farm, and Deadwood Route; Expanding Environments Program: 38 children for nine-weeks; Adult program: seven adults for ten days

Work With Other Organizations - Built Western Plains Center, starting in mid-December; grand opening on April 16; donation of property to Western Plains Historic Preservation Association of Dr. Brownrigg Hospital. Plans are being made to restore.

Publications/Reports - a quarterly newsletter published.

Programs Presented - Terry Korell on Steamboat Arbia-Kansas City; George Zeimens on various sites in Colorado and the youth program; Dewey Baars on pictographs in Texas and New Mexico; and a video on 'The Ice Man."

RAWLINS

Testing/Excavation - Chapter members worked with Mark Miller, Danny Walker and Rich Adams, OWSA, along with Sandy Meyers, archaeologist with the BLM, to clean up and salvage vandalism areas at the Aimie Eaten Buffalo Jump Kill Site.

Pubic Education - The Rawlins Chapter meets the third Thursday of the months of September, November, December, January, March, and May to bring in knowledgeable and informative speakers for member education and pubic outreach.

CHAPTER PROGRAMS AVAILABLE

Each year several requests come into our office regarding possible programs for your monthly chapter meetings. This year we have prepared a list of some of the current research topics that various people are working on, which your membership may be interested in, although it is not an exhaustive list of what may be available from Laramie. These presentations generally include slides and last from 45-60 minutes.

If your chapter is interested in a particular program for an upcoming meeting, please call one of these presenters at the phone number provided. Please also be prepared to discuss any arrangements for audio-visual equipment and funding or travel expenses. Some of these presenters are students with limited resources and often they have no financial support for their research. It is anticipated that you will make all necessary arrangements with the presenter during your phone conversation.

Thank you for your continued interest in the research activities in Laramie. Best of luck with your meeting schedule for 1998-1999.

Rich Adams "Early Man and Rock Art in South Africa." Phone (307)766-5301.

Rich Adams "Central Siberian Archeology." Phone (307)766-5301.

Rich Adams "Pipes and Bowls: Soapstone Artifacts in Wyoming." Phone (307)766-5301.

Rich Adams "Stonewall Buttes: Prehistoric Structures in the Powder River Basin." Phone (307)766-5301.

Rich Adams "Natural Science is Not Just for Nerds." (for schools). Phone (307)766-5301.

Judy A. Brown "Archaeological Curation at the University of Wyoming Repository." Phone (307)766-5301.

Cher Burgess "Working With Middle School Kids on Historical Archaeology at the Muhlbauer Site in the Black Hills." (A Visit With Your WAS President) (307)283-1154 or (307)283-1200.

Dan Eakin "Archaeological Investigations on the

North Fork of the Shoshone River." Phone(307)766-5301.

Dr. Robert Kelly "Ethnoarchaeology Among Mikea Hunter-Gatherers of Madagascar." Phone (307)766-5136.

Dr. Marcel Kornfeld "Paleoindian in the High Country: Middle Park, Colorado." Phone (307)766-5136.

Dr. Marcel Kornfeld "Hell Gap Revisited: Paleoindian Cultural Chronology and Other Problems." Phone (307)766-5136.

Dr. Mark E. Miller "Archaeology, History and the Wagon Box Fight of August 1867." Phone (307)766-5301.

Dr. Mark E. Miller "Early Archaic Pronghorn Hunting in the Upper Green River Basin, Wyoming." Phone (307)766-5301.

Dr. Mark E. Miller "Historical Archaeology at Fort Fred Steele, Wyoming." Phone (307)766-5301.

Laura Niven "Variability in Seasonality of Archaic Bison Kills." Phone (307)745-8210.

Laura Niven "1997 Excavations at Upper Paleolithic Sites in the Russian Far East." Phone (307)745-8210.

Dr. Danny N. Walker "Archaeological Looting in Wyoming." Phone (307)766-5565.

Dr. Danny N. Walker "Excavations at the Baldwin Trading Post and Sand Draw Dump Sites. Phone (307)766-5565.

1998 FALL WORKSHOP

The Department of Anthropology, Anthropology Club, and Office of the Wyoming State Archaeologist are planning a Fall Workshop for the Wyoming Archaeological Society on Saturday, November 7, 1998 in Laramie. The workshop will begin Saturday morning in the Anthropology Building (at 14th and Ivinson) on the University of Wyoming Campus. We are scheduling slide presentations by faculty and students on their current research in the morning, and tours of the anthropology museum and collection facilities in the afternoon. We also hope to have a chance to get together at a dinner that evening as well. A more detailed notice will be sent to WAS members in early October, so watch your mail. Hope to see you in Laramie.

WYOMING ARCHAEOLOGY AWARENESS MONTH

The following is the text of Governor Jim Geringer's proclamation declaring September is Wyoming Archaeology Awareness Month.

ARCHAEOLOGY is the scientific study of the material remains of human activity, including sites, artifacts, and features. Such fragile, nonrenewable evidence forms the basis for understanding past human lifeways, so archaeologists must carefully interpret this record and work to preserve the most significant discoveries.

WYOMING'S cultural heritage spans more than 11,000 years. Archaeological discoveries range from finely crafted stone tools left behind by the earliest immigrants, to metal objects from the industrial complex of the late 20th century. Scientists have studied Wyoming prehistory and early history for more than 50 years and have documented more than 60,000 sites. Significant finds are often brought about by the cooperation of local land owners and avocational archaeologists.

SEVERAL Wyoming sites rank among the most significant discoveries in the nation, such as the Colby site, an 11,200 year old mammoth kill near Worland, and Fort Phil Kearny between Sheridan and Buffalo that was abandoned and burned in 1868. Nearly 400 sites listed on the National Register of Historic Places testify to the enduring value of Wyoming's heritage for all Americans.

GEORGE C. FRISON has been a national leader in the research of early man in North America for over 30 years. He has had a special interest in Wyoming archaeology and the study of prehistoric, big game hunting. In recognition of his many scholarly contributions, Dr. Frison was recently elected as a member of the National Academy of Sciences.

WYOMING ARCHAEOLOGY AWARENESS MONTH was established to better acquaint the general public with the story of Wyoming archaeology and to strengthen the bond between past and present. For the summer and fall of 1998, over 40 activities are listed in the calendar of events around the state. These educational programs are open to the public, and they provide a wonderful opportunity to learn more about the science of archaeology and the mysteries of human existence. It is in our nature as humans to be curious about the past and it is our responsibility as a society to be respectful of its lessons. A greater knowledge of our

Governor Jim Geringer signs the proclamation declaring September to be Wyoming Archaeology Awareness Month. Looking on is the Archaeology Month committee.

past makes a stronger foundation for our future.

FOR THESE SIGNIFICANT REASONS, I, JIM GERINGER, Governor of the State of Wyoming, do hereby proclaim September, 1998, to be *WYOMING ARCHAEOLOGY AWARENESS MONTH* in Wyoming and urge the people of Wyoming to take part in the activities planned to enhance public awareness of archaeology.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the Great Seal of the State of Wyoming to be affixed this 24th day of August, 1998.

Governor

ATTEST:
Secretary of State

WYOMING ARCHAEOLOGY AWARENESS MONTH
1998 CALENDAR OF EVENTS

Casper, Cheyenne, Cody, Douglas, Dubois, Evanston, Fort Bridger, Fort Laramie, Kemmerer, Lander, Laramie, Lingle, Newcastle, Pine Bluffs, Powder River, Rawlins, Rock Springs, Saratoga, Shell, Sundance, Tensleep, Wheatland, Wright, Colorado, South Dakota

GENERAL

* The Office of the Wyoming State Archaeologist Public Program has two traveling exhibits with text and photographs pertaining to Wyoming archaeology. These can be made available on loan to schools and museums. One portrays Dr. George C. Frison and several of the sites he has investigated. The other covers Wyoming's cultural chronology and selected sites from each time period. If you would like more information on their availability, contact Judith A. Brown, Curator, (307)766-3671.

* The Office of the Wyoming State Archaeologist

Public Program has a list of speakers who would be willing to give a program on archaeology. For more information, contact Dr. Mark Miller at (307)766-5564 or email mmiller@uwyo.edu.

* Public/Educational Programs sponsored by the U.S. Forest Service:

Titles offered by Dave McKee, (307)326-5258, include: Tracking the Tie-Hack: Historic Logging in the Sierra Madre Mountains of Southern Wyoming; Archaeology of the Medicine Bow National Forest; Investigations at the River Bend Site: Winter on the North Platte River During the Protohistoric Period; and Project Archaeology: A Course for Educators and Activities for the Classroom.

Titles offered by Jeff Overturf, (907)870-2210, include: Teller City and the Mining Boom of North-Central Colorado; The Windy Ridge Site: Prehistoric Hard Rock Mining and Stone Tool Manufacture; and Flint Knapping Demonstration.

Casper

* Wyoming Archaeology Awareness Month Keynote Lecture for 1998. September 19, 7:00 p.m., Casper College, Wold Physical Science Building, Room PS 103. Dr. Tom Dillehay, University of Kentucky at Lexington, will be speaking on Pre-Clovis Culture. The public is welcome.

* Casper Chapter, Wyoming Archaeological Society. Meetings held May 13, September 9, and October 14, 1998 at the Career Studies Building, Casper College. Contact Kerry Lippincott, (307)235-8957 or email lippincott@caspers.net.

CHEYENNE

* Fort Fred Steele and the White River Expedition of 1879, slide presentation by Dr. Mark Miller. September 10, 7:00 p.m., Wyoming State Museum. Please contact Heyward Schrock at 307(777-7021) for more information.

* Cheyenne Chapter, Wyoming Archaeological Society, Monthly Meeting. May 21, 7:00 p.m. Laramie County Community College, CCI, Room 123. This will be the last meeting until fall. The public is welcome.

* Cheyenne Chapter, Wyoming Archaeological Society, Summer Activities. Field trip to Fort Laramie excavations. June 1998, date and time TBA; Shirley Basin Field Trip/Camp Out, July 11-12. BYO tent, food, water, etc.; Hell Gap Site and Spanish Diggings Area Field Trip, August 1998, date and time TBA. For more information, please call Nick Palmer, Cheyenne Chapter President at (307)632-3921.

* F.E. Warren Air Force Base Archaeology Center. Open Monday through Friday, 8 a.m. - 4 p.m., year round. Call Base Museum at (307)773-2980 from the Main Gate Visitor's Center for access. For more information, contact Richard Bryant by email at bryant.richard@warren.af.mil or by telephone at (307)773-3667.

CODY

* Excavations at Moss Creek Site, 48PA919, on U.S. 14-16-20, west of Cody, sponsored by the Wyoming Department of Transportation. Mid-May to July. The public is welcome to visit. For more information, contact Dave Eckles at (307)766-5301 or email deckle@missc.state.wy.us or Julie Francis at (307)777-4740.

* Absaroka Chapter, Wyoming Archaeological Society. In June, July, and August, the chapter will be conducting field trips throughout the Big Horn Basin. They are working with the Big Horn Canyon National Park Service to record archaeological sites selected for assessment and survey baseline data. The chapter is also assisting Northwest College in cataloging artifacts excavated from the Pryor Mountains. This project will continue into the fall. Meetings are held second Friday of each month at 7:00 p.m., in the Barling Room of the Cody Courthouse. For more information, contact Barbara Nahas at (307)868-2685 or email nahas@tctwest.net.

* The Nez Perce (Nee-Me-Poo) Trail. Lecture sponsored by the Shoshone National Forest. Dates are varied. To be held at the Dead Indian Summit Overlook of the Clarks Fork Ranger District (north of Cody). Nearly everyone knows the story of the heroic running battle between the Nez Perce under Chief Joseph and the United States military forces. The Nez Perce (Nee-Me-Poo) Trail is central to the story. Using the overlook at the top of Dead Indian Hill, talks will be provided about the trail, its role in the 1877 Nez Perce War, its origins, and uses by other Native American groups. For more information, contact William Touches Deer Puckett, Shoshone National Forest, 808 Meadow Lane, Cody, WY 82414; (307)527-6241.

* The Mystery of the Dead Ranger. Lecture sponsored by the Shoshone National Forest. Dates are varied. To be held at the Dead Indian Summit Overlook of the Clarks Fork Ranger District (north of Cody). The setting is straight from a classic western story; cliffs and meadows, lonely winds, and a solitary grave marker. At the grave site we will examine the death of early Ranger Frank Hammitt, a mystery that survives till this day. Suicide, accident, and other explanations have all been proposed, but none fully accepted. For more information, contact William Touches Deer

Puckett, Shoshone National Forest, 808 Meadow Lane, Cody, WY 82414; (307)527-6241.

* Tales from the Old Days. Lecture sponsored by the Shoshone National Forest. Dates are varied. To be held at the Wapiti Ranger Station. In the early days of the Forest Service, construction was in the hands of the rangers. Wapiti Ranger Station was one of these early "do-it-yourself" projects undertaken by the men while still carrying out other duties. We will look at the history of early development of the National Forest System and the role of the Wapiti Ranger Station and others. Talk will be given by personnel portraying early rangers. For more information, contact William Touches Deer Puckett, Shoshone National Forest, 808 Meadow Lane, Cody, WY 82414; (307)527-6241.

DOUGLAS

* High Plains Drifter. July 5-10. Archaeological survey 45 miles southwest of Douglas. Field camp at USFS campground. Sponsored by USFS, Medicine Bow/Routt National Forest. For more information, contact Ian Ritchie, 2250 East Richards, Douglas, WY 82633; (307)358-3072 or email Ian.Ritchie/r2_mbr@fs.fed.us.

DUBOIS

* On the Trail of the Tie Hack. Lecture sponsored by the Shoshone National Forest. Place and time to be announced. Between 1914 and 1946, the Wind River Mountains supplied timber for over 10 million hand-hewn ties for the country's railroads. Working in the forest around Dubois, men known as "Tie Hacks" worked year-round helping to build the western United States. There are still many traces of their presence including buildings, sawmill sites, and flumes. Many were immigrants from Sweden and Norway, but the origins of other workers may surprise you. Come discover their stories and lasting heritage in the Wind River Country. For more information, contact William Touches Deer Puckett, Shoshone National Forest, 808 Meadow Lane, Cody, WY 82414; (307)527-6241.

EVANSTON

* Evanston Chinatown Field School and Volunteer Excavation. July 6-31. For more information, contact Dudley Gardner at Western Wyoming Community College, (307)382-1746.

FORT BRIDGER

* Fort Bridger Field School and Volunteer Excavation. July 6-31. Ft. Bridger State Historical Park. For more information, contact Dudley Gardner at Western Wyoming Community College, (307)382-1746 or Martin Lammars, Ft. Bridger State Historical Park, (307)782-3842.

FORT LARAMIE

* Fort Laramie National Historic Site. June 4-8, 11-15, 18-22, and 25-29. The National Park Service, University of Wyoming, and the Office of the Wyoming State Archaeologist are conducting a public education and volunteer archaeological excavation program. Archaeological investigations will be conducted around the Bachelor Officers' Quarters known as Old Bedlam to identify pre-military era structures that might be identified as Fort William, the original fur trader stockaded fort constructed in 1834 and destroyed in 1843. Volunteers interested in helping during the excavations should contact Danny Walker at dnwalker@uwyo.edu or (307)766-5565.

KEMMERER

* Wheat Creek Meadows Historic Trails Documentation. August 7-9. Sponsored by the Lincoln County Historical Society and the Bureau of Land Management. At 8:00 a.m. each morning the group will leave from Kemmerer BLM Office, 312 Highway 189 N., and return at 5:00 p.m. Please contact Lynn Harrell, BLM, (307)877-3933, ext. 115 or Terry Del Bene, BLM, (307)352-0301 if you plan to attend. BYO lunch, water, hiking boots; we'll car pool to the field. Open to the public; no charge.

LANDER

* Pioneer Museum Cataloging Program. May and June. Sponsored by the Fremont County Chapter of the Wyoming Archaeological Society. Chapter members and the public are welcome to volunteer to catalog artifacts for a museum display on the developments of lithic tools. There will also be a flint knapping demonstration. Contact Todd Guenther, Pioneer Museum, 630 Lincoln, Lander, WY 82520; (307)332-4137 or Eva Peden at epeden@tcinc.net.

* Test excavations at Miner's Delight "Saloon" cabin, near South Pass, Fremont County. August 3-7. To sign up or gain more information, contact Craig Bromley, Bureau of Land Management, Lander; (307)332-8400 or email wycbromley@wy.blm.gov.

LARAMIE

* "Celebrating 50 Years of Archaeological Research at the University of Wyoming", Wyoming Archaeology Society Fall Workshop. Saturday, November 7, all day. For more information, contact Dr. Mark Miller at (307)766-5564, email mmiller@uwyo.edu or Kate Maxfield at (307)766-

5136, email max@uwyo.edu.

LINGLE

* Archaeology Job Program for Kids. June 1-July 31. Sponsored by the Western Plains Historic Preservation Association. For more information, contact George Zeimens at Box 381, Lingle, WY 82223, (307)837-3052.

* Summer Archaeology Field School. August 3-13. Sponsored by the Western Plains Historic Preservation Association. Participants can attend portions or all of this session. Project will focus on Jewett Mammoth site, 10-mile on Canyon Springs state stations and Latham Creek Cave. Tours to Spanish Diggings and mountain sheep traps will also be provided. Participants will be asked to chip in for gasoline. Fees are $300 for 10 days and $200 for five days or less. Participants must enroll before May 1 for planning purposes. For more information, contact George Zeimens at Box 381, Lingle, WY 82223, (307)837-3052.

NEWCASTLE

* Cheyenne-Deadwood Trail Trek. September 12. Trekkers should meet at the Newcastle BLM parking lot at 8:00 a.m. Bring a picnic lunch and drinking water. The Trek will follow a scenic portion of the historic trail along Stockade Beaver Creek to the South Dakota border. The route passes several stage stations, including the famous robbery location at Canyon Springs. Trekkers can follow a short segment of the trail on public lands. The Trek will include a demonstration of using GPS equipment to locate and map places on the ground using radio signals from satellites. For more information, contact Alice Tratebas, Bureau of Land Management, 1101 Washington Blvd., Newcastle, WY 82701; (307)746-4453 or email wyatrateba@wy.blm.gov.

* Ancient Trails Chapter of the Wyoming Archaeological Society. Meetings second Tuesday of every month. Place varies, call for more information. Monthly meetings focus on guest speakers or project work such as excavations and research of the Cheyenne-Deadwood Trail. Call for special summer activities, including field trips and fieldwork. For more information, contact Cher Burgess at (307)283-1154 or email sloopy@vcn.net.

PINE BLUFFS

* High Plains Project Field Training Workshop. June 1-5. Contact Chuck Reher at (307)766-2208 or email arrow@uwyo.edu.

* High Plains Archaeology Project. June 9-August 25. Closed some Mondays and no excavations every other weekend. Call ahead to the High Plains Museum, (307)245-9372, or the University of Wyoming Anthropology Department, (307)766-5136, for schedules and tours.

POWDER RIVER

* Prehistoric Field Methods Class. June 22-July 3. Sponsored by Western Wyoming Community College and Archaeological Services. For more information, please contact Kevin Thompson at (307)382-1668 or email kthompso@wwcc.cc.wy.us.

RAWLINS

* Rawlins Chapter, Wyoming Archaeological Society. Regularly scheduled meeting on September 17 at 7:30 p.m.; Bess Sheller Room of the Carbon Building, 4th and Buffalo. For more information, call Bill Scoggin at (307)324-6549.

ROCK SPRINGS

* Tour of Oregon Trail. August 22. Guided by BLM archaeologists and historians. Caravan will leave the BLM Rock Springs Office parking lot at 8:00 a.m. Bring water, lunch and 4WD vehicle. Please contact Terry Del Bene at (307)352-0301 for more information. Public is welcome.

* Museum Exhibit Dedication. September 12 at 7:00 p.m. Exhibit and Lecture on the Pine Springs Site by Dr. Robert Kelly, University of Wyoming. Natural History Museum, Western Wyoming Community College. For more information, contact Kevin Thompson, Western Wyoming Community College at (307)382-1665 or Russ Tanner, Sweetwater Chapter of Wyoming Archaeological Society at (307)352-0223 or (307)382-5765 or email wyrtanner@wy.blm.gov.

* Tours of excavation sites in southwestern Wyoming. The Sweetwater Chapter of the Wyoming Archaeological Society may sponsor tours to projects if there is sufficient public interest. Bring your own vehicle, lunch and water. For more information, contact Russ Tanner, Sweetwater Chapter of Wyoming Archaeological Society at (307)352-0223 or (307)382-5765 or email wyrtanner@wy.blm.gov.

SARATOGA

* Fort Fred Steele and the White River Expedition of 1879. June 20 at 7:00 p.m. USFS Brush Creek Work Center. Slide presentation by Dr. Mark Miller. Please contact Dave McKee at (307)326-5258 for more information.

* Cherokee Trail Chapter of the Wyoming Archaeological Society, Saratoga, Wyoming. Meetings second Friday of each month, September through May.

Meetings held at the Platte Valley Lutheran Church; 7:30 p.m. For more information, contact Sue or Dave McKee at (307)326-5258 or (307)326-9832.

SHELL

* Black Mountain Archaeological Project. June 10-19. Advanced Field School. This is a cooperative project between the University of Wyoming and the Bureau of Land Management, Worland District to investigate two rockshelters in the Big Horn Mountains. For more information about the field school, contact Marcel Kornfeld at the University of Wyoming, (307)766-3548. During the project, please contact the BLM at (307)347-5100.

SUNDANCE

* University of Wyoming Field School at the Vore Site and Sand Creek Site. June 9-July 17. Will also be working at the Donovan site in Northeast Colorado. Contact Chuck Reher at (307)766-2208 or email arrow@uwyo.edu.

TENSLEEP

* Tensleep Rock Art Recording Project. June 12-14. Sponsored by the Nature Conservancy. Arrive at the camp after 3:00 p.m. on June 12. Families welcome. Housing, kitchen facilities, and showers provided at no charge. Bring sleeping bags, pillows, food. No dogs allowed. For more information, contact Mike Bies at the Worland District, Bureau of Land Management, (307)347-5100 or email wymbies@wy.blm.gov.

WHEATLAND

* Excavations at the China Wall Site. June 8-August 8. Highway 34 in Sybille Canyon, sponsored by the Wyoming Department of Transportation. The public is welcome to visit. For more information, contact Dave Eckles at (307)766-5301 or email deckle@missc.state.wy.us or Julie Francis at (307)777-4740.

WRIGHT

* Thunder Basin Stone Circle Sites Survey. June 28-July 3. Archaeological site recording 15 miles from Wright. Sponsored by the USFS, Douglas Ranger District. Field camp at USFS Work Center. For more information, contact Ian Ritchie, 2250 East Richards, Douglas, WY82633; (307)358-3072 or email Ian.Ritchie/r2_mbr@fs.fed.us.

COLORADO

* Fort Fred Steele and the White River Expedition of 1879. May 27 at 7:00 p.m., Denver History Museum. Slide presentation by Dr. Mark Miller. Please contact Robin Jacobs at (303)866-4584 for more information.

* Nun Creek Archaeological Excavation. August 16-21. Archaeological test excavations and intensive site mapping. Sponsored by the U.S. Forest Service, Arapaho and Roosevelt National Forests; northeast Colorado, 60 miles northwest of Fort Collins. Primitive field camp. For more information, contact Jeff Overturf at the Arapaho and Roosevelt National Forests, 240 W. Prospect, Fort Collins, CO 80526; (970)498-1281 or email Jeff.Overturf/r2_mbr@fs.fed.us.

* Indian Peaks Wilderness Survey. August 18-23. Archaeological survey west of Boulder. Sponsored by the U.S. Forest Service, Arapaho and Roosevelt National Forests. Camping in USFS campground. For more information, contact Jeff Overturf at the Arapaho and Roosevelt National Forests, 240 W. Prospect, Fort Collins, CO 80526; (970) 498-1281 or email Jeff.Overturf/r2_mbr@fs.fed.us.

* Buttes Bison Bed Excavation. September 14-18. Archaeological test excavations in northeast Colorado (12 miles to Grover). Sponsored by the U.S. Forest Service, Medicine Bow-Routt National Forest. Primitive field camp. For more information, contact Sue Struthers at the Medicine Bow-Routt National Forest, 925 Weiss Drive, Steamboat Springs, CO 80487; (970)870-2238 or email Sue.Struthers/r2_mbr@fs.fed.us.

SOUTH DAKOTA

* Kate Reynolds Homestead Passport in Time (PIT) Project. July 12-18. Cheyenne Crossing, South Dakota. Sponsored by the Spearfish/Nemo District, Black Hills National Forest. Camping on-site or nearby. Toilets and water provided. USFS campgrounds available within 10 miles on a space available basis. Motels within 25 miles. Contact Tim Cowan, Spearfish/Nemo District, 2014 N. Main, Spearfish, SD 57783; (605)642-4622 or email cojo5@iw.net or Cher Burgess, 201 S. 21st St., Sundance, WY 82729; (307)283-1154 or email sloopy@vcn.net. Kate Reynolds (1849-1947) came to the Black Hills in 1876 and died there 71 years later. During this time, she patented a homestead, ran a boarding house and worked in dairy farming, timbering, cooking, laundering, nursing and child care. Kate survived Quantrill's raid on Lawrence, Kansas at the age of 14 by hiding in a well. She had moved to Lawrence from Arkansas with her mother, who had been transported from Virginia to Arkansas as a slave in the early 1840's. To date, documentary evidence of this amazing woman's life is sketchy, but

each new lead produces hope for more, and a close look at the material culture left behind on her homestead can also enrich our knowledge of her life. This project will involve a surface survey of Kate's 160 acre parcel and recording of all cultural features found. We will use metal detectors to identify subsurface artifact concentrations that may then be investigated through test excavations.

WYOMING ARCHAEOLOGY AWARENESS MONTH 1998 KEYNOTE LECTURE

Mysteries of the Past: The Earliest Americans

Presented by Dr. Tom Dillehay, University of Kentucky at Lexington Saturday, September 19, 1998 at 7:00 P.M. Casper College, Wold Physical Science Building, Room PS 103, Casper, Wyoming

There is no greater archaeological mystery than the peopling of the Americas. This subject constitutes one of the major controversies of American archaeology and has also caused conflict between archaeologists and Native Americans. Most recently, one of the central figures in this controversy has been Dr. Tom Dillehay, from the University of Kentucky. Dr. Dillehay has long argued, based upon evidence from archaeological sites in South America, that the Americas were populated much earlier than was generally accepted by a number of prominent North American archaeologists. Dillehay's findings are now gaining acceptance, even among his original detractors, as discussed in the October 1997 issue of National Geographic. Acceptance of a greater antiquity for the human occupation of the Americas places American archaeology at the cusp of a major paradigm shift. This promises to change theoretical perspectives, research goals, and how the prehistory of the Americas is taught in the classroom.

It was not until the discovery of a distinctive Paleoindian projectile point with extinct Ice Age bison in 1926 that archaeologists were willing to accept the possibility of a late Pleistocene (Ice Age) antiquity for Native Americans. The advent of radiocarbon dating in the mid to late 1950s enabled archaeologists and geologists to assign a more specific age estimate to the entry of humans from Asia into North America approximately 12,000 years ago. Geologist Vance Haynes, from the University of Arizona, has been the most vocal proponent for this hypothesis. Over 30 years ago he first suggested that Clovis mammoth hunters were the earliest Americans, based upon evidence from several sites in western North America with radiocarbon ages all slightly older than 11,200 years ago. Haynes formulated a model of human migration from Alaska southward to suggest that colonization of North America by the Clovis mammoth hunters could have been accomplished in as little as 500 years.

For over 30 years, archaeological investigation at sites such as the Colby site near Worland, Wyoming supported this hypothesis. However, there was also a growing body of radiocarbon dates from a number of sites in both North and South America which did not fit the "Clovis-first" model. Dates from these sites ranged anywhere from over 30,000 to 11,000 years ago. These dates were all refuted by Vance Haynes and his colleagues for a variety of reasons, including contamination of radiocarbon samples, problems with stratigraphic context, mixing of younger artifacts into older strata by natural processes, and a variety of other reasons, sometimes resulting in rather acrimonious debate.

Central in this debate has been the long-term research at the Monte Verde site in Chile by Dr. Tom Dillehay. Monte Verde has produced evidence of house floors and tent stakes, log foundations, footprints, stone and bone artifacts, mastodon hide, cordage, and numerous other domestic items, all securely dated to more than 1,000 years older than the Clovis sites of the North American Plains. From the North American perspective none of these finds, or numerous other South American sites with pre-Clovis dates, were given any credence by the establishment. During the 1990s, findings from Monte Verde could no longer be ignored, and a select committee of 12 specialists in early American archaeology (including Vance Haynes) were assembled at the site to reach consensus about its age and authenticity. Their conclusion, as summarized in National Geographic, was that the Clovis-first age barrier had finally been broken.

The story of Monte Verde and the Clovis-first hypothesis provide a fascinating glimpse into how humanistic and scientific disciplines change. The acceptance of pre-Clovis dates will forever change our views of the prehistory of the Americas. The topic is of central importance to Wyoming archaeology, as several Wyoming sites have supported the Clovis-first hypothesis. At the same time, noted researchers such as Dr. George Frison have also suggested the existence of ancient, montane-oriented, cultural complexes contemporaneous or perhaps even older than Clovis. The Monte Verde-Clovis-first story helps place Wyoming prehistory in the larger context of world prehistory and should cause archaeologists to look in new places and beyond the expectations of prevailing paradigms.

Dr. Dillehay will discuss the strengths and weakness of new archaeological, linguistic, physical anthropological, genetic, and paleogeographic data relating to the peopling of the Americas and to critically evaluate who were the first Americans. Dr. Dillehay is Professor of Anthropology at the University of Kentucky and has over 20 years experience in South American archaeology and research on the peopling of the Americas. He has published 11 books and over 100 articles. His most recent book on Monte Verde, published by the Smithsonian Institution Press, has been lauded as setting new standards of documentation and reporting and received the 1998 outstanding book award from the Society for American Archaeology.

The public is invited to attend the 1998 Wyoming Archaeology Awareness Month Keynote Lecture. "Mysteries of the Past: The Earliest Americans" is sure to capture the imagination and interest of the audience.

VISITING SCHOLARS EXPERIENCE HIGH PLAINS ARCHAEOLOGY

Two Argentinean archaeologists accompanied UW Anthropology professor Robert Kelly on a tour of High Plains archaeological sites culminating at the KRMP Folsom site near Farson, Wyoming.

Roxanna Cattaneo and Andreas Izeta will be spending the fall semester at UW as visiting scholars in the George C. Frison Institute of Anthropology and Archaeology. Cattaneo is a PhD candidate from La Plata University in La Plata, Buenos Aries Province, Argentina. She is studying chipped stone technology at Late Pleistocene sites in Patagonia. Izeta is also a PhD candidate at La Plata University, where he is studying Formative (ca. 1,000 years ago) period sites in northern Argentina.

They were led to the Institute and Bob Kelly by another South American archaeologist who found the University of Wyoming's Anthropology Department's home page on the World Wide Web.

Over the summer Izeta and Cattaneo helped Kelly excavate the Pine Spring site in southwestern Wyoming, a site originally reported by Floyd Sharrock in 1966. Pine Spring is a stratified, multi-component site where camel bones were found in the lower levels. They also assisted Dr. Charles Reher at the Vore site and Sand Creek rock shelter in northeastern Wyoming.

The KRMP Folsom site was discovered by avocational archaeologist Jack Krmpotich of Rock Springs. Excavations conducted during three field sessions have revealed a rich Folsom workshop yielding what emeritus Anthropology Professor George C. Frison has termed "one of the best Folsom sites currently being studied."

The two have bought a used car and hope to explore Wyoming and the United States. Cattaneo says that certain parts of Wyoming remind her of Patagonia; however, she says the climate is better in Wyoming.

1999 ISLAND IN THE PLAINS CONFERENCE

The 1999 Island in the Plains Conference will be Island in the Plains will be held Feb 6 & 7 at the new Journey Museum in Rapid City, SD. Mike Fosha is accepting abstracts at the State Archaeological Research Center, P.O. Box 1257, Rapid City, SD 57709-1257 or by e-mail to < mfosha@silver.sdsmt.edu >.

IN MEMORIAM

HELEN BRYANT

It is with sadness we note the recent passing of Helen Bryant of Casper. Helen was a long time member and strong supporter of the Wyoming Archaeological Society. She served for many years as chair of the student scholarship (Mulloy Scholarship and Frison Scholarship) committee. A memorial for Helen Bryant has been established in WAS, with donations going to scholarships. Elsewhere in this issue can be found a form to be used for making this donation in Helen's memory.

A REQUEST FROM THE STATE ARCHAEOLOGIST FOR RESEARCH ASSISTANCE

Dear Wyoming Archaeological Society Members

Avocational archaeologists in Wyoming, especially members of the Wyoming Archaeological Society (WAS), always have been tremendous sources of information on important archaeological discoveries. Similar voluntary support is available to researchers elsewhere on the Plains, and Dr. Jack Hofman has been able to utilize such help to develop a fluted point survey in states like Oklahoma and Kansas. He and I would like to initiate a similar project for Wyoming, using the attached reporting form.

If you know of a fluted point (Folsom, Clovis) locality, or have a collection from one, please fill this form out and return it to one of the addresses listed at the bottom. You do not have to worry about completing every entry, and you only need to be as specific as you can. If you know a site location is in a particular county our township, but do not know the section, then just list the county or township. We are interested in descriptions and measurements of whole or fragmentary projectile points, and all the information you provide will be kept confidential.

We hope to compile information on as many discoveries as possible over the next year or so. Folsom and Clovis weapon technologies are relatively easy to identify compared to other Paleoindian assemblages, so we are confident the geographic distribution of known localities may help us understand certain aspects of prehistoric human behavior. From the forms you return, we can begin to get a picture of this distribution. We also can begin to see if certain raw materials show up more in one area than another, and whether or not different production technologies (flaking patterns) occur throughout the entire region. Many other lines of research may develop from this project.

Your participation will be a big help in our effort to document fluted point localities in Wyoming, and any information you provide will be greatly appreciated. Please call the Wyoming State Archaeologist's office at the number provided if you would like to visit about filling out a form, discuss a site or artifact you would like us to see, or if you just want to talk about archaeology.

Thank you in advance for any assistance you can provide. We will try to keep the WAS membership up-to-date through *The Wyoming Archaeologist* as we interpret any findings.

Dr. Mark E. Miller
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Wyoming State Archaeologist's Office
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GREAT PLAINS FLUTED POINT SURVEY
specimen data sheet 5/1/92 JLH

Date:_____ Recorder:_____ Spec. Number:_____ Type:_____
Collection of:_____
Specimen found by:_____
Find Spot--State:_____ County:_____ River System:_____
Site:_____ Legal:_____ 1/4S:___T:____R:_____
Context:(field, pasture, road, streambed, terrace, upland, slope, excav.)
_____
Type of Specimen: point--fluted/unfluted preform-fluted/unfluted
_____
Portion present: (complete, base, blade, tip, edge, channel flake)
_____
Lithic Material: (include translucence, color, texture)
_____
Ultraviolet response: LW/SW_____
Thermal alteration:_____
Abrasion/Patina:_____

Measurements (cm/in):
Length:_____Width:_____Basal Width:_____Thickness:_____
Fluted Thickness:_____Basal Depth:_____ Weight:_____(gm/oz)
Flute A: length___width_____; Flute B: length_____width_____
Flake Scars (per/cm):face_____edge_____; Stem Length:_____

Reworking: (tip/base/edge)_____
Flaking Pattern A:_____B:_____
Flake Blank: (Y/N)_____
Distal end of flute A: (extended to tip y/n)
removed by flaking:___hinged:___feathered:____missing:_____
Nipple: (present/absent/remnant)_____
Base outline:_____Edge outlines:_____
Edge Grinding A:____Edge Grinding B:____ Basal Grinding: _____

Photos: y/n, b&w, slides, color/ Draw specimen below or on back

Notes:

Return form to:

Jack L. Hofman
Anthropology Dept.
622 Fraser Hall
University of Kansas
Lawrence, KS. 66045
913/864-4103

or

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X-RAY FLUORESCENCE SIGNATURES OF WYOMING OBSIDIAN SOURCES

by
Raymond Kunselman

ABSTRACT

I report on x-ray fluorescence (XRF) analysis of the chemical trace element compositions of obsidian sources in Wyoming and include nearby important sources in Idaho. The obsidian source data assists in prehistoric artifact studies of interregional contacts and connections. Secondary pebbles and primary geological deposits are included as sources.

INTRODUCTION

The chemical composition of each obsidian source is a distinct signature because the variations of all element concentrations within sources are small and the variations of some element concentrations between sources are large relative to the standard deviations or measurement uncertainties. The geochemical source of a prehistoric obsidian or ignimbrite artifact can be determined using an XRF signature. This assumes access to the XRF chemical signatures of the sources that were available prehistorically.

Chemically distinguishing sources of obsidian with XRF is similar to camera photography with visible color. One uses x rays instead of visible light, and the apparatus is not portable. XRF spectroscopy has been used to source obsidian artifacts collected from several sites in Wyoming and the region (Connor and Kunselman 1995; Kunselman 1991, 1994; Kunselman and Husted 1996). The trace element concentrations for artifacts are compared to trace element concentrations from known sources to identify matches. Obsidian from a single source can have variations in color, and obsidian from several distinct sources can be the same color. This means that human observations with visible light and color are not always reliable to determine the source of obsidian. X rays are used to interact with the chemical atoms of the obsidian and produce characteristic fluorescence radiations for each element, and these allow determination of the composition of the obsidian.

Western Wyoming and other western states were sources of obsidian for prehistoric peoples in much of America (Frison et al. 1968; Griffin et al. 1969). Wyoming was on prehistoric Northwest Plains connecting routes for transport of obsidian from Yellowstone and Idaho to locations which have become Hopewell archaeological sites (Anderson et al. 1986; Hughes and Nelson 1987; Wright and Chaya 1985). From the south, materials from sources in New Mexico were transported to Wyoming (Reher et al. 1995). Regional sources neglected present geographic and political state borders such as between Wyoming and Idaho. If the size of a naturally moved pebble was adequate for a desired tool, it is not unreasonable to assume that the primary source was not visited. The patterns of sources utilized has allowed establishing connections and contacts in considering questions of the influences in acquisition, distribution, use of obsidian, and possible trade or travel routes. The archaeologist must determine the behavior that resulted in distinct distributions of materials. The information of the source of the obsidian artifacts is to help answer questions on kinds of prehistoric behavior.

METHODOLOGY

A non-destructive analysis procedure was used to analyze a range of artifact sizes that all contain source information. The XRF procedure is reliable to avoid false identifications that would lead to wrong statements about behavior. The procedures and precision of the XRF method are described elsewhere (Giauque et al. 1993; Kunselman 1994).

I report here on the chemical element concentrations in parts per million (ppm) of several sources of obsidian in western Wyoming. Most analyses were done with the energy dispersion XRF apparatus at the

University of Wyoming Physics Department (Kunselman 1991), with other sources analyzed commercially with the wave-length dispersion XRF apparatus at the Bureau of Mines in Socorro, New Mexico.

The diagnostic peaks in the analyses are the five trace elements rubidium (Rb), strontium (Sr), yittrium (Y), zirconium (Zr), and niobium (Nb) (Table 1). To confirm some identifications, iron (Fe) is also utilized, but this is not generally reliable for small artifacts with wave-length dispersion. The analyses to determine matches of artifacts to known sources are done comparing all five trace elements, and since it is unlikely the whole universe of sources is included, an artifact source may have to be designated as unknown. The source catalog of trace element signatures that I have measured is supplemented by data available in the literature (Anderson et al. 1986; Nelson 1984). With five diagnostic elements the chances are small that two artifacts could be from different sources but produce an identical signature, and no identical sources have been found. The inventory of element composition signatures that I have been acquiring for various sources show overlap of some elements but differences in other elements for Rb and Zr for Fish Creek (FC) and Wright Creek (WC) (Table 1).

SOURCE DESCRIPTIONS

The approximate locations of the sources are shown in Figure 1, and the key for the sources is the same as used in Table 1.

OBSIDIAN CLIFF, YELLOWSTONE NATIONAL PARK, WY (YC)

The area where good material is available covers at least five km by two km. A visit after the 1988 fires allowed observation of the numerous prehistoric excavation pits where material was obtained. Crystal Creek north of the cliff face had material which gave the same XRF signature for the trace element concentrations. Initial samples were provided by Danny Walker.

TETON PASS, WY (TP)

Teton Pass is west of Wilson, WY and the source site appears to be a primary geological vent source located about one mile south of the highway pass. A pit occurs 20 meters southeast and it is not clear how important that was either as a source or in a search for better quality material. I was directed to this site by George Frison.

FISH CREEK, WY (FC)

Fish Creek is located near Wilson, WY. George Frison showed me material from Fish Creek along Paintbrush Lane south of Wilson. Obsidian occurs in

Table 1: Wyoming obsidian sources chemical concentrations in parts per million (ppm). Descriptions of sources found in text.

		ELEMENT CONCENTRATIONS (PPM)				
		Rb	Sr	Y	Zr	Nb
YC	Obsidian Cliff, Yellowstone National Park, WY					
	n=9	237	1	80	220	65
		±7	±4	±9	±7	±9
TP	Teton Pass, WY					
	n=9	110	136	22	92	35
		±5	±6	±8	±6	±9
FC	Fish Creek, WY					
	n=9	117	140	23	91	37
		±5	±6	±8	±6	±9
FS	Fish Creek var.2, WY					
	n=5	109	192	22	150	36
		±5	±7	±8	±6	±9
HC	Horse Creek, WY					
	n=8	333	15	74	37	60
		±9	±4	±9	±6	±9
PR	Phillips Ridge, WY					
	n=4	66	156	12	105	12
		±4	±6	±8	±6	±9
EQ	Engineers Quarry, WY					
	n=9	78	212	27	270	21
		±4	±8	±8	±7	±9
GR	Green River Basin, WY					
	n=6	72	221	27	185	20
		±4	±9	±8	±7	±9
GS	Green River Basin var. 2, WY					
	n=1	143	182	22	103	38
		±9	±9	±8	±7	±9
GL	Grassy Lake, WY					
	n=9	186	0	75	253	67
		±6	±4	±9	±7	±9
CP	Conant Pass, WY					
	n=9	165	20	72	189	63
		±9	±4	±9	±7	±9
TA	Bear Gulch, Targhee National Forest, ID					
	n=9	165	48	40	312	61
		±6	±4	±8	±7	±9
WC	Wright Creek, ID					
	n=9	119	85	32	87	32
		±5	±5	±8	±6	±9

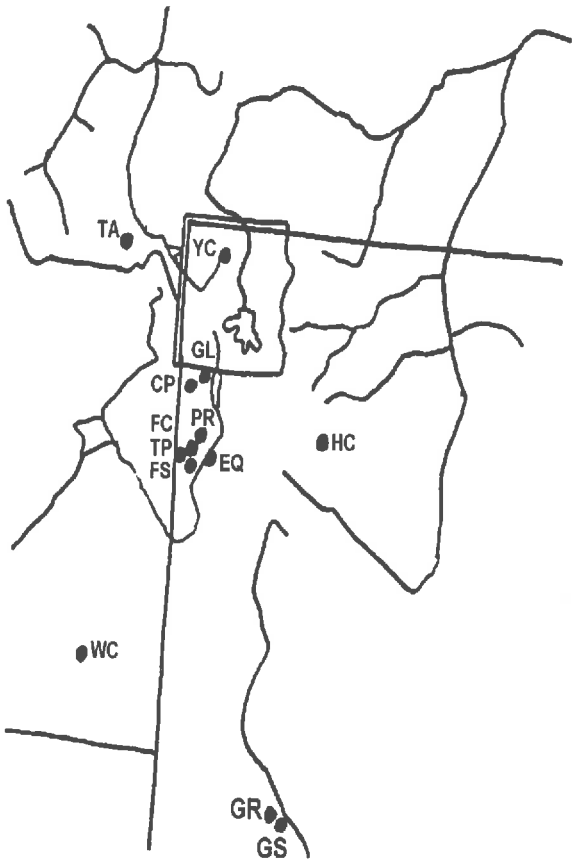

Figure 1: Map of Wyoming obsidian source locations. Location abbreviations given in text and Table 1.

the creek south of the Lane, on the hillside to the northwest, and in a well drilled east in the housing area. Well samples provided by David Love of the USGS in Laramie were from every five feet to about 200 feet, and included ice and pumice. The XRF signature matches that of Teton Pass (Table 1). A natural hypothesis is that material could be found from the Teton Pass source down Black Canyon to the Fish Creek area, and that this distribution represents past erosion and deposition.

FISH CREEK SECOND VARIETY, WY (FS)

About 10% of the obsidian along Paintbrush Lane up from Fish Creek is of a chemically distinct second variety. Jamie Schoen of the Bridger Teton National Forest showed me where this type also appears alone about one-half mile south in the Crescent H subdivision as a dense concentration similar to the concentration at Teton Pass, and along Mosquito Creek. Whether the Crescent H occurrence is a vent could be determined with digging. No obsidian with this chemical signature was found at the Teton Pass source site.

HORSE CREEK, WY (HC)

Samples were provided by David Love and Don Davis. The pebbles, to 4.0 cm, are available on the terraces near the pass on Horse Creek north of Dubois. I have not discovered with XRF any artifacts made of this source material.

PHILLIPS RIDGE, WY (PR)

The material is in a dense concentration along the dirt road and power line about three miles north west of Wilson. The material is pebbles to 5.0 cm, and is dense in spots. I was directed to this source by a local ranch hand.

ENGINEER QUARRY, WY (EQ)

The material occurs along the east side of the Snake River about one mile north of the road from Jackson to Wilson. Most of the material was exposed in the process of removing material for fill and hence the name. Some of the material is found in 25 cm blocks, and red as well as black. The XRF signature (Table 1) represents both color kinds of material. I was directed to this site by Irv Friedman of the Denver USGS.

GREEN RIVER, WY (GR)

The water worn pebbles, to 4.0 cm, were found in several places on the elevated lands along Highways 372 and 374 northwest of the town of Green River. Jim Miller reports on finding the material extensively in the Basin (Miller 1991:456). Most of the material provided by Jim Miller, Charlie Love, myself, and others has an XRF signature that nearly matches Engineer Quarry (Table 1). One 3.0 cm oblong sample found by Charlie Love has the signature of FS and this is given a separate designation GS, Green River second variety.

GREEN RIVER SECOND VARIETY, WY (GS)

The signature that matches FS is given a separate designation of GS, Green River second variety. This

indication of geological transport from the north is worth pursuing further.

GRASSY LAKE, WY (GL)

Grassy Lake is along the southern border of Yellowstone National Park and material appears as pebbles in streams and in blocky chunks to 40 cm in road cuts. The material is of poor knapping quality because of numerous inclusions. More material is available west of the lake at the present time because of road grading. Artifacts of this source material are reported in the literature (Connor and Kunselman 1995; Kunselman 1991).

CONNAT PASS, WY (CP)

The initial sample was provided by George Frison. Subsequent material was obtained west of Grassy Lake in drainages beyond Boone Creek. The source near the pass itself has not been visited. The material is of poor knapping quality because of numerous inclusions. An artifact of the source material is reported in the literature (Kunselman 1991).

BEAR GULCH, ID (TA)

The samples from Bear Gulch, Targhee National Forest, in the Centennial Mountains, near Anthony, ID were initially provided by Jim Woods of the Herrett Museum and Skip Wellington of the Targhee National Forest. This ignimbrite is of excellent knapping quality and was transported to the Hopewell area along with Obsidian Cliff material (Hughes and Nelson 1987; Wright et al. 1986).

WRIGHT CREEK, ID (WC)

This quality knapping material occurs in mining tailings, along and on dirt roads, and in several drainages north of Malad. A local rancher had never seen obsidian attached to any outcropping or in a primary position. The material occurs in water-worn pebbles to 25 cm. Two first samples were provided in red and black forms by Jim Woods of the Herrett Museum. The chemical signature matches the eight obsidian artifacts of the Fenn Paleoindian cache (Frison 1991; Kunselman 1991). XRF signatures of element concentrations for Wright Creek are compared to the Fenn Cache (Table 2).

RESULTS AND DISCUSSION

The measured data for the several Wyoming sources is presented (Table 1). The indicated measurement uncertainties for the samples (Table 1) is based on the calibration of the apparatus and standard deviations of the sets of samples. Figure 2 uses the most diagnostic pair of element concentrations, rubidium (Rb) and zirconium (Zr), to make a bivariate plot.

The Teton Pass (TP) and Fish Creek (FC) sources appear to be chemically the same because each pair of element concentrations agree within the indicated measurement uncertainties. The primary location could be the Teton Pass (TP) volcanic tube or pipe south of

Table 2: Chemical composition (in ppm) of selected obsidian artifacts and sources. Fenn Cache data average for eight artifacts from Wright Creek. Fifth column is Elko point discussed in text. Columns 6-9 are selection of sources discussed in text.

Element	W[a] ID	W[b] ID	Fenn[c] Cache	Elko[a] Point	J[nd] Jemez	J[md] Jemez	J[sd] Jemez	MT[a] NM
	n=9	n=6	n=8	n=1	n=16	n=9	n=13	n=4
Rb	119 ±5	127 ±1	127 ±4	135 ±5	149 ±9	151 ±8	189 ±15	457 ±8
Sr	85 ±5	74 ±1	85 ±6	77 ±5	<2	<2	<2	2 ±2
Y	32 ±8	27 ±1	33 ±5	19 ±8	20 ±3	40 ±3	58 ±7	83 ±8
Zr	87 ±6	87 ±1	92 ±6	81 ±6	60 ±7	169 ±13	167 ±12	110 ±8
Nb	32 ±9	19 ±2	34 ±3	24 ±9	54 ±4	58 ±3	86 ±4	174 ±9

Key: WC = Wright Creek, near Malad, Idaho; JN = Polvadera Peak, north Jemez New Mexico; JM = Cerro del Medio, middle Jemez New Mexico; JS = Obsidian Ridge, Cerro Toledo, and Rabbit Mountain, south Jemez New Mexico; MT = Mount Taylor, New Mexico.

[a] Present work.[b] Giauque et al. 1993.[c] Kunselman 1991. [d] Glascock et al. 1997.

the Pass, with secondary sources occurring in south Jackson Hole at several places such as Paintbrush Lane.

The Green River pebble sources have been used for artifacts (Waitkus 1991). Jim Miller speculated the Green River material could have been moved from sources in the north (Miller 1991:456). The fact that the Green River (GR) signature is quite close to that of Engineer Quarry (EQ) suggests a possible relationship that might be worth pursuing for geological information.

The Fish Creek second variety (FS) signature almost matches one Green River second variety (GS) pebble found in lengthy searches. Many small artifacts in the basin have been measured with XRF to be the Green River (GR) signature and none with Green River second variety (GS). Obsidian is brittle and this makes it unlikely that large pieces could survive a long movement in fast water with other hard stones if only a few large pieces started the journey.

The procurement and utilization of Wright Creek (WC) obsidian led to artifacts that have been discovered up to great distance. Material from this source was used to produce all eight obsidian artifacts of the Fenn Cache. Table 2 indicates the average of these specimens, which were probably found near southwest Wyoming (Frison 1991). Artifacts from the High Plains Archaeology Project have been reported to match the Malad/Wright Creek source (Reher and Kunselman 1990; Reher et al. 1995). The chemical signature agrees with that presented by Giauque et al. 1993). A sourcing application will be discussed below.

The transport of Wyoming obsidian from Obsidian Cliff in Yellowstone National Park (YC) to Hopewell sites is well documented (Frison et al. 1968; Griffin et al. 1969). Idaho obsidian from Bear Gulch (TA) just west of the Wyoming border on Bear Creek in the Centennial Mountains of Targhee National Forest in Idaho was also transported to sites in Iowa (Anderson et al. 1986; Hughes and Nelson 1987). It would be interesting to determine whether both sources were transported along the same routes and at the same time. One might reconstruct the approximate transport routes from the swath that the reports of material at sites makes from the sources to the eastern destination areas. If one could locate a line of dense reduction debitage from camp stops along the return journey, it might be possible to determine whether the material was acquired directly or as a trade item.

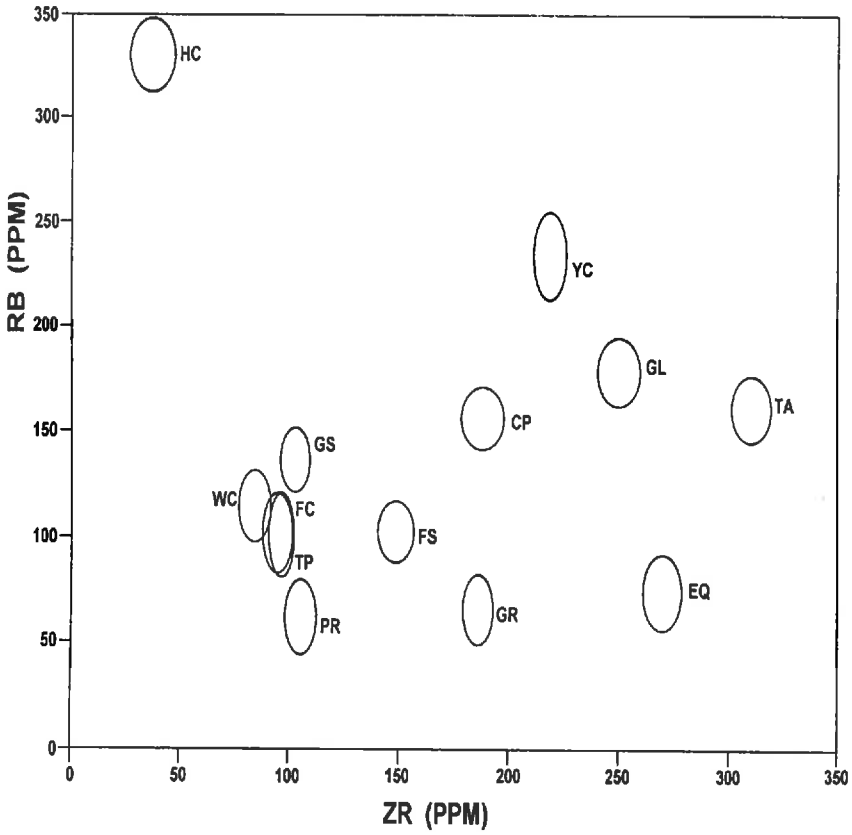

Figure 2: Bivariate plot of Wyoming obsidian concentrations (in ppm) for RB versus ZR. Source abbreviations presented in text and Table 1.

AN APPLICATION OF SOURCING

As an application of the XRF sourcing technique to establish a connection, an Archaic projectile point (Figure 3) was found on the San Pedro Land Grant on the east side of the Sandia Mountains in New Mexico by a local resident on a walk. The location was 300 m east of San Pedro Creek, 100m south of the Texas-New Mexico pipeline, and 500 m north of Sandia Knolls housing subdivision. The hillside is covered with grass, cac-

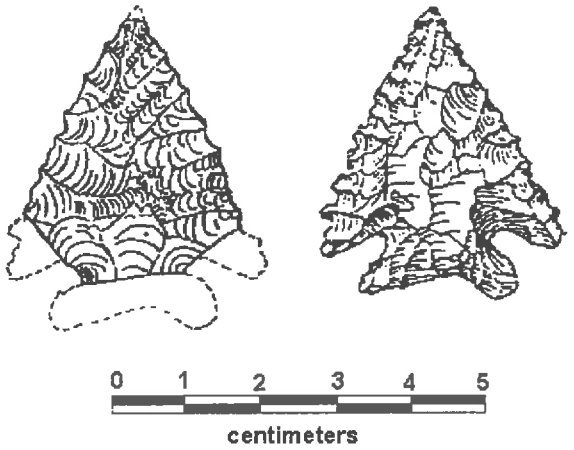

Figure 3: Elko projectile points. Left: from New Mexico and source from southern Idaho. Right: from Titmus and Woods (1986).

tus, pinon, and cedar brush at an altitude of 2700 m.

Most local exercise walkers do not leave the worn trail because of the rough vegetation. The surface artifact was found 200 m west of the trail, and was clearly an Archaic dart point which had suffered impact breakage. The question was immediately the source of the obsidian, and the expectation was that it would be one of the three good quality sources in the Jemez Mountains 150 km to the northwest. The artifact and nine flakes from the nearby trail were analyzed for trace elements with XRF. The flake artifacts were all from New Mexico sources and were returned to their find location on the foot trail. Of the nine flakes, five were from Rabbit Mountain/Obsidian Ridge in the southern Jemez, two were from Cerro Medio in the middle Jemez, one was from Polvadera Peak in northern Jemez, and one was from Mt. Taylor (this source of pebbles includes secondary deposits on the Rio Grande, Rio Puerco, and Grants Ridge area). The point artifact was not from any New Mexico sources I have knowledge of and the data for the artifact are presented in Table 2, column 5. The point has substantial Sr and the four New Mexico sources are depleted in Sr. The point matches the trace elements of the Wright Creek (WC) source near Malad Idaho.

To get to the east side of the Sandia mountains from Malad is a considerable distance. Several connection routes are possible, with the shortest going across Wyoming. Because the source was close to the Idaho-Wyoming border it would require extra effort to avoid Wyoming.

The authenticity of the point can be of concern. The breakage pattern reveals a single impact break and supports use as a weapon. There is no evidence to indicate reworking or reuse. The point is similar to but not the same as New Mexico styles. Jim Woods of the Herrett Museum in Idaho recognized the style as Elko corner-notched with double-diagonal or chevron pattern, and confirmed the breakage features are commonly caused from bending during impact (Titmus and Woods 1986). This Middle Archaic cultural association, side-eared Elko projectile point is 3.0 cm in width (Figure 3) along with a sketch of an unbroken point from Titmus and Woods (1986). With no recent reworking, and with no evidence of non-authenticity, the artifact and analyses indicate early prehistoric origins in the region of the source material in southeast Idaho.

Obsidian is a component of many lithic assemblages in the Plains and several reports of utilization of WC material have been reported. These include 29 artifacts from 15 Late Archaic or Late Prehistoric sites reported by Hester et al. (1994), five Late Prehistoric or Early Plains Village A.D. 1100-1450 from Oklahoma reported by Baugh and Nelson (1987), a surface flake at Edwards I site reported by Baugh (1982), and six artifacts from the Texas Obsidian Project (Giauque et al. 1993). Exchange of other sources occurred between the southwest and southern plains (Spielman 1983), and a major shift in trade alliances between Early and Middle Plains Village periods was an interpretation of the changes in sources utilized (Baugh 1982).

The present projectile point is an example of a limitation of sourcing. The source of the original acquisition of the obsidian material is determined and not the location where the material was utilized to produce the artifact. One cannot assume that the obsidian was moved directly to the location where it was found. The path of transport and the time of transport may not have been direct and prompt. Further data from other sites would be necessary to distinguish whether the obsidian artifacts for this particular Archaic time period represent logistical organization with trade and exchange, collection as part of specific collecting trips, or foraging behavior of collection during seasonal migrations (Butzer 1982; Torrence 1986). For example, the acquisition of obsidian as part of a yearly round should leave dis-

carded artifacts and debitage in several sites. If a single item was a gift or stolen item it might appear singly with no debitage. The sourcing does prove a connection, but the mechanism of the connection can only be speculation at the present time.

CONCLUSIONS

A raw material source has a unique geochemistry because of the differences in the underlying geology. The XRF chemical data allows us to determine the probable obsidian geological sources of artifacts. Obsidian is a brittle lithic material and large pieces are not moved great distances when mixed with harder rocks, hence we assume that most artifacts were made from the larger material near the primary sources. Many sourcing investigations are with sites hundreds of kilometers from the source so that a source discrepancy of a few kilometers is an acceptable uncertainty. Determining the geographic sources of obsidian tools is useful to access human behavior in the environment in research of prehistoric cultures and economies. The occurrence of artifacts from geographically distinct sources leads to prehistoric connections and contacts and will eventually answer questions of exchange networks and mobility patterns leading to the distributions.

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THE CULTURE OF THE EXCAVATION: OBSERVATIONS OF A FIRST-TIME VOLUNTEER[1]

by
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I recently volunteered, for the first time, to participate in an archaeological excavation. My interest in archaeology had developed over several years, and I had read a fair amount about archaeology in general and about excavations at various sites across the Midwest. While I knew a little about the "what and why" of archaeology I hadn't yet experienced the "how" of it except through books. (I figured it was like the difference between reading about swimming and actually doing it.)

As a result, I responded to a call for volunteers in the Missouri Archaeological Society Quarterly. A quick phone call was all it took. I passed the extensive questioning to determine my qualifications (Are you familiar with the tool known as a shovel?) and was accepted into what was undoubtedly an elite and prestigious group. Several months later I left Minnesota to spend a week as a volunteer with two archaeologists from Iowa at a Paleoindian site in Missouri. (One goes where the action is.) What follows is my attempt to provide a description of what it is like to be a first-time volunteer.

STUDYING ANOTHER CULTURE

There is a certain mystery about them. Small bands of hunters, highly mobile, roving from site to site over large distances. Moving from sheltered sites in winter, revisiting sites used in earlier years, using primitive hand tools, they hunt and gather along river valleys and across the Great Plains. Yes, archaeologists are interesting.

Archaeologists are essentially kids who loved to play in the dirt and have figured out how as adults, to get paid for it (although, unfortunately, not very well). They study and analyze and write and teach, but I suspect all that is ancillary to the real fun playing in the dirt. This is not to demean their academic skills and qualifications, the science and technology involved in their work, or their years of study and preparation for their careers. But it is the hunt that excites them.

Archaeologists am not unlike gold seekers searching for the lucky strike or the early settlers looking for more fertile land. They are constantly seeking the rich site that has a plenitude of heretofore unknown artifacts or a site that provides some missing link in the prehistoric or protohistoric record.

The excavation is where the excitement is. The truly hard work of archaeology is, I suspect, all the work that goes on after the excavation -- cleaning, sorting, cataloging, plotting, analyzing and interpreting and then writing the results of it all in a not-very-fancy office that is overcrowded with labeled boxes full of labeled bags in the midst of computers, charts, research reports, coffee cups, and reams of notes, and is probably either too hot or too cold during the winter. I suspect there are not a lot of volunteers around for this part of it.

In other words, as a volunteer, you get to do what is most exciting about it all. (well, all right. If it's 90° and you've been digging all day and have found zip, it may not seem very exciting at that moment, but read on anyway.)

There is a hierarchy within the culture based upon experience, knowledge, and skill. At one end of this continuum is the professional archaeologist; at the other is you -- the inexperienced but enthusi-

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astic, first-time volunteer. Somewhere in between is the experienced volunteer.

You may, initially, feel somewhat intimidated by the experienced volunteer. They have, after all, their own private collections that are so much larger than yours, participated in excavations at places you've only read about, and are able to remember and laugh with others about shared experiences at other sites. Everyone, however, has had his or her first experience. I found the experienced volunteers to be open, friendly, and willing to share their personal knowledge and to keep things lively. The excavation is, after all, a social event as well as a learning experience.

WHAT YOU NEED

While you need little but enthusiasm, there are a few essentials. You will be frequently asked to bring the following with you: a 5m metal measuring tape, a Marshalltown trowel, and a line level. Your local hardware store is likely to have the last two (mine did). Your own handy measuring tape in feet and inches isn't going to do, and your search for one in meters is going to be fun. I live in a population center of several million people with an abundance of hardware stores. There are thousands of measuring tapes in these stores, different sizes, different lengths, and different prices, all in feet and inches. Asking if there is one in meters is likely to draw perplexed looks that suggest the unspoken question, "Why on earth would you want one of those?" (More on the fun with the metric system later.) Trust your sponsoring archaeologist to have an extra one.

Ah, what to wear. You certainly want to avoid looking inexperienced. What is the current fashion among field workers? Will my camping clothes do? What about my gardening outfit? Does. L. L. Bean have archaeological wear? Where is Abercrombie and Fitch when you need them?

Perusal of the laborers the first day quickly revealed that anything goes. You can't tell the archaeologists from the volunteers. A good hat for the sun is absolutely essential. You can wear anything and get away with it. My preference was a wide-brimmed, straw hat from Australia, and it was worth every penny. Your hands are going to be subjected to rough wear and tear. Good work gloves are another essential; I like the lightweight leather ones. Band-aids to help with the blisters are good. Take comfortable shoes or lightweight boots. If it's going to be hot (you can bet money on this one) take comfortable, loose- fitting clothes. You are going to be on your knees a lot; long pants will help. (Why are knee pads such a good idea, and yet I never saw any?) A bandanna around your neck will help avoid sunburn and add a bit of color. Lots of pockets are good. New clothes should be subjected to punishment to avoid that too-new look. A small backpack to carry everything is handy, especially for the sun block and mosquito repellent brought in quantities that should be, but probably won't be, excessive.

And bring a camera. ("Boy, wait 'til the folks back home see this!") You are going to want to document your participation. Practice different poses that remind you of the archaeologists in old movies and "Indiana Jones." Take pictures at the end of the day when you look your worst so people will know "it Ain't easy out here." Silhouettes against the setting sun are particularly good, peering out of and over the edge of a pit.

While the arrangements for food may vary from site to site, you will want to take your own water. Take a lot of it (and drink a lot of it). Find some kind of energy food to fuel your sagging resolve and coordination toward the end of the day. Be prepared to go out to dinner at a fancy restaurant when all this is over.

TOOLS AND TECHNIQUES

Archaeology as a science really has two faces -- that is, it is bifacial. One is high tech. It involves a wonderfully complex language, and archaeologists positively drool as the syllables roll off their tongues -- geomorphology, resistivity and magnetic surveys, dendrochronology, pollen analysis, radiocarbon dating, and fluorescence spectrometry. You will not be doing any of this. The other face of archaeology is low tech. You will be doing a lot of that.

THE SHOVEL

Archaeologists have taken a perfectly good tool designed to remove, oh, a good six to eight inches of soil per swipe and turned it into a long-handled, sharpened gouge. It is therefore used to remove only a thin layer of soil, maybe one-half inch deep or so. Shovel skimming, as it is called, is the technique frequently used to remove the "plow zone." (Plow zone is usually pronounced with some degree of distaste.) The plow zone is that layer of soil that has

been so mixed by mechanical means that the archaeological record has been damaged, rearranged, and transported so that it is of less value than what the surface finds have already promised lies undisturbed below. It is like a thick layer of old paint that must be stripped away in refinishing furniture.

The most significant find for me in shovel skimming the plow zone was a marble. While it is doubtful that it was of Paleo-Indian origin, it did, however, serve the purpose of demonstrating proper technique. I heard the shovel making contact in time to avoid ripping it out of context. I am convinced that one of the archaeologists planted it just to see if I was paying attention.

THE TROWEL

Basic operation of the trowel is simple. It involves holding it at a slight angle to the dirt and then slicing through the dirt at a ridiculously shallow depth. It is not unlike a woodworker using a plane to move a thin slice from the surface of a piece of wood. Sharpening the edges of the trowel is helpful, lessening the resistance of the soil. The trowel, like the shovel, is somewhat of a sounding device. When you strike an artifact, the sound is distinctly different. You can then carefully remove the dirt from around the artifact, plot its location, label, and bag it.

When you begin to use the trowel it is a slow and awkward process. With time, the trowel becomes a surprisingly precise instrument. It is amazing how your sense of touch extends down the handle and to the edge of the trowel and how your ear gets attuned to the sound of a find. As your sensitivity in working with the trowel increases, a small flake of chert can send out a signal to both your sense of hearing and touch that defies its size. It is a new skill. (And, if it turns out that archaeology is not for you, you have developed a skill that will be handy when plastering walls or frosting cakes.)

The object of troweling, besides locating artifacts directly, is to fill the five-gallon plastic bucket next to you. The dirt you have so laboriously removed will be screened to find the artifacts too small to have been discovered by troweling itself.

THE SCREEN

Screening the dirt removed by shovel or trowel is also a repetitive task. A screen is a piece of wire mesh stretched across a frame of 2 x 4s, which is set upon a couple of saw horses at, hopefully a good working height. Dirt is dumped onto the screen and then pushed by hand back and forth, and back and forth, and back and forth, until all the dirt is gone and those artifacts too large to pass through the screen are revealed. These may be very small pieces of chert, charcoal, pottery, or what have you.

This process teaches you patience and the multiple qualities of different types of soil. Wet clay is a different commodity than sandy loam. Gloves are a real necessity here. They will save lengthy complaints by your manicurist as well as expenditures for hand lotion and Band-Aids.

Screening is an activity that frequently involves people standing side by side or across from each other. While screening involves constant shoulder, arm, and hand movements, it also provides a marvelous opportunity for conversation. You do not need to concentrate too heavily on discovering artifacts because, by definition, they will not pass through the screen whether you are paying attention or not. Therefore you can use the opportunity to either ask questions to enhance your archaeological expertise or explore a wide range of topics from the profound to the profane. (A testable proposition for research would be: As the frequency of artifacts found during screening decreases, the frequency of verbal interaction among screening partners increases.)

While you may only learn about the health problems of your partners, their difficulty in finding eligible men (or women) when divorced, or the latest assault on common sense by their now-grown children, there are other topics to be explored as well. You can learn about the history of the site, cultural patterns of early settlers in the area, genealogy, geology, local flora and fauna, hydrology, soil erosion and deposition, cultural diffusion, and weather forecasting. You may also learn different philosophies of life, retirement savings plans, good bars in the area, gossip about different anthropology departments and professors, candid book reviews, and the merits of different thirst quenches and mosquito repellents.

One-on-one conversations are best, either with an archaeologist or another volunteer. Triads are a little trickier As long as the volunteers outnumber the archaeologists, the conversations will usually remain interesting. On the other hand, if you get

two archaeologists together, they will tend to descend into career-centered discourse that tells you more and more about less and less. The archaeologists will start talking about who is reading a paper where, who is the student of whom, who is taking a new job or has a new grant or contract what books and articles are currently of interest (or not), and who will be visiting the site from where.

THE GEOMETRY OF ARCHAEOLOGY

Archaeologists are at times terribly uncreative. This is particularly true when it comes to the shape and definition of the holes they dig. They like straight lines, vertical walls with smooth sides and right angles. The trowel, in effect, becomes your straight edge, your protractor, and your depth gauge. When they want a three-centimeter layer of dirt removed, they do indeed mean three centimeters. And they want the bottom of the layer to be a right angles to the walls of the levels removed immediately before. Some archaeologists, it is told, seem to be more interested in the aesthetics of the pit (the cubism school of archaeology) than removing enough dirt to find anything.

But, if that's what they want, you give it to them. It is all training the eye, using the tape measure, and moving slowly to the right depth. (It's kind of like smoothing out the concrete for a sidewalk.) Your eyes will begin to notice subtle changes in both slope and angle, and your sense of touch will tell you where the high spots are. It does not take long at all, and soon you will begin to take pride in how good your square looks.

Crumbling edges are a dead give-away of the novice. These can be caused when climbing in or out, by using the edge for support with your left hand as you excavate with your right, or by sitting on the edge. It is nigh on to impossible to put it back were it was. So it does pay to be careful.

Figure 1 shows the differences between the professional archaeologist's excavations and some early attempts by a novice. You will move from right to left.

THE METRIC SYSTEM

Archaeologists use the metric system. The metric system is an amazingly simple approach to

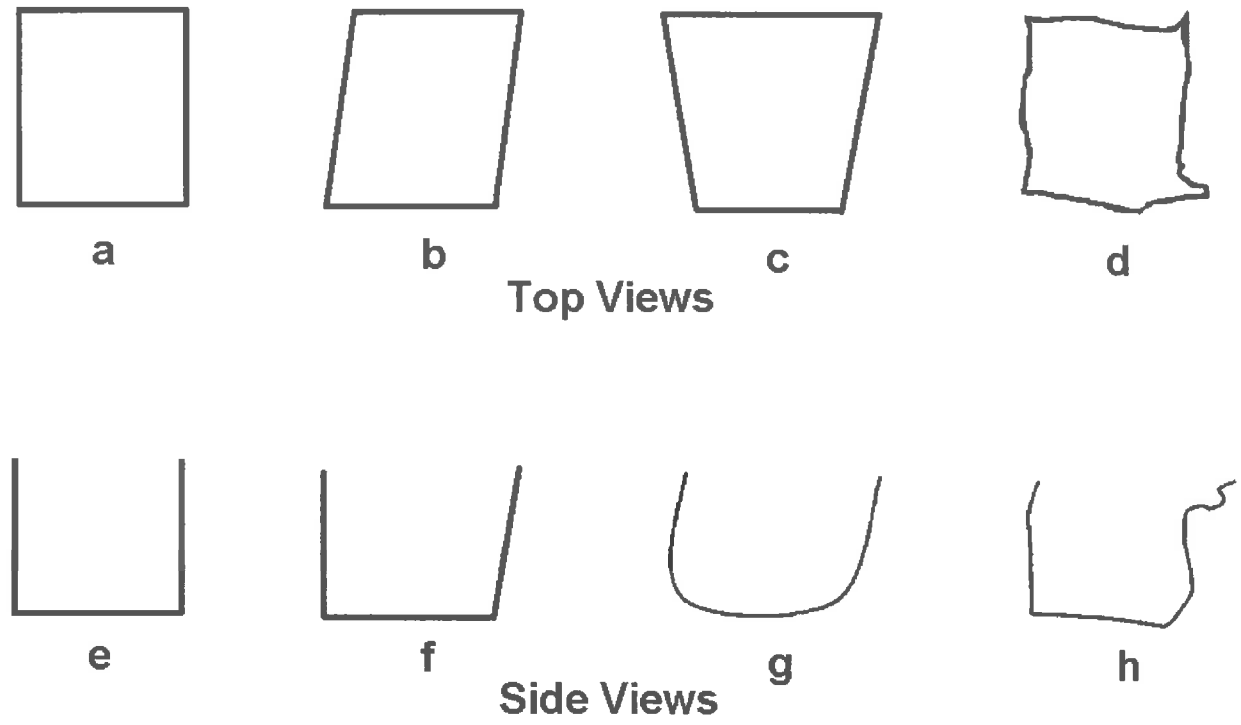

Figure 1: The use of space by professional archaeologists (a-d) and by new volunteers (b-d, f-h).

linear, sur- face, and cubic measurement that has been easily grasped by the majority of the world's population, excluding, of course, us Americans who have grown up otherwise. Our problem is, I think, not the metric system per se, but rather our (or at least my) incessant need to convert it to yards, feet, and inches. Therefore, to visualize digging down 3 cm we need to know that it's about 2 1/2 inches. [MAS Editor's note: Mr. Reynolds didn't do his conversions very well; 3 cm is approximately 1 1/4 inches, not 2 1/2 inches.]

SIMPLE MOTIVATIONAL DEVICES USED BY ARCHAEOLOGISTS WITH VOLUNTEERS

Because fieldwork is labor intensive, you are a valuable commodity as an unpaid volunteer. Consequently, archaeologists have developed a variety of deceptively simple motivational techniques to keep you working productively. While anyone with a modicum of intelligence can see through these ploys, they still work.

The first is the "promise of the next level." This goes back to the lure of a hunt for gold and the idea that you will strike it rich with the next pan of gravel or just a little farther upstream. However, other volunteers have found goodies in the "next level," have shared their excitement with you, and you, envious of others' good fortune, dig on. (I wonder if archaeologists go to the casinos a lot?)

The second is the statement: "We may not find much, but whatever you find will be really old -- and scarce." You immediately resolve the quantity/quality debate, and with a knowing nod and the deep, mutual understanding expressed with an "Ah yes," you dig on. Supply and demand makes for an effective motivational tool.

The third technique is not confirmed, though it is suspected. This involves the practice of the archaeologist "salting" the excavations with just enough previously found, minute fragments of artifacts each night after the volunteers have left for the day to tease out the next day's efforts. Sure, you saw yesterday's finds being bagged -- but are they still in them? Refusing to believe you could be duped so easily, you dig on.

WHY DO THIS?

You can look at artifacts in a museum and perhaps see better examples of whatever it is you are after at an excavation than you will ever find. But it is not the same as seeing "it" in the ground where it has lain untouched for perhaps thousands of years. What you have found is not antiseptic or sterile or distant; it is not labeled, dated or described. You may not even know exactly what it is -- but it is real and wonderful, and it has a meaning that is very personal. Somehow, in your hand, it is partly "yours." And, when someone explains to you what you have found and its significance, it's a lesson easily learned. Besides, you may just have found the best one yet.

Finding an artifact of a past culture brings a sense of discovery, excitement, and reward. Because you have worked so hard to locate the artifact in hand, you are drawn to study it closely. If, for example, it is a tool made from chert, you notice the variation in color and how it has been worked to produce the surfaces that are as smooth as fine china and taper to edges as sharp as a razor. The archaeologist will be able to use that artifact to talk about enough topics in archaeology to fill a textbook. The next time you go to the museum and look at a display of similar artifacts, it will be from an entirely new perspective.

THE FREEDOM IN BEING A VOLUNTEER

As a volunteer in a labor-intensive and undoubtedly under-funded venture, you are a valuable commodity. You also have a great deal of freedom to, theoretically, come and go as you please.

I suppose it would be possible for 10-15 volunteers to drive an archaeologist in charge of an excavation crazy trying to plan for and coordinate the efforts of a work force that constantly changes in size and schedule. Being somewhat reliable is a good trade-off for what you are learning. Furthermore, the more reliable you am, the more valued you are, and the more time will be allotted to your questions and learning so that you will be even more valuable to the archeologist. The reciprocal nature of it is pretty fundamental. You'll get out of it what you put into it.

But there is no pressure on you. All the pressures of a job and career are not for you, at least not here. You can enjoy the scenery, people, quest, and discovery as an interested and enthusiastic participant. You have much to gain and quite little to lose.

CONCLUSIONS

In sum, by volunteering to participate in an

excavation, you are likely to develop a greater appreciation of air-conditioning, chairs, deodorant, cool showers, and the history and discovery channels on cable television.

You will also gain an appreciation of the cultural history of the area, the dedication of archaeologists to their work, and the excitement of finding things that are indeed "really old." You will also meet the nicest and most interesting people; earn bragging rights about how tough, persistent, or learned you are; inspire your friends and relatives; and literally uncover history. I can't wait to do it again.

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AN ANALYSIS OF THE E. B. RENAUD ARCHAEOLOGICAL SURVEY OF WYOMING

by
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INTRODUCTION

Relocating and documenting archaeological sites first found by E. B. Renaud in the 1930s in Wyoming and determining their land status were the main objectives in this analysis. These objectives were in accordance with the guidelines and directives set out in the cooperative agreement K910-A4-0030, task order No: TO-2 between the Bureau of Land Management (BLM) and the University of Wyoming Department of Anthropology, Archaeological Repository (UWAR). This analysis provides information concerning archaeological sites documented by E. B. Renaud. First, the site location data may help the BLM in the management of cultural resources within their resource areas. Secondly, the artifacts from these sites now have a more definite provenience. This analysis may also help other federal agencies in the management of their cultural resources, as well as provide information about sites located on private land.

This analysis follows the directives stated in the task order. The directive specifics are as follows: "the examination of these records (the Renaud records) shall result in a report identifying legal locations or best guess locations, where possible, for each site documented by Renaud; and a categorization of land status of the site at the time the collection was made, as either (1) federal public land; (2) likely federal public land; (3) private land; or (5) unknown land status" will also be provided. If the land status was identified as federal public land, the federal agency that manages the land such as: the Bureau of Land Management, U.S. Forest Service, Bureau of Reclamation, National Parks Service, or U.S. Fish and Wildlife Service, shall be identified.

METHODOLOGY

GEOGRAPHICAL AREAS ANALYZED TO DETERMINE LAND STATUS

The areas to be analyzed were determined by the chronological sequence in the field notes from Renaud's Wyoming archaeological expeditions. The first field notes taken by Renaud, or the 1931 notes, indicated that sites were documented mostly in the eastern half of Wyoming. These sites had catalog numbers which were given a (WR) prefix, possibly representing Wyoming Renaud. All of these sites were analyzed in chronological order, starting with WR 1 and ending with WR 85. After 1931, Renaud provided a new numbering system which started with just a (W) prefix.

No individual counties were selected to be analyzed at one time, due to the nature of the Renaud field notes. Counties included in the 1931 Renaud archaeological expedition and included in this analysis are: Albany, Carbon, Campbell, Converse, Fremont, Goshen, Laramie, Niobrara, Platte, and Uinta.

CROSS-REFERENCING RENAUD'S SITES WITH SMITHSONIAN NUMBERED SITES

The sites recorded by Renaud, which when relocated and found to be on BLM-administered land, were compared to records maintained by the Wyoming Cultural Records Office (WYCRO) under the auspices of the Wyoming State Historic Preservation Office (SHPO). These comparisons were completed to determine if a site that Renaud recorded was later given a Smithsonian site number by other investigators. In accomplishing this, file searches of all sites located on BLM-administered lands were completed.

ESTABLISHING A DATA BASE

In accomplishing the above guidelines, a computerized data base was established. All the note cards were entered into the data base, allowing for a sort by site number, WR number, catalog number, etc. to better analyze the data. The data base (Appendices 1-2) included the following fields or categories: catalog number, site number, WR site number, township, range, section, county, land status and site type (see Appendix 1 for coding format).

The field called **catalog number** is a reference number which the author of this report gave to each Renaud site form listed in the site form catalogs. These site form catalogs were provided by the University of Wyoming Department of Anthropology, Archaeological Repository. The catalog number was a reference number acting like a page number and was used to expedite the cross-referencing of the Renaud site forms and notes.

The category called **site number** was a number given to each site after the initial field work was completed. This number was assigned by either Renaud or persons at the University of Denver. This number cross-references to the WR numbers given to sites located by Renaud in 1931. Further research of the assignment of these numbers may provide more information pertaining to details, such as site location. Each record in the data base represents a single site. One exception to this is the discrepancy of several sites having two site numbers. Once this was encountered, the two numbers were put in the same record or row in the **site number** field.

The **WR Number** is a field number given to each site by Renaud in the earlier years of the field expeditions, specifically the first expedition from June 15 through August 24 of 1931. In later expeditions, the sites were not given WR numbers but rather the sequential **site number** described in the previous paragraph.

Township, range, section and **county** are the next fields in the data base and were sometimes recorded by Renaud or by later persons. Some of the Renaud site cards had only the township and range. Occasionally the location of a site within a section was denoted. Most generally the county name was provided on the note cards and then the county name or abbreviation was entered into the data base.

The field **land status** was created to enter sites identified as being located on Federal public land and private land. Federal properties were abbreviated as: the Bureau of Land Management (BLM), U.S. Forest Service (USFS), Bureau of Reclamation (BR), National Parks Service (NPS), and U.S. Fish and Wildlife Service (USFWS). Sites located on private land were entered as (PVT) in the **land status** field.

Site type was a field set up in order to enter the type of site found by Renaud. Features or artifact types were also entered into this category (see Appendix 1 for coding format).

LOCATING SITES AND DETERMINING LAND STATUS

Using the E.B. Renaud Site Notes and Site Forms

The next procedure in identifying or correctly denoting the site location and land status was to review the Renaud notes and the site forms. Interpretation of the poor quality photocopied Renaud notes and Renaud's handwriting increased the time necessary to identify the location of each site. However, this problem was soon overcome as the author became fluent in "Renaud" and thus was able to translate the notes more rapidly. Through a literature search, it was found that the Renaud notes were previously typed and published (Renaud 1932). These notes were helpful, but some details of the site locations in the original notes were left out, creating some ambiguity.

Use of Maps and Other References

Other sources of information used to locate sites included GLO survey notes and maps, historic maps of the 1930s Wyoming highway system, land ownership maps, old historic maps, older and updated 7.5 minute topographic maps and 1:100,000 scale surface management status maps. References with place names such as Bonney (1987), Linford (1975), Spring (1949), Urbanek (1988), and Zellmer (1995); the Wyoming Cultural Records Office in the SHPO; and any other particles of information also helped to locate the sites.

Measuring Distances from Reference Points to Sites

After reviewing the records, it was noted that only a small percentage of the archaeological sites had proper documentation of legal locations. These legals were documented on the catalog or site cards prepared by Renaud or persons at the University of Denver. Sites with specific legal descriptions were also, at times, recorded in Renaud's personal notes. For most

of the sites located, the only information available to identify the locations was in the form of directions in Renaud's site notes, or provided in brevity by the catalog cards.

Together the notes and the site forms usually provided mileage from a certain point or location such as a town, a previous site, a monument, ranch headquarters, a bridge, mountain top, or other somewhat vague marker. Sometimes Renaud would give mileage to a site from his field camps which he established while on the survey. The legal locations of the camp locations were marked in a few places within the notes but exact location within a section was also rather vague.

The exact route taken by Renaud or his assistants to a particular archaeological site was also vague at times. Most times he would provide the number of the highway system or road he was traveling on, but the route became obscure when he departed from the main road. Once a particular road was determined to be a possible route to a site, a planimeter was used to help compare the distance of the road to the distance given by Renaud. The planimeter measurement would confirm or contradict a postulated road.

Creating The Site Map Figures And Site Map Explanations

Creating maps for several figures in this report were accomplished by computer scanning in 1:100,000 maps of particular areas that Renaud surveyed (Figures 1-9). The maps display all the sites located on BLM land, and on the same maps, sites with different land status may also be shown. Sites not scanned were any sites not on BLM land and not within the area to be scanned around a BLM status site. The image imported was scanned at a 100 percent scale. Once the image was opened, it was enlarged or reduced to fit on an 8.5" x 11" plate. The scale is indicated by the presence of sections with their section number represented.

The general and sometimes more specific site locations are denoted by the black ovals, squares, and polygons. A larger blacked-out area indicates a general site location due to the inability to obtain more specific site information from the Renaud notes or site cards. A smaller blacked-out area displays a more specific site location.

RESULTS

RELOCATED SITES AND THEIR LAND STATUS

One hundred and thirty-five sites were documented having specific legal locations to the section (Appendix 2). Of these 135 sites, 12 sites were located on BLM property (Table 1-3). Five more sites were located partially on BLM land and partially on private land (Tables 1-3, Appendix 2).

Other Federal properties which had sites located on them but are not included in Table 2, were the U.S. Forest Service (USFS) and the Warren U.S. Air Force Base (FEWAFB) in Cheyenne. Site number WR-24 was located on the Warren Air Force Base near the railroad station and the confluence of two tributaries of Crow Creek. Site number W-35 is located on the Hutton Lake National Wildlife Refuge south of Laramie and is administered by the USFS.

Nine sites were located on State of Wyoming land, with an additional five sites located on state and private land. The category of private land status contains the most amount of relocated sites, which is 101. An additional 11 sites were found to overlap on either BLM land or State land (see Table 2).

Table 1: Number of sites on BLM land and counties where located.

COUNTY	BLM	BLM AND PRIVATE	TOTAL
Albany	1	3	4
Carbon	4	0	4
Campbell	0	0	0
Converse	1	0	1
Fremont	5	0	5
Goshen	0	1	1
Laramie	0	0	0
Niobrara	0	0	0
Platte	0	1	1
Uinta	1	0	1
Weston	0	0	0
Total	12	5	17

Table 2: Total number of sites of particular land status and the counties where located.

COUNTY	BLM	STATE	PRIVATE	STATE AND PRIVATE	BLM AND PRIVATE	TOTAL
Albany	1	5	44	1	3	54
Carbon	4	2	6	0	0	12
Campbell	0	1	0	0	0	1
Converse	1	0	5	0	0	6
Fremont	5	0	4	0	0	9
Goshen	0	0	14	2	1	17
Laramie	0	0	13	2	0	15
Niobrara	0	0	5	0	0	5
Platte	0	1	8	1	1	11
Uinta	1	0	1	0	0	2
Weston	0	0	1	0	0	1

CROSS-REFERENCING RENAUD'S SITES WITH SMITHSONIAN NUMBERED SITES

Several sites recorded by Renaud were relocated and found to be on BLM-administered lands and were then compared to the Wyoming State Historical Preservation Office's Cultural Records. The results of the cross-referencing procedure indicated that few of Renaud's sites had been given Smithsonian numbers. In fact, only one of the 17 sites later recorded was given a Smithsonian number. This site was the Castle Garden rock art site (48FR108) (WR-72).

CONCLUSIONS

One third of the total number of sites (135 out of 405) that Renaud recorded were relocated in this analysis. Only 12.5 percent of the total number of sites relocated were on BLM land. This was due to the area Renaud surveyed in 1931, mostly the eastern half of the state. When Renaud

Table 3: Data base listing BLM sites and 1:100,000 maps where located.

CAT. NO.	SITE NO.	WR NO.	RANGE	TOWNSHIP	COUNTY	1:1000,000 BLM Land Status Map
216	18a		76	12	Albany	Laramie
217	18b		76	12	Albany	Laramie
218	19		76	12	Albany	Laramie
219	20		77	12	Albany	Laramie
35	180	56	65	28	Platte	Torrington
20	184	60a,b	65	29	Goshen	Torrington
162	243-3		81	13	Carbon	Saratoga
64	236		113	17	Uinta	Evanston
353	169	8	80	26	Carbon	Shirley Basin
354	172	11	80	26	Carbon	Shirley Basin
355	173	12a,b	79	24	Carbon	Shirley Basin
358	206	76	74	33	Converse	Douglas
332	142	85b	98	31	Fremont	Lander
334	149	83	92	32	Fremont	Rattle Snake Hills
335	144	72	90	34	Fremont	Rattle Snake Hills
336	145	78	90	34	Fremont	Rattle Snake Hills
338	148	81	91	34	Fremont	Rattle Snake Hills
337	146	79	90	33	Fremont	Rattle Snake Hills

did minor survey in the central and western portions of the state, the sites he located tended to be located on BLM land. This is due to the increased amount of public land in these areas.

A comparison of counties and the number of sites located on BLM land or private land (Table 2) indicates that 55 percent of the sites located in Fremont county are on BLM land. The other 45 percent are located on private land. In Uinta county, 50 percent of the sites are located on BLM land and the other 50 percent are located on private land. In contrast is the percentages of sites located on BLM or private in counties from the eastern portion of the state. For example, 82 percent of the sites relocated in Goshen County were on private land. Eighty-six percent of the sites relocated in Laramie County were also on private land.

A survey of the field notes and other related information from the 1936, 1938, and 1939 Renaud field expeditions would increase the number of sites relocated on BLM land. This is because Renaud concentrated on the western portion of the state during these years which is an area containing a large portion of BLM land.

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APPENDIX 1
CODING FORMAT AND DESCRIPTION OF CODES

FIELD NAME DESCRIPTIONS AND DEFINITIONS

CAT. NO. = Catalog Number: Catalog number is a sequential reference number of each the catalog cards. It can also be considered a page number in the note card reference provided by the SHPO for this project. This number helps when sorting records by specific fields.

SITE NO. = Site Number: Site number is the site number given to each site and is believed to have been designated by Renaud or persons at the University of Denver.

WR NO. = Possibly Wyoming Renaud Site Number: This number was given to each site by Renaud or his assistants' only during the first University of Denver expedition in 1931.

Range = The range number

Township = The township number

Section = The section number

County = The county designation code: Albany County = Albany; Carbon County = Carbon; Campbell County = Campbell ;Converse County = Converse; Fremont County = Fremont; Goshen County = Goshen; Niobrara County = Niobrara' Platte County = Platte; Sweetwater County = Sweetwater; Uinta County = Uinta

Land Stat. = Land Status: The ownership status of the land where the site is located and other codes defining problems or sites needing more research. Code: BLM = Bureau of Land Management; USFS = U.S. Forest Service; BR = Bureau of Reclamation; NPS = National Parks Service; USFWS = U.S. Fish and Wildlife Service; FEDAFB = Federal Air Force Base; PVT =

Private; State = State of Wyoming; NED = Not Enough Data to determine Land Status; REVIEW = Site was started to be researched but dead ends were met or time constraints caused abandonment of research; NR = Not Researched.

Site Type = Site Type, Artifact types and Feature types:

Site type codes were given to the different site types Renaud encountered. Within the field of site type artifact type and feature type codes were also used. The codes are the same codes Renaud used. Code: WS = Work Shop (lithic reduction area); TR = Tipi rings; QY = Quarry Site; LO = Look Out; C = Camp Site; CS = Camp Site; Pott = Site with pottery; BE = Site with beads; FP = Fire pit located at the site.

APPENDIX 2
DATA BASE OF ALL SITE RECORDS IN RENAUD SITE CATALOG CARDS

Catalogue Number	Site Number	WR Number	Range	Township	County	Land Status/Site Type Codes
203	4		73	16	Albany	PVT
204	5		77	15	Albany	PVT
2	391		0	0	Niobrara	NR/CAMP W/TIPI
205	6		0	0	Albany	NR
3	392		0	0	Niobrara	NR/CAMP
5	394		0	0	Niobrara	NR/CAMP W/ TIPI
6	395		0	0	Niobrara	NR/CAMP W/TIPI
162	243-3		81	13	Carbon	BLM
328	284		112	27	Sublette	NR
163	244-4		81	13	Carbon	PVT
400	109		0	0	Platte	NR
164	245-5		81	13	Carbon	PVT
398	393		0	0	Niobrara	NR
165	246-6		81	13	Carbon	PVT
14	117		0	0	Goshen	NR/WS/QY
166	247-7		81	13	Carbon	PVT
16	119		0	0	Goshen	NR/C/WS/TR
167	?		0	0	?	NR
392	112		0	0	Platte	NR
402	132		0	0	Goshen	NR
390	124		0	0	Niobrara	NR
327	123		0	0	Niobrara	NR
388	121		0	0	Niobrara	NR
170	48		73	20	Albany	PVT
385	131		0	0	Goshen	NR
171	95		0	0	Albany	NR
383	310		0	0	Albany	NR
172	137		72	20	Albany	PVT
381	302		0	0	Albany	NR
173	138		72	20	Albany	PVT
379	294		0	0	Albany	NR
174	139		73	20	Albany	PVT
377	321		0	0	Albany	NR
175	141		72	20	Albany	NR
375	319		0	0	Albany	NR

Catalogue Number	Site Number	WR Number	Range	Township	County	Land Status/Site Type Codes
176	46		0	0	Albany	PVT
373	317		0	0	Albany	NR
177	47		0	0	Albany	PVT
38	334		0	0	Uinta	NR/SF
178	85		69	19	Albany	PVT
40	253		112	18	Sweetwater	NR/WS
179	86		0	0	Laramie	NR
42	256		112	17	Sweetwater	NR/WS
180	87		0	0	Laramie	NR
371	308		0	0	Albany	NR
181	88		0	0	Laramie	NR
46	359		0	0	Sweetwater	NR
182	91		0	0	Laramie	NR
48	368		0	0	Uinta	NR/WS
183	92		0	0	Laramie	NR
50	232		114	16	Uinta	PVT/WS
184	93		0	0	Laramie	NR
52	234		114	0	Uinta	NR/WS
185	94		0	0	Platte	NR
54	349		0	0	Uinta	NR/WS
186	96		0	0	Platte	NR
56	351		0	0	Uinta	NR/SF
187	97		0	0	Platte	NR
58	353		0	0	Uinta	NR/WS?
188	98		0	0	Platte	NR
60	369		0	0	Uinta	NR/C
189	99		0	0	Platte	NR
62	371		0	0	Uinta	NR
190	100		0	0	Platte	NR
64	236		113	17	Uinta	BLM
191	101		0	0	Platte	NR
66	257		112	17	Sweetwater	NR
192	102		0	0	Platte	NR
68	262		112	16	Sweetwater	NR
193	140		72	20	Albany	NR
70	264		113	16	Uinta	NR
366	113		0	0	Converse	NR
72	252		0	0	Uinta	NR
362	104		0	0	Converse	NR
74	333		113	15	Uinta	NR
356	292		0	0	Albany	NR
76	293		110	22	Sweetwater	NR
329	309		106	25	Sweetwater	NR
78	299		110	23	Sweetwater	NR
77	297		111	22	Sweetwater	NR
79	301		110	23	Sweetwater	NR
81	305		109	23	Sweetwater	NR
80	303		109	23	Sweetwater	NR
83	307		106	26	Sweetwater	NR
315	383		0	0	Fremont	NR
85	281		110	18	Sweetwater	NR
200	1		73	16	Albany	PVT
87	289		110	19	Sweetwater	NR
201	2		73	16	Albany	PVT
89	127		0	0	Goshen	NR
202	3		73	16	Albany	PVT
91	129		0	0	Goshen	NR

Catalogue Number	Site Number	WR Number	Range	Township	County	Land Status/Site Type Codes
1	389		0	0	Niobrara	NR/CAMPSITE
367	114		0	0	Converse	NR
325	260		0	0	Weston	NR
95	342		0	0	Sweetwater	NR
330	311		107	24	Sweetwater	NR
97	344/285?		0	0	Sweetwater	NR
331	313		104	26	Sweetwater	NR
99	346		0	0	?	NR
207	82		0	0	Laramie	NR
101	355		0	0	Uinta	NR
208	83		0	0	Laramie	NR
103	360		0	0	Sweetwater	NR
209	84		0	0	Laramie	NR
105	251		109	18	Sweetwater	NR
210	89		0	0	Laramie	NR
107	339		0	0	Sweetwater	NR
211	90		0	0	Laramie	NR
109	338		0	0	Sweetwater	NR
212	14		75	12	Albany	PVT
111	255		111	17	Sweetwater	NR
213	15		75	12	Albany	PVT
113	260		112	16	Sweetwater	NR
214	16		75	12	Albany	PVT
115	280a		110	16	Sweetwater	NR
215	17		76	12	Albany	PVT
117	323?		111	16	Sweetwater	NR
216	18a		76	12	Albany	PVT/BLM
119	325?		111	17	Sweetwater	NR
217	18b		76	12	Albany	PVT/BLM
121	327?		111	16	Sweetwater	NR
218	19		76	12	Albany	PVT/BLM
123	329?		110	16	Sweetwater	NR
219	20		77	12	Albany	BLM
125	337		0	0	Sweetwater	NR
220	21		76	14	Albany	PVT
127	364		0	0	Sweetwater	NR
221	23		76	13	Albany	PVT
129	265		109	12	Dagget, UT	NR
222	24		77	13	Albany	STAT
131	274		110	14	Sweetwater	NR
223	25		76	13	Albany	PVT
133	276		111	13	Sweetwater	NR
224	26		76	13	Albany	PVT
135	278?		111	14	Sweetwater	NR
225	7		77	15	Albany	PVT
137	331?		111	15	Sweetwater	NR
226	10a		74	13	Albany	PVT
139	267?		109	12	Sweetwater	NR
227	10b		74	13	Albany	PVT
141	270		109	15	Sweetwater	NR
228	10c		74	13	Albany	PVT
143	272?		109	14	Sweetwater	NR
229	10d		74	13	Albany	PVT
145	365		0	0	Sweetwater	NR
230	11		74	13	Albany	PVT
147	367		0	0	Sweetwater	NR
231	12		74	12	Albany	PVT

Catalogue Number	Site Number	WR Number	Range	Township	County	Land Status/Site Type Codes
149	69		0	0	Carbon	NR
232	13		0	0	Albany	NR
151	290		0	0	Carbon	NR
233	22		0	0	Albany	NR
153	286		0	0	Carbon	NR
234	28		0	0	Albany	PVT
155	8a,b		77	15	Albany	PVT
235	29		74	13	Albany	PVT
157	9		77	15	Albany	REVIEW
236	30		74	13	Albany	PVT
159	241b		81	12	Colorado	NR
237	31		74	13	Colorado	PVT
161	242-2		81	13	Carbon	PVT
238	32		74	13	Albany	PVT
399	106		0	0	Niobrara	NR
239	33		73	14	Albany	PVT
15	118		0	0	Goshen	NR/C/WS/QY?/TR
240	34		74	14	Albany	PVT
391	126		0	0	Niobrara	NR
241	35		74	14	Albany	USFS
387	390		0	0	Niobrara	NR
242	133		73	13	Albany	PVT
382	314		0	0	?	NR
243	134		0	0	Albany	PVT
378	322		0	0	Albany	NR
244	135		73	13	Albany	PVT
374	318		0	0	Albany	NR
245	136		74	13	Albany	PVT
39	238		112	18	Uinta	NR/WS/SF
246	71		69	14	Albany	PVT
372	316		0	0	Albany	NR
247	73		0	0	Laramie	PVT
47	357		0	0	Uinta	NR/SF
248	74		0	0	Laramie	PVT
51	233		115	0	Uinta	NR/WS
249	75		0	0	Laramie	PVT
55	350		0	0	Uinta	NR/SF
250	76		0	0	Laramie	PVT
59	354		0	0	Uinta	NR/SF
251	77		0	0	Laramie	PVT
63	235		114	16	Uinta	NR
252	81		0	0	Laramie	NR
67	258		112	16	Sweetwater	NR
333	338		0	0	Fremont	NR
71	282		114	16	Uinta	NR
350	65		0	0	Carbon	NR
75	291		109	21	Sweetwater	NR
255	36		74	20	Albany	NR
82	239		111	18	Sweetwater	NR
256	27		0	0	Albany	NR
86	283		111	19	Sweetwater	NR
257	37		0	0	Albany	NR
90	128		0	0	Goshen	NR
258	38		0	0	Albany	NR
94	335		0	0	Sweetwater	NR
259	39		0	0	Platte	NR
98	345		0	0	Sweetwater	NR

Catalogue Number	Site Number	WR Number	Range	Township	County	Land Status/Site Type Codes
260	40		0	0	Platte	NR
102	356		0	0	Uinta	NR
261	41		0	0	Albany	NR
106	336		0	0	Sweetwater	NR
262	42a		0	0	Albany	NR
110	341		0	0	Sweetwater	NR
263	42b		0	0	Albany	NR
114	261		112	16	Sweetwater	NR
264	43		0	0	Albany	PVT
118	324?		111	16	Sweetwater	NR
265	44		0	0	Albany	NR
122	328?		111	16	Sweetwater	NR
266	45a		0	0	Albany	STAT
126	363		0	0	Sweetwater	NR
267	45b		0	0	Albany	STAT
130	273?		110	14	Sweetwater	NR
268	49		0	0	Albany	NR
134	277?		111	13	Sweetwater	NR
269	50		0	0	Albany	NR
138	266		109	12	Sweetwater	NR
270	51		0	0	Platte	NR
142	271		109	15	Sweetwater	NR
271	52		0	0	Platte	NR
146	366		0	0	Sweetwater	NR
272	53a		0	0	Platte	NR
150	70		0	0	Carbon	NR
273	53b		0	0	Platte	NR
154	288		0	0	Carbon	NR
274	54		0	0	Carbon	NR
158	241a		81	13	Carbon	NR
275	56		0	0	Carbon	NR
401	110		0	0	Platte	NR
276	57		0	0	Carbon	NR
17	120		0	0	Goshen	NR/C/WS/TR
277	58		0	0	Carbon	NR
384	312		0	0	Albany	NED
278	66		0	0	Carbon	NR
376	320		0	0	Albany	NR
279	67		0	0	Carbon	NR
41	254		112	18	Sweetwater	NR/WS
280	72		0	0	Laramie	NR
49	231		114	16	Uinta	PVT/WS
281	78		0	0	Laramie	NR
57	352		0	0	Uinta	NR/C?
282	79		0	0	Laramie	NR
65	237		113	17	Uinta	NR
283	80a		0	0	Laramie	NR
73	332		113	15	Uinta	NR
284	80b		0	0	Laramie	NR
84	252		111	18	Sweetwater	NR
285	105		0	0	Douglas	NR
368	296		0	0	Albany	NR
286	107		0	0	Niobrara	NR
100	347/289?		0	0	Sweetwater	NR
287	108		0	0	Niobrara	NR
108	340		0	0	Sweetwater	NR
288	116		0	0	Goshen	NR

Catalogue Number	Site Number	WR Number	Range	Township	County	Land Status/Site Type Codes
116	280b		110	16	Sweetwater	NR
289	125		0	0	Platte	NR
124	269		108	160	Sweetwater	NR
349	64		0	0	Carbon	NR
132	275?		110	14	Sweetwater	NR
348	63		0	0	Carbon	NR
140	268		108	14	Sweetwater	NR
321	380		0	0	Natrona	NR
148	68		0	0	Carbon	NR
320	379		0	0	Natrona	NR
156	8b		77	15	Albany	NR
347	62		80	28	Carbon	NR
13	115		0	0	Goshen	NR/C/WS/TR
346	61		0	0	Carbon	NR
380	300		0	0	Albany	NR
345	60		0	0	Carbon	NR
370	306		0	0	Albany	NR
344	59		0	0	Carbon	NR
61	370		0	0	Uinta	NR
314	381		0	0	Fremont	NR
316	384		0	0	Fremont	NR
319	382		0	0	Fremont	NR
96	344a		0	0	Sweetwater	NR
318	387		0	0	Fremont	NR
112	259		112	16	Sweetwater	NR
301	298		0	0	Albany	NR
128	330?		106	16	Sweetwater	NR
302	11_373		84	49	Johnson	NR
144	372		110	16	?	NR
343	55b		80	27	Carbon	NR
160	241c		81	12	Carbon	NR
342	55a		79	28	Carbon	NR
37	295		111	23	Sweetwater	NR/SF
317	385		0	0	Fremont	NR
69	263		113	16	Uinta	NR
306	396		0	0	Crook	NR
104	362		0	0	Sweetwater	NR
307	397		0	0	Crook	NR
136	279?		111	14	Sweetwater	NR
308	398		0	0	Crook	NR
389	122		0	0	Niobrara	NR
369	304		0	0	Albany	NR
120	326?		111	17	Sweetwater	NR
152	315		0	0	Albany	NR
53	348		0	0	Uinta	NR/WS
309	399		0	0	Crook	NR
310	377		0	0	Fremont	NR
311	386		0	0	Fremont	NR
312	378		0	0	Fremont	NR
313	376		0	0	Fremont	NR
198	227	1ab	75	15	Albany	PVT
199	228	2	75	15	Albany	PVT
298	222	3	73	20	Albany	PVT
168	223	4	73	19	Albany	STAT
169	224	5	73	19	Albany	STAT
299	225	6	72	19	Albany	PVT
300	226	7	72	19	Albany	PVT

Catalogue Number	Site Number	WR Number	Range	Township	County	Land Status/Site Type Codes
353	169	8	80	26	Carbon	BLM
351	170	9	81	26	Carbon	STAT
352	171	10	81	26	Carbon	STAT
354	172	11	80	26	Carbon	BLM
355	173	12a,b	79	24	Carbon	BLM
292	174	13	0	0	Carbon	REVIEW
340	175	14	79	24	Carbon	PVT
293	176	15	0	0	Carbon	REVIEW
206	229	16	73	16	Albany	PVT/STAT
194	211	17	69	19	Laramie	PVT
297	212	18a,b	69	19	Laramie	PVT
195	213	19	69	20	Laramie	PVT
196	214	20abc	69	19	Laramie	PVT
197	215	21	69	19	Laramie	PVT
34	218	22	60	13	Laramie	PVT/STAT/C/POTT/BE
33	219	23	65	14	Laramie	PVT/C/TR
93	220	24	67	14	Laramie	FEDAFB
253	216	25	66	21	Platte	STAT
254	217	26	67	22	Platte	PVT
295	189	27	62	26	Niobrara	PVT
296	190	28	62	26	Niobrara	PVT
341	221	29	81	32	Natrona	PVT
364	209	30	69	31	Converse	NR/2 graves also
365	210	31	0	0	Converse	NR
386	191	32	0	0	Niobrara	NR
403	193	34	0	0	Niobrara	NR
404	195	36	0	0	Niobrara	NR
405	196	37	0	0	Niobrara	NR
393	197	38	0	0	Niobrara	NR
394	198	39	0	0	Niobrara	NR
395	199	40	0	0	Niobrara	NR
396	200	41	0	0	Niobrara	NR
397	201	42	0	0	Niobrara	NR
406	202	43	0	0	Niobrara	NR
4	160	44	63	31	Niobrara	NR/C/WS/TR
9	161	45	63	31	Niobrara	NR/C/WS/TR
8	162	46	63	31	Niobrara	PVT/C/WS/TR/FP
10	163	47	63	29	Niobrara	PVT/C/TR/FP
11	164	48	63	29	Niobrara	PVT/C/TR
12	165	49	63	29	Goshen	PVT/C/WS
24	166	50	64	29	Goshen	PVT/C/TR
25	167	51	64	29	Goshen	PVT/STAT/C/TR
26	168	52	65	28	Goshen	PVT/C/TR
18	177	53	63	27	Platte	PVT/C/TR/FP
31	178	54	65	27	Platte	PVT/SF/TR
32	179	55	65	27	Platte	PVT/SF
35	180	56	65	28	Platte	PVT/BLM/C/TR
326	181	57	65	28	Goshen	PVT
294	182	58	65	28	Goshen	PVT
19	183	59	65	29	Goshen	PVT/C/WS
20	184	60ab	65	29	Goshen	PVT/BLM/C/TR
21	185ab	61ab	65	29	Goshen	NED/C/WS/TR/LOOK
22	186	62	65	29	Goshen	PVT/C
23	187	63	65	28	Platte	PVT/QRY
92	154	64	63	14	Laramie	PVT/STAT
88	155	65	62	20	Goshen	PVT/STAT
36	156	66	62	25	Goshen	PVT/C/FP

Catalogue Number	Site Number	WR Number	Range	Township	County	Land Status/Site Type Codes
29	157	67	66	24	Goshen	PVT/C/FP/MT/MNOS
30	158	68	66	24	Platte	PVT/STAT/C/LO/WS
291	159	69	62	24	Goshen	PVT
324	152	70	62	23	Weston	PVT
305	153	71	67	31	Campbell	STAT/burial
335	144	72	90	34	Fremont	BLM
357	203	73	74	32	Converse	PVT
361	204	74	74	32	Converse	PVT
359	205	75	75	31	Converse	PVT
358	206	76	74	33	Converse	BLM
363	207	77	70	32	Converse	PVT
336	145	78	90	34	Fremont	BLM
337	146	79	90	33	Fremont	PVT/BLM
339	147	80	90	34	Fremont	PVT
338	148	81	91	34	Fremont	BLM
322	150	82	91	35	Fremont	PVT
334	149	83	92	32	Fremont	BLM
290	151	84	0	0	Fremont	NR
332	142	85a	98	31	Fremont	PVT
323	143	86	86	36	Natrona	PVT
360	208	87	74	31	Converse	PVT
0	142	85b	98	31	Fremont	BLM
28	103	103	67	23	Platte	PVT/C
27	130	130	57	27	Goshen	PVT/C/WS/TRT
43	285=358	111	19	0	Sweetwater	NR/SF
45	287=359	111	19	0	Sweetwater	NR/WS/SF
303	374	12	83	48	Johnson	STAT
304	375	?13	83	48	Johnson	STAT
4	TLS	9	0	0	?	NR
44	358=285		0	0	Sweetwater	NR/FP

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BOOK REVIEWS

South Pass, 1868: James Chisholm's Journal of the Wyoming Gold Rush. By James Chisholm, Introduced and Edited by Lola M. Homsher. Bison Books, University of Nebraska Press, Lincoln. (4th Edition). 244 pages, 7 figures. $12.00

Gold! Gold near the Sweetwater River! Though the presence of gold in the vicinity of the South Pass of the Rockies goes back until 1842, it was not until the late 1860s that mining became a real industry in the region. James Chisholm was sent west by the Chicago Tribune in 1868 to cover what they thought would become the next California gold rush. In fact, the breaking story of the gold and silver strikes of the Sweetwater Mines was a bit of a fizzle. We are fortunate that the Chicago journalistic community sent Chisholm to the gold fields. His records of his journey flesh out many of the details of life in the new territory of Wyoming.

Chisholm spends a large part of his time out west being stuck in Cheyenne, then a stereotype of the wild west. Chisholm, barely just arrived, covered a double lynching thusly.

> "Cheyenne, D. T., March 21
>
> it is a sign of good times, they say here when people begin to do a little hanging . . . The vigilantes have been 'doing a little hanging' over night, and today there is an excitement such as we do not witness every day, even in Cheyenne. The spectacle of a human being suspended in the air with blue swollen features, tongue and eyes protruding in a horrible manner, and fists clenched in the last convulsive struggle, is not a pleasing object to encounter in your morning ramble . . . The two bodies were cut down by order of authorities and deposited in City Hall. From thence they were soon conveyed in a wagon -- the rope still round their necks -- to the Coroner's office, where an inquest was held, the jury having no difficulty in arriving unanimously at the conclusion that they had both come to their death by strangulation."

Chisholm is an excellent observer and a lively writer. Whether the subject is the operation of a stamp mill or the pathetic tale of what to do when one's pet bear grows into a dangerous animal, Chisholm is wonderful at making the reader see what he was able to see. In many cases Chisholm was a duck out of water trying to get by in a culture which was far more adventurous than he had bargained for. However, he stayed with the story and even managed to do some exploring in the area. He was greatly disappointed at not getting to meet Chief Washakie. However, he eventually came to believe himself some kind of adventurer going so far as to participate in the rescue of a miner thought to be in the clutches of hostile Indians and helping a lawman guard a prisoner from the efficiencies of the Vigilantes noted above. Not bad for a city slicker.

Chisholm does a remarkable job recording the mining subculture. Additionally his wanderlust led to some interesting and sometime humorous observations about Wyoming in general. He observed some of the first development of fossil fuels in the Wyoming and even commented upon soda ash mining. Here he describes some mining of soda ash near Green River.

> "This alkali is almost as fine as flour, and it lies to a depth of about four inches on the level. Owing to the wind which blows here continually, it is a circulating medium of the most marked character . . . Many here are bleeding from the lungs from inhaling the alkali, which . . . permeates to such an extent as would leave any person to believe that by swalling a small amount of tartaric acid we would all be brought to a state of effervescence . . ."

Chisholm must have been a character to be around. He always seems to be losing something on his excursions and we are most fortunate when he was able to recover his lost notebook. One of my favorite incidents in Chisholm's travels is when John and his traveling companion get a little careless when boiling some coffee and start a grass fire.

> "I jumped on it with a long stick and endeavored to beat it out but it was too late. In a minute we were all be surrounded. John seized all he could lift in his arms and would have rushed up the bluff while I took to the

> creek with an armsful. We had a pile of cartridges and a large flask of powder lying somewhere, and in the excitement of the moment they could not be found. It was a question of whether we would have to flee and lose everything or risk an explosion."

They did manage to find the powder flask before it became a bomb.

This is the fourth printing of this fine book. There is a wealth of information about tools, weaponry, clothing, mores, and even some of the characters of local color (such as Mountain Bill Rhodes). The book is recommended as a must for those studying mining camps as well as for those who would like to pass a few pleasant hours with an interesting observer. How unfortunate that Chisholm went back to Chicago. We could have used a lot more of his good work here.

Terry A. Del Bene
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Rock Springs, WY

CAHOKIA: Domination and Ideology in the Mississippian World. Edited by Timothy R. Pauketat and Thomas E. Emerson. 1997. University of Nebraska Press, Lincoln. 360 pp, list of illustrations and tables, notes, references, index. $55.00

This new book on Cahokia is much more than a compilation of recent archaeological information concerning the American Bottoms. Rather, it is a sophisticated multi-disciplinary approach at placing the site of Cahokia in a local and regional context, interweaving subsistence, ideology, political power, social structure, power elites, long distance trade and anthropological theory into a new view of a Cahokia dominated Mississippian Culture. As such, it is a signal book, destined to become an essential reference for Mississippian researchers for decades to come.

Thirteen chapters are authored or co-authored by nine scholars. The introductory chapters, written by Pauketat and Emerson, places Cahokia in its regional setting and sets the tone for the volume. The editors describe Mississippian Culture in terms of Social History, a dynamic and changing (evolving?) hierarchical system at the chiefdom level of development. Pauketat dedicates an entire chapter to defining Cahokia's political economy, intertwining Mississippian ideology with economics. The chapter examines both the individual and the household as units of production. Status differences are inferred by the rather spectacular mortuary remains (from individual interments to cemeteries) and monumental construction (this is Cahokia) at the site; value and ideological interpretations are assigned to the archaeological manifestations.

Subsequent chapters by Niel Lopinot and Lucretia Kelley analyze Cahokia's vegetal and faunal resource exploitation. These are complete treatments, discussing floatation results, seed use, small mammal and avian utilization, the "total food web." Rinita Dalan's presentation on "downtown Cahokia" was the result of a remote sensing effort using conductivity, resistivity and soils magnetics measured from cores. The effort is laudable; I wished she had provided graphics on the remotely sensed data.

Pauketat and Lopinot's population analysis is intriguing. Drawing from Illinois Department of Transportation (IDOT) mitigative highway work , the authors discuss population dynamics diachronically and regionally. Was Cahokia urban? Not to these authors who take a refreshingly critical, conservative and analytical approach to Cahokia's demographics. James Collins' household analysis, though brief, looks at Cahokia households within the greater context of Mississippian social structure. Perhaps leaning on the term "elite" too heavily, one cannot refute status distinctions among those notables who had lavish material cultural remains. John Kelly, again using IDOT data, provides a descriptive presentation comparing Cahokia with a mound center excavated at East St Louis during me Sterling Phase, the Cahokia chronological apex.

Thomas Emerson, director of the IDOT program of archaeological investigations, presents an exciting synthesis of regional sociopolitical dynamics. Based firmly within extant anthropological theory, Emerson's two chapters demonstrate the heights impact-based archaeological investigation can attain. He views Cahokia's growth and development as a dynamic, changing and complex system with control by power elites waxing and waning, measuring influences from the hinterlands and recognizing "artifacts and architecture of power." Emerson's version of the Rise and

Fall of Cahokia was to me a brilliant synthetic effort. There's even a little post-processural work to criticize, but I won't!

Vernon Knight presents a brief comparison between Cahokia and Moundville. Following Knight, David Anderson's contribution puts forth the thesis that Cahokia played a critical role in shaping southeastern Mississippian cultural development. While I found room for disagreement here, Anderson's attempt to provide truly a continental perspective to Cahokia is noteworthy. Finally, Pauketat and Emerson conclude by tying together the volume into a Cahokia-dominant perspective of Mississippian culture. Noting similarities and differences with other Mississippian polities, Cahokia's demise is viewed as an internal, almost inevitable circumstance of chiefdom.

The volume demonstrates that dedicated scholars can produce first rate archaeological theory, inspired by a database of highway construction motivated projects. But the book isn't about highway projects around East St. Louis, it's about Cahokia. If you want to read about current thinking concerning arguably the largest earthen mound site in North America, this book's for you. Cahokia truly is one of the most important archaeological sites in North America. I think this book (and the CRM effort behind it) does fine justice to a magnificent site.

David Vlcek
Bureau of Land Management
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Pinedale, WY

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