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The Midden

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The Midden

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Submissions and exchange publications should be directed to the Editor. Contributions on subjects germane to B.C. Archaeology are welcomed: maximum length 1,500 words, no footnotes and only a brief bibliography (if necessary at all). Guidelines available.

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The next issue of *The Midden* will appear mid-October, 1985.

Publication of *The Midden* is made possible in part by a grant from the British Columbia Heritage Trust.

THE COVER: *Seated human figure bowl, 22 cm high. The first archaeological artifact designated under the B.C. Heritage Conservation Act. Photo courtesy of the BCPM.*

The Society

Membership year runs September 1 - August 31. Fees: single - $15; family - $17; senior citizen - $10; student - $10. Address to: A.S.B.C. Membership Secretary, Box 520, Station A, Vancouver, B.C. V6C 2N3.

Meetings featuring illustrated lectures are held on the second Wednesday of each month (except July and August), at 8:00 p.m. in the Vancouver Museum Auditorium. Visitors and new members are welcome!

Next meeting: September 11, 1985.

Editorial

How many stone bowls will it take?

ANOTHER PREHISTORIC stone bowl is about to be exported from Canada—legally, with a new twist.

The artifact, a seated human figure bowl (see cover photo and below), had been in a private collection in Victoria.

It was recovered from a midden site on private property in 1960 together with another similar bowl that was sold and exported to the US two years ago. Both were featured in the Images Stone B.C. exhibit (nos. 30 and 32 in the catalogue).

Last year a Victoria art dealer applied for a permit to export the artifact. The permit was refused. The dealer appealed the decision. Under provisions of the Cultural Property Export and Import Act, if the artifact cannot be sold "at fair market value" within Canada during the ensuing six months, an export permit is automatically granted.

The delay period expires May 29, 1985. At press time there is still no Canadian purchaser.

The expectation was that a museum or similar institution would apply for a grant from the federal government with which to buy the artifact.

Most Canadian archaeologists refuse to buy artifacts or even to recognize that they have monetary value. The insistence that archaeological significance cannot be measured in commercial terms is a fundamental position of the Canadian Archaeological Association as

Rear view of the seated human figure bowl illustrated on the cover. Photo courtesy of the BCPM.

well as the ASBC. The CAA has requested Canadian museums to refrain from purchasing archaeological artifacts.

Provincial Archaeologist Art Charlton approached the current crisis from a different angle: he asked the Cabinet to designate the stone bowl under the B.C. Heritage Conservation Act. A designated heritage object cannot be legally removed from the province without the written consent of the Minister.

On May 2, 1985, British Columbia acquired by order in Council its first, and to date only designated archaeological artifact.

"Acquired" is probably the wrong word, since it is still in private hands, and reportedly out of the province.

It seems that the dealer shipped it out of B.C. as soon as he heard about the designation. According to informed sources, he was tipped off by a local archaeologist.

The dealer claims that he took the artifact out of the province before he was notified that it had been designated, and he expects an export permit to be issued at the expiration of the delay period. There is no provision in the federal law to halt export at this stage of the proceedings.

The question of fraternization between archaeologists and antiquities dealers aside, the incident does demonstrate the ineffectiveness of the federal legislation. Something is grossly wrong when an export permit can be legally issued for an artifact that has been designated under a provincial Heritage Conservation Act.

The ASBC has sent a telegram to Victoria demanding that the full course of the law be applied, and to Ottawa requesting cooperation with the province so that the artifact remain in Canada. Letters will follow giving details of the case and pointing out, once again, that the solution is to change the federal law so that permanent export of all archaeological artifacts is disallowed.

But that's only half the battle.

Now that we have a designated heritage object in B.C. the question of ownership looms large. The provincial Act allows for compensation if designation "decreases the economic value of land"—but it does not provide for artifacts. We should anticipate the next step of the dealer/collector community and overhaul our provincial legislation—after all, it is hardly state-of-the-art heritage protection. □

- Kathryn Bernick

Trust goes for Three

THREE of the 56 positions funded by the B.C. Heritage Trust under its 1985 Summer Student Employment Program are for archaeological projects:

- Bob Hogg (UVic) is analyzing faunal remains from several sites in Johnstone Strait that were excavated in the early 1970s;
- Massimo Piscopo (SFU) is also doing faunal analysis—of excavated material from the Kiusta site on the Queen Charlotte Islands;
- Elizabeth Furniss (UBC) is conducting a study of the Alexander MacKenzie Heritage Trail for the Nazko Indian Band. □

Tracking Microblades

ARCAS ASSOCIATES is currently excavating at a series of five sites in Highland Valley near Logan Lake southwest of Kamloops.

The project, directed by Stephen Lawhead, is the second phase of mitigation in response to expanding mining operations. Cominco, which owns the mine, is funding the archaeological work.

According to Arcas partner Arnoud Stryd, research will focus on the Quiltanton Phase, a microlithic industry that was discovered two years ago when Arcas excavated a pit house site in Highland Valley. A major objective is to date the microlithic components which are thought to be about 2,000 years old. □

ARCHAEOLOGICAL PROTECTION

The way they do it in Saskatchewan

by Nick Russell

ARCHAEOLOGICAL RESOURCES may have better legal protection in Saskatchewan than in any other province of the country, according to the man who administers them.

Brian Spurling, describing Saskatchewan's archaeological legislation for *The Midden,* noted that the laws apply to all land in the province, not just Crown land, as in B.C.

The law, amended in1984, makes all recently-collected artifacts Crown property, but allows people to collect and keep artifacts at home under permit. Despite these seemingly draconian rules, Spurling, who is the province's Archaeological Resource Management Supervisor, said that the level of cooperation from the public is unusually high.

The crucial provision requires citizens to register collections, and all material collected since 1980 automatically becomes the property of the Crown.

"That sounds great," said Spurling, "but does the Crown need all those things? How is it going to manage them?"

The solution to this *embarrass de richesse* is permits.

"Amateurs can get a permit to survey and collect, if they fulfill certain obligations," he explained.

This procedure was instituted in 1984, but although only a couple of dozen individuals came forward in the first year to apply for such collection permits, Spurling was already seeing a healthy number of applications in 1985. The system covers only surface collecting, not digging.

Meanwhile, existing collections are also being registered. Does the concept of collections becoming state property deter people from registering their finds?

"People are reluctant to part with their collections," said Spurling. "We are finding a problem with that, so as an interim measure, we will allow them to keep the artifacts in their homes".

Effectively, this means that people can hang onto their finds for their lifetimes, but cannot sell them. Selling artifacts is illegal in

Saskatchewan, though one auctioneer found a neat loophole last year, auctioning Saskatchewan and B.C. artifacts in Alberta, and hence outside provincial jurisdiction. Efforts are being made to educate auctioneers, and the hope is that the provincial heritage boards can get together to formulate a reciprocal agreement.

"I'm not aware that anyone is collecting for financial gain (today)," Spurling said. For the most part, it's a favorite leisure activity.

This was confirmed by Margaret Hanna, who, as a curator at the Museum of Natural History in Regina, handles registration of collections. She said that people tend not to want to put a monetary value on their collections, though sometimes they ask for insurance purposes. Hanna's response to that is simple: A collection should be valued on the time the collector has spent in gathering and recording the material.

What DO people collect in Saskatchewan, and what is the nature of archaeological sites? Typical sites include stone circles and other alignments such as "medicine wheels," teepee rings, a few burial mounds, pictographs and petroglyphs, some 150 fur-trade posts, buried multi-component sites, and lithic scatters.

Many sites are long gone, as about one-third of the entire province has been cultivated. In addition, the fierce, dry winds of the Thirties uncovered a lot of material, at a time when many people had enforced leisure time to collect. Artifacts developed a certain currency: Spurling recalled the story of a Regina doctor who built a collection—decades ago—of 100,000 complete projectile points, many of them received in lieu of payment from patients. (As far as is known, the collection is long since dispersed.)

Over the last couple of years, Hanna has documented some 80 private collections, averaging 400 to 500 pieces (the smallest collection was four objects, the largest contained 5,606). She already has "three or four hundred on file" requesting registration, so there's no shortage of offers.

"A lot of collections are mainly points," she told *The Midden*, "because those are easily recognized. But occasionally there are knives and scrapers, beads and even musket balls." Hanna noted that some amateurs are so meticulous they gather butchered bone, flakes, cores and fire rocks, and keep such good records they are almost as good as professional collections.

Other collections are worthless: "One character in the Thirties paid people 25¢ for a gunny sack of artifacts." The material, from all over the province, was just thrown together, and now is virtually worthless for research, she said.

Hanna added that the Museum isn't actively seeking more artifacts, being hardly able to cope with all it already has. However, management hopes to computerize the records, making access and research far easier.

In 1984 the law was amended so that the contentious issue of ownership was somewhat defused: There is now no threat of confiscation of unregistered collections.

"If we ever tried to confiscate a collection, that would be it, game over . . . We've got to get at it (locating collections) through information and education," said Hanna.

Spurling sees public awareness and public participation in archaeology as vital tools in protecting and developing the heritage environment. He works actively with the large and ancient archaeological society, whose activities and positive approach he warmly applauds.

The SAS has more than 350 members, spread among five chapters, the oldest of which—Saskatoon—this year celebrates its 50th anniversary—possibly the oldest continuously-operating archaeological society on the continent.

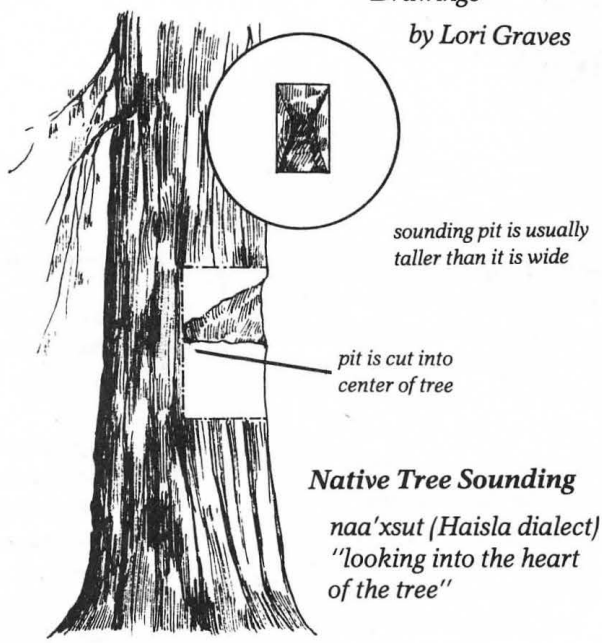
The society receives support from provincial lottery funds. Its activities include publishing memoirs and books, running a field school, providing speakers to outlying areas and supporting a modest research grant program. Spurling said the SAS often helped map sites and do emergency excavations.

He spoke particularly enthusiastically about the group's Five Year Plan: an approach to planning which he strongly recommended.

Both Hanna and Spurling therefore characterize Saskatchewan as being well-protected in terms of strong legislation effectively administered, and having a good rapport between government and an increasingly-cooperative public. □

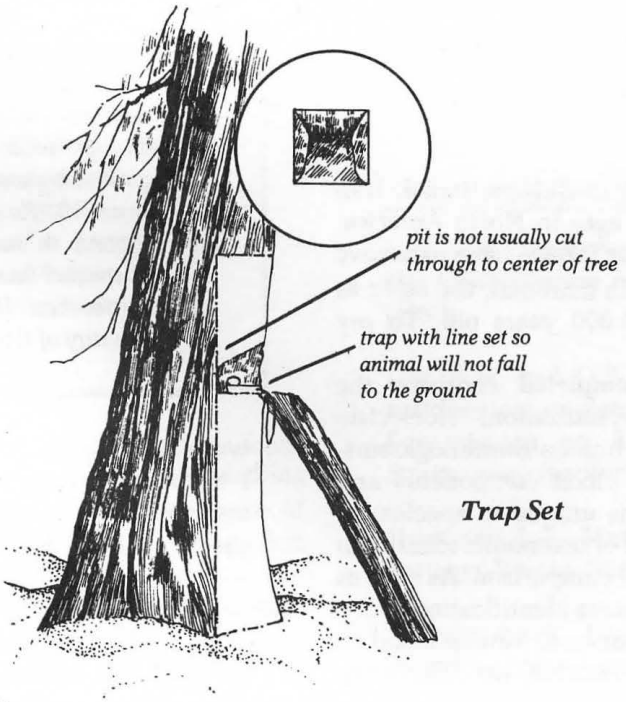
Test Pits: Are they caused by native logging or historic trapping?

Drawings by Lori Graves



Native Tree Sounding

naa'xsut (Haisla dialect) "looking into the heart of the tree"



Trap Set

by J. Tirrul-Jones

CULTURALLY MODIFIED TREES are an important source of information when reconstructing human history. While the nature or type of modification may prove that a person has modified the tree, too often an assumption is made that the person was a native, or that the purpose of the modification is easy to determine.

One type of cultural modification is the test pit which is a pit cut horizontally into the tree to assure that it is not rotten in the middle. It is easy to spot pits in a tree—but these are not always native test pits.

Trappers in the coastal forest, especially in areas of deep snowfall, cut pits into trees to use for setting traps. Such pits are similar to native test pits, but can be identified by careful inspection and a knowledge of how the pits are made.

First, the trapper selects a tree that is large enough to cut a small pit into. This may be a cedar, hemlock, fir, or whatever is handy. A hole is cut into the tree about one meter above the snow level using a narrow bladed axe (which leaves marks similar to those made by a broad adze blade). The hole is cut deep enough to accommodate a leghold trap for marten, weasel, or squirrel. A log or stick is then placed leaning up against the tree from the ground to the hole, so that animals can run up to the baited trap.

The purpose of this arrangement is to insure that the trap is not buried in a heavy snowfall. A leaning tree is sometimes selected, and the pit cut into the underside, further protecting the trap from snow. The height of the pit varies depending on the depth of the snow when the trap is set.

To avoid the pitfalls of snap judgements, all forms of culturally modified trees should be examined and interpreted with caution: perhaps those features deserve a second look.

Many thanks to native trappers John Wilson and Sam Robinson. □

BLOOD

Residue analysis identifies 100,000 year old human blood

by Thomas
Archaeology
British Columbia Pro

DURING THE PAST FOUR YEARS I have examined hundreds of tools from sites around the world, from many different types of sites and burial conditions and have found that, contrary to expectations, blood and other organic residues are well preserved and quite stable over periods of as long as 100,000 years.

The originally published technique for determining the species of origin of these blood residues relied upon the extraction and crystalization of the hemoglobin fraction. Owing to the process of evolution, the exact protein makeup of blood molecules is unique to species. While the crystalization technique works well and is inexpensive, it is a tricky and demanding process. In addition, in the absence of a known reference blood smear for making an exact match at the species level, no identification is possible—even at a higher taxonomic level (such as family). Using a modern protein separation procedure called isoelectric focussing and newly developed immunological tests, it is feasible to analyze quickly large numbers of tools and to determine the family, genus, or species without the drawbacks of the crystalization procedure.

Some of the research highlights:

- Tools have now been examined from sites in Europe, Israel, Iran and from a wide variety of environments and ages in North America. Two tools from the Barda Balka site in Iran (near Jarmo) have extensive blood deposits on their surfaces: one identified as mammal, the other as human blood. These two tools are about 100,000 years old. To my knowledge it is the oldest blood observed.
- A collaborative research project just completed confirms the accuracy of species identification using crystalization, isoelectric focussing, and the immunological detection of human immunoglobins. The isoelectric focussing technique separates blood components and produces a distinctive "fingerprint" of proteins unique to species. In addition, it is possible to determine higher levels of taxonomic identity in the absence of a known standard blood for direct comparison. As little as 100 nanograms of protein is needed to obtain species identification.
- A recent project has resulted in the identification of human blood on a variety of tools, including the ritual bowl illustrated, manufacturing waste flakes, a knife and an arrowhead

Small amounts of stuff: *O gram; one nanogram is 1/10 picogram is 1/1,000,000 of a mi*

Isoelectric focussing *is a purification of proteins. A thin p containing special chemicals (b current passed through it. The very acid pH to very basic pH at molecules placed in the gel mov electric current until they reach they are electrically neutral a complex mixture of molecules co bands associated with specific points).*

Immunological testing *encon techniques and applications. animals produce antibodies tha foreign proteins as part of the producing antibodies to specific a rabbit, for example, and link system to make them visual, suspected human blood sample antibodies. If there is binding identity of the blood sample is pr*

I have adapted a bead-linked antihu technique that is highly specific and picogram amounts of human immun will begin shortly to investigate blood

- During the process of examining power light microscope, it has been po hafting and reconstruct the movement

Incised siltstone concretion from Nootka Island that once held human blood. Samples taken from the depression were tested immunologically and resulted in positive identification of human immunoglobin type G. Drawing by Nancy Condrashoff.

100,000

by Thomas H. Loy
Archaeology Division
British Columbia Provincial Museum

Small amounts of stuff: *One milligram is 1/1,000 of a gram; one nanogram is 1/100,000 of a milligram; one picogram is 1/1,000,000 of a milligram.*

Isoelectric focussing *is a method of separation and purification of proteins. A thin plastic-like gel (0.2 mm thick) containing special chemicals (buffers) has a strong electric current passed through it. The buffers form a gradient from very acid pH to very basic pH at either end of the gel. Protein molecules placed in the gel move under the influence of the electric current until they reach a specific pH value at which they are electrically neutral and do not move. Thus, a complex mixture of molecules can be separated into discrete bands associated with specific pH values (called isoelectric points).*

Immunological testing *encompasses an immense field of techniques and applications. At the simplest level, all animals produce antibodies that recognize and bind with foreign proteins as part of the body's defense system. By producing antibodies to specific human protein molecules in a rabbit, for example, and linking those antibodies with a system to make them visual, it is possible to expose a suspected human blood sample to the anti-human (rabbit) antibodies. If there is binding between the molecules the identity of the blood sample is proved.*

waste flakes, a knife and an arrowhead, and one of the Barda Balka tools. I have adapted a bead-linked antihuman immunoglobin cell-labelling technique that is highly specific and that will detect the presence of picogram amounts of human immunoglobin G (IgG). Experimentation will begin shortly to investigate blood group identities.

- During the process of examining blood covered tools with a high power light microscope, it has been possible in some cases to determine hafting and reconstruct the movement patterns at the time of tool use.

In addition to the detection and identification o of origin, other types of analysis can be done progress or in the planning stages. Using investigate the abundance ratios of stable isotop and oxygen, information can be obtained on seasonal animal movement. In addition, there is being able to use the new accelerator mass sp determine the radiocarbon age of at least the Although we have been successful in sample pr measuring of the carbon, it appears that co problem. Continuing research is attempting to d the contamination and how to eliminate it.

In the last two years blood residue research ha field of application that cross-cuts scientific implications in many specific fields: forensic studies, medicine and epidemiology, organic de archaeometry. I anticipate with great delight th research and the opportunity to collaborate with of techniques of analysis and applications of thi avenue to understanding the past. □

For further reading:

Loy, T.H. ***Prehistoric blood residues: Detectio the identification of species of origin.*** **Science,** (1983).

Loy, T.H. and D.E. Nelson. ***Potential Applic residues on ancient tools.*** **Proceedings of th Symposium on Archaeometry,** J. Olin and Smithsonian Institution, Washington (in press).

Osterman, L.A. **Methods of Protein and Nucle** Springer-Verlag, New York. 1984.

Wrigglesworth, J.M. (ed.) **Biochemical Resea Practical Introduction.** John Wiley and Sons, To

Incised siltstone concretion from Nootka Island that once held human blood. Samples taken from the depression were tested immunologically and resulted in positive identification of human immunoglobin type G. Drawing by Nancy Condrashoff.

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In addition to the detection and identification of the residues to species of origin, other types of analysis can be done and some are now in progress or in the planning stages. Using mass spectrometry to investigate the abundance ratios of stable isotopes of carbon, nitrogen, and oxygen, information can be obtained on diet, temperature, and seasonal animal movement. In addition, there is a distinct possibility of being able to use the new accelerator mass spectrometric method to determine the radiocarbon age of at least the thicker blood residues. Although we have been successful in sample preparation and machine measuring of the carbon, it appears that contamination is a real problem. Continuing research is attempting to determine the nature of the contamination and how to eliminate it.

In the last two years blood residue research has opened an enormous field of application that cross-cuts scientific boundaries and has implications in many specific fields: forensic science, evolutionary studies, medicine and epidemiology, organic degradation studies, and archaeometry. I anticipate with great delight the continuation of this research and the opportunity to collaborate with others in the extension of techniques of analysis and applications of this previously unknown avenue to understanding the past. □

For further reading:

Loy, T.H. ***Prehistoric blood residues: Detection on tool surfaces and the identification of species of origin.*** **Science,** v. 220, pp. 1269-1271 (1983).

Loy, T.H. and D.E. Nelson. ***Potential Applications of the organic residues on ancient tools.*** **Proceedings of the 13th International Symposium on Archaeometry,** J. Olin and J. Blackmun (Eds.), Smithsonian Institution, Washington (in press).

Osterman, L.A. **Methods of Protein and Nucleic Acid Research,** v. 1 Springer-Verlag, New York. 1984.

Wrigglesworth, J.M. (ed.) **Biochemical Research Techniques: A Practical Introduction.** John Wiley and Sons, Toronto. 1983.

New Publications

The Ring of Time: The Story of the British Columbia Provincial Museum. BCPM, Victoria. 1985. 106 pp., ill. $14.95 (paper).

The Men with Wooden Feet: the Spanish Exploration of the Pacific Northwest by John Kendrick. NC Press, Toronto. 1985. 168 pp., ill. $19.95.

The Archaeology of Wetlands by John Coles. Univ. of Edinburgh Press, Edinburgh, Scotland. 1984. 111 pp., ill.

Coast Salish Gambling Games by Lynn Maranda. **National Museum of Man Mercury Series, Canadian Ethnology Service Paper** No. 93 (1984). 143 pp., 43 figs.

Communal Buffalo Hunting among the Plains Indians: an Ethnographic and Historic Review by Eleanor Verbicky-Todd. **Archaeological Survey of Alberta Occasional Paper** No. 24. 1984. 262 pp. (paper). Available free of charge from the Archaeological Survey of Alberta, 8820 - 112 St., Edmonton, Alberta T6G 2P8.

The Analysis of Animal Bones from Archaeological Sites by Richard G. Klein and Kathryn Cruz-Uribe. University of Chicago Press, Chicago. 1984. 266 pp. $12.15. (paper).

News Bits

ARCAS heads for the trees

Arcas Associates has been retained by the Clayoquot and Ahousaht Indian Bands, under the auspices of the Nuu-Chah-Nulth Tribal Council, to conduct a study of culturally modified trees on Meares Island. (Last year Arcas prepared a study of Meares Island trees for MacMillan Bloedel.)

Hwys. keep archaeologists busy

Several archaeological projects instigated by highway expansion are currently up for bids. Two are inventory and impact assessment studies—along the highway right-of-way between Penticton and Peachland, and between Sicamous and Revelstoke. A third project will involve salvage excavation of eroding cache pits and testing at site EeRl 193 near Lillooet.

UBC aims for the heights

UBC will hold its 1985 summer field school in the Chilcotin. Students will participate in a research project directed by Dr. R. G. Matson which this summer will emphasize survey and collection in the alpine zone on Potato Mountain.

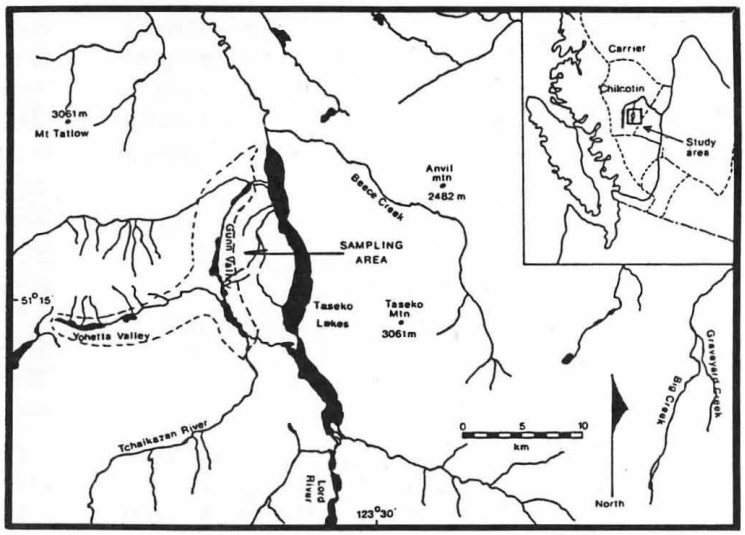
Pot hunters prosecuted

Two Ontario men were recently fined $7,000 for looting an Iroquois site near Hamilton. They were also ordered to forfeit the 9,500 artifacts they had illegally dug up and were offering for sale.

CAA reaches out

The Canadian Archaeological Association will be granting an annual merit award to an outstanding avocational archaeologist. Also, there will be an annual award for the best non-technical article on Canadian archaeology published in a popular magazine or newspaper.

Fig. 1. *Taseko Lakes region and study area.*



Taseko Lakes Prehistory Project: A Preliminary Report

by Martin P. R. Magne

THE TASEKO LAKES REGION is located in south-central British Columbia, along the east flank of the Coast Range, within the physiographic zone known as the Interior Plateau (Fig. 1). The area is biogeographically classified as a subalpine fir-Engelmann spruce environment, and it ranges in altitude from about 1,300 m to 3,300 m. This is a mountainous region with accessible and active glaciers, abundant salmon, root, berry and seed plant resources, and a wide variety of mammals and fish.

The study area itself is immediately west of the Taseko Lakes, and comprises Lastman, Tuzcha and Fishem Lakes within the Gunn Valley, and Yohetta Lake of the Yohetta Valley. The "universe" within which the survey was conducted comprises a total of 27.5 km² (Fig. 2).

History of the Project

The Taseko Lakes project was initiated through the author's association with the nearby Eagle Lake project, which is investigating the nature and timing of the migration of the Athapaskan-speaking Chilcotin to central British Columbia. The Taseko Lakes region had never been surveyed for archaeological sites, yet contains environments with high (and low) potentials for such.

Grant funds were provided by the B.C. Heritage Trust and the Nemiah Valley Indian Band. In 1983 small crews were able to test regional survey methods and site "prediction" models developed at Eagle Lake, and gather ethnogeographic information. In 1984, excavations were conducted to shed light on potentially unprecedented changes in the subsistence and settlement patterns of Interior Plateau people about 2,000 to 1,200 years ago.

Regional Survey Methods

The method used to select survey areas was regional random sampling. The survey universe was divided into 110 quadrats measuring 500 m on a side and oriented true north. All quadrats have at least one edge within 1 km of a lake. The

universe was sampled at a 10% rate, for a total of 11 quadrats. Because this was a preliminary survey, we did not want to waste time surveying areas highly unlikely to contain sites, such as mountain sides and alder swamps, and thus the universe is relatively small, and the final sample of quadrats is also small.

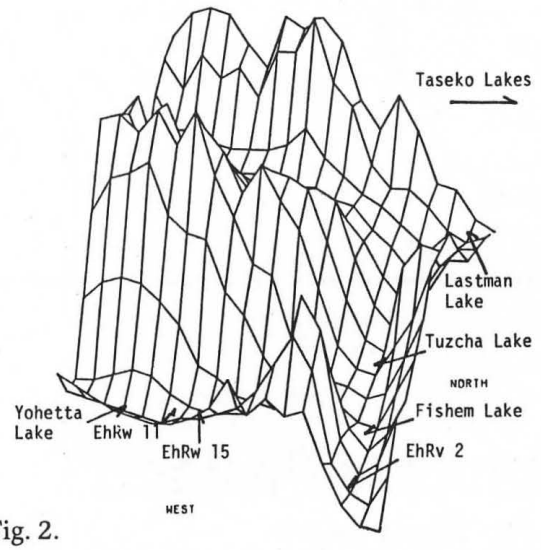


Fig. 2.

Three dimensional view of the study area, showing locations of sites EhRv 2, EhRw 11, and EhRw 15. (UTM) grid, in kilometers.)

Survey Results

The probabilistic survey in 1983 located 16 sites, two of which were partially excavated in 1984. These 16 sites contain a total of 53 housepits, 39 root roasting pits, 53 cachepits, about 1,200 lithic items, 11 culturally modified trees, and one historic above-ground cache feature. All told there are seven different kinds of sites in the area: large and small housepit sites, small, medium, and large roasting pit sites, lithic scatters, and historic sites.

Using the Student's t statistic, we can state with 95% confidence that the sampling universe of 27.5 km² contains between 48 and 270 sites, with an expected value of 165 sites of all sorts.

With the aid of an elderly Chilcotin informant, Robert Tyhurst was able to map some 30 Chilcotin place names in the area. These include prominent peaks, prime resource areas, archaeological sites, named ancestors' dwelling areas, rock pile hunting blinds, and other localities.

The most notable site we found is a very large housepit village (about 1,000 x 500 m) containing over 100 cultural depressions. This site, *EhRv 2,* was partially destroyed by a small airstrip that was built in the 1940s, and stone tools and debitage occur in several exposed areas. Several of the housepits are quite impressive, measuring between 12 m and 15 m in diameter. Often smaller house depressions overlap the larger ones (Fig. 3). The site is typical of a Lillooet Phase village, and thus the larger houses should date to between 2000 B.P. and 1200 B.P. Stryd (1971, 1973) once proposed, quite carefully, that the end of the Lillooet Phase marks the end of these large semi-subterranean houses, and that by the early historic period much smaller housepits on the order of 5 to 10 m in diameter were the norm.

We do not know why this occurred, but there are several possible explanations:

1. A major environmental change may have caused the people in the large houses and villages to disperse.
2. The large pits are not houses at all, but structures that served another, perhaps ceremonial, purpose, and some major social event rendered their function obsolete.
3. Some major cultural event, such as a migration of other people, caused the groups to abandon their settlement pattern.
4. The large houses are not restricted to the 2000 - 1200 B.P. time span, but were used right up to the late prehistoric period.

With respect to *EhRv 2,* I favour the first idea. The site is located next to a stream and lake subsystem that no longer supports, but likely once did receive, an annual run of spawning salmon.

Another major site complex is that of *EhRw 11* and *EhRw T15,* which are roasting pit sites in the Yohetta Valley. These earth ovens would have been used to prepare onion *(Allium cernuum),* mountain potato *(Claytonia lanceolata),* balsamroot *(Balsamorhiza sagittata),* hog-fennel *(Lomatium macrocarpum)* and other root resources abundant in the region.

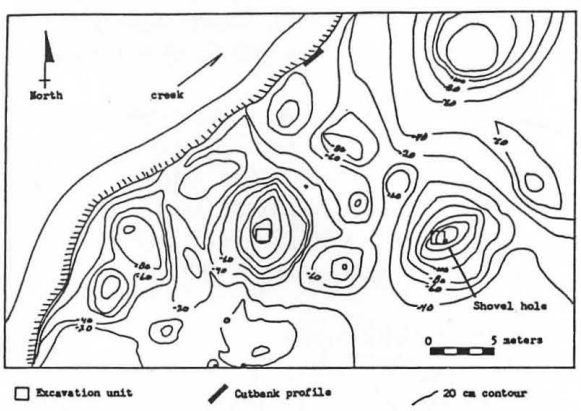


Fig. 3. *EhRv 2, north end of site showing locations of excavation units in housepit depressions.*

Excavation Rationale and Results

The questions we sought to answer with excavations at *EhRv2, EhRw 11,* and *EhRw T15* are as follows:

1. What are the temporal relationships of the three sites?
2. Were they part of one subsistence system?
3. Do the large houses date to within 2000 and 1200 B.P.?
4. Are the large houses single or multiple component?
5. Do the houses or roasting pits contain identifiable faunal and/or floral resource remains useful for subsistence analysis?
6. Do the houses contain lithic remains useful for typological comparisons and technological studies?
7. Are the roasting pits all of the same sort, or can they be differentiated on the basis of structural features and types of processed resources?

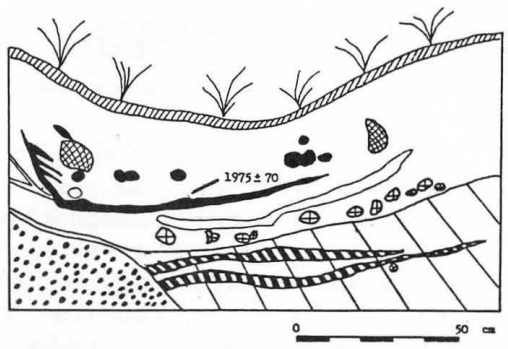
At *EhRv 2,* we tested two 15 m diameter housepits with a single 1 m x 1 m unit in each. To our surprise, these contained very few artifacts, practically no faunal or floral resources, quite simple stratigraphy, and no evidence of multiple occupations. One house is dated at 1660±80 B.P. (WSU 3027), the other at 1165±70 B.P. (WSU 3028), nicely within the expected time range.

While excavating, we noticed a housepit eroding from the stream bank (Fig. 4). Reasoning that it must be older than the intact ones, we removed a charcoal sample from a protruding charred roof beam. The result, 1975±70 B.P. (WSU 3025), is again as expected. At a depth of 50 cm below this house, river gravels were observed to contain charcoal and a single flake was found in association. A charcoal sample is currently being analysed, and may date one of the earliest occupations of the entire region.

At *EhRw T15* and *EhRw 11,* 1 m x 1 m units were placed in two roasting pits, each 6 m in diameter. Each unit yielded about 350 kg of fire cracked rock and large fragments of lodgepole pine charcoal.

One of the roasting pits dates to 210±55 B.P. (WSU 3030), the other to 55±70 B.P. (WSU 3029). Given the unreliability of radiocarbon dates within the last 600 years, these are tentative dates. The dendrochronology that has been developed at Eagle Lake may help pinpoint the ages of these features.

Fig. 4. *EhRv 2 cutbank profile, showing eroded housepit stratigraphy.*



Preliminary Conclusions

It appears that the large housepit site and the large roasting pit sites were not part of the same settlement-subsistence system. It is likely that the roasting pits were made by relatively recent occupants, perhaps the Athapaskan Chilcotin. The earlier houspit site was probably occupied by ancestors of Salish Lillooet or Shuswap people, and abandoned when salmon failed to ascend the Gunn Valley.

The large housepits fall within the age range expected, yet are single component features. This could mean that they were occupied only briefly, or that families lived in them for a long time without significant interruptions. We do not know if people abandoned the region entirely about 1200 years ago, or if they simply dispersed after the proposed salmon decline. There are several small housepits at *EhRv 2* and at other sites that would tend to support the latter thought, but these have yet to be tested.

The most worthwhile direction for future research in the Taseko Lakes region would be to mount a multi-disciplinary project to reconstruct paleo-environmental events, including deltaic formation, neo-glacials, forest succession, faunal succession, fires and other events, and then relate these to a firm cultural sequence in the region. □

* * *

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References Cited

Stryd, A.H. 1971. An archaeological research design for the investigation of pithouse anthropology. In *Aboriginal Man and Environments on the Plateau of Northwest America.*, edited by A.H. Stryd and R.A. Smith. pp. 36-43. University of Calgary Archaeological Association.

Stryd, A.H. 1973. *The later prehistory of the Lillooet area, British Columbia.* Ph.D. dissertation, University of Calgary.

A Re/View-ing

TUCKED AWAY in Gallery V of UBC's Museum of Anthropology is one of the neater exhibits I have ever seen. Entitled **Changing Tides,** this Masters thesis project explores the development of archaeological reserach in the Fraser Delta.

The display is a balanced blend of photographs, drawings, the printed word, and a representative sampling of artifacts which demonstrate the prehistoric lifeways of the Fraser Delta's native people.

The notes accompanying **Changing Tides** (available for $2.75 at the MOA gift shop) reiterate the themes of the presentation and stand well on their own as a brief and informative introduction to Fraser Delta archaeology.

The exhibit has been very cleverly designed to be both portable and adaptable to virtually any space allotted to it; a useful feature since, after its showing here (until September 1, 1985) **Changing Tides** is going on a cross-country tour beginning in Halifax (January 11 to April 7, 1986), moving on to Trois Rivieres (May 1 to June 15, 1986), to Ottawa's National Museum where it will be among the last exhibits to play the old building (July 15 to August 31, 1986), thence to Yellowknife (October 15 to November 30, 1986) and, finally, home to Langley's Centennial Museum (December 21 to January 25, 1987).

Ann Stevenson, curator and candidate, is to be commended on the execution of an interesting and intelligent exhibit. Its value can be measured by the words of one opening night viewer who exclaimed, "I never knew there were people at Marpole two thousand years ago!" □

- Phyllis Mason

Native Studies Course

A new credit course on contemporary issues of Canadian native cultures is being proposed for fall term (1985) at VCC-Langara. Subjects include land claims, acculturation, the ethics of doing anthropological research, native arts, environmental issues, etc. For more information phone Vancouver Community College, Langara campus (324-5511), after June 17.

PERMITS • PERMITS • PERMITS • PERMITS

Permits issued between January and May, 1985:

1985-1 Dr. Donald Mitchell (UVic): comparison of screening procedures in recovery of midden soil for *DcRt 10.*

1985-2 Dimity Hammon (Delta Museum): test excavations at *DgRs 14.*

1985-3 Syd Riley: screening and recovery of artifacts from disturbed portions of *DlSd 17* as part of public interpretation program.

1985-4 Dr. Mark Skinner: recovery and analysis of "found" human skeletal remains.

1985-5 Steve Lawhead (Arcas Assoc.): salvage excavations at 5 sites, Highland Valley.

1985-6 Dr. Arnoud Stryd (Arcas Assoc.): inventory and impact assessment, Merritt to Kamloops section of Coquihalla Highway.

1985-7 Ian Wilson (I.R. Wilson Consulting): inventory and impact assessment, Kotcho-Desan Exploration Road.

What to See this Summer:

Fraser Delta

Archaeological excavations at the Whalen Farm Site, sponsored by the Delta Museum: in Tsawwassen, at the foot of 66th St. and Boundary Bay.

- Guided tours. Open to the public 9:00 a.m. - 4:00 p.m., Wednesday through Sunday, from June 19 until September 6.
- For details of special ASBC tour, phone Terry Spurgeon at 464-1984.

Gulf Islands

SFU field school on Pender Island:

- Guided tours of excavations at the Pender Canal site (at bridge between North and South Pender Islands): June 1 through Labour Day, 7 days a week.
- ASBC tour planned for Saturday, August 10. Phone Terry Spurgeon at 464-1984 for details.

Sunshine Coast

At the Willingdon Beach Campsite in Powell River:

- Mock excavation and screening of disturbed shell midden deposits.
- Slide show and artifact display in the Interpretive Centre.
- Open to the public Wednesday through Sunday and holiday Mondays, June through Labour Day.

Program organized by Syd Riley, volunteer Regional Advisor for Powell River.

Exhibits

UBC Museum of Anthropology

CHANGING TIDES: the Development of Archaeological Research in British Columbia's Fraser Delta Region. Curator, Ann Stevenson; until Sept. 1985. (See review).

Alberni Valley Museum

CEDAR THE GREAT PROVIDER: Traditional Uses of the Cedar among the Northwest Coast Indians; a UBC Museum of Anthropology travelling exhibit. Curator, Hilary Stewart; July 1 through October 18.

The Midden
P.O. Box 520
Station A
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