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THE MIDDEN

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WHAT'S a
nice coin
like this
doing in
COMOX?

See December issue of The Midden

IT'S a Bird?
It's a Plane?
No, it's a ...
Well, see Page 19

HE was a
farm laborer.
Yet he rose
to become
B.C.'s first
"archaeologist."
See Page 15

OPEN LETTER TO GLADYS GROVES

Dear Gladys:

How can we thank you for all those years devoted to The Midden?

Your role in producing this little publication since its inception a decade ago has been largely invisible, and yet entirely crucial.

It was you who wrote to hundreds of potential contributors, urging them to meet deadlines and write what needed writing. It was you who later wrote and thanked them. You who kept the mailing list faultlessly up to date, and supervised the whole laborious process of mailing out hundreds of copies all over the world. And above all it was you who typed it all, fast and faultlessly.

We don't blame you for deciding to take a rest. But we do miss you. We're finding it will take two or three people at least, to replace you.

Thanks from all Midden readers, but especially from me.

Nick

N.Russell,
Editor

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ARCHAEOLOGY EDUCATION PROGRAM PROVES SUCCESSFUL AT PITT RIVER SITE

An Interim Report
by Valerie Patenaude,
Project Director

The Pitt River Archaeology Project, made necessary by the impending destruction of much of the site, DhRq 21, in Port Coquitlam, has been funded for a third season. The Ministry of Transportation and Highways has provided the major funding for all three seasons, due to an unavoidable conflict between the site and the Mary Hill Bypass Highway.

At the end of the 1979 field season, the site was visited by 50 Grade 4 and 5 students from a nearby elementary school. The success of this visit prompted us to propose a children's excavation project to the Coquitlam School District (#43), to be run during May and June of 1980. The proposed program included:

- a walking tour of the entire site (about 1 km);
- a description of the geographical history (paleogeography), ethnography, and archaeology of the area;
- a description of the different part of the Pitt River site as revealed by excavation;
- the opportunity to observe 'real archaeologists' at work;
- a display of prehistoric artifacts recovered from the site along with a demonstration of the techniques of their manufacture;
- at least 1½ hours spent excavating in a special area set aside for the program.

Our contact with the Coquitlam School District was Clint Webb, who is responsible for Elementary Science Education for the district. Enthusiastic from the start, he soon had the necessary funding for one salary plus expenses. Although the school program could only be run in May and June, sufficient funding was granted to allow a third salaried month to evaluate and report on the success of the project.

The program began on May 7. The school excavation took place 100 meters west of the main excavation area, currently being worked by a crew composed of B.C. provincial government employees (6), Douglas College students (5), and the Vancouver Community College (Langara) field school in Archaeology (11 students) with their instructor, Jean Bussey.

Sharon Johnson (UBC) was hired to direct the project on the School District salary. She was assisted by Pat Ward (UBC) and Leila Kullar (Douglas) on alternating weeks. George Kirszenstein (Provincial Government) was loaned to the project to display his talents at prehistoric tool manufacture and comedy. Assisted by occasional loans of people from the main crew, this small group of people introduced more than 1000 children to B.C. archaeology. The students were primarily

Grade 7's, although there were some groups of Grades 4, 5, 6, 10, 11, and 12. They visited the site at the rate of one or two groups per day. High school students were given a whole day at the site.

Despite the almost constant rain of May and June, the program was a howling success. Through the school district, we arranged to have questionnaires distributed to all of the students who had visited the site. More than 80% of the responses were very favourable, with most of the rest being indifferent, rather than hostile. We found that with minimal instruction, most children above the age of 10 can be taught to accurately remove an arbitrary level of soil (50 x 50 x 5 cm), measuring their elevation in height above sea level using a line level and tape measure. The excavation was taught in teams of four or five. Each student had a turn as digger, recorder, measurer, or screener (1 or 2). Some of the notes taken showed abilities at observation far exceeding our expectations for children so young.

One of the major concerns of the project was the problem of site security. Archaeological excavations are very hard to secure as they are too big to hide. It was not possible to have anyone live at the field office, as it is a partially stripped house without water or power. A certain amount of senseless vandalism goes on in any community, so we were concerned that with making our location so well known, we might be making a target of the site. To this date, no such vandalism has occurred. In fact, several of the keener 13-and 14-year-old boys have been guarding the site on weekends. In both the tour and the replication show, it was stressed repeatedly that preserving the context of an artifact was as important as the artifact itself. The children appear to have understood this.

Data are currently being compiled to accurately gauge the success of the program and to make suggestions for future projects. Through the abovementioned questionnaires, we are able to show that the enthusiasm generated at the site ensured that much information was passed from the children to their parents, brothers and sisters, and friends.

A final consideration is the manpower available in a program like this. Not only are the children given a valuable learning experience, they are also making a real contribution to B.C. archaeology in that the deposits and artifacts they recover would not otherwise have been collected.

In two months, the children excavated 30 excavation units (50 x 50 cm) in 5 cm arbitrary levels, and screened almost 50 cubic meters of backhoe trench backdirt. Approximately 165 artifacts and 5½ kilos of lithic detritus were recovered. Now that school is out, small groups of students are returning to the site to work, many of them bringing brothers, sisters or friends.

Subsequently, we will have a good idea of the number of people who can be reached by a project of this type. At this point, it is safe to say that the value of the public education far outweighs the cost of the program.

MORE THAN 100 PRIVATE COLLECTIONS PHOTOGRAPHED AND RECORDED BY A.S.B.C. FIELD TEAMS

The A.S.B.C.'s Private Collections Project, aimed at photographing privately-held Indian artifacts, has passed the 10,000-item mark.

In a report to Canada Council this Fall, Don Bunyan, project co-ordinator, noted that 110 collections have been recorded, with a total of 1,236 large black-and-white photos. Each picture shows an average of nine sorted and labeled artifacts, for a grand total at the end of September of 11,564 items recorded, over about four years.

The actual picture taking, using elaborate, custom-built camera and light stands with rear-lighting for the artifacts, is only a small part of the work. Every artifact is also meticulously measured and analyzed. This information is then eventually transferred onto key-sort file cards.

The photos and records are then kept in the archaeology research area at the University of British Columbia. In that form -- cross-indexed photos and records -- the material makes available to researchers thousands of artifacts previously unknown and inaccessible in private hands.

The report to the Canada Council involves accounting for a $3,210 grant from the cultural agency. Most of that money has now been spent, a large part on a small salary for setting up and catalyzing the project by a professional. The single other major expense has been film purchase and processing ($390).

The actual photography and recording has been carried out by several teams of volunteers, primarily covering the Lower Mainland, but also getting well into the Interior and Vancouver Island.

Some of the impetus for the project has -- admits Bunyan in his report -- worn off. Nonetheless, work progresses.

"Despite the slackening of pace, we have by now actually recorded more collections than was forecast in our original application," he says. And yet more than 70 collections still remain to be visited, and doubtless others will emerge.

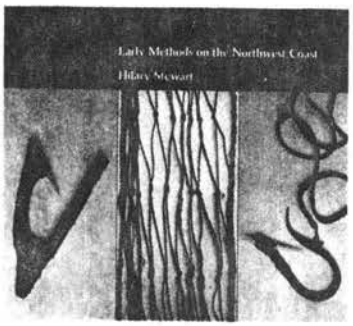
"Some of these represent 'collections' of one or two small items, which are worth bothering with only when we can line up a number of them in one area for a team to deal with the lot in one day," Bunyan reports. "Some are larger collections in remote locations, which can be dealt with when we have someone visiting the locale. However, there are still quite a few jobs awaiting us readily at hand, and we continue to hear of further collections from time to time.

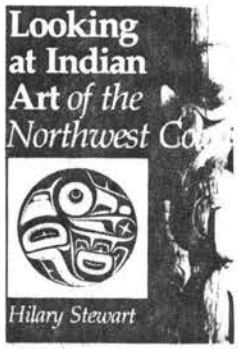
"We are committed to continuing the work. Because the rate depends on success in recruiting volunteers and keeping them interested, progress is likely to be sporadic. However, we still have one team that shows every sign of maintaining enthusiasm through the coming winter, and we have hopes of revivifying another. We shall also make further efforts towards keeping professional archaeologists informed about our files." Bunyan told the Canada Council that as a small non-profit society dependent on members' dues for expenses, the A.S.B.C. finds even the fairly small outlay for films, processing, publicity and correspondence a burden. So, he requests, "the small sum of $376 remaining from the original grant will be left with us for the continuation of this useful work."

NR.

HILARY'S BOOKS: WORTH LOOKING FOR

Still in print are Hilary Stewart's three major works: Indian Fishing: Early Methods on the Northwest Coast; Looking at Indian Art of the Northwest Coast; and Robert Davidson: Haida Printmaker.





And she might be persuaded to autograph a copy if you catch her after A.S.B.C. meetings.

HERITAGE HITS THE ROAD

The Heritage Conservation Branch has mounted a travelling display, describing Archaeology, Heritage Building Preservation, and Historic Research.

The panels are currently on an 18-month tour of B.C., and have already spent a couple of weeks each in Prince Rupert, Atlin, Fort Nelson, and Fort St. John.

Between now and Christmas the show will be seen in public buildings in Prince George, Burns Lake and Quesnel. Early in the New Year it goes to Williams Lake and 100 Mile House. It will be in Robson Square, Vancouver, April 20 - May 4, and then moves to Powell River, Princeton and Merritt, before going to the Okanagan and Kootenays in late summer and fall.

APOLOGIES....

Our apologies to U.B.C. for being unable to publicize the current lecture series on Underwater Archaeology, due to the lateness of this issue of The Midden.

Ed.

FLOTATION PROVES INDISPENSIBLE AS A KEY TO PREHISTORIC ENVIRONMENTS

By Cynthia M. Bunbury,
Anthropology Student, U.B.C.

INTRODUCTION

Increasingly, the objectives of the archaeologist are broadening, aspiring to a more complete understanding of former human populations and their lifeways. Flotation methods of recovery of data now are a necessity in the reconstruction of paleoenvironments essential to this. Early archaeologists were satisfied with the discovery of skulls, house posts and stone tools. While these are still important, small-scale remnants of human activity and environments, such as botanical and animal foodstuffs, now are coming into focus as equally valuable aspects of paleoenvironmental research.

RECONSTRUCTION OF THE PALEOENVIRONMENT

Environmental reconstruction has become an indispensible facet of modern archaeology, and has necessitated the wedding of these scientific disciplines in pursuit of a common goal: the fleshing out of the scanty image, gleaned from the material remains of a bygone population.

This reconstruction rests largely on the evidence produced in a site, be it geomorphological, soil materials, or animal and plant remains (Butzer 1971:49). Such products of excavation must be meticulously extracted, studied and carefully interpreted; the evidence is not self-explanatory, but most often disjointed and fragmentary. The result is an overall picture which is relatively clear and representative. However, the archaeological record may yield anything from the entire organism to submicroscopic remnants of bone or pollen. While traditional techniques of excavation prove relatively efficient in the recovery of large remains, they are unable to provide the scientist with the small evidence often crucial to a full interpretation of early environments. It is in this capacity that sieving and flotation techniques may be invaluable.

THE NATURE OF THE REMAINS

Large remains are extracted from archaeological context through initial excavation. The more perishable organic materials and minute chipping detritus from stone tool manufacture are often missed or destroyed at this level of recovery.

Plant material decays rapidly, and with the exception of fairly recent sites, visible remains of plants are seldom found.

Conditions most conducive to plant survival in the archaeological record are those of extreme aridity, cold or waterlogging. In any of these situations, it is possible that plant remains will be preserved indefinitely in perhaps recognizable form. Charcoal, leaves, stems, buds and roots may all be found preserved under the right conditions. Seeds often occur in quantities in such deposits, but due to their size are more difficult to recover. Pollen grains, due to their durable outer wall, tend to be the least susceptible of plant materials to decay, and pollen diagrams may quite closely represent actual paleoenvironmental vegetation conditions as the bulk of settling pollen remains in the locale of its origin (Dimbleby 1977:22).

METHODS OF RECOVERY OF SMALL-SCALE REMAINS

Ordinary excavation techniques may miss minute details such as seeds, plant fragments, bone chips and sometimes chipping detritus and microliths. Visual recovery of organic matter is often initially impossible, as even the finest soils tend to blend in such remains. The method of trowel-searching the soil before it is taken from the excavation unit is thus ineffectual in this regard (Jarman et al 1972:39). The excavator cannot depend soley on features within a site or previous experience as indicators of areas rich in organic remains.

The microscopic processing of soil samples after preliminary screening has been suggested as a means of alleviating this situation (Jarman op cit). But the procedure is excruciatingly slow and only very small portions of the soil excavated may be scrutinized.

Dry sieving has been developed to a point where it becomes a relatively efficient method of recovery of durable materials. Putting soil through a series of progressively finer mesh screens salvages much of what might otherwise have been overlooked. The task is time consuming and labour intensive if done by hand, however. Mechanized sieving devices cut down on man-hours, but may be rather noisy. In both cases the size of the sample which may be screened is farily limited. Dry sieving also has many other limitations (Payne 1972:49; Struever 1968:357; and Struever and Brown 1973:279).

These problems are somewhat mitigated by the use of wet sieving. Small soil particles are washed away, leaving the sample clean and the collected remains more easily identifiable. The speed with which particles are separated with this procedure allows for the processing of bulk quantities of soil (Struever 1968:357). Abrasion and breakage of samples is considerably reduced by this method, due to the cushioning effect of the water. To a limited degree materials are separated into fractions of different densities. (Naturally porous charcoal and light dry cellulose material will float in water. Particles of bone sink, but at a slower rate than denser stone material or soil.) Struever's (1968) method of water sieving counts on the ability of the person screening to recover each of these fractions from its place in the water column. Furthermore, the sample may not be completely representative (Jarman et al 1972:39).

FLOTATION TECHNIQUES

To overcome the limitations of both dry and wet sieving and the tedium of microscopic sorting, chemical methods of class sorting small-scale archaeological remains have been developed. The object of flotation is to somehow counteract the natural tendency of dense objects to sink in solution. Dense Media Separation, Elutriation, and Froth Flotation techniques involve considerably different procedures, which are outlined below. The underlying principles for all methods were borrowed from the mining industry, where flotation is used to separate valuable minerals from dross (Jarman et al 1972:41).

DENSE MEDIA SEPARATION

This method was developed by a geologist from Stuever's excavation at Apple Creek (Struever 1968:355). Chemicals are added to water in an effort to increase the density of the separation medium. Sodium chloride, zinc chloride, carbon tetrachloride or toluene mixtures achieve this end. The resulting solution causes the separation of plant materials, which float, and animal remains which sink, in a more dpendable manner than simple water sieving. While the process is easily undertaken, there are major drawbacks to the use of dense media separation (Jarman et al 1972:39). Sodium chloride will leave a white encrustation on plant materials which must be thoroughly rinsed before full identification is possible. The properties of zinc chloride endager the final samples unless they too are carefully washed after flotation separation, lest the chemical prevent specimens from fully drying prior to storage. The use of toluene or carbon tetrachloride is usually precluded by their expense and high toxicity, outside limited laboratory situations.

Further limitations are set by the fact that this form of chemical separation is usually performed secondarily to either dry or wet sieving or perhaps both (Struever and Brown 1973:279). The separation solution requires rather large quantities of chemicals (Struever 1968:355), therefore necessitating its restricted use. While it saves time and energy which might be otherwise spent in microscopic sorting of organic remains, the repeated handling of samples and their multiple immersion may result in as much damage to delicate materials as would progressive screening (Jarman et al 1972:45).

ELUTRIATION

A procedure exploiting "the same hydrostatic effects which cushion the shocks to a grain of sand being carried in a stream" (Weaver 1971:65), elutriation, uses no chemical additives to tamper with specific gravities. Instead, a column of water rising at a controllable velocity is continuously fed from the bottom of the elutriation unit. Its upward movement is calculated to be slightly stronger than the downward velocity of the particles sought to be retrieved (Weaver 1971:67). Thus is the sinkage of less buoyant organic material checked, and these are then gently lifted to the surface for collection.

Elutriation has its advantages over dense media separation. It is ultimately a more selective and precise method of recovering specific materials. The velocity of the upward motion can be adjusted to suit the requirements of the research. Damage to fine plant remains is minimized due to the cushioning effects of the water, as well as the fact that no rinsing of the sample is necessary following this process.

Naturally the system is imperfect. Elutriation has so far been used exclusively as an end process to either wet or dry screening (French 1971; Williams 1973). The lengthy procedures therefore cut down on the sample that may be separated (although a fully mechanized unit such as Weaver's saves labour). The prolonged immersion of the sample when wet sieving and elutriation are combined may be harmful to the preservation of recovered materials. In cases where a single elutriation unit is used, secondary sorting of animal from vegetal remains becomes necessary. Multiple elutriation units or combination units (Williams 1973) alleviate this problem. The method uses large quantities of water which, although they may be recycled, must first be purified, as silting of the fine screens within the elutriators is a constant problem (French 1971:63).

FROTH FLOTATION

This is a more recent method of flotation separation. Froth flotation decreases the density of the lighter fraction of a sample in order to correct for the possible loss of waterlogged or non-porous organic material (Jarman et al 1971:40). Collectors, most frequently paraffin or the more expensive xanthates, are added to water into which is introduced the sample to be separated. The solution selectively coats the slower-sinking (lower density) particles, rendering them more water repellent and air avid (Jarman et al 1972:40). Air is bubbled through the suspension and a froth forms at the surface (with the aid of a frothing agent such as terpineol). The lower air/water surface tension allows air bubbles to remain intact for a time while in close proximity to one another. The more aerophilic particles in suspension attach themselves to colliding air bubbles and are lifted to the surface froth for removal.

The cohesion of particles to air bubbles is the function of the contact angle, "the blance of the interfacial forces involved at the point of contact" (Jarman et al 1972:40). A contact angle of zero allows water to wet the surface of a particle to the exclusion of air, and the object sinks. Complete coverage of the surface by air is expressed as a contact angle of 180^{o}. The maximum contact angle of any solid is 110^{o}. However, oil collectors such as paraffin may be used to coat a substance to promote floatability, as it is the contact angle of the surface coating, not the material itself which determines its ability to remain buoyant.

The advantages of this method of separation recommend it to more widespread field use. It is possible with froth flotation to process excavated soil directly, although a preliminary coarse-screening may be desirable to remove larger elements from the sample (Jarman et al 1972:44).

The size of most froth flotation units (as described below) allows for the uninterrupted processing of large quantities of materials. The method is less labour intensive (Jarman el at 1972:45), water conservative (Minnis and Leblanc 1976) and is easily adaptable to any field situation, provided a dependable source of water is available. The cost of the froth flotation units varies, but the chemicals involved tend to be less expensive than those for dense media separation, and less is required per unit porcessed (Jarman et al 1972:44).

Perhaps the major shortcoming of froth flotation is that it unfortunately again requires a further separation of the bone and vegetal matter retrieved, usually by dense media separation, thus increasing the possibility of damage to fragile remains.

APPLICATIONS OF FLOTATION

Flexibility is the key to a workable recovery technique. Here outlined are various ways in which flotation has been put to use in field situations.

A very simple and inexpensive flotation system was devised by Minnis and Leblanc (1976), geared to their specific requirements of a water-conservative and portable mechanism to recover organic remains from sites in New Mexico and Arizona. The flotation cell consisted of a 55-gallon drum, open at one end and filled with water, into which was immersed a screen-bottomed laundry tub. The system was used both as a water sieving unit and for dense media separation. In either case a kitchen strainer covered with a piece of cloth diaper was used to collect the floatable fraction from the surface area of the separation medium while the tub was rotated. The cloth was removed and set over a beer flat to dry slowly and evenly. Contamination was prevented by rinsing the tub after each sample was processed, with the resulting heavy fraction being kept or discarded, as the research indicated. The flotation cells (there were two to allow for uninterrupted processing - one tank settled while the other was in use) were used repeatedly before having to be emptied. A third drum of water was used for washing equipment.

Work of Siraf, in Iran, over the 1972-73 season produced a flotation unit customized for the particular situation (Williams 1973:288). The final product of experimentation was fashioned after two more elaborate systems later described.

Limiting factors of accessibility to materials and water necessitated the adaptations incorporated into the Siraf elutriation system. Water was piped in by flexible plastic tubing and fed continuously to two 50-gallon cells. The in-flow of water was controlled by taps. A nylon residue net, fixed to a wire frame, was suspended in the cell. Plastic bowls equipped with fine sieves were supported outside the cell to retrieve the flot (floatable material). The sieves and residue nets were washed in another container after each use.

Similar to the Minnis model, the Siraf unit required agitation by hand to assure complete separation of light and heavy fractions. Material from this unit was shade-dried in the retrieval sieves. This could however, result in damage to delicate samples upon their extraction once dry.

The small-scale remains retrieved by the Siraf flotation unit were used to complete the collection of data for a study of the subsistence economy of the medieval city under excavation (Williams 1973:288). Generally, the efficiency of recovery rose significantly for all samples processed in this manner, although experiments to test the ultimate improvement in efficiency have yet to be undertaken. In comparing the speed of sorting materials at Siraf to other sites, Williams found (1973:290) that the elutriation unit considerably accelerated the process without forfeiting efficiency.

One of the prototypes of the Siraf model is the Cambridge froth flotation unit developed by Jarman, Legge and Charles (1972).

The flotation cell is constructed of polypropylene sheeting, with a froth moat fixed to the upper lip. The material is drained into sieves below the spout of the moat. A bubbler unit is suspended inside the flotation cell. Settling tanks at graduated levels below the residue outlet permit the desilting and recycling of water.

The Cambridge unit has been tested at Nahel Oren in Palestine, where material was first coarse dry-sieved, put through the flotation unit and then further hand or chemically sorted, as was the residue, to check for heavy-fraction cultural material. Destruction rates of delicate material were not noted in Jarman's discussion (Jarman et al 1972).

The Ankara unit designed by French (1971) and Weaver (1971) is the second of those used as models for Williams' unit. The system combined a wet sieving operation gravity-fed from holding tanks with elutriator units supplied with water by a pump. Particles as small as 90 microns were recovered through this process.

EVALUATION

Flotation is now indispensible in the recovery of minute, fragile archaeological remains. Previous to its introduction, there existed no method other than microscopic examination which could recover such small-scale data. It provides a comprehensive retrieval system when combined with traditional excavation techniques, and enables fuller comprehension of paleo-economy and environment.

Dennel's (1978) project in Bulgaria, where he used an adaptation of the Cambridge froth flotation unit, is a prime example of this. Flotation results provided "a far more accurate indication of the importance of each plant food in an ancient community" (Dennel 1978:9) by supplying a representative sample of plant remains otherwise missed by the excavators. From the distribution of the smaller material as compared to that of

macro-remains, Dennell was able to reconstruct the round of activities involved in processing the Neolithic food crops he had unearthed. He argues that the botanical evidence made available through flotation provides better documentation of subsistence activities than do the remnants of the technology (e.g. tools), whose record may be biased by virtue of their rate of decay or misunderstanding of their functions.

Payne's (1972) experiments with the efficacy of wet as opposed to dry sieving have yet to be replicated for flotation techniques. The gross difference between the recovery rates of the wet and dry methods suggests 50 percent more material may be recovered with flotation.

Flotation procedures are not yet widespread. Perhaps the complicated nature of the Cambridge and Ankara test models has discouraged their broad usage. Initially also, cost was a limiting factor. The simplicity of the units derived from the prototypes has illustrated the adaptability and mobility of flotation systems.

The capacity of flotation for large-scale processing of soil to recover organic remains recommends its application to any project attempting paleoenvironmental reconstruction, and further experimentation and field use of the various methods will perhaps lead to more comprehensive techniques.

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Simon Fraser University

S.F.U. OFFERS COURSE FOR SERIOUS MATURE STUDENTS

This fall's B.C. Studies course, offered by Simon Fraser University, is already well under way, but there's another in the spring, and the series is worth noting anyway.

The certificate program in B.C. Studies -said to be the only one of its kind in the province - is geared particularly for working adults, with several courses offered at the Centennial Museum in the evenings. This fall, for instance, the Prehistory of Canada and Indians of the Pacific Northwest are both offered at the museum - the latter, unfortunately, on Wednesdays to conflict with A.S.B.C. meetings.

The full certificate program comprises these two, plus The Prehistoric Past, An Introduction to the Ethnology of B.C., geography, history, and others - 30 credit hours altogether. Students may take up to five years to finish.

The spring program begins January 12. Deadline for applications: November 7. Information: "B.C. Studies". Continuing Studies, SFU, Burnaby V5A 1S6; or call 291-4304.

Swipe File

Porcelain clue to Drake's landing

GUARDIAN, London Spring 1980

From Christopher Reed
in San Francisco

Fragments of sixteenth-century Chinese Ming porcelain, found in archaeological digs at an American Indian encampment in California, are the source of new information about where Sir Francis Drake landed on the West Coast in 1579.

It has been long known that Drake spent some weeks on the coast repairing the Golden Hind after attacking Spanish galleons on his way north from South America. But historians have argued about the exact spot from which the seamen declared the territory as New Albion.

Now, two scholars have studied 595 porcelain shards using new data conveyed from China. They conclude that "in all likelihood" a proportion of them arrived in Drake's ship, which, therefore, beached on the Pacific coast about 30 miles north of San Francisco.

This would mean that the navigator sailed straight past the bay — one of the finest natural harbours in the world. Other scholars have contended that Drake did enter the bay, but they differ about his acherage. That he did land in California is known from a diary by the ship's chaplain, but the log book has never been found.

The new findings represent an extraordinary archaeological puzzle — and some adroit detective work by the scholars, Mr Clarence Shangraw, senior curator of San Francisco's Asian Art Museum, and his collaborator, Mr Edward van Der Porten, a Drake historian.

The porcelain pieces of dishes and bowls were found in digs at camp sites of the Miwok Indians, who lived on the Pacific coast in what is now Marin County, near the site of the presumed landing place.

Mr van Der Porten realised, however, that the shards divided into two groups. One was well preserved, and the other showed signs of abrasion, eroded glaze, and faded colours, as if by the action of surf and sand.

He concluded that the worn fragments came from the Spanish galleon, San Agustin, which foundered at the spot now known as Drake's Bay, 16 years after Sir Francis's visit. The galleon was known to be carrying Ming porcelain, but it was also known that Sir Francis had plundered four crates from Spanish ships he had attacked.

Using this knowledge, the two scholars then further analysed the groups, discovering from recent information from China that the fragments fell consistently into two categories of Chinese design, quality, and kiln-origin, indicating that they were separated by distance and time.

The California scholars concluded that the well-preserved pieces were carried ashore from the Golden Hind.

J A M E S D E A N S

ANOTHER IN THE MIDDEN'S SERIES ON PEOPLE PROMINENT IN B.C. ARCHAEOLOGY

Sketch by Hilary Stewart

Text by Don Bunyan

The man who was probably British Columbia's first archaeologist certainly came to the role by a circuitous route. Introducing himself to his readers late in his life, he said, "As a writer I cannot and dare not make any pretensions, because I had but little schooling," and added that he had been taught little more than "the three r's." Then, in English of Swiftian simplicity, he told of his arrival, aged 26, in this country.

"Early in the summer of 1853, in my native Scotland, along with several others, I joined the Puget Sound Agricultural Company, a branch of the Hudson Bay Company, as a farm labourer. Toward the end of August, that year, we left London, England, on the barge Norman Morrison, with Captain Wishart, bound for Vancouver Island on the coast of Northwest America, where this company held large tracts of farming land. After being six months under the care of the good captain, we arrived safely at Royal Roads, outside of Victoria Harbor, on Sunday 16th of January, 1853. On Tuesday, 18th, we all went ashore, at what was then known as Fort Victoria, a trading post of the Hudson Bay Company, now Victoria, the capital of the province of British Columbia. After being on the island a few months I learned enough of the Chinook to enable me to converse as well as to trade with the Indians." (Deans 1899b,pp.5 & 6)

However, the editor of Deans' book of Haida tales was not deceived by this simplicity, and describes Deans' reputation: "Mr. James Deans, the collector of these tales ... is widely known as a geologist, ethnologist and anthropologist." (Ibid: Introduction) But these roles come fairly late in the sea-changes of this semi-literate Scots labourer: in his times he was a shepherd, a farmer, a miner, a linguist, a botanist, a fisheries expert, an interpreter, a poet and an addicted writer of letters to editors.

Deans was born near Haddington in Lothian, Scotland, in 1827. By the age of 20, he was employed in a tile works owned by one Kenneth McKenzie of Rentonhall. In 1853, James, his brother George and George's wife Annie joined a party of 25 families who signed on for the journey already described, to work for Mr. McKenzie at a farm near Victoria which was later named Craigflower. James's wages were £17 a year, with free board and the privilege of buying his clothes at half price from the Company store. At the end of five years each man was to receive a grant of between 25 and 50 acres of land. James lived in a dormitory with other bachelors. George and Annie had their own quarters. (Smith 1966)

Deans' modest little aside about learning Chinook in a few months suggests that -- whatever his education may have lacked -- he must have had a flair for languages. His reputation for this talent is demonstrated by his being summoned from Craigflower, one day in 1854, to pacify a Russian prisoner of war who, on parole in the city, had become drunk and rowdy. (Perhaps the "three r's were "readin', russian and 'rithmetic" in those days.) Deans' linguistic ability was matched by sympathy for the Indians and a keen interest in their ways and their legends, in later days particularly those of the Haida. He became proficient in a number of the languages of the Northwest Coast, and was often called upon as an interpreter.

The immigrant left the Hudson Bay company in 1857 to become a farmer, on a property which he named Oak Vale Farm. The indefatigible indexers in the Provincial Archives in Victoria have found no less than 60 glimpses of him in the pages of the Colonist (British, Victoria or Daily, according to era) over the next 48 years. At least half are letters or articles written by him.

Thursday, 11-4-61: In a 2,000-word letter to the editor he attached the land-holding system, the government, its taxes and its roads. "Permit,me, through the columns of your valuable journal... (Give the farmers a chance and they will) turn our fertile vales, sacred to the wild deer and wolf, into fields in which the song of the reaper will be heard among the yellow corn... Hear us, ye legislators, hear us, ye philanthropists. Grant us the common right of man..."

Saturday, 13-2-64: He married Catherine Bullion, lately of Edinburgh, at Old Fort Street, Rev. John Hall officiating.

Sunday, 15-8-64: He reports on his placer-mining activities at the Bullion Claim on the Leech River.

6-6-1879: Deans lost a suit against a neighbour whom he had accused of stealing his deceased brother's sheep.

29-2-1884: He acted as an interpreter for two policemen searching for a murderer among the Indians.

By 1871, in his early 40s, he was transforming into archaeologist. In December issues of the Colonist, one item by a reporter and two by Deans himself describe his excavations of burial mounds in the Victoria area. He excavated five earth mounds near Cadboro Bay and stone ones, taking careful measurements and describing the contents meticulously, noting the placement and orientation of the skeleton -- always with the skull to the south -- and commenting on the absence or ornaments or utensils. Deans' own accounts are strictly factual, but the reporter, perhaps inspired by unguarded comments by the excavator, attributes the remains to a "race who possessed this fair land centuries before the Deluge." He notes that the teeth are wide and flat on top like those of a vegetable-eating animal, and speculates, "perhaps the Darwinian theory is about to receive new and startling confirmation from these researches."

In January, 1872, Deans described another feature of the landscape, one which was rapidly disappearing. At some four or five places, he had found paired lines of stones, laid straight and parallel, always aligned 12° north of east, the stones weighing between five and 20 pounds. The Indians of Deans' times knew nothing about them; they belonged to a more remote past. "Had they anything to do with serpent worship?" Deans wondered. "Had they anything to do with any ancient and bloody rite?"

Deans travelled much. Up and down Vancouver Island, to and around the Queen Charlotte Islands, surveying deposits of coal and other minerals, assessing the fishing potential, learning the languages and myths of the natives and studying their cultures and the remains of the past, he was a perpetual peripatetic. Wherever he went, he wrote up his observations and conclusions, in letters and articles in the Colonist or in letters to the Government.

He began submitting his anthropological and ethnological comments to American Antiquarian. Between 1886 and 1895 that journal published 25 contributions from him. Many are very brief communications, others are longer articles on the myths of the Northwest Coast Indians, particularly those of the Haida, and on his archaeological observations.

Today some of his ideas seem eccentric. He traced similarities between the Haida and Phoenician languages, and between the myths of the Haida and those of Assyria, Greece and the Bible. He found confirmation of the Mongolian origin of the Haida in their former habit of chewing the narcotic seeds of a plant that might have been poppy -- both the habit and the plant were extinct in the Queen Charlottes before Deans' time.

In 1892, aged 65, he was commissioned by the organizers of the World's Columbian Exhibition in Chicago to put together a

Haida exhibition. In due course, he shipped off to Chicago a tenth-scale model of the old Skidegate village; a complete old Haida house 28 feet by 29 feet, with a pole 40 feet high; a 42-foot canoe, six and a half feet high at the stern; a chief's dance dress of ermine; a chief's headdress; and many other objects. After the Fair, the material went to the Field Columbian Museum in Chicago. In 1897, two members of the Field Museum visited the Queen Charlottes with Deans, and another 22 cases went off to Chicago. Autres temps autres moeurs: the Colonist seem delighted that the outside world could appreciate the beauty of these products of our natives' skills: apparently no-one resented their being shipped out.

In 1899, a number of Deans' contributions to American Antiquarian were republished in two volumes by the International Folk-Lore Association (Deans 1899a and 1899b). These were apparently his only separately published books. They were limited editions, highly praised and quickly sold out.

Deans was a member of the Victoria Natural History Society, and lectured to them on occasion. He was also a member of the St. Andrews and Caledonian Society, and for years was the Society's bard.

On Tuesday, July 18th, 1905, the Colonist informed its readers that "James Deans, a respected pioneer... died yesterday at his residence, Oak Vale Farm on Richmond Avenue, at the ripe age of 78 years..." The cause of death is not stated, and there is no mention of survivors. In a brief note the next day, the paper further advised that the members of the Natural History Society planned to attend the funeral. Presumably, the Caledonians also attended.

To end this account, here are a few lines from a poem written by Deans in 1899, in his guise as the Caledonians' bard. The poem is entitled "Had I But ae Day Mongst the Heather."

"Changed are the scenes of my childhood,
Gane are the friends of my youth.
Never mair shall we range through the wildwood,
Never mair shall be slocking our drouth

"At the well near the brig o'er Tyne River..."

Many poets with better schooling have written worse lines.

References:

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1891 Burial Mounds of British Columbia and Their Relics. American Antiquarian, 13: 171

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1899b Tales from the Totems of the Hidery. Collected by James Deans and edited by Oscar Lovell Triggs. Archives of the International Folk-Lore Association, Chicago, Vol. II.

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1975 Pioneer Tourist. THe Daily Colonist, Victoria, 18-5-1975. Magazine Section, pp. 10, 11 & 15.

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ROCK ART EXPERTS CONFER

The fifth conference of the Canadian Rock Art Research Associates is set for Nov.20-23, at the University of Saskatchewan.

Information or transcripts of proceedings is available from the conference organizer, Tim Jones, C.R.A.R.A., Box 101, Dalmeny, Sask, SOK 1E0.

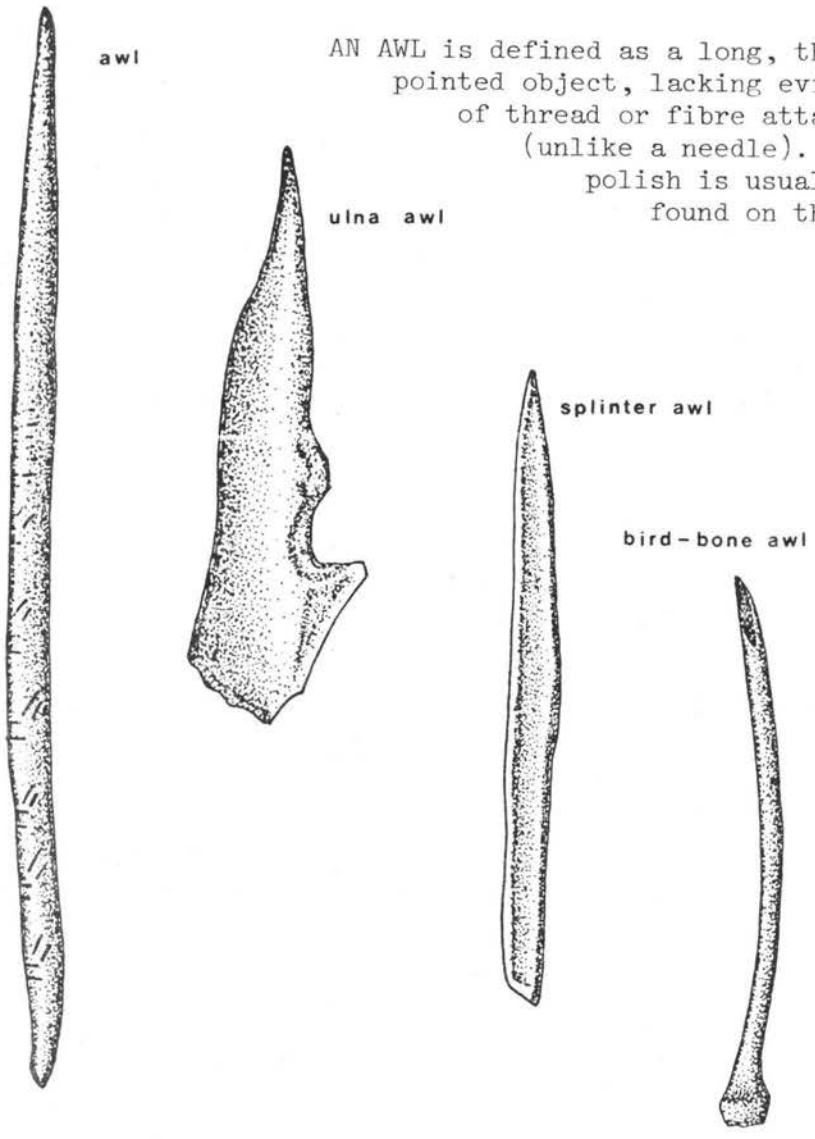
Papers and films on current Canadian, American and Australian rock art projects will be featured at the symposium.

The research staff of the Canadian Conservation Institute are also scheduled to deliver an update on preservation techniques.

And one session is planned to bring together provincial government representatives and rock art researchers to discuss management policy of sites.

Describing Artifacts, No. 23

(Part of a continuing series on artifact description, reproduced from the handbook for archaeological staff working on the National Inventory Project in B.C. The Midden extends thanks to Tom Loy of the Provincial Museum for permission to reprint.)



AN AWL is defined as a long, thin, pointed object, lacking evidence of thread or fibre attachment (unlike a needle). Wear polish is usually found on the tip.

Awls