BROKEN BOTTLES AND BISON BONES: PUBLIC ARCHAEOLOGY AT FISH CREEK PROVINCIAL PARK, CALGARY, ALBERTA

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Abstract

This paper takes a look at the activities of the University of Calgary's Programme for Public Archaeology at Fish Creek Provincial Park during the 1999 field season. We discuss public involvement in the excavation of a prehistoric bison kill site and an early historic settlement site within the Calgary area (Fish Creek Provincial Park). Included in the discussion are programme promotion and publicity, the geo-topography of the Fish Creek area, as well as heritage background information on both of the excavated sites. Also discussed is the continuation of the programme through volunteer work in the laboratory and undergraduate analyses of the excavated material. We have realized that Public Archaeology is an area deserving further academic study and application. There are numerous archaeological programs that cater to the public within the United States, through university programs and programs offered by museums, but have found Canada, especially Alberta, generally lacking in such programs. The expansion of this Programme for Public Archaeology will lead to an increase in the visibility of students, and the Department of Archaeology within the University of Calgary on a community, provincial and (hopefully) regional scale. As well, this programme may create new avenues for funding and a greater understanding of Alberta's cultural heritage resources.

Résumé

Nous nous penchons ici sur les activités du programme d'archéologie populaire entrepris par la University of Calgary dans le parc provincial Fish Creek au cours de la campagne 1999. Nous parlons de la participation de la population aux fouilles effectuées dans une station préhistorique de dépeçage des bisons et un établissement historique du début de la période historique, situés dans la région de Calgary (parc provincial Fish Creek). Nous faisons état de la publicité donnée au programme, de la géotopographie de la région de Fish Creek de même que des données historiques et préhistoriques sur les deux chantiers de fouille. Nous parlons aussi de la poursuite du programme grâce aux travaux bénévolement accomplis en laboratoire et de l'analyse des matériaux dégagés par des étudiants de premier cycle. Nous avons constaté que l'archéologie populaire était une branche qui méritait des études théoriques et pratiques. Aux États-Unis, de nombreux programmes archéologiques s'adressent au grand public, aussi bien dans les universités que dans les musées, mais ce n'est en général pas le cas au Canada, surtout en Alberta. Le développement de ce programme d'archéologie populaire fera mieux connaître les étudiants et le département d'archéologie de la University of Calgary à l'échelon local, provincial et (nous l'espérons) régional. Par ailleurs, ce programme ouvrira peut-être de nouvelles perspectives de financement et fera mieux apprécier le patrimoine culturel de l'Alberta.

During the 1999 field season at Fish Creek Provincial Park, we had the opportunity to supervise the Programme for Public Archaeology that was offered by the University of Calgary under the direction of Dr. Dale Walde. This experience enabled us to see first hand the positive impact a Public Archaeology programme has on the community; despite this, there is a lack of such programmes in Alberta. We were

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able to interact on a daily basis with the participants, answer perceptive questions and share in the 'awe' of many participants' first excavation.

This public programme (part of the Alberta Heritage Research Project) is a cooperative project funded by the University of Calgary, the Archaeological Society of Alberta, the Alberta Historical Resources Foundation, and Fish Creek Provincial Park. Its design is to give members of the general public an opportunity to experience an archaeological excavation and to learn about the region's heritage while working side by side with students and professional archaeologists.

The Programme for Public Archaeology was promoted through media exposure. Newspapers, radio stations, television stations, and community announcements were set up to aid us in providing information to the public regarding this unique opportunity. Previous participants were also contacted, some of whom were gracious enough to appear with us in the media spotlight. The media coverage brought us a wide variety of interested members of the public, most of whom were surprised by the fact that they were welcome on a real archaeological dig. Among one of our most interesting media experiences was an appearance on Channel 7's *Breakfast Show*, where enthusiastic students and participants did a very good job of convincing the public that most archaeologists get up at 5.00 am to dig.

Along with excavations at Fish Creek Park, a new and exciting part of the public programme is the integration of archaeology into the school system. Recently, projects have been carried out at St. Clements and at Vista Heights elementary schools in Calgary, and at Alcona Glen elementary school in Ontario. At St. Clements, grade 4 children had the opportunity to do a simulated survey and excavation, as well as assistance in finding archaeology on the internet. It is hoped that this type of programme will expand in the next couple of years to include many more schools.

Situated within Calgary's city limits, Fish Creek is the largest urban park in Canada and boasts over 70 archaeological sites (Dale A. Walde, personal communication 1999). Two of these were excavated as part of the public programme — the Glenn Building ca. 1873, and a bison kill.

In 1873, John and Adelaide Glenn left Fort Benton in Montana with all their possessions loaded onto the back of a mule (Anon., N.D.). Heading north along the "Whoop-Up Trail", they arrived at the junction of Fish Creek and the Bow River — today's Fish Creek Provincial Park. Here they built a log house, a farm and a modest trading post, wherein one of the excavations lie. In years following, Glenn contributed to the building of Fort Calgary while continuing to develop his own ranch. In 1877 he sold the farm to the Canadian government who reestablished it as an Indian Supply Farm. The ranch eventually changed hands several times over this period, and in 1973 the provincial government declared Fish Creek a public Provincial urban park.

During the years prior to provincial park status, John Glenn's modest trading post was utilized as a blacksmith's shop as well as serving as a supply and storage building. In the 1950s the floor was paved and the south end of the log building was replaced with a modern metal garage door after the wall had been removed using a chain-saw. In the spring of 2000, the cement floor will be cut into 50 cm squares, to be indiscriminately removed for excavation. It is our hope that once excavations begin beneath the cement floor, that a living floor will be revealed and a more complete record about the life of this building will be known.

The public programme began at this site in late June, continuing excavations from the previous year. This building, which had been the oldest standing structure in Calgary, was disassembled at the end of the 1998 summer session, enabling us to save the best-preserved timbers for future reconstruction. Plans see a museum in the Park, containing artifacts excavated from the site, and allowing for continuation of public involvement after the conclusion of the field season.

Participants were introduced to the archaeology of the Park with a brief history of the farm and the building. Significant artifacts from the previous seasons were presented as part of this introduction, giving the participants a first hand perspective of the site's history. A chronology of historic nails (Schatz, 1999a), butchered bones, and exotic objects, such as a reassembled torpedo bottle, imported from Belfast, were part of this introduction.

After this brief introduction, participants were assigned their own units, where a demonstration of proper excavation techniques was undertaken; appropriate measurements, mapping, and instrument use detailed these instructions. Participants were encouraged to ask questions during their hands-on excavation training. It was our experience that the participants gained a broader, more comprehensive understanding of the significance of proper excavation techniques through this method. Site integrity, context, and the fragile nature of excavated material was stressed.

Artifacts recovered during the 1999 field season include broken pop bottles, nails, structural material, slag produced from Blacksmithing activities, faunal material, as well as assorted personal items (such as jewellery, plastic green army men and chewing tobacco tins). Excavations proceeded to a maximum depth of 175 cm below the surface, where charcoal was found on top of a fossil flood plain. Other indigenous materials were found below the historic levels, including spirally fractured bison bone, bison hair, and an end scraper. This evidence of pre-European occupation now allows for a Borden designation of the site on which the Glenn building stood. This is significant in that it allows for site recognition within the Alberta archaeological community. It is of interest to note that most of this material recovered was excavated by the public participants, thus giving the public an active role in the development of Alberta's cultural resources.

The highlight of the programme was the opening up of a bison kill site. In 1977 Lifeways of Canada performed an archaeological investigation on the Fish Creek Valley and described the area as a relict glacial spillway, as witnessed by the broad U-shaped valley (Reeves, 1977). The Park today is characterized by a series of flat terraces formed by flooding and alluvial deposition. Terraces above the lowest elevation are marked by soil with low humic content, but high in minerals (Wilson, 1983). The terraces further uphill are subject to burial and deposition from slopewash or slumping from the prairie environment above (Wilson, 1983).

The slopes of the valley are composed of glacial till or glacial lake deposits and slumping can occur along its edges, especially when encouraged by local ground water action (Smith, *et al*., 1977). Surface runoff from the Plains environment above has cut many small channels or gullies along the edge of the terrace levels dividing the terraces into a series of flat benches, relatively high above the creek level and usually free from flooding (Smith, *et al*., 1977). The kill site, EfPm-27 is located on one such elevated bench.

Within the Park, vegetation varies from short-grasses to scrub bushes and sparse tree cover. The terrace environment on which the kill site lies is characterized by undergrowth consisting of short grass, burdock and stinging nettles. Bunchberries are abundant throughout the terrace and thorny gooseberry

bushes are evident along the perimeter of the site. The trees at the site are predominantly trembling aspen, balsam-poplar, water birch and Saskatoon bushes (Boland, 1999). The soil on the terrace is a fine-grained black organically rich A-Horizon, over 50 cm thick, perhaps partly as a result of the underlying bone-rich beds.

For over 8000 years indigenous peoples of Alberta have utilized these lands, and have left us remnants of their passage. The Public Programme gave people the opportunity to explore the rich cultural heritage of this area, through the excavation of a bison kill site.

The faunal material recovered from the kill site represents an extraordinary assemblage. With such a large collection there is a wide variety of bone, ranging from the remains of extremely young bison to mature adults. As well, represented in the collection are damaged, diseased and broken bones that show evidence of healing. This prolific assemblage of bison remains allowed for a near constant uncovering of archaeological material, making this a most exciting and educational experience for all involved. (The bone bed was usually so dense, that we often ended up digging with plastic spoons!) After half a summer of excavation, Louis Couronne, one of our most enthusiastic participants, knew all of the bones that make up the bison skeleton, and would often recite the entire skeleton from head to tail in proper osteological terminology. On the other hand, some participants opted to dig instead at the Glenn site, after having to map and draw all of those bones!

Exotic lithics were also recovered, including several projectile points, consisting mainly of the latest pre-contact type, the Plains Side-Notched. A knife, and some debitage were also found at the site. Louis, our most frequent excavator found eight of these points himself, over the course of the field season, three in one day, even! This was his third season digging with the Public Programme, and as a flintknapper hobbyist, it was very exciting for him to uncover authentic materials made by past peoples. Another participant, Valerie Adams, found a Washita Point *in situ* associated with articulated vertebrae; it was in fact found directly between two vertebral elements. As this was the first point found by any of our public participants, it caused a fever among the group.

Public excavations wrapped up with a potluck picnic, featuring, among other delights bison salami. This was a positive way to end the season, as many of our participants who came out on a regular basis, had formed friendships with one another and were reluctant to see the end of such a successful field season.

Rigorous interpretation of this site has been undertaken, with almost 30 volunteers, consisting of students and avocational participants remaining with the programme after excavations ended. They have worked on the washing, cataloguing, and interpretation of materials excavated. Some interesting artifacts have been discovered during this laboratory work, which had been overlooked in the field. These include a bone tool handle, a raw hide wrapped bone, and assorted lithic debitage.

As well, students are addressing varied research questions based on the material excavated during the public programme. B. Horrell (1999) looked at hair that was recovered from both the Glenn site and the kill site, and through comparing and contrasting the unknown sample with a wide variety of known samples (such as hair from a bison coat, hair from tanned skins, and her own), she has narrowed the excavated hair samples down to bison, human or bear. The ambiguity of these conclusions is due to the highly degraded state of the material. The hair from the kill site is assumed to be bison, because it was in association with bison bones. It is hoped that further analysis of the Glenn hair will firmly identify it as bison, providing a verification of prehistoric bison habitation prior to the Glenn's occupancy.

J. Hill (2000) and J. Maxwell (1999) looked at samples of bison feces that were found at the kill site. The analysis of the phytoliths contained within the feces and the wear patterns on teeth from various mandibles, suggested that the types of food ingested by the bison could be determined. Through the application of acetate peels on the first mandibular molar Maxwell (1999) found medium to short striations that are indicative of a grazing behavior, based primarily on prairie grasses.

The phytoliths recovered from the feces support this grazing hypothesis due to the predominance of bilobate phytoliths (bilobate refers to the characteristic barbell shape, i.e., two lobes). Bilobate phytoliths are indicative of C4 grasses. These are grasses that are adapted to hot and dry conditions, more commonly referred to as prairie native grasses. However, Hill (2000) also found phytoliths indicative of woody plants, which support a browsing behavior and C3 plants that include trees and shrubs. Yet, the abundance of the C4 phytoliths indicates that the bison were preferentially grazing on C4 grasses.

M. Schatz (1999b) undertook a preliminary faunal investigation of one of the units within the kill site, in an attempt to determine whether a single or multiple kill event was represented. Butchering marks, gnaw marks, articulated units, and site stratigraphy all aided in the analysis. The research indicated that distinct stratigraphic profiles, or the lack thereof, may be utilized as a conclusive standard toward the identification of kill events. As well, the presence of burned bone in conjunction with disarticulated units, may be used as a means by which to identify multiple kill events, and when absent, may be indicative of a single kill event (Kooyman, 1997; Wheat, 1972). The faunal assemblage within this single unit supports a single kill event (Schatz, 1999b).

C. Cluney and M. Lobb (2000) have carried out immunological analysis on sixteen of the twenty-four lithic elements excavated by participants during the 1999 field season. Four of these sixteen, tested positive for Bovid blood residue, which comes as no surprise, having come from a bison kill site. This helped to set the stage for future residue sampling at the site. Soil samples were also integrated with this research (Cluney and Lobb, 2000). The results and their implications were presented at the 2000 Apala conference in Saskatoon.

As well as the work continuing throughout the year in the field school laboratory, we represented the department in promoting archaeology as a possible academic and career path at the University of Calgary's 101 expo. for incoming students. Road trips to relevant academic conferences were organized, as part of encouraging an archaeologists' lifestyle to students. During the Rocky Mountain Anthropological Conference, we had the opportunity to talk to and exchange ideas with others involved in various successful public programmes. This allowed us to incorporate and expand the potentials for the public programme offered by the University of Calgary.

Further excavations with the Public Programme will be continuing in the upcoming season, as we are looking forward to another successful and rewarding season with enthusiastic members of the public.

We feel very strongly with regard to the significance of public involvement within Archaeology. Not only will such programmes increase community contribution and identity, they also create new avenues for funding and a greater understanding of the importance of Alberta's cultural heritage resources. Native involvement, including opening and closing ceremonies will augment future excavations, adding to the public education component of this project.

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