THE WYOMING ARCHAEOLOGIST

VOLUME 32 (3 - 4)

FALL 1989

THE WYOMING ARCHAEOLOGIST

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Membership period is from January through December. All subscriptions expire with the Fall/Winter Issue and renewals are due the first part of January each year. Continuing members whose dues are not paid by March 30 of the new year will receive back issues only upon payment of $5.00 per issue.

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THE WYOMING ARCHAEOLOGIST
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ARCHAEOLOGICAL SOCIETY, INC.

WYOMING ARCHAEOLOGICAL SOCIETY MEMBERS:

As the newly elected President of the Wyoming Archaeological Society, I would like to take this opportunity to introduce myself and present some information on the accomplishments and direction of the Society and Foundation. During my many years of belonging to the Society, I have met and gotten to know most of our members and I hope to acquaint myself with everyone as a new friend or to reestablish previous friendships. As WAS President I want to make myself available to everyone for any questions, complaints, suggestions, and inquiries of any kind. I will try to address your concerns or problems as best I can.

Archaeology in Wyoming continues with many and varied exciting activities and events, and I hope all of you have availed yourself of at least some of the opportunities to participate in Wyoming archaeology. Dr. Frison conducted a Field School at the Lookingbill Site prior to his trip to Russia. Dr. Miller has been busy trying to meet demands on his time all over the State, as has Danny Walker. Dr. Francis has continued her survey work a South Pass City, and Dr. Reher has been involved again this summer with his work at Pine Bluffs. In conjunction with these activities we have had the field trip on August 11 through 13 at Pine Bluffs sponsored by the Cheyenne Chapter at the High Plains Archaeology Project and also on August 19, the flint knapping and atlatl contest in conjunction with the Fort Caspar Museum. This was followed by a lecture by Dr. Frison on his trip to Russia.

I have been working with our new Editor of the "Archaeologist", Toddi Darlington, to make a smooth transition from the fine job that was done by our previous Editor, Sandra Hanson. We are instituting a few changes to the publication and your reaction would be welcome. I would also like to encourage anyone as an individual or a Chapter to submit articles which would be appropriate for the "Archaeologist". It is always educational to have amateurs as well as professionals publish their reports and accomplishments.

Best wishes are sent out on behalf of the Society to our previous Editor Sandra Hanson in her new job as Public Relations Director at Eastern Wyoming College.

On July 28, 1989, we held our summer meeting in Laramie as a work shop on Hell Gap. On Friday we traveled to the Hell Gap Site with Dr. Eileen Johnson of Lubbock, Texas, and Dr. Frison gave a fine tour of the property with insight on the history and future for Hell Gap. On Saturday we met in the Anthropology Building in Laramie where Dr. Frison and Dr. Miller discussed the background of the site and gave intuitive suggestions for

future preservation and development. We were afforded the opportunity to view the original artifacts which were excavated by the Peabody Museum. Dr. Johnson then gave a well prepared and informative lecture on development of a Master Plan for our responsibilities and goals for the Hell Gap Site. I feel this discussion helped tremendously to establish the concepts of how to preserve, develop and manage the site. We have included an article in the "Archaeologist" that summarizes the information from Dr. Johnson.

We will have our Fall Workshop on November 11 at Laramie and I would encourage everyone to attend. More information will be forthcoming from Dr. Francis.

The High Plains Chapter had volunteered to host the annual spring meeting for 1990, but they have subsequently withdrawn their invitation, so if any chapter would like to volunteer to be the host chapter we can discuss this at the Fall Workshop.

Enclosed in this issue you will find the various minutes of the meetings of the Society and the Foundation Board which will explain in greater detail the discussions held and the business transacted. Any questions or comments can be directed to me or any other Society officers or Foundation Board members.

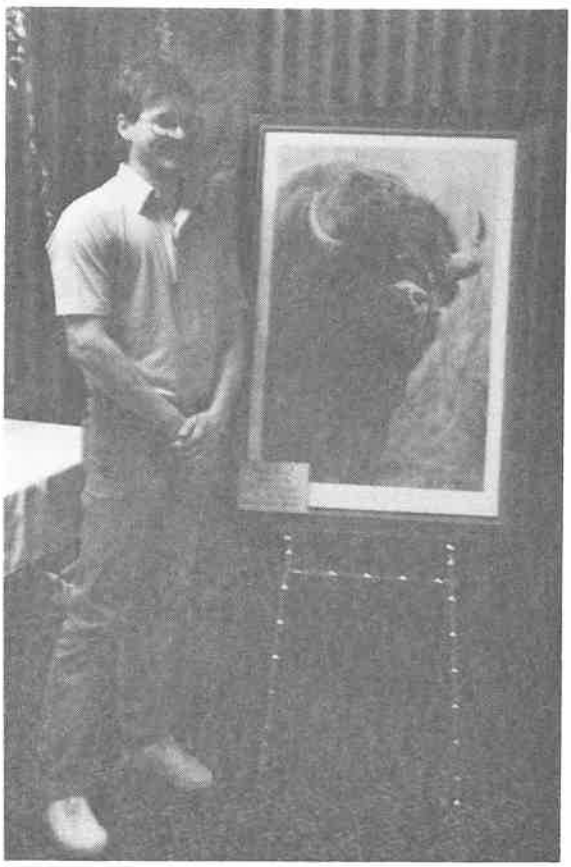
Sincerely,

Bill Scoggin
President, WAS

ANNOUNCEMENTS

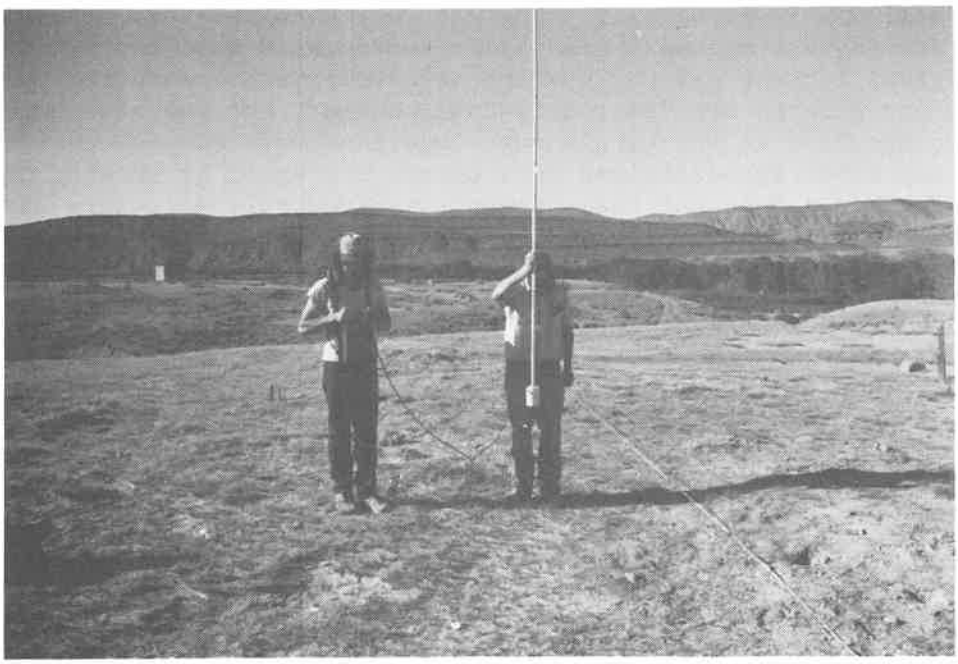
Jay Meyer of Riverton, Wyoming, University of Wyoming graduate student in Anthropology, receives the George C. Frison Scholarship from Carolyn Buff, Executive Secretary/Treasurer of the Wyoming Archaeological Society (photo by Dr. Danny N. Walker).

George C. Frison, Professor of Anthropology, University of Wyoming, and former Wyoming State Archaeologist, receives a special Golden Trowel Award from Dr. William Scoggin, President of the Wyoming Archaeological Society, at the 1989 annual spring meeting.(photo by Dr. Danny N. Walker).



Frank Zeller, of Cody, Wyoming, stands next to the grand prize raffle drawing he won at the evening banquet at the 1989 annual spring meeting of the Wyoming Archaeological Society. The prize was a Vivi Crandal print (photo by Dr. Danny N. Walker).

Dr. Julie Francis (left), Mr. Rick Gaumer (middle) and Mr. Marcel Kornfeld (right) are seen here preparing to establish a grid system over the Fort Fred Steele Cemetary in Carbon County prior to conducting soil resistivity and magnetometer studies on the site. These studies were a necessary first step in future interpretation of the cemetary as part of the on-going development of Fort Fred Steele as a Wyoming Historic Site (photo by Dr. Danny N. Walker).



The Wyoming State Archaeologist's Office conducted preliminary soil resistivity and magnetometer studies at the Fort Fred Steele Cemetary in Carbon County this past spring. Shown here are Mr. Rick Gaumer (left) and Dr. Mark Miller (right) taking magnetometer readings on a portion of the cemetary (photo by Dr. Danny N. Walker).

THE WORK SHOP ON HELL GAP

The work shop on the Hell Gap Site began July 28 with a field trip to the site outside Guernsey to allow Dr. Johnson an actual site visitation. Fifteen people made the trek with Dr. Frison leading a tour of the site and a discussion of the previous work done by the Peabody Museum and such individuals as Vance Haynes, Richard Moreland, and Cynthia and Henry Irwin. Dr. Frison stated the archaeology was very professionally done with this being the type site for the Hell Gap point and the first discovery in situ of the Goshen Complex. A good stratigraphic sequence of Paleo Indian was established and detailed field notes were kept, but unfortunately a complete publication was never forthcoming.

On Saturday, July 29, we met in Laramie at which time Dr. Frison summarized the history of archaeology in Eastern Wyoming and the Hell Gap Site in particular. We all had the opportunity to view the original artifacts excavated by the Peabody Museum which are now in Dr. Frison's possession for study.

Dr. Miller also spoke on comparative archaeology of the Hell Gap Site with other sites such as the Powers II Site and the Patton Creek Site. He emphasized the importance of Hell Gap because it was a campsite with evidence of all stages of Paleo point and tool production and important faunal material was also excavated.

Dr. Eileen Johnson of the Lubbock Lake Site in Texas then presented an excellent program on development of a Master Plan for an archaeological site and Hell Gap in particular. She was very complimentary of our achievements when she stated that she was "greatly impressed with what the Wyoming Archaeological Society and the Wyoming Archaeological Foundation have done" and our efforts are "extremely commendable", but she also emphasized that a "Master Plan is the single most important work you can do for the Hell Gap Site". She explained this strong statement by showing that a Master Plan is a document that demonstrates control, structure and accountability by the Board as well as protects the site and establishes a basis for fund raising for future development. The "Master Plan represents a consensus of what needs to be done and how it will be done".

Dr. Johnson then queried all the people present in the room as to perceptions of why the site was purchased and priorities for its future. This discussion then became the basis to establish a statement of purpose and philosophy. It was readily apparent that almost all people present were in agreement that the site was acquired for preservation and to prevent loss of the site with research and development a future priority. As funding and practicality would allow, planning could be done for a possible research center, on-site museum, interpretive center or visitors center. As Dr. Frison stated, we wanted control of the Hell Gap Site for "management in the best interests of future research".

Based on these statements of site potential, Dr. Johnson suggested the following guidelines:

I. Establish in writing as a document unto itself a statement of purpose, scope and philsophy.

II. Establish priorities of action that can be accomplished prior to full development of the Master Plan.

A. Place the Hell Gap Site on the National Register.

This is done to help in preservation of the site, establish the site as one of national importance, create landmark status, and it becomes a crucial tool for receiving funding.

B. Establish that all deeds and leases are accurate, clear and unencumbered.

We need to acquire an unrestricted deed on the donated Gorman property because the 5 year and 10 year requirements for building are unrealistic and too binding. Also, the mistated description of the Fredericks property which we acquired must be corrected and we need to continue in our efforts to acquire a lease on the northern part of the site which is on private property.

C. Obtain liability insurance for the protection of the property and the Wyoming Archaeological Society.

D. Remove the Airstream trailer on the property as it belongs to the State and is not part of our ownership.

E. Obtain a survey of actual property lines.

F. Place a fence around the property to denote the property boundaries.

G. Gather all material from previous research and aid in its analysis and publication.

This is important because it serves as an inventory of all materials from the site, it will be the basis for all future research and it becomes the proof of the national significance of the site.

III. The General Master Plan process.

The development of the Master Plan will be a reflection of the statement, scope, and philosophy, and it serves as a guiding document for current and future Boards. The Master Plan is then composed of three major sections:

A. The Introductory Phase:

1. The philosophy statement.
2. The background on the archaeology, the history and the standing structures on the property.
3. A statement of what information we have to date.
4. A statement of why Hell Gap is important.

B. The Major Phase:

1. Development of Value Maps:

a. A map of prehistoric, historic, and architectural cultural resources.

-a survey and statement of site boundaries, mineral rights and all resources and their extent on the property.

b. A map of natural resources.

-this illustrates the geology, soils, biology and water of the property.

c. A map of development limitations.

-this defines by the Board any boundaries and limitations for all development on the property.

These three maps can then be overlaid on each other to delineate value areas and show where developments will have the least impact on the archaeology and resources of the property.

d. Interpretive potential map.

-this map will illustrate interpretive areas of greatest interest and value for public education and involvement.

e. Map of past land use.

-this map will illustrate areas of past excavations, roads and trails, utility lines and construction.

A combination overlay of all these maps will then become a critical tool to determine future research, construction, public access and funding for Hell Gap.

2. Discussion of archaeological research considerations:

This body of the Master Plan is a statement of site potential, possible research and the philosophy of research, a determination of who will do research projects, how any research will be coordinated and monitored, and establish the system of permitting by the Foundation Board. It also includes a statement of ownership and repositories for all material recovered from the site, to include management, conservation, storage and research use of items such as artifacts, faunal remains and records.

3. Discussion of intrepretive process:

This portion explains and establishes public involvement as to kind and degree that is recommended for the site. This can be a single interpretive display or an involved visitors center and museum.

C. The Closing Phase:

The final phase of the Master Plan is a discussion of how it will be accomplished.

1. The type of development:

The options range from complete site development accomplished all at once or development done in stages.

2. Development of operations:

A discussion of buildings, kinds and sizes, utilities, parking areas and other developments and how they would impact the site.

3. Costs and budgets:

This is a breakdown of funding, its sources and how it will be acquired with a budget of projected expenses.

4. Land use patterns:

   A discussion of the projected use of the property for present and future considerations.

5. Facilities:

   An inventory of the actual existing facilities on the property with a description for the use of each item listed.

As you can see, the Master Plan process is long, detailed and difficult, but most of all it is critical for correct and responsible preservation and development of the Hell Gap Site. We have in our ownership one of the most valuable and potentially informative archaeological sites in the New World, and we as Society members need to strive to manage the site development and reaearch with the respect it deserves.

Bill Scoggin

Members of the Wyoming Archaeological Society and Wyoming Archaeological Foundation met on July 28, 1989 at the Hell Gap site near Guernsey, Wyoming, to tour the property with Dr. Eileen Johnson, Director of the Lubbock Lake site in Texas. Part of the group is shown here near Locality III at the northern end of the valley. They are discussing the site with Dr. George C. Frison, Professor of Anthropology at the University of Wyoming, who guided the tour. From left to right: Dr. Frison, Dr. Johnson, Carl Belz, John Albanese, Ada Jackson, and Dewey Baars. Two unidentified participants are standing to Baars' right. (photo by Dr. Mark E. Miller).

WYOMING
ARCHAEOLOGICAL SOCIETY, INC.

WYOMING ARCHAEOLOGICAL SOCIETY, INC.
1989 ANNUAL MEETING MINUTES
Jeffrey Center, Rawlins, Wyoming
Friday, April 21, 1989

PRESIDING: Alan Korell, President

CALL TO ORDER: 7:30 p.m.

ROLL CALL AND CERTIFICATION OF DELEGATES: Secretary/Treasurer Carolyn Buff certified the voting delegates: Absaroka, Ilena Miller and Frank Zeller; Casper, Carl Belz and Grover Phelan; Cheyenne, Susan Carlson and Julia Hasenkamp; High Plains, Clayton Housh and Terry Paterson, and Rawlins, Bonnie Johnson and Marilyn Mills. Roll call showed five chapters represented: Absaroka, Casper, Cheyenne, High Plains, and Rawlins. Not represented at the meeting were Cherokee Trail, Fremont County, Platte County, Sheridan, and Sweetwater County.

MINUTES OF LAST ANNUAL MEETING APRIL 8, 1988: Motion by Carolyn Buff, second by Bonnie Johnson to dispense with the reading of the minutes and approve as published in the Fall 1988 issue of The Wyoming Archaeologist. Carried.

TREASURER'S REPORT: Secretary/Treasurer Carolyn Buff gave the treasurer's report showing a total net worth as of March 31, 1989 of $14,602.33. Motion by Carl Belz, second by Marilyn Mills to file the treasurer's report for audit. Carried. The treasurer's report was audited and found to be in order. Milford Hanson gave the Foundation treasurer's report showing a total net worth of $20,365.26, plus 80 shares of IBM stock, value unknown at the time of the meeting. Carolyn Buff announced that there are approximately 132 memberships unpaid, two chapters unpaid: Cherokee Trail and Platte County, and that the amount of the state dues was misprinted in the previous issue of the Archaeologist. The correct figures should read: single = $6.00 and family = $7.50 and if any chapter had overpaid they could request a refund.

EDITOR'S REPORT: Sandra Hansen announced that the journal was available if dues had been paid. Members may pick them up at the registration table. She also recommended that perhaps we should increase the rates for Canadian subscriptions due to the higher cost of mailing the journals to Canada. The bulk permit is currently in Rawlins and solvent. Ms. Hansen announced her resignation, effective the end of the current school year. She also highly recommended that the Editor have computer capabilities. The recommendation is for the Wyoming Archaeological Society to purchase a computer system.

Motion by William Scoggin, second by Carolyn Buff to write a letter of commendation and recommendation for Sandra. Carried.

LIBRARIAN'S REPORT: Danny Walker reported that there was no report because no publications had been received by him since last year. Frank Zeller announced that the Absaroka Chapter had established a library and if any chapter would like a listing, to contact him.

SCHOLARSHIP COMMITTEE: Carolyn Buff, chair, reported that scholarship recipients would be announced at the banquet on Saturday.

CHAPTER REPORTS: Absaroka, Frank Zeller; Casper, Grover Phelan; Cheyenne, Susan Carlson; High Plains, Terry Paterson; and Rawlins, Bonnie Johnson.

ANNOUNCEMENTS: Carolyn Buff announced that the Atlatl Contest will be held at Fort Caspar on August 19. She also announced that stationary and membership cards are available to all chapters.

Alan Korell announced a search for an Editor and we would accept volunteers. A post script to the meeting: Toddi Darlington from Rawlins later accepted the position of Editor.

Alan Korell announced that the Foundation meeting would be held on Sunday morning at 8 a.m. at the Bel Air Inn.

Chuck Reher issued an invitation to the Wyoming Archaeological Society to have the summer meeting at Pine Bluffs. Susan Carlson submitted a proposal for same.

NOMINATING COMMITTEE: Alan Korell announced that one three-year member was to be elected to the Foundation Board in addition to the president, first vice-president and second vice-president of the Society.

BREAK

OLD BUSINESS: Membership Post Cards: Motion by Carl Belz, second by Bonnie Johnson to drop the plans for printing membership post cards and selling them to the chapters because all chapters represented reported that they had methods for notification of dues payable. Carried.

NEW BUSINESS: None brought to the floor.

ELECTION OF OFFICERS: Danny Walker and Milford Hanson, nominating committee, announced nominees: William Scoggin, President; Frank Zeller, First Vice-President; and Bonnie Johnson, Second Vice-President. Motion by Marilyn Mills, second by Ilena Miller to cast a unanimous ballot. Carried.

Nominations for Foundation Board of Directors, three-year term: nominees to include John Albanese, Carolyn Buff, Lou Steege, and George Zeimens. The vote indicated two votes for Albanese, two for Buff, four for Steege, and two for Zeimens. Lou Steege was elected by written ballot.

SELECTION OF SITE FOR SUMMER MEETING: Motion by Bonnie Johnson, second by Carl Belz to hold the summer meeting at Hell Gap in conjunction with a visit from Dr. Eileen Johnson from the Lubbock Lake area. Carried. After much discussion it was also agreed that dates for the Pine Bluffs visitation by Society members would be arranged and announced after a date is set for the Hell Gap meeting.

SELECTION OF SITE FOR 1990 ANNUAL SPRING MEETING OF THE SOCIETY AND FOUNDATION: The High Plains Chapter will host the 1990 spring meeting on April 26, 27, 28, 1990.

APPOINTMENT OF NOMINATING COMMITTEE FOR 1990: Danny Walker, chair, Milford Hanson, and Chuck Reher.

CORRESPONDENCE: A letter from the Montana Archaeological Society was read inviting the Wyoming Archaeological Society and the North Dakota Archaeological Society to a tri-state meeting in Billings, Montana on April 18-21, 1991. After discussion it was decided to poll the chapters to see if there would be interest in participating.

Julie Francis asked for ideas for the fall workshop.

INTRODUCTION OF NEW OFFICERS: Alan Korell introduced the officers for 1989-1990: Bill Scoggin, president; Frank Zeller, first vice-president, and Bonnie Johnson, second vice-president.

BYLAWS REVISION COMMITTEE: Bill Scoggin, Carolyn Buff, Bonnie Johnson, and Danny Walker, to meet as soon as possible.

ADJOURN: 9:20 p.m.

RECONVENE BUSINESS MEETING: Saturday, April 22, 1989, 10:15 a.m. It was discovered following the meeting on Friday evening that the election of the three-year position on the Foundation Board had not been valid as per the Wyoming Archaeological Foundation, Inc. Bylaws. The bylaws state that there must be a two-thirds vote; therefore, the business meeting was reconvened to re-cast ballots for the position. Carolyn Buff withdrew her name from consideration. Following voting by written ballot, John Albanese was elected to serve a three-year term on the Wyoming Archaeological Foundation Board of Directors.

BANQUET ANNOUNCEMENTS: Saturday, April 22, 1989: Jude Carino of the Wyoming Association of Professional Archaeologists presented the Wyoming Archaeological Society with a check in the amount of $100.00 to be designated toward the purchase of a computer printer. Dr. Julie Francis contributed her Wyoming Humanities Council honorarium in the amount of $138.00 toward scholarships, and Dr. George Frison returned the honorarium of $200.00 as banquet speaker to the Society to be used for scholarships.

GOLDEN TROWEL AWARDS: Ada Jackson, Saratoga and Bill Barlow, Gillette.

SPECIAL GOLDEN TROWEL AWARD: Dr. George Frison, University of Wyoming.

SATURDAY'S PAPER PRESENTATIONS:
"An Introduction to the Archaeology of Seminoe Reservoir, Hanna Basin, Wyoming," by Dr. Mark Miller, Wyoming State Archaeologist.

"The Wollesen Site: A Late Prehistoric Stone Circle Complex in Southeastern Montana," by Kyle C. Baber, University of Wyoming.

"The Barnes Bison Jump: Late Prehistoric Settlement and Subsistence Patterns in the Green River Basin, Wyoming," by Steven D. Creasman, Western Wyoming College.

"1988 Investigations at Legend Rock," by Dr. Danny N. Walker, Assistant Wyoming State Archaeologist.

"Age and Sex Determination of Bison Recovered from the Jackson Lake Reservoir Project," by Debra A. Swearinton, Department of Anthropology, University of Wyoming.

"Archaeology on the Exxon-LaBarge Project, Southwest Wyoming," by Dave Vlcek, BLM-Pinedale.
"Excavations at 48NA969, The Edness-Kimball Wilkens #1 Site," by David G. Eckles, Office of the Wyoming State Archaeologist.

Banquest Speaker: Dr. George Frison, Department of Anthropology, University of Wyoming, "The History of Archaeology in Wyoming."

Carolyn M. Buff

Carolyn M. Buff
Executive Secretary/Treasurer

Alan Korell

Alan Korell
President

WYOMING ARCHAEOLOGICAL SOCIETY, INC.
SCHOLARSHIP COMMITTEE
MINUTES

PRESIDING: Carolyn Buff, Chair

PRESENT: Carolyn Buff, Alan Korell, Mark Miller, William Scoggin

Motion by William Scoggin, second by Alan Korell to award the Frison Scholarship to Jay Meyer and the Mulloy Scholarship to Michael Stafford, and that the awards be $350.00 each. Carried.

Carolyn M. Buff

Carolyn M. Buff
Scholarship Committee Chair

MINUTES OF BOARD OF DIRECTORS MEETING
OF THE WYOMING ARCHAEOLOGICAL FOUNDATION
AT RAWLINS, WYOMING ON APRIL 23, 1989

The meeting was convened at 8:10 a.m. by Dr. William Scoggin who was acting as Chairman of the Board in the absence of George Brox, elected Chairman. Board members in attendance were: Dr. William Scoggin; Milford Hanson; Alan Korell; John Albanese; Dr. George Frison, ex officio; Dr. Mark Miller, ex officio.

An election of officers was held with the following results:
George Brox, Chairman
Milford Hanson, Treasurer
John Albanese, Secretary

The reading of the minutes of the previous Board Meeting was waived. Milford Hanson subsequently presented a Financial Statement 1988 - 1989, concerning the financial condition of the Foundation as of April 18, 1989. The Statement indicated that the Foundation, during the previous year, had a net income of $26,160.26 and expenditures of $3,795.00, with a resultant balance of $22,365.26. In addition, the Foundation possessed 80 donated shares of I.B.M. stock. It was further announced that an Auditing Committee had examined the financial records of the Foundation and found them to be in order.

A letter dated October 7, 1988, from Ada Boriel Jackson, addressed to Dr. and Mrs. George Frison, was read by Dr. Frison. The letter concerned Mrs. Jackson's vital role in securing a $20,000.00 donation to the Foundation by the Nason Charitable Foundation for the development of the Hell Gap Site. Mrs. Jackson stressed the importance of keeping the Nason Foundation aware of what work and improvements were occurring at Hell Gap so as to enhance the possibility of securing future funds. A motion was presented by John Albanese and seconded by Alan Korell that the Chairperson of the Foundation send a semi-annual report to the Nason Foundation concerning activities at the Hell Gap Site. George Frison stressed the importance of such action. The motion was approved unanimously.

Alan Korell reported on the results of the cleanup of trash and removal of dilapidated buildings and trailers at the Hell Gap Site which was carried out by the High Plains Chapter, and towards which $3,000.00 had been granted by the Foundation. Most of the area has been cleaned up but some trash still remains.

A discussion was held as to who has possession of the warranty deed of the Gorman et al property that was donated to the Foundation. Harley McKinney did not know who had actual possession, but that legally it did not matter as long as the deed was recorded in the Goshen County Court House which has been done. A discussion followed and it was stressed by W. Scoggin that better record keeping be kept as to authorization expenditure of moneys plus other data necessary to run a business and satisfy the I.R.S.

A discussion was held concerning the frequency of Board Meetings and difficulty of getting full attendance. H. McKinney suggested the use of conference telephone calls.

Another discussion concerned the current payment of property taxes for the Hell Gap Site property and who had paid them in the past. It was suggested that the Clerk of Goshen County be notified that future tax notices should be sent to the Foundation.

H. McKinney notified the Board that 6000 acres previously owned by Travelers Insurance had been bought by a Mr. Peterson of Chicago and that he was willing to give a 99 year lease on some of this property that adjoins the Hell Gap Site. Conversation and an agreement with Mr. Peterson will have to be finalized by May 1, 1989. Motion by Milford Hanson, second by A. Korell, to negotiate with Peterson to secure lease on 80 acre tract that adjoins land owned by the Foundation. Motion carried.

Dr. William Scoggin suggested that Ms. Cathy MacPherson, a Rawlins attorney, be made Official Attorney of the Foundation on a volunteer basis. Milford Hanson said that he would contact a C.P.A. in Cody, to act as Advisory Accountant to the Foundation. Harley McKinney commented that the Foundation needed an attorney with a business law background. Cathy MacPherson stressed that during the early "growing pains" period of the Foundation, an attorney's aid was needed to avoid problems.

A bond for the Foundation Treasurer was discussed and all agreed that one should be secured.

Motion by A. Korell, second by J. Albanese, that Cathy MacPherson be retained as Foundation Attorney and that Milford Hanson contact a C.P.A. in Cody to see if he would act as the Foundation's Accountant. It was further declared that Harley McKinney be commended and thanked for his past efforts as legal advisor to the Foundation. Carried.

W. Scoggin strongly suggested that liability insurance be obtained for the Hell Gap. Site. He stressed the importance of such coverage in the event the Foundation was sued for personal injury.

Motion by J. Albanese, second by M. Hanson that Dr. Scoggin, in consultation with an attorney, work up a liability insurance package that could be sent out to insurance agents for bid, and that this report be submitted to the Board. Carried.

A discussion was held concerning the archaeological tours conducted by the High Plains Chapter in eastern Wyoming which include trips to the Hell Gap Site. A. Korell said that he would investigate the status of these trips and report back to the Board. Some concern was expressed concerning tour trips to the site in the absence of liability insurance.

Motion by J. Albanese, second by M. Hanson, that all archaeological tours be suspended at the Hell Gap Site until a liability insurance policy is issued. Carried.

A discussion concerning future expenditures at Hell Gap stressed the importance of spending monies in a systematic and well planned manner so that additional grants can be requested from the Nason Foundation.

Motion by J. Albanese, second by M. Hanson, that Dr. George Frison draw up an expenditure list concerning future archaeological activities at the site and that this list of proposed expenditures be submitted to the Board. Carried.

Motion by M. Hanson that John Albanese draw up plans to have Hell Gap Site property boundaries surveyed by a professional engineer and that other pertinent geographic and site date be included in the mapping project. This plan will then be submitted to the Board. Carried.

Motion by J. Albanese, second by M. Hanson, that the Office of the Wyoming State Archaeologist be designated as official repository for documents of the Wyoming Archaeological Foundation. Carried.

Motion by A. Korell, second by M. Hanson, that the official address of the Wyoming Archaeological Foundation be that of the Chairman of the Foundation. Carried.

A discussion of the importance of a Master Plan for development of the Hell Gap Site was lead by W. Scoggin. He mentioned that he had written to Dr. Eileen Johnson of Texas Tech University, who is Director of the Lubbock Lake Landmark, and asked for her advice in developing a Master Plan. At a future date, to be determined, a meeting of the Board will be held at the Hell Gap Site in conjunction with a visit by Dr. Johnson. Dr. Johnson has been the main influence for the past 17 years in the development of the Lubbock Lake Site, a major paleoindian site on the southern plains.

Motion by A. Korrel, second M. Hanson, that a Master Plan for development of the Hell Gap Site was of major importance and that such a plan should be formulated as soon as possible. Carried.

It was decided that the next Board meeting will be held in Casper on May 20th at 12:00 noon.

Alan Korell said that he would meet with architectural students at the University of Wyoming who had visited the Hell Gap Site. The students, as part of their class work, have drawn an architecural plan for a visitors center at the site. Alan will receive copies of the student architect's plans.

One of the last matters of business at the lengthy Board Meeting was the matter of signature cards for the Foundations checking account at Cody. Milford Hanson is the only person now authorized to sign checks. It was suggested that the Chairman also have the authority to sign checks.

Motion by M. Hanson, second by J. Albanese, that both the Chairman and Treasurer of the Wyoming Archaeological Foundation be authorized to sign checks drawn on the Foundation's checking account. Carried.

The meeting adjourned at approximately 11:00 a.m.

Respectfully submitted,

John Albanese
Secretary
Archaeological Foundation

JA:rjd

MINUTES OF THE BOARD OF DIRECTORS MEETING
WYOMING ARCHAEOLOGICAL FOUNDATION

May 20, 1989
Casper, Wyoming

The meeting of the Board of Directors of the Wyoming Archaeological Foundation was convened at 1:10 p.m. on May 20, 1989 at the Casper Petroleum Club; Casper, Wyoming. Members of the Board that were present at the meeting were: George Brox, Chairman; Milford Hanson, Treasurer; John Albanese, Secretary; Dr. William Scoggin; Alan Korell; Dr. George Frison, ex officio; Dr. Mark Miller, ex officio; Cathy MacPherson, Foundation Attorney.

The reading of the minutes of the previous meeting were waived. Milford Hanson presented a Treasurer's Report and indicated that the Foundation presently had a cash balance of $23,061.83. A motion was made by Alan Korell to approve the Treasurer's Report, second by William Scoggin; passed. George Brox was authorized to sign the signature card for the Foundation's checking account. In the future, two persons, Milford Hanson and George Brox, will be authorized to sign checks for the Foundation.

A discussion concerning liability insurance for the Foundation was led by W. Scoggin. He presented a memorandum, written by Cathy MacPherson, that set out the specific parameters that the liability insurance should cover. W. Scoggin has contacted two insurance agencies for cost quotes on the insurance. To date, only the Wise Agency of Rawlins has responded. It was decided that a decision to accept a bid should wait until more bids are received from other insurance agencies. A motion to this effect was made by W. Scoggin, second by M. Hanson; passed.

A report on a proposed land survey of the WAF property at Hell Gap was presented by J. Albanese. Albanese reported that a discussion with Dan Seik, a professional surveyor of Casper, indicated that it would cost between $6,000.00 - $8,000.00 to conduct a survey that included the following:

1. Survey of property and lease boundaries.
2. Emplacement of brass markers that mark section corners and quarter-corners.
3. Emplacement of 15 ground control points for future and present aerial photography coverage.
4. Establishment of datums at three Harvard excavation areas.
5. Survey of existing fences.

W. Scoggin mentioned that Robert Jack Smith of Rawlins, a professional engineer-surveyor firm, would be interested in doing the survey and also that some individuals in Rawlins would do the surveying on a volunteer basis. A. Korell mentioned that a professional surveyor in Torrington would also conduct the survey project on a volunteer basis. W. Scoggin motioned that the land descriptions on the Frederick and Gorman et al Warranty Deeds are in error. W. Scoggin moved that C. MacPherson draw up corrected Warranty Deeds and also that A. Korell contact the surveyor in Torrington to see if he would carry out the required land surveying; second by M. Hanson; passed.

A discussion concerning the official repository of the Foundation ensued. The consensus opinion was that the official repository for Foundation documents should not be at the University of Wyoming but rather the repository should be one of the officers of the Foundation. W. Scoggin moved that the Treasurer's office of the Foundation should be the official repository for all documents and records of the WAF; second by A. Korell; passed.

A report was presented concerning the Architectural Class (University of Wyoming) design for Hell Gap facility development. G. Frison mentioned that he had viewed the design plans and had taken video movies of the plans. A VCR was not available for showing at the meeting and it was decided to successively mail the video to individual Board Members. G. Frison was impressed by the quality and thoroughness of the student plans which are on file at the Engineering Department, University of Wyoming. Thirteen students were involved and each formulated separate plans which included a Visitors Center, Equipment Storage, Dormitory for students involved in excavation and a recreational vehicle park. Possible total costs of the facilities, as outlined on the various plans, varied between $350,000.00 and $1.5 million.

A discussion was held concerning past and future property taxes at the Hell Gap Site. W. Scoggin reported that he had written the Goshen County Assessor and requested information concerning the tax status of the properties. Copies of three tax receipts involving WAF properties were sent to Scoggin. These included:

1. $578.60, January 3, 1989, on Frederick Estate.
2. $201.88 by Minnie Frederick Estate.
3. $157.13 paid in 1988 for Gorman et al properties.

All of the above tax receipts included the lands owned by the WAF plus other lands outside the Hell Gap Site area. In addition, it was mentioned that Hell Gap Expeditions (George Ziemens) had paid $78.71 for delinquent 1988 property taxes on the Gorman et al property. The question of what the actual property taxes are for the properties owned by the WAF will have to wait until the next tax notices are received from the Goshen County Assessor.

The question of what monies had been dispersed by George Ziemens (Hell Gap Expeditions) in connection with the Hell Gap properties was further discussed. George Ziemens had apparently negotiated a grazing lease on the properties for $150.00. He accepted payment and then used the money as follows:

1. $77.59 - Meals for architect students who visited Hell Gap Site (paid by Hell Gap Expeditions).
2. $78.71 - Property taxes, Gorman et al property (paid by Hell Gap Expeditions).
3. $28.00 for filing fees, Warranty Deeds on Hell Gap properties.

It was moved by W. Scoggin that the WAF send a check for $156.30 to Hell Gap Expeditions (George Ziemens) for payment of student meals and 1988 property taxes on Gorman et al property. A separate check for $28.00 is to be sent to George Ziemens in payment for filing fees for Warranty Deeds; second by Milford Hanson; passed.

W. Scoggin reported that Gary Schmidt of Title Guaranty of Rawlins has offered to issue Title Insurance on the Frederick's properties at Hell Gap, free of charge to WAF. The same offer will probably also apply to the Gorman et al property at a later date.

Cathy MacPherson has prepared a 99 Year Lease and Grant of Access Agreement with Edward Petersen of Ingleside, Illinois, that sets forth stipulations in connection with our archaeological lease of the 80 acre tract at Hell Gap on which a portion of the site is situated. The agreement will be sent to Mr. Petersen for his review and concurrence. Some of the

stipulations requested by Mr. Petersen are no sale of artifacts, no destruction of buildings, keep gates locked, etc. Mr. Petersen will pay property taxes. One legal question is whether Mr. Petersen owns the property outright or whether it is mortgaged. An existing mortgage would present certain problems in regard to the longevity of the lease. A motion was made by A. Korell that the agreement be sent to Mr. Petersen for his review, and that after his comments are reviewed by Cathy MacPherson, that the lease be signed and executed; second by M. Hanson; passed.

It was announced that Dr. Eileen Johnson of Texas Tech University and Director of the Lubbock Lake Archaeological Complex, will visit the Hell Gap Site on July 27th and offer comments and recommendations on a Master Management Plan for the site. A workshop concerning the Management Plan will be held at Laramie on July 29th. Airplane tickets will be sent to Dr. Johnson and associated arrangements will be made.

The upgrading of the amount of the Surety Bond for the WAF Treasurer was discussed by Milford Hanson. A motion was made by J. Albanese that the amount of the Surety Bond for M. Hanson be increased to $60,000.00; second by A. Korall. A discussion followed that concerned an additional Surety Bond for George Brox, now that he is authorized to sign checks. The motion was tabled and M. Hanson was instructed to gather additional information concerning whether two bonds are needed or just what is the proper procedure. He will report back to the Board.

Dr. George Frison discussed proposed expenditures of moneys obtained form the Nason Foundation. He mentioned that the WAF will have difficulty securing future funds from the National Science Foundation and National Geographic Society for investigations at Hell Gap because the original investigators who had secured funding from the NSF and NGS had not fulfilled the original grant requirements. The original artifact material now at Harvard has not been accessioned or cataloged and moneys will have to be expanded by the WAF for such purposes. G. Frison has spent $500.00 of his own research funds for the cataloging of Hell Gap materials that he has received to date from Harvard.

G. Frison also mentioned that Harvard would send copies of all original field notes for an estimated reproduction cost of $1,200.00. Other possible expenditures at Hell Gap were discussed which included:

1. Estimated Fencing Costs - $9,000.00
2. Estimated Cost of Casting Artifacts in Harvard Collection - $1,000.00
3. Expenses for Pollen Investigation at Site by Steve Hall - $500.00
4. Expenses for Soil Studies by Richard Reider - $500.00

5. Expenses for Geologic Studies by John Albanese $500.00

It was decided by the Board that a letter should be sent to the Nason Foundation listing past and future proposed expenditures at Hell Gap that involve the $20,000.00 that they have granted the WAF. J. Albanese said that he would draw up bid forms that would concern land surveying at the site; however, it was decided that decisions regarding expenditures for surveying and fencing would be held off until the Warranty Deeds of the properties are revised and corrected. W. Scoggin made the motion that the following expenditures, that were recommended by G. Frison, be allowed:

1. $1200.00 for reproduction of the records in possession of the Peabody Museum.
2. $500.00 expenses for Pollen Studies - S. Hall
3. $500.00 expenses for Soil Studies - R. Reider
4. $500.00 expenses for Geologic Studies - J. Albanese
5. $1,000.00 for Plastic Casting of Artifacts to H & R Casting, Cody, Wyoming

The motion was seconded by A. Korall; passed with two abstentions (J. Albanese, M. Hanson).

M. Hanson discussed candidates to act as volunteer advisors in regard to the financial accounting of the Foundation. He mentioned two volunteer individuals, Sandra Christy, an accountant with the Park County School System and Lyle Lawton, a CPA at Cody. W. Scoggin moved that Lyle Lawton be accepted as volunteer CPA advisor to the WAF; second by J. Albanese; passed.

Cathy MacPherson discussed a grazing lease form that she had prepared that could be used in connection with the Hell Gap properties. A letter that was received from F.B. Zeller was discussed. In the letter, Zeller expressed concern about allowing grazing as it would have an adverse effect on the archaeological values at the site. The Board decided that allowing grazing would do no harm to the site as individual critical areas could be selectively fenced. W. Scoggin moved that the grazing lease form that was prepared by C. MacPherson be approved; second J. Albanese; passed.

W. Scoggin moved that Chairman, George Brox prepare a letter to the Nason Foundation informing them of past expenditures and future plans and that this letter be reviewed by the Board prior to mailing; second M. Hanson; passed.

Under New Business, the following actions were taken:

1. It was decided not to invite the Advisory Board to our Hell Gap Workshop, July 27 - 29, 1989, as an invitation at this time would be premature.

2. It was decided that it would be premature to request specific outside assistance in the development of a Master Plan. W. Scoggin will write a letter to Eileen Johnson outlining some of the Board's ideas concerning a Master Plan.

3. John Albanese mentioned that Mr. Harrison of Los Angeles was another prospective source of grant money for the WAF. However, it was decided that an approach to Mr. Harrison as well as other potential sources for funds should wait until a Master Plan was formulated.

It was decided that any major expenditure of funds such as land surveying or fencing would have to wait until Cathy MacPherson completed the revision and new execution of the Warranty Deeds on the Fredericks and Gorman et al properties.

It was further decided that if Alan Korall contacts someone who wants to graze livestock on the properties, a lease form should be executed and signed by both the livestock operator and George Brox, WAF Chairman.

It was announced that the next Board Meeting of the WAF will be held at Hell Gap Workshop, July 28 and 29, 1989.

The meeting was adjourned at 4:00 p.m.

Respectfully submitted,

John Albanese

John Albanese, Secretary
Wyoming Archaeological Foundation

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REPORT OF PREHISTORIC SITES ALONG THE NORTH PLATTE RIVER NEAR LINGLE, WYOMING

BY
DENNIS EISENBARTH

INTRODUCTION

In an area southeast of Lingle, Wyoming, cultural materials have been found along an eroding terrace above the North Platte River floodplain since spring of 1966. The presence of several sites is indicated on the ground surface, although disturbed by irrigated farming tillage practices and erosion. Over a mile and a half of the terrace (which parallels the river to the north) has been examined. Several Paleoindian projectile points have been found in areas of eroding gravel deposits along this terrace. Although later period projectile points have been found in areas both slightly higher and lower in elevation than these gravel deposits, some significance could possibly be attributed to this feature in establishing artifact chronology and soil deposition and erosion in the area of the old river channel and floodplain. At least one known undisturbed site exists as a cutbank deposit in the area.

This preliminary report will only discuss diagnostic surface finds and their general locations, although a full range of lithic materials has been recovered. Measurements were made on the Paleoindian artifact assemblage for comparative purposes. Since the artifacts were found on the surface, out of context, it was not deemed necessary to include measurements from later time periods.

SITE AREA I

The first site identified along the terrace was located in an area of predominantly dryland pasture. In recent years, a portion of this site was leveled for irrigated farming. Paleoindian projectile points have been found directly above eroding gravel deposits in the site. The three projectile points described below were found in close proximity to one another within an area less than 30 m in diameter.

A lanceolate projectile point found in this area (E108; Figure 1F) has attributes of Goshen Complex projectile points. It demonstrates excellent pressure flaking with slightly convex sides and a concave base. Basal edges are ground for about half the length of the point. Thinning of the base was accomplished by removal of small vertical flakes. Flaking varies from parallel, particularly at the distal end, to irregular. The point is 6.4 cm long, 2.4 cm wide and 0.55 cm thick. Material is Arikaree Formation, pink and white chert of local origin.

Another (E124; Figure 1E) is a parallel-sided, small-shouldered, broad-stemmed blade typical of a Scottsbluff Type I point of the Cody Complex. Flaking is trans-

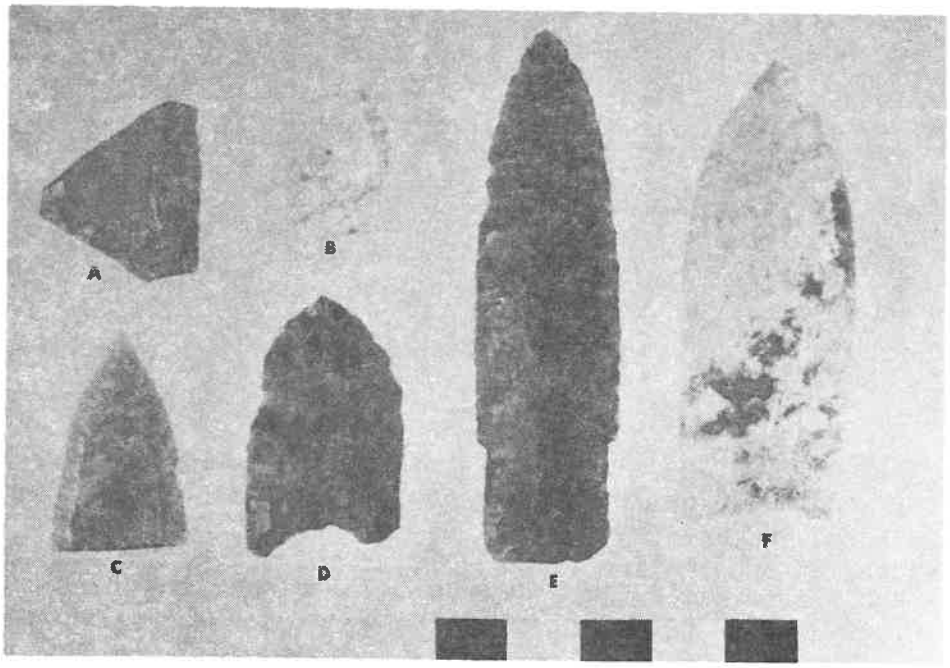

Figure 1: Artifacts recovered from surface of site areas I and III.

verse parallel, with a thick, oval cross-section. Stem edges are ground, with the grinding more pronounced on one edge. This point is 7.3 cm long, 2.0 cm wide and 0.64 cm thick. Material is a dark brown, semi-translucent agatized wood of probable local origin.

A distal end of a Folsom Complex projectile point (E127; Figure 1B) was found. This point fragment exhibits excellent transverse parallel flaking on one surface, while being fluted on the other. The blunted tip suggests this point incurred a hinge fracture break during fluting of the second side.

SITE AREA II

The second identified site contains a buried cultural level eroding from a cutbank, as well as surface cultural materials. Flakes, bone and an unfinished projectile point have been found eroding from the cutbank. The bone exhibits green bone breakage, and identified as deer. The unfinished projectile point (E126; not figured) shows indications of unsuccessful attempts to notch the base. Apparent smoothing of the basal area suggests use of the discarded point as a knife. Material is a pinkish-tan, dendritic chert, probably from the Hartville Uplift. Several flakes of the same color and material were found near E126, indicating that tools were probably being manufactured at this site.

A short distance east from this site area, the eroding terrace pastureland blends into cultivated fields leveled for irrigated farming. However the terrace is still visible.

SITE AREA III

Paleoindian, as well as later period, projectile points have been found in the cultivated fields of site area III. The Paleoindian projectile points were found in gravel pocket areas within the fields, as was the case in Site Area I.

Paleoindian diagnostic material

Artifact E251 (Figure 1D) is a lanceolate biface, demonstrating excellent pressure flaking on what appears to be a reworked point. Basal edges are ground. Thinning of the concave base was accomplished by removal of small vertical flakes. The point is 3.6 cm long, 2.2 cm wide and 0.39 cm thick. Thinness of the point is an attribute contributing to the classification of this point as Midland. Material is a purplish-grey chert of local origin.

Artifact E412 (Figure 1C) is the distal end of a Folsom projectile point. Fluting runs to the tip of the point on both sides. Small pressure flakes were removed from the edges of the point. This broken point is 3.0 cm long, 1.9 cm wide and 0.32 cm thick. Basal grinding is not present beyond the hinge fracture break. Material is a local pinkish chert.

A mid-section of another Folsom projectile point was recovered (E599; Figure 1A). Fluting appears on both surfaces. Slight basal grinding is present along a portion of the longest edge of this fragment. Three hinge fracture breaks are apparent on this broken point. Fluting carried close to the edge of the point on one surface, while the flute was centered on the opposite side. Point thickness is 0.39 cm and width is 2.2 cm. Material is a local, tannish chert from the Hartville Uplift region.

Artifact E705 (not figured) is a projectile point midsection, with the proximal end exhibiting basal edge grinding. Transverse parallel flaking appears on one side of the point, while several parallel flakes terminated by diving near the center of the point surface on the opposite side. Thickness is 0.47 and width is 1.8 cm. Material is a local, arikaree Formation white chert.

Another projectile point (E110; not figured) is represented by a midsection exhibiting transverse parallel flaking. A slight shoulder is present, indicating possible Cody Complex technology. Width of the point is 1.4 cm, and thickness is 0.55 cm. Material is a local, brown chert.

A probable Paleoindian artifact (E704; not figured) was found. This is a biface 9.1 cm long, 4.5 cm wide and 0.71 cm thick. It has the general appearance of a Clovis or Folsom Complex projectile point preform. A striking platform was set up on the proximal end in the same fashion as those which would be used in fluting these points during later stages of completion. The distal end also has a blunted appearance typical of such flintknapping technology. Material is a whitish-brown, semi-translucent chert, of probable local origin.

Late Plains Archaic diagnostic material

Corner-notched projectile points represented from this site are typical of the Late Plains Archaic period. Bases represented are straight to convex. Flaking is irregular to parallel transverse. Smoothing of the base is present on points E135, E225, E227, E578, E255 (Figures 2E, 2F, 2G, 2H, 2I), and E308 (not figured). Points E136 (Figure 2K) and E706 (not figured) do not exhibit smoothing of the base. Point E136 is of somewhat cruder workmanship and may be an unfinished point. Point E706 has several heat spalls removed from its surface, indicating that it was once in a fire. Point E135 (Figure 2E) appears to be a reworked point. This point shows evidence of an impact fracture at the tip. Point E116 (Figure 2J) has damage to the base so basal shape and smoothing

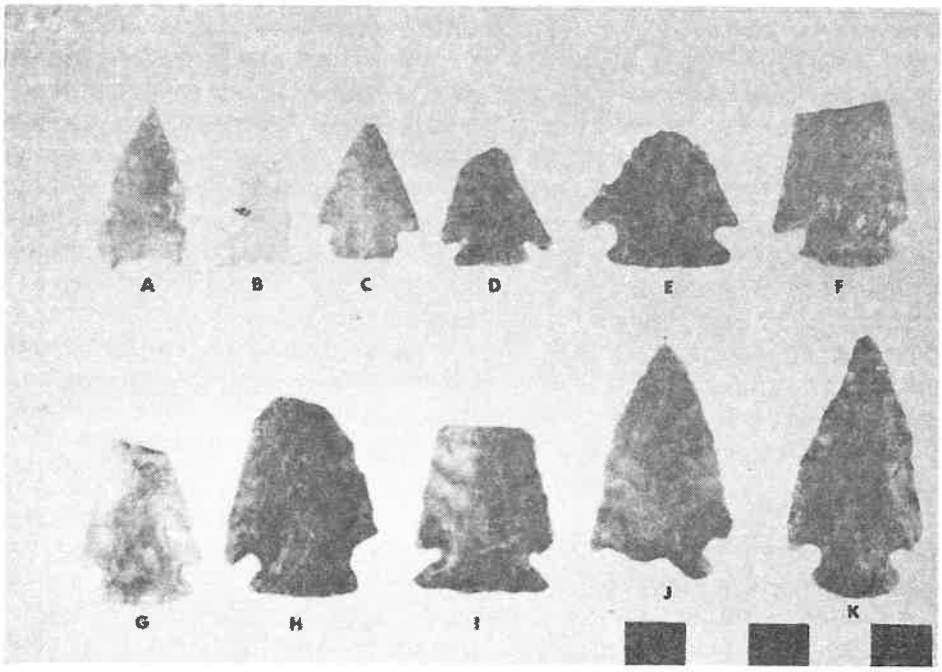

Figure 2: Artifacts recovered from surface of site area III.

cannot be determined. Materials utilized are tannish-brown, brown, and purplish-gray chert and purplish quartzite, all probably of Hartville Uplift origin.

Late Plains Prehistoric Period diagnostic material

Corner-notch and side-notch projectile points typical of the Late Plains Prehistoric Period are also represented at this site. All display fine pressure flaking. Corner-notch points E125 and E305 (Figures 2C and 2D) have smoothing along the straight bases. E305 displays an impact fracture at the tip and is made from local, red dendritic chert. E125 is made from brownish-tan chert of local origin.

Both side-notch projectile points have a concave base. Smoothing at the base is not present on either point. Point E138 (Figure 2B) has transverse parallel flaking on both surfaces. The base was thinned by the removal of several small, parallel flakes from both sides of the base. Material is clear, semi-translucent local chert.

Point E496 (Figure 2A) displays irregular and random flaking with parallel flakes removed from the edges. The base was thinned by removal of flakes from only one side, resulting in a somewhat blunt appearing basal edge. The point was probably made from a plano-convex flake, with the curvature of the flake apparent along the edges of the point. Material is a local, tannish quartzite.

SITE AREA IV

Site Area IV lies below the terrace and is nearer or within the old floodplain of the river. Over two dozen preforms and a Late Plains Archaic period corner-notch point base (E707; not pictured) were found concentrated in a small area within an irrigated field. Point E707 shows no smoothing of

the base. Flaking is parallel transverse to irregular. Material is brownish-tan chert of local origin.

CONCLUSION

A great deal of erosion has taken place along this North Platte River terrace through the years. The potential exists for locating other sites, some of which may contain undisturbed deposits. The artifact assemblage gathered from the surface indicates the possibility of such sites dating to the Plains Paleoindian Period.

Dennis Eisenbarth
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A BRIEF DESCRIPTION OF THE KORELL-BORDEAUX SITE POTTERY

BY
ALAN KORELL

Forty-nine ceramic sherds were recovered from the Korell-Bordeaux site. Only one specimen was a rim fragment and the remainder are body or bottom sherds (Figure 1). Some of these sherds contain an as yet unidentified burned residue on the inside, which indicates the sherds are from used vessels. Also present were several small, obscure ceramic pieces which have not been fired, are poorly fired, or may have been inadvertently fired. The significance of these items is not clear, but they may suggest that pottery was being manufactured at this site.

There was not enough pottery present for meaningful reconstructions, but the sample could undoubtedly be enlarged through additional excavations. More than one vessel is probably represented in this small sample. Therefore, any discussion here relevant to the range of variation of attributes, would be no more than speculation. In general, this pottery is distinguished by a cord-roughened exterior and is apparently straight-walled with a slight incurving and round, unthickened lip. The cord marks are shallow, partially obliterated in places, and have been

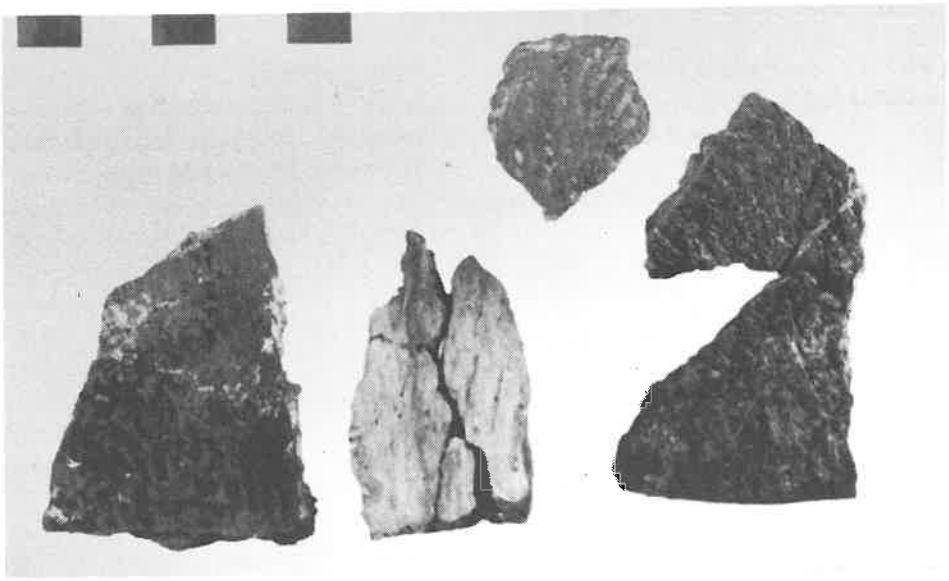

Figure 1: Probable Plains Woodland ceramic sherds from Korell-Bordeaux site, Area 2.

applied at an oblique angle to the vertical axis of the vessel. This pottery was apparently fired at a low temperature and varies in color from dark black to light buff. Temper is sand and ranges from very fine particles to some as large as four mm in diameter. Body sherds range from seven mm in thickness near the rim to 11 mm near what is probably the bottom.

This pottery most closely resembles other Late Woodland assemblages found on the Northwestern Plains. The site date of 1150 + 90 (Beta-22874) corresponds with other dated Woodland sites. Side-notched arrow points occurred in direct association with the pottery. In this region of Wyoming, Woodland pottery has only been found associated with corner-notched projectile points, at least to date, while Upper Republican pottery is associated with side-notched projectile points (Dr. Charles Reher, personal communication, 1988). However, investigators in northern Colorado report that the Woodland pottery/side-notched projectile point association is not uncommon (Butler 1988:462) and the notching variation is not a good criterion for distinguishing between the two cultural complexes.

Three additional events are necessary before more elaborate statements can be made concerning the cultural affiliations of this site. First, additional radiocarbon dates would serve to better define the site temporally. One date cannot be considered reliable, especially from a agricultural field that has been cultivated, fertilized, and irrigated numerous times in recent years. Second, a larger sample of ceramics is needed to better define various attributes which presently remain vague. Finally, additional research needs to be concentrated at the numerous ceramic sites in southeastern Wyoming in an effort to gain better insight to the many-faceted, complex problems, which are currently poorly understood.

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1988 The Woodland period in northeastern Colorado. Plains Anthropologist 33 (122):449-465.

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PROJECTILE POINT DESCRIPTIONS FROM THE KORELL-BORDEAUX WOODLAND COMPONENT

BY
HARRY EARL

There were seven projectile points recovered from the Korell-Bordeaux Woodland component that were suitable for accurate measurements (Figure 1). Twenty-five additional point fragments were also recovered. Evidence indicates all points from this assemblage fall into the Late Prehistoric Period category. The points form a homogeneous group of small, side-notched, triangular arrow points with bases ranging from straight to slightly concave. The blade edges usually followed a symmetrical-convex pattern, but in the cases of points K0002 and K0101, one blade edge on each is nearly straight.

The points are made on small flakes, and still retain their original curvature or plano-convex shape. Both dorsal and ventral sides of the flakes have been worked. Sometimes, the flake channels do not completely cover the original face of the flake.

Seven points were measurable, with five of these being weighed to obtain average size and weight (Figure 2, Table 1). Measurements taken were as follows: maximum length, maximum width, maximum

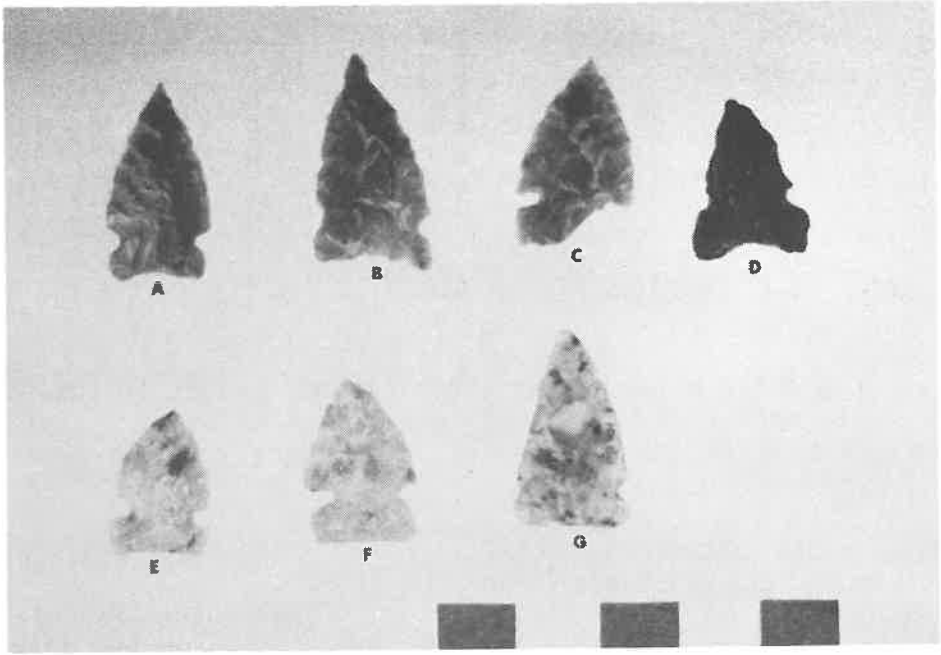

Figure 1: Projectile points from Korell-Bordeaux site, Area 2.

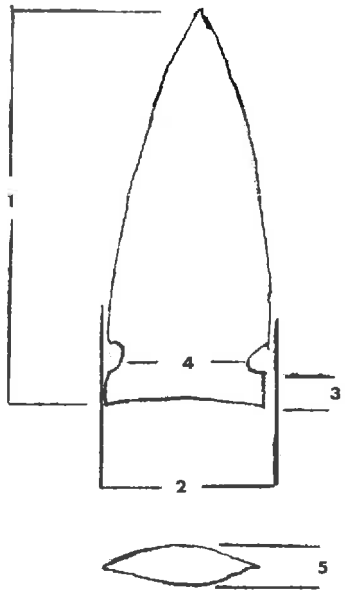

Figure 2: Location of measurements taken on projectile points from Korell-Bordeaux site, Area 2. 1 = maximum length; 2 = maximum width; 3 = distance from corner to side notch; 4 = distance between side notches; 5 = maximum thickness.

Catalog Number	Maximum Length	Maximum Width	Distance from Base to Side Notch	Distance Between Side Notches	Maximum Thickness	Weight
K0001	20.1	14.0	5.0	9.0	2.0	----
K0002	20.2	15.0	5.0	10.0	3.5	0.84
K0006	18.5	13.0	4.0	8.0	3.0	0.61
K0007	20.5	14.5	4.0	8.5	3.5	0.89
K0100	27.0	15.0	4.5	13.0	3.5	1.18
K0101	24.0	15.0	3.0	----	3.0	----
K0196	25.0	13.0	4.0	9.0	3.0	0.84
average	22.2	14.2	4.2	9.6	3.1	0.87

Table 1: Projectile point measurements (in mm, weight in gms) from Korell-Bordeaux site, Area 2. Point K0001 was broken in final stages of manufacture and point K0101 is incomplete. Both were deleted from appropriate weight and measurement categories.

thickness, width between notches, width of base, and distance from corner to notch. The measurements were taken to the nearest 0.5 mm and the weight to the nearest centigram.

PHYSICAL DESCRIPTIONS

K0101

This point (Figure 1G) was made from a percussion flake, with the distal end being toward the bulb of

percussion. It exhibits indiscriminate retouch during manufacture and a square, thinned base with evidence of light basal grinding. One blade edge on the point is convex, while the opposite is nearly straight. The material used in the point is a clear dendritic chert.

K0002

This is an unfinished arrow point (Figure 1D) constructed of black porcelanite. One blade edge is straight from the base to the distal end, while the opposite is slightly convex. It exhibits only partially completed notches and a concave base. Indiscriminate pressure flaking was used to shape the blade edges, with flake scars extending across one face, but not the reverse. The specimen shows no evidence of grinding.

K0196

This point (Figure 1A) was made on a percussion flake with a slight twist in profile. One side exhibits parallel oblique flaking, with the flake scars extending downward from the blade edge. The reverse side is indiscriminate retouch, with some evidence of grinding on one blade edge near the distal end. The base is slightly concave and light grinding is evident. The material used was a yellow, dendritic chert.

K0001

This point (Figure 1C) was broken in the final stages of manufacture. The attempt to create the final side-notch resulted in a hinge fracture that removed a portion of the base. The blade edges feature a symmetrical convex style. A pressure flaking technique was used to shape the point, with parallel oblique flaking from the blade downward being prevalent on one side. A more indiscriminate form of flaking was used on the reverse side. Flake scars do not extend entirely across the face of the point, thus leaving undisturbed areas on both sides. The point is made from a brown, dendritic chert.

K0006 and K0007

There is a distinct similarity in these two arrow points (Figures 1E and 1F). I would postulate they were made from flakes obtained from the same core of grey, mottled quartzite. The two flakes were reduced to shape with a minimum of pressure flaking. Both points show little effort was necessary on one side of the flakes, with only moderate work on the reverse needed to create crudely flaked, but adequate projectile points. Both exhibit basal grinding and an overall completeness that indicates manufacturing was complete.

K0100

This unfinished point (Figure 1B) exhibits a diagonal flawline from the approximate center of the base to midway through a blade edge. The irregular thickness exhibited on the point indicates the inability to create a finished point. Apparently the flintknapper was unable to carry the flake scars across the midline of the point. The flake was discarded without attempting to notch one side. Unusually irregular surfaces on the blade edges near the distal end were also left. The material used in this attempt was a purplish chert.

Point materials

The materials from which these seven points are made are available locally, with one exception. There are several sites, including the Spanish Diggings and Hartville Uplift, where chert and quartzite sources are abundant. The black porcelanite (point K0002) is available in the Powder River Basin. However, there is no evidence of its being the actual source material.

Point fragments

Of the twenty-five point fragments taken from the Korell-Bordeaux site (not figured), twenty-four are also made from these same materials discussed above. There are additional color variations present, including red and pink quartzite and brown and dark tan cherts. There is one base in the collection made from Arikaree Formation chert. This base is a milky-white, tight-grained material available locally. This is a side-notched base homogeneous in type to other specimens, and is anomalous in material type only.

Of the twenty-five fragmented points, nineteen are distal fragments with the remaining being proximal fragments. There is no hard evidence that any of the arrow points, partial or complete, found in this assemblage were ever hafted and used. Points K0006 and K0007 are indeed ready for use, but close examination of the distal ends of these projectile points reveals a sharpness not present in points that have penetrated flesh and bone. Apparently the points described above were manufactured at the site. Examination of the bases indicates breakage during manufacture and not the basal grinding and wear typical of used points.

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HUMAN SKELETAL REMAINS FROM THE SHUTE CREEK SITE, SOUTHWESTERN WYOMING

BY
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INTRODUCTION

During the summer of 1986, Bureau of Land Management (BLM) archaeologists recovered the skeletal remains of two humans from the Shute Creek site (48LN1296-E) in southwestern Wyoming. These remains were sent to the University of Wyoming, Department of Anthropology, for examination. The most complete skeleton (Feature 39) yielded a total of 57 cranial and 19 postcranial measurements, and 52 discrete and non-discrete observations. The second skeleton (Feature 194) consisted of postcranial materials that yielded only 17 postcranial measurements and three discrete observations. The remains of both individuals were returned to the BLM for reburial after analyses on the remains were conducted. Similar radiocarbon dates have been obtained for both sets of remains. Feature 39 yielded a date of 1060 ± 90 yrs B.P. (personal communication, Lynn Harrell, BLM archaeologist, 1989). Feature 194 yielded a date of 1100 ± 70 yrs B.P. (Wheeler 1986).

BURIAL ONE

Of the two human skeletons recovered from excavations at Shute Creek, only Burial #1 (Feature 39) is nearly complete. The skeleton is that of a young adult American Indian male. These determinations were made from a complete cranium and mandible, a complete set of long bones, both innominates and clavicles, all in good condition. Other bones present, though not essential to the following analysis, included a manubrium and nearly complete corpus sternum, all twelve right ribs, the distal ends of ten left ribs, nine rib fragments, thirteen carpals, five metacarpals, fifteen hand phalanges, four tarsals, two metatarsals, twelve foot phalanges, all vertebrae, sacrum, both scapulae, and left patella.

Although gracile, the individual is clearly male, according to certain diagnostic cranium and post-cranial skeletal traits (Krogman 1962; Brothwell 1981). The skull is not particularly large or robust, although the presence of supraorbital ridges, nuchal crest, and medium to large mastoids suggest maleness. The diameter of the femoral head is small (42 mm) and does not give a clear indication of sex. The pelvis, however, is obviously male. The sciatic notch is narrow and deep. Additionally, the subpubic angle is narrow.

Using McKern and Stewart's method of judging the pubic symphyseal development (Ubelaker 1978), the age of this individual was estimated to be 20 to 24 years of age at death. Hrdlicka's scale of tooth attritions (Ubelaker 1978) yields a greater age of 26 to 33 years at death. This individual shows a degree of wear that is well

above the normal amount. Nearly all teeth show a marked exposure of the dentine. This high degree of wear is typical of other Red Desert prehistoric individuals and is probably due to an increased grit in the diet and not advanced age. As a confirmation of the younger age estimate, the state of epiphyseal fusion of certain long bones (Stewart 1979) was examined.

The most age diagnostic of these fusions are seen in the clavicles. The distal epiphyses of the clavicles are not fused with the shafts. The latest age that this fusion occurs is usually around 25 to 26 years of age. The femoral heads and illiac crests show signs of recent fusion with their diaphyses. These bones fuse as late as 20 years of age. Taken together, these fusions assist to confirm an age in the early twenties.

Visual and metric criteria of the cranium (Gill 1981) reveal the race of the individual is American Indian. Non-metric criteria used for this determination include the straight shape of the palatine suture, elliptical palate form, guttered nasal sill, small nasal spine, elliptic auditory meatus form, rhomboid shape of the eye orbits, shovel-shaped incisors and edge-to-edge tooth occlusion. Metrically, gill's interorbital race determination method (Gill 1988) placed the individual within the American Indian range of variation as well.

Living stature was calculated from maximum lengths of the left femur (414 mm) and tibia (245 mm). According to the Trotter and Glesser (1958) formula for male Mongoloids, the stature was estimated at 163.0 + 3.24 cm (5'4"). Thus the gracile attributes seen in the skeleton are also reflected in the height of the individual.

Burial #1 also shows two interesting pathologies. The first concerns the shape of the corpus sternum. In this individual, the sternum is unusually short and broad. The significance of this anomaly is not known. The more interesting deformity concerns the cranium. Identified by Dr. George Gill (personal communication, 1988), the skull exhibits artificial cranial deformation. The occipital area is flattened, with the flatness skewed toward one side of the cranium. There is also a cranial depression at point lambda at the back of the skull. This type of deformation is reminiscent of the fronto-occipital type seen in west Mexico (Gill 1971). Until now, cranial deformation has not been observed in Wyoming specimens. Study is continuing on this cranial deformation example (George Gill, personal communication, 1988).

Results of the metric analysis for the burial can be presented in tabular form (Table 1). The cranial measurements and indices have been skewed by the artificial deformation of the skull. The deformation has caused the cranial index to fall into the hyperbrachycranic , or very broad-headed range. The facial measurements of the skull compare favorably to the small-skulled Stone Fence individual (Gill 1980). Gill suggested this small-skulled, broad-faced type may reflect Shoshonean instead of Crow or Sioux affinities. However, a firm conclusion must await a larger sample size.

BURIAL TWO

Less can be said about Burial #2 (Feature 194) because less of the skeleton exists. The cranium, the best determiner of race, is absent, so less firm conclusions about race can be made. The parts of the skeleton that are present include left femur, tibia, humerus, ulna, and fibula; right fibula and

MEASUREMENTS (in mm)		
Cranial*		
Cranial length	160	
Cranial breadth	141	
Basion-Bregma	112	
Endobasion-Nasion	88	
Endobasion-Alveolar Prosthion	89	
Minimum frontal breadth	89	
Biauricular breadth	124	
Auricular height	108	
Facial		
Nasion Alveolare	64	
Nasion-Gnathion	110	
Bizygomatic breadth	131	
Nasal height	51	
Nasal breadth	25	
Right orbital height	35	
Right orbital breadth (MF)	43	
Biorbital breadth	95	
Interorbital breadth	18	
Cheek height	22	
Palatal length	49	
Palatal breadth	62	
Palatal depth	9	
Porion-Nasion	85	
Porion-Subnasale	80	
Porion-Prosthion	89	
Mandibular		
Symphyseal height	33	
Bigonial diameter	88	
Bicondylar diameter	113	
Ascending ramus breadth	33	
Ascending ramus height	55	
Corpal length	78	
Gonial angle	21°	
INDICES		
Cranio-facial		
Cranial module*	137.7	
Cranial index*	88.1	hyperbrachycranic (very broad headed)
Cranial length-height*	70.0	orthocranic (average skull)
Upper facial index	48.9	euryene (broad-faced)
Total facial index	84.0	euryprosopic (broad-faced)
Nasal index	49.0	mesorrhine (average aperature)
Orbital index	81.4	chamaeconch (wide orbits)

Table 1: Cranial metrics of Shute Creek Burial #1. Measurements and indices marked with asterisk have been affected by cranial deformation.

distal fragments of tibia; complete sternum and both sets of ribs; all thoracic and lumbar vertebrae; left and right innominates with partial sacrum; left and right scapulae and clavicles. All bones are weathered and in a deteriorated state.

Shute Creek Burial #2 is an older female, presumably American Indian based on its association with Burial #1. Skeletally, the only race inference that can be made comes from the platymeric form of the proximal femur shaft.

Other determinations that could be made for the individual include sex, age, and living stature. The shape of the pelvis is clearly female. Diagnostic traits include a side sciatic notch and subpubic angle and concave inferior pubic rami. The diameter of the femoral head (40 mm) is also within the female range.

An assessment of age was made using the pelvis. Gilbert and McKern's method (Ubelaker 1978) was applied to the pubis and yielded an age of 60+ years. Stature was calculated using the maximum lengths of the femur (388 mm) and tibia (334 mm) in the Trotter (1970) formula for Caucasian females. The stature was estimated to be 153.6 $\pm$ 3.55 cm (5'1/2").

Additionally, the individual suffered from arthritis, as evidenced by a considerable lipping of the vertebrae. Another condition shown by the skeleton, possibly pathological, was a strong curvature exhibited by all long bones.

SUMMARY

The Shute Creek burials consist of a young male and an old female. The most interesting features of the male are the artificial cranial deformation, previously unreported in Wyoming prehistoric human populations, and secondly, the possible Shoshonean influences shown by the size of the skull and the shape of the face.

Less can be said about the female skeleton, as it lacks any cranial remains. The advanced age, however, is noteworthy. The greatest contribution of these burials lies in their ability to add another piece to the puzzle of the physical anthropology of the Northwest Plains prehistoric Indian populations. As the sample size continues to increase, so will the understanding of the genetic affinities and temporal changes that occurred in these peoples.

ACKNOWLEDGEMENTS

Special thanks must go to the Bureau of Land Management for allowing both individuals to be examined and measured at the Department of Anthropology, University of Wyoming. The agency also provided information on the radiocarbon dates for the burials.

Thanks are also due to Dr. George Gill for checking all my measurements and giving assistance with the analysis of the skeletal material.

This research was also made possible by the awarding of the William T. Mulloy Scholarship by the Wyoming Archaeological Society to the author. The assistance of the society in this research is gratefully acknowledged.

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THE DIVIDE BURIAL FROM NEAR WAMSUTTER, SWEETWATER COUNTY, WYOMING

BY
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ABSTRACT

While excavating a backhoe trench for an American Telephone and Telegraph Company (AT&T) fiber optic cable east of Wamsutter, Wyoming, in June 1988, construction personnel discovered the unmarked grave of a Euroamerican frontiersman. Most likely, the individual was a construction worker who died at approximately 23 years of age, during the original building of the Union Pacific Railroad (UPRR). The robust male skeleton reveals an unusual pattern of dental pathology and some interesting postcranial anomalies. Well preserved buttons and items of clothing, as well as the wooden coffin in which the skeleton was found, provide valuable cultural information. The skeleton itself contributes to a small but growing body of information relating to health, lifestyle, and demography of Euroamerican pioneers of the Northwestern Great Plains.

INTRODUCTION

On June 24, 1988, a construction crew, while digging a backhoe trench for an American Telephone and Telegraph Company (AT&T) fiber optic cable near Wamsutter, Wyoming, discovered an unmarked grave of a Euroamerican male frontiersman. The backhoe encountered a wooden coffin and disturbed some of the skeletal remains inside, but digging operations were halted immediately, and the Bureau of Land Management (BLM), Rawlins District was notified. That afternoon Alice Bronsdon, BLM Great Divide Resource Area Archaeologist; Tom Zale, Rawlins District Archaeologist; and archaeologists from Mariah Associates, Inc. (Mariah) examined the burial. It was decided that the burial should be excavated, recorded, and studied by a physical anthropologist and historian. AT&T agreed to sponsor the scientific study of the burial.

On June 28, 1988, Darryl Newton, Mariah archaeologist, excavated and recorded the skeletal remains. The following day the senior author (GWG) and an assistant, Louis West, joined the crew to assist with recording and removal of the skeleton. The skeleton was transported to the University of Wyoming for detailed study. Skylar Scott, Mariah historian, provided descriptions of the artifacts. After analysis, the skeleton of the unknown individual was reinterred in the Rock Springs, Wyoming, cemetery.

THE BURIAL

The unmarked grave was located about 7 km east of Wamsutter, Sweetwater County, Wyoming (Figure 1). The Wamsutter, Wyoming, United States Geological Survey 7.5 minute quadrangle map, 1966 (photorevised

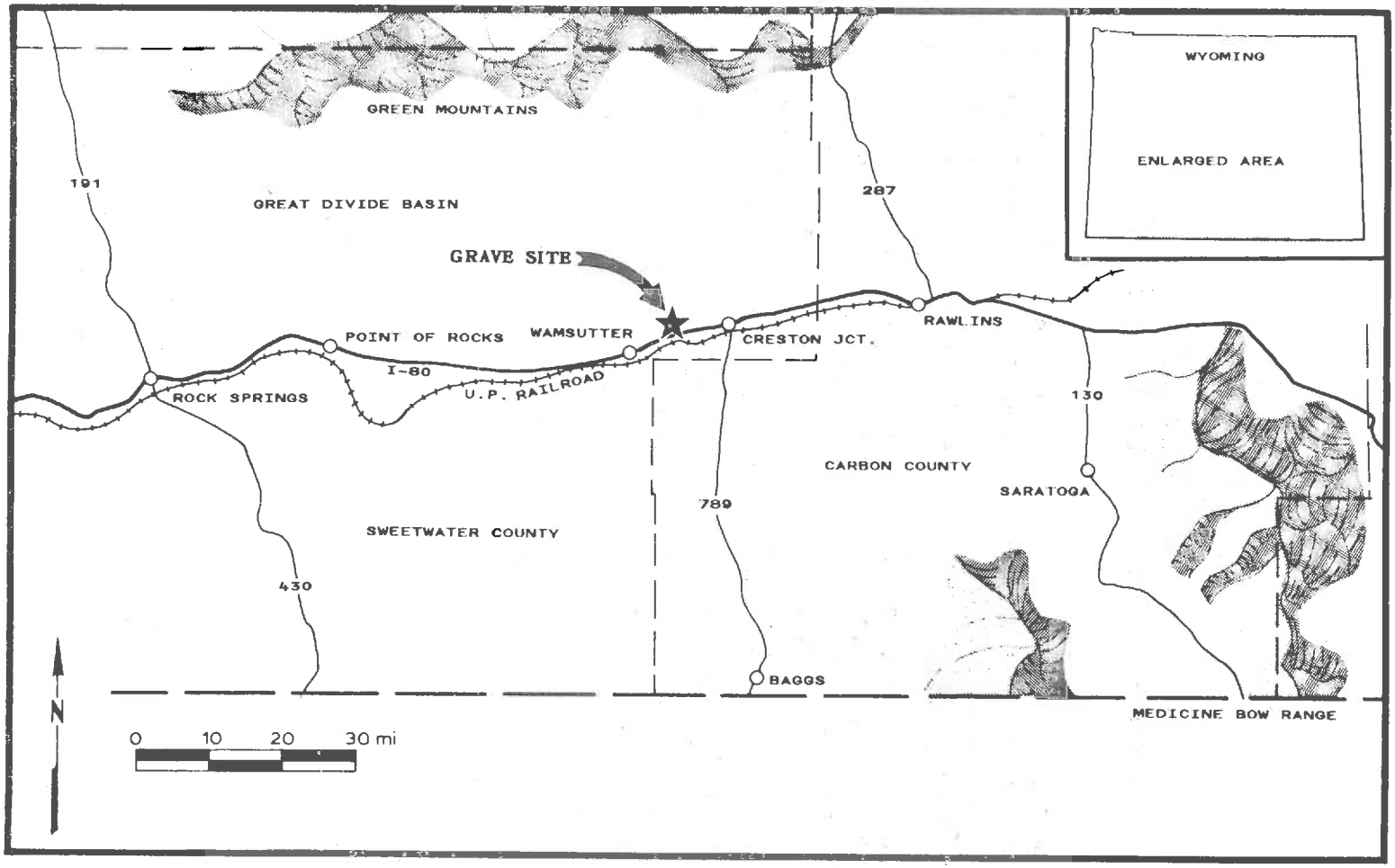

Figure 1: Location of the Divide Burial, Sweetwater County, Wyoming.

1981) encompasses the area. The grave was in the NE/SE/SW of Section 17, T20N, R93W. The land is owned by the Union Pacific Railroad (UPRR).

The grave site was situated in a level area surrounded by ridges along Latham Draw at an elevation of 2060 m. The site area is located near the eastern edge of the Great Divide Basin about 10 km west of the Continental Divide. The area is sparsely vegetated, and no water is present in the immediate site vicinity. The UPRR tracks are 300 m south of the grave. Interstate 80 is between the grave site and the tracks. Several pipelines and a Mountain Bell buried cable cross near the grave. Other than the railroad, no historic sites or homesteads occur in the area.

The Euroamerican male was buried in a rectangular pit oriented at 67° and measuring 242 cm long, 64 cm wide, and 162 cm deep. This depth below surface is slightly less than the typical "six feet under" of Euroamerican tradition; however, the amount of loss or gain of surface soil above the grave over the last century is unknown. The pit was dug through an upper stratum (70 cm thick) of compacted silt with shale pebbles and a lower stratum (92 cm thick) of shale.

Though much of the pit fill was removed by the backhoe before discovery, the coffin was probably covered with an 80 cm thick layer consisting of 50 to 75 sandstone rocks ranging from 10 to 60 kg. The rocks do not occur naturally in the immediate grave area. The upper 80 cm of the pit was filled in with sediment.

The rectangular coffin measured 201 cm in length (east/west orientation), 51 cm in width (north/south), and 34 cm in depth (Figure 2). It was constructed of unplaned, circular-saw-cut cedar planks in widths ranging from 20.0 to 25.5 cm. The floor and end boards were 2.5 cm thick, and the side and lid pieces were 3.75 cm thick. The coffin was held together with square cut nails. The nails were in poor condition, and length measurements could not be taken. The coffin boards probably were used originally for some other purpose.

Backhoe trenching directly impacted the coffin from the west and destroyed the east (foot end) and north sides of the coffin. The skeleton's legs, feet, and left humerus were removed from the coffin and dumped in the backdirt by the backhoe. Other portions of the skeleton were disturbed. Before backhoe disturbance, the grave was apparently in excellent preservation. Other than a broken lid board, the coffin was probably entirely intact with its interior mostly free of dirt.

The layout of the skeleton as found in the coffin is shown in Figure 3. The individual was interred in the wooden coffin fully extended on the back with the head toward the west. The skeleton was tilted to the right as was the face. The arms were placed along the individual's sides and crossed over the abdomen, left over right.

Parts of a shroud (probably a blanket) were preserved over the face (Figures 4, 5, and 6). Pieces of wool cloth possibly representing a jacket or blanket were found beneath the head and shoulders. The remains of a cotton twill, possibly white, shirt also were recovered. Three buttons were among the artifacts. One was of mother-of-pearl measuring approximately 10 mm in diameter and was found in the abdomen area. The other two were cloth covered measuring 20 mm in diameter and were recovered from the pelvic area. The three buttons were deteriorated. A few pieces of decomposed

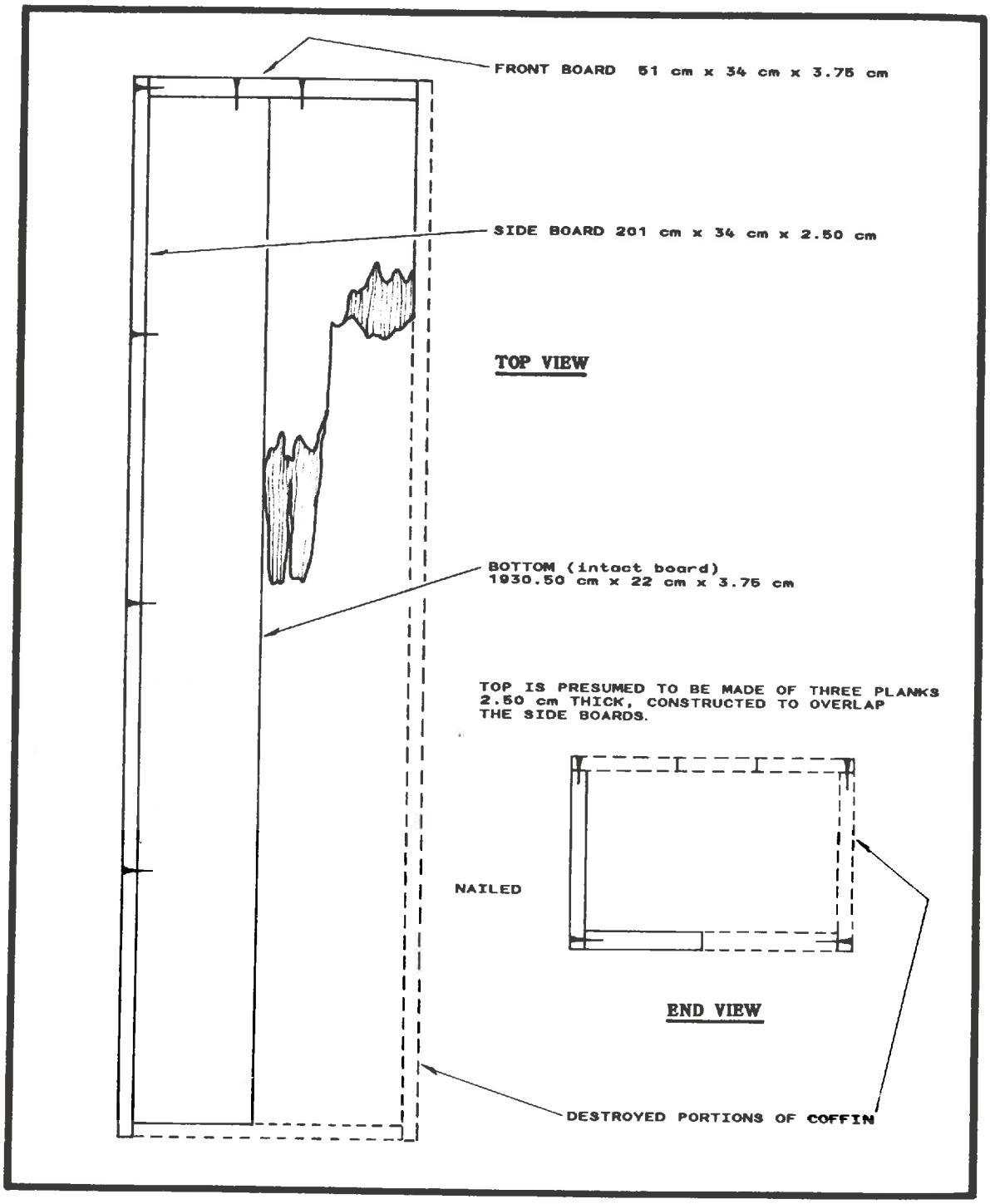

Figure 2: Schematic of wooden coffin, Divide Burial, Sweetwater County, Wyoming.

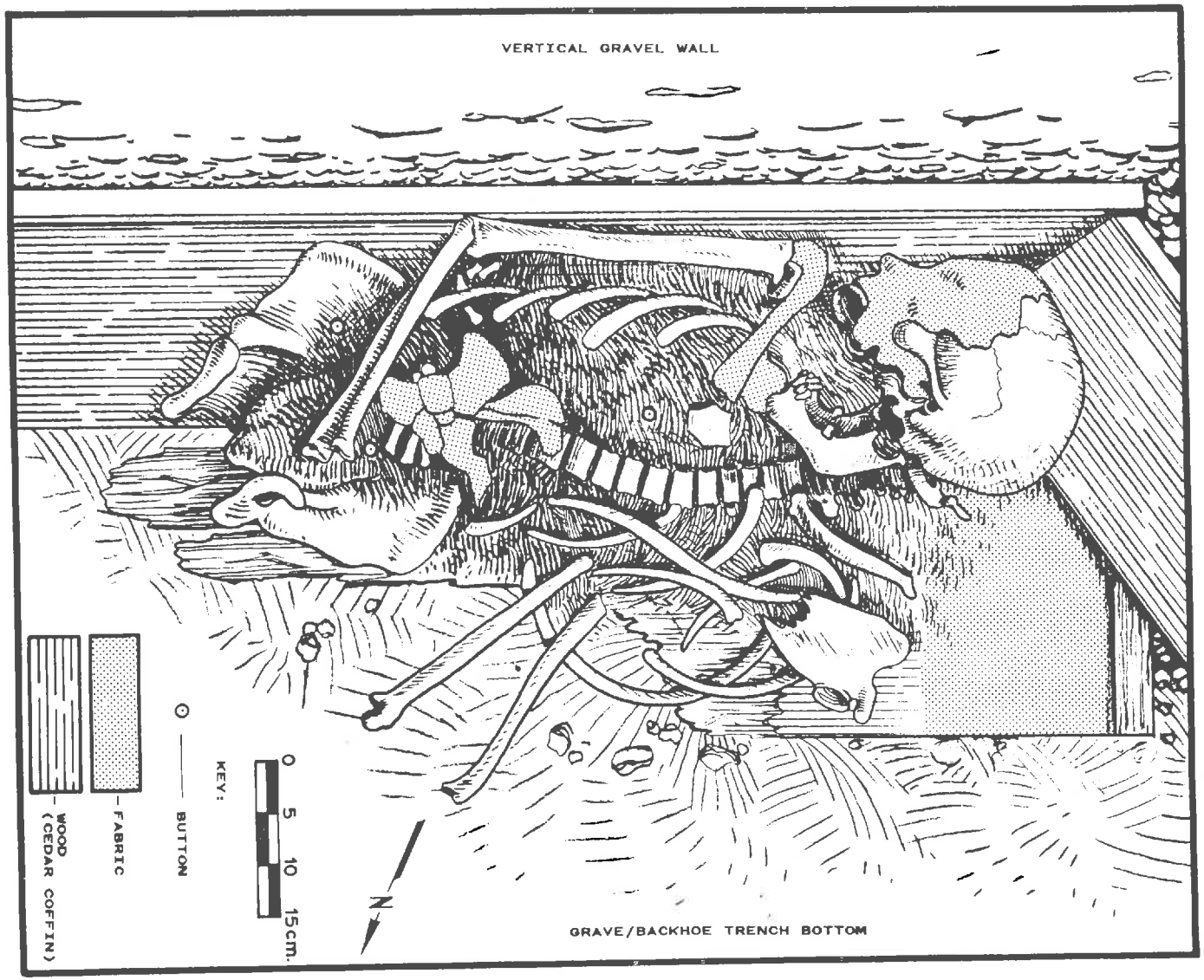

Figure 3: View of Divide Burial, Sweetwater County, Wyoming, after excavation.

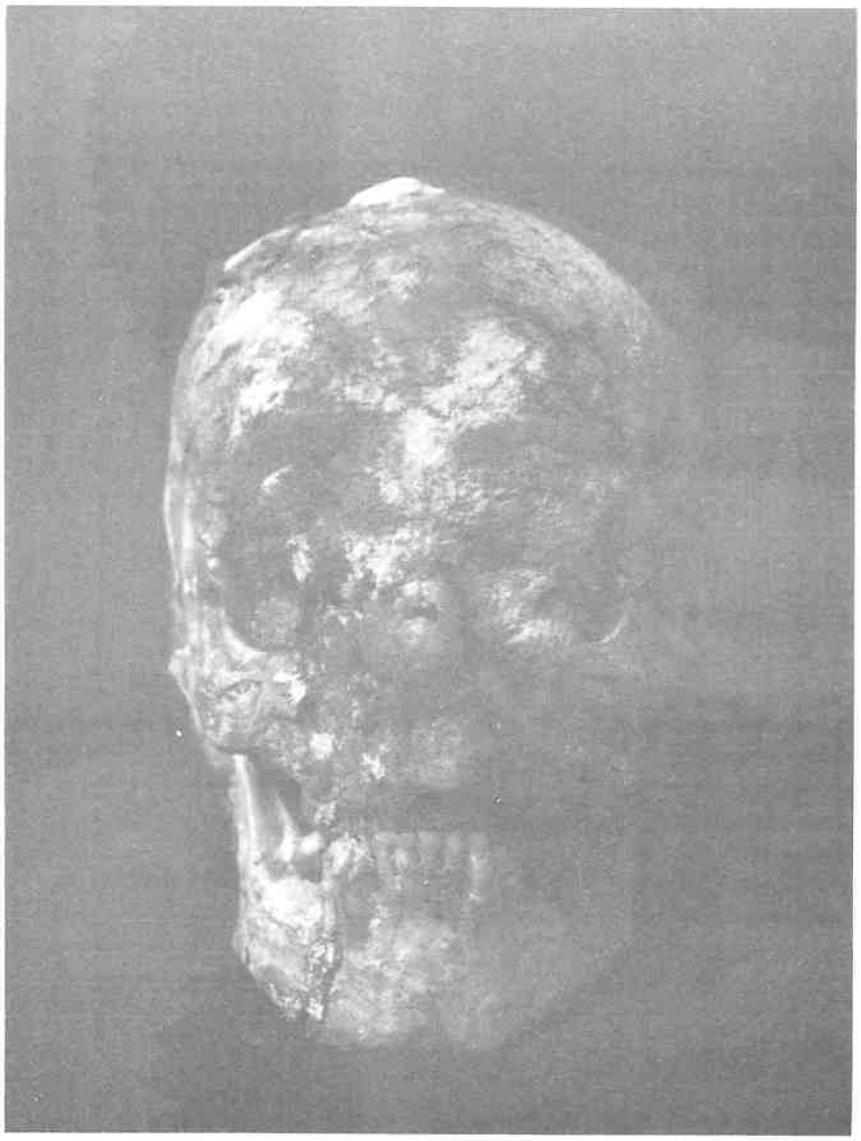

Figure 4: Frontal view of shrouded face, Divide Burial, Sweetwater County, Wyoming.

cloth from the trousers were present as well.

Two well preserved, silk handkerchiefs were found with the burial. One was tightly tied around the right wrist with the knot upward. It had a blue and gold pattern and measured 62 by 50 cm (Figure 7). The other handkerchief had a red, black, and gold pattern and measured 60 by 48 cm (Figure 8). It was originally tied around one upper leg.

HISTORICAL INFORMATION

To determine identity and year of death of the individual, the Wyoming State Archives, the UPRR Archives, the University of Wyoming Coe Library, and local residents were consulted for information. No record of the death or grave was obtained from these sources. The use of square-cut nails in the coffin indicates an age before 1890 for the grave. The patterns on the silk handkerchiefs were popular

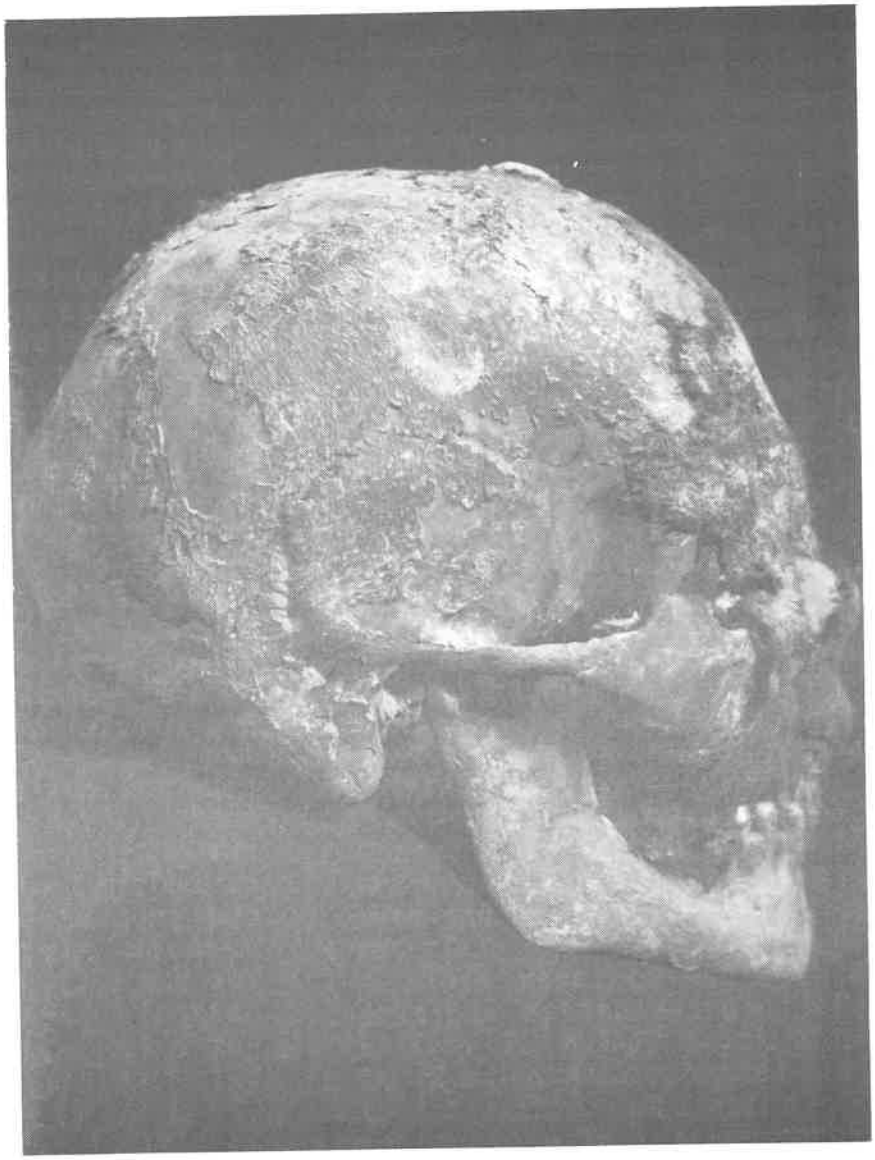

Figure 5: Right lateral view of shrouded face, Divide Burial, Sweetwater County, Wyoming.

during the 1860s; however, the patterns are still in use today. The recovered buttons and cloth are also typical of that period.

The major historic activities that may have occurred in the area before the 1900s include sheep ranching, maintenance of the railroad, and railroad construction. The Overland Trail, a popular transcontinental route across southern Wyoming during the 1800s, occurred about 25 km to the south of the grave site. A deed and title search conducted at the Sweetwater County Court House indicated that the UPRR owns the entire section where the grave was found. The title search produced no evidence of homesteading, and no physical remains of a homestead were noted near the grave site.

Sheep ranching became popular in the area in the late 1800s following the construction of the railroad (Bartlett 1918). The

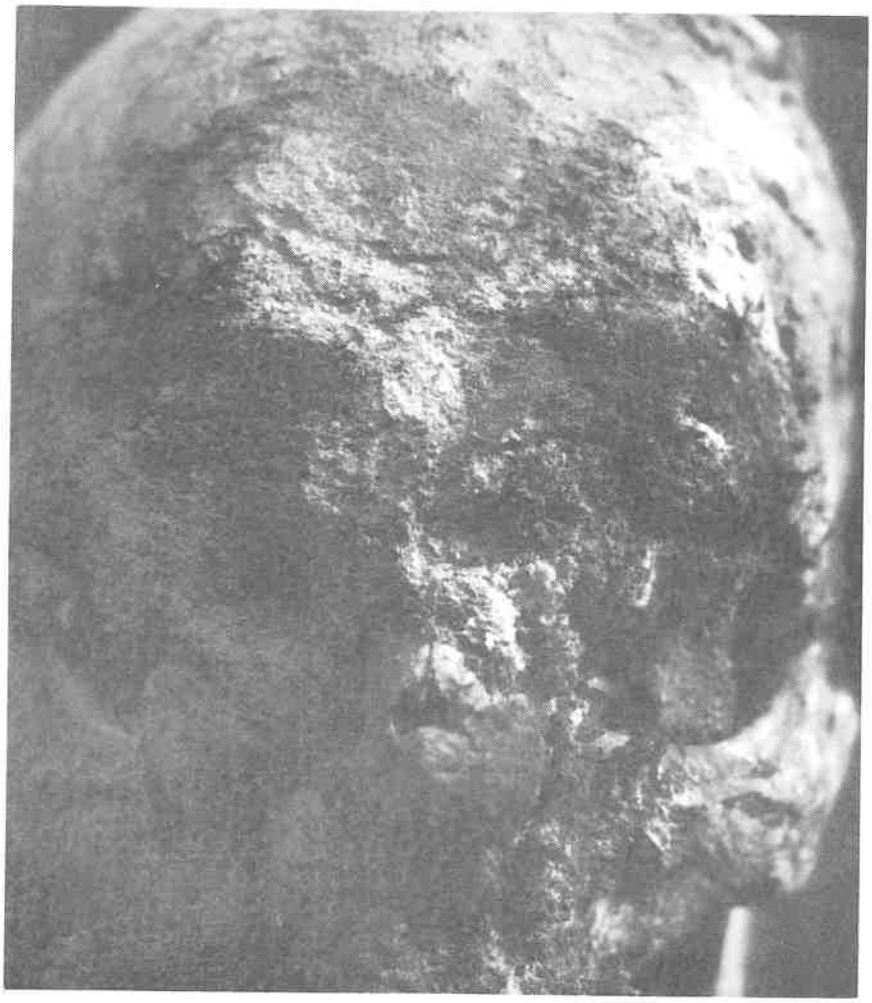

Figure 6: Close-up frontal view of shrouded face showing heavy texture of material, Divide Burial, Sweetwater County, Wyoming.

individual could have been a sheep herder; however, the presence of nonlocal sandstone rocks covering the grave suggests this is not the case. Only individuals with the capability of transporting large amounts of rock into the area, such as during railroad construction, would have used non-local stone in a remote grave. To build the railroad, rails, ties, bridging, fastening, roadway supplies, fuel for locomotives, and supplies for workers and animals were transported to the construction area (Dodge 1965).

Individuals associated with section gangs for the maintenance of the railroad were in the area following construction (Carson 1968). Small stations were established at seven to twelve mile intervals along the railroad for maintenance and to supply the locomotives with fuel and water. These stations had at least a wooden water tank and a hand pump or windmill, and some stations contained extensive wood yards (Hickman et al. 1986).

The nearest section station to the grave site was Latham, which according to the 1875 Government

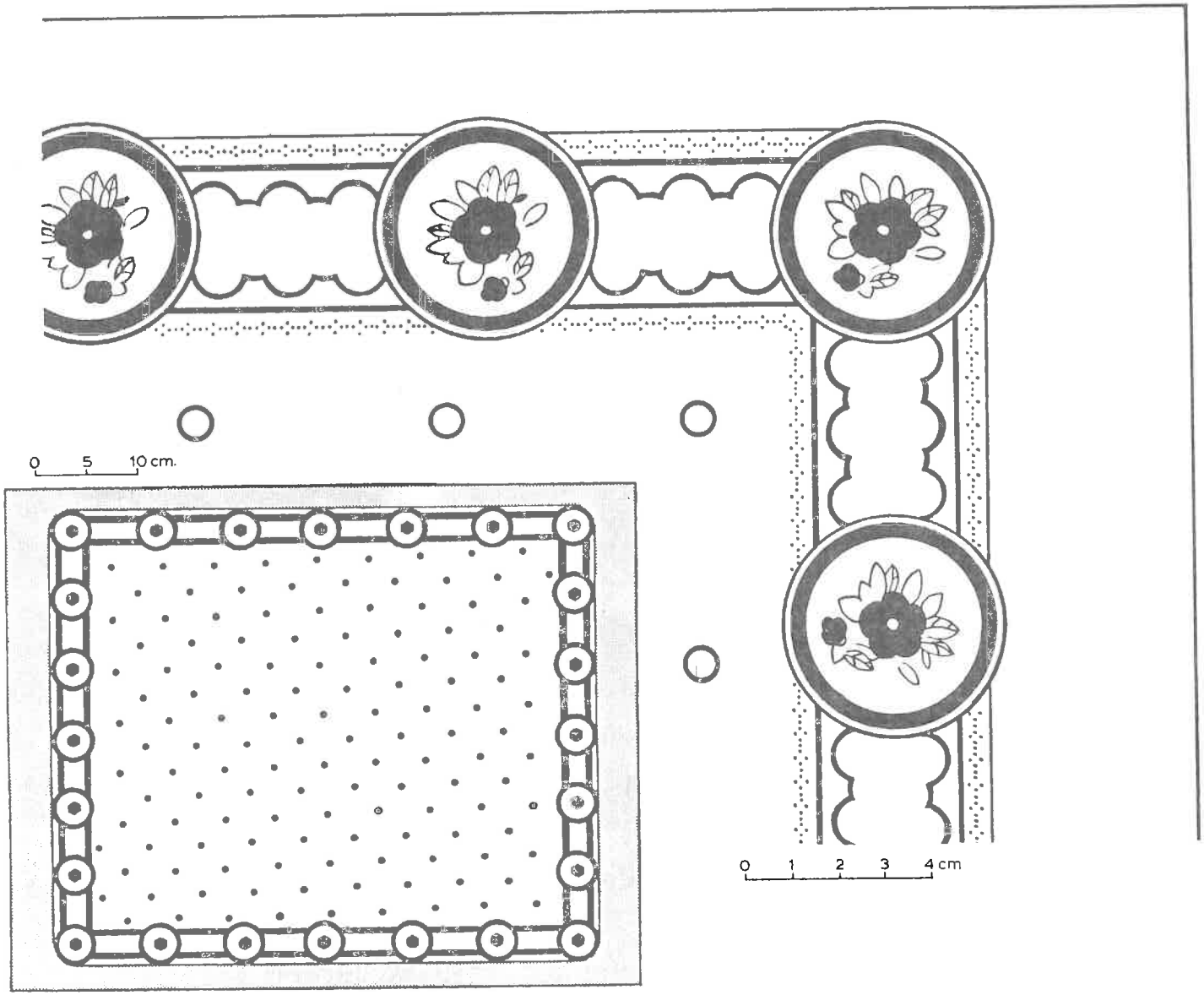

Figure 7: Overall view and close-up of blue and gold handkerchief design, Divide Burial, Sweetwater County, Wyoming.

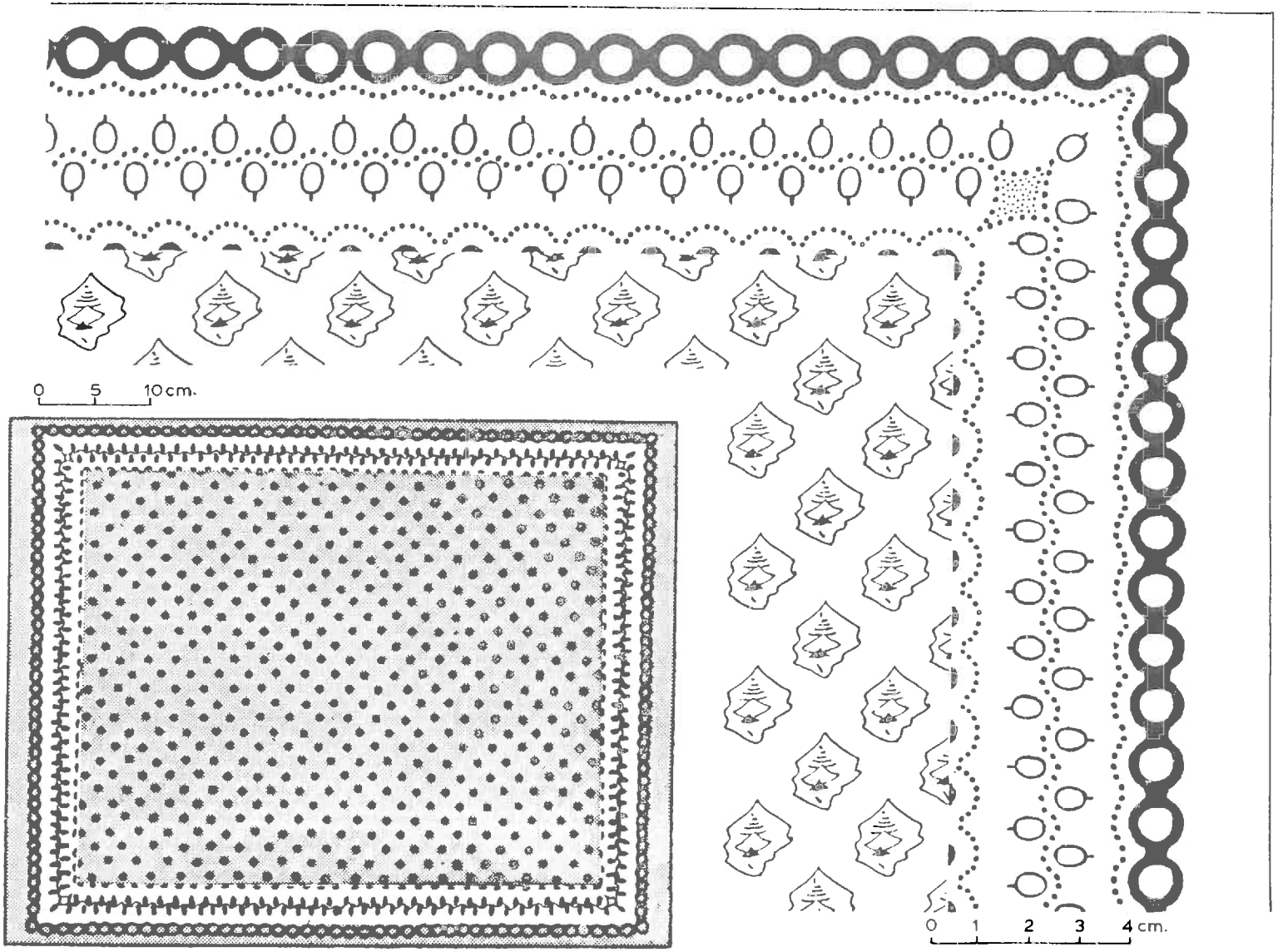

Figure 8: Overall view and closeup of red, black, and gold handkerchief design, Divide Burial, Sweetwater County, Wyoming.

Land Office (GLO) plant map for T20N, R93W was located in Section 24 about 6 km east of the grave. Another Latham site (48SW2244), probably dating to after 1900, was recorded in Section 24 about 7 km east of the grave (Hickman et al. 1986). According to the tourist guides of the early 1880s, Latham was only a side track where passenger trains did not stop (Crofutt 1879; Williams 1881). Most likely, if an individual associated with the station had died, the body would have been buried near the station or transported by railroad out of the region.

The limited evidence suggests that the person buried here was a construction worker who died from an accident, disease, or Indian attack during the building of the original UPRR in the summer of 1868. As shown on the 1875 GLO plat map, the original route of the UPRR in Section 17, where the grave site is located, is the same as the present-day Interstate 80, which is about 50 m south of the grave. The present route of the railroad is south of the Interstate. No old railroad grades are evident in the area.

It was common practice to bury construction workers near the tracks where they died during the original building of the railroad. No records of these deaths were kept. During railroad construction through the Red Desert in July and August 1868, 10,000 animals and from 8000 to 10,000 laborers were employed (Dodge 1965). Most of these laborers were Irish and were Civil War veterans (Hogg 1967). These laborers were employed at such tasks as surveying, bridge building, grading, tie and track laying, cutting railroad ties, and quarrying stone. During the rush through the Red Desert, three to four miles of track were constructed per day (McCague 1964). According to Yost (1975), the statement that a person died for every mile of track laid was no exaggeration. Probably numerous construction laborers were buried along the original railroad.

This person appears to have been in the right age group and was of the right race to be a railroad construction worker on the UPRR. According to Don Snoddy, UPRR archivist, the large sandstone rocks used as part of the grave fill were probably for the building of bridges. The cedar coffin boards also were from construction materials. The handkerchiefs may have been tied around wounds received on the arm and leg, or they may have been added by loved ones as was the custom during that time.

THE SKELETON

The skeleton from the coffin is mostly complete. The only long bones missing are the entire left humerus and the proximal end of the left fibula. These were disturbed by the backhoe. All the others are well-preserved and complete. Both patellae are missing, possibly due to the action of the backhoe. All ribs and vertebrae are present and complete, as well as the skull and mandible. The left maxilla reveals an area of postmortem breakage and some bone loss, but this is minimal. The pelvis is likewise complete including all five segments of the coccyx. Both clavicles are complete. The right scapula is complete, but the left appears to have been damaged by the trenching operation and is missing its most inferior aspect. Regarding the wrist and hand, all left carpals are present except for a missing navicular, lunate, and pisiform. The right carpals are also present except for a missing lunate and triquetral. All metacarpals are present. Most phalanges are missing, but five proximals, three

medials, and two distals are represented among the remains. The ankles and feet did not fare as well, perhaps due to the disturbance by the backhoe during trenching operations (which destroyed part of the coffin in that area as well). All tarsals are missing except for a complete right calcaneus. All left metatarsals are present, but all rights are missing except for a complete second metatarsal. No phalanges of the feet were recovered.

The overall preservation of the skeleton is excellent (Figures 9, 10, and 11), and even some soft tissue survives (mostly fascia and ligament attachments) along vertebrae and some long bones. A few fragments of mummified brain tissue were recovered from the cranium, as well as optic nerve fibers and the posterior portion of the eyes themselves (recovered from the orbits on both the right and left sides).

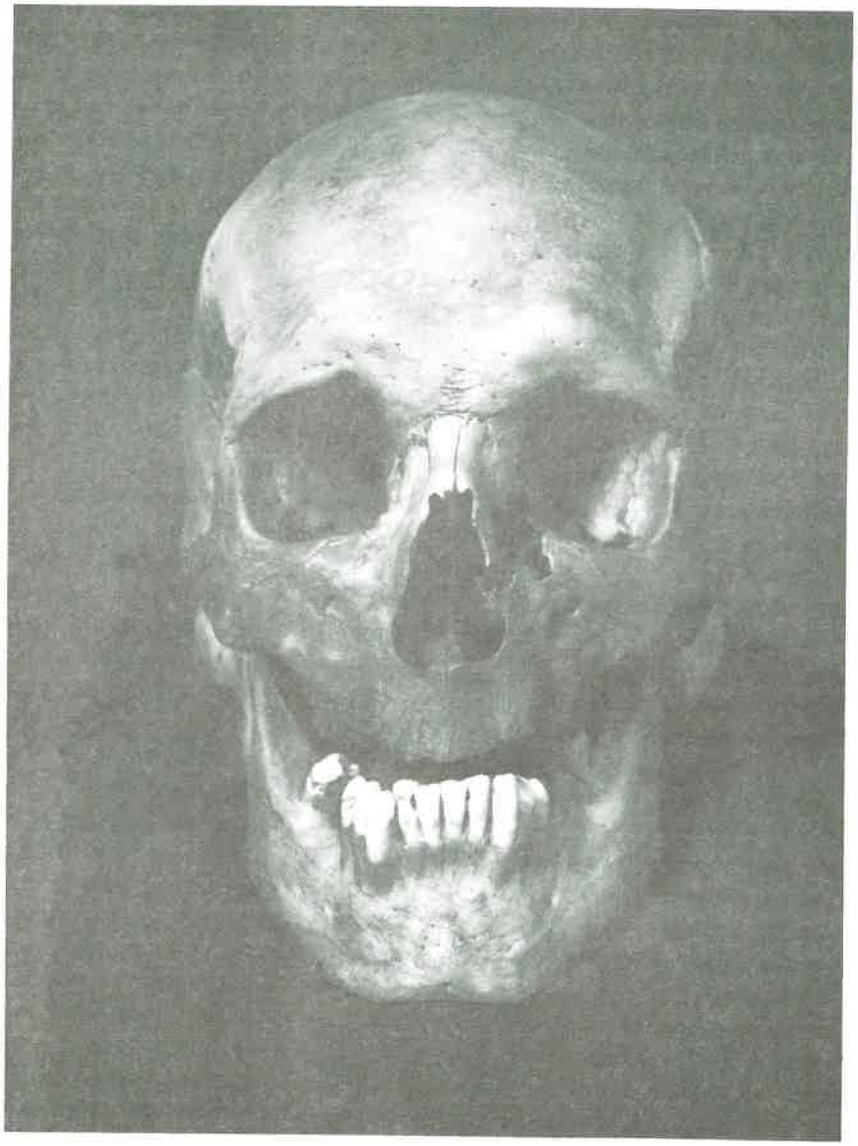

Figure 9: Frontal view after removal of shroud pieces, Divide Burial, Sweetwater County, Wyoming.

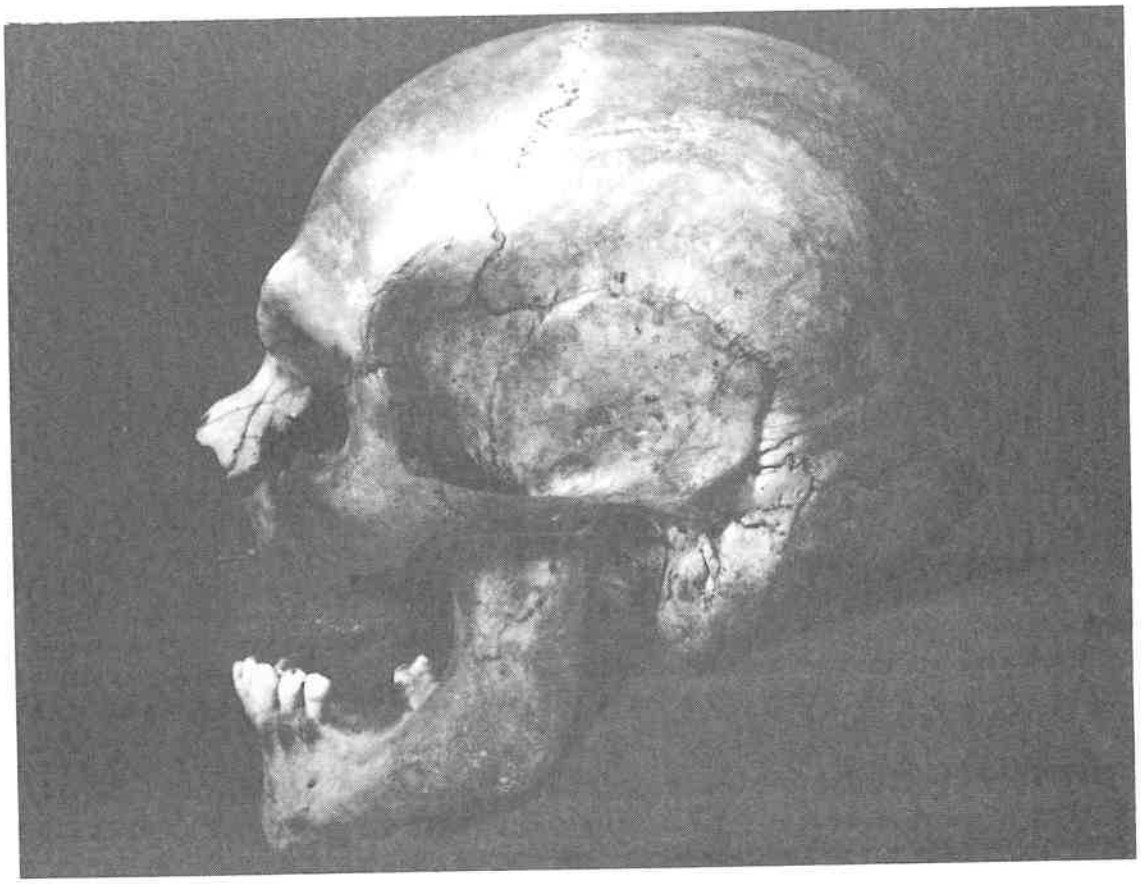

Figure 10: Left lateral view showing postmortem bone loss in orbital area (superior maxilla), Divide Burial, Sweetwater County, Wyoming.

The skeleton is that of a robust male. Sex determination was easily made from both metric and nonmetric assessments of the innominates, skull, femora, and humeri (Stewart 1979; Krogman and Iscan 1986; Bass 1987). The Giles and Elliot (1962) discriminant function test was applied, and the result was 47 points into the male range (clearly male). The skull overall is quite rugose with particularly large mastoids and supraorbital tori. The long bones are heavy but the joint surfaces not surprisingly large (femoral heads measure R = 47 mm, L = 48 mm, and the vertical height of humeral head is R = 46 mm).

The age of the individual at the time of death was approximately 23 years (22-24 years). Some excellent skeletal criteria point to this specific age. For instance, the iliac crests of the innominates are fused, but the sternal ends of the clavicles are not (strongly suggesting 22-24 years). This age bracket is supported by the pubic symphysis age (McKern and Stewart 1957) of 18-23 years (component scores of 2·2·0). Tooth eruption and wear also point to an age above 21 years.

Race was clearly established as Caucasoid on the bases of anthroposcopic and metric traits of the skull (Giles and Elliot 1962; Stewart 1979; Krogman and Iscan 1986; Gill 1986; Bass 1987; Gill et al. 1988). Results of the method of Gill et al. (1988) produce indices of 36·43·71 which put the skull clearly but not strongly in the

Figure 11: Right lateral view showing better preserved interorbital region, Divide Burial, Sweetwater County, Wyoming.

Caucasoid area. This method alone is 88% accurate in placing Euroamericans. The Giles and Elliot (1962) discriminant function results (68.5 Euroamerican/Negroid and 6.5 Euroamerican/Native American) also place the skull in the Euroamerican sector. Other Caucasoid features which support the metric results are: reduced prognathism; prominent nasal spine; projecting, bilateral chin; leptorrhine nasal form; very steeply inclined nasal bones; retreating malar bones; high sagittal contour; parabolic, almost triangular palate; jagged palatine suture form; blade-like (nonshoveled) incisor teeth; and non-platymeric shape to the proximal femur, as well as a medium degree of anterior femoral curvature. The mandibular teeth show a form and degree of crowding also characteristic of Euroamericans.

Adult living stature was calculated by use of the Trotter formula for Euroamerican males (Stewart 1979), utilizing the maximum lengths of the tibiae and femora. Calculations yielded a stature estimate of 176.7 ± 2.99 cm or approximately 5' 9.5".

With a nearly complete cranial skeleton, 50 reliable craniofacial measurements were taken. A selected sample of 20 of the most descriptive of these, and some derived indices are presented (Table 1). Selected standard measurements of the mandible and postcranial skeleton are also listed. Measurements and indices are based on procedures outlined in Howells (1973), Bass

Description	Measurement	
CRANIAL:		
Cranial length	196	
Cranial breadth	143	
Basion-bregma height	138	
Porion-bregma height	124	
Auricular height	125	
FACIAL:		
Nasion-prosthion[1]	72	
Nasion-alveolar prosthion	(76)[2]	
Nasion-gnathion	(127)	
Bizygomatic breadth	131	
Nasal height	53	
Nasal breadth	23	
L. orbital height	32	
L. orbital breadth (dacryon)[1]	36	
L. orbital breadth (maxillofrontale)	41	
Maxillofrontal breadth	22	
Maxillofrontal subtense	8	
Zygoorbital breadth	51	
Zygoorbital subtense	22	
Alpha chord	(28)	
Alpha subtense	(20)	
MANDIBULAR:		
Symphyseal height	41	
Bigonial diameter	101	
Ascending ramus breadth	31	
Ascending ramus height	68	
Corpal length	77	
Gonial angle	34°	
POSTCRANIAL: (maximum lengths)	Left	Right
Femur	491	485
Tibia	384	382
Fibula	---	377
Humerus	---	343
Radius	254	254
Ulna	271	272
Clavicle	148	144

Table 1: Measurements and indices, Divide Burial. All measurements in this table are in millimeters unless otherwise designated. [1] These measurements are according to Howells (1973) and are not those used in calculation of the indices in this table. [2] ( ) indicates estimated measurements

Description	Measurement	
POSTCRANIAL:		
(midshaft measurements)		
Femur	left	right
perimeter	103	99
Humerus		
maximum diameter	---	26
minimum diameter	---	22
perimeter	---	78
CRANIOFACIAL INDICES:		
Cranial index	73.0	long (narrow) cranium
Mean basion-height index	81.4	medium-high vault
Mean porion-height index	73.2	high vault
Upper facial index	58.0	narrow face
Total facial index	(97.0)	very narrow face
Nasal index	43.4	narrow nose
Orbital index	78.1	wide orbits
Cranial module	159.0	
Cranial capacity	1,554	cc

Table 1: (continued).

(1987), and Gill et al. (1988). A few nonmetric discrete traites of the skull were collected according to procedures of Gill (1971) and El-Najjar and McWilliams (1978) (Table 2).

The excellent preservation of the craniofacial skeleton allowed facial reconstruction (Figure 12). This work was done by Laramie artist/anthropologist Sharon A. Long, whose accuracy in reconstructions has been tested previously on homicide cases where photographs of the decedents could later be checked. The likeness is probably close.

PALEOPATHOLOGY

The only striking pathological condition on the specimen is the edentulous condition of the maxilla with subsequent alveolar resorption to a marked degree. This is unusual for a person of such a young age. Also unusual is the degree of attrition on the lower teeth, which instead of being less than normal (because of the early loss of the upper teeth), is somewhat more. Perhaps dentures were in place at one time, which enhanced the wear on the lower dentition. If so, these were not recovered.

A question related to this is: How can a person with relatively normal mandibular dentition (and such a young age) show a totally edentulous upper jaw with advanced alveolar resorption? Obviously, the upper teeth had been missing for a period of years. In light of the healthy condition of the lower teeth (few caries, no active abscesses), one must suspect injury as a possible cause of the loss of these teeth. The possibility of severe caries problems, with subsequent loss, must also be considered, but seems a less likely scenario.

This has been supported by the independent examination by an orth-

Cranial Traits	Occurrence Left	Right
Lambdoid ossicle(s)	+	+
Parietal foramen	+	+
Epiteric bone	o	+
Mastoid sutural ossicle	o	o
Parietal notch bone	+	o
Asterion ossicle	o	o
Tympanic dehiscence	o	o
Double anterior condylar canal	o	o
Accessory lesser palatine foramen	o	o
Supraorbital foramen	o	o
Frontal foramen	o	o
Suture into infraorbital foramen	o	o
Zygomaxillary suture-curve	o	o
Accessory infraorbital foramen	o	o
Os japonicum	o	o
Mylo-hyoid bridge	o	o
Accessory mental foramen	o	o
Mandibular torus	o	o
Rocker mandible	o	o
Epactal bone	+	
Inca bone	o	
Palatine torus	o	
Pharangeal fossa	+	
Superior sagittal sinus-left	o	
Metopic suture	o	
Bregmatic bone	o	

Table 2: Discrete cranial characteristics, Divide Burial. + = indicated presence of the trait. o = indicated absence of the trait.

odontist. Jerry P. Devin, D.D.S., Laramie, Wyoming, also considers the loss of anterior dentition of the maxilla (and associated alveolar bone) to be the result of trauma. A crushing blow from the kick of a large hoofed animal, or a sustained butt stroke from a metal-plated rifle butt (common to the period) would be sufficient to cause such damage. Damage like this could result in the loss of other maxillary teeth (molars) as well, or they could have been exfoliated subsequently as a secondary result of the damage (or even due to unrelated causes). At any rate, Dr. Devin felt the upper molars must have been lost around 20 years of age to allow some wear on the lower third molars and yet show significant alveolar loss there as well.

The mandibular dentition was not without its problems during life. Four caries appear on incisors and a premolar. Four (right and left M1 and M2) of the six molar teeth are missing. Both M3s were intact and healthy at the time of death, but had drifted slightly in a mesial direction.

One anomaly of the postcranial skeleton is observable of the scapulae. The tips of the acromion processes of both right and left

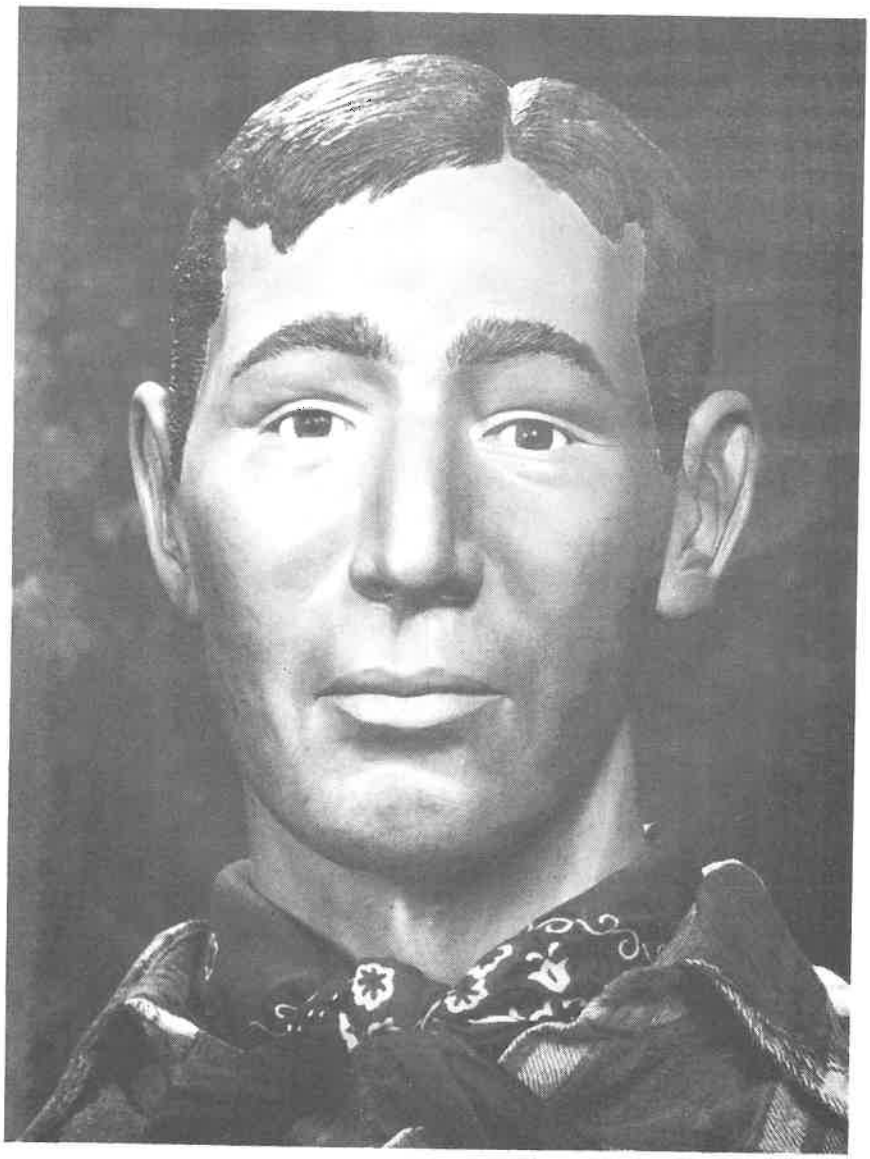

Figure 12: Frontal view of facial reconstruction, Divide Burial, Sweetwater County, Wyoming.

scapulae existed as separate bones, unattached to the rest of the process.

SUMMARY AND CONCLUSIONS

The grave of a young, Euroamerican frontiersman has been excavated from a site near the original railroad bed of the UPRR transcontinental line. The person was possibly a railroad worker during the original construction of the transcontinental line. The person was buried, with silk handkerchiefs tied around a wrist and leg, in a coffin constructed of cedar boards. No other graves appear to be located in the immediate area. This person was of above average stature and robusticity, and had probably sustained an earlier injury which led to an edentulous maxillary condition. Otherwise, the skeleton reflects excellent health and no additional injuries.

This skeleton is a part of an

expanding sample of frontier Euroamericans from Wyoming. Most show unusual amounts of skeletal pathology as a result of traumatic injury. Many died by violence. The skeleton shows no evidence of how the pioneer died and shows less than the average sign of injury (even if the upper teeth were lost as a result of injury). Specimens like this one are beginning to produce an interesting osteological profile on an early element within the Euroamerican population of the North American Great Plains. The lifestyle of these early pioneers is becoming more fully understood through additional case studies in human osteology like the one presented here.

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BOOK REVIEW

A Cultural Resource Inventory of Portions of Lake Oahe, Carson County, South Dakota, Volume 1. P. H. Sanders, D. M. Penny, M. L. McFaul, K. H. Dueholm, K. P. Schweighert, and T. K. Larson. Omaha District, United States Army, Corps of Engineers, Omaha, Nebraska, 1987. 212 pp. 26 figures, 23 tables, references, 2 appendices. No cost if printed copies are available from Omaha District of Army Corps of Engineers. $0.10 per page after printed copies are dispersed (paper).

Cultural resource inventory reports are not normally reviewed for the public. Such reports usually contain management information and recommendations for sites of interest only to the professional community. This report goes beyond expectations by providing a short analysis of data collected during a preliminary inventory in South Dakota. The area of discussion is South Dakota, but this should not deter Wyoming readers. The Plains Woodland and Eastern Woodland traditions have penetrated the eastern boundaries of this state and are an important part of the prehistory of the High Plains.

The beginning chapters deal wholly with information that is required by federal agencies. Chapter One, by P. H. Sanders, details who did the actual survey and what was done. A small section on the history of archaeological surveys in the Missouri River Basin and the Lake Oahe pool area is important because it documents the large number that have been conducted in the area. Many past researchers have recorded sites with different site numbers and in incorrect legal locations. This has led to difficulty in identifying these sites today. Past surveys primarily have dealt with earthlodge village sites. This survey addresses non-earthlodge sites. This orientation forms the focus of the research questions throughout the report.

Chapter Two, by K. H. Dueholm and P. H. Sanders, is a brief synopsis of the environment in the Missouri River Basin. This includes sections on physiography, geology, soils, climate, fauna, and vegetation. Chapter Three, by P. H. Sanders and D. M. Penny, is a regional overview of the prehistoric - protohistoric culture history. A large regional cultural history was used to incorporate the small and geographically isolated segment of land surveyed into known cultural periods. This gives the reader a short course in the archaeology of Wyoming and South Dakota.

An excellent historical overview is found in Chapter Four, by K. P. Schweigert. In this short section, the author discusses the historic time period from the first contact between the Native and Euroamerican populations through the present. The use of the Missouri River as a transportation route as well as its role in ranching and homesteading are discussed.

Methods and techniques used in the survey comprise the fifth chapter, written by T. K. Larson, P. H.

Sanders, and D. M. Penny. The research orientation utilized for the project is described and clarified as well as survey and recording techniques. The main body of the report is found in Chapter Six, by P. H. Sanders and D. M. Penny. One hundred pages are devoted to the description of sites and isolated finds. The larger and more important sites have detailed descriptions, site maps, and excellent black-and-white reproductions of selected artifacts. The smaller sites usually only have written descriptions. A more important topic discussed in this section is the destruction of important sites by erosion because of inundation and wave action by Lake Oahe. Entire sections of sites that were recorded in earlier surveys have disappeared. This report not only records the damage, but gives researchers some idea of the rate at which this erosion is occurring. Measures should be taken to stop the erosion, or mitigate impacts to the sites in danger. Many of the sites are also being destroyed by vandals (i.e., pothunters) who have easy access to cultural levels exposed by erosion.

The next three chapters deal with analysis of data collected during the field survey. Patterning of prehistoric lithic resource utilization is addressed in Chapter Seven, by P. H. Sanders. In 1977, Ahler demonstrated definite patterns in procurement of lithic material in both Extended Middle Missouri villages and Extended Coalescent villages in the area. Extended Middle Missouri villages utilized sources to the north and west, while Extended Coalescent villages used sources to the south and southwest. This present study not only tested Ahler's results, but asked other specific questions using data gathered. Despite some problems with all sites not being recorded consistently, the results are interesting. The present study appears to agree with Ahler's original analysis, but because of problems with sample sizes, conclusions are tentative.

Chapter Eight, by M. McFaul, assessed the geoarchaeological potential of the survey area. The author of this chapter produced a model for the project area by reviewing literature on the subject, and constructing a methodology specifically for the Missouri River Trench. Seven landform associations are described for the right bank of the Missouri River in this region. Each is assessed for its potential to preserve archaeological remains, taking into consideration such influences as erosion and bioturbation. Relative ages of each landform are discussed. Similar studies for other surveys can provide a valuable tool for field archaeologists in assessing potential of an area to contain cultural remains.

The entire survey area was gridded into 40 acre blocks during the survey to determine if site locations exhibit distinct environmental/locational characteristics. Chapter Nine by T. K. Larson, documents this procedure. Metric environmental variables are assigned to each grid block. By applying statistical techniques of logistic regression, the author of the chapter uses a model to predict the location of archaeological sites. By using these techniques, accuracy of up to 98% may be obtained for the prediction of earthlodge site locations.

The last chapter is a summary of conclusions and recommendations. Damage to archaeological resources by impoundment of the Missouri River is again addressed. Management decisions for the Corps of Engineers will be difficult and crucial to the future of all sites

along Lake Oahe. One section of the report that may be missed by the casual reader is the plant resource base in Appendix A. This is an interesting discussion of the potential floral resources available to aboriginal peoples.

Readers may notice the separate chapters of this document do not flow or build on one another. This is an inherent nature of a report generated by a contracting agency or firm. Each chapter is a separate entity designed to stand alone, while conveying the necessary information. Although this format may seem tiresome, interesting and informative ideas and techniques can be forced between the tedium. The first six chapters are usually found in any similar report, while the last four are out of the ordinary. It is encouraging to see that even in the early stages of cultural resource management (e.g., inventory), analysis of data forms an important aspect of this contracting firm's orientation. This volume can serve as a model for all engaged in cultural resource management. The addition of statistical and innovative techniques in any report greatly enhances its value. Published and unpublished cultural resource management reports should be reviewed more often, especially if they contain novel ideas that could be interesting and useful to others concerned with studies of the past.

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