

ARCHAEOLOGICAL INVESTIGATIONS AT *TSETSEQU* (EBRK-2), AN NLAKA'PAMUX ROCK PAINTING SITE ON THE STEIN RIVER, BRITISH COLUMBIA

Chris Arnett



Figure 1. Collapsed rock shelter at the base of granite cliff, Ebrk-2. 2009 excavations were at entrance of shelter beneath painted overhang, right centre of photo. Photo by Chris Arnett.

While much work has been focused on the material record and subject matter of Salishan rock painting (Teit 1896:1900;1906; n.d.; Malouf and White 1953; Corner 1968; Lundy 1976; Bell 1979; York et al. 1993) until recently very little attention has been paid to archaeological investigations of Salishan rock painting sites. As a result, detailed records of site formation processes (natural and cultural histories) of these landscapes are limited. Fortunately, the archaeology of British Columbia rock art sites has increased dramatically in the past few years

adding significantly to the comparative data archive regarding these places of important Indigenous social activity.

In southern British Columbia a number of landscape painting sites—including DhRa-2 (Copp 2006), EdRi-2, EdRi-10 (Rousseau 1991), EbPw-1 (Mohs 1981) Ebrk-2 (Arnett 2012) and EaRj-81 (Sanders et al. 2013) on the Canadian Plateau as well as coastal sites DhRi-2 (Ritchie and Springer 2011) on the Harrison River and Ashlu River (Rudy Reimer p.c.)—have revealed valuable data on behavioral patterns at these sites. Bryan Gordon's

experimental work in the Nicola and Similkameen Valleys in 2008 and the Birkenhead River used subsurface deposits to gather information pertaining to the age of specific paintings by focusing on the recovery of paint or pigment and samples beneath painted panels for C-14 dating (Gordon 2010). This was the initial research goal of the 2009 work in the Stein River Valley considered below. However, archaeological investigation of rock art sites requires a more inclusive study of subsurface deposits using traditional excavation techniques to recover as much

data as possible if we are to understand behavior at a specific site, including the research goal of investigating the relationship between subsurface deposits and extant panels of paintings.

The largest rock painting site in Nlaka'pamux territory (EbRk-2) is located within the boundaries of the 107,191 hectare Stein Valley Nlaka'pamux Heritage Park on the Aboriginal trail, which passes directly in front of the cliff site in full view of the paintings (Figure 1). It is the only rock art site in the Stein River Valley with a recorded Nlaka'pamux name, *TSeTSeQU* meaning "markings/writings", to describe the large number of individual red ochre paintings (*TSeQU*) found here. The approximately 30m high, 120m long granite cliff is separated from the river by a 45m stretch of boulder-strewn alluvial terrace covered with small diameter fir, cedar trees (some culturally modified), vine maple, cottonwood, and cascara trees. The north-facing cliff dominates the south side of the river which begins a rapid canyon descent to the Fraser River at this point. Mechanical erosion has created a small rock shelter at the base of the cliff flanked on either side by sheer rock walls and ledges where red ochre paintings occur up to a height of five metres. As many as 98 distinct painting episodes appear along the base of the cliff from ground level to five metres above the ground.

The fact that EbRk-2 is marked by numerous paintings (*TSeTSeQU*) indicates that the site is a landform of some significance to Nlaka'pamux people. The striking anthropomorphic geology of the cliff, calling to mind "standing collasi" suggest that the landform is a *sxwAym*, or powerful being(s) transformed to rock during the *sptaquh*, or legendary times (Teit 1898;1900; n.d.). Part of the rock shelter has collapsed and the eroded rounded face of the fallen overhang block may have suggested "a body part" feature of a *sxwAym*. In any event the geology indicates that the place is "pre-given," not a *tabula rasa*, and an important agent in the production of later, historically contingent activities. On the cliff face, older granite blocks are suspended in more recent mica-speckled quartzite veins and are particularly pronounced above the rock shelter at the base of the cliff at the spatial centre of the site. Groundwater deposited iron oxide is also present on the cliff and because of its

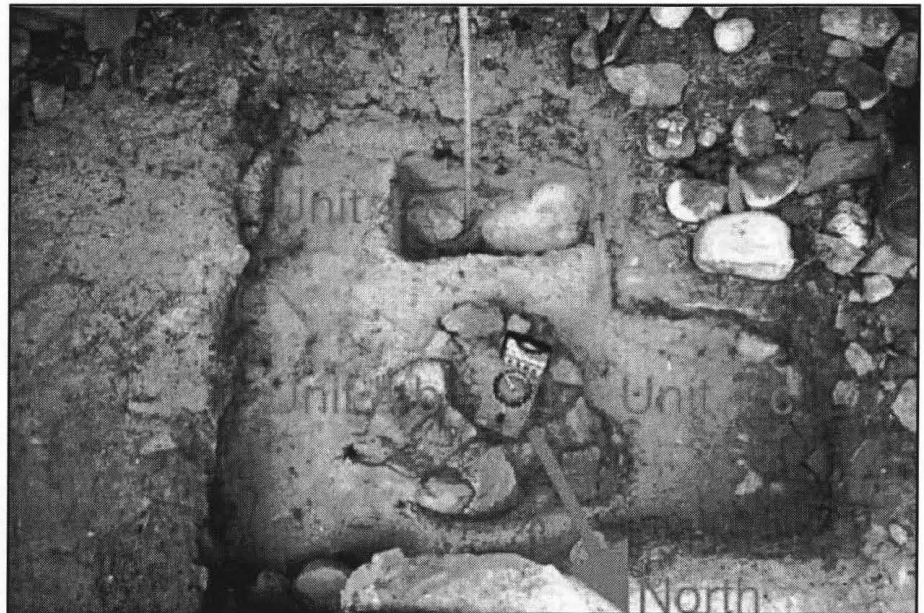


Figure 2. Unit 4 excavated to sterile alluvial sediment (Stratum IV) showing stratigraphy with compact dark anthropogenic layer (Strata III and IV) between sandy eolian (Stratum I) and sandy illuvial (Stratum IV). Note exploratory shovel test in sterile alluvial deposits in Unit 4a (43 cm DBS). Stone hearth is situated at 8 cm DBS at beginning of Stratum III deposits. Photo by Chris Arnett/Adrian Sanders.

known cultural properties can be assumed to be part of the site's significance. As well, the site has an acoustic dimension caused by the refraction of sound from the nearby river distinguishing the place from other locations. The cultural importance of the site embodied in the physical appearance and acoustics of EbRk-2 may be assumed to predate the paintings found there.

Earlier European visitors to the Stein, including the archaeologist Harlan Smith, were not shown this site, the largest in the valley, which suggests that local people deliberately restricted access to the location (Arnett 2012).

In July 2009 Adrian Sanders and I conducted an archaeological excavation to understand the site formation processes and to recover pigment and other cultural material beneath a painted slab overhang located at the entrance of the collapsed shelter at the base of the cliff where the largest amount of paintings are concentrated. A 50 x 50 cm excavation (Unit 4a) was chosen directly beneath the painted ceiling of the overhang (Figure 2). A datum was established at the base of an angled rock beneath the overhang with a 50-cm horizontal quadrant using 2-cm vertical levels to record any in situ artifacts.

All sediment was screened through a 1.5 mm mesh strainer to locate pigment and other cultural, faunal and floral material, which included red and yellow ochre, lithic debitage and shatter, shell artifacts, glass shatter, seeds, fish and mammal bone.

A bulk sample of 624.07 g was taken from the 4 to 6 cm DBS level of Unit 4a and another 1,180.49 g from the hearth features.

The initial excavation (Unit 4a) was extended by an additional 40 x 50 cm unit (Unit 4b) parallel and northeast of Unit 4a with another excavation, 35 x 40 cm (Unit 4c) made adjacent and west of Unit 4b. This fully exposed a small 27-cm diameter hearth of fire-altered rock placed directly in front of the entrance to the now-collapsed shelter. Cultural deposits, pigment, artifacts, flora and faunal material were located to a depth of 13 cm in all sub-units.

Granite rock shelters such as EbRk-2 can present particular problems to archaeological excavation. European archaeologists have used the term *eboulis*, French for rubble, to describe rock shelter and cave deposits marked by the disintegration of rock due to mechanical weathering, particularly freezing and thawing cycles that cause "a relatively steady rain of rock



Figure 3. Southwest corner of Unit 1c, EbRk-2. Culture bearing strata I, II, and III (to 13 cm DBS) on top of alluvial deposits. Note upper dense eboulis stratum. Visible tape is 23 cm. Photo by Adrian Sanders.

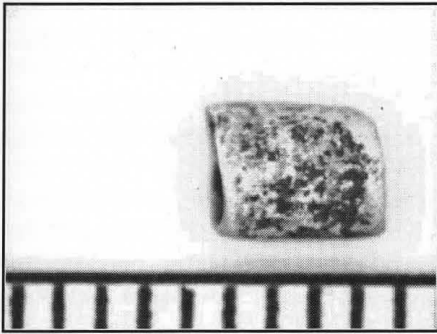


Figure 4. Dentalium bead, Unit 4b, 9.5 cm DBS. Photo by Chris Arnett.



Figure 5. Pecten shell fragment, Unit 4c, 6 cm DBS. Photo by Chris Arnett.

fall" from large blocks marking significant roof collapse to individual grains (Goldberg and McPhail 2006:175). Eolian sand altered cultural deposits over time creating a complicated undulating and overlapping microstratigraphy. Interestingly, EbRk-2 cultural strata was distinguishable mainly by the presence or absence of eboulis (none found below 8 cm DBS) and sediment composition.

Despite the shallowness of deposits four strata could be distinguished (Figure 2): Stratum I was a disturbed surface layer up to 2 cm deep consisting of eolian sand mixed with rootlets, forest debris and small rocks.

Stratum II is a compact 6-cm thick cultural stratum of dark brown ashy sediment mixed with variable sizes of eboulis and bioturbated with rootlets (Figure 6). At 8 cm DBS this stratum graded into Stratum III composed of sandy ashy sediment with no eboulis.

The presence of a lower stratum (IV) composed solely of alluvial deposits of sand and waterworn cobbles and boulders at 13 cm DBS suggests that the Stein River once flowed close by this portion of the cliff prior to the deposition of the present cultural layers (Figure 6). Earlier cultural deposits, if they existed, would have been washed away, as would be any eboulis leaving only alluvial deposits. Climate change may be part of the observed difference in the natural site formation process

at EbRk-2 with warmer temperatures associated with the initial occupation of the site followed by a colder period with freeze and thaw cycles increasing mechanical erosion, production of eboulis, and use of the site.

Below the upper 13 cm of cultural deposits were sterile deposits of coarse river sand and boulders to 43 cm depth below surface (Figure 6). These deposits represent a period when the river apparently flowed directly below the cliff. It is possible that earlier cultural deposits may have been washed away or covered by this alluvial deposit.

Two features were identified during excavation of Unit 4 including a hearth in the east wall of Unit 4c and a single rock hearth feature measuring 27 cm in diameter in the centre of the unit. The stone hearth was constructed at the beginning of Stratum III deposits (8 cm DBS) when the river level dropped allowing occupation of the site. The small rock hearth was composed of small, fire-altered rock (n=20) arranged in a rough circle in front of the entrance to the shelter. The edge of another small simple hearth was located in Unit 4c at 4 to 6 cm DBS (See Arnett 2012 Figure 3).

Basalt and quartzite debitage was recovered in all sub-units but predominant (n=32) in Unit 4a and 4b, those closest to the entrance of the rock shelter (See Arnett 2012, Figures 16, 17 and 22, Appendix A, Table I). 97.5% of the lithic debitage was found in the pre-glass (European) levels above 4 cm DBS. This amount is similar to the percentages at the Oregon Jack Creek EdRi-1 rock art shelter where vitreous and fine grained basalt made up 98.1% of the debitage (Rousseau 1991).

Four types of glass shatter (n=12) were recovered from the upper 4 cm of each sub-unit of Unit 4. Glass made up 51% of the "artifacts" from this layer suggesting recent deposition over the last century or more. Amounts were concentrated in the sub-units closest to the perimeter of the overhang. Although glass, as a source material, is clearly of European-American origin its presence at EbRk-2 does not necessarily indicate that the material was not used by indigenous people (Martindale and Jurakic 2006; Ritchie and Springer 2011).

A small piece (7 x 5.2mm) of calcined pecten (scallop) shell was recovered

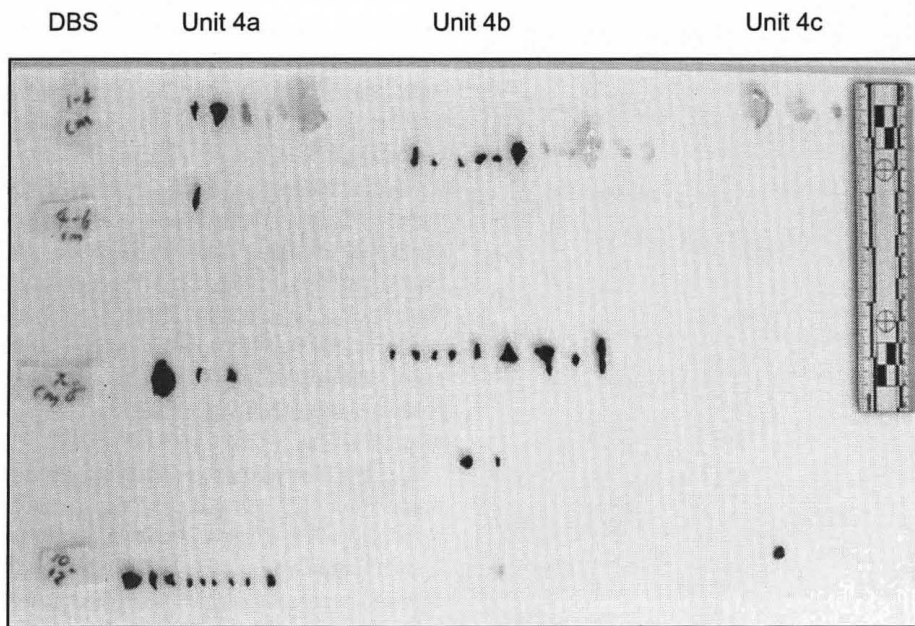


Figure 6. Lithic debitage and glass shatter according to 2 cm levels and sub-Unit. Photo by Chris Arnett.

from Unit 4c at 4 to 6 cm DBS (Figure 5). This is probably a piece from an intentionally (?) burned piece of a *Pecten caurinas* rattle or pendant. Rattles and pendants are known archaeologically from the Middle Fraser and Kamloops areas (Smith 1899:152; 1900:428; 1913: Plate XIII f; Sanger 1968:123; 1970:101) associated with burial places (as prestige/ritual items) and rock painting shelters (e.g., [Sanders et al. 2012] EaRj 81 at Kwoiek Creek). To date, pecten shell is found only in Plateau (2400-1200 BP) and Kamloops (1200-200 BP) Horizons context (Richards and Rousseau 1987:Table 10).

A single dentalium bead was recovered in Unit 4b at 9.5 cm DBS (Figure 4). The bead was cut from a shell of *Dentalia pretiosum* probably from the west coast of Vancouver Island. The 5 x 3.6-mm bead was probably part of a larger string of similar beads comparable to archaeological examples from Cache Creek (Richards and Rousseau 1989:Fig 23j), Lytton (Smith 1899), Nicola Lake (Smith 1900:425), Kamloops (Sanger 1968:123), Lillooet (Stryd 1973:425-427) and Scowlitz, where 7,000 cut dentalium beads formed a necklace for the occupant of Mound 1 (Blake 2004:108-109). While unmodified dentalium has a respectable antiquity in Pacific Northwest archaeological sites (Andrews 1989), cut dentalium beads are limited to Plateau (2400-1200 BP) and

Kamloops (1200 BP to 200 BP) contexts (Richards and Rousseau 1987:91).

As expected, small pieces (<5mm) of red (Fe₂O₃) and yellow ochre (FeO(OH) nH₂O) were encountered occasionally throughout Unit 4 and in the deepest levels of Unit 3 (Table 1). Smaller particles were also collected from fine-sorting the bulk samples up to 500 UM from Unit 4. This material is curated at the Laboratory of Archaeology at UBC and will be the subject of further trace analysis using SEM/EDS and other methods.

A limited variety of fauna, including fish and mammal taxa, was recovered from all sub-unit levels in Unit 4 a and in Unit 3 and analysed by Rebecca Wigen of Pacific ID (Arnett 2012; Table 1). 92 bone elements were evenly divided between fish (47 elements) and mammal (45 elements). Fish elements consisted mainly of salmon vertebrae and ribs. The presence of a single postcleithrum, a bone associated with the pectoral fin behind the gills, suggests that it may be from a processed fillet rather than a whole fish. Identifiable species included mountain whitefish. The presence of a single metacarpal proxima of hoary marmot with no other remains may indicate that it was brought to the site, possibly as part of a cultural artifact or practice.

A variety of flora were recovered from Units 4a and 4b including seeds identified by Natasha Lyons as *Prunus spp.*

(n=24), *Rubus spp.* (n= 8.5), *Sambucea cf. cerulean* (n=2) *Sheperdia canadensis* (n=1) and a definitely historic *cf. Prunus armeniaca* (n=1) (Table 2). *Rubus leucodermis* grows on the slopes above, is a favorite food and was sometimes used in the production of red dye or paint (Tepper 1994:73).

The earliest archaeological evidence of the site follows stabilization of the river bank, which allowed occupation on alluvial sediments and use of the shelter and the construction of a small stone hearth at its entrance. Results indicate intermittent site-specific activity involving painting, lithic manufacture, mammal, fish and berry consumption and burning at EbRk-2 by small groups of people over time with increasing intensity towards later use. Differential deposition of eboulis (fallen rock fragments) in cultural levels may be a signature of climate change specifically the onset of the little Ice Age and subsequent colder temperatures resulting in increased cryoclastic weathering between 1550 and 1800 AD (Lamb 1972:107).

Stone tool artifact production is reductive and the absence of large debitage and cores at EbRk-2 (X=7.6, SD 3.75) is indicative of later stages in lithic tool manufacture. (Andrefsky 2005:98). The small flakes revealed no dorsal cortex surface, generally indicative of early stage reduction in more sedentary residential or food processing locations, with the possible exception of three small basalt flakes with possible cortex indicating raw material and potential core reduction at the site. Eliminating outlier basalt pieces allows the remaining basalt debitage at EbRk-2 to cluster at less than 8mm length, 6mm width and 1.5mm in thickness indicating later stages of reduction by soft hammer techniques or pressure flaking. This reflects a pattern of very short-term limited maintenance or production of basalt, chert and quartzite lithic tools at EbRk-2 over time from the beginning of site formation, with the cortex bearing outliers possibly indicating the manufacture of expedient tools from small portable cores.

Glass made up a significant 57% of the slim Strata 1 cultural material. The relatively small amount (n=12) from at least four different sources suggests that it may not have originated in accidental or deliberate breaking of a glass container which would presumably leave significant

DBS	Unit 4a	Unit 4b	Unit 4c	Unit 3
0-2 cm	present			
2-4 cm	present	present		present
6-8 cm	present	present	present	
8-13 cm	present			
13-16 cm				present

Table 1. Presence of red and yellow ochre pieces by level and Unit 4 sub-units EbRk-2.

shatter.

Modified glass flakes at DhR1-2, a pictograph decorated rock shelter on the Harrison River (Ritchie and Springer 2011:13, Table 1) and glass arrowheads in the Lytton/Lillooet area (Peter Merchant, p.c.) suggest that post-contact incorporation of glass as a raw material into indigenous cultural activity in painted rock shelters is a possibility.

Although glass is recognized as a raw material by indigenous people at other rock painting sites, the presence of glass shatter in the same contexts as lithic debitage at EbRk-2 does not prove that glass was used as a resource material by indigenous people for a specific purpose at this site. The Stein River and its archaeological sites have been known for well over a century by outsiders and hundreds, perhaps thousands, of people have visited EbRk-2 particularly in the last few decades. Thus glass may have originated as the result of other activities. Nevertheless, the incorporation of this material into indigenous cultural activity is a distinct possibility and could demonstrate new raw material acquisition and continuity of practice into the beginning of the 20th century at EbRk-2.

Magne's study on variations of lithic debitage in the Southern Interior identified 11 types, all of which were focused on food production. The one closest to the EbRk-2 assemblage is characterized by small assemblages, ("short term lithic scatters with fire-cracked rock") "with restricted ranges of debitage reduction stages" which he sees as "related to large mammal procurement and processing" (Magne 1985:248-249). Limited fauna and flora remains at EbRk-2 suggests that lithic scatter types, particularly those associated with rock paintings, also include sites of potential ritual activity not associated directly with food production.

The sparse faunal and flora remains

at EbRk-2, complete lack of manufactured tools or cores, and the socio-cultural context of a rock art landscape suggest that lithic technology at EbRk-2 was a limited and infrequent activity involving later stages of lithic reduction for maintenance or expedient tool manufacture not necessarily associated with the processing of game. This raises the question of what might those activities have been?

Ethnographic accounts from the late 19th century Plateau area describe cultural practices involving the use of unspecified basalt lithics in ritual bloodletting including one account where a novice during spiritual training "cut the points of his eight fingers with a sharp arrowstone, after which he sweat bathed. ... the cutting of finger tips was supposed to let out all bad blood" (Teit 1909:590; see also Teit, 1906:238-239, 267; Keyser and Taylor 2006). Piercings of nasal septum and ears also occurred during puberty training and required sharp instruments (Teit 1900:321). In Mesoamerica where the practice of ritual bloodletting still occurs, bloodletting practitioners use tiny sharp instruments invariably made of glass (Deal and Hayden 1987). There is also a connection in Plateau practice between the use of red ochre and cuts on the skin. Teit wrote that red ochre or charcoal "were sometimes rubbed into cuts made at puberty. These formed no designs" (Teit 1930:418).

Bloodletting was an integral part of Canadian Plateau spiritual training of warriors (Teit 1906:238) and hunters. The

DBS	Unit 4a	Unit 4b	Unit 4c
2-4 cm	present	present	
4-6 cm	present	present	
6-9 cm	present	present	

Table 2. Presence of flora (seeds) by arbitrary level and Unit 4, EbRk-2.

late Charlie Mack, a noted Lil'wat elder, described the practice of a renowned mountain goat hunter (Bouchard and Kennedy 2010:114):

This man was trained. He could almost fly because he had lanced himself. The trained men removed as much of their blood as they could to make themselves light. One day the hunter grew tired going up the mountain. He thought that it might be because he hadn't lanced his tongue. He pulled out his tongue and lanced it. There was some blood still in it. When he had done this he was once again light and filled with energy.

The lithic assemblage at EbRk-2 represents the latter stages in the maintenance or creation of tools for intermittent activities under a painted overhang in a landscape with rock art. EbRk-2 is well-known to the local Nlaka'pamux people as having an association with *shxwoonAm* (shamans) who are said to be the painters. It seems likely that the limited lithic oriented activity at EbRk-2 may be associated with the restrictive activity of *shxwoonAm* and may be the result of tool-related activities other than those associated with hunting.

Lithic scatters associated with ritual activities are, however, not unrelated to food acquisition. In the Canadian Plateau culturally prescribed ritual activity is related in a very direct way to natural food resources and is integrated with technology as an adaptive mechanism essential to the reproduction of life and social structure. Successful hunting of mountain goat, bighorn sheep and deer in the Stein River Valley, according to 19th and 20th century Nlaka'pamux epistemology, was dependent on the acquisition of spiritual powers in the course of a rigorous training program. During this training one might acquire a powerful spirit helper who appeared in a dream and bestowed valuable songs and symbols to the recipient.

Of course, whether or not these lithic activities either archaeological or ethnographic have any association with the rock paintings on the cliff faces is unclear at this point of analysis. The proximity of the archaeological pattern to the paintings, and the direct association of red ochre paint with the lithic assemblage, suggests a connection between these lithic assemblages and the practice or presence of the rock art either by the painters or later visitors to the site.

Although the 2009 archaeological investigations at EbRk-2 are inconclusive regarding absolute dating (samples may still be submitted for radiocarbon dating) the nature of the subsurface cultural material through time suggests a close relationship between a specialized lithic activity, the production of paint using red and yellow ochre (and possibly bitter cherries and black caps), limited food production and the burning of bone, ochre and scallop shell at the entrance to a rock shelter at a dominant geological landform, or *sxwayAm* ("transformed mythological being") located on a travel corridor between Lytton area and points elsewhere through the Cascade mountains. Initial use coincided with changes in the river flow that permitted construction of a stone hearth on sterile sandy alluvial surface beneath an overhang at the entrance of the rock shelter. Later cultural deposits show increasing cycloclastic rock fall suggesting that the activity at the site intensified during a period of climate change probably the Little Ice Age that occurred between 1550 and 1800 AD.

Chris Arnett is a PhD candidate in the Department of Anthropology at the University of British Columbia. His dissertation is a spatial temporal analysis of Salishan rock painting.

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Figure 12. Carnivore ulna tools. Lynx, DcRv-1:974 (L. 97mm); Raccoon, DgRs-1:4528; Dog, DgRv-3:13.

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