



# OKLAHOMA ARCHEOLOGICAL SURVEY THE UNIVERSITY OF OKLAHOMA

## NEWSLETTER

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### ***CONTINUING RESEARCH IN PALEOINDIAN BISON HUNTING ORGANIZATION***

In 1994, beneath the skeletons of 29 bison in an arroyo at the Folsom-age Cooper site, northwestern Oklahoma, was a crushed bison skull with painted zigzag designs on its frontal and horn core base. This, the oldest painted object in North America, is also the oldest evidence of a pre-kill ritual on the North American Plains. Similar to painted mammoth skulls in the Old World, cave paintings in Spain and France, and late Prehistoric/early historic painted bison skulls on the northern Plains of North America, this artifact probably resulted from the hunters' need to invoke the supernatural to sway the outcome of a tenuous task. The fact that this skull was crushed by a subsequent herd of bison denotes the successful nature of this hunting venture. The arroyo containing this kill was also the scene of two other bison kill episodes. All three kills date to the Folsom time period (ca. 10,500 years ago) as evidenced by the recovery of Folsom projectile points among the bison bones. Unlike other Folsom bison kill sites, no processing areas were found in the immediate vicinity of the kills, suggesting that perhaps a major encampment was some distance away and that only meat was transported there for further processing and consumption. Alternatively, erosion may have removed any processing areas not on the arroyo floor. Based on the work at the Cooper site, a model integrating large numbers of animals, gourmet butchering techniques, little carcass dismemberment, seasonal redundancy, and the possible aggregation of more than a single group of hunters was proposed (Bement 1999). This

model, herein referred to as the Cooper Model, builds on previous investigations of Folsom sites and presents a scenario of seasonal population aggregation/dispersal that can be assessed through additional work in the region.

***The Cooper Model.*** The Cooper Model posits that a dichotomy in bison kill site size exists during the Folsom period and that this dichotomy is the result of a seasonal, although not necessarily annual, population aggregation/dispersion mobility pattern. The model suggests large (~40-60 animals) communal bison kills were conducted in



*Figure 1. Lee Bement inspecting one of many cores to be taken during the bison project.*

the late Summer/early Fall season of the year by aggregated hunters. During the rest of the year and throughout all seasons in non-aggregation years, Folsom groups fissioned into smaller groups and employed an encounter hunting strategy of bison procurement with kills of up to 6 animals per episode. At small kills, the group moved residentially to the vicinity of the kill site, while at large kills the aggregated population maintained a camp established before the kill and only a logistical group frequented the kill site. Accompanying shifts in procurement strategies, the butchering patterns changed from complete carcass dismantling and intensive meat stripping with some marrow processing attending small kills (Johnson 1987, 1997) to a gourmet strategy of meat filleting from nearly complete carcasses at larger communal kill sites (Bement 1999; Hofman et al. 1991). Consequently, meat transport decisions also varied. At large kills, boneless meat packages were transported to the camp while at small kills, where the residential move lessened the distance for transport, some meat was carried still attached to the bone for further processing. Bone marrow processing may attend both small and large kills. The extent of this processing is not known. At small kills such as documented at Lubbock Lake, bone fracturing patterns have been attributed to fashioning bone expediency tools (Johnson 1987), while at other sites including Stewart's Cattle Guard, splintered bone is consistent with marrow extraction tasks (Jodry 1987; Jodry and Stanford 1992). According to this model, large kills were conducted to procure sufficient meat to support the large accumulated population for the short-term duration of the aggregation. This is at variance with the Late Prehistoric situation where large communal kills (much larger than the largest Folsom kill) provided storable foodstuffs for over-wintering (Frison 1991; Reher and Frison 1980).

To better understand the Cooper site and aspects of the Cooper model, a multi-staged research project has been formulated. It is reasoned that since the Cooper site arroyo contained three kill episodes, adjacent gullies might also have been used as bison traps. The first stage consists of surveying additional areas along the Beaver and Cimarron rivers to locate additional sites. The second stage consists of the intensive subsurface probing of sediments in anticipation of locating other filled gullies of Paleoindian age that could contain additional bison kill sites or processing areas. A third research stage is the excavation of new sites that contained Paleoindian age cultural material toward the goal of assessing their relationship, if any, to the Cooper site bison kills.

These three stages will be initiated as funding becomes available. Stages one and two are already underway. Reports on this work will be available later this year as the results are formulated. So, stay tuned for more adventure in northwest Oklahoma.  
*Lee Bement*

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### Plains Conference Papers

Three Survey staff, Richard Drass, Kent Buehler, and Lee Bement, presented papers at the 57<sup>th</sup> annual Plains Conference in Sioux Falls, South Dakota. The conference was October 20<sup>th</sup> through the 24<sup>th</sup>. Richard presented a paper entitled *The Wheeler Phase and Evidence of Protohistoric Corn Cultivation West of the 98<sup>th</sup> Meridian*. Lee and graduate student Scott Brosowski presented a paper on *Recent Investigations at the Odessa Yates Site (34BV100), Oklahoma*. Kent prepared a poster paper on forensic techniques and facial reconstruction. The conference was also well attended by OU students and many gave papers. One student, Rhonda Fair, won the best student paper award at the conference. This year the conference included a tour of the Mitchell Prehistoric village and the new Archeodome at the site. The Archeodome is a building built over the site so archeologists can work indoors year-round. This is the first of its kind in the U.S. for archeological sites; plans are for excavations to begin this year in the dome. This fall, the conference will be in St. Paul, Minnesota, November 9-12. *Richard Drass*

### Survey Archaeologists Attend Clovis Conference

Staff archeologists Leland Bement, Kent Buehler, Larry Neal, and Lois Albert attended the Clovis and Beyond Conference in Santa Fe, New Mexico, October 28-31. The conference presented the latest thoughts on the peopling of the Americas and the evidence for pre-Clovis occupations as early as 30,000 years ago. Paleoindian experts from the fields of archeology, physical anthropology, genetics, and geoarcheology presented summaries of the latest findings and implications for research directions for the new millennium. The effects of NAGPRA legislation on the study of Paleoindian materials was a key topic early in the conference and perspectives were provided by archeologists, Federal regulatory archeologists, lawyers, artifact collectors, and Native Americans. The work on the Kennewick skeleton was presented as a case where NAGPRA was successful — the fact that it took a lawsuit to bring this about was somehow overlooked. The remainder of the conference consisted of papers dealing with Paleoindian research. George Frison was honored as Paleoindian Archaeologist of the Century and a similar honor was bestowed on C. Vance Haynes. Perhaps the greatest contribution of this conference to the many attendees (over 1300 of them) was the chance to view site collections from all parts of the Americas and to meet face to face with many of the key researchers presenting poster papers. Oh yes, Santa Fe wasn't too hard to take either.

*Lee Bement*

### Kirkpatrick Challenge Grant

During the fall, the Archeological Survey participated in the Oklahoma City Community Foundation's challenge grant sponsored by Mr. Charles Kirkpatrick. The challenge was for the Survey to raise \$2500.00. Mr. Kirkpatrick would then double the amount in match. Unfortunately, we were unable to meet this challenge, raising \$850.00 by the end of the year. However, we are extremely grateful to those who donated to the challenge grant. Your support and concern for our mission and need for external funding is very much appreciated. It moves us that much closer to the level where our foundation account provides us with the levels of interest capable of funding students as well as the other activities of the Survey.

*Robert L. Brooks, Director*

### Thundering Errata

Since its publication last March, more than 800 copies of *Bison Hunting At Cooper Site: Where Lightning Bolts Drew Thundering Herds* (University of Oklahoma Press) have been sold. While this number doesn't place the book on the New York Times Best Seller list, it does illustrate the interest in Oklahoma's Paleoindian archaeology. As usual, reviews of this book have appeared in a number of professional and popular journals. Most of the reviews have been positive and accurate in portraying the actual content of the book — although one has the site as a bison jump rather than an arroyo trap. In addition to the reviews, I have received lots of feedback from readers. As part of the feedback, readers are quick to point out typos and other inconsistencies that were missed by, among others, ME. Two errors are particularly bothersome because they affect the presentation of some very important data. The first of these occurs in Table 40 (page 159) concerning the Upper Kill lithic material type percentages. The correct numbers are 20.0% Edwards and 75.0% Alibates. This error is significant because the Upper Kill at Cooper is one of the few southern Plains Folsom sites for which Alibates material outnumbers Edwards in the projectile point assemblage. The careful reader would have caught this discrepancy as the actual numbers are given in the description of the Upper Kill. The other regrettable error is found in the appendix on Table 44 (page 195). The equation relating the humerus and radius measurements should read:  $y_{\text{humerus}} = 1.0668 \times \text{radius} - 36.192$  instead of the typo  $+36.192$ . While this typo will not affect the lives of 99.9% of the people reading the book, those few practitioners of bison skeletal metric data will be burdened. As more critical errors are found, I will keep you updated. I am sorry for any inconvenience these errors

have caused, and the blame for them rests squarely on my shoulders.

*Lee Bement*

### **1999 State Fair of Oklahoma**

The 1999 State Fair of Oklahoma was held between September 17<sup>th</sup> and October 3<sup>rd</sup> on the Oklahoma City Fairgrounds. The Archeological Survey, in conjunction with the State Historic Preservation Office, and the Oklahoma Anthropological Society, sponsored a booth in the Outdoor Oklahoma Building. The theme of this year's fair was *Oklahoma Archaeology: Points of Interest*. We handed out thousands of posters, bookmarks, and pamphlets. Additionally, there were displays on the research activities of the Survey and Society and an exhibit of artifacts on Oklahoma's culture history. In general, it was a wonderful opportunity to promote our state's heritage. We greatly appreciate all those who volunteered their time to hand out posters and otherwise promote Oklahoma's cultural heritage.

*Bob Brooks*

### **Survey Archeologists Attend Academy Meeting**

Survey archeologists Lee Bement and Lois Albert, as well as graduate student Scott Brosowske, drove to Black Mesa State Park to attend the Fall Field Meeting of the Oklahoma Academy of Science on the weekend of September 17 - 19. The delightfully cool weather was appreciated after the heat wave of the main body of the state. They attended field trips which included a hike up Black Mesa, identifying the plants of the park area, visiting the dinosaur tracks, looking at the wildlife of the area adjacent to the park, visiting a prairie dog town, visiting the tri-state marker, and - by special arrangement with a private landowner - visiting Robbers' Roost and nearby rock art.

On Saturday evening, Lee Bement gave a slide presentation on the archeology of the region around the western end of the panhandle. Because of the clarity of the night sky far from major light pollution, the evening ended with a telescope viewing of stars and planets visible at the time.

*Lois Albert*

Newsletter co-editors: Lois E. Albert and Marjy Duncan