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FRASER VALLEY CHAPTER HAS ACTIVE FIRST YEAR

(The Midden has invited chairpersons of the Valley and Victoria Chapters to contribute regular reports on their activities.)

The Fraser Valley Chapter, established in 1974, would like to begin its initial contribution to The Midden with a whopping vote of thanks to the parent body in Vancouver for much needed nurture during its tender, formative year. Among the favourite things which we like to remember are excellent speakers provided from Vancouver for meetings of the Chapter; attendance by members of the parent body at Chapter meetings, and the opportunity for Chapter members to attend Society meetings in Vancouver. While we hope to assume increasing responsibility for speakers, films, etc., for local meetings, we intend to encourage reciprocal visits with the parent Society. These have been an inspiration to Chapter members.

News of Chapter activities is perhaps less plentiful than usual owing, at least partially, to our summer recess. Our last meeting was held on June 17th and our first meeting of the new season is scheduled for Tuesday, September 9th. During July, four Chapter members joined Society members from Vancouver in a visit to a dig near Hope, B.C. On August 12th and 13th the Chapter maintained an information booth at a "Renaissance Arts and Crafts Fayre" sponsored by the Abbotsford Arts Council. Displays at the booth consisted of a show-case with artifacts borrowed from a Chapter member for the occasion, plus a scrapbook history of the Chapter and Archaeological Society leaflets and bulletins. A number of Archaeological Society leaflets containing typed information on the local Chapter were distributed to interested visitors. The show-case and scrapbook history proved to be excellent attractions and contacts were made with a number of potential new members.

Duncan McIntyre

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ARCHAEOLOGICAL SITE ATTRITION IN THE GULF ISLANDS,
BRITISH COLUMBIA

Paper presented by Gordon Hanson, Asst. Provincial Archaeologist, to the Canadian Archaeological Association Meeting at Thunder Bay, Ont., March 1975

Prepared by: Art Charlton, Gordon Hanson, John McMurdo, Trisha Schibli, Bjorn Simonsen and Paul Sneed

One of the hotly debated subjects in North American archaeology today is sampling, i.e. the methods by which predictions are made about a population through observation of a portion of the total population or universe. It is recognized that before one samples from a population one must have some idea of the nature of the population under observation.

INTRO-
DUCTION

This paper is not directly about sampling, but about what is happening to a population of great importance to the archaeologist - namely archaeological sites. All archaeologists in Canada recognize that the total population of sites in the country or elsewhere is being modified at an unprecedented rate. One can, of course, be academic about it and argue that archaeological sites have been intruded into, mixed, eroded away, and redeposited for millennia. But we all know that site destruction today is of a higher order and that the data base of the discipline is at stake.

That site destruction is occurring rapidly is common knowledge, but little research has been carried out to ascertain how the selection by modern development is modifying the site population.

The question addressed here is as follows: are certain archaeological sites classified by size and/or location being selected at differential rates? Intuitively one would expect this to be the case as often contemporary land use and development patterns closely approximate that of aboriginal occupancy. The fact that many contemporary city and town sites are situated in locations of major prehistoric settlements is a case in point. If all of the larger prehistoric settlements are selected out of the site population in a particular region, valley or drainage by modern development, how will this influence settlement and subsistence pattern reconstruction?

I wish, therefore, to present here the preliminary findings of an analysis of survey data from the Gulf Islands in British Columbia.

THE AREA The Islands are situated in the Gulf of Georgia off the southeast coast of Vancouver Island. The Islands do not support any major industry. The secondary industries present are tourism, some agriculture, some logging and fishing. Most of the recent development involves the construction of small houses for summer and retirement use and related service industries. What sort of impact would one expect this kind of development pattern to have on the population of archaeological sites in the Islands?

The inventory of known sites in the Islands prior to January 1, 1974 had been compiled over several decades in a sporadic and unsystematic

fashion and totalled 150 sites. An intensive survey of the southern Islands was carried out between January 1st and September 1st, 1974.

THE SURVEY One of the objectives of the survey was to compile a thorough site inventory which would at least approximate the aboriginal site population. The results of the inventory will be included in a comprehensive land use planning programme being formulated for the Islands by residents and the provincial government.

All previously recorded sites were visited and re-recorded to ensure that the quality of survey data was consistent and uniform. Detailed information on all known and newly recorded sites included an accurate map of each site, the dimensions of the cultural deposits, an assessment of the extent of site destruction and the agents or cause of destruction. A typology was also developed assigning sites to groups according to physiographic location (for example, shell midden sites at the heads of bays, on spits, on points, or along open shorelines, etc.). By September 1974 the site inventory for the area had been expanded from 150 to 590 sites, almost a 400% increase.

The survey data was then tabulated to assess the current condition of the total site population, to identify which kinds of sites had been affected most drastically by development, and by which destructive agents.

ANALYSIS The tabulations relating to the condition of the entire population revealed extremely disturbing findings. It was discovered that of the 590 sites, one quarter were 75% destroyed; that 269 (slightly less than half) were 50% destroyed; and that only 35 sites (6%) were over 75% intact.

The assessment of site condition for the total population was then followed by a breakdown of site condition on the basis of site size. The area of each site was plotted on a 500 sq. metre interval scale to determine the size distribution in the population. It was found that the majority of sites clustered at the low end of the scale with 53% of the sites less than 1,000 sq. metres in area, 38% were between 1,000 and 10,000 sq. metres and 8% of the sites were between 10 and 60,000 sq. metres.

The sites in the small, medium and large categories were grouped according to site condition and illustrated in graph form. According to the size groupings the extent of destruction appears to have a similar distribution for all sites when viewed on a percentage basis. However, as there are far fewer medium and large sites in the population the damage may be much more significant if viewed in terms of absolute numbers. If extremely large sites are important in the cultural ecology of the area, modern development has left a meagre representation in this category.

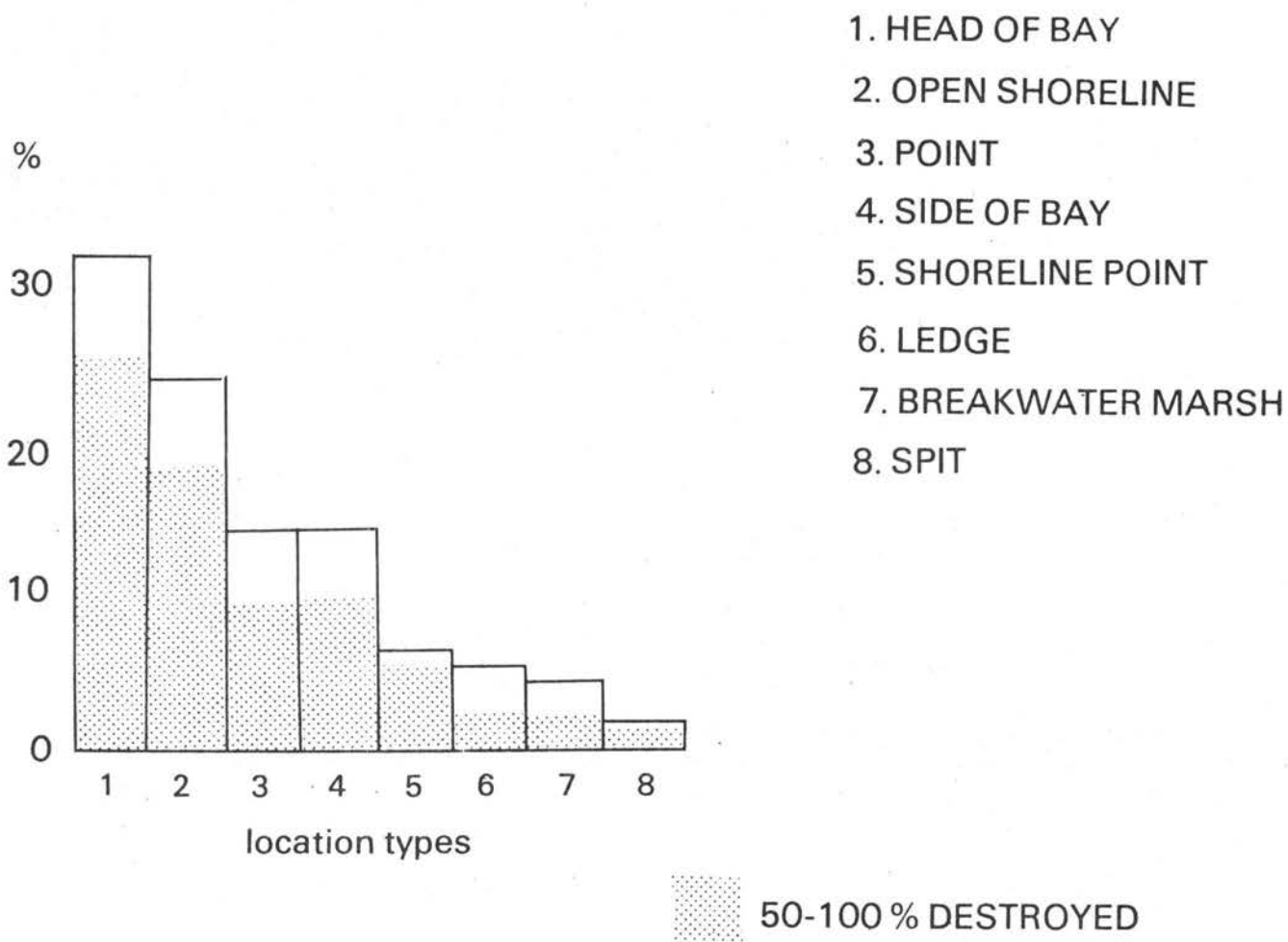
A tabulation of the sites grouped according to physiographic location indicated the most common site locations are at the head of bays.

ONE-THIRD This location type comprised 34% of the total with open shorelines 24%, sides of bays 14% and so on, to spits representing approximately 1% of the site locations.

IN BAYS The shaded portion of the bar graph indicates what percentage of sites within each location groups are more than 50%

destroyed. The sites at the heads of bays have been hit extremely hard by development with 77% of the sites in the groups over 50% destroyed. In terms of absolute numbers, however, this category still has a fair representation of sites in the over 50% intact category. Regarding the condition of spit sites, which incidentally appear to be among the largest in size as well as the fewest in number, no such sites are in the less than 50% destroyed category. Again, if spit sites are a significant aspect of the settlement

PERCENT OF GULF ISLAND SITES GROUPED BY LOCATION



subsistence pattern in the Gulf Islands, then this category of site will not be very well represented in any sample.

What are the main destructive agents of archaeological sites in the Gulf Islands? The most destructive agent is construction. The

building of houses, road access and related land altering activities are the prime agents of destruction in at least 44% of the sites in this study. Second is wave erosion which has been accelerated greatly by the advent of fast pleasure boats and large ships. Pot-hunting is grouped in the miscellaneous category and does not appear to be a very significant factor in site attrition.

The extent and nature of damage reported here is not unlike numerous areas in Canada. What is documented in the survey and revealed in the preliminary analysis is that destruction has been extensive for a short time span.

What can be done at this juncture to ensure that this pattern does not continue? One, archaeologists must be far more conservation

mindful than they have been in the past. Inventory work
WHAT CAN must receive high priority, for without it there can be
BE DONE? no effective management and protection of the resource.

The Gulf Islands survey data is being provided to the government licensing and planning agencies and has been provided to all of the Indian Bands concerned. All Island residents who have an archaeological site on their property are being notified by our office and their co-operation in protecting the site is being sought. Where the owners are not willing to assume a custodial responsibility, then stronger measures such as formal designation or site acquisition will be pursued. We are hopeful that the necessity for the latter course of action will be minimal.

It should be obvious from the Gulf Islands example that the population of archaeological sites in Canada has been and is being selected against at an alarming rate. To arrest this trend, all archaeologists are going to have to give top priority to protection and conservation.

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PORTICELLO SHIPWRECK

Society members are cordially invited by the Archaeological Institute of America to attend an illustrated lecture on Monday, October 20 at 8:30 p.m. in Lasserre 102, U.B.C. Guest speaker will be Mrs. Cynthia Eiseman, Executive Director of the American Institute of Nautical Archaeology, from the University of Pennsylvania. Subject: "Porticello Shipwreck", a late 5th century shipwreck in the Straits of Messina, Sicily.

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ARCHAEOLOGICAL SURVEY IN THE ALBERNI VALLEY

Nearly 30 New Sites Identified

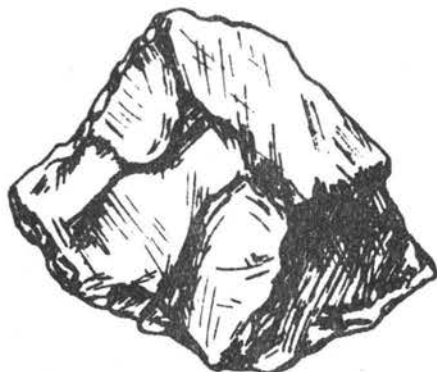
Report by Alan D. McMillan, Douglas College



Archaeological resource inventory was carried out by the author in the Alberni Valley and adjacent waterways from June 2 to July 2, 1975. The survey area included all of the Alberni Valley, Sproat Lake, and Alberni Inlet as far south as Nahmint Bay. The Archaeological Sites Advisory Board administered this project, as well as the succeeding survey of southern Alberni Inlet and Barkley Sound by Denis St. Claire. Sheshaht band member Wilfred Robinson served as assistant on both projects. Approval was granted by the West Coast District Council of Indian Chiefs.



Survey attention was focussed on the waterways - primarily the Sproat, Stamp and Somass Rivers, Sproat Lake and Alberni Inlet. The lake and inlet were surveyed by boat, giving total coverage of the shoreline in the survey area. The river systems were surveyed by truck and on foot, with problems of access resulting in selective coverage. Extensive residential, industrial and agricultural development along the Somass has resulted in easy access along most of the river and exposure of a large number of sites. The Stamp, on the other hand, is largely inaccessible, resulting in only a single site being recorded. Road cuts, quarries, and other exposed areas inland from the rivers were also checked for evidence of older occupation sites. The survey was greatly aided by the co-operation of John Sendey, director of the Alberni Valley Museum, who has located a number of such sites and has built up extensive surface collections of lithic artifacts and detritus from the area.



A total of 29 archaeological sites was recorded during this survey, bringing the site inventory of the area to 45. These are divided into occupation sites, burial sites, fish traps, and petroglyphs (Table 1). Considerable temporal variation in

Fig. 1. Artifacts from quarry site (DhSf18), Alberni Valley.

occupation sites was evident - from purely historic to sites which may be of considerable antiquity. Each site has been described and recommendations for the area made in the survey report (McMillan 1975).

TABLE 1 - Recorded Sites

| <u>Type of Site</u> | <u>Recorded in 1975 Survey</u> | <u>Previously Recorded</u> |
|---------------------|------------------------------------|--------------------------------|
| Occupation sites | | |
| River | 21 | 8 |
| Lake | 0 | 2 |
| Inlet | 6 | 2 |
| Burial sites | 1 | 1 |
| Fish traps | 1 | 1 |
| Petroglyphs | 0 | 2 |

Total recorded sites - 45

The survey area was the ethnographic homeland of two Nootka-speaking bands, the Sheshaht and Opetchesaht. Only a few sites, all quite recent, can be identified with the Sheshaht, who, according to ethnographic tradition, are late arrivals in the Alberni area (Boas 1890:548; Drucker 1951:5). These sites are along the Alberni Inlet and on the lower Somass River, at the head of the Inlet, which was the centre of their salmon fishery. Their occupation continued to be seasonal, with most of the year spent at their large village sites in Barkley Sound, until well into the historic period. The upper sections of the rivers and the inland lakes were left to their less maritime Opetchesaht neighbours, who maintain the tradition of always having occupied the lakes and rivers of the Alberni Valley. Lengthy hunting trips to the interior were important in the traditional economic pattern, and such forest resources as deer played a major role in the diet. Contact with the Salish across the island was common, and considerable evidence exists that the Opetchesaht themselves were once Salishan speakers (Boas 1890:584; Sapir 1915:19). The only other band to hold territory in the survey area was the Ucluelet, holding a seasonal fishing station on Alberni Inlet.

SOMASS RIVER IS RICH IN SITES

The five mile length of the Somass River, at the head of Alberni Inlet, is rich in archaeological resources. Of the 29 river sites recorded, 24 are on the Somass. Both bands have their major reserve on the Somass, which still supports an impressive salmon run. Many of the sites recorded were seasonally

occupied as fishing stations well into the historic period. These late sites are identified by a cultural deposit of dark soil and fire-cracked rock, a location at the edge of the river, and surface collections including a ground stone industry (particularly ground slate artifacts), small chipped basalt projective points, and occasional implements of bone or historic items.

The area along the Somass also yields evidence of much greater antiquity. Several sites were exposed in road cuts or gravel quarries well back from the river and a considerable distance above it. These sites lack any midden deposit, and are recognized by surface collection of lithic artifacts and detritus in the gravels. Surface collections from these sites include chipping detritus, pebble tools, microblades and microblade cores, and occasional large bifacial projective points or knives (Fig. 1). These often show heavy patination. Both the nature of the artifacts and the location of these sites argue for considerable antiquity.

SPROAT LAKE BELIES TRADITION

Sproat Lake, supposedly the traditional homeland of the Opetchesah (Drucker 1951:5), has yielded very few archaeological traces of this occupation. Two of the lake's four arms were surveyed by Keddie and Carl in 1971 (Keddie 1971). The only sites recorded were on two small islands, each lacking any midden deposit but yielding artifacts or detritus from a small beach. The 1975 survey completed the lakeshore coverage without locating additional sites.

The sites recorded along Alberni Inlet are all late, with most known ethnographically as fishing stations. In addition, a number of known ethnographic sites, particularly those associated with the historic dogfish oil trade, were visited without finding any archaeological remnant of this occupation. Information gathered on such locations was noted in the survey report (McMillan 1975) but these were not recorded as sites.

Two older sites exist on Shoemaker Bay, at the head of the Inlet near the mouth of the Somass River. The only excavations in the survey area took place at one of these sites (DhSe2) during the summers of 1973 and 1974 (McMillan and St. Claire 1975). Radiocarbon age estimates indicate a temporal span from about 2000 B.C. to A.D. 800. A cultural continuity seems to exist throughout this period, with affinities being greater to the Strait of Georgia area than to other excavated sites in ethnographic Nootka territory. However, contact with the open ocean resources of Barkley Sound by the latest period of occupation is indicated by such faunal remains as whale,

northern sea lion, and the California mussel. The second site is a non-midden surface collection of patinated chipping detritus on a bluff overlooking the bay, and would appear to pre-date DhSe2.

FISH TRAPS FOUND, BUT BURIAL CAVE BULLDOZED

Non-occupation sites are encountered more infrequently. Two different types of fish traps have been recorded. One is a series of small curving lines of piled beach cobbles, in the inter-tidal zone off a point in Alberni Inlet. These were rock tidal traps for small fish. Another type of trap was constructed of lattices of boughs and withes, supported on stakes driven into the river or stream bed. The bases of the wooden stakes which supported such a structure are still visible at low tide in a creek entering the Somass River. A transit and tape were used to record the position of each stake, in order to prepare an accurate map.

The ethnographic mortuary pattern in the Alberni Valley was tree burial or placement in a small cave in Shoemaker Bay. No trace today exists of these practices, and the cave has been destroyed by road construction. The two recorded mortuary sites are recent burial areas.

The two recorded petroglyphs have been known since the 19th century. The impressive Sproat Lake petroglyphs of mythical marine creatures carved into a vertical rock face are among the best known in the province. A single figure reported for the western end of Great Central Lake has since disappeared and is presumably below the present water level of the lake.

The survey report attempts to compile available information on both those sites recorded during this survey and those previously recorded. Copies have been sent to both native bands and to the local museum to act as an archaeological resource inventory of local heritage sites. Continued residential and industrial expansion will undoubtedly expose additional sites, as well as threaten many already reported. Hopefully, we are now in a stage to begin protecting the area's archaeological resources.

References

- Boas, Franz
1890 Second General Report on the Indians of British Columbia. Report of the Sixtieth Meeting of the British Association for the Advancement of Science: 562-715.

- Drucker, Philip
1951 The Northern and Central Nootkan Tribes. Smithsonian Institution, Bureau of American Ethnology, Bulletin 144.
- Keddie, Grant R.
1971 Report on the 1971 Sproat Lake Highway Survey. Unpublished report submitted to the Archaeological Sites Advisory Board, Victoria.
- McMillan, Alan D.
1975 Preliminary Report on Archaeological Survey in the Alberni Valley and Upper Alberni Inlet. Unpublished report submitted to the Archaeological Sites Advisory Board, Victoria.
- McMillan, Alan D. and Denis E. St. Claire
1975 Archaeological Investigations in the Alberni Valley. B. C. Studies 25: 32-77.
- Sapir, Edward
1915 Abnormal Types of Speech in Nootka. Geological Survey of Canada, Memoir 62.

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AN APOLOGY FOR SUCCESS

It seems silly to apologise for the success of a meeting...but some ASBC members were undoubtedly disappointed by not being able to get into the Carlson/Nelson presentation "In Mackenzie's Footsteps" recently.

Such spectacular popularity was unexpected. Not unjustified, but simply unexpected. Those members who arrived after 8 p.m. and were turned away, missed a fine presentation. Fortunately, so did the Fire Marshal, as the auditorium was jammed full.

It does not seem practical to give Society members priority at such popular events: we can scarcely turn away early comers.

Unfortunately, despite stalwart efforts by Ron Sutherland and the willingness of the speakers, we have been quite unable to schedule a repeat performance that would not clash with other activities or other hall bookings.

Sorry.

Nick Russell, president.

SEASONALITY INTERPRETATIONS FROM CLAM SHELLS

by Leonard C. Ham, Department of
Anthropology and Sociology,
University of British Columbia

On the Northwest Coast, periodic movements to exploit seasonal availability and abundance of resources appear to have been widespread (Suttles 1960:527-9). Thus archaeologists working in this area have an interest in determining the seasonal patterns of site occupation and resource exploitation reflected in recovered faunal remains. Methods for inferring periods of site occupation and resource exploitation have depended upon the identification of faunal species from a site, and then from animal ecology, deriving species availability on a seasonal basis. One method which has demonstrated its usefulness locally at the Glenrose Cannery Site (DgRr 6) is the determination of seasonality from marine clam shells (Ham 1974). This method has also had some application in the analysis of archaeological sites outside British Columbia, in California (Weide 1969), and in New Zealand (Coutts 1970, Coutts and Higham 1971).

Marine Clam Shell Growth

In most bivalve clams, shell growth occurs by the accumulation of calcium carbonate crystals deposited by the mantle along the ventral edge of each shell valve when the valves are open (Wilbur 1964: 243-4, Clark 1974: 968). The deposition rate of calcium carbonate is influenced by periodic changes in physical and chemical conditions such as temperature and salinity (Barker 1964: 74, Kobayashi 1969: 664). This change in the deposition rate of calcium carbonate results in the presence of growth layers, defined by two boundaries or surfaces which vary in colour (see Figure 1) from the growth layer (Pannella and MacClintock 1968: 66). Annual growth in marine molluscs is greatest during the spring and summer due to increased water temperatures and food supplies (Quayle and Bourne 1972: 8). During the fall and winter, decreasing food supplies and temperatures severely retard growth.

Barker (1964: 80) has classified cyclic growth layers in clams into five orders, two of which are of interest here. The first, fourth order growth layers (made up of one thick layer formed during the day and a thin layer formed at night), reflect daily temperature fluctuations. These layers will be referred to as daily growth increments. The second, first order growth layers, are composed of thick daily growth increments representing summer growth and thin daily growth increments representing winter growth. These layers reflect annual

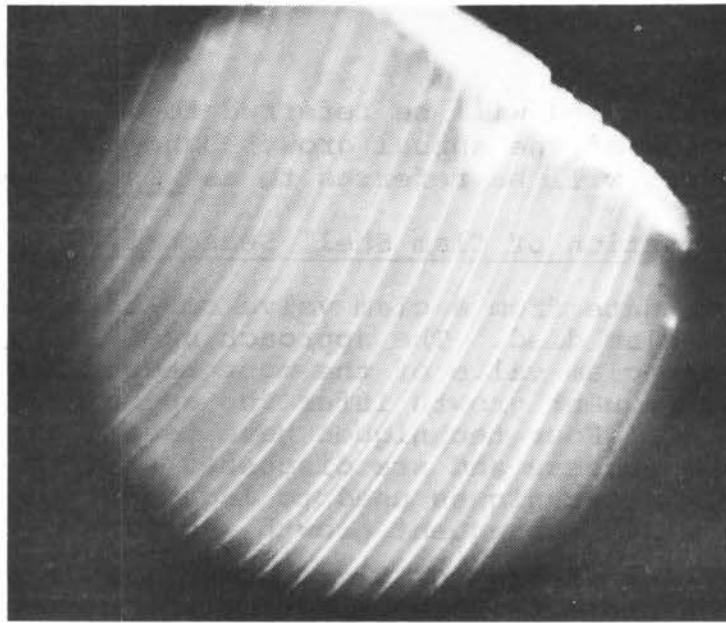


Fig.1. Daily growth increments in the butter clam Saxidomus giganteus Deshayes. (43.5x)

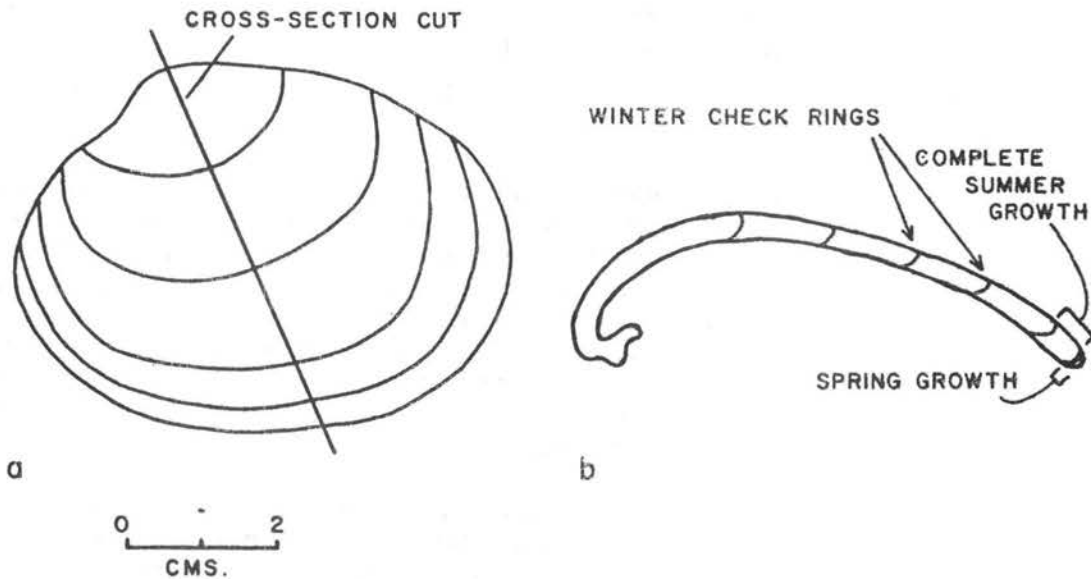


Fig.2. Determination of clam shell seasonality.

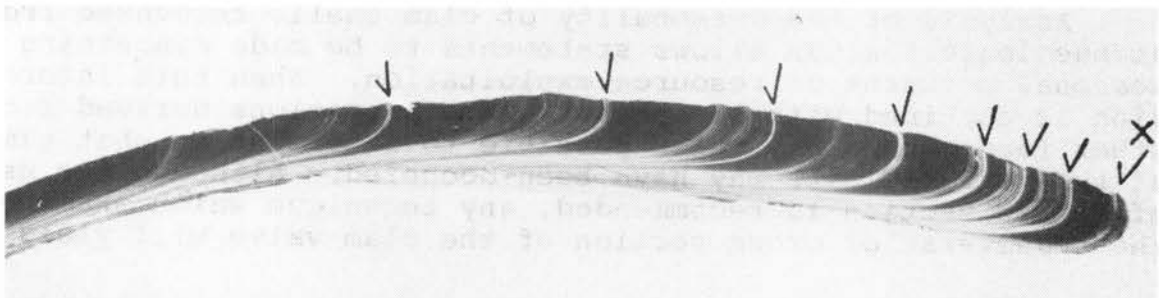


Fig.3. Winter check rings and summer growth bands in a thin section of the butter clam Saxidomus giganteus Deshayes. (1.75x) ('x' indicates location of most recent winter check rings.)

temperature variation and will be referred to as annual growth bands. That portion of the annual growth band which represents winter growth layers will be referred to as winter check rings.

Determination of Clam Shell Seasonality

A seasonality date from a clam valve reflects the time of year in which the clam died. The approach used is to determine the position of the clam valve of the most recent winter check ring, and from subsequent growth infer the approximate season of death (Figure 2). Four techniques have been used with varying degrees of success and are discussed elsewhere (Ham and Irvine 1975). These techniques used to locate winter check rings and to calculate subsequent growth include:

- 1) Visual determination of winter check rings and growth on the anterior surface of the clam valve;
- 2) Determination of the location of translucent winter check rings and opaque summer growth using a strong light source;
- 3) Determination of winter check rings and summer growth from a polished cross section; and
- 4) Determination of winter check rings and summer growth from a thin section.

The fourth technique was found to be the most successful by Ham and Irvine (1975) who used sections prepared by Brian Humphrey of Coots Petrographic Service (Vancouver) Ltd. In preparing thin sections, the clam valve is cut in half from the dorsal to the ventral edge (Figure 2). One valve half is then coated with epoxy and ground smooth on 220-600-1000 grit paper. A 0.50 cm section is then removed and mounted on a glass slide with epoxy and ground to a thickness of approximately 0.030 mm (Humphrey, 1975: personal communication).

Examination of the thin section in Figure 3 reveals the location of the most recent winter check ring which is indicated by an "X". Measurement of the amount of growth after this check ring indicates that the clam had attained approximately 10% of the average annual growth of previous growth bands. The season of death was interpreted as spring.

Analysis of the seasonality of clam shells recovered from archaeological sites allows statements to be made concerning seasonal patterns of resource exploitation. When this information is combined with seasonality interpretations derived from other faunal remains, it is possible to determine at what times of the year the site may have been occupied. Although the use of a thin section is recommended, any technique which examines the transverse of cross section of the clam valve will yield

valid results. The most economic technique is simply to polish the valve cross section on fine grit paper (600-100 grit).

Conclusions

Past experience and the comparison of several techniques for inferring clam shell seasonality suggest that the use of a thin section is the most accurate (Ham 1974, Ham and Irvine 1975). The nature of the thin section makes it much easier to determine the size of daily growth increments, often necessary not only in determining the location of winter check rings but also in segregating winter check rings from those of storms. The preparation of a photographic record is also easier from a thin section. Research is continuing in an attempt to find even more accurate techniques for obtaining seasonality dates from clam shells. One technique which it is hoped will yield useful results is the use of a scanning electron microscope. If successful, this technique may allow the counting of daily growth increments and should give increased accuracy.

Acknowledgements

Gratitude is extended to Drs. Richard Pearson and R. G. Matson, Department of Anthropology and Sociology of the University of British Columbia, who provided funding for this study. The results of this study were originally submitted for Archaeology 897, a graduate course at Simon Fraser University. A revised edition by the author and Moira Irvine was accepted for publication in Syesis, some of the results of which are summarized in this paper.

References Cited

- Barker, Richard M. (1964). Microtextural Variation in Pelecypod Shells. Malacologia, 2(1):69-86.
- Clark II, George R. (1974). Calcification on an Unstable Substrate: Marginal Growth in the Mollusk Pecten diegensis. Science, 183:968-970.
- Coutts, P.J.F. (1970). Bivalve-growth Patterning as a Method for Seasonal Dating in Archaeology. Nature, 226:874.
- _____, and Higham, Charles. (1971). The seasonal factor in prehistoric New Zealand. World Archaeology, 2(3):266-277.
- Ham, Leonard. (1974). Glenrose Cannery Site: Shell Analysis. In Prehistoric Adaptation At The Glenrose Cannery Site, Fraser Delta, B.C., Matson, R.G., et al. Submitted to Mercury Press, National Museum of Man.
- _____, and Irvine, Moira. (1975) Techniques For Determining The Seasonality Of Shell Middens From Marine Mollusc Remains. Syesis, 8, in press.

- Kobayashi, Iwao. (1969). Internal Microstructure of the Shell of Bivalve Molluscs. Am. Zoologist, 9:663-672.
- Pannella, Giorgio, and MacClintock, Copeland. (1968). Biological and Environmental Rhythms Reflected in Molluscan Shell Growth. The Paleontological Society, Memoir 2, Journal of Paleontology, Vol. 42, Supplement to No. 5:64-79.
- Quayle, D.B. and Bourne, N. (1972). The clam fisheries of British Columbia. Fisheries Research Board of Canada, Bulletin 179, Ottawa.
- Suttles, Wayne P. (1960). Variation in Habitat and Culture on the Northwest Coast. Akten des 34. Internationalen Amerikanistenkongresses. Wien.
- Weide, Margaret L. (1969). Seasonality of Pismo Clam Collecting at ORA-82. Archaeological Survey Annual Report, Department of Anthropology, University of California, Los Angeles, p. 127-141.
- Wilbur, Karl M. (1964). Shell Formation and Regeneration. In Wilbur, Karl M., and Yonge, C.M. (eds.), Physiology of Mollusca, Academic Press, N.Y., pp. 243-257.

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A.S.B.C. DIARY

All Society meetings are held the 2nd Wednesday of the month in the Auditorium of the Centennial Museum at 8 p.m.

- Oct. 8 Dr. Knut Fladmark, Simon Fraser University speaking on archaeology of the Peace River - both early man and historic.
- Nov. 12 Dr. Christopher Stocker, University of B. C., Dept. of History, on Chateaux of the Loire Valley, France.
- Dec. 10 Dr. Donald Mitchell, University of Victoria, (tentative), subject to be announced.
- Jan. 14 Dr. James Russell, University of B. C., Dept. of Classics on "New Finds at Anemurium" (Turkey).
- Feb. 11 Dr. Patricia Hitchens, University of B. C., speaking on the Bronze Age in Japan.

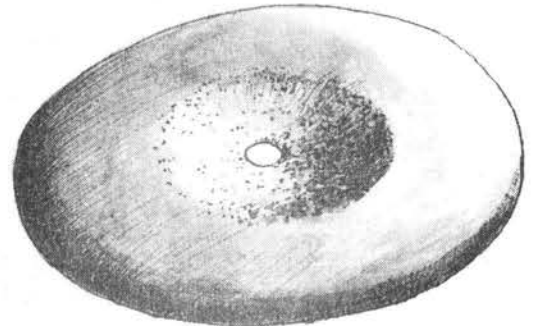
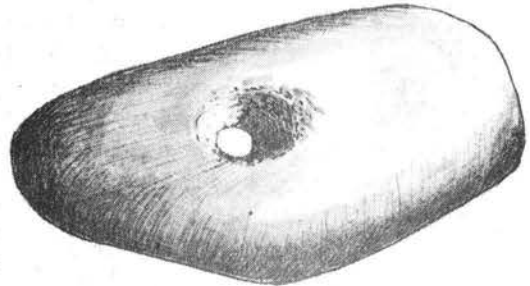
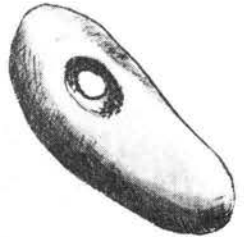
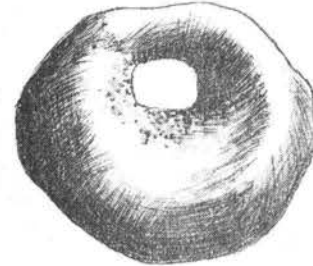
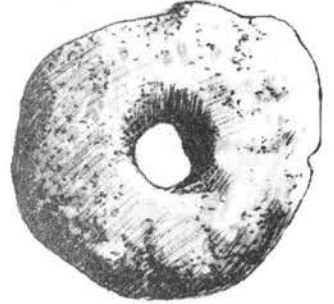
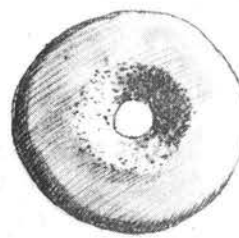
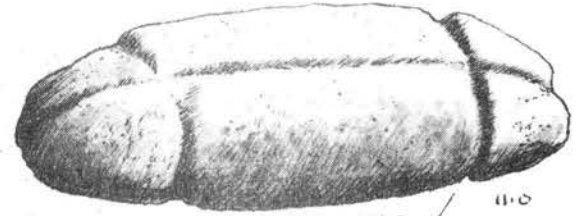
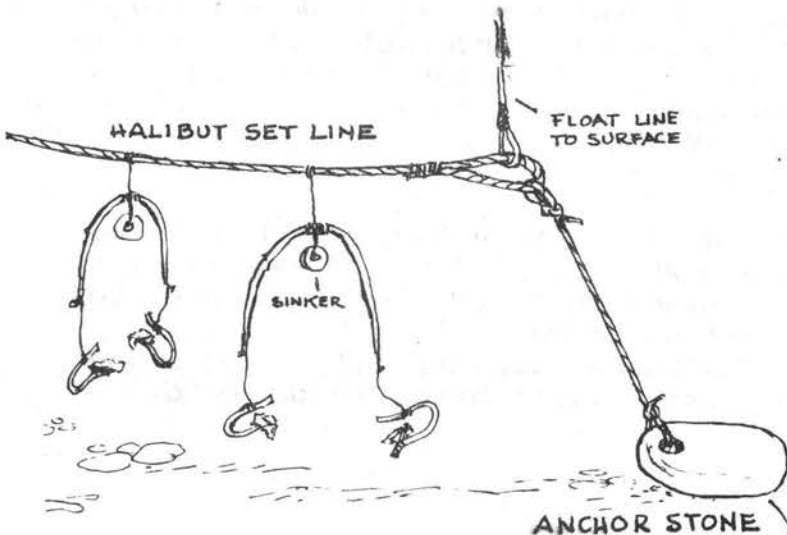
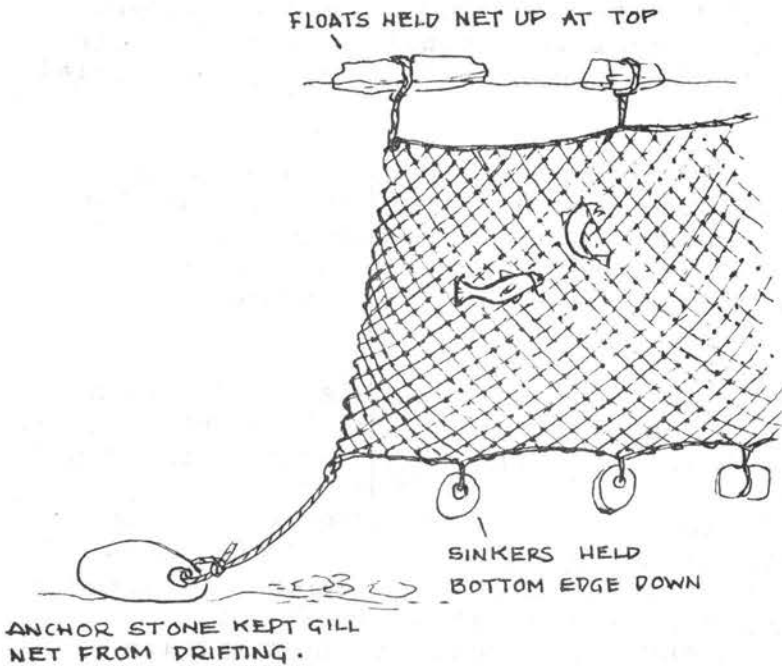
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These perforated and sometimes grooved stones had a wide use as sinkers and/or anchors.

Sinkers were attached to various types of fish gear, from the small fish gorge and the trolling line, to the big halibut hooks set singly or in pairs, while sinkers on the lower margin of an outstretched fish net kept it hanging vertically.

Heavier stones served anchoring purposes. The end of the long line of halibut hooks or the ends of the fish net were held down in place with an anchor stone; a basket fish-trap was anchored down to prevent it being dislodged, and there were other anchoring and weighting down requirements.

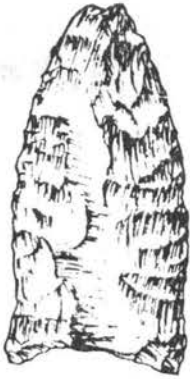
An extremely large and heavy stone, weighing perhaps 50 lbs or more, perforated and tied to the end of a long cedar bark rope, made an efficient anchor for a canoe.



EXCERPTED FROM
 "ARTIFACTS of the NORTHWEST
 COAST INDIANS" by
 HILARY STEWART © 1973

A SUMMARY OF RECENT ARCHAEOLOGICAL RESEARCH
IN THE PEACE RIVER DISTRICT

By K. R. Fladmark, Department of Archaeology,
Simon Fraser University



In the past two summers Simon Fraser University has been contracted by B.C. Hydro and the Archaeological Sites Advisory Board to carry out archaeological surveying and salvage excavation within the main Peace River drainage of north-eastern British Columbia. This work was prompted by a Hydro proposal to construct a series of downstream dams to flood the Peace River and tributaries between the Alberta border and the Bennett Dam. The area previously had seen very little archaeological investigation and the main purpose of our work has been to compile an initial site inventory.



Results to date indicate that the Peace River drainage, east of the Rocky Mountains, has a very high site density encompassing a considerable time-range and that the general archaeological resources of the area are of notable significance to the history and prehistory of this province.



Site surveying in 1974 and 1975 has resulted in the location of about 300 previously unknown archaeological sites in the Peace District. Most of these consist solely of surface scatters of lithic artifacts and detritus: aboriginal surface features of any sort are rare. Most lithic sites are concentrated along intermediate terraces or the valley lip, mainly in south-facing grassland-parkland areas east of the mountain front. Very few aboriginal sites were found on the modern flood-plain - probably reflecting the lack of significant fisheries in the Peace River system - and only a very few sites were located in the Peace River Canyon where the river cuts through the eastern flank of the Rockies.

Ethnographic data indicate that the Sekani and Beaver Indians who occupied the Peace District at time of contact were strongly orientated towards the hunting of major land fauna such as wood bison, moose and wapiti; and flaked stone projectile points, large bifacial knives or

Early projectile points
from the Peace River
District, Fort St. John
area. Natural size.

preforms and heavy quartzite butchering tools are among the most common diagnostic artifacts encountered in surface assemblages or local collections. Although research has not progressed sufficiently to indicate the local prehistoric cultural-chronology with any certainty, many of the projectile point styles suggest correlations with, at least, some of the earlier point-types of the northwestern Great Plains - a physiographic zone continuous into the Peace River area.

Of particular interest has been the location of two sites containing small lanceolate, concave-based, edge-ground, basally-thinned or fluted points which seem to fall within the range of variation of the Clovis point tradition (see figure). Total assemblages from these sites, which are located back from the river valley at elevations correlative to late stages of Glacial Lake Peace, are very distinctive, including scraper styles and lithic raw material preferences very different from assemblages found within the drainage systems.

FUR TRADE FORT FOUND

A different sort of "early" site is Rocky Mountain Fort - the oldest European settlement on the mainland of British Columbia - built in 1797-8 and abandoned in 1805. We located the Northwest Company fur-trading fort this summer after having intensively searched for it in the previous season (we actually approached within about 300 m. of the site in 1974 and turned back, unaware of the closeness of our goal...). The fort was visited and occupied by such historical notables as Simon Fraser and David Thompson and was an important link in the initial expansion of the land-based fur-trade into British Columbia. After 1805 its usefulness was supplanted by new posts at Hudson Hope, McLeod Lake and the first Fort St. John, and the old establishment disappeared into the dense undergrowth of the Peace River floodplain to remain lost and apparently undisturbed until the present time. Visible remains today consist of five low rock mounds left by collapsed stone chimneys or fireplaces, a number of cellar depressions, and a rectangular trench apparently left from a stockade enclosure.

The early fur-trade history of the Peace River is of considerable interest to the post-contact period of British Columbia as a whole, since it was along this natural communication corridor that many of the original European explorers and fur-traders entered the intermontane area of the province. At least six forts are known to have existed in the British Columbia portion of the Peace District between 1798 and 1890 and others may exist which have yet to be located. All the located sites are relatively large with complex structural features, and deserve a high salvage priority if any development should be planned in the area. Initial efforts at salvage excavation of the fur-trade settlements began this

season with a project focussed on Fort Epinette, or St. John's, situated near the confluence of the Beaton and Peace Rivers and occupied between about 1806 and 1813. Students of the Simon Fraser University archaeology field-school spent two months excavating this site under my direction and the results clearly show a significant data potential for historical archaeology in this area. The work revealed the basic ground plan of the fort and many structural details, as well as a wealth of information concerning the subsistence patterns and activities of the post's inhabitants. The establishment apparently consisted of one large house with two chimneys and a couple of smaller out-buildings surrounded by a light stockade, situated close to the river bank on the modern flood-plain. In addition, a wide range of artifact types, from hand-made stone tobacco pipes through patent-medicine bottles and musket parts to a single preserved leather shoe, indicate the preferences and relative frequencies of the subsistence and trade goods reaching the northern Interior at this time.

Initial investigation of the pre-contact and post-contact archaeological resources of the Peace River District indicates that the area has a long and complex culture history. Hopefully continuing research will eventually disclose an accurate picture of the total human history of this important, but all too frequently ignored, part of our province.

* * * * *

CENTRE FOR CONTINUING EDUCATION, U.B.C.

Mystery of the Maya, Frances M. P. Robinson, Dept. of Fine Arts, 8 Thursdays, Oct. 2 - Nov. 20, 8-9:30 p.m., Woodward Instructional Resources Centre, Lecture Hall No. 1, \$25

Introduction to Underwater Archaeology, Carl Semczak, six lecture-discussions. For further details, please call 228-2181, local 237.

Salish Language and Culture, jointly sponsored by the Musqueam Cultural Committee, the UBC Museum of Anthropology and the Centre, Dr. James V. Powell, Dr. J. E. Michael Kew, Dept. of Anthropology & Sociology UBC, Della Kew, Cultural Coordinator for Musqueam Band, Dr. M. D. Kincade, Dept. of Linguistics UBC, and Mr. Arnold Guerin, Musqueam Band. Part 1 - 8 Tues. 7:30-9:30, Oct. 7 - Nov. 5, \$34; Part 2 - 6 Tues. - Spring 1976, \$26, \$55 combined fee.

EXPERIENCING THE WEST COAST

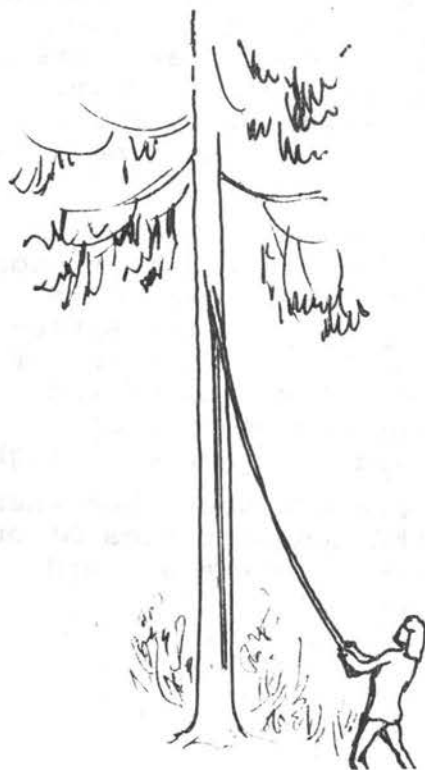
Written and illustrated by Hilary Stewart

On a remote wilderness beach some ten miles down the coast from the ancient Indian village of Yoquot, in Friendly Cove, on the west coast of Vancouver Island, a group of about 20 people were encamped for the week. They had been brought out by truck and by boat from the Strathcona Park Outdoor Education Centre, on Upper Campbell Lake, Vancouver Island, to participate in a new kind of learning experience, a course entitled "Native Indian Lifestyles".

The idea behind this course was to live with the environment that encompassed the life of the coast Indian peoples: to experience the sea, the intertidal zone, the forest and the climate; to learn something of their technology, the foods and the cooking; to try to touch a small part of what Westcoast living would have been like before Capt. Cook sailed into the bay he named Friendly Cove, almost 200 years ago.

Resource people for the course were Joy Inglis, formerly the Education Officer for the Centennial Museum, Vancouver; Michael Robinson, anthropology graduate from U.B.C. (whose specialty was the Nootka and the Friendly Cove area), and this writer.

Although we were not in dug-outs, when the wind built up the swell in the open sea and whipped the white caps to a froth, we felt the dependency for survival on our small craft, and when we landed and drew the boats up the sand, caring for the craft became the first consideration.



Morning brought fog, and mist hung low between the mountains. Rain fell steadily most of the day and we knew the dampness of wet clothing steaming before a wood fire, and discovered that bare feet were infinitely more practical than shoes.

Ravens called out as they flew with noisy wingbeat, an eagle perched high in the dead spruce at the edge of the forest, watching, and one day killer whales leaped and spouted not far from the shore. It was then that we felt a little closer to the legends and myths of the coast Indians.

On a low tide we gathered mussels and dug clams and cooked them with kelp and hot rocks in a hole in the ground, savouring the flavour of food that only a steam pit can



provide. The dulse we had gathered from the low-tide rocks dried black and crisp in the sun that day. It was a new experience in taste as were the Black Katy chitons and the goose barnacles.

In the forest we stripped bark from the red cedar tree, separated it, dried it and soaked it again in a tidal pool. We beat it and shredded it or twisted it into twine and realized the incredible versatility and importance of this material to the coast Indian. Seeing the bark pull away and run more than 40 ft. up the trunk of the tree before breaking off was a living lesson in ethnobotany, but saying the prayer to the spirit of the tree before taking its "dress" was to understand the reverence and respect of the Indian for the life-giving cedar.

When we twisted cedar withes into rope, gathered spruce gum for glue and collected flat sandstone rocks to abrade a splinter of bone to make a fish hook barb, or to grind a piece of slate into a wafer-thin knife for cutting fish, we appreciated the skill of a technology so suited to the life-style of its craftsmen.

We rolled mountain goat wool on naked thigh with the palm of the hand to make roving. We twirled wooden spindles to spin roving into yarn, felt the satisfaction of producing hand-spun wool, and knew how soft and warm a woven blanket of this would be.

When we were hungry and the men came back in the boats bringing fresh fish for supper, and the women returned with baskets full of salal berries and wild peas, we shared the feasting of the fire-roasted fish with everyone, and used big white clam shells for dishes. The fish we didn't need we butchered and spread out over the rack above the fire to smoke and turn golden brown. When a dog-fish was caught we took the sharply rough skin, dried it, and used it for sandpaper on the carved wooden spoons some people were making.

On a clear night the full round moon showed itself above the forest on the far mountain, we took strong sticks and beat upon a hollow log on the beach, singing as we did, and when the white disc rose high above the tree tops into the sky we knew the satisfaction of "drumming up the moon", and returned to the fire in our makeshift longhouse. Then we sang and laughed and talked of the day's activities. A storyteller told the myths and legends of long ago as we roasted mussels over the fire that was our only light.

We weren't on the beach very long, barely a week, but when we returned to our houses and high-rises in the cement cities of our culture, we still had the feel of the sand between our toes, and the scent of the smoke on the fish by the fire.

THE DEEP BAY SALVAGE PROJECT, Summer 1975

By G. Monks, U.B.C.

THE WORK DONE at Deep Bay just north of Qualicum on Vancouver Island during this past summer is intended by the Archaeological Sites Advisory Board to be part of an ongoing salvage project at Deep Bay. This project has become necessary because the spit which encloses Deep Bay has been subdivided into lots, and these lots are currently being developed as building sites. While the total area of aboriginal habitation includes most of the shoreline of Deep Bay, the salvage project is presently confined to the spit where development is now occurring. Funding for this summer's excavations was provided by the Archaeological Sites Advisory Board of British Columbia, and the first two months of the project were conducted in conjunction with the University of British Columbia summer field school in archaeology. (This writer hopes to use the material collected this summer as part of his doctoral dissertation at U.B.C.)

THE EXCAVATION was conducted in combined natural and arbitrary 10 cm levels. That is, each natural stratum was removed 10 cm at a time unless a break between natural strata occurred. When such a break occurred, the level bags for the upper stratum were closed and a new set of level bags begun for the new stratum for the remainder of the 10 cm level. This technique provides a high degree of control over the stratigraphy and the material recovered from the excavation. The excavated matrix was screened through 1/8" screen in order to recover the smaller faunal remains and artifacts that may slip through 1/4" screen. Screening, as well as being a double check for artifacts, was intended to recover all land and sea mammal remains, all bird remains, all fish remains except herring, most herring remains, and as much identifiable shell as possible. This emphasis on faunal remains is a result of the writer's interest in pre-historic subsistence. Information from level bags and soil samples will be used to determine the season during which the site was occupied, the range of faunal species being exploited, and the relative intensity with which individual species were being exploited. (However, the main thrust of the writer's dissertation will be the relationship between the faunal species and the artifact classes.)

THE MAIN FOCUS of the excavation was on a 2 m x 10 m trench that eventually reached a maximum depth of over 2 m. Within this trench, three components were tentatively identified, excluding the historic component. Uppermost was what appears to be a Developed Coast Salish component. It was composed of a series of strata containing large amounts of clamshell and herring remains. This component produced about 175 artifacts and two

burials. The intact burial was atypical of the Developed Coast Salish culture type because it was a cairn burial. Its provenience, however, was at the very bottom of the Developed Coast Salish component, and it appears to belong to the same tradition as the well documented cairn burials recorded for the Marpole culture type at this and other sites. The middle component is tentatively identified as Marpole. A series of distinctive artifacts and features are contained in a fairly homogeneous matrix of charcoal-stained soil and shell. Well over 200 artifacts were recovered from this component along with seven other burials. All the burials in this component involved cairns.

THREE HYPOTHESES OFFERED FOR BOTTOM LAYER

THE BOTTOM COMPONENT may belong to what is known as the Lithic culture type. Approximately 30 artifacts, all stone, were found in an alternating series of sterile and cultural strata of coarse brown sand, gravel, and cobbles. Virtually no shell or other faunal remains were found, and this situation may have developed in one of several ways. First, no bone or shell was being deposited at the site, so none was found. Second, no shell was being deposited on the site at that time, and the consequent soil acidity did not permit bone preservation. And third, the spit was being inhabited as it was still building up to an elevation at which it no longer would be inundated by the highest high tides and storms. This would mean that debris left on the site during these times would be likely to wash away at the next inundation. The resulting lack of clamshell, hence increased soil acidity, might account for the decomposition of whatever bones were not washed away. These are all suggested options at this point, but the writer's inclination at present is to favour the last of the alternatives. The assemblage from the lowest component is mostly large leaf-shaped chipped points and point fragments and modified and unmodified flakes of basalt, quartz crystal, and obsidian.

THERE ARE SEVERAL aspects of this summer's excavations that are of particular interest. The cairn burial in the suggested Developed Coast Salish component is one aspect. Another aspect is the presence of a matched pair, and possibly other fragments, of antler composite toggling harpoon valves. Helen Point on Mayne Island is the only published report listing these items from a Marpole component. Another interesting aspect is the presence of substantial quantities of herring remains from the end of the Developed Coast Salish component right through to the beginning of the Marpole component. This suggests that a) herring has been an important dietary item at Deep Bay for the past 2000-2500 years, and b) that to obtain herring in large quantity it was necessary to occupy this site in late March through April. It is unlikely that herring were brought to the

site from elsewhere because the outside of the spit is known to be one of the major herring spawning areas in the Gulf of Georgia, and because there is a very large stone wall tidal fish trap on the outside of the spit. A fourth aspect of interest is the presence of a thin, compacted clay and sand floor at the bottom of the Lithic component. This floor was impregnated with chunks of charcoal and several samples were recovered. These samples will provide the first chronometric dates for the Lithic component in the Gulf of Georgia. A final item of interest is the material which is not available locally. Obsidian from the lower Marpole component and the Lithic component must have come from the interior of B.C. at the nearest. Jade for the two celts in the lower part of the Marpole component probably came from the Fraser River. *Mytilus californianus* shell, dentalium, and perhaps whalebone, came from the west coast of Vancouver Island at the nearest. Clearly, widespread contacts of a direct or indirect nature have existed in this area for a considerable time.

THIS MATERIAL now will be analyzed in detail at the University of British Columbia Archaeology Lab before being returned to the B.C. Provincial Museum where it will be held in trust for the local bands. The writer would like to thank the Qualicum and Comox Bands for granting permission to conduct this project in their territory.

NEW COURSE OFFERED

INDIAN USE OF PLANT MATERIALS - Instructor: Hilary Stewart

A practical look at how Northwest Coast Indians made extensive use of the natural materials of their environment, with displays of these materials and many of the items made from them, some from the Centennial Museum collection.

Demonstrations of some of the technology used include making rushmats, twisting two-ply rope and string, making glue and abrading bone and slate. Students will have a chance to try out some of these skills themselves.

The course runs for four Tuesdays, October 14 to November 2, 8.00 p.m., in the Junior Workshop, Centennial Museum. Fee: \$12.00 (\$10.00 to ASBC members).

Pre-registration for this course is strongly recommended. Phone 736-4431, local 249.

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