ARCHAEOLOGY IN NEWFOUNDLAND & LABRADOR 1985

EDITED BY
JANE SPROULL THOMSON
CALLUM THOMSON

Annual Report No. 6

NEWFOUNDLAND MUSEUM
HISTORIC RESOURCES DIVISION
DEPARTMENT OF CULTURE, RECREATION & YOUTH
GOVERNMENT OF NEWFOUNDLAND & LABRADOR

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Annual Report #6

Edited by: Callum Thomson
Jane Sproull Thomson

Newfoundland Museum
St. John's, Newfoundland
December 1986

Cover: The revised Historic Resources Act was passed on December 10, 1985, and provides increased protection for the provincial heritage.

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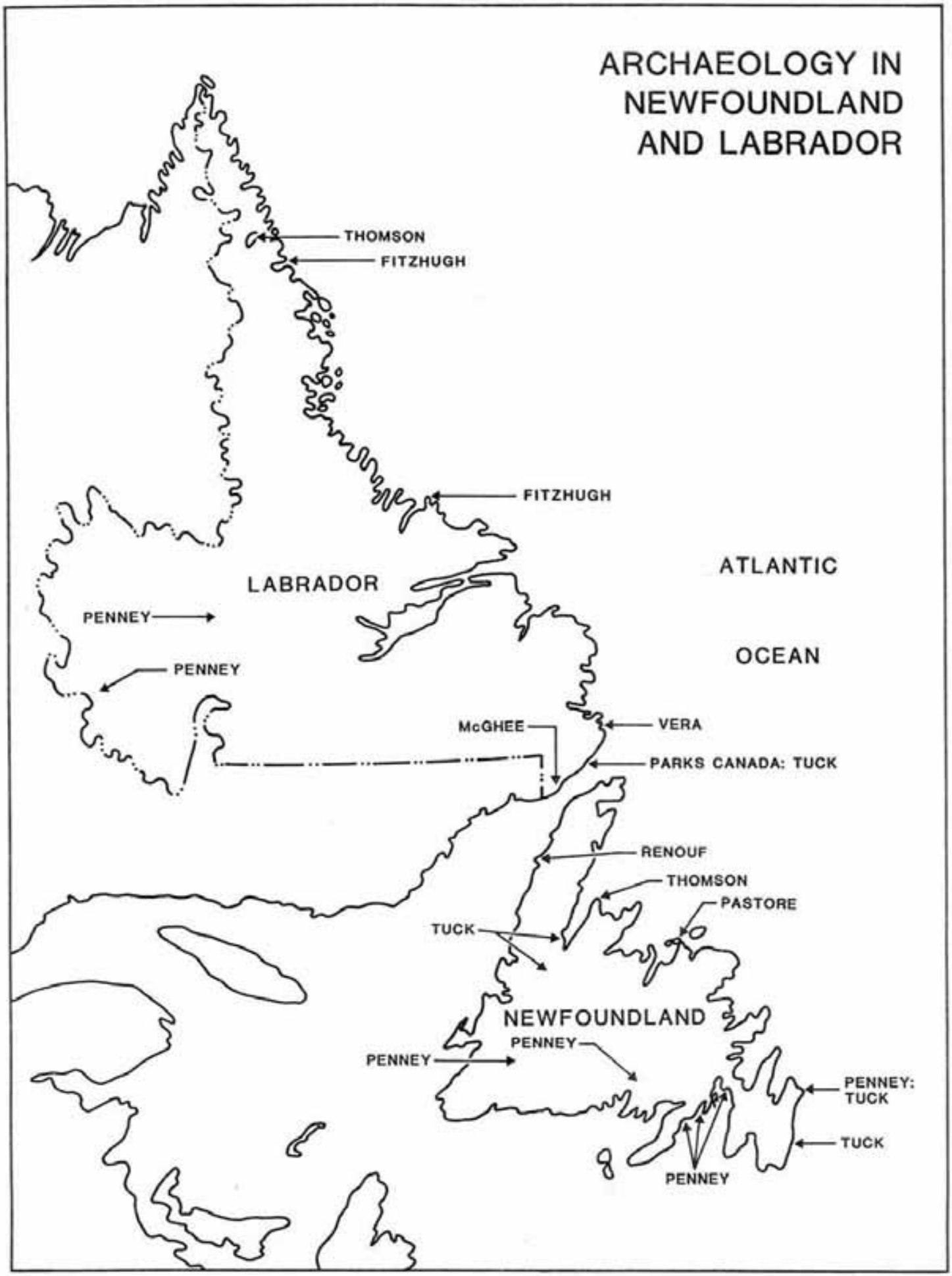
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ARCHAEOLOGICAL RESEARCH IN NEWFOUNDLAND AND LABRADOR, 1985

J. Callum Thomson
Historic Resources Division
Department of Culture, Recreation and Youth

Archaeological activity continued to maintain a high profile in the province throughout 1985, with the passage of the new Historic Resources Act in December and a total of seventeen archaeological projects for which permits were obtained including eleven research projects and six historic resources impact assessments. In addition, a Parks Canada project under a special contractual permit agreement was completed.

The new Act Respecting the Preservation of the Historic Resources of the Province, abbreviated to Historic Resources Act, was generally well received among archaeologists and the general public. The main thrusts of the new act strengthened the Government's power with respect to site protection and penalties for disturbance and a new requirement of registration of artifact collections in private hands. Partly as a result of publicity about the Act and a continuing programme of public lectures and school visits by Division staff, about a dozen new sites were reported by members of the public and several sets of artifacts were donated and/or registered. The new legislation will now permit immediate site inspection on behalf of the Minister by Historic Resources Division officials and provides for consideration of a stop work order, archaeological investigation, and mitigation, wherever development of any scale is seen to be adversely affecting an historic site. Prior to passage of the Act, James Tuck had noted that the archaeological heritage of St. John's had suffered another loss in 1985 when development of a downtown lot revealed stratified deposits relative to a late 18th century ceramic importing business. While most of the information from this site was lost to the developer's equipment, the new Act will prevent similar occurrences in the future.

Site preservation efforts were further enhanced by gaining membership on the Interdepartmental Land Use Committee for the Provincial Archaeologist, who

will work to ensure that historic resources are protected where land use conflicts arise. Site and artifact data continued to be entered into the Canadian Heritage Information Network through a terminal at the Newfoundland Museum. Approximately 100 new sites were recorded in 1985, bringing the total in the province close to 2000. Of these, one-third have been entered on the CHIN system.

On the island of Newfoundland, Tuck continued excavations and an associated field school at Lord Baltimore's Colony of Avalon, 80 km south of St. John's. Work was centered on a small garden in the present village of Ferryland where a deep deposit was found to contain features dating from the initial period of colonization in 1621 to the destruction of the colony, perhaps by the Dutch in 1673.

A few miles outside of St. John's, Gerald Penney assessed the historic resources potential of Freshwater Bay, a site being considered for use as an offshore oil development supply base. Remains found include several structural foundations and gardens dating to the 19th and early 20th centuries, and a small shipwreck in the lagoon. Mitigation procedures have been proposed for this site. Further south, in Placentia Bay, Penney also conducted a preliminary examination of the impact of a proposed hydroelectric plant on the Paradise River and participated in an assessment of several areas being considered for offshore oil related development. The same investigator continued his research into Micmac use and occupancy of the interior of Newfoundland. He located and documented historic hunting and trapping sites at King George IV Lake and on the Bay du Nord river system in the western and southern areas of the island, respectively.

On the northeast coast of the island, Ralph Pastore concluded his investigation of the Boyd's Cove site, concentrating on the excavation of a large oval house pit measuring 9.5 x 6 m. If Pastore's hypothesis that this structure may have been used for caribou bone mash feasts (analagous to the Naskapi-Montagnais mokoshan, a ceremonial feast conducted in a shapatuan) is correct, our understanding of Beothuk belief systems will be considerably increased.

Over a period of several weeks during the fall, the Provincial Archaeologist conducted a series of test excavations at the Fleur de Lys

soapstone quarry, known from past investigations to have been exploited by Dorset Eskimos, and surveyed other parts of the Baie Verte Peninsula. Work at the quarry produced a large number of quarrying tools, soapstone blocks and fragments of vessel preforms. Surface surveys and subsequent excavations of nearby residents' gardens produced evidence of a Middle Dorset habitation site in the form of badly disturbed structural rocks and several hundred lithic artifacts and soapstone vessel fragments. Of additional and unexpected interest was the first indication at this site of a former Maritime Archaic presence manifested in several small adzes and gouges. Surveys around the peninsula produced evidence of other substantial Maritime Archaic and Palaeo-Eskimo sites.

James Tuck conducted a survey of a part of the Main River to assess the historic resources potential and possible impact of a forest harvesting area. The E.I.S. from the proponent has not yet been released.

Tuck also briefly surveyed the Deer Lake area in response to information received from local residents on sites and lithic artifacts. Flooding prevented inspection of key sites. Rumours of prehistoric occupation of this region, 150 km from the present coastline, have been circulating for several decades; confirmation of these rumours would be a significant addition to our knowledge of settlement and exploitation patterns. Perry Moulton conducted extensive surveys around Notre Dame Bay and its hinterland. A report on his work has not yet been received.

Following her 1984 archaeological survey of the new Port au Choix National Historic Park, Priscilla Renouf continued excavations in 1985 at the large and sheltered Dorset Palaeo-Eskimo site of Phillip's Garden on the Point Riche Peninsula. Excavations also took place at the Point Riche site, which is a slightly smaller Dorset site located on the same peninsula on an exposed point of land. The artifactual remains from Phillips' Garden are exceptionally rich, and include many segments of bone sled runners, a small number of bone points, needles, and harpoon heads, fragments of soapstone bowls, and a range of typically Middle Dorset lithics. Future excavations will be expanded to include another nearby house feature and its external area. At the point Riche site, several depressions, possibly house features, can be seen on the surface. Excavation of one of these yielded a bone and stone tool as-

semblage comparable to the main occupation at Phillip's Garden in richness and range. It is expected that radiocarbon dates from Point Riche will overlap with those at Phillip's Garden.

On the Labrador side of the Strait of Belle Isle, Parks Canada archaeologist Robert Grenier and a crew of underwater archaeologists and support staff continued excavations and surveys in the harbour at Red Bay. Primary objectives were to complete the survey and documentation of the remains of the Basque vessel originally thought to be the San Juan, to determine the age and origin of several other shipwrecks in the harbour through surveys and dendrochronological studies of wood cores, to complete the survey of the harbour, and to stabilize the site.

Also at Red Bay, Tuck's excavations on one of southern Labrador's many 16th century Basque whaling stations continued for the ninth season. Work at the whalers' cemetery was completed. One of the more than a dozen shore stations in the bay, consisting of a wharf, tryworks, cooperage, and other structures, has now been completely excavated. The discovery of a large number of small living sites, many reoccupied several times, adds a new dimension to our understanding of life in southern Labrador during the late 16th century.

Surveys at L'Anse Amour by Robert McGhee resulted in the discovery of a possible Maritime Archaic longhouse feature, similar to northern Labrador structures, and a sinuous boulder feature bearing resemblance to Maritime Archaic "roads" recorded in central Labrador.

A team of Spanish archaeologists and historians under the leadership of Jose Antonio Hernandez Vera carried out a survey with limited test excavations from Chateau Bay to St. Lewis Sound, concentrating on Pleasure Harbour, Stage Island, Henley Island and Chateau Island. Several substantial Basque sites were documented. Comparisons were to be drawn between structural, demographic and economic evidence at these sites and evidence from the same (16th and 17th) centuries in the Basque country.

A survey of the proposed Department of Transportation tote road routes from Wabush to Churchill Falls in western Labrador was undertaken by Gerald Penney to assess the historic resources potential of this area. Penney found little evidence of native peoples' utilization of the region.

William Fitzhugh continued his research into Maritime Archaic settlement

patterns in Labrador through mapping and excavation of several sites between Aillik and Hebron. He was able to further refine the early Maritime Archaic chronology through typological comparisons of tool assemblages and structures, and gathered additional information on whole site settlement patterns and village organization.

The problem of culture boundaries between late Maritime Archaic and early Palaeo-Eskimo was also studied through excavation of several sites relating to each group. A brief survey of Duncan Strong's interior site at Northwest Corners indicated that, although the site was sporadically occupied seasonally by small hunting groups for the past 4000 years, the paucity of cultural material at this site supports the present belief that the late Maritime Archaic culture was predominantly maritime-oriented. This 15th season of work on the forest-tundra transition zone brings to an end this segment of Fitzhugh's Maritime Archaic and other studies, the results of which are shortly to be published by the Smithsonian Institution in a series of monographs.

Callum Thomson and a small crew conducted a survey of the inner reaches of Saglek Bay and fjord searching for evidence of prehistoric and historic exploitation of caribou and arctic char. A Thule grave cache containing (rarely preserved) organic tools and implements as well as artifacts of slate, nephrite, chert and some Late Dorset pieces, and a lithic reduction and possible caribou hunting station containing Saglek quartzite biface preforms and an associated charcoal date of 5000 B.P., the earliest yet this far north, were among the highlights of the foot and boat survey of interior Saglek fjord. A ca. 4500 B.P. Maritime Archaic longhouse and two ca. 3700 B.P. Pre-Dorset sites in the outer part of Saglek Bay were excavated with the aid of the Fitzhugh crew. The M.A. structure produced a large number of chert, quartzite and slate tools. Material at the large Pre-Dorset sites was from the early - middle period and places further doubt on the straightforwardness of the Maritime Archaic Pre-Dorset boundary/enclave theory.

These projects are reported on in this volume; in most cases papers are of a preliminary nature. The Historic Resources Division's intent in producing these volumes is to disseminate as quickly as possible the principal results of the current field season and the cooperation of contributors in

this respect is greatly appreciated. To maintain consistency throughout the series, the papers are presented in geographic order from northern Labrador to the southern Avalon.

For the first half of 1985 the Division was without an archaeologist; Callum Thomson was appointed to the position in August. During the year 34 development registrations were received from the Department of Environment for review under the Environmental Assessment Act; five of these were judged to have potential for damage to archaeological sites and the proponents were advised to prepare an historic resources assessment. Currently the provincial archaeologist sits on 6 intergovernmental assessment committees. The Division also examined approximately 220 quarry permit applications and 5 land applications in order to ensure that these operations would not impact known archaeological sites. These assessment tasks are made more efficient by the continuing cooperation of archaeological and other researchers in reporting sites as soon as possible after discovery.

Assistance with cataloguing and cleaning collections has again been most efficiently rendered this year by Julia Mathieson and Mark Allston, volunteers from the Newfoundland and Labrador Association of Amateur Archaeologists. Julia also spent many hours assisting with the editing of this Annual Report.

The Historic Resources Division was pleased to provide $22,000.00 in grants to researchers in 1985 to defray fieldwork costs.

GRANTS:

Janette M. Ginns	M.U.N.	$ 4,000.
William W. Fitzhugh	Smithsonian Institution	$ 5,600.
Ralph Pastore	M.U.N.	$ 4,000.
Callum Thomson	Bryn Mawr College	$ 8,300.

In addition, $111,000 was provided on a 50/50 cost shared basis by the federal and provincial governments to cover the cost of work at the Red Bay Basque whaling site in 1985.

THE NEWFOUNDLAND AND LABRADOR ASSOCATION OF AMATEUR ARCHAEOLOGISTS REPORT OF THE YEAR'S ACTIVITIES, 1985

Mark Allston
President

1985 has been a busy year for NLA^3. Our third year has seen the association preparing to fulfill the last of it's major objectives; that of incorporation. Discussions and preparations have taken place with lawyer Bill Crosbie to this end. We expect to have this status in the near future.

This year has also seen the implementation of the Site-Watch program. This program is intended to provide volunteers to help the Provincial Archaeologist conserve archaeological sites around the province. The first Site-Watchers to volunteer have come from Fleur de Lys and Millertown. To my knowledge Newfoundland is the second province in Canada (B.C. being the other) to have a site-watch program.

General meetings included lectures by Mr. Barry Lord, Dr. Bill Fitzhugh, Dr. Jim Tuck and Rose Smart, and twelve evenings of movies. The lectures covered the following topics: "Discovery and underwater investigation of the Hamilton and Scourge" (co-sponsored with NMAS). "The Maritime Archaic Tradition", "Excavations at Ferryland" and "Following Artifacts from Site to Museum". The movie series were the "The Making of Mankind", "Egyptian Civilizations" (John Romer), "In Search of Ancient Mysteries" and "Digging From the Air".

On Sunday, May 26th, 10 members gathered at Castle Hill, Placentia for a walking tour of the Historic Park. Fog and sunshine escorted us on our walk around the site.

In July Mark Allston accompanied Callum Thomson and Eric Loring to Labrador for a month of archaeological work. One of the highlights of Mark's experience was finding a Maritime Archaic soapstone pendant.

In August, just a few day after their return from Labrador, Callum and Mark were off to Fleur de Lys to excavate a Dorset Eskimo Site. They collected many artifacts which are presently being studied at the Newfoundland

Museum.

During the year, Parks Canada held several events to which the President of NLA^3 was invited. These included a special showing of the new L'Anse aux Meadows film "The Vinland Mystery" on which occasion Drs. Helge and Anne Stine Ingstad were present; a reception to meet Selma Barkham at the opening lecture of the series "The Basques in Atlantic Canada"; an invitation to be present at the Official opening of The L'Anse aux Meadows National Historic Park Visitor Center in L'Anse aux Meadows; and the open house concerning Terra Nova National Park. All were attended by NLA^3 members, as was Barkham's Basque lecture series.

Two NLA^3 members were elected to the executive of The Basque Canadian Institute, and two other members have been actively volunteering their time at the museum working on the archaeology collections.

All in all it's been another year of growth and development for NLA^3. We are continually grateful to the professional archaeologists for their support and encouragement.

We look forward to 1986 and more archaeology.

NLA^3's address is: P.O. Box 8214, Stn. A, St. John's, Nfld., A1B 3N4.

*Nachvak Brook should be spelled Nakvak Brook.

CARIBOU TRAIL ARCHAEOLOGY
1985 INVESTIGATIONS OF SAGLEK BAY AND INNER SAGLEK FJORD

Callum Thomson

Newfoundland Museum
St. John's, Newfoundland

INTRODUCTION

In 1809, Moravian missionaries Kohlmeister and Kmoch (1814) wrote, "There are about five or six winter-houses at Saeglek, containing each about two or three families", implying a winter population of around 100 people. Forty years earlier, Jens Haven (1773) and Lieutenant Roger Curtis (1774, in Taylor 1974) had estimated winter populations of 100 and 140 respectively. While there was most likely considerable movement of families among the various communities on the north coast, in Ungava Bay, and further afield, Saglek Bay seems to have been capable of supporting an Inuit population of around 100 which moved seasonally to exploit resources between the inner bay zone around Rose Island (Figure 1) and the outer coastal and island zone. Archaeological investigations in 1969-71 by Tuck (1975) and Schledermann (1971) indicated that the inner bay region had also been sporadically exploited by a succession of other cultural groups from the Maritime Archaic through Pre-Dorset, Early Dorset and Middle Dorset to the Thule, over the past 4500 or so years. In 1977-78, the Torngat Archaeological Project (Fitzhugh 1980) found evidence of extensive use of the outer bay zone by most of these as well as by Groswater and Late Dorset Palaeo-Eskimo groups, a pattern which was repeated to some extent in other bay/fjord complexes on the north coast and seemed to add a new dimension to the view held by Tuck and Schledermann that the inner bay had always been the main focus of attention.

From 1980-83, following discussions with members of the Torngat Archaeological Project, I conducted excavations at several Dorset and Thule sites on the outer islands and surveyed much of the mainland coastline and is-

lands in the outer bay (Thomson 1981, 1982, 1983, 1984). During the course of the surveys it became evident that there had been extensive use of this zone by all cultural groups from ca. 6000 B.P. early Maritime Archaic through several Palaeo-Eskimo phases including Pre-Dorset, Groswater Eskimo and Early, Middle and Late Dorset, to Thule and Labrador Inuit, as well as at least sporadic visits by Point Revenge Indians. The location of most sites, the results of faunal analysis, our own observations of resources throughout several summers and the information contained in Brice-Bennett's land use study (1977), and the nature of the majority of structures found suggested that occupation of the outer islands and mainland coastline would have been heaviest in late winter, spring and fall. During this period seals, walrus, beluga and larger whales, small numbers of caribou reaching the outer coast early in spring or remaining late in fall, berries, various bird species and, in spring, their eggs would have been the prime food resources.

It seemed that winter, spring and late fall settlement and exploitation patterns were becoming well known after a decade and a half of study, yet our observations of large numbers of caribou and char, both available in Saglek Bay from late spring until late summer, suggested that these resources would also have played an important part in the seasonal round. However, because of our research focus to this point, little archaeological evidence had been produced to ascertain the extent to which these resources were utilized. In 1985, a project was aimed primarily at surveying the inner bay and the fjord arms where the major char streams are located (Brice-Bennett 1977) for evidence of char fishing and caribou exploitation. In addition, a search was to be made for the elusive 19th century Hudson's Bay Company Lampson Post and further investigation would be conducted at a Maritime Archaic longhouse site on Big Island and at a Pre-Dorset village in St. John's Harbour, both in the outer coastal zone. Information from these last two sites would, I hoped, contribute to the debate (Thomson 1984; Fitzhugh 1985) on contact between these two groups.

NARRATIVE

With the withdrawal of Petro-Canada from the Labrador oil and gas exploration field, the Canadian Coast Guard Service emerged as a logistical

saviour in 1985 and our crew of three and enough gear for a month were transported very comfortably north from St. John's to Saglek Bay over a period of three days, early in July. After breaking through the several kilometer-wide strip of mixed pack and bay ice drifting down on the Labrador Current, the Sir John Franklin steamed into Saglek Bay early on the morning of July 7 and hove to in the mouth of St. John's Harbour. Our equipment and the crew were ferried ashore by helicopter, a supply run was made down to the west end of Saglek Bay, where we would be located later in the summer, and then the Franklin headed north to deposit a field crew of geomorphologists in Nachvak Fjord prior to commencing their official ice-breaking and escort duties in the eastern Arctic.

We set up our tent camp beside a cabin at the head of St. John's Harbour and used this as our base for the first week. On July 8 we attempted to begin our boat survey of the south coast of Saglek Bay but were thwarted by a solid band of thick ice between the mainland and Shuldham Island, which effectively confined us to the mouth of the bay. We were able to count several hundred seals basking in the warm sunlight on the ice; as this was the first year I had noted this phenomenon so late in the summer it was probably not a regular or dependable resource available so late in the year to previous inhabitants of the bay, but it illustrated for us how good stalkers could obtain meat and skins on a several square kilometer patch of stable ice with a reasonable degree of safety and a good rate of return for their effort. En route back to St. John's Harbour we stopped at Shuldham Island 9 to check on its state since we had left it in 1982. It appeared to have remained undisturbed and vegetation including moss, grasses and bakeapple was slowly taking hold on the back-filled structures.

For the next few days we began to map the Pre-Dorset site (IcCq-8) near the mouth of St. John's Harbour, excavated one of the structures, a substantial oval tent ring, and identified a second late Pre-Dorset site (IcCq-10) several hundred metres south of the main site. Easterly winds brought more seal-laden ice into Saglek Bay but also broke up the jam off Shuldham Island, so we were able to begin our survey of the south coast, as squally weather permitted. We found some evidence of Maritime Archaic (IcCr-11, IcCs-1, -3, -4) and Palaeo-Eskimo (IcCt-5,-6) occupation of the southern bays and

headlands, but there had been much more intensive use of the area by Neo-Eskimos (IcCr-11, IcCs-1,-3,-4,-5,IcCt-5,-6) (see Preliminary Results section below). We noted far greater numbers of seals in the open water of the inner bay zone than we ever had on the outer coast, as well as small groups of caribou, geese, eider and guillemot. We also found that travel along this south coast, (fully exposed to heavy swells from Saglek Bay and some bad north-easterly winds) slow, cold and occasionally...stimulating as we coped with a recalcitrant outboard motor, a leaky inflatable boat, and ice pans looming suddenly out of rain squalls and fog.

On July 14 we were able to take advantage of an unexpected visit by a party of geologists and hitched a lift for our boat, motors, gear, food and selves by Otter from St. John's Harbour 25 km west to the mouth of Nachvak Brook. Here we set up a camp from which to survey the fjord arms at the west end of the Saglek Bay/Fjord complex. The weather during this week was pleasantly sunny and warm, but early evening winds gave us bumpy, wet rides home most days. We found that most of the fjord arms had been lightly used by all of the cultural groups represented in Saglek Bay: the great length of Ugjuktok Fjord and its shoally last few kilometres seemed to have discouraged most people from travelling beyond Tuck's (1975) Maritime Archaic and early Palaeo-Eskimo Ugjuktok site (IcCu-1) and our IcCu-2. Southwest Arm had a bad feeling to it altogether, with barren scree slopes, sharp, jagged peaks towering over the narrow fjord, and long sand bars preventing easy access to the river mouth. It proved to be practically devoid of cultural remains (IcCv-1, -2) also, and we were quite happy to leave. North Arm was a different story. A classic U-shaped valley led up to a broad beach with a good anchorage. Recent tent rings abounded on the beach, Neo-Eskimo graves and caches were numerous (IdCu-2) on the first terrace on the east side of the river mouth and up the hillside to the west of the river, and a Captain Pedersen had been buried in 1883 overlooking the sunny fjord . His grave was marked by an engraved headstone. Pre-Dorset material eroding into the river indicated that this place had been visited for several millennia. On our way out of the arm we stopped at a spit, not expecting to find much, but Eric quickly tracked down several Thule graves with associated caches (IdCu-3), and some twenty stone habitation features. One of the grave caches, on the edge of the ter-

race and full of sea grass, provided an unusual collection of grave goods which we excavated over two days. A third site (IdCu-4), on a river delta near the fjord mouth, contained a further 17 Inuit tent rings.

On our way back to camp one evening we spotted a sleek, fat black bear ambling his way along shore, coming from the direction of our camp. While we edged downwind to watch him we were wondering what state our tents and food cache would be in. The wind switched, he heard us, and off he went at a great rate up a steep hillside, rolls of fat rippling down his broad back. We later discovered that he evidently had not seen our camp, nestled into the shelter of a hill, for which we were thankful.

Bruce Ryan and Dick Wardle of the Provincial Mines and Energy Department Mapping Division dropped by in their helicopter one day and gave us a tour of Rose Island and the bay west of Jens Haven Island where we were hoping to find the remains of the Lampson Post. During this overflight and a later boat survey of the area we were unable to find the Post, which was disappointing, but we did note several more Neo-Eskimo (IdCs-2,-3,-4) and Dorset (IdCs-2, -4) sites.

During our week at Nachvak Brook we were able to conduct surveys around the mouth of the river and several kilometers upstream. On the point of land where Saglek Fjord becomes West Arm we came across three deep sod houses (IcCt-7) which seemed to be Labrador Inuit fall structures, although the presence of black chert flakes in the walls and on the surface suggests that a previous cultural group—most likely Pre-Dorset — had also benefitted from the fine vantage point and structural materials offered by this sodded, sandy, elevated beach terrace. Test pits visible around the houses attested to a previous archaeological investigation of this site although no record exists.

On the west bank of Nachvak Brook above the Nachvak Brook 1 Labrador Inuit site (IcCt-1) excavated by Peter Schledermann (1971), a series of glacially-deposited terraces has been cut through by the river and levelled by marine action. The site is still suffering from these and other forms of erosion, not the least of which is the tendency of caribou to ascend the unstable banks from the river, sending sand and gravel cascading downslope. On top of one 13 m a.s.l (above sea level) terrace we found evidence of a Maritime Archaic occupation which was probably related to caribou hunting and

char fishing (IcCt-3).

On the opposite bank, on the terrace upon which we were camped, two discrete occupation areas attested to multiple occupations on this side of the river, also (IcCt-4). At the front of the terrace scatters of lithic material related to a Maritime Archaic presence - again the subject of a previous unrecorded investigation -- while a large concentration of Saglek quartzite in the centre of the terrace, some 100 m back from the present terrace edges, was identified as an early, Archaic occupation ca. 5000 B.P. This locus was revealed initially by isolated flakes in the numerous caribou trails which criss-cross the terrace.

Caribou were notable at this location not merely by their trails but by the unexpected sight, sound and smell of many thousand head of mostly mothers and calves as they came streaming down the west bank of the river, crossed it at its mouth, climbed the bank at our camp site, and headed off east over the hills. This impressive trek went on for three days and, if a regular occurrence over the past few millennia, produced ample evidence of the availability and potential importance of this animal in the subsistence rounds of Saglek's human inhabitants.

Before we left this area we took a run around the coast to the Big Falls site (IcCt-2) identified by Tuck (1975) as a source of Ramah chert, which seemed unlikely from the geological mapping of the Ramah beds (Morgan 1975). While we did find great amounts of Saglek quartzite outcrops, boulders, blanks and debitage on the beach and terraces below the falls, some specimens of which bore strong resemblance to Ramah chert, none of the huge boulders or bedrock appeared to be other than Saglek quartzite. This evidently was a major source of the material used by the Maritime Archaic.

Our return trip from Nachvak Brook to St. John's Harbour on July 20 was a four hour marathon against heavy swells. We turned into the Harbour just a day ahead of a solid ice jam which choked the outer part of Saglek Bay for the next week. We had to haul our boat up every evening and chop our way off the beach through stranded pans each morning. However, we were able to resume excavations at the Pre-Dorset sites at the mouth of the bay, keeping a close eye peeled for polar bears following the ice in, and did some foot surveys west from St. John's Harbour. This resulted in the discovery of a single Inuit

site on a river, 3 km from the sea (IcCr-12), a small Maritime Archaic site (IcCr-11) on a terrace above the first cove west of Torr Bay, and a Maritime Archaic deposit (IcCq-11) on a former vehicle roadway close to the St. John's Harbour cabin. For the last few days of July we excavated a Maritime Archaic longhouse structure on the south coast of Big Island (IdCq-54), collecting 100-odd Ramah chert, Saglek quartzite and slate artifacts and a single soapstone pendant (Plate 1) among the cobbles of the walls and floor, and dulling a good number of trowels in the process. For the last two days we were joined by Bill, Ben and Josh Fitzhugh and Dosia Laeyendecker and greatly appreciated their help on the longhouse and Pre-Dorset sites.

Our return to Nain was a quick but most enjoyable ride aboard the Smithsonian research vessel Tunuyak. We arrived one hour before the departure of the M.V. Topsail Star and were able to load our field gear aboard. Then, in uncharacteristic Labrador style, we were squeezed into the last two seats aboard the Labrador Airways Twin Otter to Goose Bay and were home in St.John's 12 hours after our arrival in Nain, surely a record for a departure from the field.

PRELIMINARY RESULTS

The short but productive and eventful 1985 field season resulted in a surprising (to me) dearth of prehistoric sites in the fjord arms and near-interior, confirming the position held by Richard Jordan (1985: personal communication) that most of the subsistence and settlement activity of these peoples would have been towards the outer coast, and suggesting that an alternative research strategy involving surveys north and south in the outer coast and island zone would be more profitable. The results of our four weeks of work are summarized briefly below. A total of 24 new sites was found and additional information was recorded for 10 previously known sites revisited.

New Maritime Archaic sites

St. John's Harbour 5: IcCq-11, ca. 10 m a.s.l.

This small site is located 50 m west of the cabin at the head of St. John's Harbour, on and beside a road formerly used during the DEW Line period. Black chert, Ramah chert and Saglek quartzite were found on a caribou trail utilizing the roadway and in an adjacent blowout. Possible structural rocks

and undisturbed vegetation suggest that parts of this site may remain undamaged. Its presence, probably related to caribou and char exploitation, provides the strong possibility that other similar habitation areas were located on the several level hectares between the sandy beach and the foothills, an area utilized during the '50s and '60s as a fuel storage dump.

Saglek Bay 1: IcCr-11, ca.40 m a.s.l.

This site is situated on a sandy blowout 500 m back from a large horseshoe-shaped cove 3.5 km west of Torr Bay, on the bank of a stream. Three tent rings and a scatter of black chert, Ramah chert and Saglek quartzite flakes certainly of Maritime Archaic origin were found on the blowout. A small cache pit and other faintly discernible structures were located on a boulder terrace above the blowout, probably dating to an earlier Maritime Archaic occupation.

Silupait Point 1: IcCs-1, 16, 21 m a.s.l.

During surveys of this point between Kejuktok Cove and Pangertok Inlet we located a scatter of black chert, Ramah chert and Saglek quartzite flakes and soapstone debitage on a small 16 m a.s.l. terrace overlooking the point, and Ramah chert and Saglek quartzite flakes in and around a small tent ring on a 21 m a.s.l. terrace overlooking Kejuktok Cove. This site is ideally situated for observing and gaining access to seals on the spring ice.

Pangertok Inlet 4: IcCs-3, ca. 25 m a.s.l.

This site was noted by Eric Loring, Gary Baikie and John Maunder in July 1981, but not recorded. A probable longhouse feature and a possible burial are located on a sandy terrace where the Pangertok river flows out of the lake. No lithic material was found. This situation would be ideal for exploitation of char and caribou. We were unable to reach this side of the river due to the depth and swiftness of the water and with the approach of a storm ran out of time in which to move the boat around to that side and walk back up the 3 km to the site.

Pangertok Inlet 5: IcCs-4, 70 m a.s.l.

A scatter of Ramah chert and Saglek quartzite was found high on a sandy terrace on a saddle looking east to Mt. Pinguksoak and north out of the Inlet to Jens Haven Island. A possible tent ring may have been partially dismantled for use in the construction of two small Inuit children's graves on the same

terrace.

Ugjuktok Fjord 2; IcCu-2, 11 m a.s.l.

James Tuck had found in 1970 a mixed Maritime Archaic and Palaeo Eskimo site on the northeast side of the mouth of a large river which empties into Ugjuktok Fjord (Tuck 1975). We revisited this site in 1985 and found additional lithic material including a Rattlers Bight stemmed point base, a miniature slate bayonet and several retouched Ramah chert flakes, as well as an abundance of pink and grey Saglek quartzite flakes and chunks, at the same location. In addition we located two boulder shelters, with Ramah chert several centimeters below the surface, on the ridge closest to the fjord, a 3 X 3 m tent ring containing Ramah chert and Saglek quartzite on the first level terrace back from the fjord, an area containing flat paving slabs and the major concentration of artifacts and debitage on the second terrace, eroding into the small cove to the northeast, and a possible tent ring on the third terrace. Test pits on the first and second terraces produced lithic material, and in one case red ochre, from as deep as 15 cm. Although there has probably been considerable marine, riverine and caribou-instigated erosion there seem to be at least parts of the site left intact.

On the front terrace on the southwest bank of the river we found another Maritime Archaic site, dating to the same ca. 3800 B.P. period as Tuck's site on the northeast bank, about 250 m from the main area of lithic material described above. We were able to find small amounts of black chert and Ramah chert, including a Rattlers Bight stemmed point base. Structures included several tent ring-like features, two small rectangular boulder features which may be Inuit below-ground burials, and a 7 X 6 m oval structure, in which the point base was found. Observations of caribou and numerous trails on the terraces, the presence of char in the river (Brice-Bennett 1977), and the 30 recent tent rings on the present foreshore attest to Tuck's interpretation of this location as a good one from which to exploit caribou and char.

Southwest Arm 1; IcCv-1, ca. 18 m a.s.l.

On the north side of the river running into Southwest Arm, on a dry terrace above a marshy flat area, nestled into the slope of the foothills, a large oval boulder habitation structure and two caches were found. No lithic material was seen on the surface or in test pits, but this is certainly a

Maritime Archaic site, probably situated for its proximity to caribou and char. The main structure measures 13 X 7 m and has two probable room dividers parallel to the short axis. An entranceway was found at the southwest corner, overlooking what would have been the head of the fjord arm.

Nachvak Brook 2: IcCt-3, 13 m a.s.l.

This site is situated on the west bank of Nachvak Brook, 300 m north of the present mouth of the river on the lowest prominent flat terrace. One tent ring, several other amorphous structures, scatters of lithic material including black chert, Ramah chert and Saglek quartzite, and a large (1 X 1 X .5 m) block of white Saglek quartzite were found on the terrace. The quartzite block has been used as a source of this material; spalls and several hammerstones were noted around it. This terrace is being eroded by riverine action and by the passage of large numbers of caribou up its bank from the river. It is probable that much of the site is now lost. Once again, caribou and char would have been the prime resources sought at this location, although we also saw ptarmigan, a black bear and berries in the vicinity.

IdCt-01

Nachvak Brook 3: IcCt-4, Locus 2, 20 m a.s.l.

The remnants of what was probably at one time an extensive Maritime Archaic site are located at the front edge of the first major terrace on the east bank of Nachvak Brook. Ramah chert and Saglek quartzite flakes and one Saglek quartzite stemmed point were found along the edge of the terrace, overlooking the west end of Saglek Fjord and the entrance of Ugjuktok Fjord. The only structural feature found was a possible rectangular burial. Numerous test pits along the terrace edge attest to previous archaeological investigation of this site, although no record exists.

IdCt-01

Nachvak Brook 3: IcCt-4, Locus 1, 20 m a.s.l.

This part of the site was located as we followed a caribou trail across the terrace upon which we were camped — the first major terrace on the east bank of the river. The caribou trail had cut through the overlying vegetation, exposing Saglek quartzite flakes in the sandy soil. Excavation later revealed a 1 X 1 m concentration of this material, including 30 angular bifaces and preforms (Plate 2), and a hearth, charcoal stained soil, a single Ramah chert flake in addition to the several hundred quartzite flakes, and traces of red ochre. Test pits around this location also produced similar

deposits. Although no structure was found other than the hearth it is possible that one or more may lie intact beneath the surface. A sample of the charcoal was sent for radiocarbon dating and produced a date of 5020+100 B.P. (Beta-15672), the earliest yet for Saglek or any site north of Okak.

This site does not bear any resemblance to Maritime Archaic sites on the north coast either in tool typology, virtual exclusivity of raw material, and apparently isolated hearth. It seems to fit more accurately the generalized description of Shield Archaic as offered by Fitzhugh (1972: 131-2), but the preform nature of most of the artifacts prevents any positive attribution. As with the other sites around the mouth of Nachvak Brook, caribou, char, ptarmigan and berries would have been the subsistence foci.

New Pre-Dorset sites

St. John's Harbour 4: IcCq-10, 4-8 m a.s.l.

This site was originally recorded (Thomson 1982) as a second locus of the St. John's Harbour 3 site, IcCq-8. Re-examination of the area in 1985 indicated that it was considerably more extensive than previously thought, sufficiently far removed from IcCq-8 (100-400m), and deserved separate attention, which would facilitate temporal, seasonal and other comparisons between the two sites. IcCq-10 extends sporadically for 300 m along a well defined caribou trail on a continuous terrace which undulates between 4-8 m above St. John's Harbour, on the east shore, near the entrance to Saglek Bay. The site is ideally located for spring ice sealing, and possibly procurement of caribou, utilizing for the latter the steep hillside and the natural boulder and outcrop blinds which occur along the edge of the terrace. Our experience at the mouth of Nachvak Brook, where our tent camp was located at the edge of a terrace had suggested that caribou are not easily deterred from their intended route; many hundreds passed within 50 m of our camp at that site and could easily have been taken.

About 150 artifacts (Plate 3) were recovered from test pits and excavation of one partially paved feature nestling into bedrock outcrops at St. John's Harbour 4. The predominant materials were black chert and a variety of other coloured fine-grained cherts. Artifact types included burins, non-serrated triangular, concave-based harpoon points, eared endscrapers and wide parallel-stemmed bifaces typical of the middle Pre-Dorset period of ca. 3400 -

3700 B.P. (Steven Cox 1986: personal communication). The curiously stemmed arrow points, which may have been used to hunt basking seals, seem to have few counterparts other than one from Tuck's (1975) undated site Y on Rose Island.

Pangertok Inlet 3: IcCt-6, 3-5 m a.s.l.

A single black chert eared endscraper indicated a former Pre-Dorset occupation of this predominantly Labrador Inuit site on the west bank of the Pangertok River, at the head of Pangertok Inlet. None of the forty-odd structures at the mouth of this river were Pre-Dorset, nor were other lithic materials found in a quick survey; although it is possible that a Palaeo-Eskimo occupation underlies this site, importation of this single artifact should not be discounted.

North Arm 1: IdCu-2, 13 m a.s.l.

This large Labrador Inuit site at the very end of North Arm was previously occupied by Pre-Dorset Palaeo-Eskimos. A concentration of lithic material was found eroding down the bank of a now-dry stream channel. No Pre-Dorset structural feature was seen during a hasty and cursory inspection of this area.

Nachvak Brook 4: IcCt-7, 5 m a.s.l.

The presence of black chert flakes in the sod walls of two Labrador Inuit sod houses at this site indicates a previous Pre-Dorset or Maritime Archaic occupation of this location, at the junction of Saglek Fjord and West arm, 1 km south of the mouth of Nachvak Brook. As test pits were visible in the interior of the houses we assumed that this site had already been recorded and we did not investigate it any further. However, no site record exists.

New Dorset sites

Pangertok Inlet 2: IcCt-5, 5 m a.s.l.

A few flakes of Ramah chert in a blowout on the west side of Pangertok Inlet mark the remains of a probable Dorset site. No structural features were found here, although there are nearly 30 Inuit structures nearby (see below).

North Arm 2: IdCu-3, 3m a.s.l.

Ramah chert flakes were found in test pits and around two of the structures at this predominantly Neo-Eskimo site. A Late Dorset occupation is

implied, perhaps contemporaneous with the Thule occupation, given the nature of some of the artifacts recovered from Cache 2 (see below).

Jens Haven Bay 1: IdCs-2, 5m a.s.l.

A few flakes of Ramah chert in a caribou trail above an otherwise predominantly Labrador Inuit site on the mainland shore west of Jens Haven Island led to the discovery of a paved area perhaps 4 m in diameter. A soil depth of about 10 cm over the structure contained diagnostic Late Dorset artifacts. This site, which may be more extensive, is ideally situated for access to seals and caribou.

Jens Haven Bay 3: IdCs-4, 10 m a.s.l.

This site is located on the most westerly point on Jens Haven Island, a good spring sealing location. Middle Dorset lithics were found on a small, partly vegetated terrace above a larger terrace which contained 40 Inuit structures. Two stone features were visible at the Dorset locus; more may be hidden beneath the vegetation.

New Labrador Inuit sites

Saglek Bay 1: IcCr-11, ca. 40 m a.s.l.

A single rectangular 4 X 4 m one-tiered tent ring with an outer ring of large hold down rocks and a central hearth with abundant charcoal and a single vertical slab was found in thick crowberry vegetation behind the Maritime Archaic locus at this site. It was assumed to be Labrador Inuit because of the freshness of the charcoal, the shape and construction of the feature and the lack of lithics. Other amorphous structures seemed to be present beneath the lush berry vegetation.

Saglek Bay 2: IcCr-12, 20 m a.s.l.

Two small multi-tiered boulder shelters were found on a river bank 3 km inland from Torr Bay. They probably represent a small overnight Inuit camp.

Silupait Point 1: IcCs-1, 3-20 m a.s.l.

This substantial site may have been associated with the 19th century Hudson's Bay Lampson Post. I had been swayed by archival information (Johnston 1890s; White 1926) into assuming that the Post was on the north side of the Bay, probably in the vicinity of Jens Haven Island, although the Canadian Atlas places it vaguely in the Silupait Point/Kejuktok Cove area, and information obtained from the Winnipeg Hudson's Bay Company records (Susan

Kaplan 1985: personal communication) fits this latter location quite well. When we came across this site, its potential as a Hudson's Bay Post or an Inuit site located in close proximity to the post did not strike me until afterwards. On the main beach there are 6 sod houses, all with sod and stone wall construction, some with partial wooden walls and floors, oil drum stoves, and metal, china and plastic artifacts dating to the last 30 years. At least two, however, have an older appearance, being less clearly defined, more overgrown and lacking obvious wooden construction elements; although their semi-subterranean construction and relatively small size were not typical of Hudson's Bay post architecture , they may well have been initially occupied during the mid-19th century HBC era. Twelve substantial tent rings are also located on this beach, which slopes gently from 3 - 6 m a.s.l.

On the long point extending from the east end of the beach there are another 2 tent rings, twelve caches, a single grave, and seal and caribou bone, all between 3-5 m a.s.l. At a point 8 m a.s.l., above the smaller locus, another sod house was found, measuring 4 x 4 in the main room with two smaller anterooms attached. On a 16 m a.s.l. terrace above this there is yet another sod house, measuring 3 x 3.5 m, with a corner entrance passage and a raised sleeping platform.

The large number of Inuit tent ring sites in Pangertok Inlet (see below) may also be partially accounted for by the proximity of the Lampson Post, if it is indeed located in this region. One would expect that such an establishment would draw people within easy reach and, conversely, the Post would be situated for easy access, in a region of good resources. Closer perusal of maps in the Newfoundland Archives led to the conclusion that the Post may be located at the bottom of Kejuktok Cove - the only bay not surveyed in 1985!

Pangertok Inlet 1: IcCs-2, 3-5 m a.s.l.

We pulled in to this small spit to make adjustments to a baulky motor and found several Labrador Inuit tent rings and caches, probably located for spring and summer sealing.

Pangertok Inlet 2: IcCt-5, 3-5 m. a.s.l.(see above)

Two loci extend on either side of the small river which empties into the southwest side of Pangertok Inlet. A total of 26 tent rings and 2 caches were found; about 100 caribou, a dozen geese, 50 eider and some seals in the near

vicinity suggest some of the subsistence reasons for settlement at this spot.

Pangertok Inlet 3 IcCt-6, 3-5 m. a.s.l.

This major Labrador Inuit site at the mouth of the Pangertok river, at the head of the Inlet, is situated for exploitation of Arctic char, most likely in late summer as they mill around the river mouth and start their ascent to the winter lakes, perhaps also in spring for the migration out to sea. 30 tent rings, 11 large caches, and 3 burials were noted on the west bank of the river below the rapids.

Pangertok Inlet 4, IcCs-3: 3-20 m a.s.l.

This site was not recorded in 1985, but had been noted by Eric Loring, Gary Baikie and John Maunder in 1981. A large number of tent rings and caches were observed on the east bank of this river and northeast along the coast from the head of the Inlet. Char and, most likely, caribou would be the prime resources sought at this site.

Pangertok Inlet 5: IcCs-4, 2-3 m a.s.l.

Three loci at this site contained Labrador Inuit material. On the same 70 m a.s.l. saddle as described previously for the Maritime Archaic occupation, two small, rectangular, rock-lined, gravel-capped graves were found, most likely for enclosing children's remains left on the surface. These are apparently Inuit and probably relate to the extensive site on the beach below, Locus 2. Locus 2, at the northern tip of this small peninsula on the west side of the major river on the east side of the Inlet, containing 20 tent rings. A third locus, on the east side of the river, is comprised of two tent rings and two graves. Some promising-looking teraces above Locus 3 were disappointingly sterile. Once again, char would have been the main resource sought at this site.

Pangertok Inlet 6: IcCs-5, 3 m a.s.l.

Twenty tent rings were observed at this site on a long flat terrace on the most northerly small headland on the east side of Pangertok Inlet. Differential vegetation growth on the tent rings indicates a range of antiquity for this site, which has good access to seals on the spring sea ice in the Inlet and out on Saglek Fjord. Twenty caribou were also counted on the terrace.

Ugjuktok Fjord 2: IcCu-2, 2 _ a.s.l.

Thirty tent rings were found on the upper part of the present beach and the

first low terrace on the east and west shores of the river. Char and caribou, and perhaps seals, would be sought at this site.

West Arm 1: IcCu-3, 1-3 m a.s.l.

This site is located at the junction of Saglek Fjord, Ugjuktok Fjord and West Arm, so has a good vantage point, but is also exposed to heavy swells coming in from Saglek Bay. The rocky shore makes a boat approach tricky, but it is probably a good sealing location and, at least for us, provided a good spot in which to rest after battling the fjord winds. Eight Labrador Inuit tent rings were noted, although more may be present beneath the heavy vegetation.

Southwest Arm 2: IcCv-2, 1.5 m a.s.l.

Nine large and three small tent rings, some wooden barrels, an iron bedstead and other modern litter date this site to the 20th century. Seal and caribou bone presented evidence of at least part of the subistence focus.

North Arm 1: IdCu-2,0 2-16 m a.s.l.

This very extensive and interesting site contains 44 assorted boulder structures on the beach and terrace on the west side of this river at the head of the fjord, and another 20 on the hillside and scree slope of the east side. Among these structures are very large burial chambers, caches, boulder houses and single- and multi-tiered tent rings and shelters with and without adjoining caches and some with sleeping platforms, fox traps, an isolated hearth, and a sod house. This would be an excellent site at which to document variability among Neo-Eskimo structures.

In addition to these remains, and the Pre-Dorset occupation mentioned above, there is a European burial dating to 1883, that of a Captain A. B. Pederien or Pedersen, "Dod 18 Juli 1883", commemorated on a 40 X 50 cm stone slab on the bank overlooking this most beautiful of fjords.

Although no record exists of previous investigations at this site, the lack of skeletal material or grave goods in the burials, all of which are uncapped, suggests that collections of materials had already been made. This site seems best situated for char fishing in the river and, judging from bone and antler remains on the beach, caribou hunting in the near interior.

North Arm 2: IdCu-3, 3-5 m a.s.l.

This remarkable site is situated on a small spit on the east side of

North Arm. Twenty eight boulder tent rings, caches, shelters, and graves are located on the boulder-strewn slope. The most significant feature is a grave, recently converted into a hunting blind, and an associated cache which contained 117 artifacts,(Plates 4-8) of which the bulk were Thule although there are several Late Dorset tools, in an organic deposit 1 x .7 m in length and 5 cm thick. The presence of a thick mat of sea grass and overhanging stone slabs made the grave goods invisible on the surface. We excavated this cache over two days and found an unusual assemblage of Thule and Late Dorset men's, women's and children's tools, presenting room for theories about the occupant(s) of the large associated grave and the possible contact situation implied by the mixed asemblage. The apparent antiquity of some of the other structures makes this an interesting site to study with the neighbouring North Arm 1 site with regard to structural variability in the Neo-Eskimo period.

North Arm 3: IdCu-4, 2-3 m a.s.l.

This site is comprised of 17 tent rings on a sandy river delta near the mouth of North Arm, probably situated for spring and summer sealing.

Jens Haven Bay 1: IdCs-2, 3-5 m a.s.l.

This, I had thought from previous archival research (Johnson 1890; White 1926), was the most likely place for the Lampson Post to be situated. It seemed to fit in most respects the physical description culled from the Hudson's Bay Co. records by Susan Kaplan (1985: personal communication) but, while we did find 21 tent rings, 2 graves, 7 caches and a possible foundation for a rectangular house (we were really trying to force the evidence out of the ground by this time), there was no clear indication of what appears to have been a fairly substantial establishment comprised of at least a house, store and oil house (H.B.C. Lampson Fort Journal 1874) in the form of structural or artifactual remains. In addition, the shore is very rocky, which would make loading and unloading from a supply boat extremely and unnecessarily difficult, and the site seemed too far removed from the centre of activity around Rose Island, whereas the Silupait Point area is ideally situated.

Jens Haven Bay 2: IdCs-3; 2-3 m a.s.l.

A total of 14 tent rings and 3 caches are distributed about this river delta on the northwest shore of Jens Haven Bay. Seals would be the prime game

species hunted from this small site.

Jens Haven Bay 3: IdCs-4, 3 m a.s.l.

This extensive site on the northwest corner of Jens Haven Island contains 38 Labrador Inuit tent rings and 3 graves. The high number of tent rings around this bay suggest that it is a rich hunting ground during the spring, summer and, possibly, fall months.

Sites revisited

A short visit to Shuldham Island 9 (IdCq-22) reassured us that the site was becoming revegetated and less obvious to passers-by, of which there are increasing numbers as the region gains popularity with sailing and kayaking groups, climbers, and many others bent on recreational, commercial, military and scientific endeavours. We retrieved several artifacts from the backdirt, including part of a drilled miniature soapstone vessel of Inuit manufacture.

On Big Island we excavated one longhouse feature at Big Island 9 (IdCq-54), as described above, and found several other features at this site, including a second longhouse of very light construction but similar size and shape. This could be a warm weather domicile of the group who occupied the substantial longhouse on the boulder beach. Several new cache pits associated with the excavated longhouse were also found. Artifacts found in the los inwith the excavated longhouse were also found. Artifacts found in the longhouse include a small ground slate celt and many fragments of red slate, some most likely from a second celt. Chipped stone tools were predominantly of Ramah chert, although a single shouldered biface (found in 1982), an asymmetric biface and several scrapers and retouched flakes of Saglek quartzite were also recovered. No charcoal was found with which to date this site, but typologically the material most clearly resembles early Maritime Archaic tools from Sandy Cove 2, dated at about 5000 B.P. (Fitzhugh 1972: Plate 73). The single soapstone remnant has been incised with fine geometric patterns on both sides. Its wafer-like thinness (2.5 mm) and lack of suspension means (although it is incomplete, so this could be a wrong assumption) are unlike the Nulliak pendants found 25 km to the south, although the shape is similar.

We also returned to Big Island East 11 (IdCq-50), but were not able to find any more diagnostic material to support the 6000 B.P. date suggested by a

quartzite nipple-based point recovered from this site in 1982 (Thomson 1983).

At Big Island East 12 (IdCq-51) we remapped the bilobate tent ring as two separate tent rings and made a collection of Saglek quartzite and Ramah chert material from this now positively-Maritime Archaic site high on a 30 m a.s.l. ridge on the northeast side of the island.

On the intermittent 10 m a.s.l terrace west of the landing beach north of the Saglek runway several new loci were found on small sheltered level area among the spines of bedrock running down to the sea. Maritime Archaic and Dorset occupations were identified and a small angular, finely chipped biface fragment suggested that at least one of the structures related to a Point Revenge presence.

In addition to the excavation of the main tent ring structure at St. John's Harbour 3 (IcCq-8), near the entrance to this fjord, we mapped an additional 13 small, discrete paved areas, most of which are eroding down the terrace bank, and made a collection of surface material from these structures and from several deep caribou trails. Preliminary assessment of this assemblage places it in the same time period (3400-3700 B.P.) as IdCq-10.

At the next bay west from St. John's Harbour, Torr Bay, an additional two loci were added to IcCq-5. A 5 x 8 m area from which sod had been removed 20 m back from the single sod house at this site presumably marked the location from which material had been removed for construction of the house. Traces of iron and bone in a test pit in the house as well as the relative freshness of the sod removal scar confirm the Labrador Inuit origin of this structure, although in previous test pits Middle Dorset material had also been recovered. A second locus, 20 m further back again, contained a 5 X 6 m tent ring, well overgrown with grass and moss.

At Torr Bay 3 (IcCq-7), on the east side of the bay, two more loci were recorded, one containing eight tent rings and a few caches, 50 m south of the main part of the site; the other, about 100 m further south was comprised of three tent rings, twelve caches and two paved areas. A great deal of Ramah chert debitage was found in the vicinity of the paving, suggesting a reduction station, but no diagnostic artifacts were found from which to confirm the cultural affiliation.

CONCLUSIONS

The drawbacks of a short field season, a troublesome boat and motor, an over-ambitious schedule involving the surveying of over 200 km of shoreline, and the unusual presence of large amounts of ice in the bay throughout the season did not prevent us from meeting most of our planned objectives. In addition, and as usual, several new avenues of research were opened up.

The main research focus, to determine the extent and nature of exploitation of caribou and char in Saglek Bay and Fjord, particularly in the fjord arms and inner bay, produced the expected density of Labrador Inuit sites, many of which were substantial, but disappointingly low amounts of prehistoric sites. It is possible that the research methodology, concentrating primarily on areas identified as being important char fishing stations during the late historic period (Brice-Bennett 1977), resulted in my underestimating the economic biases such as fish salting for storage and sale, fox and other fur-trapping inherent in the location of these sites and subsequently in our missing some prehistoric seasonal components. But the overall impression gained was that nearly all of the inner fjords were at least lightly utilized by the Maritime Archaic and Pre-Dorset, almost completely avoided by the Dorset, and not heavily exploited by the Thule. This suggests that the needs of these people, whose populations seem never to have reached that of the historic Inuit, vis a vis char, caribou meat, skins, sinew, fat and antler, and the social aspects involved in obtaining these resources, were met in the Saglek Bay zone or further into the near-interior than we were able to penetrate in 1985. The presence of at least one of the prehistoric groups in all of the fjord arms, though, indicates the need for a more intensive survey than we were able to conduct of the fjord heads, the river valleys, partially around rapids and pools were char would rest, and the fjord shores. Neither were we able to journey far enough up the valleys to where hunting parties en route to or from the interior might have camped.

The anomalous Archaic site at Nachvak Brook 3 with its 5000 B.P. date, the earliest from Saglek Bay by 500 years, produces the slight possibility of a new cultural group to consider in the northern Labrador culture history. Its location at the mouth of a broad river valley which leads back to within a few kilometers of the height of land, with easy access to the George River

system, might have resulted from an initial exploratory journey from the west, but the absence of Quebec cherts or quartzites or any other lithic material other than a sincle Ramah chert flake in our admittedly limited test-pitting and the presence almost exclusively (99.9%) of local Saglek quartzite argues more for an occupation by an already-established group. Whether it was related to Shield Archaic groups to the west or Maritime Archaic groups to the south, or already present, this site adds an interesting focus for future attention.

I regret to conclude that we did not find the H.B.C. Lampson Post. The overly substantial and recent nature of the Silupait Point structures and the ephemeral nature of the Jens Haven Bay site do not quite fit the bill. Two places close to those identified on the various maps deserve attention: the bay immediately east of Silupait Point, Kejuktok Cove, and the river mouth and headland north of Branigan Island, neither of which we were able to visit. Finding the Lampson Post and analysing its attenuated Inuit communities which, for the first time in Saglek's history were not based totally on subsistence, would be an interesting study and would help with the difficult task of assigning temporal, seasonal and functional attributes to the multitude of tent rings, shelters, houses, traps, caches, graves and other boulder structures in Saglek Bay.

Analysis of the material recovered from the three main sites investigated in the outer bay in 1985 has not yet begun, but initial impressions gained in the field indicate that the Big Island 9 longhouse is probably as early as first assumed on the basis of the Aillik structure typology (Fitzhugh 1984), and the presence of Sandy Cove-type lithics. The presence of these small longhouse and tent ring encampments around Saglek Bay in the 5000-4500 B.P. period prior to the advent of Palaeo-Eskimo suggests that only with the latter's arrival did the perceived need arise for the possibly defence-related large multi-family structures seen at Nulliak and at Tuck's site A on the north shore of Saglek Bay.

In St. John's Harbour, the two Pre-Dorset sites produced a large number of lithic tools but, unfortunately, no organics. The one charcoal sample submitted returned a puzzling date of 2070+ 60 B.P. (Beta-15673) on a mixture of willow, alder and/or birch (Dosia Layendecker 1985: personal communication). It is probable that the small size of this sample and an unknown source of

contamination spoilt this date from the hearth of a structure in what appears to be a single component site. Both sites contain artifacts which indicate a date mid-way in the Labrador Pre-Dorset sequence, around 3400-3700 B.P. (Steven Cox 1986; personal communication). The presence of these large sites so near to the entrance to Saglek Bay, only 20 km from the major Maritime Archaic site at Nulliak and possibly overlapping periods of occupation, presents a strong case for an accommodation reached between the two cultural groups in which bays along the north coast were shared, and contact and free passage may have been more typical than the territorial protection and avoidance proposed by Fitzhugh (1984). In fact, one Rattlers Bight stemmed point base (Plate 3) was found at this site, and a wide stemmed biface was found at St. John's Harbour 3, among otherwise exclusively early Palaeo-Eskimo remains.

The burial cache in North Arm proved to be the most visually stimulating of our finds from 1985. The large collection of endblades, sideblades, ulus, drill bits, knives, snowknives, lances, harpoon heads, adzes, a needle case, fishing lure and other tools representing many different seasonally-related occupations for both sexes, and the presence of some late Dorset burin-like tools Plates 4-8) will be the focus of a separate paper in the future. We initially had some misgivings about excavating a burial site related to an extant cultural group, but a number of considerations mediated in favour of proceeding: 1. the grave had been converted to a hunting blind and no skeletal material remained; 2. the placement of the cache as a discrete unit, separate from the burial; 3. the knowledge that all too few Neo-Eskimo graves have been professionally investigated in the past and that this one, if not found and looted in the near future, seemed to be facing imminent damage and erosion due to the encroaching sea, the growth of sea grass, caribou trails, and its position on the edge of an active bank. Thus we overcame our hesitation.

Caribou trails had definitely played a significant role in our work in the 1985 season. Many prehistoric sites were found thanks to the tendency of subsurface archaeological deposits to surface and thus be visible within trails. The large herd passing by and through our Nachvak Brook camp stimulated most of our senses for several days and made us realise that elaborate caribou ambushes involving fences, inuksuks, blinds and other aids may not always be essential components in northern caribou hunting technology. A

person located on top of the high, steep banks at the mouth of Nachvak Brook could dispatch caribou after caribou as they came over the lip of the bank, without those animals below having any idea of their impending fate. Small bands of people could probably meet their requirements in similar locations, taking advantage of natural features such as water bodies, steep shores, outcrops and boulders, and natural funnels around the shores, rivers and lakes in the Saglek Bay region over the summer months without expending too much effort in construction of blinds and fences.

Evidence for prehistoric exploitation of char was surprisingly sparse. We may have to look for these sites further inland, for it seems unlikely that such a seasonally-plentiful resource was ignored. The Maritime Archaic was the only cultural group besides the Labrador Inuit which was consistently represented in the vicinity of the mouth of major char streams. Rapids and pools further upstream and interior lakes may be more rewarding for the evidence of cultures which lacked the nets and economic incentives of the Inuit.

This fifth season of fieldwork in Saglek Bay has presented yet another series of intriguing questions and a few answers about culture history and contacts, resource procurement and trade, seasonal settlement patterns architectural variability, and subsistence preferences. The search for more of the answers to these and other questions I am sure will lure me back to Saglek in many of the years to come. While some parts of the bay still beckon to be surveyed and numerous sites demand further investigation, I expect that a major focus in the future will be north and south in the outer coastal zone towards Nachvak and Hebron, in an attempt to test the hypothesis that in prehistoric times local bands may have felt more attachment to neighbouring bands and to outer coastal resources and fast travel routes than to this archaeologist's neat geographic unit of a bay/fjord complex such as Saglek.

ACKNOWLEDGEMENTS

Field research in 1985 was conducted under a permit from the Historic Resources Division, Department of Culture, Recreation and Youth, Government of Newfoundland and Labrador. This agency also provided the necessary funding. My fine field crew of Eric Loring and Mark Allston were stalwart,

enthusiastic, uncomplaining and fun and the interesting results of this season's fieldwork were due to their sharp eyes and unwillingness to be thwarted by ice barriers, fog, cold and long days. Scott Biggin made a good start on cataloguing the several hundred artifacts, and Mark kindly volunteered to wash and sort the large amount of debitage. Artifact photographs were taken by Manfred Buchheit; the map was prepared by Lundrigan-Crowley. My thanks also go to Jane Sproull Thomson and Susan Kaplan, who did the archival legwork, to Dick Jordan, whose intuition regarding prehistoric utilization of the fjords was right again (maybe!), to Dosia Laeyendecker for identifying the charcoal samples, and to Bryn Mawr College and the Newfoundland Museum for institutional support. This project could not have been undertaken without the logistical help of the Canadian Coast Guard Service, particularly Captain Peruche, the helicopter pilot, and the crew of the CCGS icebreaker Sir John Franklin. There can be few more luxurious ways of being transported to the field. Towards the end of the season we were joined by Bill, Ben and Josh Fitzhugh and Dosia Laeyendecker and greatly appreciated their help in the field over three days and the subsequent lift back down to Nain, also in comfort but of a slightly smaller variety.

APPENDIX: SITES VISITED IN 1985

New Sites

St. John's Harbour 4	IcCq-10	Pre-Dorset
St. John's Harbour 5	IcCq-11	Maritime Archaic
Saglek Bay 1	IcCr-11	Maritime Archaic, Neo-Eskimo
Saglek Bay 2	IcCr-12	Neo-Eskimo
Silupait Point 1	IcCs-1	Maritime Archaic, Neo-Eskimo
Pangertok Inlet 1	IcCs-2	Neo-Eskimo
Pangertok Inlet 4	IcCs-3	Maritime Archaic, Neo-Eskimo
Pangertok Inlet 5	IcCs-4	Maritime Archaic, Neo-Eskimo
Pangertok Inlet 6	IcCs-5	Neo-Eskimo
Nachvak Brook 2	IcCt-3	Maritime Archaic
Nachvak Brook 3	IcCt-4	Maritime Archaic

Pangertok Inlet 2	IcCt-5	Dorset, Neo-Eskimo
Pangertok Inlet 3	IcCt-6	Pre-Dorset, Neo-Eskimo
Nachvak Brook 4	IcCt-7	Pre-Dorset, Neo-Eskimo
Ugjuktok Fjord 2	IcCu-2	Maritime Archaic, Neo-Eskimo
West Arm 1	IcCu-3	Neo-Eskimo
Southwest Arm 1	IcCv-1	Maritime Archaic
Southwest Arm 2	IcCv-2	Neo-Eskimo
Jens Haven Bay 1	IdCs-2	Late Dorset, Neo-Eskimo
Jens Haven Bay 2	IdCs-3	Neo-Eskimo
Jens Haven Bay 3	IdCs-4	Middle Dorset, Neo-Eskimo
North Arm 1	IdCu-2	Pre-Dorset, Neo-Eskimo, European
North Arm 2	IdCu-3	Dorset, Neo-Eskimo
North Arm 3	IdCu-4	Neo-Eskimo

Revisited sites

Torr Bay 1	IcCq-5	Middle Dorset, Neo Eskimo
Torr Bay 3	IcCq-7	Dorset, Neo-Eskimo
St. John's Harbour 3	IcCq-8	Pre-Dorset
Nachvak Brook (1)	IcCt-1	Neo-Eskimo
Big Falls	IcCt-2	Early Dorset, Neo-Eskimo
Ugjuktok Fjord (1)	IcCu-1	Maritime Archaic, Early Palaeo-Eskimo, Neo-Eskimo
Shuldham Island 9	IdCq-22	Maritime Archaic, Groswater Palaeo-Eskimo, Early, Middle and Late Dorset, Point Revenge, Neo-Eskimo
Big Island East 11	IdCq-50	Maritime Archaic
Big Island East 12	IdCq-51	Maritime Archaic
Big Island 9	IdCq-54	Maritime Archaic

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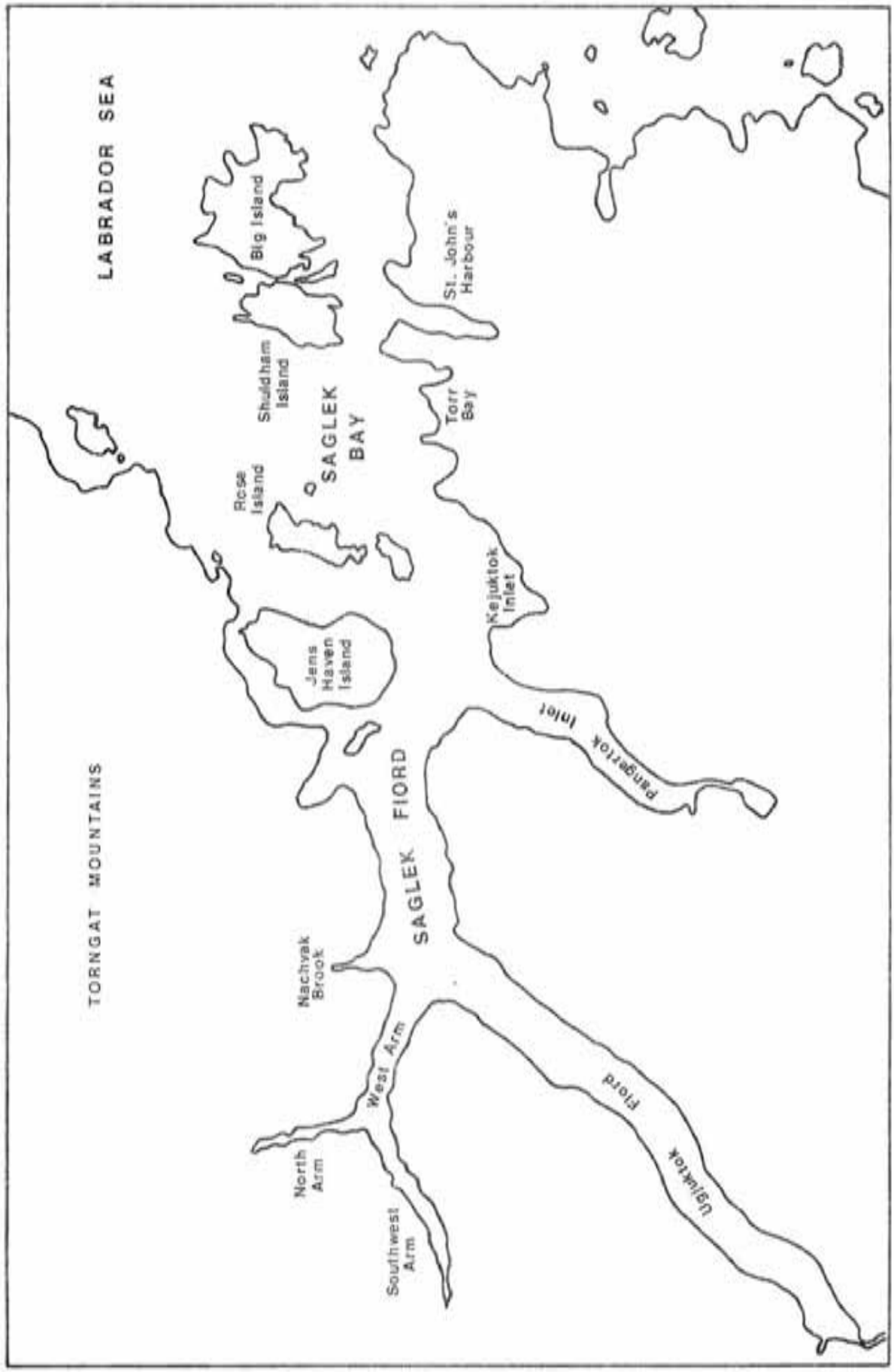
LABRADOR SEA
TORNGAT MOUNTAINS
Big Island
Shuldham Island
Rose Island
SAGLEK BAY
St. John's Harbour
Torr Bay
Kejuktok Inlet
Jens Haven Island
SAGLEK FIORD
Pangertok Inlet
Nachvak Brook
West Arm
North Arm
Southwest Arm
Ugjuktok Fiord

Plate 1

Maritime Archaic artifacts from Big Island 9, Saglek Bay (IdCq-54).

Top row, left to right:

Soapstone pendant
Ramah chert biface distal tip
Ramah chert biface distal tip
Ramah chert biface distal tip
Ramah chert biface distal tip

2nd Row:

Ramah chert stemmed biface
Ramah chert stemmed biface
Saglek quartzite single shouldered biface medial section
Saglek quartzite asymmetric biface medial section
Ramah chert stemmed uniface

3rd Row:

Ramah chert stemmed biface proximal end
Ramah chert stemmed biface proximal end
Ramah chert stemmed biface

Bottom Row:

Saglek quartzite biface
Slate celt
Saglek quartzite biface fragment

Scale 75% of actual size

Plate 2

Maritime Archaic Saglek quartzite preform artifacts from Nachvak Brook 3, Saglek Fjord (lcCt-4).

Top row, left to right:

Uniface fragment
Biface fragment
Biface fragment
Biface fragment
Biface fragment
Biface fragment

Middle row:

Biface tip
Ovate uniface
Biface
Lanceolate uniface

Bottom row:

Bipointed uniface
Lanceolate biface
Biface fragment
Bipointed biface
Biface fragment

Scale: 80% of actual size

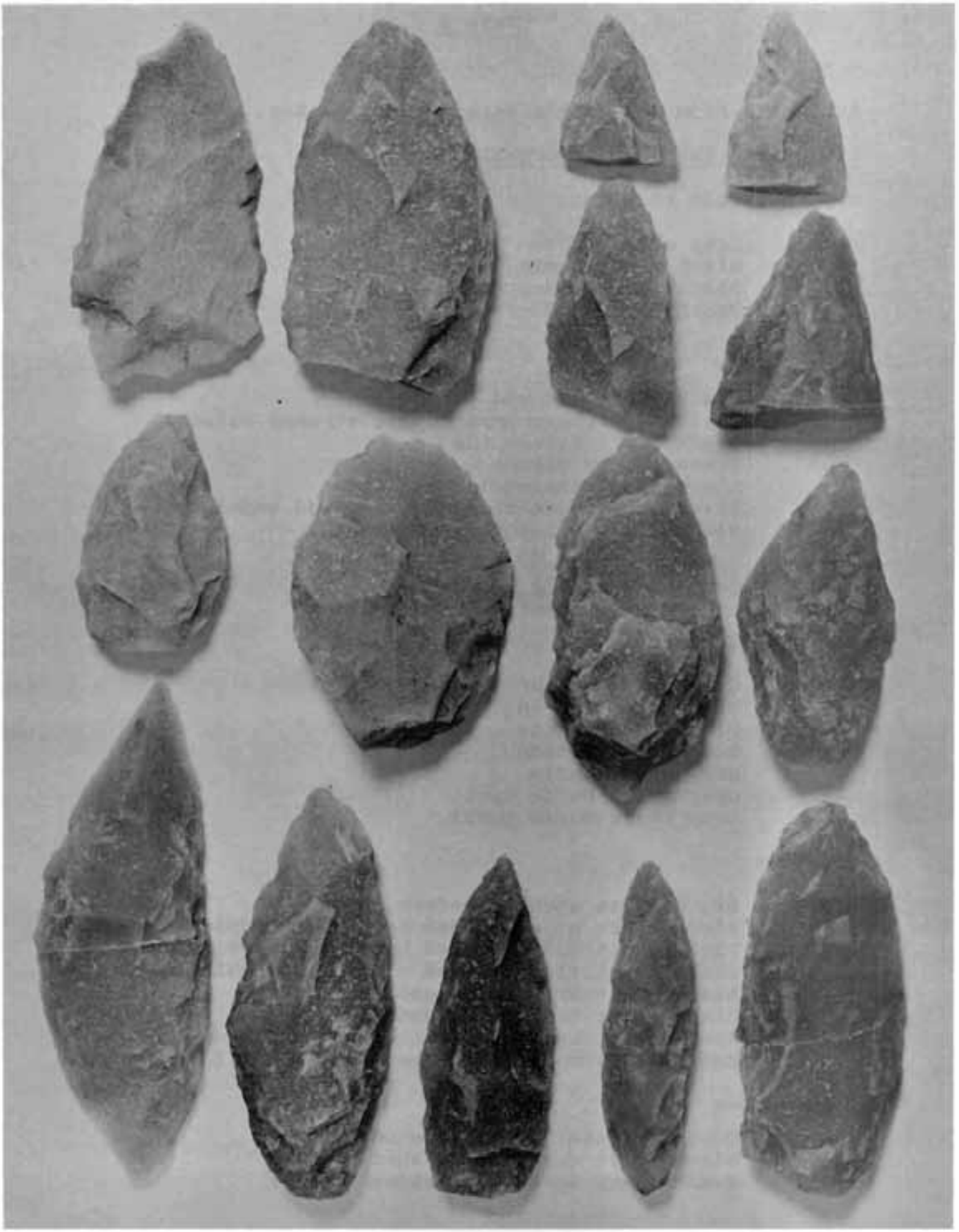

Plate 3

Artifacts from St. John's Harbour, Saglek Bay.

St. John's Harbour 3 (lcCq-8)

Top row, left to right:

Grey chert burin
Black chert burin
Black chert sidescraper
Ramah chert endscraper

2nd row:

Black chert stemmed biface
Maritime Archaic Ramah chert stemmed biface
Black chert biface tip
Ryans quartz biface
Black chert triangular endblade
Black chert side-notched bipointed endblade
Black chert triangular endblade

St. John's Harbour 4 (lcCq-10)

Top row, left to right:

Grey chert burin
Black chert burin
Black chert burin
Black chert burin
Grey chert burin
Grey chert burin spall
Grey chert burin spall

2nd row:

Black chert stemmed biface base
Black chert side-notched bipointed endblade
Black chert side-notched bipointed endblade
Black chert side-notched bipointed endblade
Black chert triangular endblade
Black chert triangular endblade
Ramah chert unifacial triangular endblade
Maritime Archaic Ramah chert stemmed biface fragment

Bottom row:

Quartz crystal microblade core
Black chert eared endscraper
Ramah chert eared endscraper

Scale: 80% of actual size

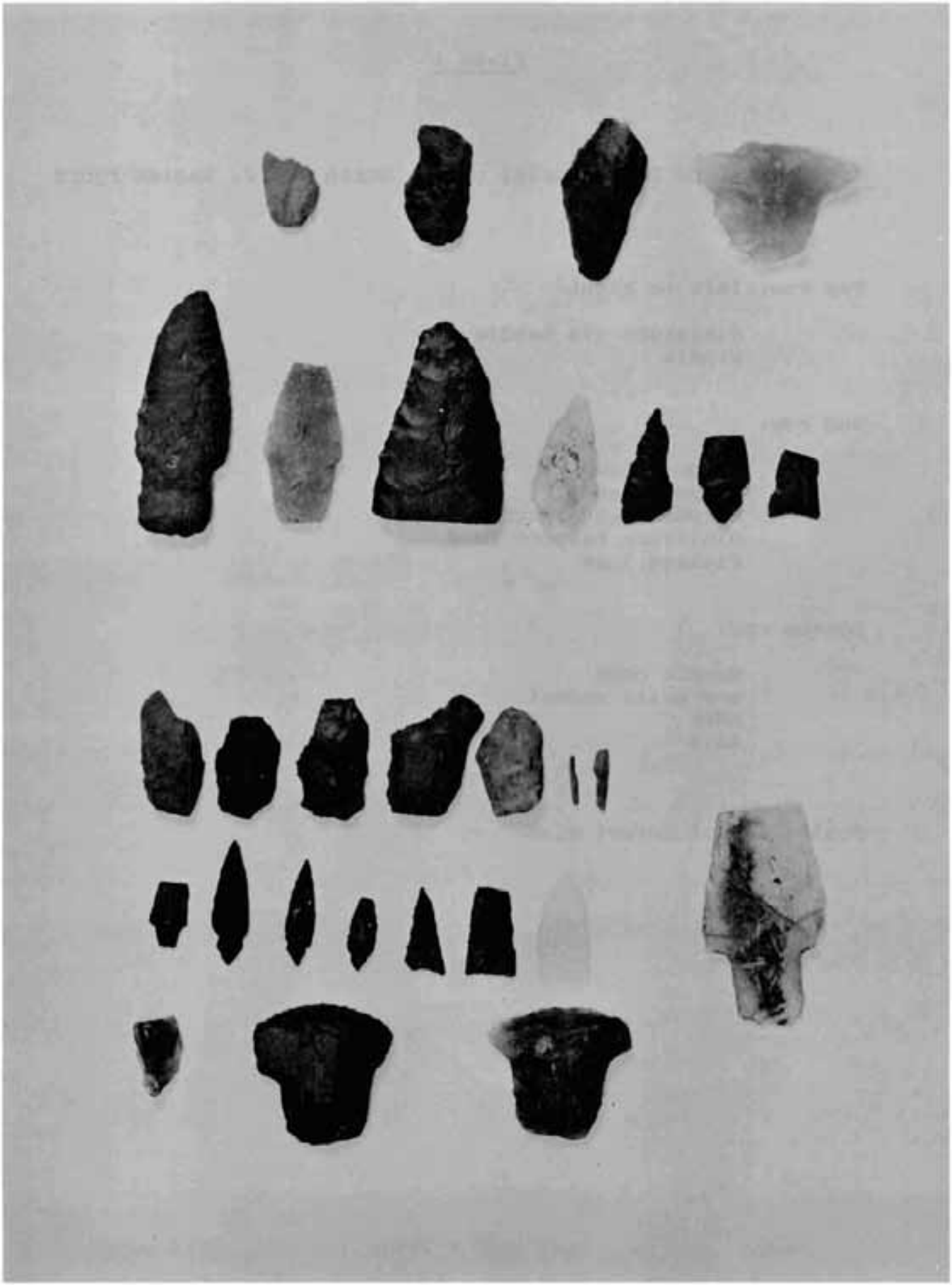

Plate 4

Artifacts from Thule burial cache, North Arm 2, Saglek Fjord (IdCu-3).

Top row, left to right:

- Miniature ulu handle
- Handle

2nd row:

- Harpoon head
- Harpoon head
- Harpoon head fragment
- Miniature harpoon head
- Fishing lure

Bottom row:

- Needle case
- Bow drill socket
- Adze
- Adze

Scale: 80% of actual size

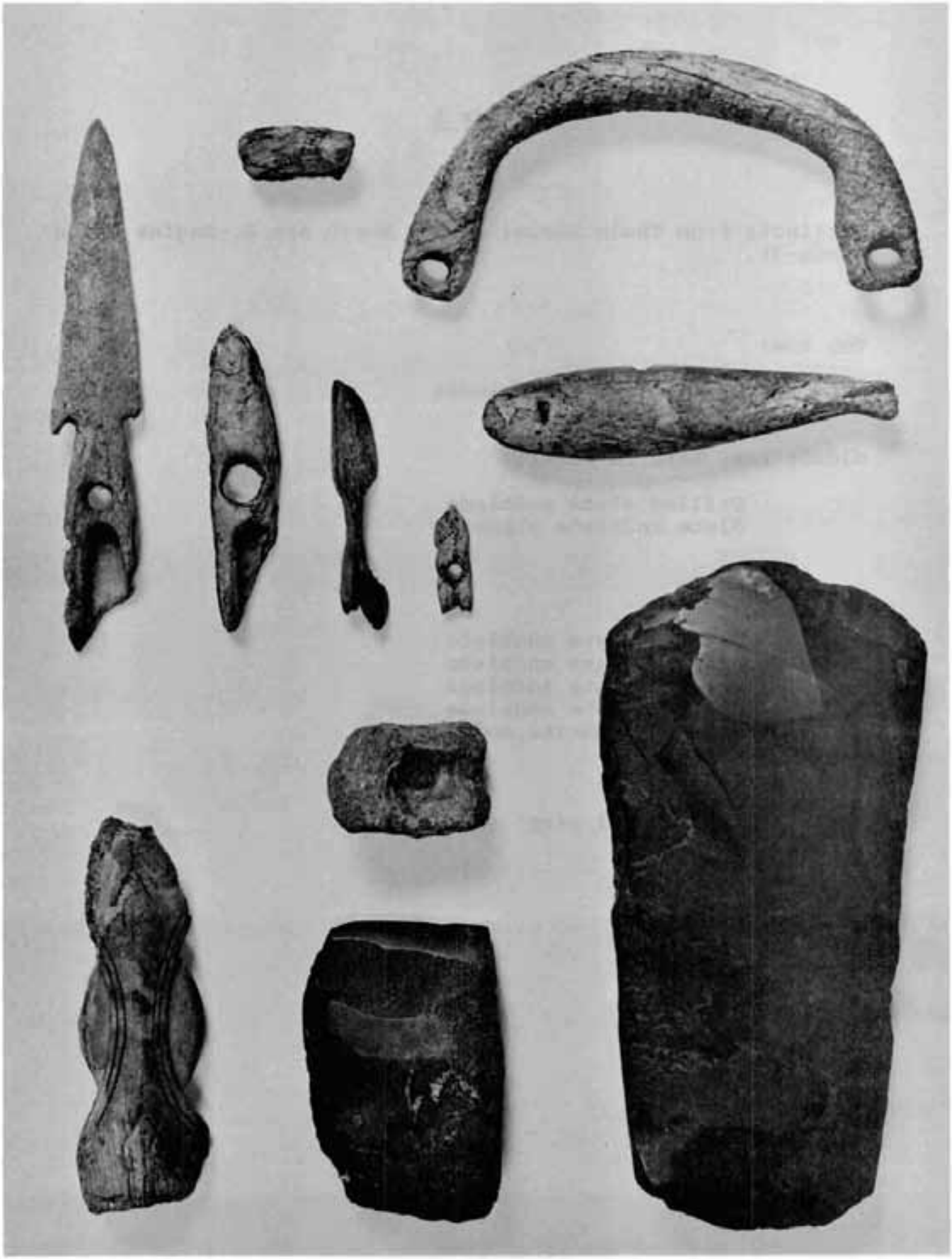

Plate 5

Artifacts from Thule burial cache, North Arm 2, Saglek Fjord (IcCu-3).

Top row:

Drilled slate endblades

Middle row, left to right:

Drilled slate endblade
Slate endblade blanks

Bottom row:

Drilled slate endblade
Drilled slate endblade
Drilled slate endblade
Drilled slate endblade
Drilled nephrite endblade

Scale: 90% of actual size

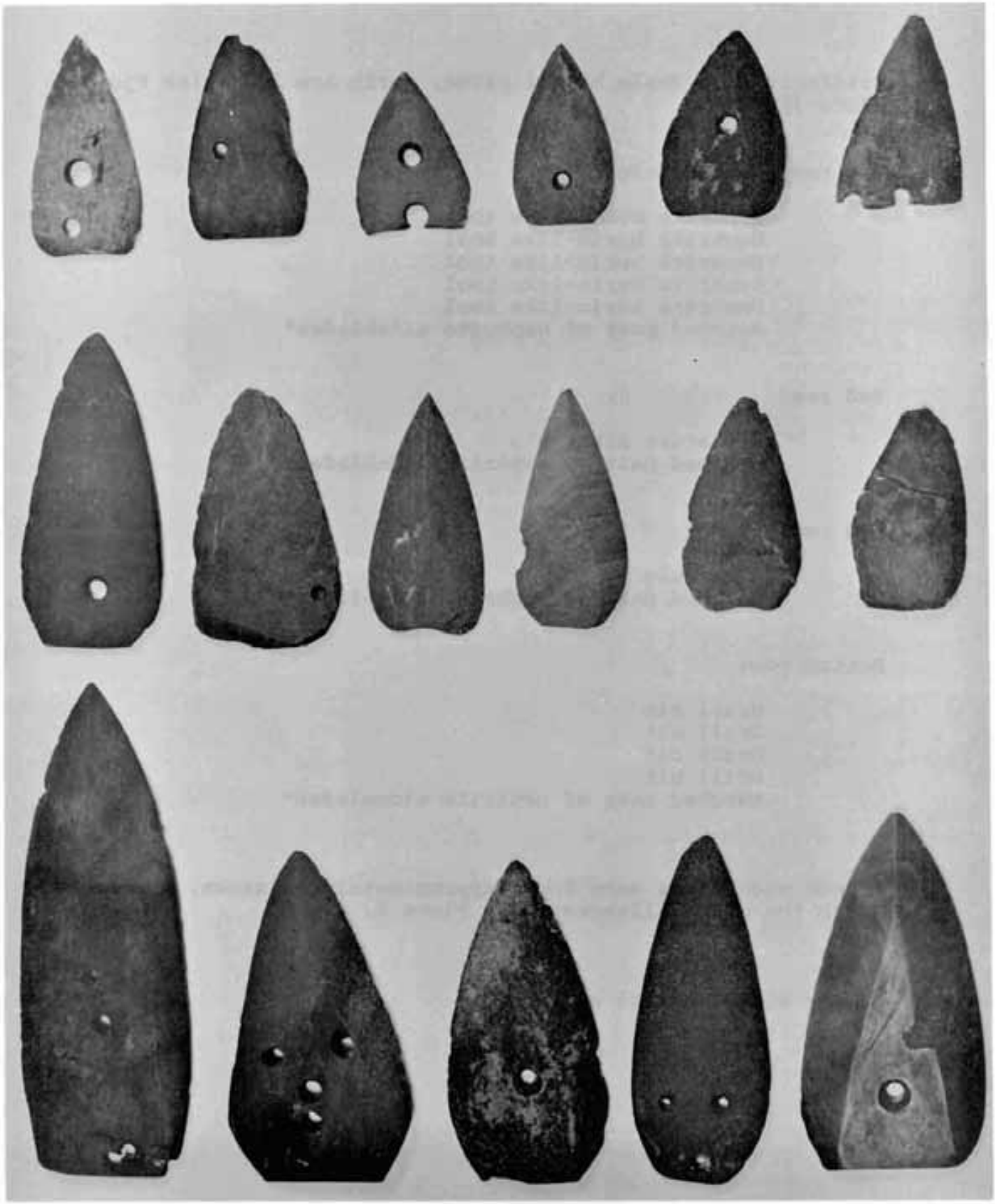

Plate 6

Artifacts from Thule burial cache, North Arm 2, Saglek Fjord (IdCu-3).

Top row, left to right:

Nephrite burin-like tool
Nephrite burin-like tool
Nephrite burin-like tool
Nephrite burin-like tool
Nephrite burin-like tool
Matched pair of nephrite sideblades*

2nd row:

Miniature slate ulu
Matched pair of nephrite sideblades*

3rd row:

Slate ulu
Matched pair of nephrite sideblades*

Bottom row:

Drill bit
Drill bit
Drill bit
Drill bit
Matched pair of nephrite sideblades*

*These sideblades were found approximately as shown, associated with the shaft illustrated on Plate 8.

Scale: 80% of actual size

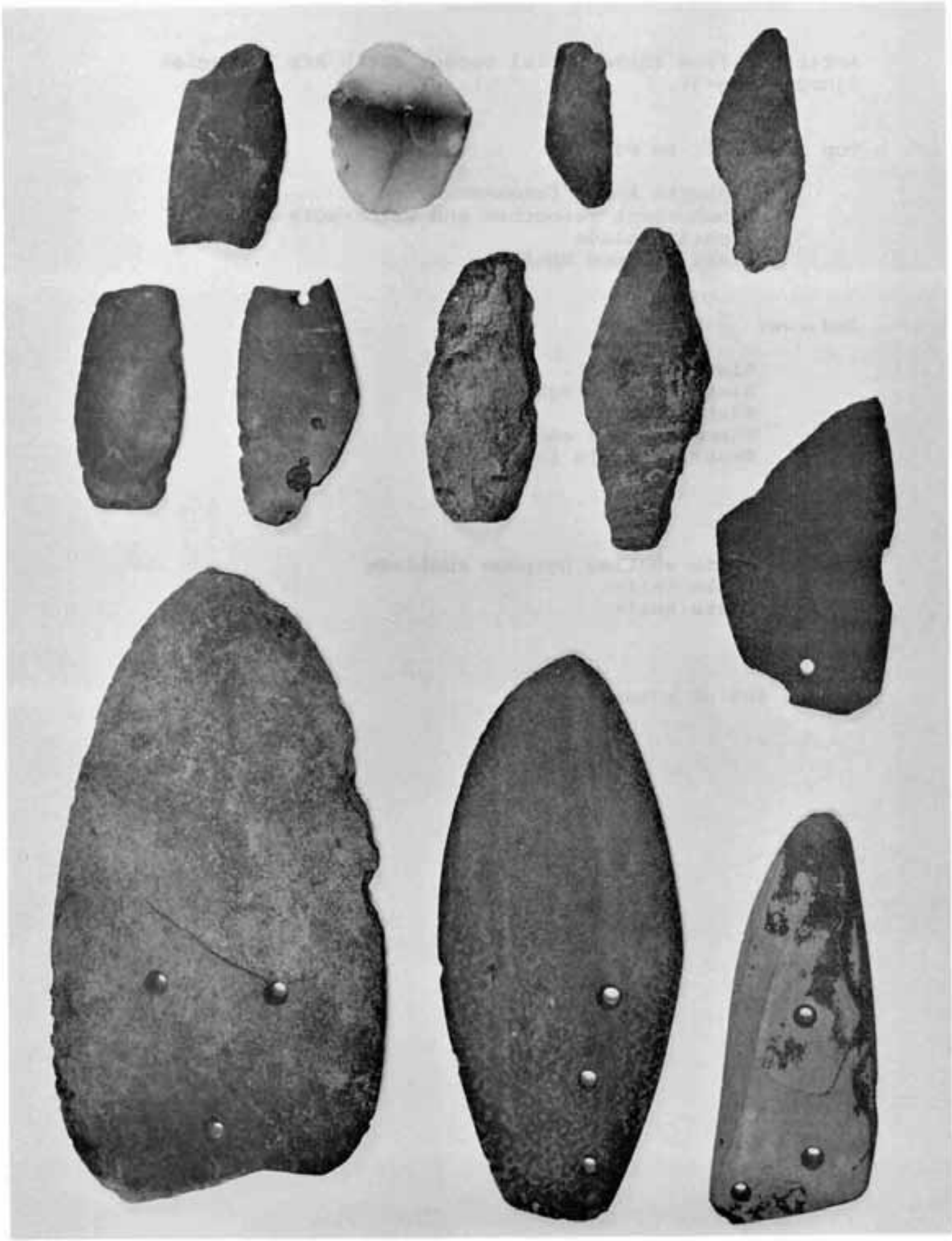

Plate 7

Artifacts from Thule burial cache, North Arm 2, Saglek fjord (IdCu-3).

Top row, left to right:

Nephrite knife fragment
Ramah chert retouched and water-worn biface
Nephrite blade
Slate stemmed knife

2nd row:

Slate preform
Slate knife fragment
Slate preform
Stemmed slate endblade
Nephrite knife fragment

3rd row:

Slate whaling harpoon endblade
Slate knife
Slate knife

Scale: 80% of actual size

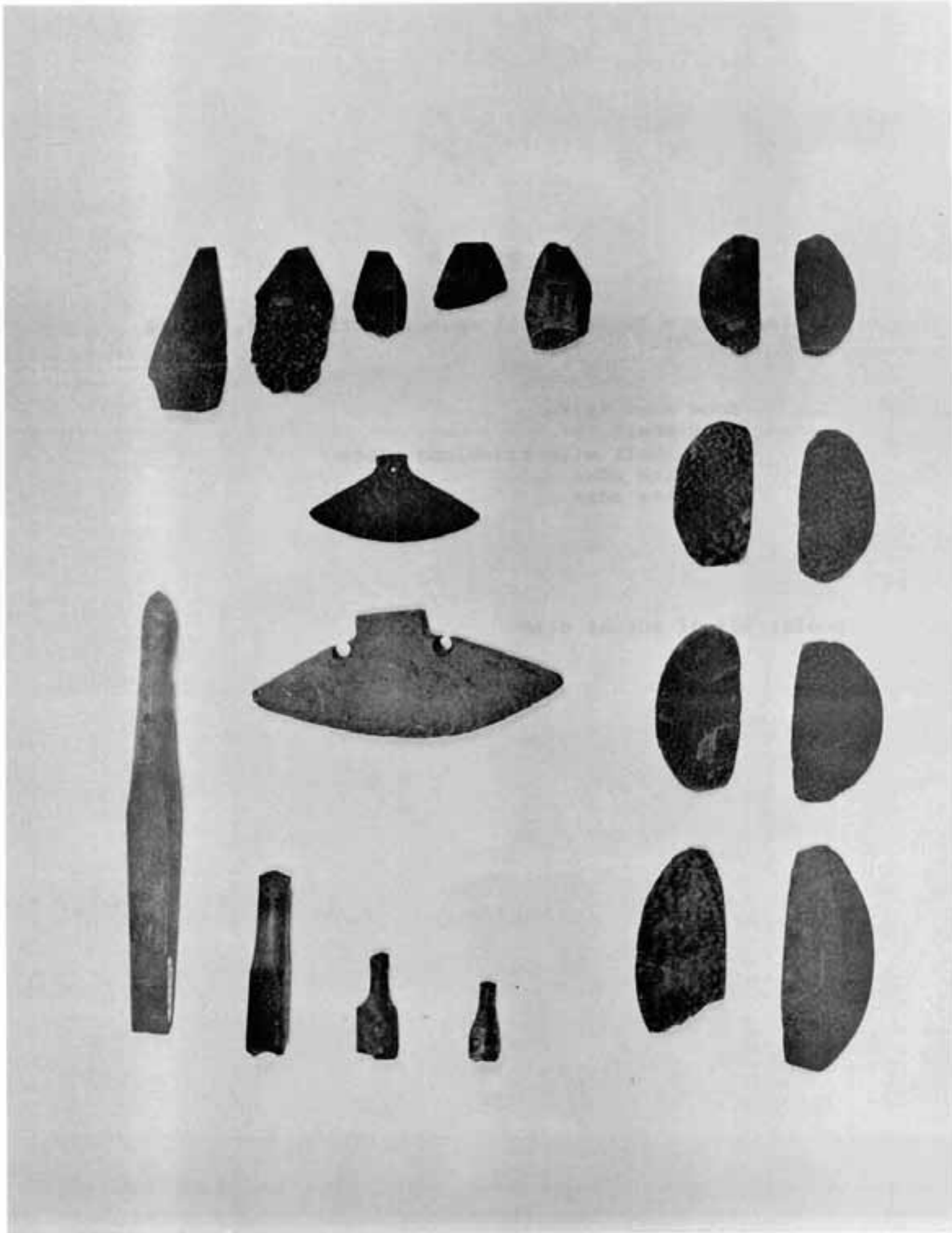

Plate 8

Artifacts from Thule burial cache, North Arm 2, Saglek fjord (IdCu-3).

Bone snow knife
Bone shaft
Bone shaft with sideblade slots
Nephrite adze
Nephrite adze

Scale: 50% of actual size

MARITIME ARCHAIC FIELD STUDIES IN CENTRAL LABRADOR AND NOTES ON NORTHWEST CORNERS

William Fitzhugh
Smithsonian Institution

Introduction

Research in central Labrador in 1985 was planned as a final stage of field work on the Smithsonian's longterm investigation of Maritime Archaic cultures in this region. The goals of the 1985 research emphasized securing data on domestic architecture, settlement patterns, burial forms, and chronology of Early Maritime Archaic culture, in addition to expanding regional survey data for the Maritime Archaic period. This report describes the field work and some of the results achieved.

Narrative

Fieldwork was planned to cover territory from Goose Bay to Saglek Bay, 350 miles to the north, using a small crew based on the Smithsonian's research vessel, Tunuyak. Among those participating were Benjamin and Joshua Fitzhugh, Eric Loring, Dosia Laeyendecker, Susan Rowley, and Mark Saksagiak. Lynne Fitzhugh assisted for two weeks in August.

Preparations began in Goose Bay coincident with a major forest fire that burned out of control between Goose and North West River for three days and was followed shortly thereafter by a large jet-fuel spill from a tanker at the Goose Bay docks. Although these incidents did not delay us, we were considerably inconvenienced by fuel problems closer to home when we broke down in the middle of Lake Melville as a result of dirty fuel received from a Goose Bay tank truck. This caused us several days of towing, tank-cleaning, and battery recharging. Reaching the outer coast, a natural obstacle --pack ice-- provided relief from man-made problems. The pack was not thick, however, and we were able to begin archaeological surveys around Smokey, Hopedale, and Davis Inlet as we proceeded north, arriving in Nain on 21 July.

The trip north from Nain to Saglek was made considerably more difficult because easterly winds had forced the pack inshore. By threading our way

through leads we reached Okak, and then Hebron, but we found Cape Uivak at Saglek completely blocked, and with ice rapidly closing in around us we were forced into the shelter of a small, ice filled harbour on Maidmont Island. Here we remained for two days until conditions improved and we were able to reach the ice-free waters of Saglek Bay, where we spent several days excavating early Maritime Archaic and Pre-Dorset sites with a field crew led by Callum Thomson from the Newfoundland Museum. The work in Saglek was completed in a few days, and we returned to Nain after brief surveys at Harp Isthmus and Takkatat to take up the major work of the summer.

Following a very productive month of work in Nain we departed for the south on the 23rd of August. Enroute, excavations were made at several Maritime Archaic sites on the central coast, but principally at Aillik 2. In addition, a two-day excursion was made to the Northwest Corners site on the upper reaches of the Hunt River, a site formerly investigated by Duncan Strong in 1928 and one of the few interior Maritime Archaic sites known in Labrador. Fieldwork was completed with our arrival in Goose Bay on the 6th of September.

Despite minor problems, the field season was exceptionally productive. A strong contributing factor, in addition to the spirited crew, was the calm, clear weather that persisted throughout the summer. We lost only a single day all summer to stormy conditions.

Results

The data recovered are discussed below with respect to the goals identified at the outset of the project:

Early Maritime Archaic Settlement Patterns

Seven of the eight Early Maritime Archaic sites targeted for research were mapped and excavated. The most important of these was the large site at Aillik 2 where eight structures are believed to document a settlement pattern transition from single to multi-family dwellings over a one-thousand year period. These structures lie on high raised boulder beaches, chronologically "stratified" by elevation above sea level, forming the backbone of the early Maritime Archaic chronology in Labrador. Our work here involved mapping and excavating six of the eight structures, most of which yielded both charcoal for species determination and dating purposes and tool samples for typological

comparisons. These data should enable us to construct a chronology for Early Maritime Archaic settlement pattern changes at a single site and should provide information about changes in social organization and population structure.

In addition we excavated Early Maritime Archaic structures at Imilikuluk, Karl Oom, Napatalik, and South Tikigakjuk Point, and one at Big Island in Saglek with Callum Thomson's crew. An important excavation was conducted at a newly discovered house structure associated with one of the two Early Maritime Archaic burial mounds (mound 2) at Ballybrack east of Nain (see Fitzhugh 1978). In addition we acquired data that suggest a seasonal, as opposed to chronological, relationship between pithouses and early period rectangular structures. All excavations produced tool assemblages and dating samples (Table 1).

In addition to house excavations we gathered information on site settlement patterns and village organization. Whole sites were mapped, and a variety of non-habitation structure types, such as caches, traps, rock alignments, and burials, were tested. These data will contribute greatly to the overall settlement studies of this early, evolving culture.

TABLE 1. Radiocarbon dates from 1985 excavations

Site	Sample #	Borden no.	Struct.	Material	Date BP*
Allilik 2	B-14326	GhBt-3	2	charcoal	4050±110
Allilik 2	B-14327	GhBt-3	2	charcoal	3680±100
Allilik 2	B-14328	GhBt-3	2	charcoal	4300±90
Allilik 2	B-14764	GhBt-3	3	char-soil	6820±180
Allilik 2	B-14764	GhBt-3	4	char-soil	6370±110
Allilik 2	B-14765	GhBt-3	5	char-soil	3270±90
Allilik 2	B-14329	GhBt-3	6	charcoal	3820±110
Allilik 2	B-14766	GhBt-3	7	char-soil	4290±90
Allilik 2	B-14767	GhBt-3	9	char-soil	3730±100
Napatalik N5	B-14768	GjCc-11	1	charcoal	4040±80
Immilik. 5	B-15514	HdCg-33	4	char-soil	3780±170
Karl Oom 3	B-15515	HdCg-39	6	charcoal	6120±120
Karl Oom 5	B-15516	HdCg-41	L1,S3	charcoal	2250±80
Ballybrack 10	B-15517	HeCi-11	Md2	charcoal	5020±100
Ballybrack 10	B-15518	HeCi-11	Md2	charcoal	6260±120

*=C13/C12 correction applied

It will be apparent to those consulting Table 1 and Figure 2 in a previous paper (Fitzhugh 1984) that there are considerable differences in the expected versus the observed radiocarbon dates for the proposed earlier (higher elevation) Aillik structures and for Napatalik North 5. These late dates raise a number of questions about the sequential settlement pattern changes as interpreted strictly from site elevation data. Although these dates do not unequivocally support the proposed sequence, when considered with potential soil contaminants (peat and forest fire charcoal) and tool assemblages, consistency with the proposed evolutionary patterns of small single/double room structures changeing to large multi-room structures is maintained. Further discussion is reserved for the monograph now in progress.

Palaeoeskimo--Maritime Archaic Contacts

The problem of culture boundaries between late Maritime Archaic and early Palaeoeskimo (Pre-Dorset) cultures ca. 4000-3500 B.P. was also addressed (and somewhat qualified) by new fieldwork. Principally, this involved excavations at several newly-found Pre-Dorset sites. One of these, located in St. John's Harbour in Saglek, is in the centre of the proposed northern "enclave" occupied by Maritime Archaic groups during this period. Several other Palaeoeskimo sites were found that added significantly to our knowledge of this culture's settlement patterns, territorial range, and chronology.

A complimentary discovery, that of a late Maritime Archaic site in the middle of the proposed early Palaeoeskimo "enclave" in Nain/Okak, was made at Attu's Point, at the southern end of Port Manvers Run, midway between Nain and Okak. Previously, few late Maritime Archaic sites have been found in this region, presumably because of its occupation by Palaeoeskimo groups. Attu's Point, which contains evidence of several large longhouses with Rattlers Bight types of tools, complicates the picture of the "enclave" theory, calling for either more interaction between these different cultural groups, or for periods of hiatus in their respective "enclaves".

Northwest Corners Survey

In his report on the "old stone culture" of Labrador, William Duncan Strong presented data from three sites in the Hopedale-Davis Inlet region

(Strong 1930). Previous reports have reanalyzed and reinterpreted Strong's data from Windy Tickle and Sharp Hill (Fitzhugh 1974, 1978). It has remained until now to secure new data from Northwest Corners, Strong's only interior site and one of the few prehistoric sites known from the near interior of the coast north of Hamilton Inlet.

Northwest Corners is a settler name for a location at the northwestern end of the second lake up Hunt River from Big (Jack Lane) Bay. Strong canoed into the area twice. The first occasion was an ethnographic foray in early October 1927 at which time Strong hoped to locate Davis Inlet Indians who were thought to be camped there hunting caribou. On this trip he was accompanied by Uncle Jim Saunders of Goose Bay, then a young lad growing up as a Davis Inlet trapper. They did not find the Indians, and work was hampered by lack of game and freezing weather; nor were archaeological sites noted, the ground being partially snow-covered in any case. The presence of stone tool sites was made known to Strong during discussion with Indians the following winter, so a second trip was planned for late June. This trip was made in the company of Frank Henderson, another member of the Rawson-MacMillan expedition. Details of this expedition are contained in Strong's diaries held at the National Anthropological Archives at the Smithsonian.

Strong reached the site by canoeing up the river as he had previously with Saunders, but this time he took a detour to fish in the "trout pond" south of the first lake up from Big Bay. The archaeological site was found as indicated to Strong on the west side of a narrows below Northwest Corners Brook, next to an old Indian camp containing the remains of three lodges and several sweatbath structures. There was little difficulty in identifying the spot because the Indians had dug the area up in their search for artifacts. Strong's photos and his description of the site are sufficient to identify it as our 1985 Northwest Corners 2 site at 55-23'54" N. Lat., 61-11'42" W. Long. GfCh-2 At the time of Strong's visit the photos show that the area had burned over previously (also noted in his soil profile), but the land forms are unmistakable today. From Strong's diary comes the following site description:

> They had dug up entire site to depth of four-five inches, thru moss to red sand underneath. No signs of original surface or tupik-stone arrangements. [I] Dug in remains, found

> several frag. implements (mostly jasper [sic.]) in situ (3"-5") deep. Some charcoal and a few hammerstones but nothing else. A disappointing climax altho the known facts of the site are important.
>
> Its location is a rocky ridge high enough to give good view of entire lake and of arm (N.W. Corns. Brook) to north, but behind it are higher ridges. As a defensible site it is negligible. From its size it consists of one or at most two tupiks. Went carefully thru the soil and found no frags of bone or bone implements, tho stone (and stone impl.) frags are common. Some charcoal in soil (perhaps due to forest fire) which seems to have blacker layer between moss and sand than usual, diff. [being] slight, however. Area turned over roughly circular (about 30' by 20'). No signs of occup. outside this area. No signs of graves, beacons or other tupik sites encountered by either of us in searching vicinity. Site perhaps 60'-75' above water line and perhaps 150 yds away at at a place halfway between mainland and point. Indian camp close alongside (due W. 50'). Several indiginous pieces and outcroppings of quartz in exposed boulders but no signs of jasper away from site.

Since 1928 no one has returned to re-study Northwest Corners. As a location actively used by the Davis Inlet Indians for fall caribou hunting, it seemed likely that more information might be gleaned from Strong's or other nearby sites. Especially important was the possibility that the area may have been an important maritime Archaic winter hunting site, for near-interior occupation has been proposed for this culture during this season. Strong's data leading to a Maritime Archaic designation, however, rests on the slender evidence of a single bipointed Ramah chert biface in his Plate 4a. As one of the very few interior sites known for this culture it was important to reinvestigate the site to determine its size and settlement patterns, its dating and the nature of its material culture.

For several years our attempts to gain access to this site have been hampered by its inaccessible location and by our commitments to other projects. This year we were fortunate to arrange an aircraft flight to Northwest Corners courtesy of the Abitibi-Price fish camp near the mouth of the Hunt River. Abitibi-Price generously provided the aircraft time, flying us in for two days, thus enabling us to avoid the arduous travel if not the flies encountered in 1928 (e.g. "Moved into a cloud of mosquitoes, millions of 'em,

in your eyes, nose, mouth-biting like demons! God damn Labrador").

Our work at the site consisted of surveying and mapping find locales and searching for artifacts and in situ deposits in what is now reasonably open terrain with blowouts and exposures. Strong's find spot proved to be one of a series of small encampments occupied by different historic and prehistoric groups over the past four thousand years. It was not possible to identify which of the several locales Strong and the Indians excavated. Artifacts and flakes occurred in several small 4-5 meter diameter clusters, which were spatially distinct and therefore were not remains of longhouses or other large contiguous structures. It seems therefore that the Northwest Corners site was a habitual camping place used sporadically by small hunting groups. While Strong's locale seems to have been a Maritime Archaic site, cultural designations could not be determined for the other find locales, and it is likely that later Indian cultures were involved. No Paleoeskimo or Neoeskimo remains were present, nor were there signs of longhouses or burials.

These findings from an interior site continue to support the current interpretation of late Maritime Archaic culture as a predominantly maritime-oriented culture. While interior hunting may have been important seasonally, it seems not to have been conducted by the large, organized groups of the size customarily found in coastal locations. Alternatively, it is possible that some of the Northwest Corners locales may have been used by early Maritime Archaic groups before the development of longhouse villages. Continued surveys in the Northwest Corners region are recommended as this is one of the few interior locations with considerable archaeological potential.

Maritime Archaic Burial Surveys

An important adjunct activity to the summer's work as investigation of several potential burial sites to augment the rather thin geographic and chronological spread of such sites as currently known. Accordingly, we tested boulder pavements and slab features at Iglosiatik, Thalia Point, Dog Island, Imilikuluk and several other sites. As luck would have it, no burials were found, and these features were determined to have been used for food caches or other purposes.

Other Results

In addition to the above, we were able, as usual, to expand our knowledge of other cultural periods through surveys conducted during the course of other research. At Drawbucket Tickle north of Davis Inlet we located an excellent series of Palaeoeskimo and Neoeskimo sites on raised beaches, including a large Middle Dorset winter house. On Jonathan Island we found the largest complex of Dorset sites yet known in the Nain region, many of which have rich cultural deposits. Among the sites are two structures that resemble Dorset longhouses found in areas north of Labrador, but heretofore missing from our region. Both have central axial pavements that are one metre wide and extend for 12-18 metres parallel to the shore. Middle Dorset tools are associated with the structures, which differ from other Dorset longhouses in having no traces of walls or of hearth boxes or niches, but with long rows of "hopping stones" which extend from the ends of the Jonathon Island axial pavements. Surveys at Takkatat, near Hebron, on the western side of Dog Island, and in the Webb Bay - Port Manvers Run area of Nain also produced new information on Paleoeskimo occupations.

Conclusions

As outlined above, the 1985 field program exceeded our best expectations. We now have excellent data for the two principal types of early Maritime Archaic dwellings — pithouses and small segmented rectangular surface structures -- and have detailed settlement pattern and site distribution data for the early Maritime Archaic period. In addition, we have recovered dating samples and tools to enable these early sites with dwelling structures to be linked to the large open terrace sites where evidence of dwelling structures has not been preserved. The only disappointing aspect of the summer was in not expanding our sample of burial sites. Nevertheless, sufficient data are in hand to describe mortuary features from previous seasons' work.

The 1985 fieldwork brings to successful completion fifteen years of surveys and excavations on Maritime Archaic archaeology in Labrador. The dataavailable now include hundreds of sites, thousands of artifacts, and scores of pollen, soil, and other environmental samples from five hundred miles of the forest-tundra transition on the central Labrador coast. While

there are still sites to be investigated and new problems to research, the data in hand are sufficient to present a monographic account of this pioneering culture of the Far Northeast, including its technology, economy, settlement patterns, and ceremonialism; its origins, development, and decline; its environmental relationships which span four thousand years from deglaciation to stabilization of the forest-tundra boundary; and its contacts and relationships with other cultures. The study will be a comprehensive treatment of an important early and largely unknown cultural tradition in Northeastern North America.

Acknowledgements

A large number of individuals have contributed to the success of the 1985 field season. In addition to the field crew members cited above I with to thank our many Labrador friends, especially Dorothy King, Gary and Trudy Baikie, Callum Thomson, and Carolyn Maybee. The Abitibi-Price Company was instrumental in our Northwest Corners survey. Finally, I wish to acknowledge financial assistance from the Smithsonian Scholarly Studies Program and the Newfoundland Museum.

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PLATE 1

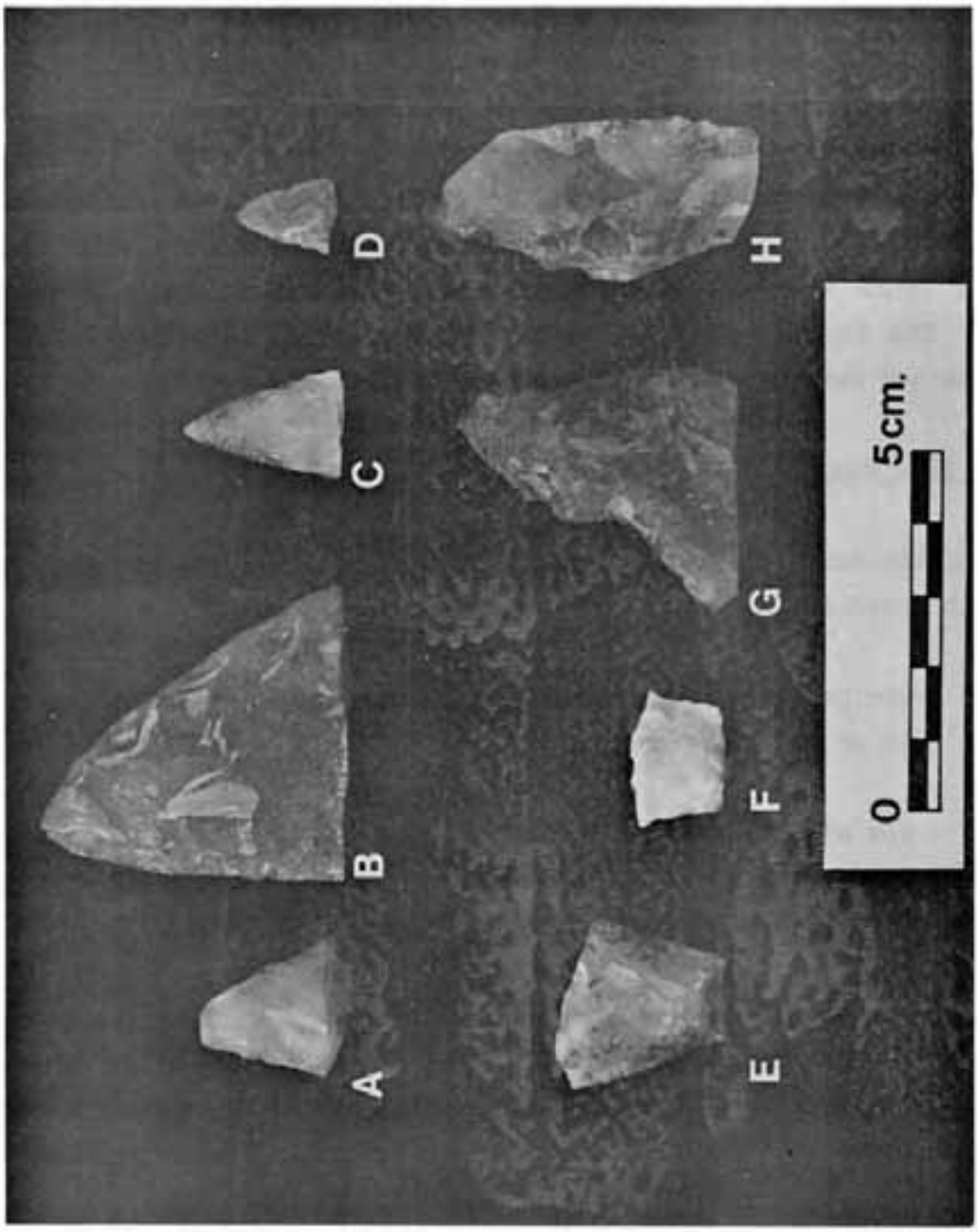
Artifacts from Northwest Corners site:

a-d biface tips

e-f biface bases

g-h biface preforms

All specimens are Ramah chert.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RESULTS OF FOUR HISTORIC RESOURCES ASSESSMENTS IN NEWFOUNDLAND AND LABRADOR 1985

Gerald Penney
St. John's

Introduction

Four historic resources assessments were conducted in 1985. The most involved was the assessment of the Ross Bay Junction to Churchill Falls Tote Road for the provincial Department of Transportation through Hardy Associates (1978) Ltd. Two assessments were carried out in Placentia Bay—one as part of a team study of three sites slated for offshore oil related developments for the Provincial Department of Development and Tourism and the other was of a potential hydro site at Paradise River for Newfoundland Light & Power Co. Limited. The fourth assessment was at Freshwater Bay between St. John's and Cape Spear for FreshwaterBay Offshore Base Ltd.

Labrador Tote Road

The Tote Road will connect towns in Labrador West (Wabush and Labrador City) with Churchill Falls. The routes under study were:

(a) the proposed route, Ross Bay Junction to Churchill Falls, with 130 km of new construction.

(b) the alternate route, Ross Bay Junction to Churchill Falls via Esker, the 90 km of new construction and the upgrading of 100 km of existing.

On the route selected, the horizontal alignment will be designed to an RCU80 (rural, collector, undivided, 80 km/h) standard. The right of way will be 40 m wide with a 20 m wide area to be cleared and close cut in order to retain the roots of existing vegetation cover and minimize erosion of the

original ground. As presently envisaged the Tote Road will be a seasonal road and will be constructed over a five year period.

The project area is bounded to the south by the height-of-land and such south flowing rivers as the Moisie and Romaine which have their headwaters here (Figure 1). To the west is the Ashuanipi River system, flowing south to north, which rises in the southwest corner of Labrador, flows through Ashuanipi and Menihek Lakes into Lake Petitsikapau, and eventually into the man-made Smallwood Reservoir. These two river systems are now, as they have been throughout the historic period, summer travel routes between the coast and the interior.

A review of ethnographic, historical and exploration literature dealing with the interior of Labrador suggests a marginal occupation, at least during the prehistoric period. Donald MacLeod (1967) found only four archaeological sites—two prehistoric and two historic—during a two-month, 800 km, canoe survey of the Michikamau area. An intensive survey of Indian House Lake (Samson 1978), a couple of hundred kilometres northeast of the study area, found 75 sites. Two-thirds of these date to the last century. Another 26 span 5000 years of prehistory.

The earlier archaeological reconnaissance of Rogers and Rogers (1948, 1950) and Rogers and Bradley (1953) in the region around lakes Mistassini and Albanel, in south central Quebec, suggests a more intensive prehistoric occupation than any yet discovered in Labrador. A three month archaeological survey in 1950 revealed 121 prehistoric sites and a 1953 survey found 30 prehistoric sites with indications of twice that many. Rogers and Rogers, in their 1949 study, observed that prehistoric camps seemed to favor a northeastern exposure while summer camps of the present day Indians have, as a rule, southwestern exposures. While the exposures may be different it has been shown that the Indian of years ago camped on spots which are still being used by his descendants today. This is proven in as much as nearly half of the prehistoric camps that were found are still being occupied. The 1953 survey revealed 17 of the prehistoric camp sites are also used by modern Indians, either in winter or when travelling through the country in the summer. Erosion threatened the majority of prehistoric sites, possibly summer camps located at water's edge.

The Innu of Labrador and Quebec, today totalling almost 9,000 people, are based in the communities of Davis Inlet, Sheshatshiu, St. Augustin, La Romaine, Natashquan, Mingan, Sept-Illes/Malistenan, Schefferville, Bersimis, Les Escoumins, and Pointe Bleue. The culture of the Innu is adapted to life in the boreal forest of northern Canada and is primarily based on large mammal hunting and exploitation of fur bearing animals. The Innu, together with the Cree, are part of a linguistic and cultural continuum stretching from Labrador to the Rocky Mountains. It is in the interior trapping and hunting lands where bands and dialects have traditionally met and merged. According to Tanner and Armitage (1985) the study area is now, for the most part, within the territory of the Sept-Isles and Schefferville bands, with a small part of the Southeastern extreme of the area falling within the area of the Mingan band.

The Sept-Isles band is the coalescence of an original Moisie River group with a number of bands (families) formerly associated with interior regions of the Labrador peninsula. During the 1800s the Ashuanipi and Menehik bands became part of the Sept-Isles band (Hind 1864) and later the Petitsikapau, Michikamau, Keniapiskau and parts of the Nichicun group were added (Figure 2). During the late 19th and early 20th centuries these interior groups, because of the closure of interior trading posts, were forced to the coast at Sept-Isles, North West River and elsewhere (Speck and Eisely 1942).

The Sept-Isles group continued, during the 1920's, to "hunt and trap up the Moisie River and east of it to Menigan and Attikenak Lakes, from the coast to the headwaters of the Hamilton (Churchill) River beyond to the height of land" (Speck 1931:585). It was this group that returned to the interior, near Schefferville (Knob Lake), in the 1950s with the advent of iron ore mining in the region. Some of the Innu who used the study area historically became part of the Sheshatshiu band either through marriage or because of perceived economic gain from the trading post there.

The section of the Tote Road from Labrador City to Ross Bay Junction was exempted from the full environmental impact assessment process; however, historic resources evaluations were required of the proponent. Preliminary field reconnaissance of the proposed and alternate routes, involving a helicopter overflight of the study area, took place in July 1985. This overflight plus the two exemption reports by Thomson (1983, 1984) suggested that river cross-

ings (i.e. where the corridor intersected or came close to lakes and ponds) would offer the highest potential for locating historic resources. The proposed and alternate routes were overflown at least twice by helicopter; nearly one half of the center cut line of the preferred route was test pitted and foot surveyed.

We were working in coordination with LGL Limited, and all stream crossings requiring assessment by the Department of Fisheries and Oceans were investigated. Stream crossings on both routes were previously marked in the field by representatives of the Transporation Department and Fisheries and Oceans Canada. Eighteen stream crossings on the preferred route, and six on the alternate route, were investigated and sub-surface sampled. The three eskers which intersect the proposed route were foot surveyed and randomly sub-surface test pitted as were the two eskers which intersect the alternate route.

One historic site--a small recent Innu campsite--was found at stream crossing 14 on the proposed route, most likely the result of a single overnight occupation during the past couple of decades. No artifacts, except a wooden stand used to set-up a camp stove, were found in the vicinity, and no iron or lithic debitage was found in test pits or on the surface.

No prehistoric sites were uncovered during sub-surface testing on the proposed route nor was any site visible on the surface of either route. A foot survey, supplemented by random sub-surface testing, of 24 stream crossings and five major intersecting eskers on the proposed and alternate routes failed to locate prehistoric sites.

Thomson (1983:iii) found four archaeological sites during his assessment of the first 57 km of the Tote Road: one prehistoric artifact find site, now obliterated by mining operations at Wabush, and three recent historic sites. During his assessment of km 57 to km 68 Thomson(1984) found only a small historic campsite throught to be the result of a single occupation by an Innu family during the past several decades.

At six stream crossings on the proposed route there is secondary evidence of man in the form of tree cuttings. Likewise on the alternate route tree cuttings were observed at four crossings. These are the possible result of deadfall trap construction, portages, fire wood gathering or some combina-

tion of these. None of these cuttings appear to be recent and may date as early as the first quarter of this century, but it is difficult to date such evidence. Conclusions from this study are not presented here as the Environmental Impact Assessment has not yet been accepted by the Department of Environment and, therefore, is not available for public viewing.

Placentia Bay Environmental Impact Study

Three areas: Mortier Bay/Spanish Room, Adams Head/Bordeaux, and Argentia have been selected by the Province as onshore development sites. An overview of the historic resources of these sites was included in the Placentia Bay Environmental Impact Study prepared for the Department of Development and Tourism.

A one day visit to Spanish Room determined the area of highest historic resources potential to be at a cove on Spanish Room Point claimed by John Pike and Richard Dober, Sr. This cove was certainly occupied during the 19th century and will require an intensive inventory including sub-surface testing to determine other possible occupations. The proposed area for a supplementary campsite, claimed by Eugene Rose, is also suspected to contain historic resources similar to those found on the Devereaux property during an assessment of the Cow Head Oil Rig Repair Facility (Penney 1984).

A one day field reconnaissance of the abandoned community of Bordeaux near Adam's Head confirmed the suspected high potential for historic resources at this site. Two Dorset sites (Figure 3) were recorded here by Linnamae (1971:17-19) during an archaeological survey of Placentia Bay islands. She found artifacts on the eastern and western sides of the brackish lagoon in the middle of the headland. The eastern site (CkAm-4) was suspected to have been eroding into the sea as little material was found. The western site (CkAm-5) was more prolific as an undisturbed occupation layer was isolated. From a test trench two triangular endblades and four microblades as well as wood charcoal were recovered. A radiocarbon age determination of AD 860 has provided the latest Dorset occupation date on the Island.

No field reconnaissance was carried out at the Argentia development site as James Tuck of Memorial University of Newfoundland assessed its historic resources potential in a 1984 study. His report concluded that the potential

for impact on historic resources as a result of development was negligible. The proponent (Argentia Development Corporation Limited) did agree to mitigate potential impacts on historic resources which might result once work begins, should any historic resources be discovered.

Paradise River Hydro Development

Newfoundland Light & Power Co.Limited proposes to construct a five megawatt hydro development at the mouth of Paradise River at Paradise Sound (Figure 3) in Placentia Bay. The Paradise River watershed is a drainage area of approximately 465 km^2. An 18 m high falls at the mouth of the river, which has prevented the entry of Atlantic Salmon (salmo salar), will be raised a further 10-15 m by the construction of an earth filled dam. Approximately one and a half ha of river bank will be flooded; the power house, substation and a four km access road will utilize from five to six ha of land.

The 1857 census records four individuals at Monkstown. According to informants two of these were Catherine and William Monk who moved from Flat Island (now Port Elizabeth). They were followed by the Barretts from Woody Island and the Pardys from Burnt Island (now Port Ann).

Settlement at Monkstown, its name having changed from Paradise Sound in 1902, seems to have occurred for a variety of reasons including population saturation on offshore islands, a more diversified fishing economy and the growth of the sawmilling and boat construction industries.

The forests found in tributary valleys of both Paradise River and Black River provide an otherwise scarce resource on the Burin Peninsula. Monk (1969:11) tells of residents living in "studded houses, stogged with moss, some of them built two miles from the shore in the heart of the timber." James and William Monk established a sawmill in Paradise Sound in 1896 while Charles Joyce of Burin built a sawmill on Paradise River in 1902. Smaller operations saw fishermen travelling in the woods during late fall and winter, setting up a pit-saw, and sawing boards for dory and western boat construction. Sawmills were eventually established elsewhere in the bay (Piper's Hole River and Black River). Brown's (1985:145) census analysis found that there were only three sawmills in the inner bay, all at Monkstown in 1911; however, by 1921 they were present in five other communities.

Sawmilling reached its zenith on Paradise River in 1923 when a contract was obtained to cut pit props for export to Britain. This activity caused a minor boom in Monkstown and environs. The population increased from 20 to 50-60 families for the next two years of prosperity.

Fur trapping on Paradise River and Black River was carried out by such residents as Albert Hefferan, Sam Barrett and John Monk during the first half of the present century.

A major inadequacy exists in the data base for prehistoric and early historic sites in this region of Placentia Bay as little survey activity, and no professional excavation, has been done. As a result only the broadest cultural history is available. The potential for prehistoric or early historic sites at the mouth of Paradise River is, from local interviews and preliminary field reconnaissance, low. However, even the cultural history of this river system is far from being completely documented.

Further studies recommended of the proponent include:

1. An intensive field survey along the center line of the access road once it is routed. Likewise, the substation and power house area should be test pitted when their locations are fixed.

2. The shoreline of Paradise River which is to be flooded should be archaeologically surveyed with concentrated effort at the mouth of its tributaries. These areas, referred to as gulches by Monkstown residents, are the suspected locations of 19th century winterhouses and saw mills. Once the flood area is designated the number of tributaries to be investigated will be known.

Freshwater Bay Offshore Base

FreshwaterBay Offshore Base Limited plan to develop and operate an offshore service and supply base with dock load-out facilities at Freshwater Bay, just south of St. John's Harbour. The proposed facility will consist of a 300m long dock with three finger piers and adjacent equipment staging and load-out facilities. Freshwater Bay Pond will be dredged to a depth of 10 m, the bay-mouth breached, and a large breakwater constructed. The Crown conveyed 113 ha of land to the company of which 65 will be developed as storage areas, pipe lay-down warehouses and an office building. Initial plans are for

a road right-of-way to the service areas with immediate construction to follow.

The place name Freshwater Bay appears as Princeuse on Champlain's (1612) Carte geographique de la Nouvele Franse. This early reference certainly lends antiquity to the place name. Because of its proximity to St. John's Harbour and Cape Spear it appears on other early charts. Seary (1971:215), records it as appearing on charts by Lait (1625), Champlain (1632), Johnson (1636) and Bleau (1662). It appears as Freshwater B. on Southwood (1675) and Lane (1774), while it is referred to as B. d'eau douce on Robert de Vaugondy's 1749 chart and as Freshwater Bay on Bonnycastle (1842).

The 1857 census, the first colonial census, records 11 households (65 individuals) living at Freshwater Bay. The next two censuses (1869, 1874) record a decline in population from 46 to 26 individuals. There is no census data for Freshwater Bay for the years 1884, 1891, 1901. Twenty individuals are recorded as living there in 1911, none in 1921, and nine in 1935. It does not appear in the 1945 census.

Three hectares of land were cultivated in 1857, however, domestic agriculture waned and is not mentioned after 1874. Lovell's Newfoundland Directory, based on 1869 census data, lists six families named Baird and one named Barnes living at Freshwater Bay. Seary (1976:15-16) records a James Baird (born 1828 at Saltcoats, Ayreshire, arriving in Newfoundland 1844) as living there. He also mentions Daniel (and other) Bairds as fishermen of that community.

While census data confirm Freshwater Bay as a 19th century community it is uncertain if its residents lived year round or practiced transhumance. From discussions with individuals, archival research and the contents of letters to the Editor which appear in The Evening Telegram it appears that its history of settlement is not well known. The public are, however, interested in the proposed development project.

Seven visits were made to Freshwater Bay. While winter weather conditions precluded sub-surface testing, some remains were still evident above ground. Two features and possibly a house structure were observed as well as the remains of rock-walled vegetable gardens. An underwater wreck was also found by divers and evidence dates the wreckage to the latter part of the 19th

century. A historic resources base does exist at Freshwater Bay as indicated by these features. At present we do not know the antiquity, distribution and potential significance of these resources.

Field surveys indicate that the proposed development at Freshwater Bay will negatively impact on historic resources. Impacts on land will occur at the northeast end of the development area while impacts on underwater historic resources will occur in Freshwater Bay Pond near the eastern end of the bay-mouth bar. As a consequence further study of the historic resources of Freshwater Bay was recommended. Features on land should be tested, mapped and photographed to determine their antiquity, seasonality and function. The centre line of the access road should be archaeologically surveyed. The underwater wreck, a feature of past maritime adaptations, should be mapped and photographed. Further informant interviews with residents of Blackhead, Shea Heights and the Battery are also recommended.

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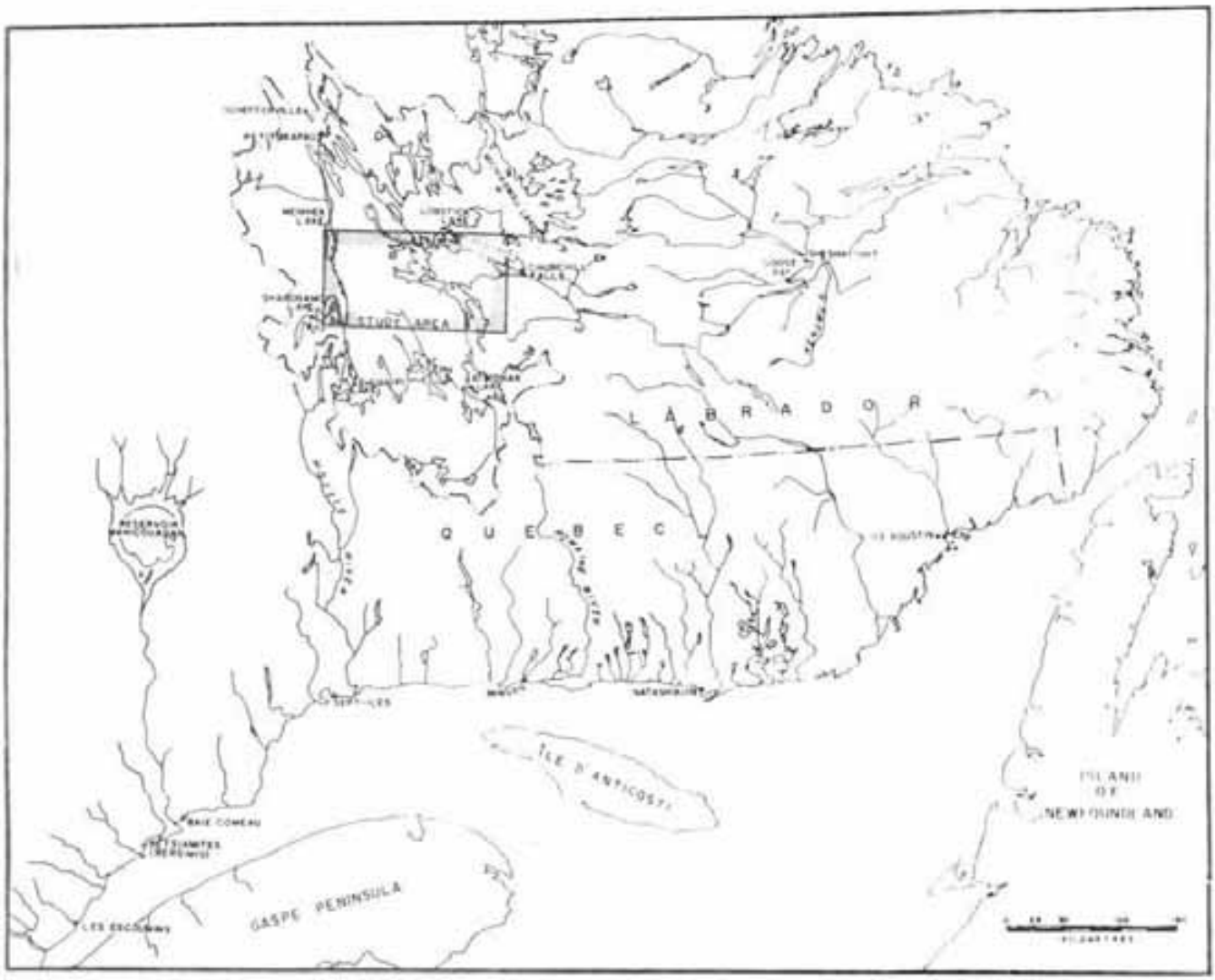

Figure 1: QUEBEC - LABRADOR STUDY AREA

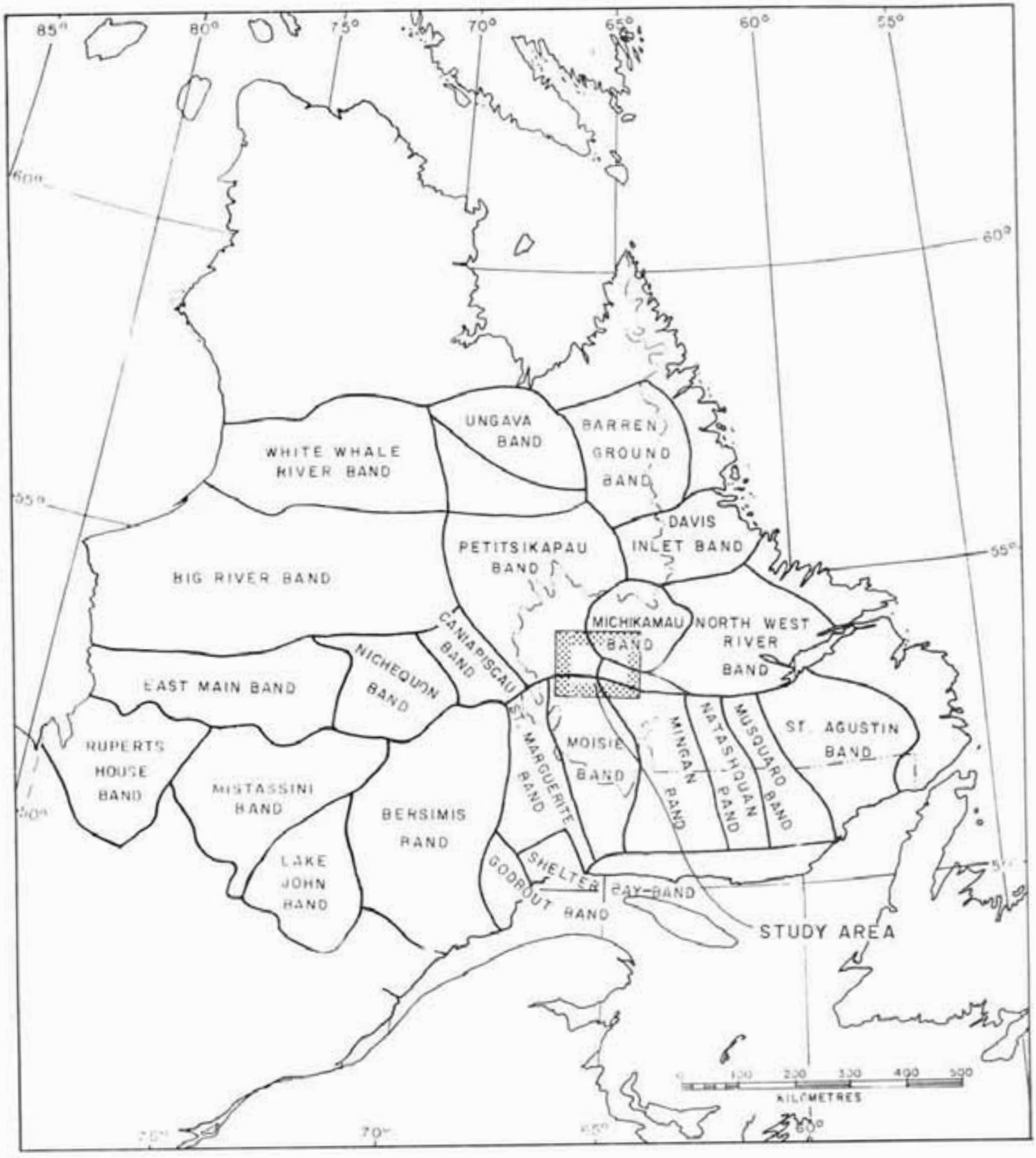

Figure 2: QUEBEC - LABRADOR BANDS (after Speck 1931)

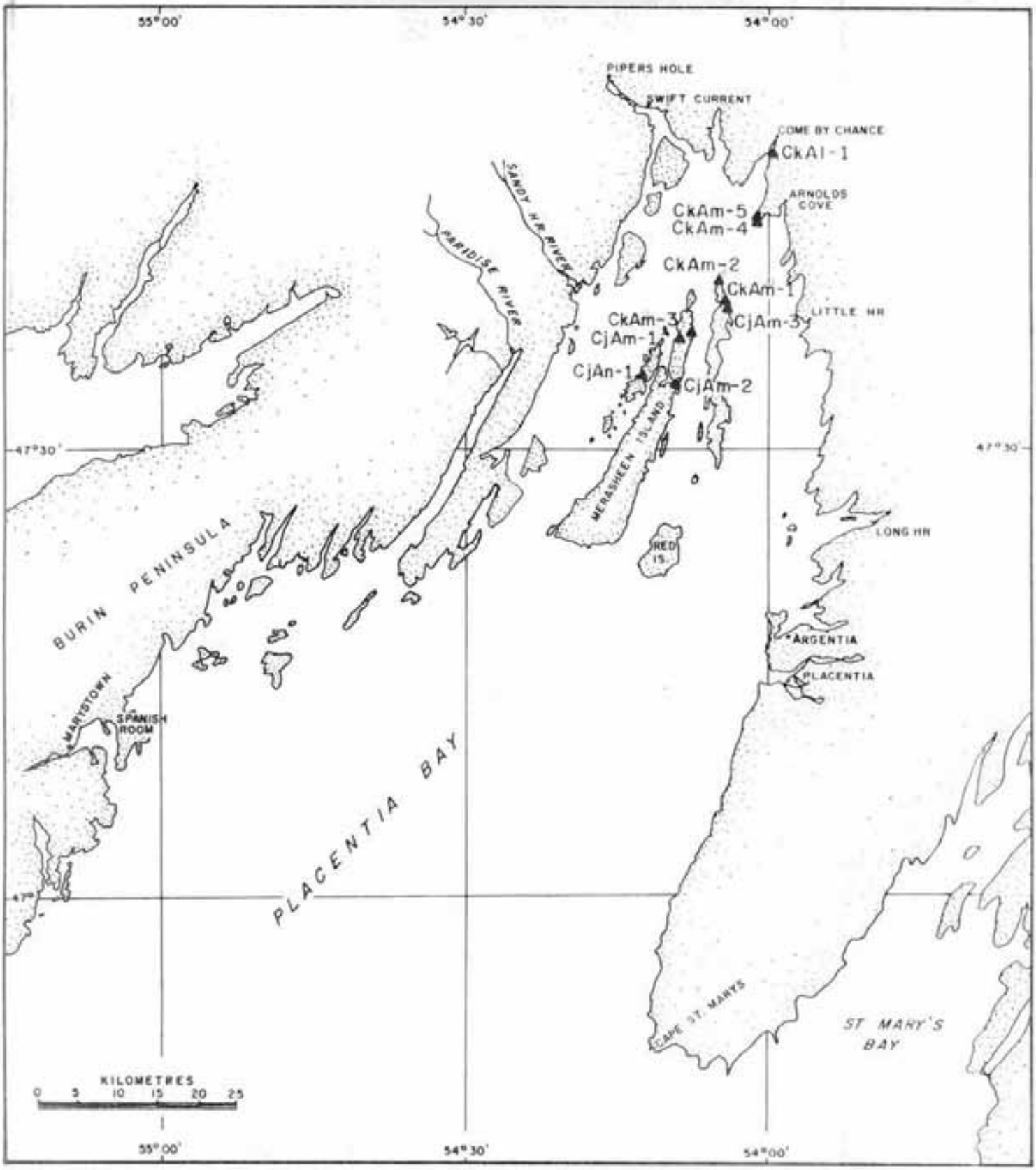

Figure 3: Placentia Bay Settlements and Archaeological Sites

BASQUE EXPEDITION TO LABRADOR, 1985

Dr. Jose Antonio Hernandez Vera
Juan Jose Bienes Calvo
Julio Nunez Marcen
Irune Zumalde Igartua

INTRODUCTION

The whaling tradition of the Basque Country can be traced to as early as the XIth century, when the first accounts of this activity are recorded. In those days, the whales were captured in the Gulf of Biscay, where these cetaceons came regularly. Gradually the whales started moving further and further away, so that the Basque fishermen had to travel greater distances to capture them, first to the Galileean and Austurian coasts and, later, to the North Sea, Ireland and Iceland.

The discovery of the New World opened new possibilities for the development of the whaling industry. Though the belief that the Basque fishermen had arrived on the Newfoundland and Labrador coasts before 1492 is still unproven, it does in no way shadow the historic consequences of their presence. With the exception of the Vikings, whose previous arrival in North America didn't have any historic or economic consequences for Europe, the Basque whalers were the first Europeans that systematically explored and exploited the whale resources of the Labrador waters. The efforts of the Breton fisherman, who had arrived there before the Basques, were mainly aimed at the cod fishery and theirs was never as big an enterprise as that of the Basques.

Before 1497, John Cabot, an Italian navigator working for the English king, surveyed the Strait of Belle Isle, gauging its economic possibilities and bringing over to Europe the news of its existance.

At that time the Strait was a route for a great number of whales that annually migrated south towards the Gulf of St. Lawrence, as still happens nowadays, although their number has considerably diminished. The descriptions

and reports the Breton mariners brought with them were one of the reasons for the affluence of the Basque whalers who, with better technical knowledge and superior skill, soon monopolized the whaling activities of that area, a monopoly they maintained during the second half of the sixteenth century.

During the last decade of the sixteenth century the Basque whaling activity declined due to several different and convergent factors. The main one was the disaster the Spanish Armada inflicted on the Basque fishing fleet, that was, in great part, sunk in English waters. This together with the frequent embargoes the Spanish Crown ordered over the Basque ships to employ them in the Cerrera de las Indias made them lose their competitiveness against other fleets engaged in the same enterprise, mainly the Dutch and English ones. Another factor recorded in the documentation, was the shift towards the south of the Inuit population, that lived in the northern part of Labrador. Their hostility towards the Europeans made dangerous the harbours the Basques were using, forcing them to move to other places. Finally the opportunities the new fishing areas in northern Europe offered the European whalers caused their abandonment of the Labrador coasts, in order to work on new and less dangerous banks. But even so, the first mentioned cause must have been the determining one. Since then, the arrantzales
probably hired their services to other countries, whose fishermen soon learned the whaling methods, relegating the Basques to a secondary position.

The signing of the Treaty of Utrecht in 1713, with the division of Newfoundland between France and England, definitively pushed the Basque whalers away from these latitudes.

RECENT RESEARCH

Although only during more recent years has research work been done on this subject there are earlier works, some of them of great merit, that have studied the Basque whalers' history.

Lope de Isasti's book (1850), written in 1625 gives important references to the conditions in which the whalers fulfilled their work. Fernandez de Navarrete (1829) and Fernandez Duro's (1846) works - though they have valuable references - are biased when talking about the documentary bases; a problem

that we can also find with P. Landhe's (1971) book - further compromised by his overuse of anecdotal and superficial details which frequently veil reality. T. Guiard's (no reference) book is a more serious and important study of primary sources though he didn't consult all the documentation available. Ciriquiain Gaiztarro's (1961) contribution is a well-done and honest synthesis of the subject. Basas Fernandez (1963) started a new stage in the research around the whalers history, studying a series of original and important - though not numerous - documents.

On the Canadian side, R. Belanger (1980) brings some new interpretations. His research - more related to the codfishing than to the whaling - lacks a good analysis of historical facts.

It has been only during the past two decades that a bigger effort has been made to trace scientifically the history of the Basque whalers along the Newfoundland and labrador coasts. The two components of recent research are: exhaustive research of the written documentation and an archaeological study of the sites where the Basques used to live and work.

Archival work has been led by Selma Barkham (1977, 1979, 1980, 1982): methodical work this author has done in the European and Spanish archives - especially in the Basque ones - has enabled her to gather an incredible amount of first-hand information drawn out of sixteenth and seventeenth century documents, that together with her strict historical bent, make her the premier authority on this subject.

In the second direction we find the archaeological digs that are being systematically carried out in Red Bay where, since 1979, there are two teams working. On land a Memorial University team, directed by Dr. J. Tuck (1982a,b, 1983, 1984) is conducting a study of the Basque remains on Saddle Island. They have uncovered several structures that sheltered the ovens and cooperages the Basques used to work in. They also found a cemetary which contributed a lot more new information about the conditions in which the whalers worked. A group of underwater archaeologists from Parks Canada, under the direction of Mr. P. Grenier, is studying the remains of a galleon - sunk in about 30 feet of water off Saddle Island - that was originally believed to be the "San Juan", records of whose sinking Mrs. Barkham has discovered to date to the autumn of 1565.

THE BASQUE EXPEDITION TO LABRADOR, 1985

A. Objectives

The expedition organized and sponsored by the Chamber of Commerce, Industry and Navigation of Bilbao, Spain, to commemorate its Centenary, was aimed at locating and identifying some of the other harbours that were used by the Basque whalers during the sixteenth century along the coast of Labrador. The length of the coastline, in whose ports the Basque ships had sounded and the concommitant logistical problems forced us to restrict the area of our study to a stretch 80 km long, situated on the northeastern end of the Strait of Belle Isle. Local fishermen in that zone had already produced information about tiles found in some of its harbours. The archaeological characteristics of the sites were unknown, due to the fact that the main archaeological investigations had been restricted to the southern harbours of this coast.

B. Methodology

The methodology followed during the survey of the selected areas was - similar to the one we use in our regular fieldwork, although the specific remains we were to look for conditioned, somehow, the judgement that directed our work, which had the final aim of locating and studying those places that due to their physical characteristics had the best conditions to harbour the whaling activities. The nature of these activities required the existence of ports with enough depth to sound the galleons and allow the landing of the shallops that hauled the captured whales to shore close to the open sea, where they captured the cetaceans, in order to save the maximum amount of time for their work, which took place roughly between June and November.

For the study of the coast and the selection of the places we were to visit, we used the availble cartographic documentation. The first source was the nautical charts of the Canadian Hydrographic Service, that showed with great accuracy the marine depths. The references we gained were completed with other notes taken from the National Topographic survey maps and aerial photographs, of that zone. We also used older cartography, such as the British Admiralty Charts for the Strait of Belle Isle and varous sixteenth and seventeenth century maps.

Thus we selected the harbours that seemed to our judgement the most appropriate ones of this sort of activity. We proceeded to examine the sites and look for unequivocal signs of Basque presence.

The clues that were basic in our surveys were the remains of the tiles that had been brought over to roof the tryworks and other structures built there, as it appears in the documents. Nowadays the tiles show clearly along the eroded coastline.

On the three harbours where our survey was successful we proceeded to open $1m^2$ test excavations, mainly along the shoreline and on different levels, in order to determine the way they used the available spaces, and the distribution of the structures, related to their use and to the topographic restrictions.

C. Results

The results we obtained in this field season are mainly related to the locating and beginning of the study of three harbours occupied by the Basques during the sixteenth century. There were signs that suggested the existence of Basque remains in some of these harbours, due to references of tiles that had appeared. In fact, in one of the sites there are several "holes" made with not too clear purpose, maybe to remove pieces of whale baleen. However this was the first time that the area was systematically studied for this purpose.

1. Chateau Bay -

This geographical unit is formed by two bays, Temple Bay and Pitts Harbour and four major islands: Whale, Henley, Castle and Stage. It has two well defined areas. The first one, that includes the two bays and Whale Island, blocks the ocean influences that would otherwise affect Temple Bay; the second area is formed by the other three islands: Henley, Castle and Stage. The first two make a natural breakwater that gives the sea arm, that opens between them and Stage, the ideal features of a secure anchorage for the galleons, with direct access from the open sea through a southern entrance and from the east via the American Tickle that separates the basaltic "castles" that crown Henley and Castle Islands, a natural entrance still used.

It is precisely this natural harbour, formed between these three islands, that was the place chosen by the Basque whalers to establish their whaling station. They occupied the eastern side of Stage Island, that provides the optimum conditions due to the presence of a small hill which protects this area from the southern winds, and the basaltic promontories do the same with the eastern winds. This side of the island also has a coastal outline that enabled them to tie up their shallops in a convenient place to allow the cutting of the whale with immediate access to the tryworks areas.

The small inner pond that is situated in this levelled area provides the drinkable water supply. The ostensible advantages offered by this natural haven were probably the reasons for the affluence of Basque whalers that at some point, must have overpopulated Stage Island. This overflow perhaps motivated the partial occupation of the western shore of Henley Island, despite that the conditions it provided were inferior to those of Stage. A submerged bar running along the shore and not far from it, hindered the approach of the shallops. This problem must have been solved by the use of wooden piers that enabled them to avoid the bar, very like the piers built in the middle of this century.

On the western side of Stage Island we excavated eleven $1m^2$ test pits. The results we gained showed a dispersion of the occupation along this whole area, located around the pond, a place with wider spatial possibilities. The establishment's distribution is determined by the shoreline, as well as the location of the pond. A set of tryworks is located practically on the edge of the shoreline. Behind this, we found a carpenter's area, answering a clear functional need.

Test pit number two, the closest we made to the sea, is located over a tryworks area, ovens built with local rocks that showed clear signs of calcination, found immediately under the peat layer.

Test pit number five (Plate 1) can be considered representative of all the tests done on carpenters' areas. At 17 cm depth appeared the Basque layer, a result of the remains of a roof fallen directly on top of the shop's floor. In this site we checked that the roofing was made out of tiles set over an assemblage of whale baleen. The floor of the shop was a result of the accumulation of softwood chips and discarded staves directly on top of the

soil, and left there to make a damp-proof layer. Among the wood chips we found several wooden taps, a wooden peg (Plate 4) and some greyware fragements (Plate 5, number 3), and a piece of wool fabric, probably part of an apron.

In test pit number 6 (Plate 2) located on the cooperage area, possibly on one of its extremities, we found an accumulation of what seemed to be barrel staves.

We also made three test excavations on the western side of Henley Island, whose results have already been mentioned. They indicated to us that there must have been a small sized establishment, that could have been used in a period of great population of the harbour. It is very difficult to evaluate its distribution and characteristics due to the destruction the rockfallings - from the basaltic "castle" - have caused on the site, which lies right below the promontory.

The survey conducted around Chateau Bay showed us the existence, on Castle Island, of a large quantity of whale bone, almost buried under the peat, on a beach just opposite the area we estimate must have been the more active one of the harbour, but far enough removed not to interfere with its activity. We also documented other remains, on Whale and Castle Islands, most likely of Maritime Archaic structures.

2. Pleasure Harbour

The simplicity and exceptional conditions of this natural harbour define the possibilities of its use. The site is limited by the mainland and a small sea wall of about 800m length, slightly oriented towards the northwest. All this creates a broad harbour, completely protected from the open sea; moveover, it has enough depth - especially on its western side - to have allowed galleons the possibility of belaying to the shoreline. A small but copious stream coming from a great inner lake provides the drinkable water supply for the harbour.

These advantages must have permitted an intensive usage of the port. We verified that the site extended over both sides of the harbour, from approximately the middle of its length to its bottom part. It seems as though they used every single bit of space they could, even leaning the structures against the steep cliffs.

It is interesting to point out the existence of a natural cave at the entrance of the harbour. There, some eroded tile fragments were found, but the inner rock falls, made a survey of its interior difficult. Moreover, these fragments appeared loose on the ground, and could have been taken there at any time. Nowadays this harbour it not in regular use; only sporadically fishermen shelter from the storms or the strong swells.

We excavated six test pits all located on the eastern and bottom parts of the harbour. The most significant discovery was that of a trywork, for rendering blubber into oil. In order to get more defined information we enlarged the $1m^2$ test pit to a 3 x 1 m trench (Plate 3). The oven is situated on the seaward area of an elevated platform. On its back side there is a free space that allowed themen working enough room to perform their activities: removing the blubber and drawing off the oil to put it in the barrels where they stored it till it was taken over to Europe. This structure was built with blocks of local volcanic rocks, lined with red clay, that had been brought over by the Basques to prevent the waste of heat.

3. Cape Charles

This was the last harbour we surveyed and the limit of our survey permit. Past Cape St. Charles the coast turns towards the west, so this area is less affected by the sea; it is also protected by a group of islands separated by narrow tickles that form sort of sheltering skerries. Cape Charles, immediately behind St. Charles River Tickle is the first significant cove that offers, in its middle, the possibility of a place to moor relatively big ships, like gallons. The present settlement has chosen the same area the whalers did - the eastern side of the cove.

This fact has produced almost complete disturbance of all the possible traces remaining from those times. The presence in the cove of huge blocks of rock, that hinder the mooring of boats, provided a problem which was probably overcome by the Basques in the same way as nowadays: wharfs built bottommed on the rocks, that helped to gain the depth needed. The water supply is guaranteed by two torrents descending from the hills at the bottom of the cove. The whaling tradition of this harbour has lasted till recently; there can still be seen some remains of a big whaling factory on Antill's Cove, the

next one to Cape Charles.

The features of this port's repeated occupation make very difficult the correct evaluation and definition of the Basque site itself, because the present buildings stand on top of the Basque remains, and there is only one area free from construction, at the entrance of the cove. The first two test pits were located in this small area near the entrance on a rocky beach cut by a steep and high cliff, where we found some tile remains, apparetnly not related with any structure. Of all the excavations made during our survey, these were the ones that gave us the most information about pottery (Plate 5, numbers 1, 2, 4, 5, 6, 7). We also made a third trial excavation outside this small area, close to a new building - built in 1984 - that had destroyed one of the areas still left untouched.

CONCLUSIONS

It is evident from our survey that these three harbours must have been subjects of major important activities, as the audience we found suggests remains belonging to tryworks and carpenters' areas, where they assembled the barrels and mended the damage shallops.

The spatial organisation of the structures conform to a very simple and functional system, delimited by the work they did and their temporary use of the buildings. It should be pointed out that the mainland was the working place, while the living and resting places seemed to be the galleons, anchored in these harbours.

Though the brevity of our work implied a great number of limitations that we hope to correct in possible future research, we feel confident that the greater part of the built structures were located near the shore. Around it, the structures appear grouped relative to the available space. Closest to shore they constructed the platforms where they located the ovens built with local granitic and basaltic rocks. The inner parts of the ovens were lined with clay, brought over from Europe. In some places they may have used local clay, when its characteristics were suitable, to make the base of the fireplaces, as we think happened on Stage Island where some of the clay uncovered seems to have come from the bottom of Temple Bay. The tryworks formed sets comprising different numbers of units, depending on the space available.

Immediately behind the ovens, on the same level, we found a free space that allowed the removal of the oil from the caldrons and its storage in the barrels. These were assembled in the cooperages that were probably located just behind these platforms.

This organization, though very simple, adjusted perfectly to its function. This plan could be enlarged or even simplified, depending on the room available for the establishment, as in fact we were able to verify. On Stage Island the structures must have been a lot more complex, as there was quite a space to use between the shoreline and the inner pond. On the western side of Pleasure Harbour, the space is so small, and the profit from its resources so big, that they even built ovens almost hanging from the steep cliffs, while the cooperages were certainly located somewhere else. Nevertheless, these conclusions should be reaffirmed in future investigations.

ACKNOWLEDGEMENTS

The problems that four remaining members of the Expedition had to overcome following the departure of other members of the group, because of climatic and professional reasons soon after our arrival to Chateau Bay, were to some extent compensated by the kind welcome and help we were given by the public and scientific authorities of Canada, and especially of Newfoundland and Labrador. We want to state our special thanks to Jane Sproull Thomson and Callum Thomson from the Provincial Museum of Newfoundland, and to Susan Kaplan, from the Peary-MacMillan Arctic Museum. Our work couldn't possibly have taken place without the collaboration of the Stone family, inhabitants of Stage Island in Chateau Bay. They became our main source of information and firm friends.

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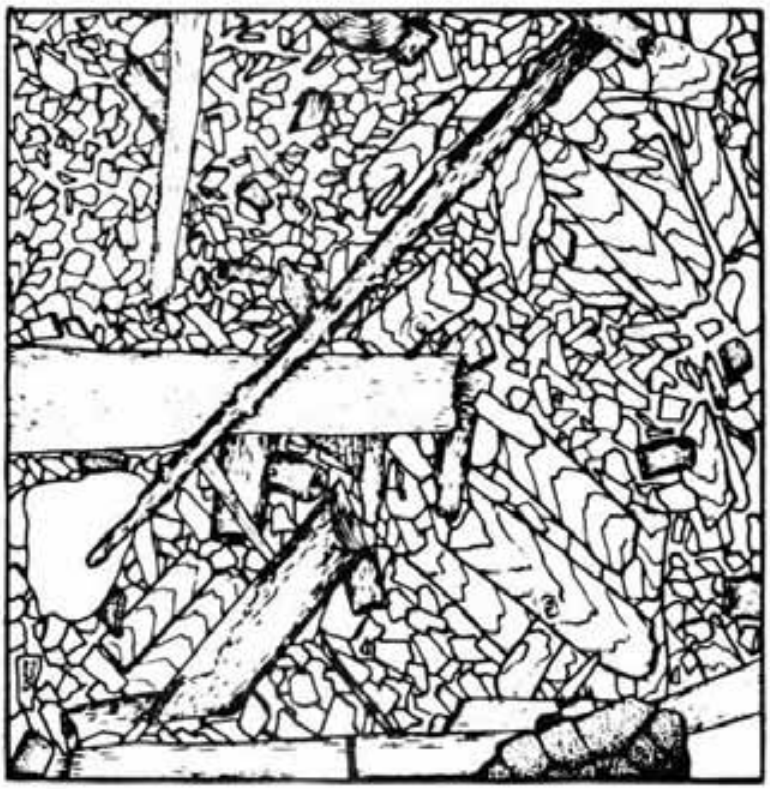
LOCATION OF THE

SURVEYED AREA

STAGE ISLAND



0 30cm.

CARPENTER'S SHOP:

WOOD-CHIPS

FABRIC

BALEEN

STAVES

TILE

PLATE: 1

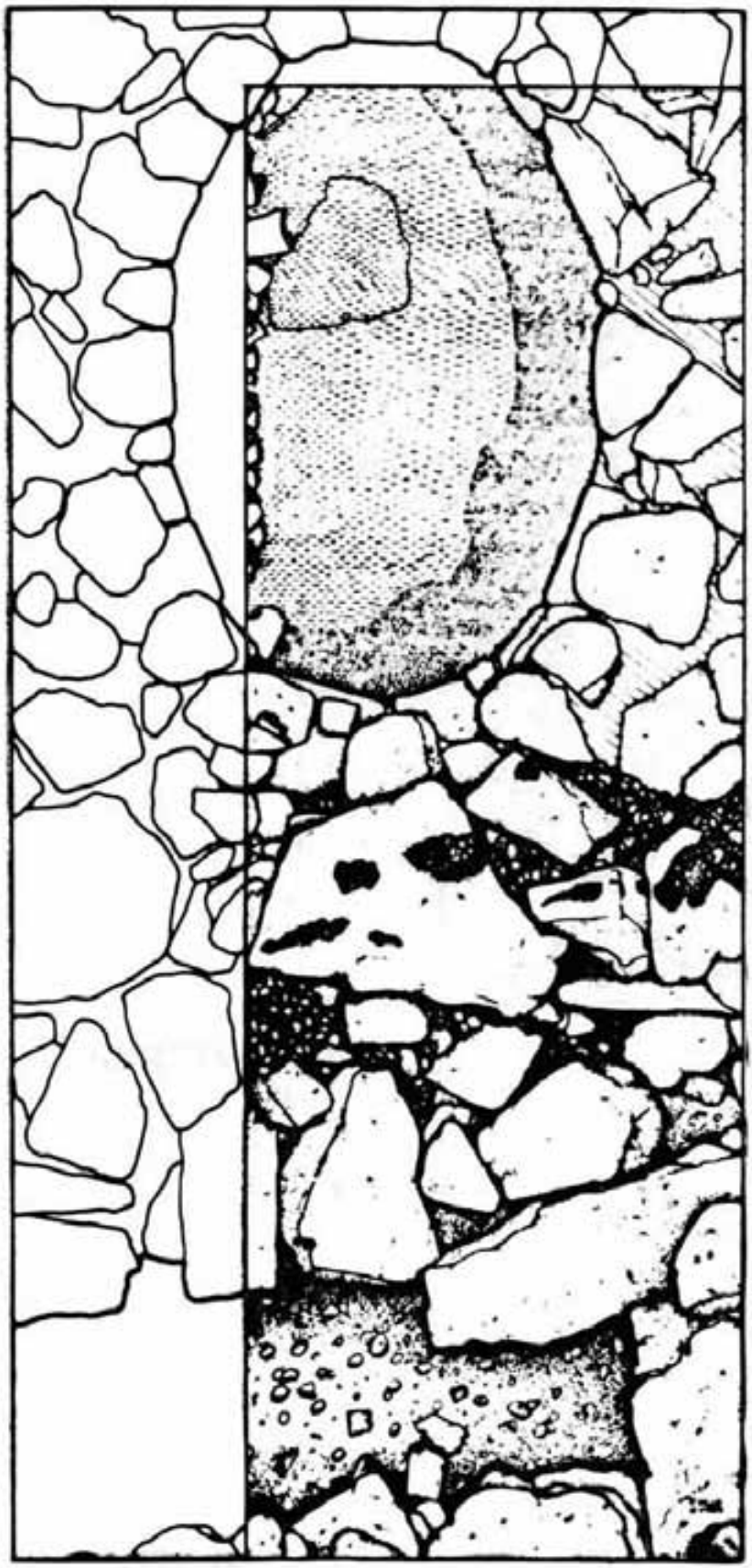
STAGE ISLAND

0 30cm.

CARPENTER'S SHOP:

STAVES

PLATE: 2



PLEASURE

HARBOUR

TRYWORK :

CLAY

FIRE-PLACE

BLUBBER. REMAINS

TILE

PLATE: 3

0 50 cm.

WOOD ARTIFACTS

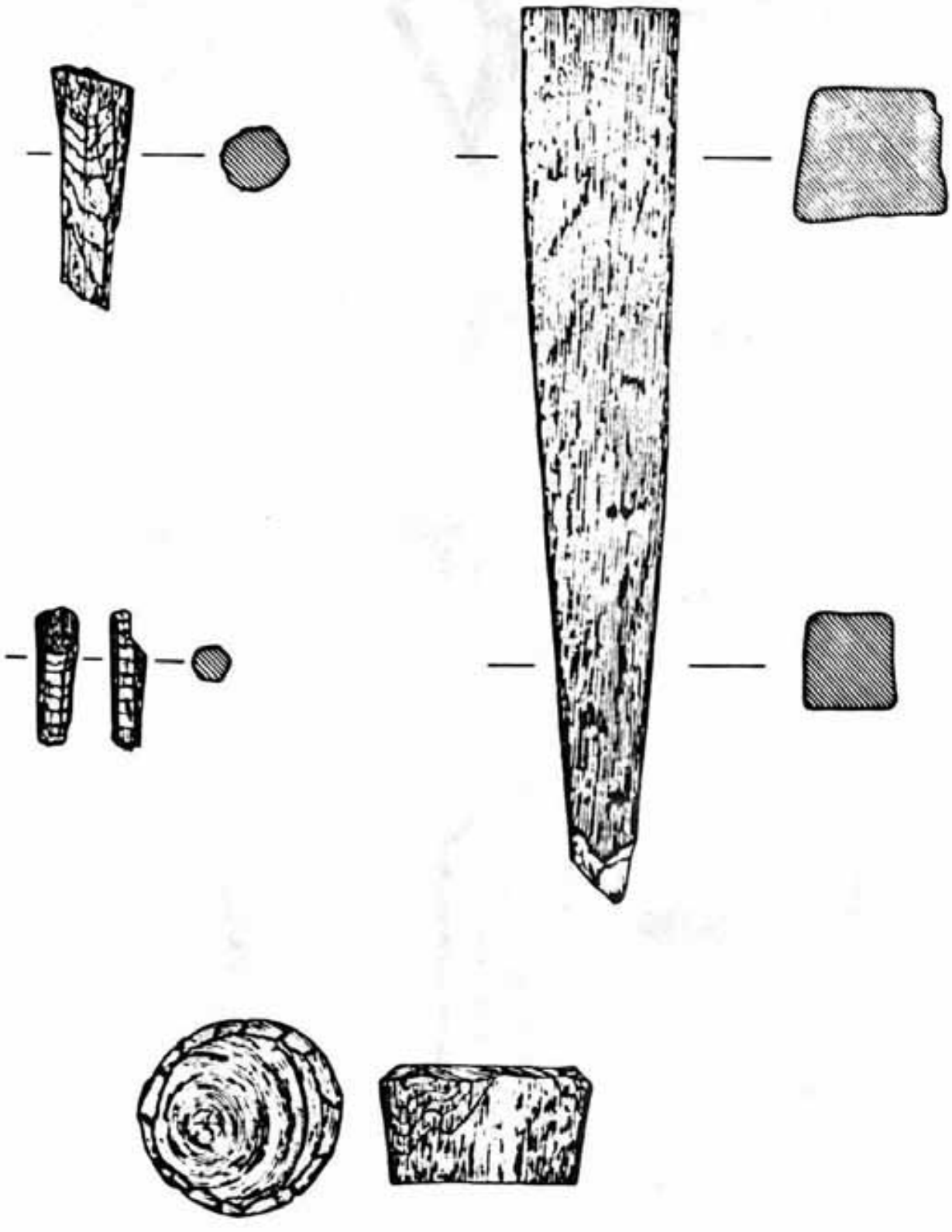


PLATE: 4

POTTERY

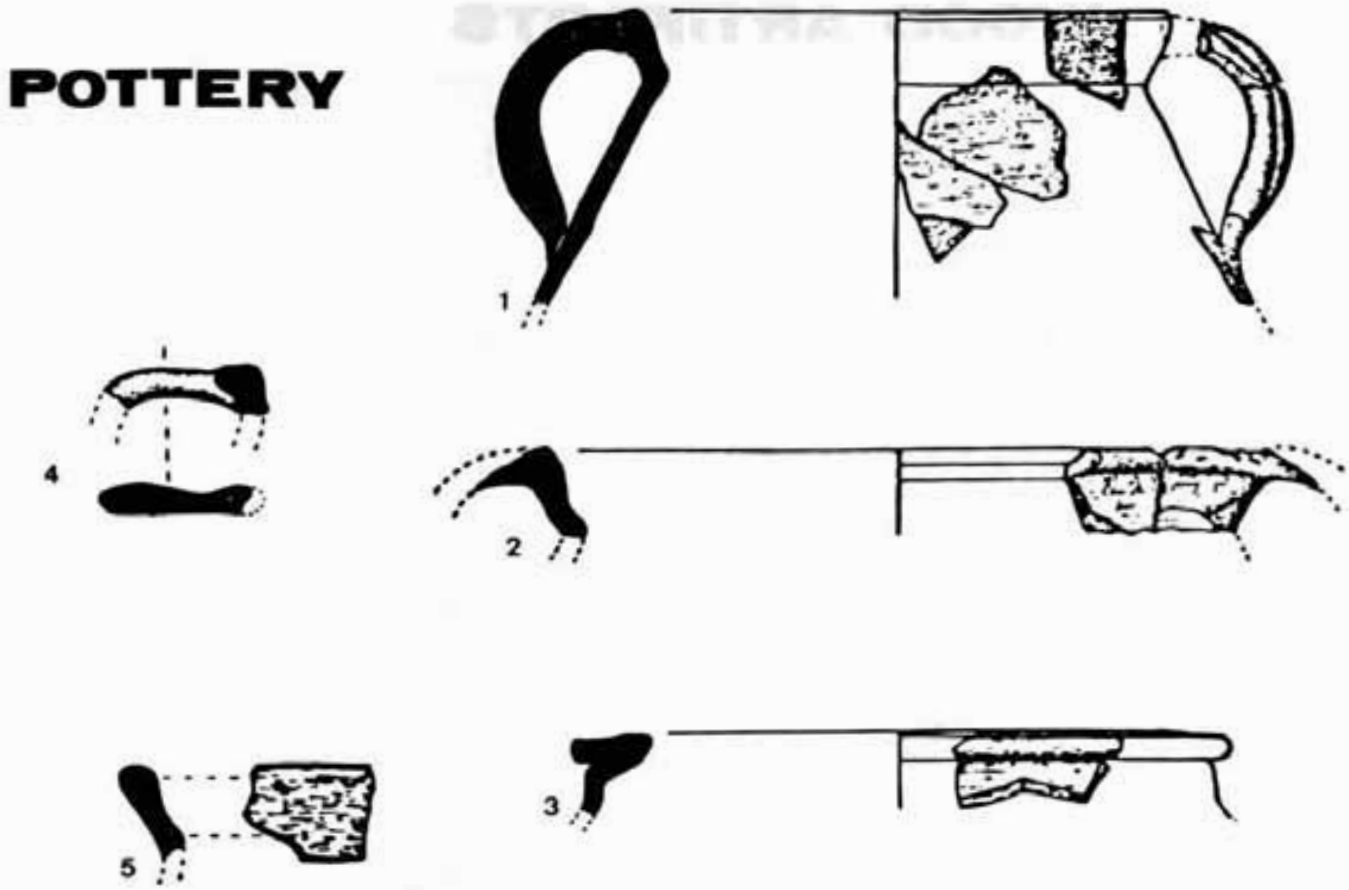


PLATE: 5

MARINE ARCHAEOLOGICAL RESEARCH AT RED BAY, LABRADOR: A SUMMARY OF THE 1985 FIELD SEASON

Willis Stevens and Peter Waddell

INTRODUCTION

In 1985 the Marine Archaeology Unit of Environment Canada - Parks completed its final season of field work in Red Bay, Labrador. The Red Bay Project, begun in 1978 under the direction of Robert Grenier, was centred around the excavation of a Basque whaling galleon. This vessel, thought to be the San Juan, was documented to have sunk in 1565 (Barkham and Grenier 1979:61). Excavations were also carried out on Saddle Island, the site of many of the Basque try-works. These excavations are being conducted by Dr. James Tuck from Memorial University of Newfoundland.

The importance of Red Bay as a whaling port was, at first, only partially understood. However, as historical and archaeological research continued, it became apparent that Red Bay played a major role in the Basques' New World whaling ventures. It is now estimated that as many as eight to ten whaling galleons may have been in the harbour at any one time. The archaeological investigations have identified three possible sixteenth-century galleons and four small boats, three of which were directly related to the Basque whaling fishery. Other evidence of the Basque presence has been found throughout the harbour, primarily during test excavations in underwater areas exhibiting surface concentrations of Basque material culture. These excavations have provided information on whale butchering techniques, carcass disposal patterns, a contemporaneous cod fishery, a cooperage operation, building construction, and a number of wharf structures.

The objectives of the 1985 field season focussed on the reburial of ship's timbers and on the permanent closing of field operations at Red Bay. However the discovery of two other possible sixteenth-century galleons in previous years, necessitated limited recording of important comparative features on these ships. Such features included the pump well/mast step areas, the sterns, master frames, and overall dimensional characteristics.

The harbour survey was also completed. This included testing an area along the proposed path of a sewage outfall pipe, towed searches within the harbour, and the investigation of a possible Basque wharf.

TIMBER REBURIAL

By 1985 the wreck of the San Juan had been completely disassembled. Over 2500 timbers had been raised to the surface, recorded and placed in temporary underwater reburial pits. Thus, the major task of the 1985 field season was to rebury permanently the entire complement of ship's timbers. Systematic reburial of such a large number of timbers had never been attempted. Conservation Division, Environment Canada - Parks was asked to develop guidelines for this work. After literature searches, several consultation meetings and some experimentation, a reburial plan was formulated (L. Murdock and J. Stewart, 1985). The essence of the plan was cost-effectively to create a sealed and anaerobic environment in which to store the timbers. This reburial attempted to duplicate the pre-excavation environment of the wreck timbers in terms of light, temperature and gas exposure.

An estimate of the timber volume was done in order to determine the space requirements of the reburial area. It was calculated that an area 14 m by 16 m by 1 m high would be required. This permitted the stacking of timbers in three distinct layers with 20 cm of sand above each layer. The profile of the reburial area was kept as low as possible in order to minimize any iceberg contact, which is unavoidable in the area. The seabed depression created by excavation of the San Juan was the obvious area to locate the pit, thereby reducing overall profile and avoiding disturbance of the surrounding artifact-bearing unexcavated seabed.

To contain the timbers and sand, a sandbag dyke was built using approximately 1200 plastic salt bags, containing some 36 metric tonnes of sand (Figure 1). The dyke walls were built in stages to permit their support by timbers and sand on the inside and by rock fill on the outside. Emphasis was on the use of readily available materials (rock, sand, salt bags) to create a stable tapered wall. In addition, it was felt that a tapered rock wall was essential in minimizing disturbance by scouring icebergs which could severely damage any vertical sandbag wall.

The area of the wreck slopes slightly downward from south-west to north-east. The deeper portion of the pit, the northern side, was used for larger timbers which passed through more than a single reburial layer. This included the 14-metre keel, keelson and several other great and compass timbers. Generally, the timbers were buried in three distinct layers. The first layer was laid within the dyke on sterile, previously excavated seabed. Timbers were fitted or "nested" to maximize the total wood volume in each layer (Figure 2). Upon completion of a layer, the area was mapped to show the location of each timber. Following the verification of the layer map, the sand covering operation began. Sand was lowered into position over the site in a specially designed dump bucket, carrying approximately two metric tonnes of sand (Figure 3). This was manoeuvered into position and released into the reburial pit. Gaps between timbers were filled and then 20 cm of sand was used to cover the entire level. The following two timber layers were built up in a similar fashion producing an overall height of approximately one metre. Ninety-six metric tonnes of sand were put over the first timber layer, followed by 93 metric tonnes for the second layer and 126 metric tonnes for the final layer, totalling 315 metric tonnes.

The reburial pit required a covering to prevent erosion of the sand and to minimize gas transfer. The covering used was a 36-mil hypalon tarp, which is a synthetic elastomer rubber with a reinforcing weave. The cover was made in two pieces to simplify handling, which was laced together underwater (Figures 1 and 4). The 16-m-by-18-m dimensions permitted coverage outside the walls of the reburial pit by one metre on each side. To ballast the cover, 60 concrete filled tires, totalling nine metric tonnes, were dispersed over the surface.

Reburial of the timbers at Red Bay represented the largest undertaking of its kind in maintaining shipwreck timbers in an optimum state. To help determine the effectiveness of the methodology, a testing procedure has been established incorporating wood samples placed at three different depth levels through the reburial site. The samples were strung on ropes which can be pulled from the pit without disturbing the other timbers (Figure 1). Over time these timbers can be recovered for comparison with frozen control wood samples from which they were cut. Some timbers were reburied outside the

reburial pit and these could also be used in assessing the effectiveness of the reburial methodology. Results of these testing procedures will have application to other underwater excavations, many of which are faced with similar reburial considerations.

OTHER WRECK SITES IN THE HARBOUR

In addition to the San Juan (24M), two other large ships have been found on the bottom of Red Bay harbour. One was discovered in 1983 and the other in 1984. The first of these wrecks (27M) was partially examined in 1984 through test excavations in the stern, bow, and mast step/pump well areas (Ringer 1985:190). The second wreck (29M) was also investigated in 1984, however, only a cursory examination was possible. It was not until 1985 that further work on both sites enabled the recording of principle features.

27M

This wreck was discovered during the survey of selected areas within Red Bay harbour. Preliminary testing uncovered the stern, the midship, and bow areas. It was identified as a probable Basque ship based on a number of comparative features, e.g. mast step, triangular recesses and master frame construction. The wreck, located in approximately five metres of water, was first noticed because the ends of the floor timbers were sticking out of the bottom silt. In 1985, excavation using water dredges was carried out in the stern and midship areas.

STERN

The excavation in the stern area was designed to uncover evidence on stern construction, principally the assembly of the stern post, stern post knee, and ship's heel. Excavation was carried out along the side of the stern hull down to the bottom of the keel; however, due to the presence of the exterior planking, little could be seen of the actual assembly technique. Stratigraphically, there was little difference between the stern areas of 27M and 24M. Cultural deposits average 40 to 45 cm thick, including barnacle shells, and were overlying a natural layer of grey sand. Most of the artifacts collected were found within the grey sand and included leather

reburial pit and these could also be used in assessing the effectiveness of the reburial methodology. Results of these testing procedures will have application to other underwater excavations, many of which are faced with similar reburial considerations.

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In addition to the San Juan (24M), two other large ships have been found on the bottom of Red Bay harbour. One was discovered in 1983 and the other in 1984. The first of these wrecks (27M) was partially examined in 1984 through test excavations in the stern, bow, and mast step/pump well areas (Ringer 1985:190). The second wreck (29M) was also investigated in 1984, however, only a cursory examination was possible. It was not until 1985 that further work on both sites enabled the recording of principle features.

27M

This wreck was discovered during the survey of selected areas within Red Bay harbour. Preliminary testing uncovered the stern, the midship, and bow areas. It was identified as a probable Basque ship based on a number of comparative features, e.g. mast step, triangular recesses and master frame construction. The wreck, located in approximately five metres of water, was first noticed because the ends of the floor timbers were sticking out of the bottom silt. In 1985, excavation using water dredges was carried out in the stern and midship areas.

Stern

The excavation in the stern area was designed to uncover evidence on stern construction, principally the assembly of the stern post, stern post knee, and ship's heel. Excavation was carried out along the side of the stern hull down to the bottom of the keel; however, due to the presence of the exterior planking, little could be seen of the actual assembly technique. Stratigraphically, there was little difference between the stern areas of 27M and 24M. Cultural deposits average 40 to 45 cm thick, including barnacle shells, and were overlying a natural layer of grey sand. Most of the artifacts collected were found within the grey sand and included leather

fragments, a piece of rope, pieces of lead, a cannonball fragment, two unidentified mammal bones, and one-half of a small pulley sheave.

Midship

Previous excavation in the midship area uncovered the mast step and a portion of the pump well. Further excavation in 1985 completed the recording on the pump well and its associated sumps.

The pump well, located aft of the main mast step, measured 140 cm by 80 cm. It was heavily constructed using 6-cm thick, hardwood planks, supported by four corner posts morticed into the ceiling planking. In comparison, the pump well on 24M was built using 2.4-cm thick, softwood planks. Construction was carefully carried out with planks cut to insure proper fittings over the keelson, mast step cheeks, and ceiling. The sumps consisted of two square holes cut through the limber boards. There was no sign of the pump mechanism.

The interior of the well was filled with a large amount of tightly packed rock, most of which seemed to be ballast rock. There were, however, a variety of interesting artifacts found scattered throughout the rock fill. Of particular interest was the remains of an interwoven, reed-like material and two, obviously worked, branch-like sticks. This assemblage appeared to be a type of basket. The same area also yielded numerous walnut shells, other unidentified nut shells, a small knife handle, and very well-preserved leaves from a plant identified as "Butcher's Broom" (Ruscus aculeatus Liaceae). This particular plant is actually an evergreen shrub native to Mediterranean and central European regions. It can be used medicinally as a diaphoretic (ed. note: producing perspiration), deobstruent and aperient (ed. note:laxative).

Discussion -27M

Several of the ceramic sherds collected from 27M, particularly in the pump well, showed signs of having been burnt. Several glass sherds actually appeared to have melted. Although there were no obvious signs of burning on the timbers, it is likely that parts of the ship may have burned.

Dendrochronology studies are being carried out on some of the larger timbers, and it is hoped a chronology can be established in relation to the other wrecks and to the Basque occupation. Finally, the wreck was backfilled

with sandbags and covered with seven metric tonnes of loose sand.

29M

This wreck was discovered in 1984 while conducting test excavations along the proposed route for a sewage outfall pipe. As a result of the discovery a new route was recommended and the outfall pipe was installed in 1985 (Figure 5).

The wreck, a large wooden vessel similar to 24M and 27M, was located in approximately three metres of water. Many of the ship's timbers, mostly knees and beams, were lying exposed on the harbour bottom. There was, however, no definitive alignment to the timbers and test excavations were carried out in 1984 to establish the vessel's orientation. By hand fanning it was possible to locate the mast step and portions of the bow. These parts of the ship, although covered with only a thin layer of silt, were very well preserved. In 1985 further test excavations using a water dredge examined more closely the stern, midship and bow areas.

Stern

Excavations in the stern area revealed a large portion of the structure still intact. The ship was lying on its starboard side, leaving the port side uppermost and more accessible for recording. A series of four strakes were still firmly attached to the heel/sternpost assembly. The heel had a very short upper-arm, with a length of approximately 25 cm. It was scarphed to the bottom of the stern post utilizing a curved or hook-shaped design.

Stratigraphically, there was one large deposit of silt covering the hull. The depth of this deposit was approximately 80 cm. Below this layer and extending beneath the keel was a 2-cm layer of crushed barnacle shells, followed by sterile grey sand. The absence of any quantity of barnacles, as was found on 24M, would indicate that the ship broke up or was dismantled soon after it sank, limiting the amount of structure available for barnacle attachment.

A general observation on the orientation of the stern section is that it appeared to be angling upwards towards the bow. This may indicate that the heel to keel scarph has been broken and that the stern has separated from the

rest of the hull. This possibility was further reinforced when a second test pit was excavated at the aft end of the keelson. At this point no structural remains (floors or futtocks) were found overlying the keel, suggesting extensive damage to that part of the vessel. Further, the line of the keel at this point was parallel to the harbour bottom and not aligned with the stern heel. In effect, it appears that the ship "broke its back" somewhere near the juncture of the heel and keel.

Midship

Excavation in the midship area uncovered the mast step, pump well, a section of ceiling planking and footwale, and the ends of the master frames (Figure 6).

The mast step was similar to that found on 27M. It was apparent that a considerable amount of time and effort had been put into the construction of the surrounding support elements. The wedge-shaped cheeks had all been grooved on their upper side edge to facilitate a better seal with the boards between the cheeks.

The pump well was located immediately aft of the mast step. No planking or corner posts were found, making it impossible to establish the precise dimensions of the well. Other features of the pump well include two sump holes cut on either side of the keelson. Both are circular and were cut so as to avoid the floor timbers.

Four billets were recovered from around the mast step which are likely to have been used as dunnage. The billets were either half or quarter round, found in pairs, aligned parallel, and separated by the estimated width of a cask. They are presently undergoing examination for possible use in a dendrochronology study of local wood sources. This study is being undertaken by researchers at Laval University in Quebec City and could lead to the precise dating of the sinking of this vessel.

Bow

The bow area was initially uncovered in 1984 during testing along the proposed route of a sewage outfall pipe. This testing revealed a large intact section of the bow, consisting of a series of exterior strakes, two wales and

a possible clamp - a heavy interior timber running in a fore and aft direction, indicative of a deck level. The presence of wales suggested a section of hull fairly high up above the water line in the bow structure. This particular section has not been found intact on the other Red Bay wrecks. Excavation in the bow was limited to uncovering the forward end of the keelson and the keel at that point.

Discussion - 29M

The keelson, one of the more important timbers recorded, had an overall length of 12.31 metres with a mast step off-centred towards the stern. A test pit excavated at the forward end of the keelson revealed a considerable amount of structural damage, including missing floor timbers. The top of the keel at this point was also uncovered. The keel was completely broken off approximately one metre forward of the keelson. The extent and type of damage suggested that, although a large portion of the bow structure was intact, it may not be integral with the rest of the hull.

A very limited number of artifacts (20), including faunal remains, were collected from 29M. The absence of artifacts and the lack of barnacle shells may be indicative of an extensive salvage operation by the Basques. It is not inconceivable that the ship, which grounded in relatively shallow water, was completed salvaged of any useable materials, including timbers.

Prior to reburying the wreck, several samples of the ship's structure were taken for dendrochronology studies. These will be included with samples taken from the other two wreck sites in the hope of establishing a dateable chronology. At the end of the 1985 field season the test pits on 29M were filled with sandbags and the entire site covered with nine metric tonnes of loose sand.

HARBOUR SURVEY

Testing the Proposed Route of a Sewer Outfall Pipe

A major portion of the 1985 harbour survey involved the excavation of a number of test pits along the proposed route of a sewer outfall pipe. The testing was a continuation of the survey work started in 1984.

The installation of the outfall pipe was designed to be laid on top of the harbour bottom. To secure the pipe, it was covered with several metric tonnes of rock up to a point where water depth prevented any further placement. After this point the pipe was anchored to the bottom using prefabricated concrete collars. Thus the pipe was exposed for a distance of appropriately 60 metres. It was this portion of the pipe line route which was tested in 1985.

Fourteen 2-m-by-4m test pits was excavated along the 60 metre line. Spacings between test pits were two m and five m depending on location and test findings. Of the 14 pits excavated six revealed evidence of whaling activity. Four of these related to a concentration of whale bones, while the remaining two represented individual whale bone finds. No other materials were found indicative of the Basque presence.

Towed Searches

Additional survey within the harbour included a series of towed searches. These searches utilized an outrigger towing method that enabled two divers to visually search an area approximately 25 metres wide. All tows were timed, with individual finds located according to elapsed time.

Three towed searches were conducted in different areas of the harbour. The first search, along the northeast perimeter of the basin, revealed a number of isolated whale bones. Near the end of the search, a concentration of whale bone was found that turned out to be the remains of a nearly complete bowhead whale. This semi-articulated carcass was completely excavated and recovered for faunal analysis. Preliminary indications are that it is a small, immature bowhead without the tail or flipper elements. These missng elements coincide with the theory that flipper and tail elements were being disarticulated prior to flensing. This discovery marks the first time that a nearly complete carcass, including skull, has been found. It will no doubt help to further understand carcass butchering techniques and disposal patterns.

The second towed search began at the research barge and continued on a straight line course to the Penney Island stage. Only one whale bone, a maxilla fragment, was noted. However, because of depth restrictions, visual con-

tact was lost with the bottom when the divers crossed the harbour channel.

The third towed search was conducted along the innermost part of the basin. Visibility was at times quite limited, less than one metre, because of the fresh water influence from out-flowing brooks. Water depth averaged four to five metres throughout the search area; although the bottom dropped off rather abruptly to +15 metres in some places. These sections were not surveyed because of depth restrictions. No Basque-related materials were seen during the search.

Wharf Structures

During a previous field season at Red Bay a possible Basque wharf was partially excavated (Ringer 1982:84). It was located just offshore from a Basque try-works on Saddle Island. This particular try-works was excavated by Dr. James Tuck of Memorial University of Newfoundland in 1980 (Tuck 1981:56). In 1985 additional excavation was carried out on the wharf in an attempt to confirm a Basque origin.

Because of a large overburden of tightly packed rock, excavation of the entire structure was not possible. The excavated remains appeared to represent the bottom of a crib-like structure. It consisted of two parallel logs with an attached cross piece. The actual bottom or floor of the crib was made up of five smaller, evenly spaced logs within the framework. Construction details included a mortice cut into the upper surface of both parallel logs. These mortices were likely used to support a weight bearing vertical timber. Auger holes, apparent in the corners of the mortices, seem to have served as guides during the actual cutting out. More importantly, oak barrel stave fragments were found pressed against the inside of both mortices. These fragments represent wedges which had been driven into each mortice to secure firmly the tenon of the vertical post.

While an exact interpretation on the function of this structure cannot be made, its close proximity to the tryworks and its construction details indicate a Basque wharf, possibly a cutting-in stage.

SUMMARY

The Red Bay Project, in regards to the underwater research, has now been completed. Major emphases in 1985 were placed on site reburial and overall close down.

The Project, which encompassed eight field seasons, has yielded a great deal of unique information on Basque maritime history in Eastern Canada. The discoveries at Red Bay have not gone unnoticed and the harbour is now recognized as a significant and valuable repository of sixteenth-century shipbuilding tradition and Basque maritime culture.

The results of these many years of underwater research have been published world-wide in a vareity of books, journals, bulletins, and newspapers as well as being presented in over 60 papers at international and national symposia throughout Europe and North America. The Project was also very well documented by the production of a 57-minute film entitled, "The Basque Whalers of Labrador". The film was produced by Adlanut Productions and is available for rental through the producing company. Detailed archaeological reports have been compiled on a yearly basis and are being prepared for publication. Research on the Basques of Labrador is continuing and additional publications are planned in the near future.

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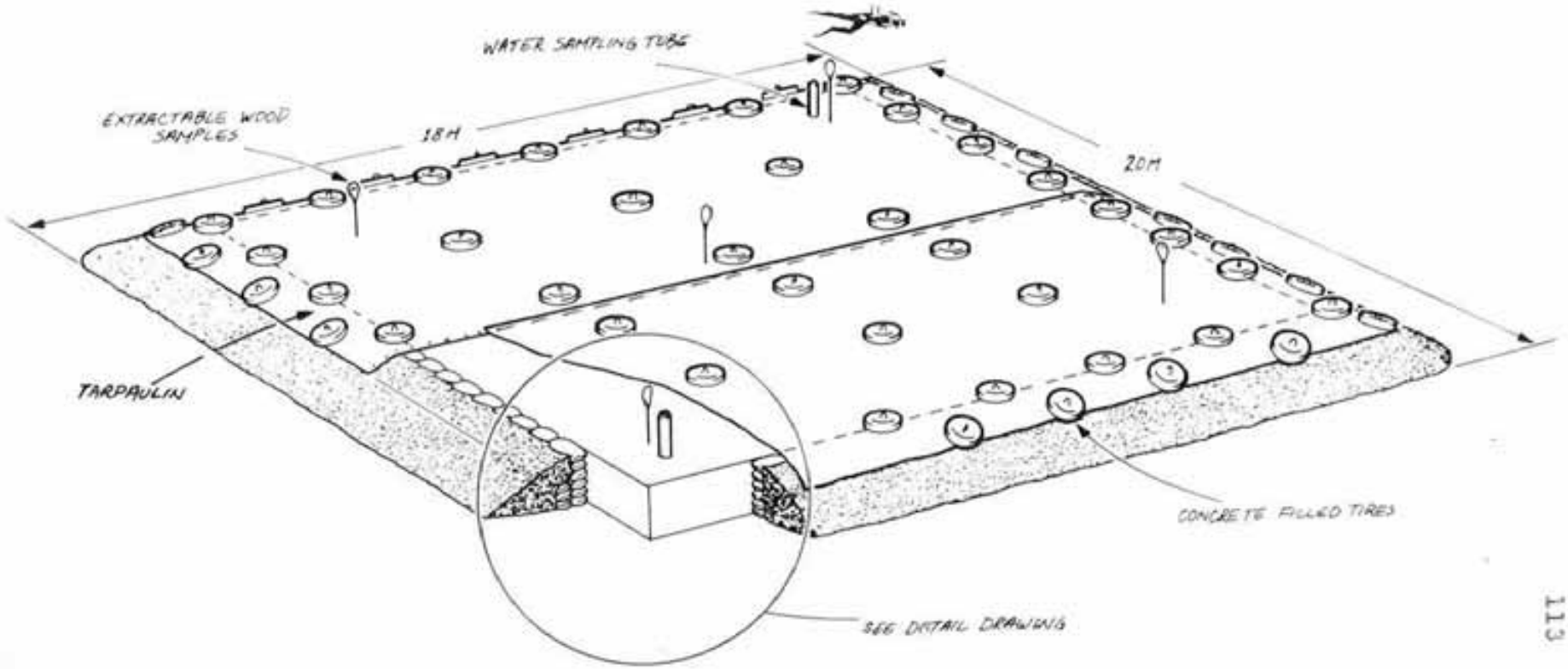
Figure 1

Timber reburial pit. (Drawing by N. Hart)


WATER SAMPLING TUBE
EXTRACTABLE WOOD SAMPLES
18M
20M
TARPAULIN
CONCRETE FILLED TIRES
SEE DETAIL DRAWING

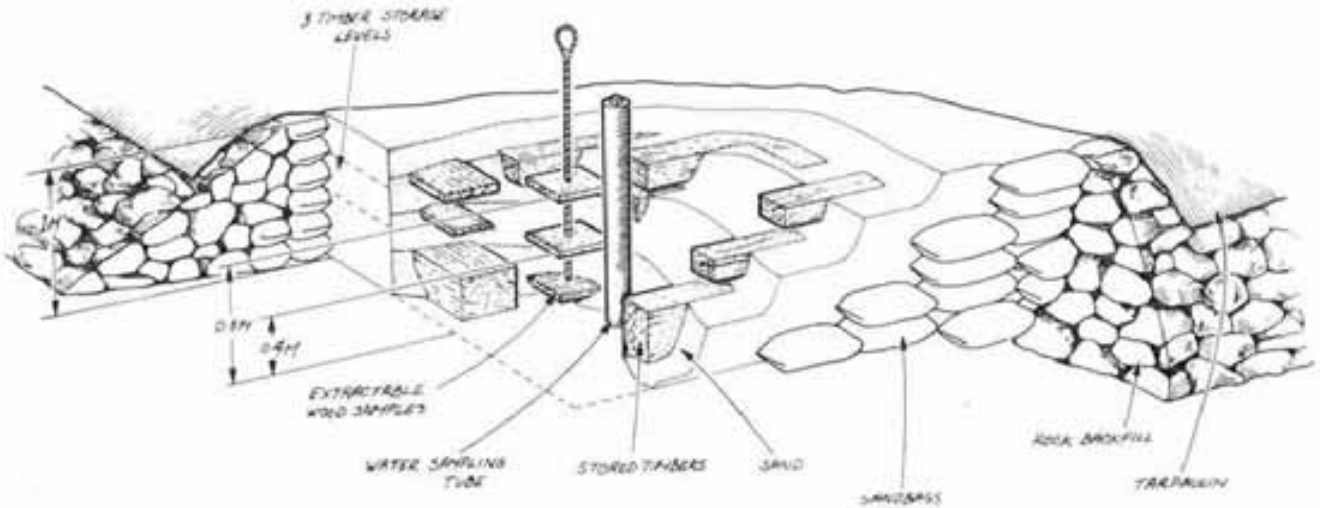

3 TIMBER STORAGE LEVELS
0.5M
0.4M
EXTRACTABLE WOOD SAMPLES
WATER SAMPLING TUBE
STORED TIMBERS
SAND
SANDBAGS
ROCK BACKFILL
TARPAULIN

Figure 2

Timbers fitted into northern half of reburial layer 3. (Photo by D. Page)

Figure 3

Sand being dumped onto reburial pit. (Photo by P. Waddell)

Figure 4

Trial joining of reburial tarp on surface.
(Photo by R. Chan)

Figure 5

Red Bay harbour showing the location of the sewer outfall pipe (line of rock) in relation to the 29M wreck site (floating dock). (Photo by D. Page)

FIGURE 6

Mast step of 29M.
(photo by D. Page)

FIGURE 7

Carcass remains of a bowhead whale. Note skull in foreground.
(Photo by D. Page)

CONSERVATION IN THE FIELD: AN EXAMPLE FROM RED BAY

Judith A. Logan
Canadian Conservation Institute
Ottawa

Archaeologists have the responsibility to ensure that excavated artifacts will survive for study and for display. The survival of archaeological material depends on good excavation technique, proper post-excavation storage, and ultimately, some type of conservation treatment to enable the material to be stable at ambient conditions. This paper describes the operation of a field laboratory that has been established by the Canadian Conservation Institute (CCI), in conjunction with the Province of Newfoundland and Labrador and the Memorial University of Newfoundland to support the excavation of a 16th century Basque whaling station at Red Bay, Labrador.

By discussing the role a field lab fills as well as describing equipment, techniques and personnel that have been employed in the running of this particular lab, it is hoped that this will serve as a guide to archaeologists involved in the excavation of complex sites.

BACKGROUND

Since 1978, Dr. James A. Tuck of Memorial University has been excavating the 16th century Basque whaling station located at Red Bay (Tuck 1982, 1983). The CCI became involved with the excavation when Tuck requested conservation assistance during his first season of excavation (Senior 1980).

Artifacts found on the site range from Palaeo-Eskimo lithics to debris associated with the 19th century settlement of Red Bay. The bulk of the material is related to the 16th century exploitation of the area by Basque whalers and includes almost every type of material that was available to European technology at that time: glass, ceramics, a variety of metals, textiles, leather, and wood, as well as substances that are by-products of the whaling industry, such as baleen (Tuck and Grenier 1981).

As an historical resource, the site is unique in North America, representing a European activity that had not previously been investigated: that of

establishing industrial centres for the purpose of exploiting a specific resource. The artifacts which reflect this activity form a type collection which must be conserved in order to be available for study, and the conservation treatments employed must not interfere with subsequent analysis. Both these factors - the historical significance of the site as well as the variety and quantity of material which has been preserved in the cold, wet climate of [illegible]stal Labrador - made the establishment of a conservation plan mandatory. The operation of the field lab represents the first stage of this plan.

The Building and Facilities

The lab itself is housed in a one-storey building that is serviced with electricity and running water. The water is gravity-fed from a fresh-water stream. For use in the lab it is passed through particle filters, then, optionally, through deionizing columns to remove soluble salts and dissolve organic material. Heat is provided by an oil-burning stove. Total floor space is 748.8 ft^2 (69.6 m^2). The available space has been divided into activity areas as illustrated in Figure 1. The activity areas reflect the functions that the lab fulfills: artifact registration, conservation and storage, equipment storage, and visitor (tourist) access. Within this space, a staff of four can work comfortably: a registrar and assistant registrar, a conservator and conservation assistant. There is also the capability of setting up temporary work areas for extra staff. The functions of the lab staff are as follows:

1) Registration of all material, on a daily basis. Material requiring special handling or packaging gets priority in registration.
2) Preparation of conservation condition reports for objects requiring conservation treatment, packaging of these objects and storage under appropriate conditions.
3) Conservation of selected objects when time permits.
4) Assistance in the field, e.g.: block-lifting fragile objects.

1) Registration

All registration information is entered into a computer using a program

that is compatible with the Paris System being implemented by the Canadian Heritage Inventory Network (CHIN). A portable computer with storage on floppy discs is used to record information in the field; at the end of the seaon the data from the discs can be transferred to the mainframe computer at Memorial University. There is space in this program to include conservation treatment information at a later date.

2) Conservation: Recording and Packaging

After registration, the objects requiring further treatment are first sketched and described by conservation staff, then packaged in such a way as to minimize deterioration.

Figure 2 is an illustration of the form that is filled out for objects requiring conservation. The information on this form is the basis of the treatment record, which will be a history of the object from the time of excavation to final conservation. It is useful to begin a conservation treatment record for each object as soon as possible after excavation. The goal is to keep subsequent handling of sensitive material to a minimum, to streamline decisions about future storage and treatment, and make final packing up of the lab at the end of the season as easy as possible.

Table 1 gives a guide to the storage conditions and packing techniques for different types of material, considering their individual needs and the final proposed treatment. With the exception of the ceramics, most of the glass and some of the bone recovered, all the material from the site must be kept wet. Although it is well known that waterlogged wood and other organic materials will deteriorate very rapidly on drying, it is not always understood that metal objects, depending on the nature and extent of mineralization should also be kept wet, especially if an aqueous treatment method is to be used (Logan 1984). It is not difficult to keep objects damp as the average length of time between excavation and registration is only one day.

A list of packing materials is provided in Appendix 1. For long-term storage, packing and support materials should be inert: i.e., they should not degrade in the storage medium. This is especially important in selecting a material to use in tagging artifacts. As mentioned previously, all artifacts are catalogued prior to being wrapped and stored. The catalogue number as-

signed to each object is duplicated on Teflon^{R} tape that will not dissolve or degrade in water, most solvents, acids or alkalis. The tape is purchased in rolls that are cut to a width that allows them to be inserted into a Dymo^{R} label maker. The catalogue numbers are embossed on this tape and tied onto the objects with florist's wire, or, in the case of iron objects packaged for x-raying, with plastic fasteners ("Dennison" fasteners) which will not appear in the x-ray images.

a) Metal

For the Red Bay metal artifacts, iron represents the largest group of problematic material. The iron from the site is in extremely poor condition. Objectgs typically have a thick corrosion layer surrounding a fragmentary metal core. The amount of corrosion and metallic iron varies depending on the object and its burial environment. If allowed to dry without treatment and if stored under ambient conditions, objects containing iron will disintegrate in a few months. Conservation treatments cannot guarantee 100% success, therefore all the iron is recorded in the field by radiography.

After excavation the iron is immediately put into buckets of fresh water. During cataloguing, the objects are kept in shallow trays, covered with wet rags. After conservation condition reports have been written, the objects are individually wrapped in cotton gauze, tagged with their catalogue number and stored in fresh water, according to provenience. When enough objects from each area of the site have accumulated for x-raying, they are secured in sandwiches of polypropylene screening measuring 14 x 17" (35.5 x 43.2 cm), the same size as the x-ray film used (Figure 3). Tracings are done of each x-radiograph and the catalogue number of the objects recorded on each tracing (Figure 4, 5). The number of the x-radiograph that an object appears on is recorded on the condition report for that object. The objects remain in their polypropylene sandwiches during shipping and in storage at Memorial University. Using this packing and recording technique, order is maintained and the archaeologist has a visual record of all the material from specific locations of the site even if the material is not easily accessible (Logan 1984).

Other metals, such as lead, copper, and their alloys do not pose major

problems for conservation. Lead is stored in fresh water; copper in deionized water. Conservation of these metals can be carried out in the field lab, time permitting (see section 3).

b) Organic Material

i) Wood

The large quantity of waterlogged wood retrieved does not present major problems in terms of conservation. The bulk of the wood is treated at Memorial University by stabilizing with polyethylene glycol (PEG 400) followed by freeze-drying (Tuck 1981). Any wooden objects that appear to require specialized treatments are singled out for shipping to CCI but the majority are simply tagged with their catalogue number, stored in water and sent to Memorial at the end of the season. Conservation treatment records are not started for each piece of wood; this information can be entered on the computer at Memorial when treatment begins. For shipping, the field storage tanks become crates. The water and artifacts are removed and the objects are packed in the crates between layers of Microfoam^{R}, Bubble Pac^{R} and sphagnum moss.

(ii) Textiles/Leather

Textile and leather artifacts are often brought to the lab in a soil matrix. Preliminary washing is carried out to assist in identification and to remove soil that would be abrasive if left on the objects for shipping. The extent of cleaning for each object will vary depending on the condition of that object. Soft textiles may be damaged by handling when wet; these are best left to be freeze-dried at a later date and cleaned when dry.

The major difficulty in storing leather and textile artifacts is that they should be kept damp, but not waterlogged. Access of oxygen to damp organic material at ambient conditions will promote rapid mould growth which may result in staining which is impossible to remove. To reduce the likelihood of mould growth, the objects are sprayed with a strong solution of iscpropanol (30% in water), wrapped in plastic (Saran Wrap^{R} or polyethylene bags) and stored in the refrigerator. Especially fragile objects are placed on a rigid support (Coroplast^{R}) with padding, either Microfoam^{R} or damp, clean sphagnum moss. When packing objects in crates at the end of the season, damp moss is

used as padding material. This keeps the objects moist but not saturated and appears to have a fungistatic effect, preventing mould growth (Williams 1982). There is a plentiful supply of sphagnum moss in the peat bogs which surround Red Bay.

3) Conservation treatments carried out in the field lab:

Conservation treatments for some types of material can be done relatively quickly, with a minimum amount of equipment. For example, pieces of friable ceramic, fragile bone and baleen can be consolidated (see below) to preserve their strength and then safely dried. With brief training, one can clean copper and copper alloys to achieve a stable and aesthetically pleasing surface. Removal of thin corrosion layers from small lead objects and stabilization of the metal surface is also not a complex procedure. As time permits, these treatments are carried out in the field lab.

Another type of conservation treatment that can be carried out to some extent in the field is the cleaning, mending and gap-filling of pottery. This is a time-consuming process and is not carried out at the expense of other conservation activities; however, it is a process that is interesting for the crew and visitors to the lab.

a) Consolidation

The consolidation of degraded ceramic, bone and baleen is done by saturating the objects with a synthetic resin emulsion followed by slow drying to enable the water to evaporate with the minimum stress to the object. The difficulty is deciding when to consolidate a specimen: one of the basic goals of conservation is to preserve material with as little alteration of it as possible. Saturating organic specimens with a synthetic resin may interfere with subsequent analysis (for example, carbon-14 dating). This is a decision that has to be made for each object, and often the decision is to try to remove the water without resorting to consolidation, knowing that afterwards the object may not be as pleasing visually nor as physically strong, but the value of the specimen for subsequent analysis will not have been altered.

The 16th century glass that is found at Red Bay is sometimes in extremely poor condition and in very rare cases requires consolidation before being dried. Being composed of silica with sodium, calcium and potassium fluxes, it deteriorates during burial due to leaching of the fluxes from the silica network. This type of deterioration produces a system of minute cracks in the glass, called "crizzling". Extreme crizzling can result in loss of the surface of the glass unless a consolidant is introduced to hold the tiny cracked fragments together.

To consolidate wet, crizzled glass, the water must be removed without initially drying the sherds. This is done by immersing the sherds in organic solvents: first acetone, which will replace the water in the glass, followed by toluene, which replaces the acetone. The sherds are then brushed with a 2% w/v solution of an acrylic resin (Acryloid B 72^{R}) dissolved in toluene as they are allowed to dry. This controls surface gloss and ensures penetration of the consolidant.

It is important to record the brand name, grade and if possible, the chemical formulation of any consolidant used. Should the object be required for chemical examination at a later date, this information is essential. For the Red Bay bone, baleen and ceramics, we prefer to use Rhoplex AC-33^{R}, an emulsion of an acrylic resin. Rhoplex does not contain the waxes or starches that are found in most commercially available white glues. The acrylic resin will remain stable chemically for a long period of time, with no deleterious effects to the object.

b) Cleaning Metal:

Copper and copper alloys are treated by removing soil and loosely adhering corrosion with wooden picks, sharp scalpels, pins and brushes. The objects are then placed under vacuum in a 2% solution of benzotriazole in ethanol. The vacuum is applied and released repeatedly to force the solution into the remaining corrosion layers and into contact with the surface of the metal. Benzotriazole reacts with copper to inhibit further corrosion (Richey 1972; Greene 1972). The objects are then coated with a lacquer prepared by dissolving Acryloid B-72^{R} in acetone in a proportion of 3% w/v to give some protection against humidity fluctuations and handling.

It is not always necessary, or desirable, to remove corrosion from metal. In cleaning the copper artifacts, the aim is to retain a smooth layer of corrosion over the surface of the object. Treatments for lead, however, remove corrosion layers, thereby exposing the underlying metal. Although the corrosion products which form on lead are generally quite stable chemically and posed no threat to the object, on the Red Bay lead there is a large quantity of organic material incorporated in the corrosion layers. This could result in further corrosion of the metal during storage, so the lead from the site is usually "stripped" of its corrosion. This is done in the field lab by dissolving the corrosion in a chemical solution which leaves the metallic lead unharmed. Large lead objects or heavily corroded objects are not treated in the field; they are stored in water and are treated by electrolytic reduction, carried out at the CCI during the winter.

In order to remove thin corrosion layers from small lead objects, a solution of diethylenetriamine pentacetic acid (DTPA) and sodium hydroxide (NaOH) is prepared, first by dissolving NaOH in deionized water, usually in a proportion of 2% w/v NaOH/water. Enough DTPA is dissolved in the NaOH solution to lower the pH of the solution to 5.5 (measured with pH papers). Objects are immersed in individual containers of DTPA/NaOH which are heated in a water bath to a temperature of between 50°C and 60°C. Average length of time of immersion is one half hour. The objects are then rinsed with tap water, dried by rinsing with acetone to remove excess water, and then the surfaces are brushed with a soft brush. The clean lead is coated with Renaissance® microcrystalline wax to protect it against atmospheric moisture and organic acids.

If there is any doubt as to the composition of a metal, treatment is not carried out until the metal can be identified. Certain alloys and "white" or "grey" metals are difficult to identify in the field. Analysis of these materials is done at CCI headquarters by the Analytical Research Services Division.

4) Assistance in the field

It is sometimes necessary to provide a support for particularly fragile

artifacts before attempting to lift them from the soil. Examples of such artifacts include mineralized iron objects, shattered ceramic sherds and large pieces of soft textile. Many small objects are routinely lifted in blocks of soil by the excavators. The objects can then be removed carefully from the soil matrix in the lab, making it possible to record the orientation of individual pieces while minimizing damage. When it is necessary to apply such a support to the exposed surface of an artifact prior to undercutting and lifting, a number of options are available and the field conservator must select the most appropriate materials and technique for each situation. The only "rules" that must be adhered to are:

1) the support material must be easily removed from the object, yet be able to be moulded to contours of the object;
2) the material should be easy to apply; in some cases this involves compatibility with environmental conditions: e.g.: plaster of Paris is difficult to apply in rain or high wind;
3) the support should be made of material that is chemically compatible with the storage environment into which the artifact will be placed, and
4) it should be as light in weight as is practical.

Supports are not always absolutely rigid. As an example, when facing a large piece of wet textile lying on bedrock, it was decided to prepare a facing cloth that was impregnated with an acrylic resin that would dry to a stiff yet slightly flexible shell over the textile (Logan and Segal 1985). In this case, cheese cloth was saturated with the resin (Rhoplex AC-33), and allowed to dry. The cloth was then cut into small strips, the adhesive softened with acetone and the strips pressed directly on the surface of the textile. The acetone evaporated and the strips dried, adhering to the nap of the fabric. There was enough flex to the facing to allow the textile to be loosened from the bedrock on which it was lying and to be lifted safely. The facing was later removed by re-softening the adhesive with acetone.

In most instances, the object is covered with an isolating layer of aluminum foil or gauze prior to applying the support material. Support

materials most often used at Red Bay are, in order to frequency: paraffin wax, car body filler (polyester putty), facing cloth prepared as described above, and plaster of Paris. The type of block lifts most often carried out are on mineralized, broken iron objects. These are pedestalled, covered with foil, then coated with molten paraffin wax. In the lab, excess dirt is removed and the object is x-rayed on its support. The objects remain on their supports for shipping.

CONCLUSION

In discussing the operation of the field lab at Red Bay, it is impossible to avoid the subject of responsibility for conservation - who is ultimately responsible to ensure that the objects are conserved and that the maximum information value is retained? In the Province of Newfoundland and Labrador, the permit to excavate places the legal responsibility on the archaeologist. In the case of Red Bay, the archaeologist realized that he would require assistance, which he sought from CCI. CCI accepted the responsibility of providing a plan for conservation; however, CCI does not have the resources to treat all the material coming off a site. In order to assist Memorial in treating the bulk of the material (primarily iron and wood), CCI has carried out characterization studies of these materials and, in the case of the iron, devised a comprehensive recording system as well as a treatment program for the collection (McCawley 1984; Logan 1984). Objects that require special analysis or individual treatment are sent to CCI where they are worked on by staff and interns over the following months. This is obviously not an ideal situation; it would be preferable if all the material could be treated at Memorial where it would be available for study by the archaeologist and where the archaeologist could have more direct input into treatment and analytical decisions. However, the joint operation of the field lab is an important first step in the overall success of the conservation plan for this site and one in which the concerns of archaeology and conservation overlap.

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TABLE 1

MATERIAL	FIELD HANDLING	1] INITIAL CLEANING	2] STORAGE/PACKAGING	FIELD LAB 3] TREATMENTS
Wood	Keep wet	wash	Fresh H_2O	
Textile	Keep damp	wash if possible	-on support with padding & fungicide -cold storage	
Leather	Keep damp	wash	-on support with padding & fungicide -cold storage	
Iron	Keep wet		-wrap in gauze; package in polypropylene screening -x-ray -store in deionized water	
Iron with organic material (composite objects)	Keep wet		-as for iron	
Copper & copper alloys	Keep wet		-store in deionized water	-dry -mechanically clean -stabilize
Lead	Keep wet		-fresh water	-chemically remove corrosion
Silver	Keep wet		-dry & store dry	
Degraded Bone; Baleen, Antler, horn	Keep damp	-wash -or dry and clean when dry	-damp, if going to consolidate	-consolidate only if necessary -dry; store dry
Glass	Keep damp	-wash	-dry and store dry	-consolidate only if necessary
Ceramics	Keep damp	-wash	-dry and store dry	-consolidate only if necessary

APPENDIX 1

Wrapping and cushioning and support materials

1] Polyethylene Sheeting:

- chemically stable
- water resistant
- transparent
- available from hardware stores and building supplies
- current cost per roll: around $80.00 for a 100' long "rack roll", 4 mil. thickness

*2] Polyethylene Foam: ("Microfoam")

- white, stable
- comes in rolls of varying thicknesses and textures
- other trade names: "Ethafoam" (Dow Chemical) "Sentinel Foam" (Dorfin Packaging)
- good for cushioning; thinner types are more useful
- objects wrapped in this will float
- cost/roll (60" wide, 750' long): $140.00
- available from packaging suppliers; find distributor

*3] Bubble Pac:

- polyethylene sheets with air pockets
- bubbles break easily
- available in a range of bubble sizes, but small bubbles are more versatile
- cost: roll of 3000 sq.ft.: $220.00 (small bubbles)
- contact packaging suppliers

*4] Cotton gauze/cheesecloth:

- from fabric stores
- will grow mould and degrade in wet storage
- very soft and useful in some cases, i.e., for binding loose associated fragments together

5] Nylon/cotton gauze:

- stretchy bandages, in a variety of widths
- stable in a wide range of chemicals; the cotton will deteriorate in long-term wet storage
- soft
- available from Smith and Nephew, Inc. Lachine, Quebec
- approximate cost: 1" wide: $7.55/doz.
  6" wide: $25.80/doz.

*6] Terry Toweling (white):

- for covering large artifacts; keeping surface wet
- available from fabric stores in rolls

*7] Saran Wrap:

- polyvinylidene chloride film
- clings to damp surfaces; will prevent movement of objects
- not to be used for indefinite storage with metal artifacts
- available from: Hardware, grocery stores

*8] Aluminium Foil:

- excellent as an isolating layer in blocklifts
- cannot be stored in alkaline or acid solutions
- available from: Hardware, grocery stores

9] Nylon Screening:

- soft
- will degrade in some chemicals, ie: hot PEG, hot alkalis
- good for packing material for storage in solution where diffusion is important
- available at hardware stores (door screening)
- cost: approximately $100.00/roll

*10] Polypropylene Screening:

- more chemical resistance than nylon screening, especially in hot alkalis
- stiffer than nylon screening

From: Cole Parmer
7425 North Oak Park
Chicago, Ill., USA 60643

- Cost: $39.15 (U.S.)/roll

*11] Polyethylene Boards: ("Coroplast")

- like cardboard, but is made from polyethylene and is stable
- floats in wet storage
- good for support for flat or fragile pieces
- board can be re-used
- available from: Cadillac Plastics, 91 Kelfield St., Rexdale, Ontario M9W 5A4
- cost: $13.58/per 4' x 8' sheet, 4 mil.

Custom-made rigid support: All support material that solidifies around an object must be separated from the object by an impervious meterial. All undercuts on an object must be padded out.

1] Paraffin Wax:

- from hardware or grocery stores (sold with canning and preserving supplies)

2] Carbody Filler:

- a filled polyester, with a buttery consistency
- very strong and light
- sets by reacting with a hardener (a peroxide) --setting time will be affected by temperature
- cured resin will swell in paint remover
- must be used in well-ventilated work area

- available from hardware stores (suggest Canadian Tire brand)
- cost: $30.00/gal.

3] Plaster of Paris:
- powder, mix equal volume with water
- sets in 5-10 minutes
- heavy; will maintain high water content for a long time
- large pieces need reinforcing
- if plaster sets on the surface of an object, it is extremely difficult to remove - all objects/materials must be protected by separating layer
- inexpensive and readily available
- cost: approximately $25.00/50 lbs.
- available from construction supply outlets or concrete and brick companies

Containers

*1] Polyethylene Bags:
- come in a variety of sizes, with and without closures, from Fisher and CanLab
- the most convenient bags for small objects and organic samples are "Whirl-pac" bags, with a built-in tie
- these are very expensive but they save time in the field and give an excellent seal
- cost: from $60.00 for 500 small ones (7.6 x 18 cm), to $120.00 for large ones (14 x 23 cm).

2] Freezer Containers:
- polyethylene containers with tight fitting lids
- variety of sizes
- "Prig-o-Seal" best
- grocery and hardward stores
- cost: $1.50 and up

3] Polyethylene Tubs:

- available in a variety of sizes and shapes, at varying costs: $70.00 to $500.00 depending on size
- with or without wheels

Supplier: Rosedale Plastics
7240 Woodbine Avenue
Markham, Ontario L3R 1A4
Telephone: (916) 495-6980

4] Pool-liners:

- for lining large storage tanks
- can be custom-made by swimming pool companies (e.g. Mermaid Pool Distributors)
- cost: varies according to size of tank: contact local pool dealer

WARNING: The liners have a built in biocide that can be very irritating to the skin and eyes if used for small containers. In full-sized pools, the biocide dissipates, but in enclosed or small areas, it can build up to toxic concentrations.

Labelling Material

*1] Teflon Tape:

- must be cut to order; specify .015 in. thick, 1 cm wide to fit into a Dymo labeller
- available from: Cadillac Plastics, 155 Colonade Rd., Nepean, Ontario Tel. (613) 226-7487
- cost: per roll: $4.71 - order in bulk (i.e., 30 rolls at a time)

2] Water-proof Labels:

- polyethylene coated paper

- not as durable as Teflon Tape
- can write on them with alcohol markers; writing eventually fades in water and runs in PEG solutions
- available from: Kimball Systems, 8300 Cote de Liesse, Montreal, Quebec
- cost: average cost, case of 500/8 x 11 1/2" sheets: $180.00 can get better rates buying in rolls

Fasteners

*1] Dennison attaching systems:

- a variety of loops and fasteners - used by retail stores to attach price tags to garments
- must buy the fastening gun: cost of gun: $50.00 each
- good for attaching labels to screening
- cost of fasteners: approximately $253.00/lot of 50,000 for single fasteners (average cost)
- available from Dennison of Canada contact retail stores to get local suppliers

2] Monel Staples:

- "Swingline SF4-Monel"
- corrosion resistant, nickle/copper staples
- from hardware stores
- cost: approximately $15.00/box of 5000 standard size
- from: Talas, 104 Fifth Avenue, New York, N.Y. 10011

*3] Plastic Ties:

- polyethylene - coated wire stable in most storage solutions
- available from Fisher, Canus, CanLab Scientific supplies
- cost: $30.00/roll of 1,500 feet.

*Material discussed in the paper

APPENDIX 2
Chemicals

Caution: Some of the chemicals listed are hazardous materials and should not be used without protective clothing or proper ventilation.

	AVAILABLE FROM:
1] Diethylenetriamine pentacetic acid:	Aldrich Chemical Co. Inc. P.O. Box 355 Milwaukee, Wisc. 53201 U.S.A. Tel: (414) 273-3850 Toll free: 800-558-9160
2] Sodium Hydroxide:	Fisher Scientific (check for local suppliers)
Health hazard: extremely caustic; must wear gloves and eye protection	
3] pH papers	Fisher Scientific
4] Benzotriazole	Fisher Scientific
Health hazard: is a possible carcinogen Avoid skin contact and inhalation	
5] Consolidants: Rhoplex AC-33 Acryloid B-72	Rohm and Haas 2 Manse Road Westhill, Ontario Tel: (416) 284-4711

6] Solvents: Acetone — Fisher Scientific
Alcohol (ethanol)
Toluene

Health hazard: are flammable; can induce dizziness and nausea;
Avoid skin contact and inhalation
Acetone and toluene can degrease skin, resulting in dermatisis

7] Isopropanol: — Fisher Scientific
Breathing concentrated vapours — Drug Stores
may cause nausea, headaches

8] Water Purification:
a) Water filters: to filter particulate matter: Contact water purification companies ("Culligan") or swimming pool suppliers

b) Deionizing columns: — Fisher Scientific
i) Barnstead high capacity
ii) Barnstead organic removal

Figure 1

Floor plan of lab.

Functional Areas:

A: Conservation

B: Registration

C: Artifact Storage

D: Display Area

E: Equipment Storage

//// Shelving - equipment and Artifact storage

| | | Wood and iron storage tanks

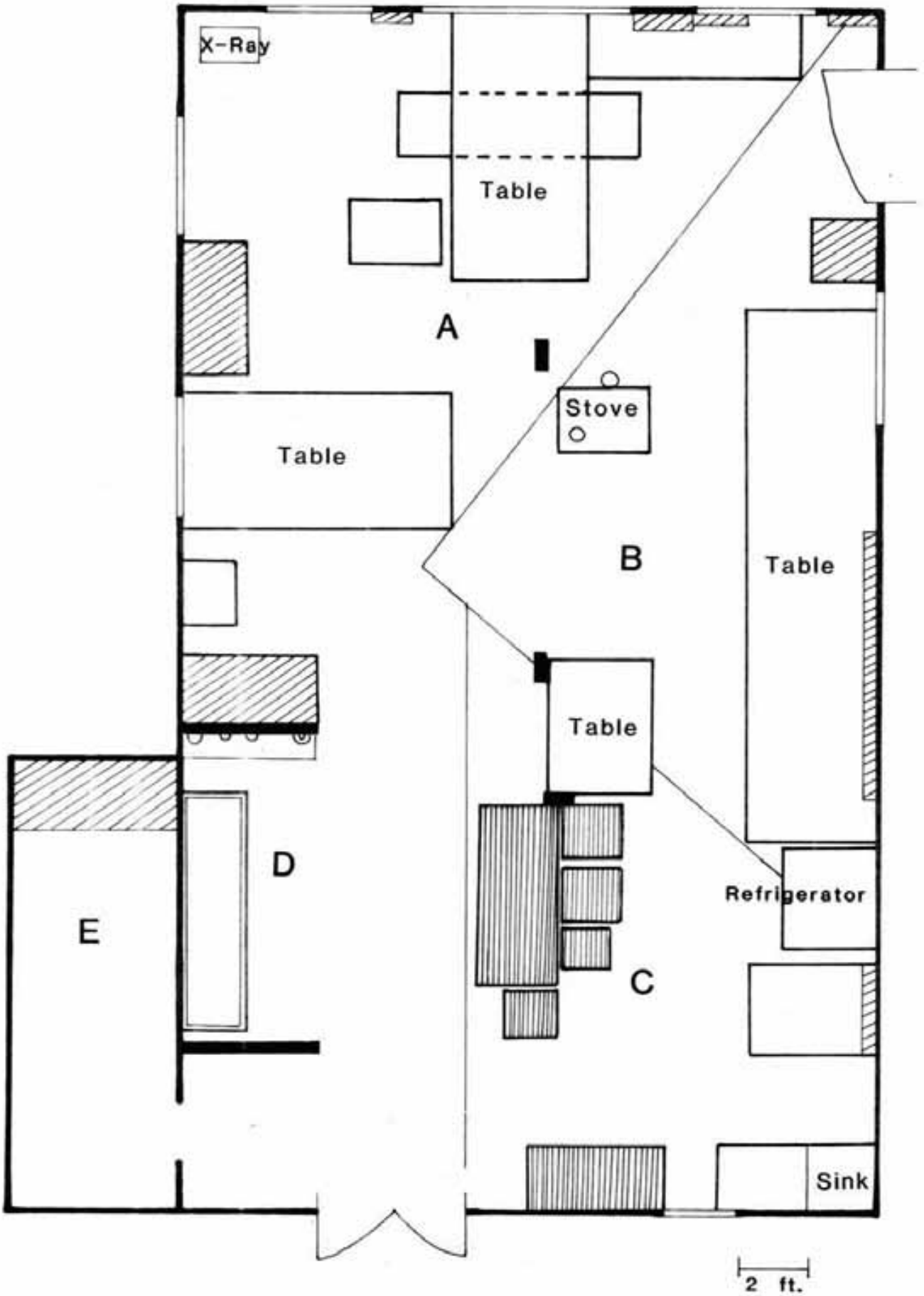
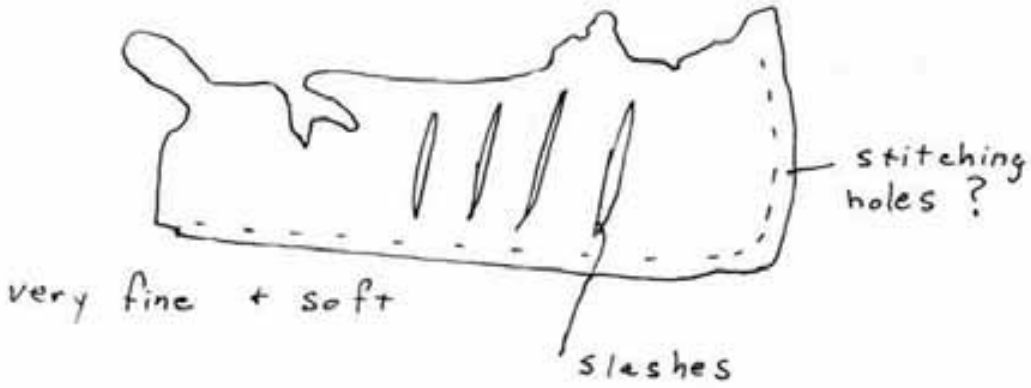

X-Ray
Table
A
Stove
Table
B
Table
Table
D
E
Refrigerator
C
Sink
2 ft.

Figure 2

Treatment history record form.

Borden # EkBc-7: 958	Acc. #	CCI #	Date excav. 21/07/84
Inst.	Object Garment Frag?		Func. Class
Dimensions L 13.8 W 4.5 T .05 cm D		Wt	Environment silt in Pond

Description and Condition



Material
Leather

Scient. Report

X-Ray:

Photography
Film #
BT
DT
AT

Pre-treatment storage 22/07/84 - on rigid support ("coroplast")

Treatment proposal
- Sprayed w 30% isopropanol/H_2O
- covered w Saran Wrap
- in fridge

SEND TO CCI

Conservator
R S

Approved

Estimated Treat. Time

Estimated Comp. Date

Actual Time

Follow-up

# of Pieces
B. A.

Treated
Site CCI

Figure 3

Packing iron for x-raying. The objects are secured between 2 layers of polypropylene screening, with their catalogue numbers (on the white reflon tape).

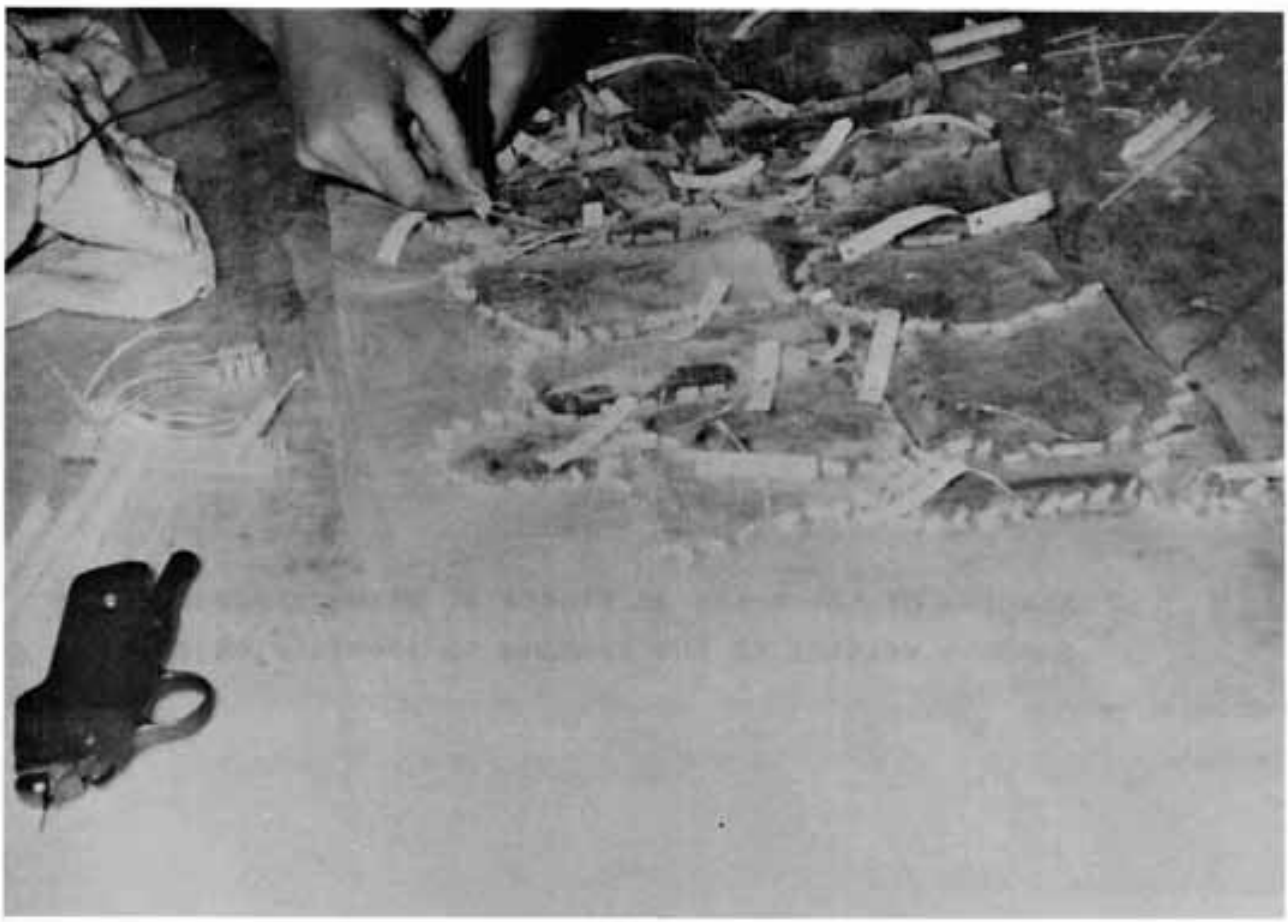


Figure 4

X-ray of nails and tools from a cooperage. White indicates metalic iron; greyish areas are completely mineralized, ie: no metal remaining.

Figure 5

Tracing of the x-ray in Figure 4, with catalogue numbers written on the tracing to identify objects.

Figure 4

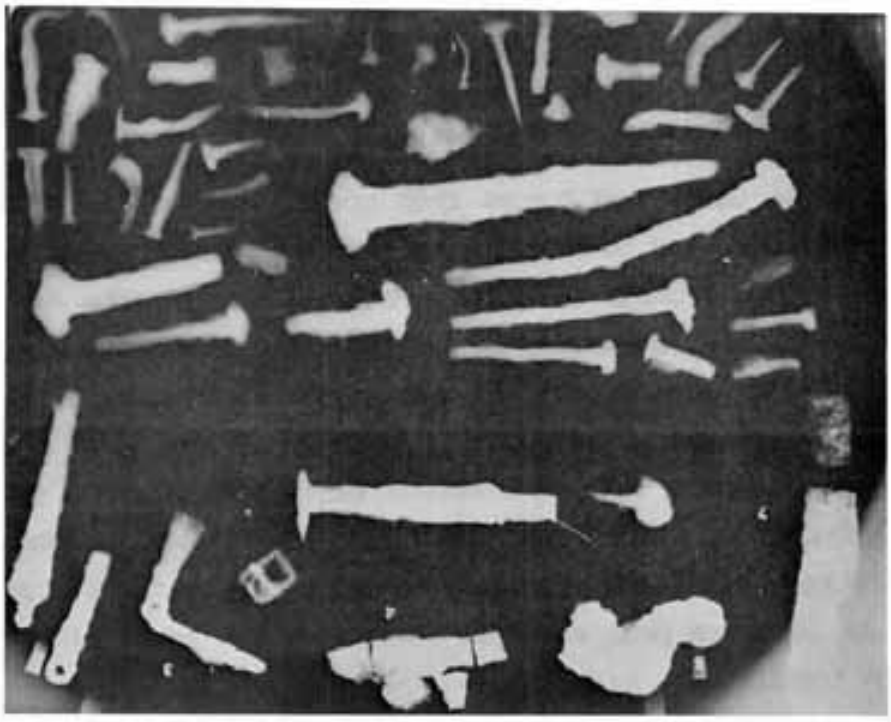


Figure 5

EXCAVATIONS AT RED BAY, LABRADOR 1985

James A. Tuck
Memorial University of Newfoundland

During June, July, and August 1985 crews from Memorial University once again returned to Red Bay to continue excavations at 16th century Basque whaling stations. In addition to further explorations at the Red Bay whaling stations, surveys were conducted up and down the southern Labrador coast to record other whaling stations of the same period. In both cases our efforts resulted in new information and interpretations of the late 16th century in southern Labrador. The 1985 excavations were financed by a grant from the Department of Culture, Recreation and Youth, Government of Newfoundland and Labrador, and conducted under permit # 85-04 issued by the Historic Resources Division. As in years past valuable assistance was rendered by the Canadian Conservation Institute.

Four areas on Saddle Island were further explored, several ponds excavated, and a series of small scattered living sites partially explored.

Excavations at Area C, apparently one of the largest and most extensively used shore stations on Saddle Island, was nearly completed during the past summer. Except for a small, but deep, deposit of clay containing well preserved organic materials — textiles, baleen, and wood—and a concentration of burned stone, tile, and fat near the southern edge of the area, the entire shore station has now been exposed. As reported previously the station consisted of a number of structures which can be summarized as follows. Most obvious, and clearly visible as a long rock mound prior to excavation, is a large tryworks, frequently repaired and probably more than occasionally rebuilt, which was capable of supporting five large copper cauldrons in which the actual rendering of oil from blubber was done. A small structure of uncertain function located on a small terrace above and behind the tryworks may have been a cooperage although no coopers' tools were found within or near the remains of the structure and a large cooperage on a second terrace immediately to the north of the tryworks more likely supplied the casks into which the oil

recovered from this tryworks was placed. A large grindstone suggests that some industrial activities were carried out in the former location, however, although the structure is perhaps best interpreted as a shelter for men tending the tryworks; even this, however, is by no means certain. In front of the shore station was a now submerged wharf or cutting-in stage where the whales were flensed and no doubt where supplies were landed and casks of oil launched to be towed to the whaleships anchored in the harbour. A reconstruction of this area by artist Richard Schlecht appears in National Geographic, Vol 68, No. 1, July 1985, on pp. 46-47. As mentioned above, a few small areas remain to be excavated, particularly at the south end of the area where it is suspected that a deep deposit of clay and refuse could conceal still another small structure. Excavations during the summer of 1986 will explore this area more fully and complete the exposure of this entire shore station.

In addition to the 16th century features described above the 1985 excavations revealed additional material pertaining to the mid-19th to early 20th century occupation of the area by the ancestors of the present day inhabitants of Red Bay as well as artifacts and one feature which may pertain to aboriginal utilization of the area. In 1984 a native potsherd was recovered from the small structure of uncertain function overlooking the tryworks (Tuck 1985: 233,247) and the 1985 excavations revealed an area where sections of copper from one of the rendering cauldrons were modified, perhaps also by native people. A number of rivets were discarded on the spot as were several asymmetric copper triangles which could have served as projectile points or perhaps are simply "offcuts" from the manufacture of such weapon parts. The context of these objects was such that contemporaneity or very near contemporaneity with the Basque occupation is indicated. No such objects have been found in Inuit sites along the Labrador coast, despite the extensive excavations of Susan Kaplan, Richard Jordan and others, suggesting that these artifacts may be further indication of Indian presence in the Strait of Belle Isle during the 16th century.

Excavations were also completed at the whalers cemetery, discovered in 1982 and the object of investigations since that time. Once again, Brenda Kennedy of the University of Calgary participated in the excavations and is now in the process of analysing the skeletal material. The 1985 season

brought the number of burials to 56 which, with Feature 1, the unburied dead which first brought the cemetery to our attention, and several kinds of random human bones, brought the total number of individuals to somewhere in the neighborhood of 130. If the port of Red Bay was in use for 60 years between about 1540 and 1600 the number of graves revealed by our excavations amounts to less than one per year. If the seasonal population averaged 500, and it seems that during the peak of the whaling period it may have been considerably larger, a death rate in the neighborhood of well below one per-cent is indicated. Both of these figures seem remarkably low for a 16th century population, but why they are so remains something of a mystery. Several factors, in addition to the possibility that there are other cemeteries which we have not located, may account for what appears to be a remarkably low death rate. Brenda Kennedy will consider these in much more detail, but it is worthwhile to point out some of them since four years' work at the cemetery are now complete and the area has been restored to approximately its original form.

The first factor which might account for the apparent low death rate among the 16th century whalers is that the individuals who came to Red Bay as whalers were doubtless not representative of the entire population of the Basque Provinces on northern Spain and southeastern France. We know, for example, that females were not present and that most of the whalers were between 20 and about 45 years of age. Factors such as death during childbirth, infant mortality, and death from old age were not features of the Red Bay population. Those men who did participate in whaling were doubtless chosen at least partly for their physical prowess; it is doubtful whether infirm individuals would have made voyages to Terranova. These two factors-- a selected and healthy population — doubtless contribute to the relatively low number of burials recorded at the Saddle Island cemetery. Other factors may also have been at work, however. The most obvious of these is that the bodies of whalers lost at sea during the undeniably dangerous business of hunting and retrieving whales from the Strait of Belle Isle may not have been recovered and therefore are not represented in the cemetery. Since the custom of raising memorial stones to those whose bodies were not recovered apparently did not exist in the 16th century, as it did among 18th and 19th New England

whalers, it is impossible to determine what effect this might have on the size of the population represented in the cemetery. Nor does the study of surviving documents in Spain yet shed much light on this point. Wills exist which clearly indicate death and burial in Terranova (Barkham 1977), but the exhaustive research needed to quantify these data will require years to carry out.

It is also conceivable that the diet of the Red Bay whalers may have been such as to promote relatively good health. No positive evidence of scurvy, which was responsible for a large proportion of the deaths at the slightly more recent Dutch whaling station at Smeerenburg (Maat 1984; Louwrens Hacquebord, personal communication), has yet been observed on the Red Bay skeletons. Once again, however, these studies are just beginning and many of the skeletons are in a very poor state of preservation, hence it may be impossible to address this question with a great deal of confidence. It might be noted, however, that faunal remains from both the land and underwater excavations indicate a diet rich in protein which included most of the fish, birds, and mammals typically available along the southern Labrador coast during the summer months (Stephen Cumbaa, personal communication); I doubt whether the amount of protein available to the population in northern Spain approached that regularly consumed by the whalers of southern Labrador. While a high protein diet probably contributed something to the general good health of the whalers, such a diet would not have prevented scurvy, perhaps the worst enemy of seamen before the discovery of the preventative powers of citrus fruit in early 17th century. It is conceivable, however, that the abundant berries in Southern Labrador--blueberries, crowberries, and bakeapples--were consumed in sufficient quantity to prevent the disease during years when the return to Spain was made at the normal time, usually no later than the first of the year. During those years when rapidly forming ice forced crews to overwinter deaths were common in the following spring, perhaps not as much from starvation or exposure as from deficiency diseases against which the whalers had no protection.

Also remaining to be explained are a number of burials which deviate significantly from normal burial practice. The majority of the graves are in the extended position, on the back, oriented with the head to the west. So closely do these burials parallel our own grid that it almost appears as if

these burials were made with the aid of a compass. Others are slightly "off-axis", probably because of natural obstacles such as bedrock outcrops or large boulders which made precisely oriented east-west graves impossible to dig. Several burials, however, are considerably out of line with the majority, some actually reversed with the heads to the east. There appears no natural reason for this diversion from the normal practice; it is hoped that analysis of the skeletons themselves might reveal some differences between those buried in a typical fashion and the majority of the interments. These and other questions have been posed by the cemetery on Saddle Island. Clearly we have more questions than answers.

Excavatons at a third area on Saddle Island revealed a large feature which as yet cannot be explained. A large scatter of wood charcoal, in places several centimetres thick and covering an area about ten metres in diameter, was completely exposed during the last weeks of the 1985 season. Stratigraphically it lies above a layer of peat which, in turn, covers a small Dorset component, and beneath a layer of sod not unlike that which has formed over most of the 16th century deposits thus far revealed. An apparently intrusive 19th century pit, possibly a trash pit or at least a shallow feature which became filled with refuse, intersects the usual stratigraphy but does not seem to pertain to the original formation of the charcoal layer. Artifacts associated with this feature, although limited in number since only a few one-metre squares have been excavated into and below the charcoal, include coarse earthenware, hard grey-bodied Normandy stoneware, a few fragments of glass including a stem fragment, nails, and other less diagnostic objects. While the coarse earthenware and iron nails with large flat heads are not unlike those from the 16th century structures excavated elsewhere on Saddle Island, the high percentage of Normandy stoneware is at some variance with the percentages of this distinctive ceramic ware in other assemblages. Unique are fragments of at least two small (not more than five centimetres high) "ointment" jars unknown from earlier excavations. The fragment of stemware has been examined by Ann Smith, Material Culture Researcher with Parks Canada who specializes in archaeological glass. She reports that the first impression is of an 18th century French origin of the majority of the early glass from Red Bay. It is just possible, therefore, that this area represents

utilization of Red Bay between the cessation of Basque whaling in the early 17th century and the start of the Labrador summer fishery carried out by Newfoundlanders beginning about 1830. It is probably too much to hope for, but we know that Pierre Constantin, a Quebec merchant, established a post at Red Bay in 1715 which was sacked and burned by Inuit in 1718. The evidence at hand — a thick charcoal layer and at least a suggestion of French artifacts — is suggestive, but only the research planned for the summer of 1986 will tell us whether we have in fact located a part of this establishment.

Following the successful excavation of the small pond on Twin Island (Tuck 1985) which produced a wealth of organic artifacts of 16th century origin, including both Basque and Inuit material, several small ponds on Saddle Island were excavated. The technique of excavation, which initially depended on siphon action to remove silt and water from the pond was improved with the addition of an in-line suction dredge powered by a three inch pump which resulted in a much more efficient system and the elimination of breakdowns which plagued the 1984 excavations.

The 1985 excavations produced a wide range of artifacts from the 16th century and more recent times. These include barrel and tub parts, about one-half of a ceramic vessel typical of the 16th century Basque material, and other containers which appear to have been lost, broken, or abandoned at places where drinking water was collected in the 16th century and more recent times. Other objects included fragments of leather, ship and small boat parts not unlike those from Twin Island, and the remains of what appear to be the complete skeletons of a number of harp seals which, for reasons still unknown, found their way into a pond more than 100 metres from the nearest salt water.

Also in 1985 , after years of searching, we discovered the locations of a number of small dwellings used by the 16th century whalers. Until 1985 we were misled by what we thought was our exhaustive knowledge of Basque ethnography and searched carefully at the bases of large rock faces for traces of structures analogous to those built by shepherds in the Pyrenees. In some cases these efforts were successful, and two such areas were excavated during the summer of 1985. At least one of these was the scene of multiple occupations, in places separable on the basis of thin layers of sod between deposits of baleen, scraps of wood, charcoal, and other artifacts. This par-

ticular location, immediately below the crest of a small hill on the extreme southern end of Saddle Island, may have been associated with a lookout established on the top of the hill, thereby accounting for its repeated utilization.

Other, and far more numerous, shelters were not located at large rock faces but took advantage of the smallest crevices in bedrock outcrops which were utilized as hearths. Some were modified by the addition of rocks and small boulders to contain the fires of wood and fat (probably the "fritters" remaining after oil was rendered from them), while others appear to have had no such modification. In most cases scraps, and occasionally sizeable plates, of baleen were preserved, in association with nails typical of the 16th century which suggest insubstantial structures framed with wood and covered, at least partly, with baleen. The use of baleen, which was later to become a valuable commodity in commercial whaling suggests that this market was not yet as important in the 16th century as it was to become a short while later. These small living sites, of which a brief preliminary reconnaissance located more than a dozen on both Saddle and Twin Islands, will be further explored during the 1986 season and it is anticipated that others, perhaps a significant number of others, will be found.

Other surveys

Finally, surveys between the Quebec border and Pleasure Harbour, about 20 km north of Chateau Bay, revealed the locations of several apparent whaling stations which had not previously been reported. Fragments of distinctive red roofing tile were found at Capstan Island, West Ste. Modeste., and at Pinware. The latter site has long been sought but, once again we were looking in the wrong place. Our efforts had been concentrated in the area of the present settlement which is sheltered by a large headland and where long, sandy beaches afford opportunity to land and launch small boats with comparative ease. It was not these sandy beaches that the Basque sought in Terranova, however. They chose instead to build their shore station to the west of the present settlement in a much more exposed and rocky area where today only a few small gardens are to be found. Whether this location was chosen for the apparently deeper water to be found there (although there are a few deep spots

along the shoreline of the present community), or because of the rocks available for construction of tryworks, or simply because they preferred the rocky shore which is not unlike that of northern Spain is hard to say. Other similar locations in Henley Harbour were chosen to locate tryworks in the 16th century and the remains of them are visible on Stage Island and the opposite shore today. Perhaps the most impressive site visited during 1985, however, is that at Pleasure Harbour, reported originally by Dr. John Kennedy, Department of Anthropology, Memorial University, and later visited by Robert Grenier and other employees of Parks Canada. Pleasure Harbour itself is without doubt the most sheltered harbour on the southern Labrador coast. The entrance is difficult to navigate but once inside the deep inlet turns to parallel the coast line for almost a mile and provides safe anchorage from any wind. The Basques apparently also realized this for there are traces of more structures at this location than at any other known site along the Labrador coast except for Red Bay itself. We were not able to visit Cape Charles where Parks Canada personal also observed scatters of tile throughout the community and which also must be a whaling station similar to those recorded at more southerly locations.

In all, the 1985 season was a profitable one. The amount of new information, and more important potential new information, gained from the site continues to be impressive. Equally impressive was the number of visitors to the site during 1985. Approximately 700 people toured the laboratory and the excavations on Saddle Island during July and August. The onslaught continued during September, particularly when the Lindblad Explorer unexpectedly disgorged some 400 tourists. They were accommodated insofar as possible by the people of Red Bay who showed them the site and discouraged several fully equipped SCUBA enthusiasts from making a close inspection of the wreck sites. We anticipate an even greater number of visitors during the 1986 season.

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1985 EXCAVATIONS AT PHILLIP'S GARDEN AND POINTE RICHE, PORT AU CHOIX NATIONAL HISTORIC PARK

M. A. P. Renouf
Department of Anthropology
Memorial University of Newfoundland

Introduction

The 1985 field season at the Port au Choix National Historic Park took place from 8 July - 23 August, following the 1984 program of reconnaissance and survey (Renouf 1985 a; 1985 b; 1985 c). As a result of that first season twelve previously unrecorded sites were located which included three Maritime Archaic, seven Palaeoeskimo, and five historic French and English components (cf. Renouf 1985b: Fig. 1). The Dorset Palaeoeskimo site of Phillip's Garden was mapped and tested and an undisturbed Groswater Palaeoeskimo component was discovered at the easternmost area of the site. A previously undiscovered Dorset Palaeoeskimo site was found at Point Riche which was roughly one third the size of Phillip's Garden, with similar round and oval surface depressions and the same range and form of material culture.

The general objectives of the 1985 field season, based upon these results, were: 1) to excavate a house and a midden feature at Phillip's Garden, 2) to fully test Point Riche and map the surface features, 3) to excavate one depression at Point Riche, and 4) to retrieve faunal material and charcoal samples from both sites. The 1985 excavations are summarized below and are described in more detail elsewhere (Renouf 1986).

2. Phillip's Garden

2.1 Introduction

Three hundred square metres were gridded in the western area of Phillip's Garden, or the second terrace which lies between 5.75 and 8.50 metres above sea level (Figure 1). The area encompassed a small mound and two clearly visible house depressions, and a shallow depression can be seen within

the southeastern corner of the area (Figure 2). Both of the deeper depressions had a break in the wall area which was inferred to be an entranceway.

Only the western depression was excavated in 1985. Levels 1 to 3 were removed in plan so that the outline of the house remained clearly visible as excavation progressed. The interior of the house was defined as an area relatively clear of beach rocks and surrounded by a slightly raised perimeter of beach cobbles (Figure 3, Plates 1 and 2). Within the interior a central depression measured approximately four metres east-west and four metres north-south and to the rear was an elevated platform which measured four metres wide and two metres deep. At the northern end of the house was a slightly raised area four metres wide and one metre deep. The wall areas were raised 25-35 cm above the central area and the rear platform was elevated 28 - 35 cm higher. The break in the northern wall indicated on the surface map showed up as a relatively rock-free depressed area in which a number of large flat rocks and some large flat, almost board-like, pieces of worked whalebone were found.

The east and west walls of Feature 1 were fairly well defined, and show up well in Plate 1. The west wall consisted of raised beach rock which ran north-south almost in a straight line along the western excavation units (Figure 3). The edge of the east wall appeared only in some eastern units as most of the wall lay beneath unexcavated squares. Where the east wall was exposed in two units the soil was unusually peat-like, especially in and around the rocks of the wall. The extent of this peat was mapped and will be further investigated next season as there is the possibility that it represents buried sod associated with the wall. The north and south walls were less distinct, but nevertheless each could be traced as it appeared in a curve crossing several excavation units.

The tracing of the walls allowed the interior dimensions of the house to be measured as approximately four metres east-west and seven metres north south, including the rear platform area, the central depression, and the slightly raised forward area.

Within the house a number of pit features were found (Figure 3). These varied in size and depth but all contained charcoal or charcoal staining and concentrations of faunal material. The three largest pits (Features 5, 6, and 7) were surrounded by and lined with stones both irregular and slab-like.

Whereas Features 5 and 6 were within the central depression, Feature 7 was in the platform area. Features 11 and 13 were both small shallow bone-filled pits which were also found within the platform area, and Feature 9 was another small bone-filled pit located outside the house. Numerous lithic and fewer bone artifacts were found within the house, both inside and outside the pit features.

In his 1976 publication Harp described the dimensions and characteristics of two house forms which he excavated at Phillip's Garden. House 2, inferred to be a winter dwelling, was approximately square, measuring 15 feet (4.92 metres) on a side. According to an unpublished field drawing this does not include the rear platform which lengthens the house to 8.2 metres. The interior area was cleared of limestone beach rocks which were stacked against the side to make walls, the remains of which were raised 12 -18 inches (30.48 - 45.72 cm) above the floor level; against the inner wall area there was some evidence of banked turf blocks. Four stone-lined pits, averaging 12 inches (30.48 cm) deep, ran in a rough line through the central axis of the house. At the rear of the house was a semi-cricular platform raised about 10-12 inches (25.4-30.48 cm) above the main floor. Three storage pits were located within this area and Harp suggested that it was a sleeping platform (Harp 1976: 131-132).

By way of contrast, House 5, representing the summer houses at the site (Harp 1976: 130), was a shallow oval depression which measured 10 by 18 feet (3.28 by 5.91 m). The interior area was incompletely cleared of rocks and there were no wall structures or interior features.

Two charcoal-based radiocarbon dates were returned from the house (Figure 4). Feature 6 was dated at 1850±100 B.P. (Beta 15379) and Feature 4, which we had interpreted as a disturbed hearth deposited on top of a disused wall, was dated at 1250±60 B.P. (Beta 15639).

Comparing Feature 1 with Harp's descriptions of his winter and summer houses, it clearly resembles House 2 more closely than House 5 in dimensions, depth and internal features. However, it appears not to have such clearly defined walls and platform area, nor do the interior bone-filled pits line up along the long axis of the house. Intrigued by these differences I examined in the field the house features which Harp excavated where it was still pos-

sible to see the house dimensions and internal features; these had not been back-filled and re-growth had been fairly slow. In House 2 the pits did indeed line up centrally along the longitudinal axis of the house and the platform area was fairly distinct. However, although the walls were at a higher elevation than the central area they were no more distinct than the walls of Feature 1. It appeared that the difference in elevation was due less to a build-up of the walls than a result of the clearing of limestone beach rocks from the interior, thus forming a depression.

House 3 and 10, both inferred to be winter houses, were also clear enough of vegetation to be examined. House 10 measured approximately 6 m in length and 9 m in width, including a rear platform. As in House 2 and Feature 1, the walls were not well defined although they were higher than the floor. House 3 measured approximately 4.5 m in width and 5 m in depth. The walls were indistinct although they were higher than the floor and I could see no platform area.

I infer from these comparisons that House 2 was particularly well defined and because of this was to a certain extent idealized as typical of all the winter house structures. It is probable than many, perhaps most, winter houses at Phillip's Garden are more similar to Feature 1 and House 3 than to House 2.

2.3 Feature 2

Originally we had hoped that the small mound associated with Feature 1 was a midden; however, upon excavation it became clear that it was one of Harp's backdirt piles, probably from his checkerboard excavation at nearby House 16. Although we thought it likely that a midden would be found near the gridded house features, no faunal material turned up in our numerous test pits. Therefore we gridded a second area 20 m to the east of the main area, where our 1984 sampling of the site had revealed a rich midden deposit 15 - 25 cm deep. Further test pits indicated that the dark, greasy, bone and flake-laden deposit covered an area of approximately 8 m north-south and 18 m east-west. As it was clear that excavation of this rich deposit would be time-consuming only 8 m^2 were opened up. The backdirt was not dry sifted but was bagged, labelled, and transported to a nearby stream where it was water sifted

through a 3 mm mesh. All but the very smallest bone and flake material was recovered and the material was dried and bagged for later sorting.

A large amount of bone came from the midden and we were grateful for an unusually hot and dry summer which allowed us to wash the material and lay it outside to dry. The midden area also proved to be exceedingly rich in artifacts, many of them bone (Plates 11 and 12).

If Figure 5, the profile of one wall of a 1 m^2 unit in the midden shows that it consisted of at least four components. This can be seen from the repeated occurrence of Levels 1 and 2 in undisturbed context; a thin Level 3 can be seen only beneath the bone-filled mound. It appears that midden material was initially deposited and became overgrown, probably quite quickly, with the sod and peat of Level 1. Another deposit was made on top of this new surface and the process of surface regrowth was repeated. From the profile it can be seen that two more such deposits were made. Presumably more than four components make up the midden.

It had been our original aim to separate the midden components as we excavated, but it turned out that this was not possible as they were very difficult to detect. It is hoped that we will be more successful next year, with the 1985 profiles as a guide. In the field Harp identified the faunal material from the midden associated with House 4 (1976: 128). He observed that 98% of the faunal material was seal, presumably harp seal from their annual spring migration. We noticed that, although seal did predominate in the midden deposit, there was also a significant amount of caribou. We have recently begun to sort the water-sifted material in the lab and a relatively small amount of fish and bird is consistently turning up which gives a picture of a more generalized diet.

Several charcoal samples were collected from the midden (Figure 4). One returned a date of 1570 $\pm$ 70 B.P. (Beta 1538) and another, at the base of the midden, returned a date of 1920 $\pm$ 100 B.P. (Beta 15638). In the report of 1984 field activities at the Park it was suggested that this midden feature had been deposited within a disused house feature, thus obscuring any surface depressions in this area (Renouf 1985:43). The difference between the date at the base of the midden and that well within the midden deposit suggests the possibility that the older date pertains to a house feature lying below the

midden. Future work at the midden should clarify the matter.

3. Point Riche

3.1 Introduction

At Point Riche all surface depressions and test pits with cultural material in them were mapped. The resulting (Figure 6) is a simplified version) shows a total of 33 large and small depressions, 19 of which appeared to be cultural rather than natural. It is difficult to distinguish between natural and cultural depressions at Point Riche because the bedrock is shattered limestone which has many natural water associated undulations in it. This process is continuous in Port au Choix where limestone bedrock is exposed and water-filled pools and holes can be seen in many areas, for example along the Park walk from Port au Choix Cove to Phillip's Garden. Cultural depressions were designated as such if cultural material was found in them or if they were particularly large and well defined.

3.2 Feature 1

It was decided to excavate one of the possible house features which we tested in 1984. Ten square metres was gridded in 1 m^2 units and the feature (Feature 1) was excavated in plan.

Feature 1 first appeared as a clearly defined depression on the surface of the ground (Figure 7). As Levels 1 to 3 were excavated the central depression became increasingly difficult to see because of the obfuscating undulations of the bedrock surface which were emerging. In addition, a large number of deep holes, some nearly a metre in depth, began to turn up (Plate 3). When a few of these holes were first revealed they misleadingly followed a gentle curve in a likely wall area and thus we speculated that they were possibly postholes. However, numerous such holes began to turn up with disconcerting irregularity and it became clear that, whatever their subsequent use might have been, originally they were a natural feature of the bedrock. A number of these contained flakes, artifacts, bone material and very dark organically-stained soil. Whereas it was clear that two (Features 2 and 5) of these had been used as storage pits similar to the bone-filled pits excavated at

Phillip's Garden, in others cases the material could either have been placed there or could merely have fallen down the hole. In one hole (Feature 6) there were no organics or artifacts but the earth was stained an unusual black which was not found anywhere else.

When the gravel bedrock was fully exposed (Plate 4) it was still difficult to see the original depression. In contrast to Feature 1 at Phillip's Garden there was no evidence of any wall structures. However, the absence of recognizable wall areas may simply be a result of the nature of the dwelling which in turn is related to the particular function and season of occupation of Point Riche and to the available building material. At Phillip's Garden the sterile sub-surface is rocky beach. In order to make a comfortable living area some of the larger and sharper rocks would need to be taken away, and at the same time would provide ready building material for walls. At Point Riche, however, the sterile sub-surface is limestone bedrock which was shattered into gravel and which has a fairly even surface despite holes and undulations. In order to make the surface comfortable no clearing away would be necessary. Instead the holes could be covered by branches, skins, or something of that nature; possibly some low growing vegetation of the sort that can be seen on the present-day exposed bedrock would have served the purpose. With no clearing away of beach rocks there would be no ready supply for wall construction. If Feature 1 of Point Riche was a dwelling with a superstructure, it could have been built of more perishable material, using posts placed in any of the ready-made post-holes.

Our original interpretation of Feature 1 as a dwelling is maintained and, hopefully, further work including excavation outside the feature and distribution maps of artifacts will clarify the issue.

4. Discussion

Point Riche and Phillip's Garden are similar in a number of ways. According to the radiocarbon dates from both areas (Figure 4) they chronologically overlap from at least 1840-1466 B.P.. No doubt the actual range of overlap is much greater, but there are as yet few dates from Point Riche compared to Phillip's Garden (cf. Harp 1976: 124). It is interesting that the dates from Features 1 and 2 at Phillip's Garden extend the range of occupation

of the site as established by Harp's charcoal-based radiocarbon dates. Whereas the earliest of his charcoal-based dates was 1800±50 B.P. (House 2) and the youngest 1275±50 B.P. (House 20) (Harp 1976: 124), the base of midden Feature 2 was dated to 1920±110 B.P. and Feature 4 was dated at 1250±60 B.P.. The period of occupation at Phillip's Garden is extended as far back as 2660±70 B.P. if you include the Groswater Palaeoeskimo component at Phillip's Garden East as part of the main site.

The artefact assemblages from the two sites are very similar as can be seen from their form and range (Plates 5 - 12). Similarly, there appear to be few differences between the range and proportion of raw material used, except that at Point Riche there was a higher proportion of Ramah chert and quartz crystal (Kennett 1985). At this stage, no formal analysis of the tool assemblage has been done.

There are also differences between the two sites. They are situated in different micro environments, Phillip's Garden in a sheltered meadow underlain by a rocky limestone beach and Point Riche on an exposed point of land with a mixture of heath and grassy vegetation underlain by undulating limestone bedrock. Both areas have a good view of the sea, although from Point Riche the vista is wider. Connected to this difference in location is the fact that during the summer Phillip's Garden, which is sheltered, is infested with uncountable flies, whereas at Point Riche where there is always a stiff cold breeze the flies are relatively scarce. On this basis it is hypothesized that Point Riche and Phillip's Garden were seasonally connected. It is suggested that Phillip's Garden was a virtual year round settlement from which task groups would have left at different periods for various purposes. A likely exodus would have occurred during the summer where most, in some years perhaps all, of the group living at Phillip's Garden would have moved the short distances to Point Riche where they could spend the summer more comfortably.

If Point Riche was a summer site then the house structures would have been different from those at Phillip's Garden. Along with different building material available at Point Riche, there would not have been the same need for shelter against the winter weather. Thus it would be logical that the house features at Point Riche would not be as distinct in outline, walls, or internal features as the more clearly defined house features at Phillip's Garden.

It must be stressed, however, that at this point these are hypotheses rather than interpretations. It is hoped that more concrete results will emerge from the faunal identification and analysis.

ACKNOWLEDGEMENTS

Many people contributed to the success of the 1985 field season. As before, Parks Canada arranged lab space and accommodation and various people from Parks were responsible for this and other logistical and financial matters: Charles Lindsay of Historic Resources Research, Atlantic Division; Edna Hall, Superintendent of National Historic Parks in Newfoundland; Bruce Bradbury, Superintendent of L'Anse aux Meadows and Port au Choix National Historic Parks; and George O'Keefe, General Works Manager for the Port au Choix National Historic Park. Earl Luffman, Parks Archaeologist with the Atlantic Division, worked with us in the field as a crew chief and repeatedly risked life and limb by taking photographs of Phillip's Garden from the dizzy and windy heights of the photographic tower which he designed and built. Brian Gallant, Restoration Officer with the Atlantic Division of Parks, arrived in time for one of the few days of driving mist in an otherwise glorious summer and put in the grid at Point Riche. I appreciate the intensive work effort which the crew maintained throughout the summer since this was at the root of the project's success. I would like to thank my two other crew chiefs, David Simpson and Carol Krol, and the rest of the crew, Mary Biggin, Scott Biggin, Barbara Gould, Troy Gould, Sue Kearsey, Jeanette Ryan, Katherine Scott, Michael Spence, Marianne Stopp, and Pat Wells. Mrs. Rita Offrey continued to be indispensable as our cook and Anne Douglas, secretary of Memorial's Department of Anthropology, regularly received messages from the field and responded to all requests quickly and cheerfully.

Back in St. John's Sue Kearsey, Carol Krol, and David Simpson continued to catalogue, Tip Evans drew the site maps and Doug Robbins drew the profiles. Memorial University Photographic Services photographed the artefacts and printed the maps.

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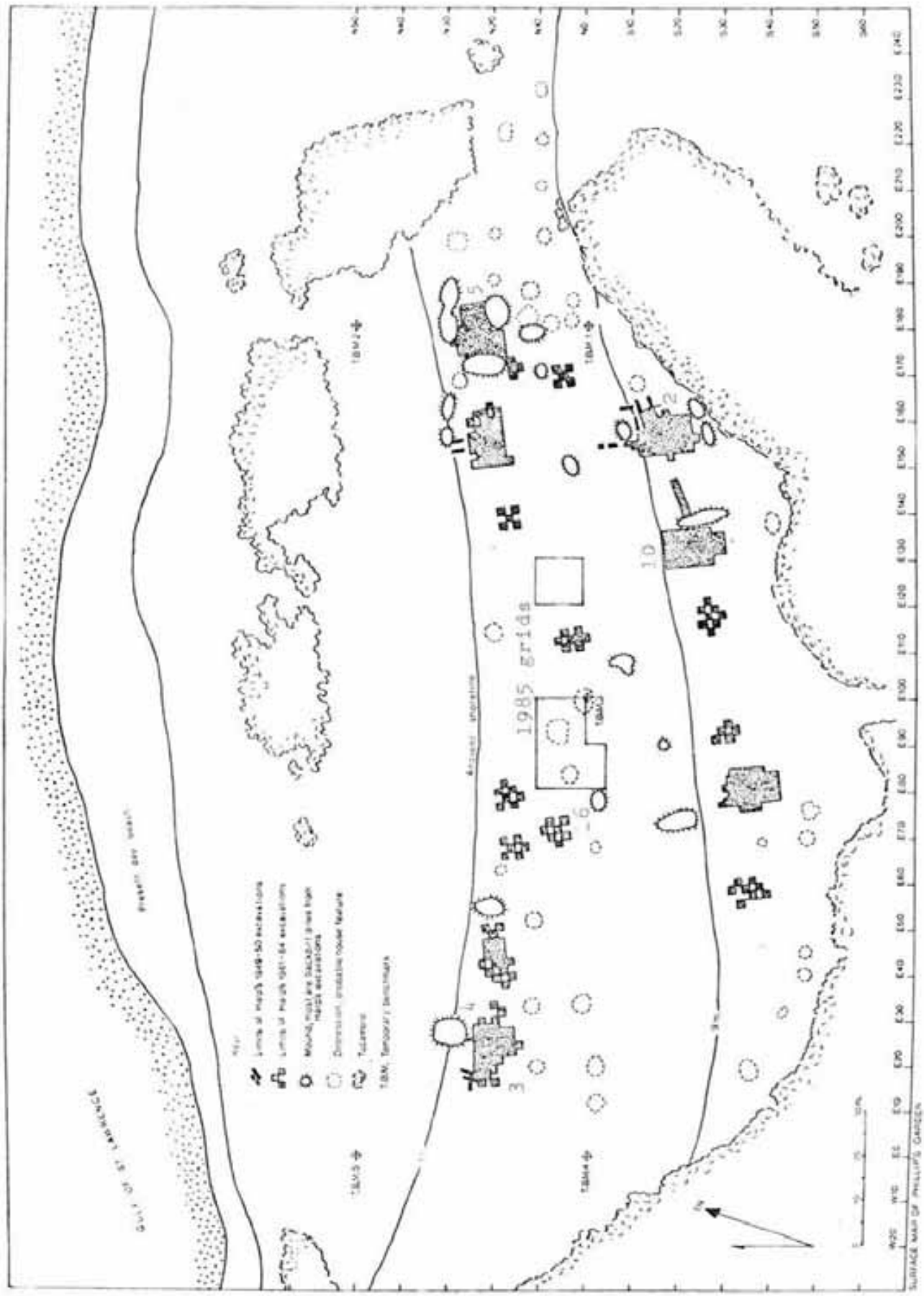
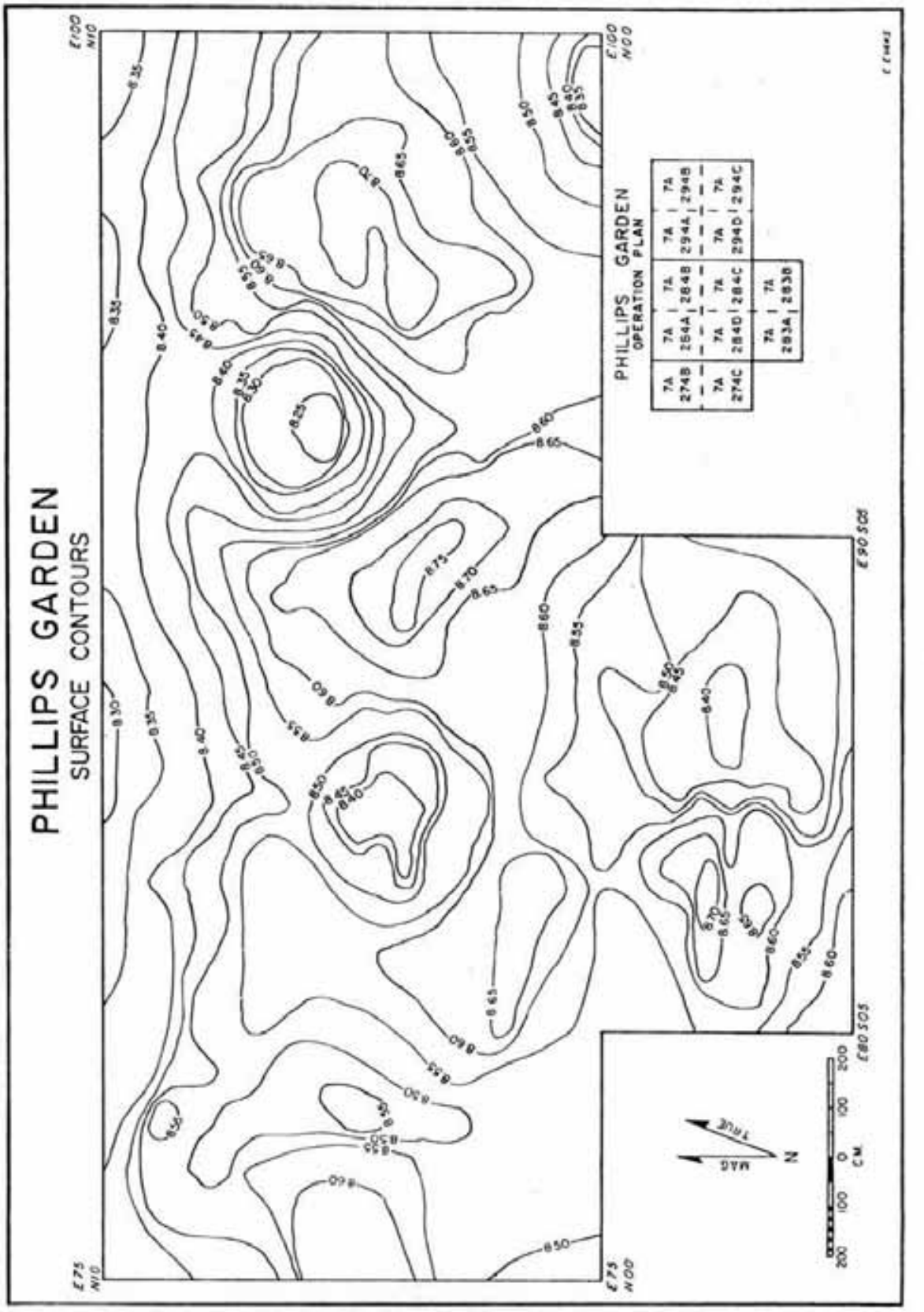


Figure 1: Surface features at Phillip's Garden.

Figure 2: Surface contours of 1985 excavation area, Phillip's Garden.


PHILLIPS GARDEN
SURFACE CONTOURS
PHILLIPS GARDEN
OPERATION PLAN
7A 274B
7A 284A
7A 284B
7A 294A
7A 294B
7A 274C
7A 284D
7A 284C
7A 294D
7A 294C
7A 283A
7A 283B
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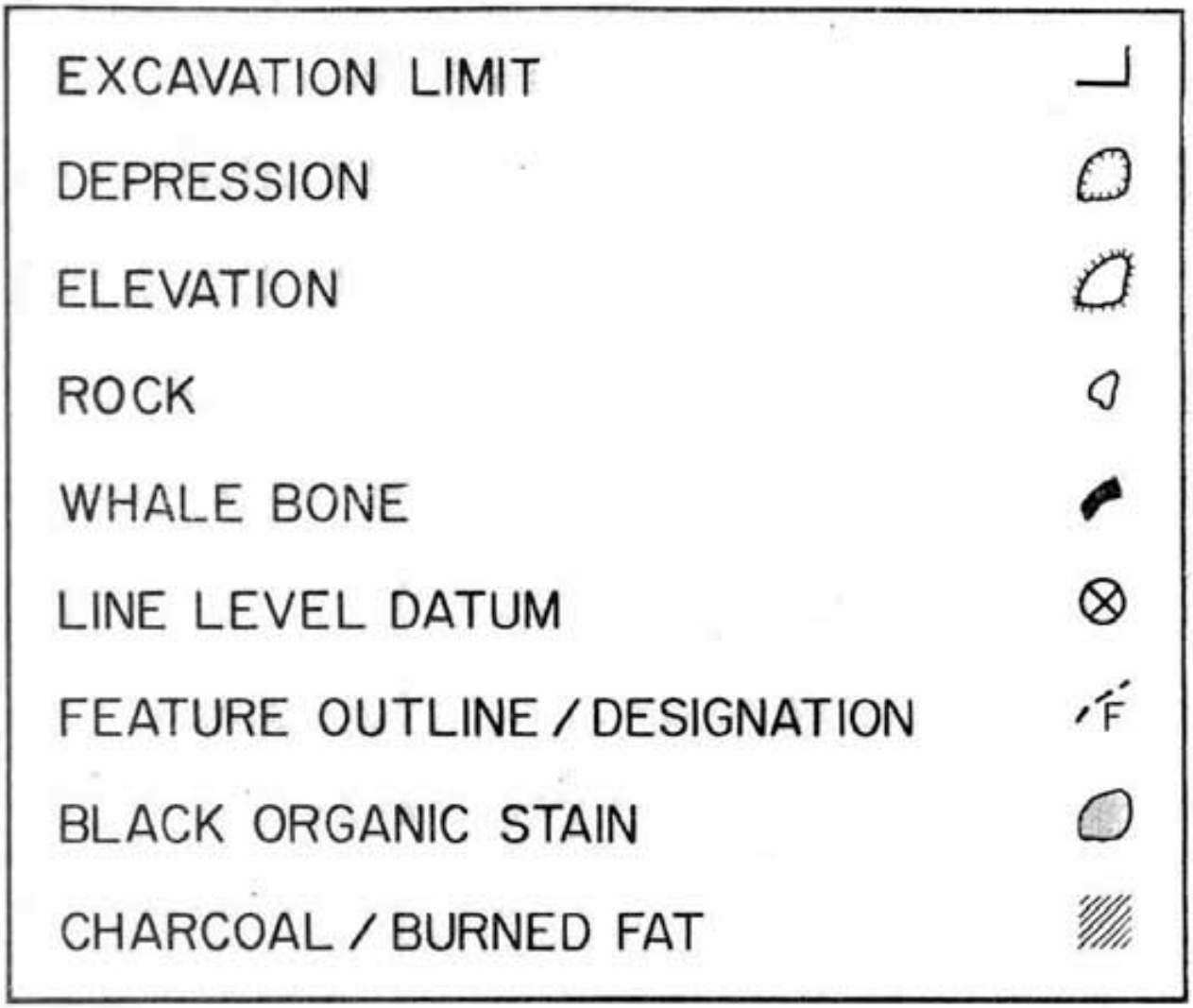
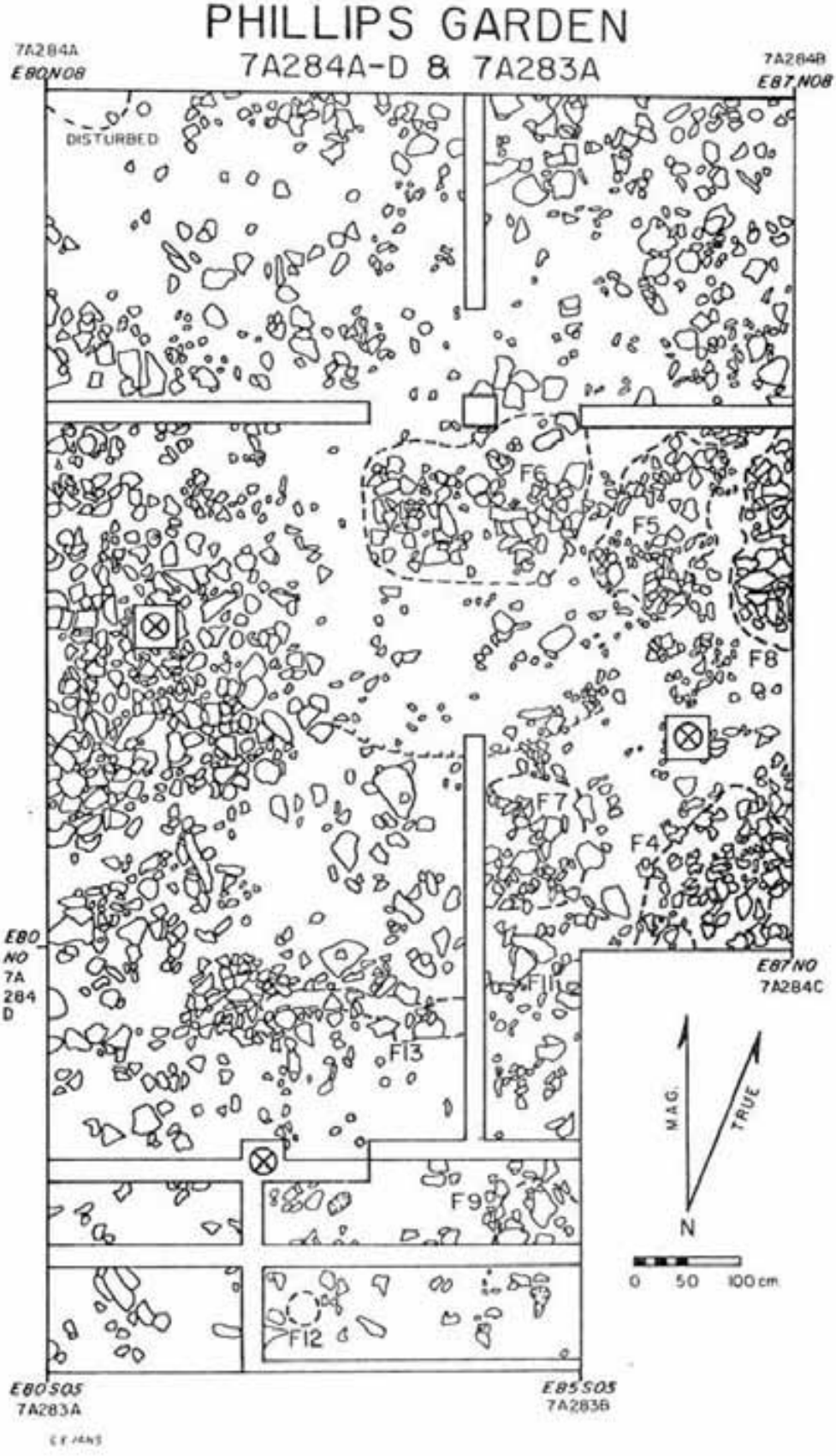


Figure 3: Feature 1 at Level 4, Phillip's Garden.


PHILLIPS GARDEN
7A284A-D & 7A283A
7A284A
E80N08
7A284B
E87N08
DISTURBED
F6
F5
F8
F7
F4
F11
F13
F9
F12
E80N0
7A
284
D
E87N0
7A284C
MAG.
TRUE
N
0 50 100 cm
E80S05
7A283A
E85S05
7A283B

List of (uncalibrated) radiocarbon dates from Phillip's Garden and Point Riche.

Site	Feature	Date	Sample Number	Lab. Number
Phillip's Garden	4	1250±60 B.P.	7A284C92	Beta-15639
Phillip's Garden	6	1850±100 B.P.	7A284D284	Beta-15379
Phillip's Garden	2	1570±70 B.P.	7A323A211	Beta-15381
Phillip's Garden	2	1920±110 B.P.	7A323A540	Beta-15368
Phillip's Garden E.	hearth	2660±70 B.P.	7A282B2	Beta-15375
Point Riche	1	1750±80 B.P.	7A547D380	Beta-15376
Point Riche	2	1750±90 B.P.	7A547B499	Beta-15382
Point Riche	-	1546±80 B.P.	7A525B113	Beta-15377

Figure 4

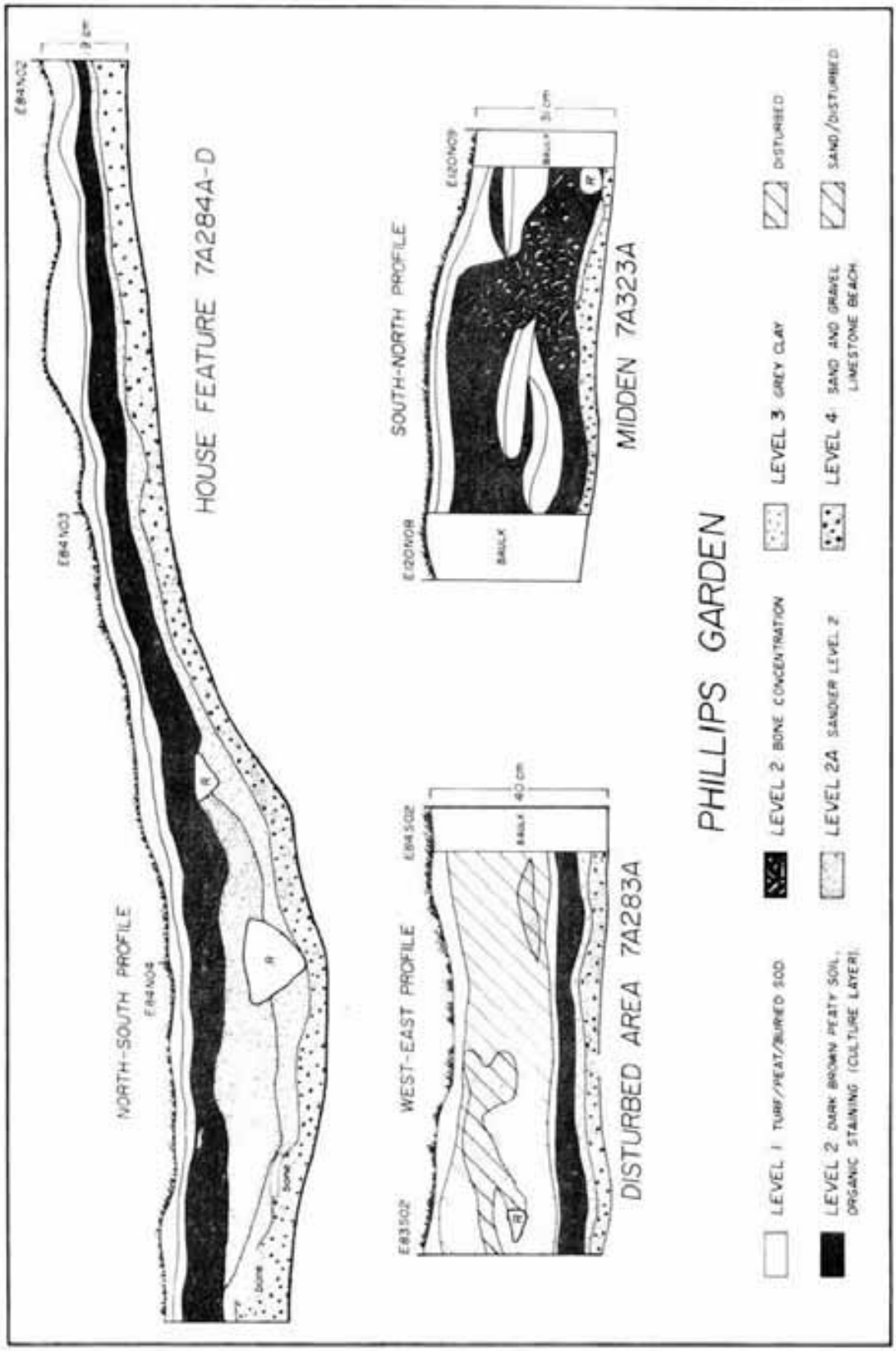
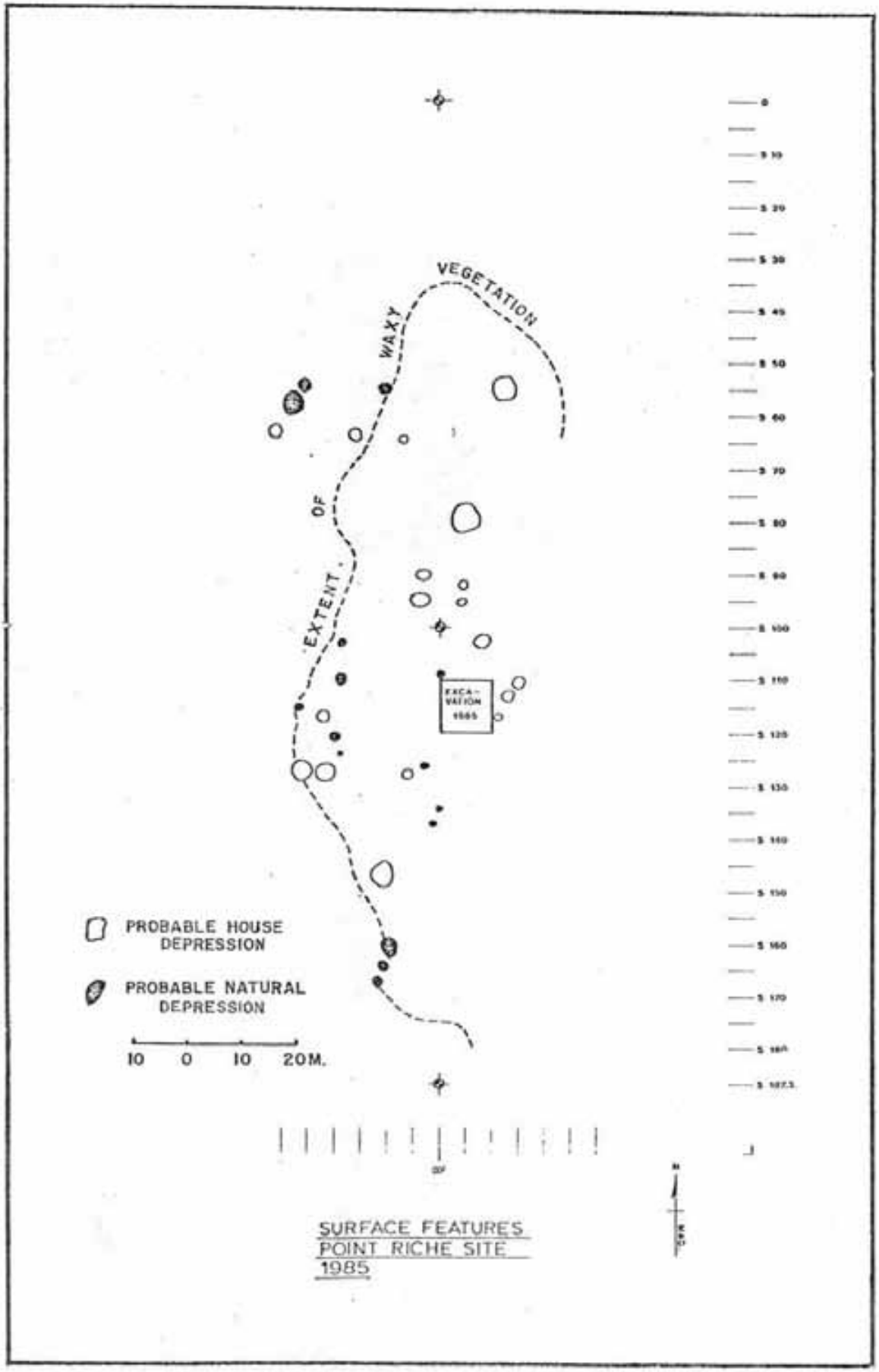
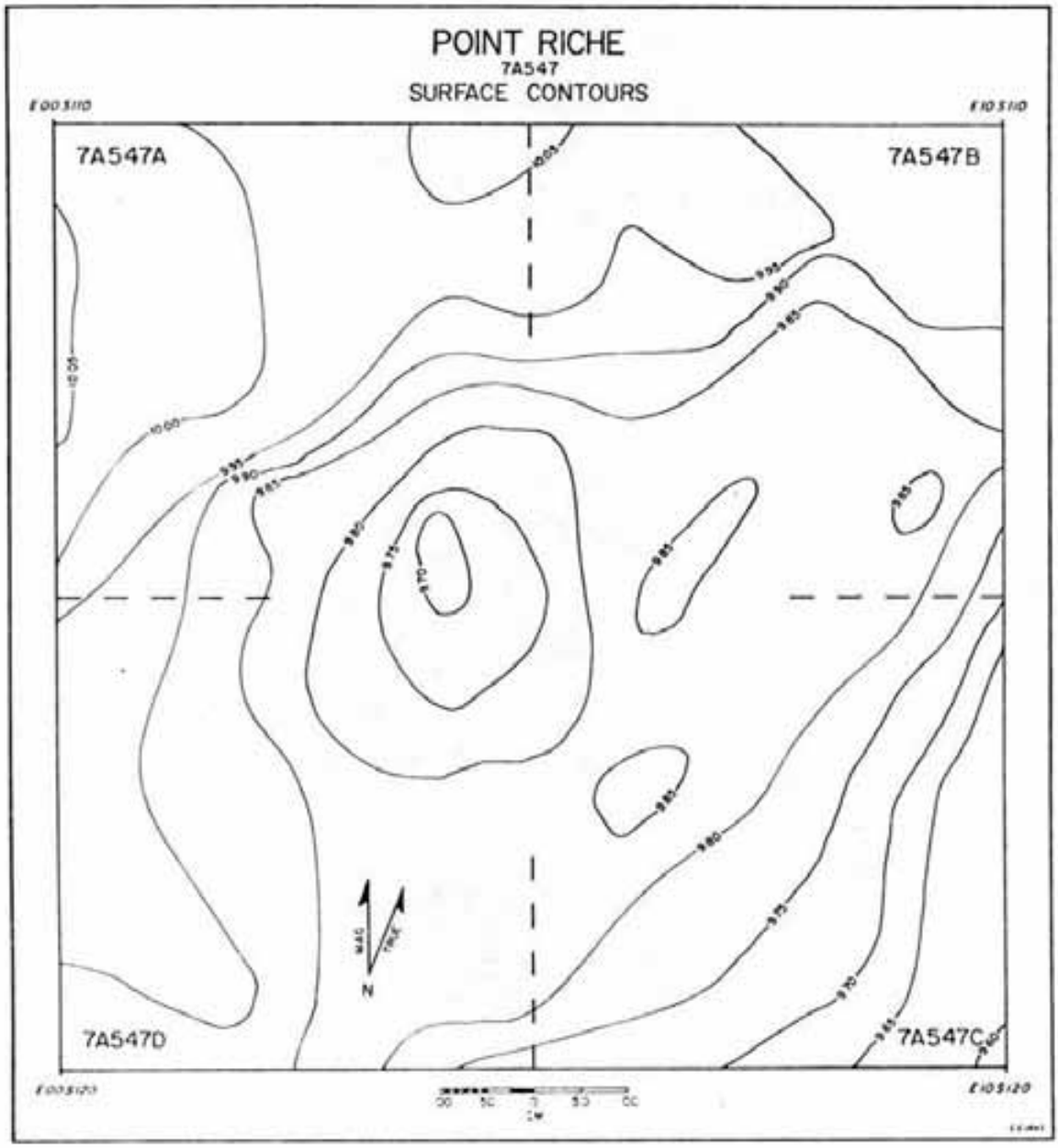


Figure 5: Profiles from Phillip's Garden



SURFACE FEATURES
POINT RICHE SITE
1985


POINT RICHE
7A547
SURFACE CONTOURS
E 005110
E 010 510
7A547A
7A547B
7A547D
7A547C
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E 010 520
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Plate 1: Feature 1 at top of Level 4, Phillip's Garden, looking north.

Plate 2: Feature 1 at top of Level 4, Phillip's Garden, looking northeast.

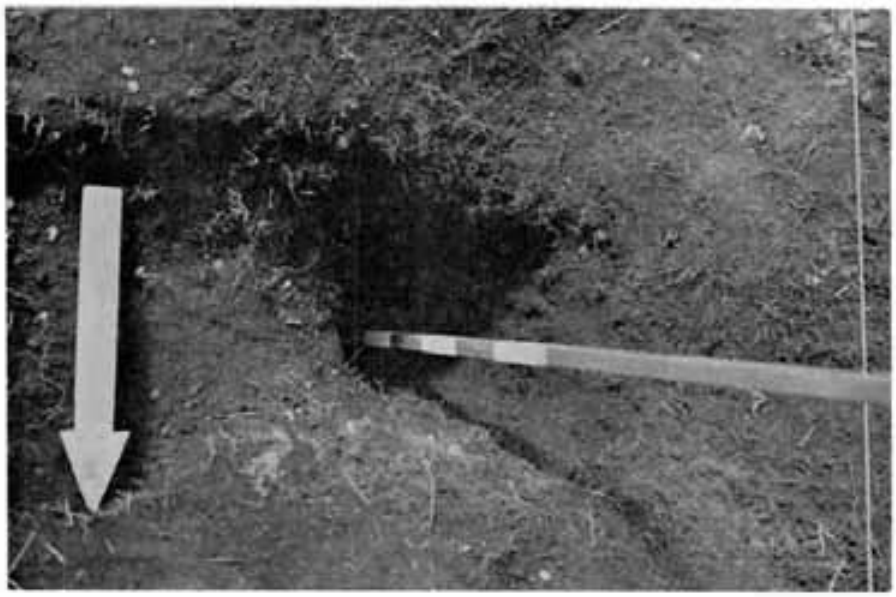

Plate 3: A deep hole, probably used as a waste pit, Point Riche.

Plate 4: Feature 1 at Point Riche, looking north.

Plate 5: Endblades and bifaces from Phillip's Garden.

A-L: Endblades.

M-O: Bifaces.

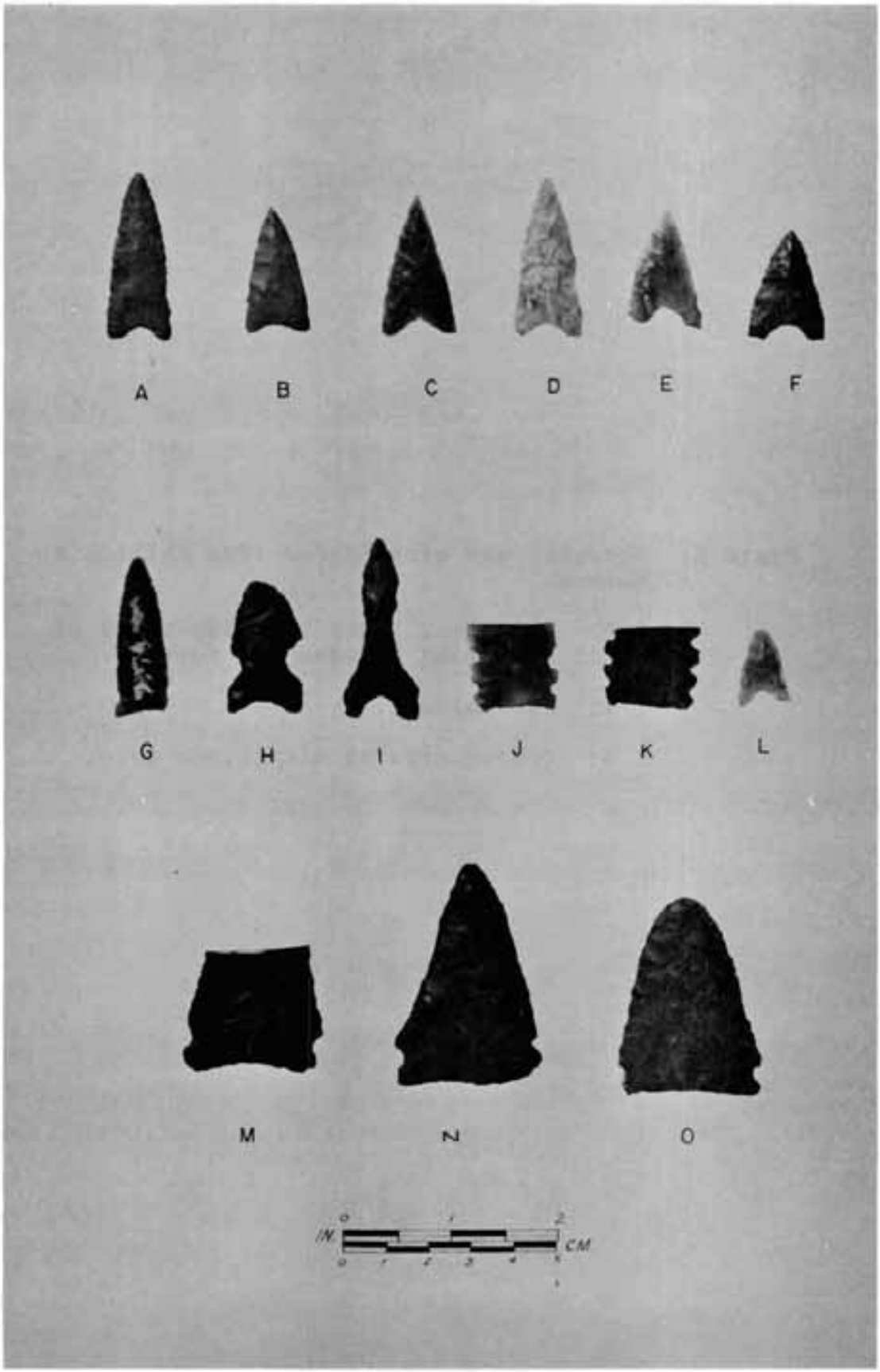
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Plate 6: Scrapers and microblades from Phillip's Garden.

A-O: Scrapers. Note the wide range of variation in size and form.

P-T: Microblades.

W: Quartz crystal microblade core.

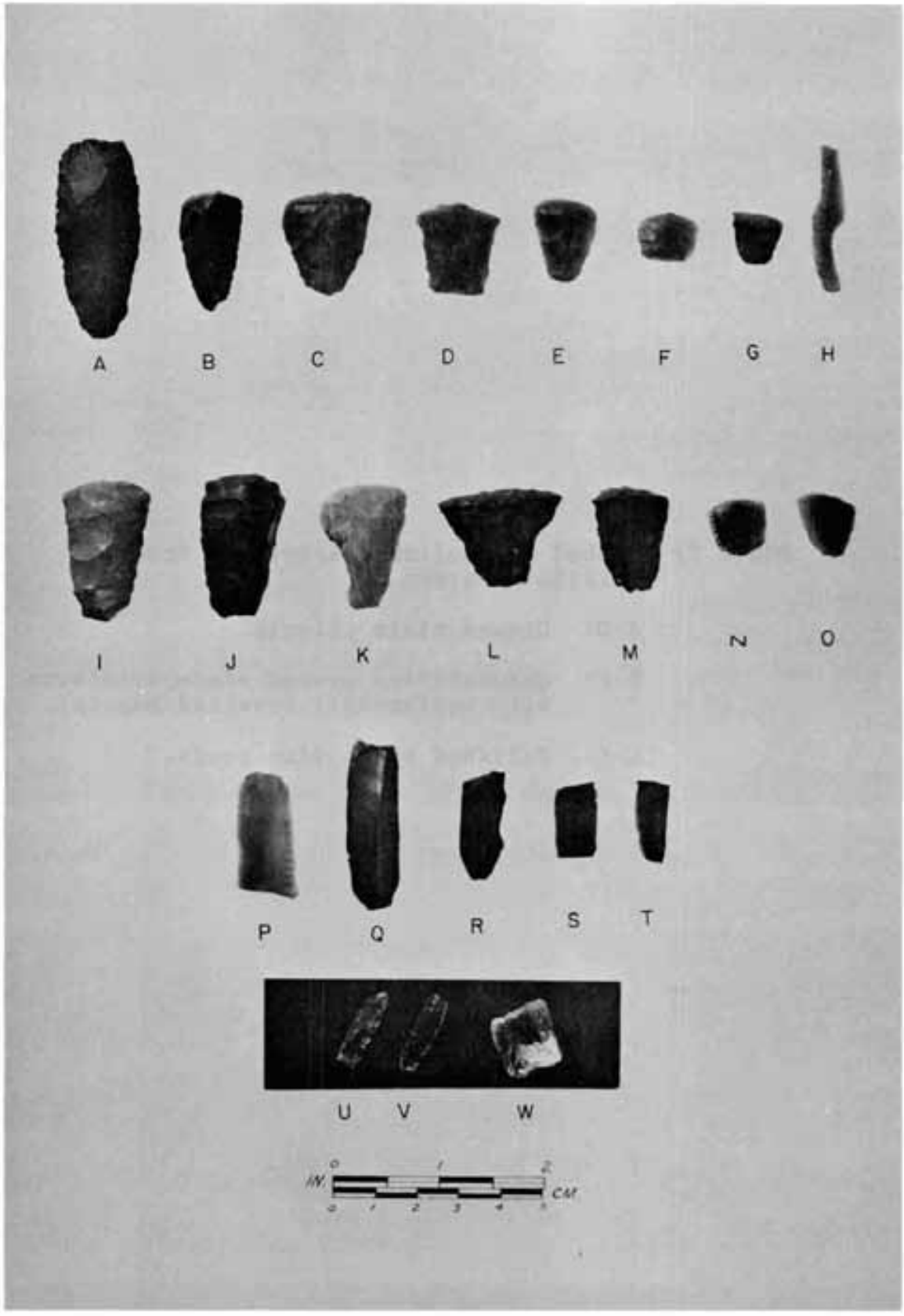
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Plate 7: Ground and polished artefacts from Phillip's Garden.

A-D: Ground slate chisels.

E-F: Unidentified ground slate artefacts with unifacially bevelled edge(s).

G-K: Polished burin-like-tools.

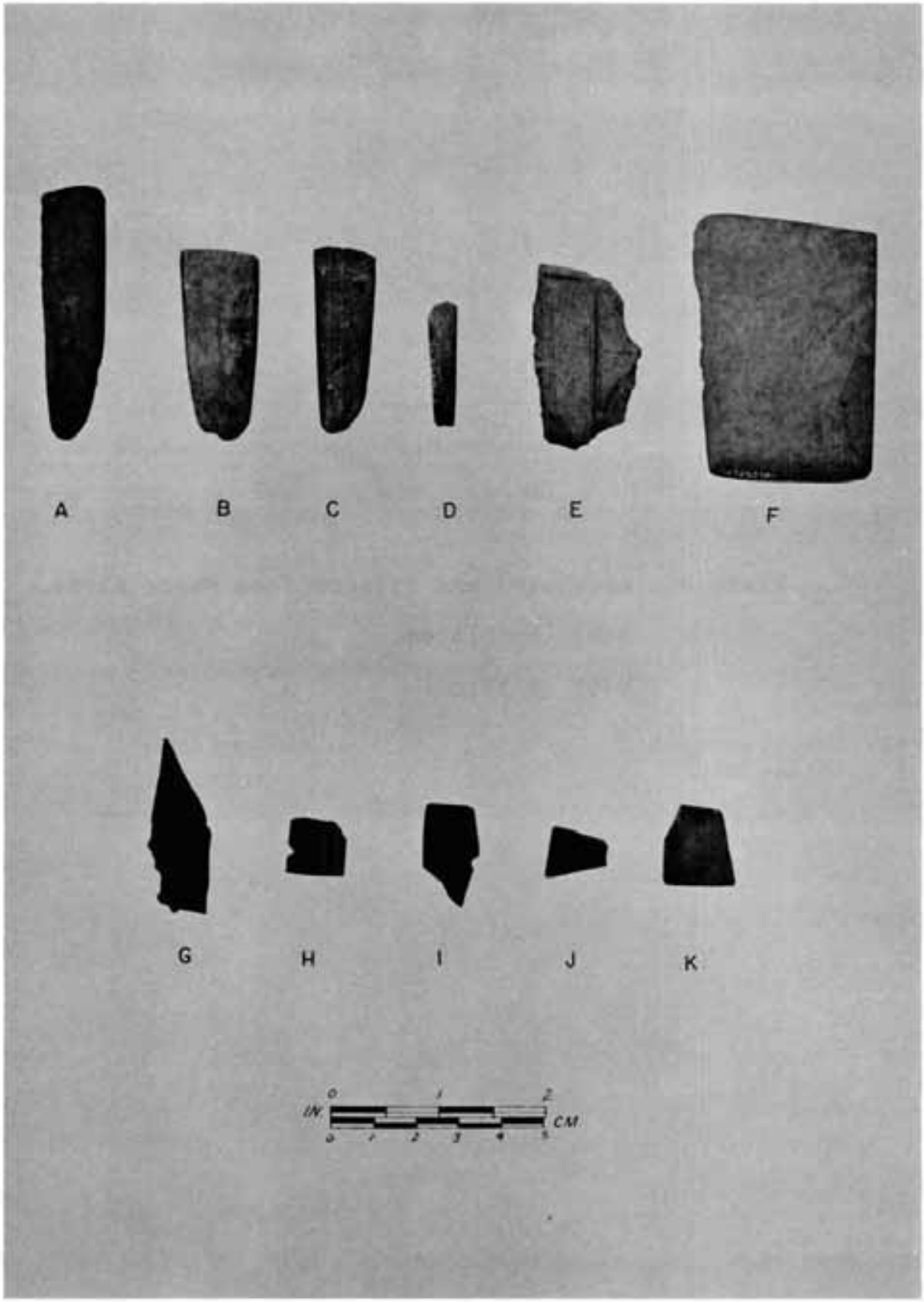
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Plate 8: Endblades and bifaces from Point Riche.

A-M: Endblades.

N-Q: Bifaces.

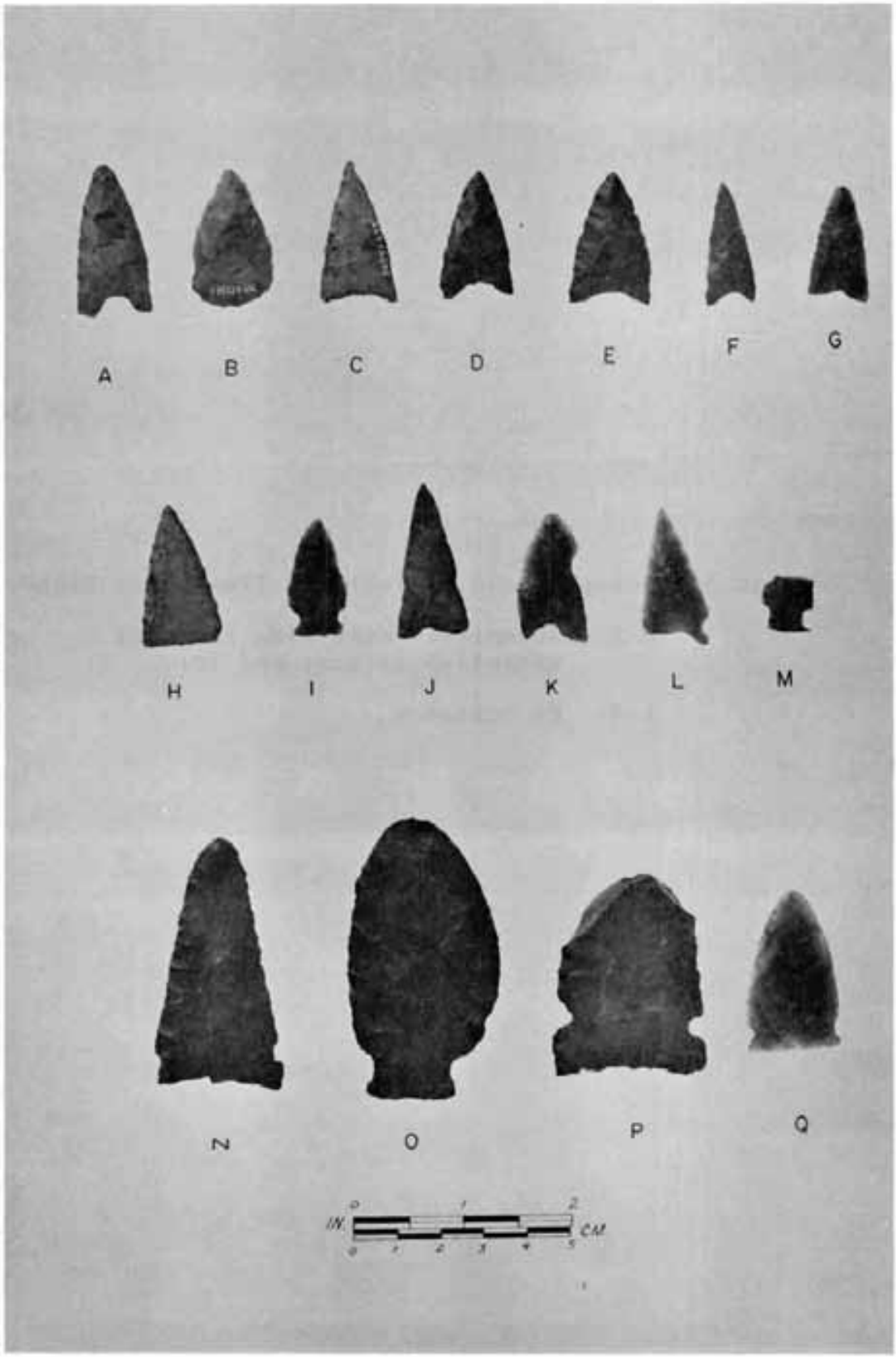
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Plate 9: Scrapers and microblades from Point Riche.

A-K: Scrapers. Note wide range of variation in size and form.

L-Q: Microblades.

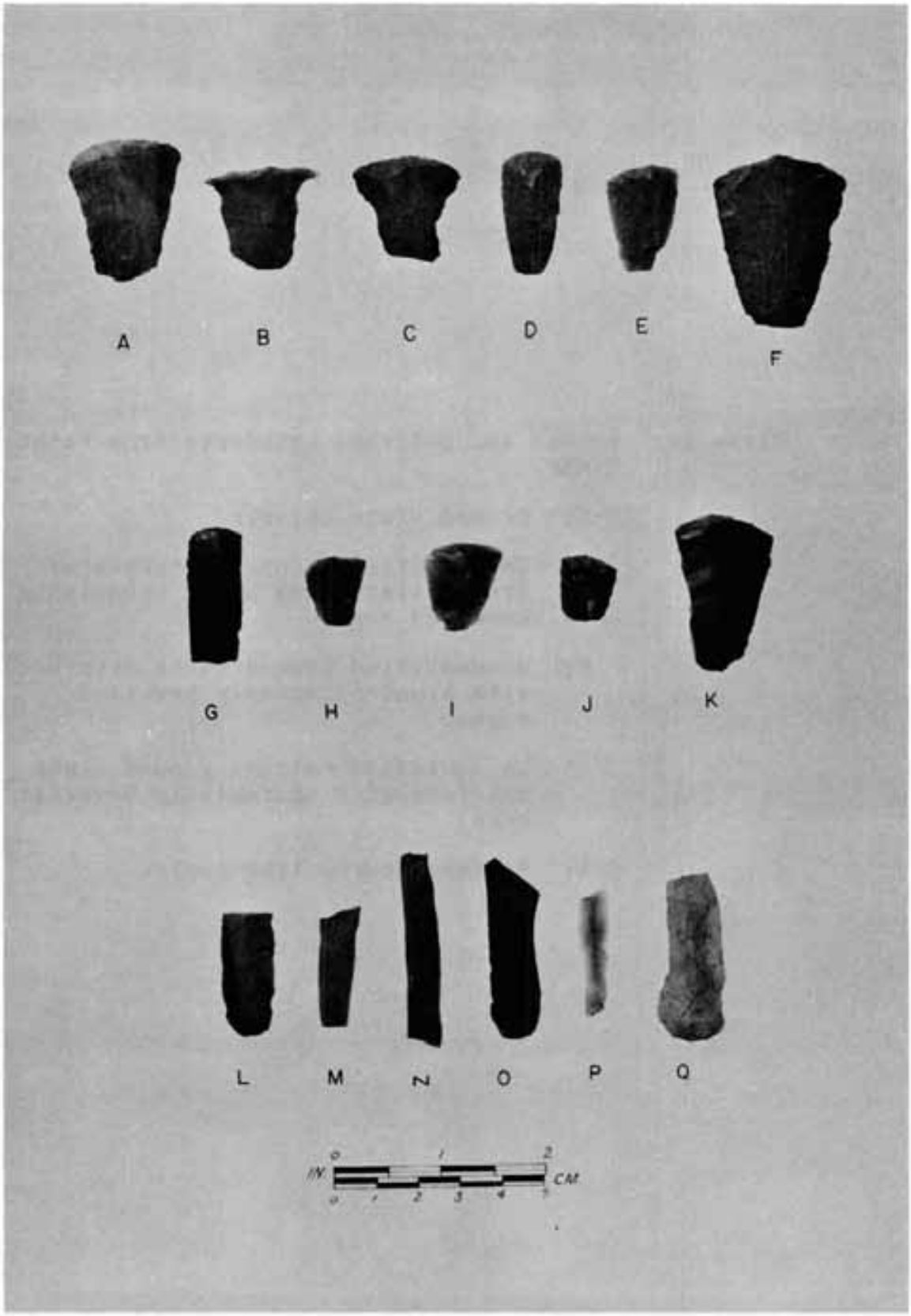
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Plate 10: Ground and polished artefacts from Point Riche.

A-C: Ground slate chisels.

D: Unidentified notched artefact of ground slate with blunt bifacially bevelled edge.

E: Unidentified ground slate artefact with blunt bifacially bevelled edge.

F: Unidentified notched ground slate artefact with unifacially bevelled edge.

G-I: Polished burin-like-tools.

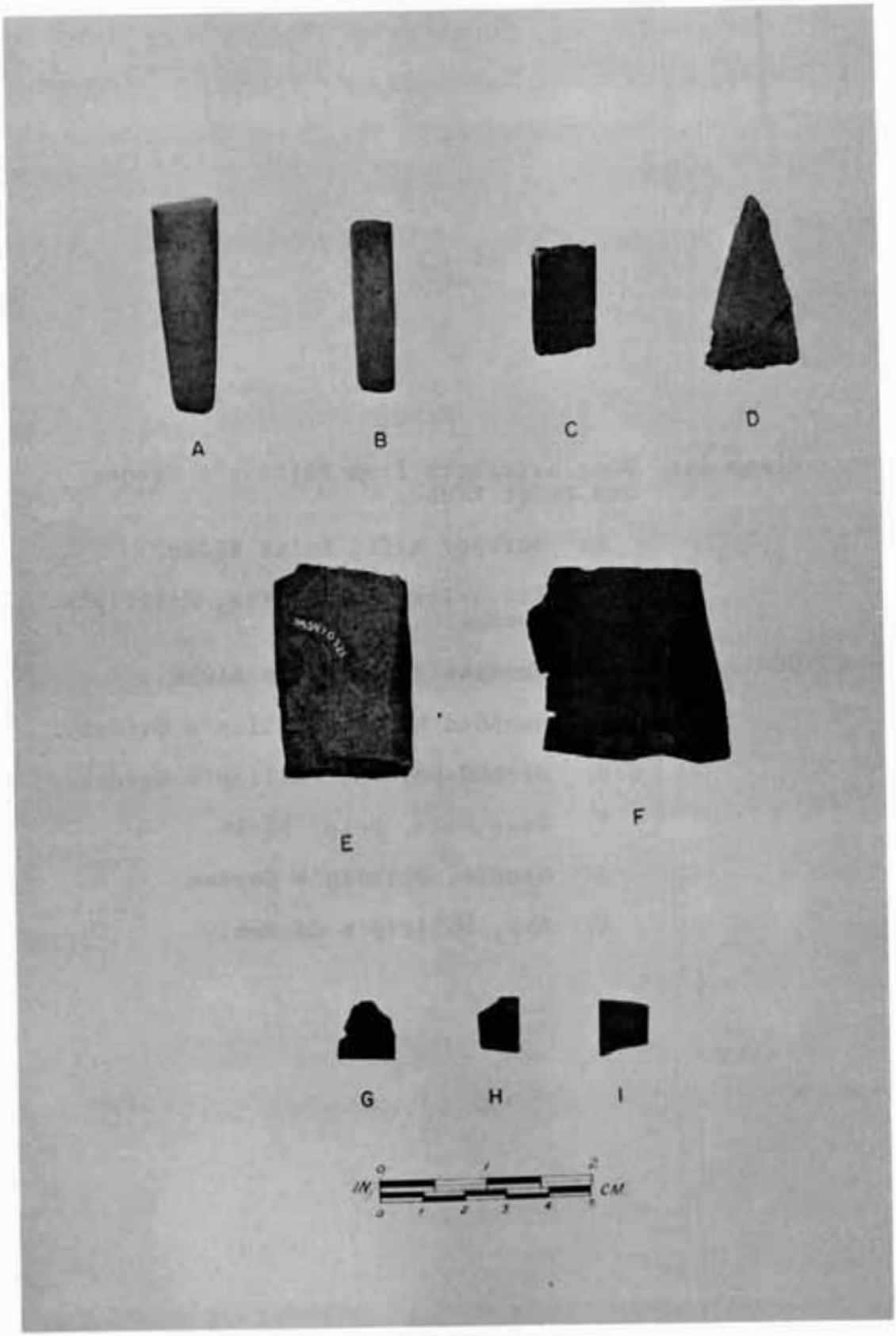
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Plate 11: Bone artefacts from Phillip's Garden and Point Riche.

A: Scraper haft, Point Riche.

B-C: Burin-like-tool hafts, Phillip's Garden.

D: Unidentified, Point Riche.

E-F: Harpoon heads, Phillip's Garden.

G-H: Barbed points, Phillip's Garden.

I: Bone bead, Point Riche.

J: Needle, Phillip's Garden.

K: Awl, Phillip's Garden.

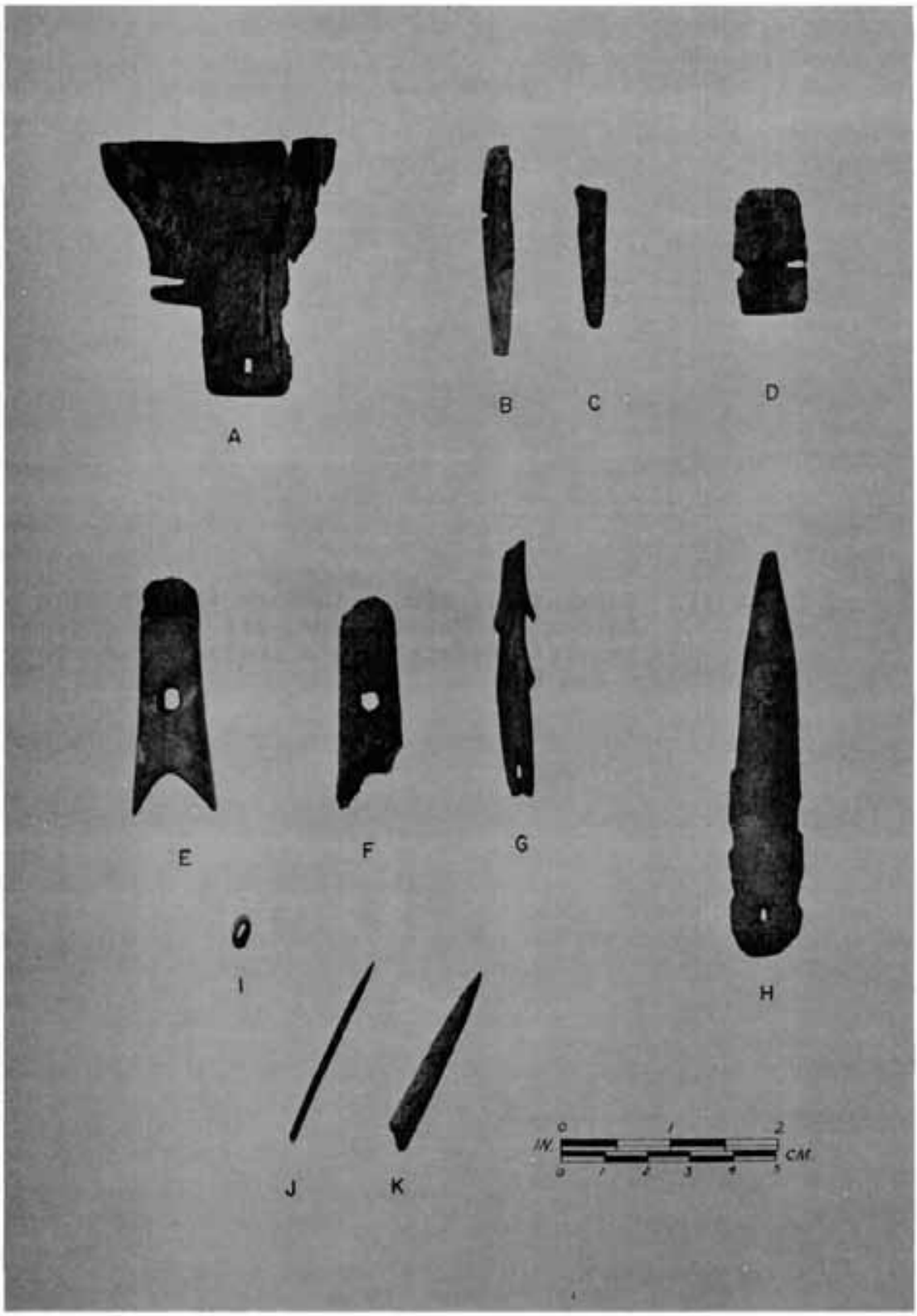
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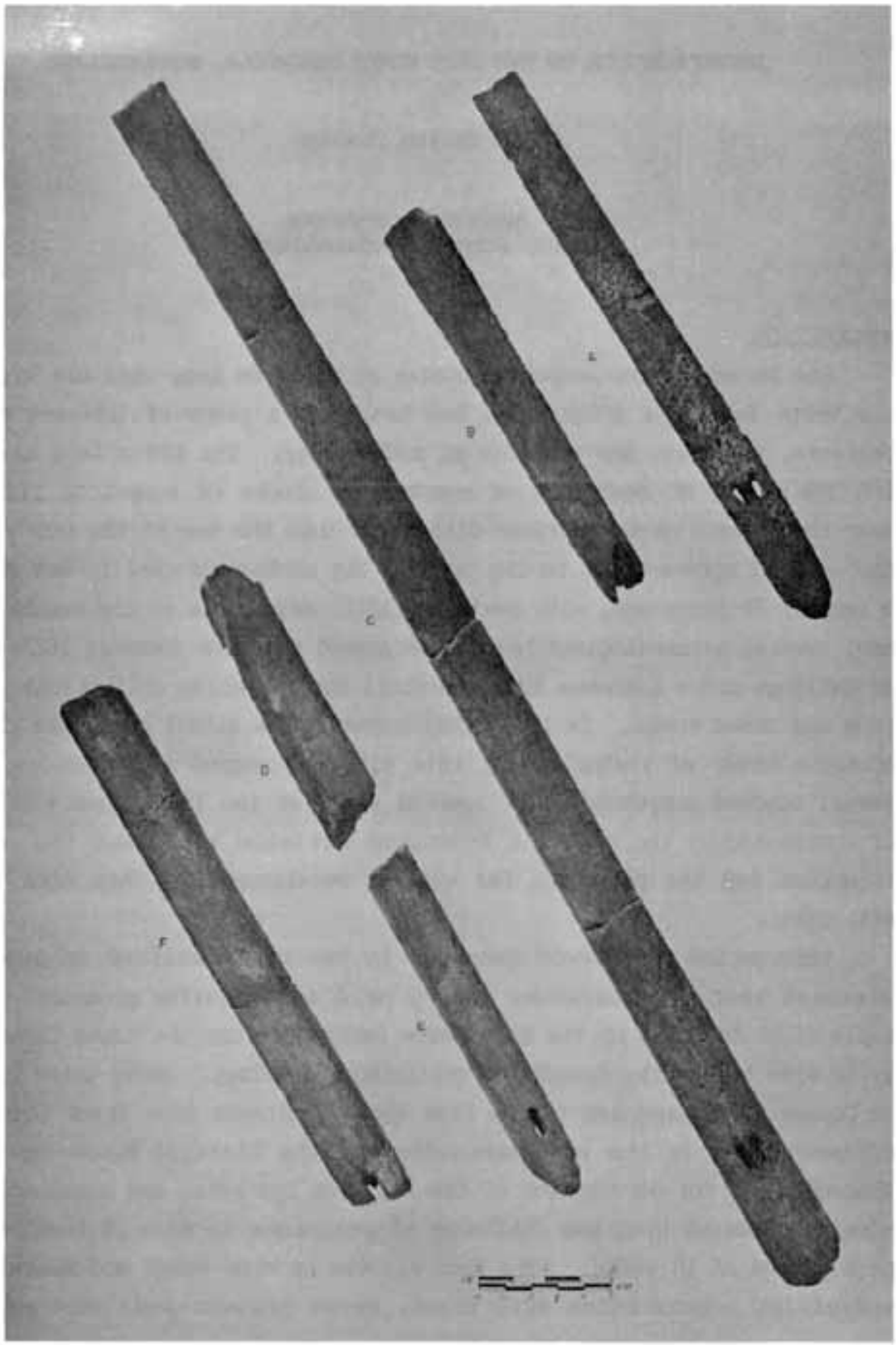
Plate 12: Segments of sledge-runners from Phillip's Garden and Point Riche, all showing ventral surface. Note incised lines on C and F.



INVESTIGATIONS ON THE BAIE VERTE PENINSULA, NEWFOUNDLAND

J. Callum Thomson

Newfoundland Museum
St. John's, Newfoundland

INTRODUCTION

The Dorset Eskimo soapstone quarry at Fleur de Lys, near the tip of the Baie Verte Peninsula (Figure 1), has long been a place of interest to local residents, tourists, and students of archaeology. The 100 m long cliff face with its scars of centuries of removal of blocks of soapstone rising 5 m above the present ground surface disappears into the sea at the south end and into stunted spruce woods to the north. Its photogenic quality was published as long as 70 years ago, with Howley's (1915) major work on the Beothuk. Since then, several archaeologists have investigated the site (Jenness 1932; LeBlanc and Carignan n.d.; Linnemae 1975; Marshall n.d.), making collections of quarrying and other tools. In 1981, Christopher Nagle (1982) conducted the first intensive study of technology at this site and mapped and photographed the several hundred soapstone block removal scars at two localities. In 1983, I was contracted by the Historic Resources Division to assess the need for protection and the potential for visitor development of this site (Thomson 1983, 1984).

This period of renewed interest in the site resulted in a regional awareness that the soapstone quarry held some tourism potential and that people might be drawn up the Baie Verte Peninsula from the Trans Canada Highway to view this early example of quarrying technology. Among other projects, the Dorset LEAD Committee of the Baie Verte Peninsula Task Force proposed to implement some of the recommendations to the Historic Resources Division (Thomson 1983) for development of the Fleur de Lys site, and obtained funding under the Federal LEAD and Challenge 85 programmes to hire 12 local students for a period of 10 weeks. With Mark Allston as crew chief and Richard Mills supervising construction activities, seven project goals were met. Test

excavations at the quarry face indicated that there was little likelihood that this area had also served as a habitation site, although some soapstone vessel manufacturing was conducted. Surveys of the adjacent shore zone produced ample evidence that Dorset and Maritime Archaic groups had camped on a gently sloping terrace 200 m distant from the quarry. A boardwalk was constructed from the road to the quarry site, information signs were placed in appropriate locations, tours were given to school groups and visiting tourists, and slide talks were delivered at several regional schools. Surveys elsewhere on the peninsula were conducted in an attempt to locate other prehistoric and significant historic sites.

FLEUR DE LYS

A description of the five soapstone localities in Fleur de Lys can be found in previous publications (Nagle 1982; Thomson 1984). The worked outcrops are mostly clustered at the east end of town which is on the north side of the harbour, in an area which has been inhabited for the past two centuries by French and English settlers. Roads, fishing stages, houses, gardens and other developments have disturbed most of the ground in this area, but the quarried outcrops seem not be have suffered much beyond the application of graffiti and occasional chipping, and erosion in the form of frost-spalling and scree slopes.

While the boardwalk was being constructed parallel to and 10 m back from the cliff face, we supervised the excavation of post holes and retrieved a few quarrying tools and pieces of worked soapstone. As this area has long been dug over for vegetable gardens, is prone to heavy spring runoff, and is a receiving area for frost-detached material from the cliff face, additional damage to cultural stratigraphy through construction of the boardwalk was minimal. In order to determine the depth of cultural material we dug seven 1 m squares between the boardwalk and the cliff face, recording stratigraphy and collecting quarrying tools, soapstone debitage, charcoal, and a few retouched and unworked chert flakes. Several vessel preforms and fragments found in the test pits indicate that some initial reduction and manufacturing was carried out at the quarry site (Plates 1,2). Unfortunately, we had chosen an unusually wet year and discovered that the squares filled to the brim with

water every night. We managed to reach 70 cm, at which depth soapstone and the odd quarrying tool were still being found. As there are quarry scars on an outcrop opposite the main cliff which reach a depth of at least 2 m, it is likely that the present ground surface at the foot of the cliff is 2-3 m or more above the base of the lowest extraction scars.

Since we were not recovering any material relating to a habitation site, although the flat terrace in front of the cliff seemed suitable, we began looking along the shore of the harbour and in the gardens, and asking whether any "arrowheads" had ever been found. This prompted the response from young members of the Genevieve Shelley family that a small soapstone pot had been recovered during excavation of their house basement. Inspection of this area immediately produced an abundance of chert flakes and artifacts on the surface of the vegetable gardens between Genevieve Shelley's house and the shore. Test pits around the garden area revealed an apparently badly disturbed cultural deposit which varied in depth between 5-30 cm.

Enquiries elicited the information that a bulldozer and backhoe had been employed to excavate the basement for the new Shelley house several years previously and subsequently topsoil had been scraped from the garden terrace towards the house to form a supporting bank. Elsewhere on the terrace, several generations of traditional gardening methods utilizing beds perpendicular to the contour and a subsiding land level causing the sea to eat away at the bank had also contributed to the erosion problem. These factors probably account for the different depths of cultural material more than does actual delimitation of the site.

However, it was obvious that a habitation site, probably associated with the soapstone quarry, had been situated here. Blocks of soapstone debris from vessel manufacturing and fragments of vessel preforms were plentiful. Although it is possible that pots and lamps were brought here from other sources it seems more likely that the dozens of fragments of finished vessels found, some with charred fat adhering, were also made from Fleur de Lys soapstone (Plate 3).

Squares located at the northwest side of the garden, close to a rock outcrop, seemed to hold the best promise for discovery of intact structures or cultural stratigraphy. Unfortunately, a local resident could not be dissuaded

from digging in his own garden and, while he turned over all of his collections to us, his enthusiastic efforts were particularly damaging in this area. Surveys further along the terrace produced similar artifacts in gardens up to 50 m to the west and east, although in much lower densities, thus indicating that there had been an almost continuous site along 100 m of a strip of shorefront now measuring 20 m in width, with the main area of repeated occupation in the central six hundred square metres.

Among the artifact collections recovered from our own and Terry Shelley's excavations were, to our delight, several Maritime Archaic specimens (Plate 4). These include small ground slate gouges, adzes and celts, a stemmed Rattlers Bight style biface made of Ramah chert, a lithic material which originated in northern Labrador, and several less diagnostic slate and chert tools. Although we recovered one chipped stone grooved plummet, or sinker, we were not able to find any plummets made of soapstone, which would have suggested more firmly that the Maritime Archaic had been the first to discover and use the soapstone quarry. However, the indications remain that these people inhabited the Fleur de Lys harbour about 4000 years ago, chopped and worked some of the abundant timber, and probably hunted the seals which are numerous off this coast in winter and spring.

Among the Palaeo-Eskimo tools (Plate 5) was one bifacial knife tip made of an orange, coarse-grained chert which, together with an eared endscraper suggests an Eskimo occupation prior to the Dorset phase. Dorset artifacts were far more plentiful. Endscrapers, many of which would have been used in soapstone vessel manufacture; microblades; cores; tip-fluted, bifacial and unifacial endblades; knives; flake tools and a few burin-like tools were the most common classes, mostly made of a variety of cherts. One unusual type of artifact, made of serpentine or antigonite, seems to have served as a chisel and/or grinding stone. Several small pallets, measuring approximately 7 x 2 x 0.5 cm, of this green or grey material had been smoothed and polished, generally on both surfaces and on the lateral edges. One had been finished with a chisel-like distal end. Its hardness would make this small implement suitable for working wood or, perhaps, soapstone. Fragments of soapstone vessels in various stages of manufacture from blanks to finished, utilized pots were also found, as well as a large amount of soapstone waste chunks. It

seems apparent that the Dorset quarrying parties came here prepared to hunt, butcher, dress hides and manufacture tools as well as to quarry, reduce, and shape soapstone blocks. They also made and apparently used at least some cooking pots, bowls and lamps. Many others of the blocks, preforms and finished vessels, judging by the probably thousands of blocks which were removed from the several quarry localities, were undoubtedly destined for distribution elsewhere in the region (cf. Linnamae 1975: 208).

Charcoal from two concentrations was sent to the Smithsonian Institution for analysis by Dosia Laeyendecker and to Beta Analytic for dating, as was one piece of burned wood from the quarry excavations. The quarry specimen, from 42 cm below the surface, was found to be coniferous, possibly spruce, and was dated at 1220 ± 110 B.P. (Beta-15675). This may have derived from a fire built to keep quarriers warm or to harden levers for use in the extraction process. One sample from a depth of 40 cm in the Shelley garden excavations was dated to a similar period, which lends more credibility to these very late Dorset dates. This charcoal was analysed as coniferous, possibly spruce again, and dated to 1270 ± 90 B.P. (Beta-15676). A third sample, identified as hardwood, possibly maple, was collected from an area of paving at 30 cm below the surface, close to the rock outcrop. This was dated at 1480 ± 100 B.P. (Beta-15674). These three dates seem acceptable, as they straddle the single Dorset date of 1340 ± 100 B.P. (GaK-1904) from the Pittman site on neighbouring Sops Island (Linnemae 1975:62), although they indicate a very late stage of the Dorset period in Newfoundland (cf. Tuck 1982:214); in fact the later two seem to represent the current terminal dates on the Island, with one exception. The single date of 1090 ± 90 B.P. (GaK-3275) from the Bordeaux-2 site in Placentia Bay (Linnemae 1975:73), which seems not to have been widely accepted (e.g. Tuck 1982), may now be given more credence. A period of Dorset occupation lasting almost into the present millennium seems perfectly plausible, with only a century or two separating the Fleur de Lys and Placentia Bay dates.

There was also a considerable number of European artifacts found. These include clay pipe bowls and stems, (Plate 6) one bearing the legend "L. Fiolet a St. Omer", St. Omer being a small town in France near the Belgian border, 30 km southeast of Calais. This suggests an origin for at least some of Fleur de

Lys' early European occupants. In addition there was an assortment of glass and ceramic utensil fragments and pieces of iron from the previous century, as well as a large amount of recent material. Analysis of the 700 prehistoric and historic artifacts and several thousand flakes and pieces of soapstone debitage has not yet been completed. Selected artifacts are shown on Plates 1-6.

SURVEYS

Although little time could be spared for surveys, we received information from students collecting historical information for other projects and from members of the general public about several artifact collections and possible sites on the Baie Verte Peninsula. This resulted in the registering of a large Maritime Archaic collection from Nippers Harbour in the hands of Brooklyn Bowers and others, a Groswater Palaeo-Eskimo collection from Westport held by Alex Gale, a small and possibly mostly obliterated Middle Dorset site in Purbecks Cove, all of which were recorded on the provincial site inventory, and several rumoured sites elsewhere on the Peninsula, some of which unfortunately we were not able to confirm (Figure 1).

We walked several kilometres along a partially restored trail from Snooks Arm into the seasonally occupied community of Indian Burying Place, where we found plenty of 19th century material but no historic native or prehistoric artifacts or any other indications of how the name derived. A local informant told us of a soapstone outcrop on the south side of Burtons Pond, near Nippers Harbour, which we were able to locate, but it seemed not to have been worked. Geologists encountered in the vicinity informed us of another likely location, on the northeast side of the pond, but this was not checked. Another unworked soapstone outcrop was found in the heart of Baie Verte, near the Beothuk Collegiate school. Short boat surveys out of Fleur de Lys also resulted in the recording of early European sites at Barrys Cove and on the south shore of Fleur de Lys Harbour, and a small Dorset site on one of the islands in the harbour.

CONCLUSIONS

Thanks to the efforts of the Baie Verte Peninsula Task Force, the Dorset LEAD Planning Committee, Mark Allston and the student assistants, and contributions from many local residents, this initial year of what I am sure will be a multi-year project saw all of the aims achieved to some degree. Education programmes, temporary information panels and site tours have created a better local understanding of the significance of the Fleur de Lys site and a reduction in vandalism at the quarry, erection of the boardwalk has made access to the site over bog, steep slopes and hazardous wells and ditches safer and easier, and surveys and test excavations between the cliff and the shore have provided information previously lacking at this site. We now have positive proof of Dorset Eskimo utilization of the quarry in the mid to late centuries of the first millennium A.D., suspicions of an earlier Palaeo-Eskimo occupation, and a not-unexpected bonus in the form of evidence of a former Maritime Archaic presence at about 4000 years ago.

Surveys and information received around the Baie Verte Peninsula indicate that this is an area rich in prehistoric and historic sites. Efforts should be made in future years to coordinate investigation of some of the more significant sites with the ultimate aim of providing a series of sites where tourists and residents could watch excavations in progress, take self-guided tours, and learn about the early inhabitants of these areas.

ACKNOWLEDGEMENTS

This project probably would not have commenced without the support and encouragement of the Dorset LEAD Planning Committee, especially Charlie Ennis. Funding was provided by Federal LEAD and Challenge 85 grants, for which Frank Allured was partially responsible, and by the Historic Resources Division, Department of Culture, Recreation and Youth. Artifacts and debitage were cleaned and sorted over many hours of volunteered time by Mark Allston, and cataloguing was performed by Scott Biggin. Artifact photographs were taken by Manfred Buchheit and the map prepared at Lundrigan-Crowley. Informants all over the Peninsula, residents of Fleur de Lys, especially Genevieve Shelley, the late Tom Silvey, Gert Walsh and those others upon whose property we conducted our excavations, and our many visitors all contributed in many ways to

the success of the project. Angus Shea, Len, Shirley and the crew at Skipper Shea's and the Boutells offered the most generous of hospitality. Finally, Derek Brown, Len Dyer, Deborah Hoven, Cindy Hurley, Rodney Mercer, Steve Norman, Richard Osmond, Elizabeth Philpott, Ron Philpott, Yvette Power, Stephen Yates, Richard Mills and Mark Allston were a magnificent crew.

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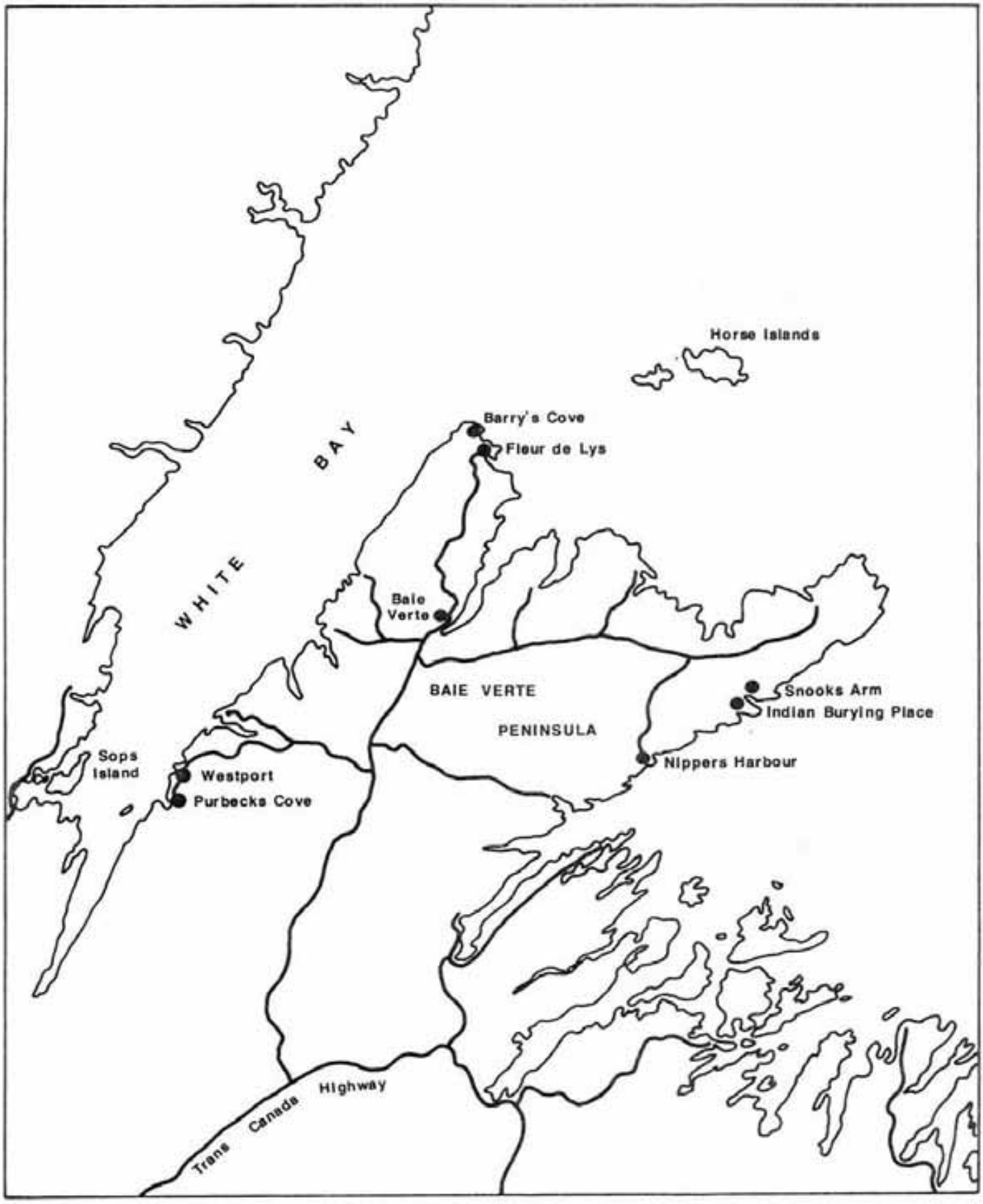

Horse Islands
Barry's Cove
Fleur de Lys
BAY
WHITE
Baie Verte
BAIE VERTE
PENINSULA
Snooks Arm
Indian Burying Place
Nippers Harbour
Sops Island
Westport
Purbecks Cove
Trans Canada Highway

Plate 1

Middle Dorset soapstone artifacts from Fleur de Lys, White Bay (EaBa-1).

Top:

Small rectangular vessel preform fragment

Middle row, left to right:

Large rectangular vessel rim/corner fragment
Small rectangular vessel preform

Bottom row:

Tabular stone quarrying scraper
Small oval vessel preform

Scale: 60% of actual size

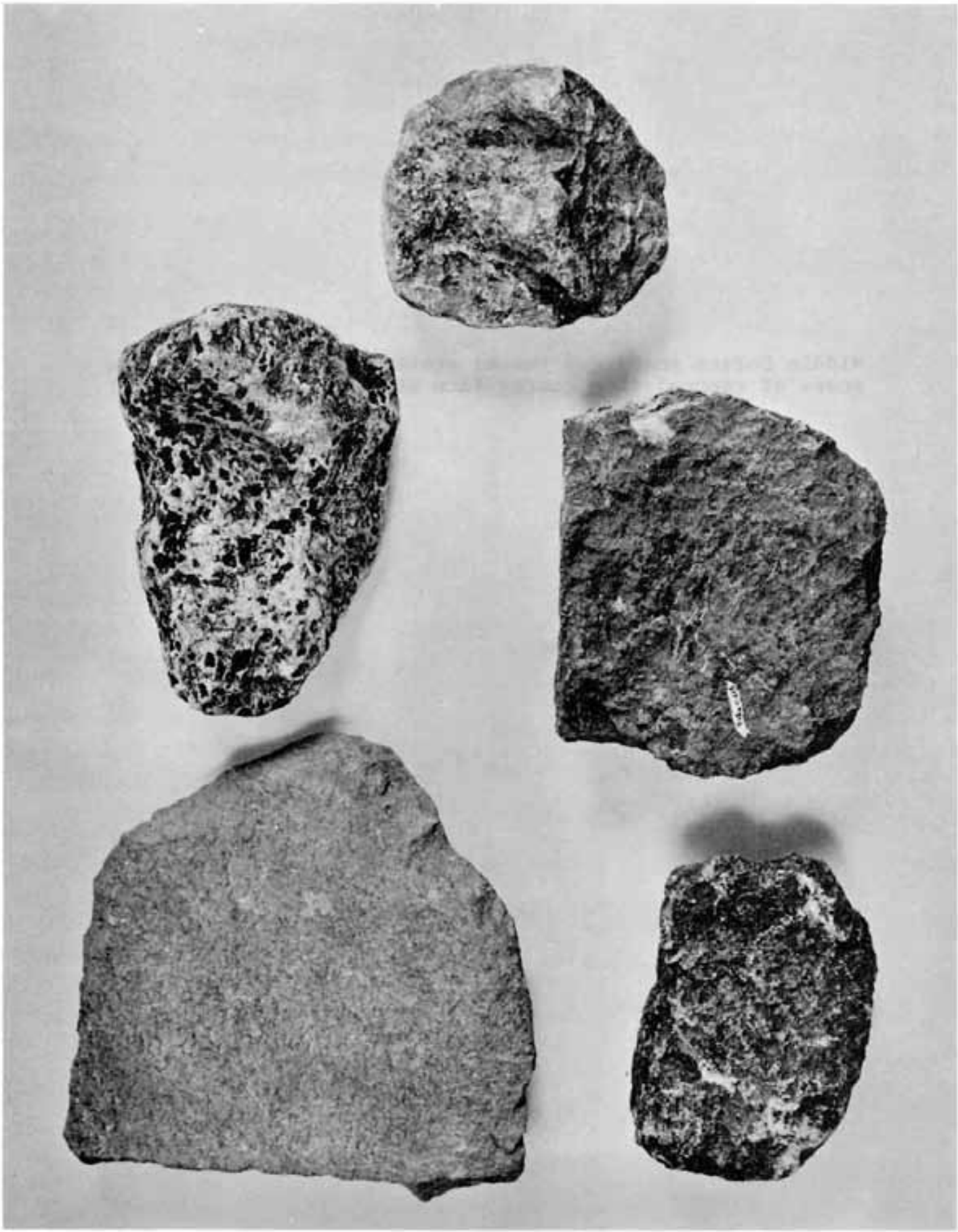


Plate 2

Middle Dorset soapstone vessel preform on block exhibiting scars of removal from quarry face at Fleur de Lys (EaBa-1).

Scale: 50% of actual size

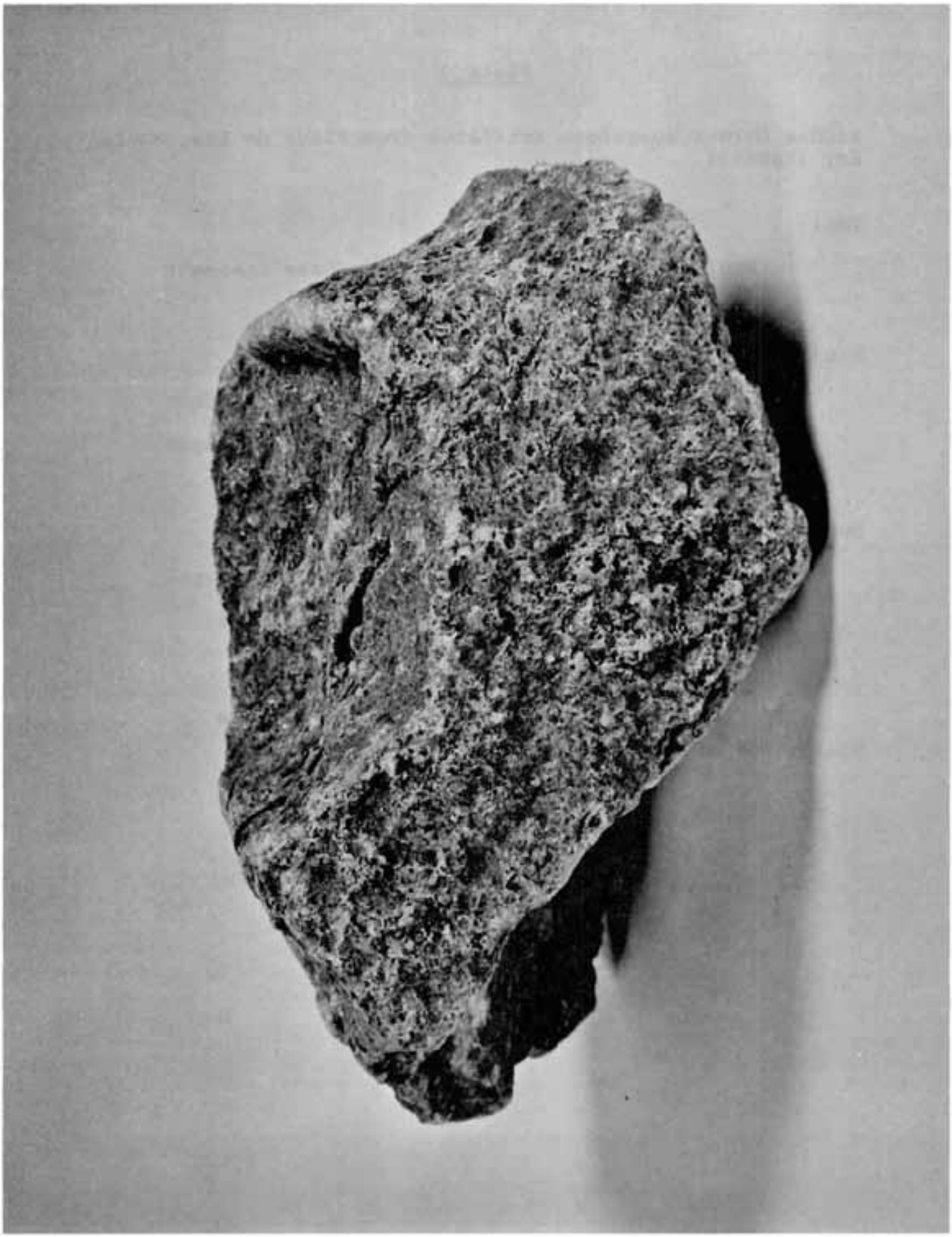


Plate 3

Middle Dorset soapstone artifacts from Fleur de Lys, White Bay (EaBa-1).

Top:

Small rectangular vessel corner/base fragment with groove in end wall.

Middle row, left to right:

Large rectangular vessel rimsherd with broken suspension hole
Large rectangular vessel rimsherd with gouged suspension hole

Bottom row:

Large rectangular vessel rimsherd with gouged suspension hole
Large rectangular vessel rim/corner sherd

Scale: 75% of actual size

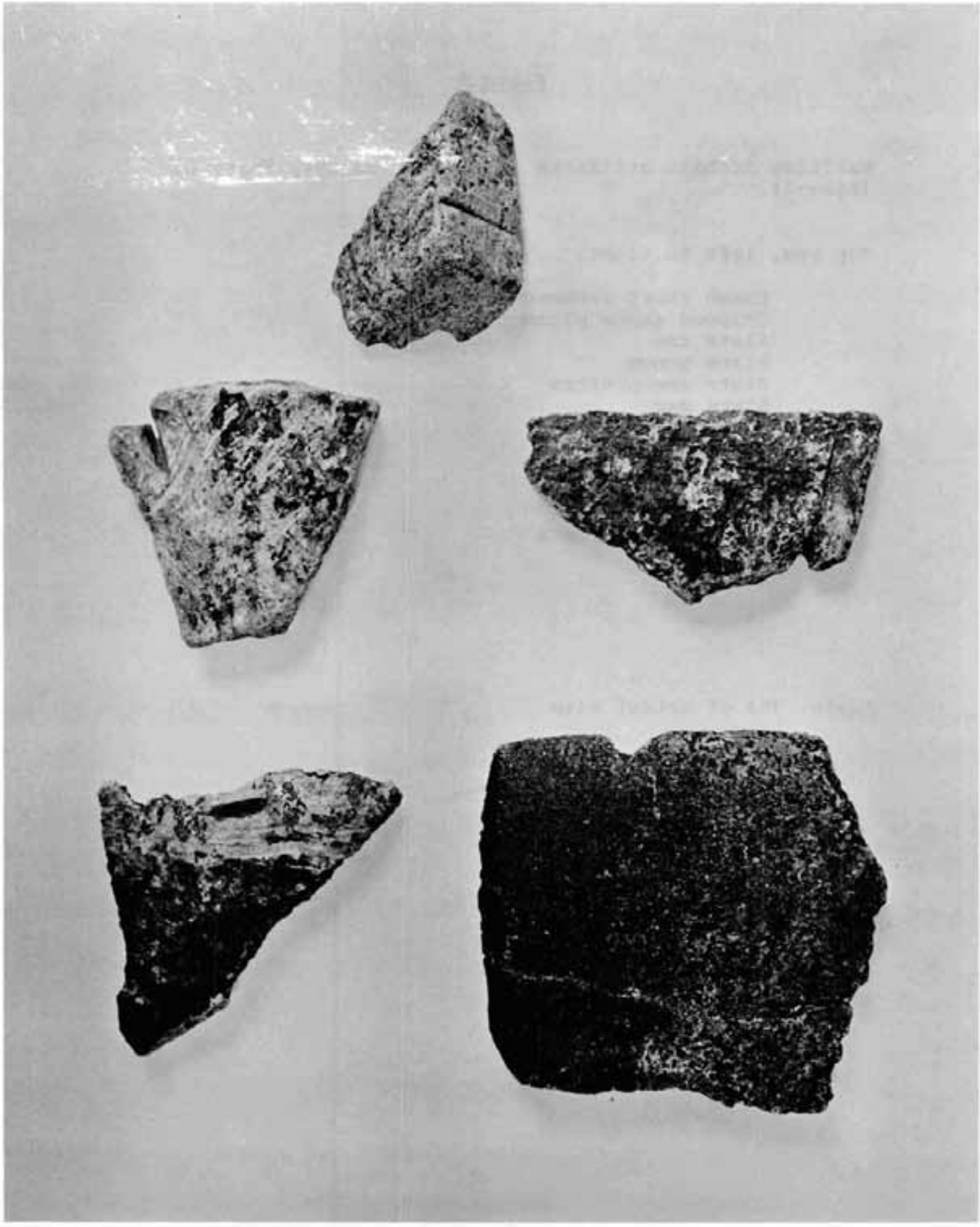


Plate 4

Maritime Archaic artifacts from Fleur de Lys, White Bay (EaBa-1).

Top row, left to right:

Ramah chert stemmed biface
Chipped stone plummet
Slate axe
Slate gouge
Slate axe preform
Slate axe

Bottom row:

Slate knife
Slate adze preform
Slate axe

Scale: 75% of actual size

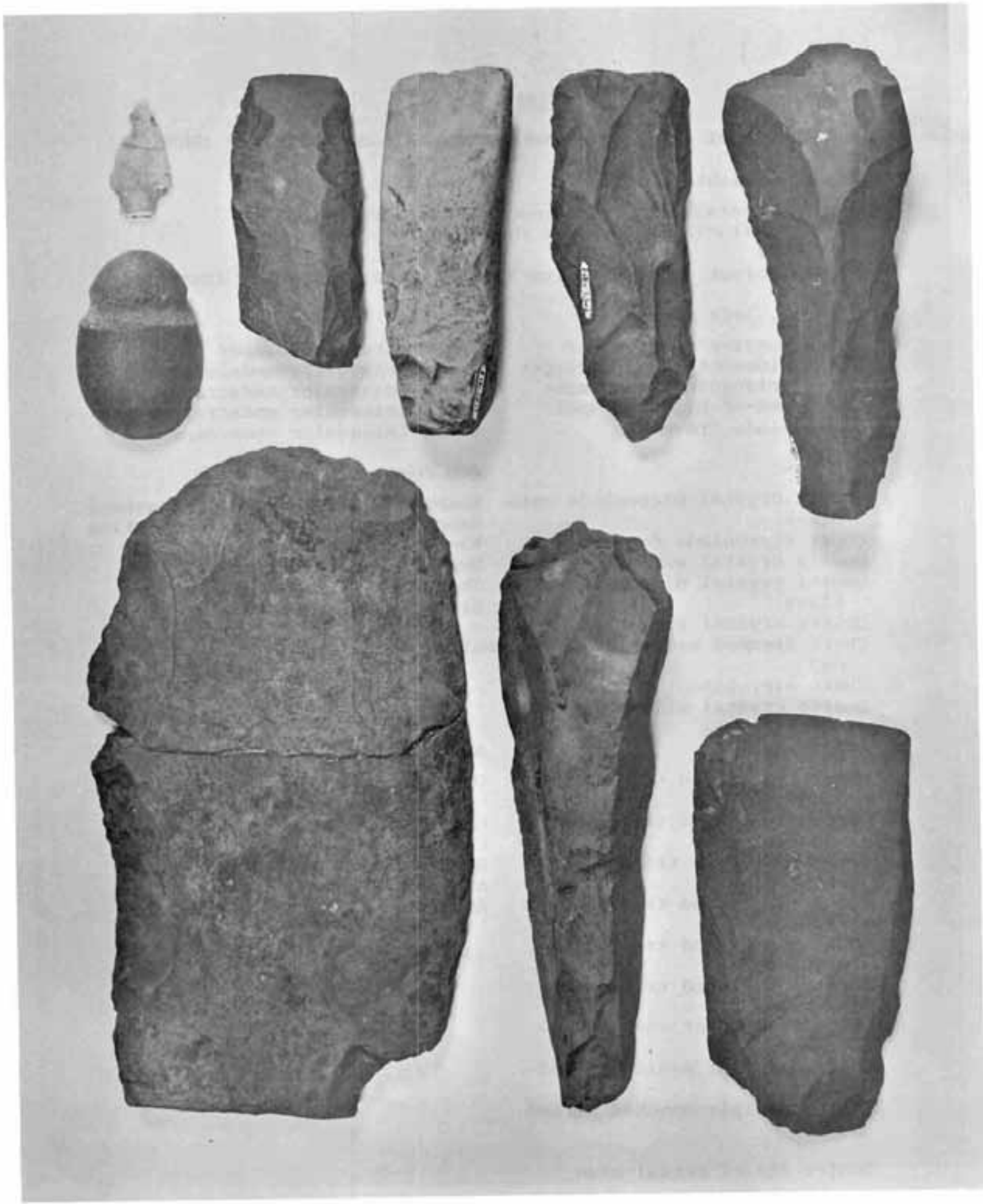


Plate 5

Middle Dorset artifacts from Granby Island, White Bay (DkBe-3).

Top row, right to left

Rectangular soapstone pot rim/corner sherd
Bifacial triangular endblade

Middle Dorset artifacts from Fleur de Lys, White Bay (EaBa-1).

Top row, left to right:

Chert concave sidescraper
Chert side-notched endscraper
Chert triangular endscraper
Chert end-of-blade scraper
Slate blade fragment

2nd row:

Chert eared endscraper
Chert triangular endscraper
Chert triangular endscraper
Chert triangular endscraper
Chert triangular endscraper

3rd row:

Quartz crystal microblade core blank
Chert microblade core
Quartz crystal microblade core
Quartz crystal microblade core blank
Quartz crystal microblade core
Chert stemmed microblade, proximal end
Chert microblade
Quartz crystal microblade

4th row:

Soapstone human figurine fragment
Ramah chert blade, medial section
Ramah chert retouched flake
Nephrite burin-like tool
Chert tip-fluting spall
Slate spatulate blade

5th row:

Chert tip-fluted triangular endblade
Chert tip-fluted triangular endblade
Chert unifacial triangular endblade
Chert tip-fluted triangular endblade
Chert tip-fluted triangular endblade
Chert tip-fluted triangular endblade
Chert triangular endblade preform
Chert bifacial miniature endblade
Chert multiple-notched biface

Bottom row:

Chert asymmetrical biface (early Palaeo-Eskimo?)
Chert side-notched biface
Chert biface
Serpentine chisel blank
Antigonite chisel blank
Antigonite chisel, distal end

Scale: 75% of actual size

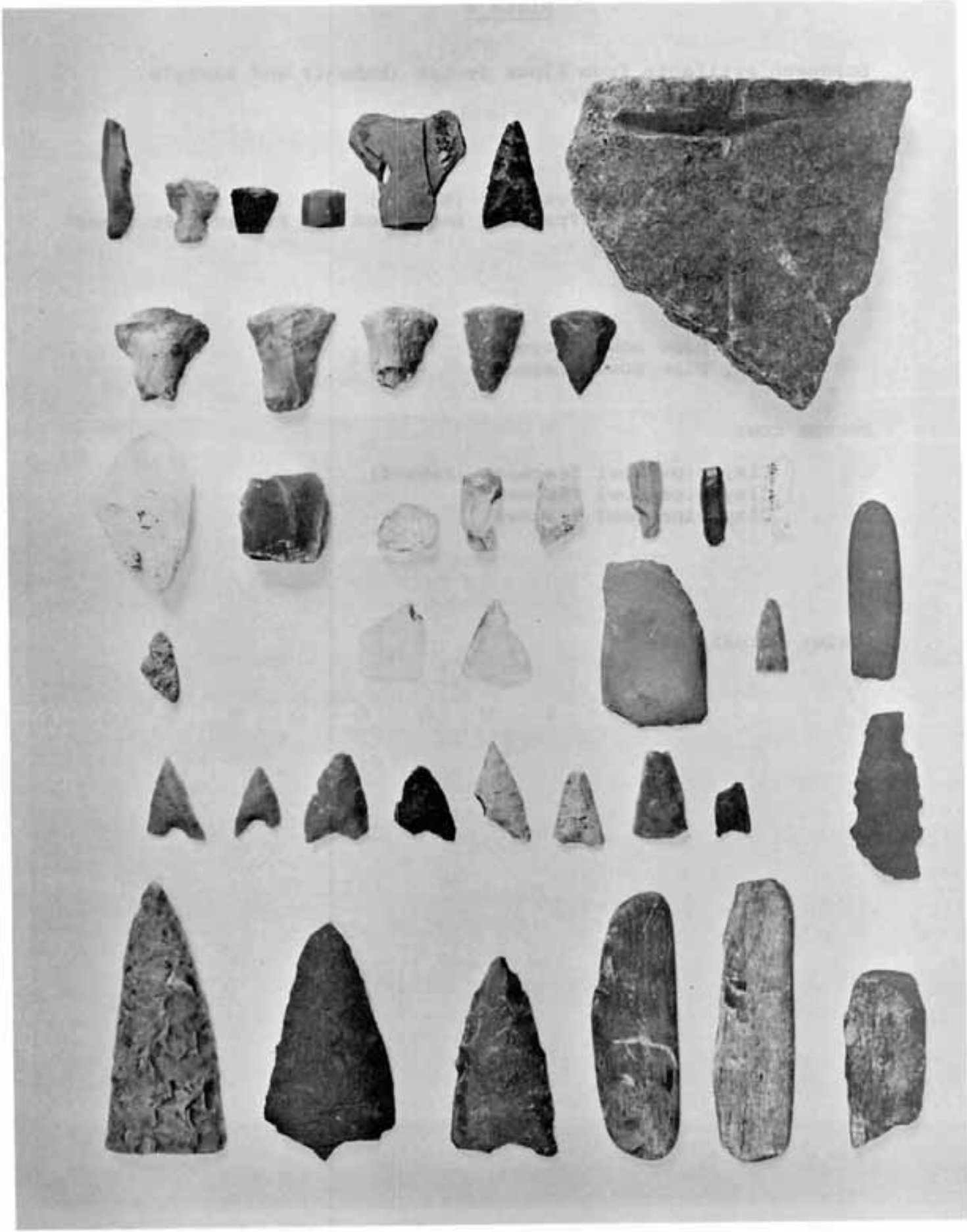


Plate 6

European artifacts from Fleur de Lys (EaBa-1) and Barry's Cove (EaBa-4), White Bay.

Top row, left to right:

Clay pipe stem fragment (EaBa-4)
Clay pipe stem fragment inscribed "L. Fiolet a St. Omer"

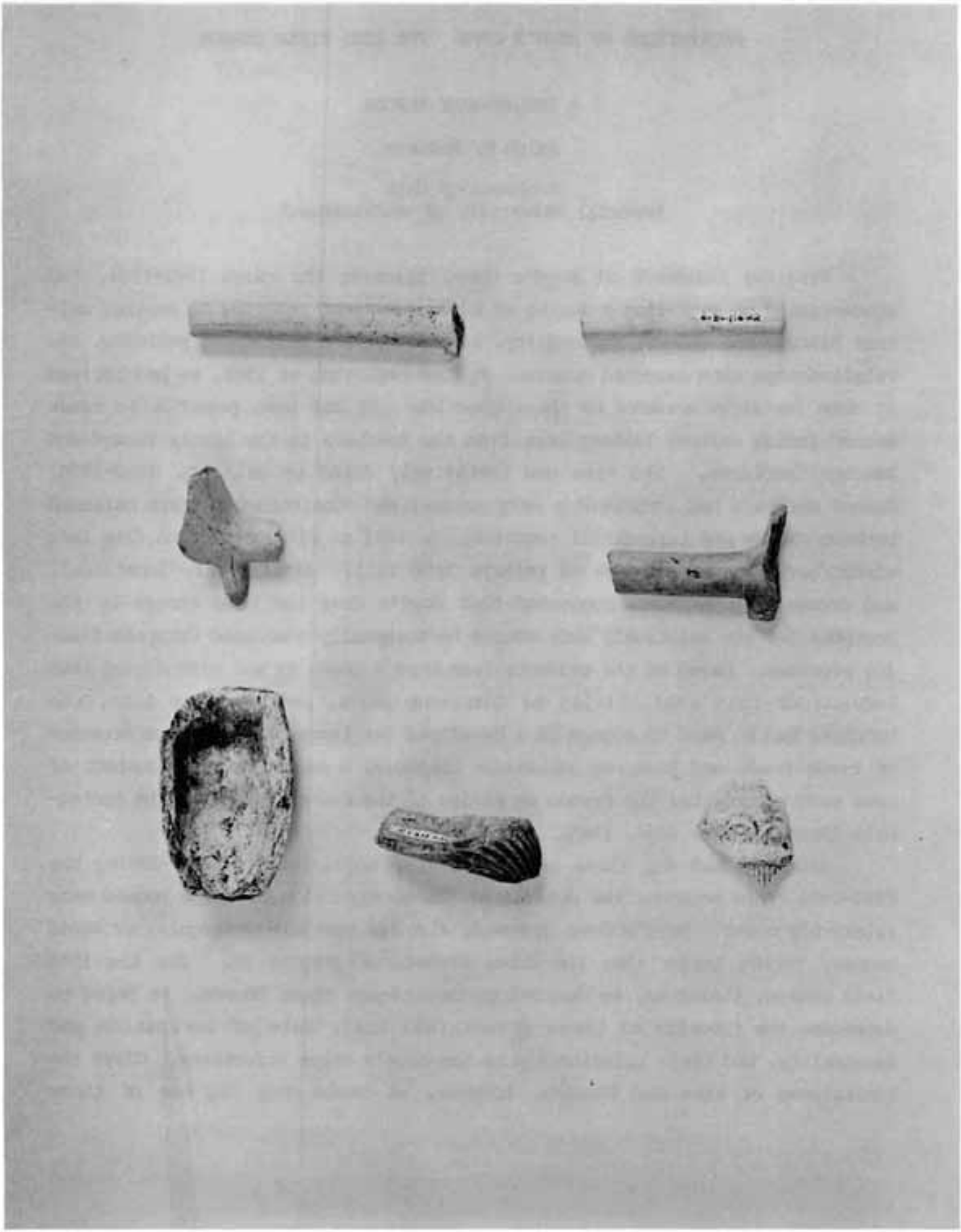
2nd row:

Clay pipe bowl fragment
Clay pipe bowl fragment

Bottom row:

Clay pipe bowl fragment (EaBa-4)
Clay pipe bowl fragment
Clay pipe bowl fragment

Scale: actual size



EXCAVATIONS AT BOYD'S COVE: THE 1985 FIELD SEASON

A PRELIMINARY REPORT

Ralph T. Pastore

Archaeology Unit
Memorial University of Newfoundland

Previous fieldwork at Boyd's Cove, spanning the years 1982-1984, had concentrated on answering a series of basic questions relating to Beothuk culture history and change, seasonality, subsistence and settlement patterns, and relationships with external groups. By the beginning of 1985, we had arrived at some tentative answers to these questions. It had been possible to trace Recent Indian culture history back from the Beothuks to the Little Pasage and Beaches Complexes. The site was tentatively dated to ca. A.D. 1650-1720. Faunal analysis had indicated a very generalized subsistence pattern balanced between marine and terrestrial resources, as well as site occupation from late winter/early spring through to perhaps late fall. Artifactual, locational, and documentary evidence suggested that Boyd's Cove had been chosen by the Beothuks for its relatively safe access to seasonally-abandoned European fishing premises. Based on the evidence from Boyd's Cove, it was also argued that because of this availability of European goods, particularly iron, the Beothuks had no need to engage in a developed fur trade, although the presence of trade beads and Normandy stoneware suggested a minor peaceful contact of some sort with either the French or allies of the French, probably the Montagnais (Pastore 1983, 1984, 1985).

Since we had dug three sub-circular to multi-sided houses during the 1982-1984 field seasons, the details of the construction of these houses were relatively clear. Boyd's Cove, however, also has two sub-rectangular or ovoid houses, rather larger than the other structures (Figure 2). For the 1985 field season, therefore, we decided to investigate these houses. We hoped to determine the function of these structures, their date of occupation and seasonality, and their relationship to the site's other structures. Given the limitations of time and funding, however, we could only dig one of these

houses. We chose to dig House 4 because it was closest to areas previously excavated. We reasoned that the attempt to discover external features related to H-4 would be facilitated by the fact that we had already dug a considerable area in the immediate vicinity of this structure. In addition, the houses previously investigated were all closer to H-4 than to H-8, the second of the two large ovate dwellings. This meant that attempts to determine relationships between H-4 and other structures might be facilitated with a minimum amount of digging.

We began excavation with three hypotheses about the function of H-4. One possibility was that H-4 was an older, communal type of dwelling. Such houses were reported from Red Indian Lake and appear to have contained tools older than those used by the Beothuks (Locke n.d.). The recent discoveries of Maritime Archaic longhouses (Fitzhugh 1984) also held out the possiblility that H-4 was an older form of house. Unfortunately, the older tools that one would expect to find in such a dwelling were lacking here. The iron, lithic, and other artifacts associated with H-4 were consistent with an A.D. 1650-1720 time span postulated for the Beothuk component of the site.

It was clear that H-4 was not an older form of dwelling, and it quickly became equally clear that the evidence from H-4 did not substantiate our second hypothesis— that it might be a storehouse. There are a number of references in the historical record to Beothuk storehouses, one of which was described as being rectangular and 40 to 50 feet in length (Howley 1915: 69, 75 , 85, 192, 248). Forty feet would not be too far from the outside dimensions of H-4 which proved to be just over 11 m long from the outside base of one wall to the outside base of the opposite wall. The discovery of a large hearth and sleeping hollows clearly indicated, however, that H-4 was a dwelling, rather than a storehouse (Figure 3).

Another possibility was that H-4 was larger than other dwellings because of socio-economic changes in Beothuk culture. Other researchers (Jordan 1978; Schledermann 1971) have suggested that, in the case of Labrador Eskimos, larger houses were inhabited by individuals who were successful traders or hunters, and in times of stress, individuals and other families tended to coalesce around such people, since one way to survive in a band-level society under stress is to associate oneself with a successful hunter or trader. This

hypothesis would have been strengthened by the recovery of an unusual amount of trade goods or faunal remains for H-4. In fact, H-4 did not contain a greater frequency of European goods than the other houses, nor do (at least after preliminary inspection) the faunal remains suggest that it was the dwelling of a superior hunter. The size and configuration of this dwelling, however, provided some clues to its possible function.

House 4 was constructed by partially excavating an interior living floor and piling up a low earthen wall around the perimeter (Figure 4). Some earth was also apparently scraped from outside the walls to build them higher. On average these walls ranged from ca. 20 cm to 30 cm high, but it was apparent that over time there had been some slumping. It was also clear that the entire interior had not been excavated. Judging by the presence in the house of patches of the leached zone and a culture-bearing layer apparently lying beneath the living floor, the interior was probably leveled rather than completely excavated by its builders. A number of post moulds, on average angled inward at only 10^{o}-15^{o}, were found in the walls suggesting that these posts were studs which supported horizontal poles from which rafters projected inward either bending over to the other side or meeting a central ridge pole. All post moulds in the interior were vertical, suggesting either racks or internal supports. For the most part the post moulds suggested posts that were in fact sharpened saplings of ca. 10 cm in diameter. Traces of birch bark found in and on the walls hint at the possibility that this house was covered in that material.

Whatever the covering, it is a sizable structure. Measuring from wall crest to wall crest, H-4 is 9.4 m long and 6.1 m wide. Its interior dimensions are just under 7 m by 4.1 m. Running down the long axis and curving toward the southeast was a large hearth measuring almost 5 m by 1 m (Figure 4). This hearth consisted of a low (8-10 cm) mound of small fire-cracked rocks, charcoal, bone fragments, and other organic material including what might be bone powder. It was apparently built in a shallow (8 cm) depression. This hearth differed from those of other excavated hearths in the amount of material within it, its linear configuration, and its considerable size. With regard to its size, it is quite likely that this entire hearth area was not used at any given time; indeed, there are also areas of fire-reddened subsoil

in the southeast portion of the house which suggest that the area in which fires were built was even more extensive than the hearth at the time of abandonment.

The house contained as many as 11 sleeping hollows as indicated by shallow (3.5-7.5 cm), ovate depressions. In all but one case, it was impossible to determine if these hollows were the result of excavation or simply compression of the living floor. One sleeping hollow, however, appears to have been excavated into what had been a portion of the hearth. This overlapping of a sleeping hollow with the hearth, the overlapping of post moulds with the hearth and with sleeping hollows, and the shifting hearth area itself, are all indicative of re-use of the house, probably by a variable number of individuals.

Two entrances were indicated by low breaks in the walls and evidence of excavation by the house builders. It is not clear which of these was the more frequently used. Although the north entrance was more exposed in that it faced the water, it did have an overlapping entryway which would have served as a sort of wind baffle.

The size and configuration of this house suggest a similarity to the historically known shaputuan--a large multi-family dwelling used by the Naskapi-Montagnais for a ceremonial purposes, including the mokoshan, a feast held to honour the spirit of the caribou. The mokoshan involved grinding caribou long bones, boiling the bone mash, skimming off the grease, compressing it into cakes and eating it. One Labrador explorer in the period 1819-1820 provided what may be the earliest description of a mokoshan for Labrador Indians:

> **These Indians had killed two deer and as strangers had met them a feast must ensue. A long tent was erected with five fireplaces in, and the Indians seated on each side. The vension was divided and afterwards a lump of fat, about three feet long and one foot broad and as much in depth, was shared out. This lump of fat, I was told, was the marrow fat of about two hundred deer which they had killed at one time during the winter (Henriksen 1973:10) .**

There is more recent evidence, this time archaeological, of the shaputuan. From the Indian House region of Quebec, Gilles Samson (1976) reported oval structures resembling shaputuans ranging up to 9.4 m long and

3.95 m wide, with as many as three hearths in them. William Fitzhugh investigated an oval tent ring from Winter Cove-4 in Groswater Bay on the central Labrador coast, which measured 4 m by 8 m. The structure yielded two dates of 465 +45 BP and 435 +90 BP, and was ascribed to the Point Revenge complex. Although the Winter Cove-4 feature was a tent ring, and its hearth was very different from that of the Boyd's Cove house, it did have two entrances, one of which was overlapping, and its size was quite comparable to that of House 4. Fitzhugh noted that the Winter Cove-4 structure "resembles the Montagnais-Naskapi shaputuan in basic form —oval outline and double entrances— but it lacks multiple hearths common in ethnographic types..." (Fitzhugh 1978: 159).

More recently, Stephen Loring has reported on a Point Revenge structure from Daniel Rattle-1, a site near Davis Inlet, on the north-central coast of Labrador. This too appears to have been a tent, ca. 8 m by 4 m, with "four small cobble hearths, two at each end...flanking a raised linear hearth 4.5 m long and 1 m wide...{and} packed with calcined bone fragments..." (Loring 1985: 129) Loring has identified this structure as a shaputuan, and, based on tool typologies, has suggested a date of ca. 1000 BP (ibid).

The House 4 hearth at Boyd's Cove also contained large amounts of burned and unburned bone, as well as a number of lenses of a muddy-brown deposit, samples of which under a microscope appear to contain powdered bone. In the late 1960's Georg Henriksen witnessed the preparations for a mokoshan. The man preparing the bone, according to Henriksen, "sits at the back of the tent pounding off the two ends of each clean bone...with an axe or heavy mortar. He continues to crush the ends which contain marrow until they become a coarse-grained paste..."(Henriksen 1973:36). This "coarse-grained paste" could well be the major component of the muddy-brown lenses found in the H-4 hearth, but we cannot be sure until further anaylsis is completed.

Henriksen noted that it was not unusual to use the bones of up to 30 caribou for such a feast (ibid). This suggests that the Beothuks would have had to stockpile caribou long bones and there is evidence of this in the literature. In 1811, Lt. David Buchan, who had been sent up the Exploits River to make contact with the Beothucks and who had found a camp, reported that: "Each wigwam had a quantity of deer's leg bones ranged on poles (in all three hundred)". Buchan commented that they had been fed with the marrow from

some of these bones, so it seems clear that these were the long bones only, not haunches of meat (Howley 1915:79).

As research off and on the island continues, the validity of making comparisons between the Beothuks and the Naskapi-Montagnais appears to be increasingly confirmed. Loring (1985) argues that Indian material from the Strait of Belle Isle is "closely related to both the Little Passage complex in Newfoundland...as well as to the Point Revenge sites in Labrador." Certainly, Point Revenge and Recent Indian projectile points from the Strait of Belle Isle bear very strong similarities which hint at an ethnic relationship. If this proves to be the case, one would expect Beothuks and Naskapi-Montagnais to share practises such as the mokoshan. Given the fact that we possess almost no ethnohistoric data about the Beothuk belief system, the discovery of a possible shaputuan with archaeological evidence of a mokoshan holds out the promise of providing at least a glimpse into the beliefs of these people.

If House 4 and 8 are shaputuans, this may also tell us something about the contemporaneity of the site's structures. In the Indian House Lake area, Samson found that dwellings consisted of two types: the single-family habitation as indicated by the "circular-trucated earthring", and the multi-family shaputuan, indicated by an oval earthring. He also found that dwellings seemed to cluster in groups of 4 -7 with one shaputuan per cluster. If this model held true in Boyd's Cove, we would expect the two large oval houses to be associated with two groups of houses, perhaps four and five respectively. Allowing for a family of five to seven individuals per smaller house, and two families per shaputuan, one would arrive at a total site population at any given time of anywhere from thirty to forty-nine individuals. This also suggests that one goal of future work should concentrate on determining if each of these large oval houses is associated with a cluster of smaller houses.

Certainly, the artifactual material contained in H-4 is in general comparable to that of the other excavated houses. House 4 yielded modified nails, glass trade beads (Kidd IIa 12 and IIa 56), pipe stems, decorated bone pieces, and tiny stemmed and basally-notched projectile points similar to those found in Houses 1 and 3. Among other European objects, House 4 also produced a large iron buckle, a link of what appears to be a trap chain, a portion of a trap spring, and a few fragments of a brass or copper kettle.

The only potentially significant dissimilarities recognized to date are the absence of Normandy stoneware (found in House 1, 3, and 11) and the presence of a few sherds of what appears to be North Devon coarse earthenware. The artifactual complement of House 4, then, is most similar to that of Houses 1 and 3, and least comparable to House 11 which lacked trade beads and decorated bone pieces, and contained only one stone projectile point.

House 4 is obviously different in shape from the other excavated houses, but it shares some similarities in internal and external features. Externally, it appears to have a large cluster of fire-cracked rocks outside the north entrance. These rocks were not associated with charcoal, and there was no evidence of *in situ* burning; and it is likely that this represents hearth debris similar to another rock cluster found in apparent association with either H-1 or H-11. The pits found in House 4 appear to pre-date the house as was the case with the pits in the other excavated dwellings. Indeed, test excavations well apart from the houses revealed pits apparently of prehistoric origin, but of unknown function.

House 4, like Houses 1 and 3, contained sleeping hollows, which were lacking (or not discoverable) in H-11. Post moulds found in the walls of H-4 had the same slight (10^{o}-15^{o}) angle as H-3 and were not too dissimilar from the nearly vertical post moulds found in the walls of H-1. where post moulds were discoverable in H-11, however, they appeared to angle inward sharply, suggesting that H-11, in fact, was a roughly conical wigwam set in a shallow depression. All of the houses contained interior post moulds suggesting internal roof supports or cooking and storage racks.

Obviously, it is premature to suggest the relationship of House 4 to the other dwellings. Further investigation and analysis, it is hoped, will make this relationship clearer.

ACKNOWLEDGEMENTS

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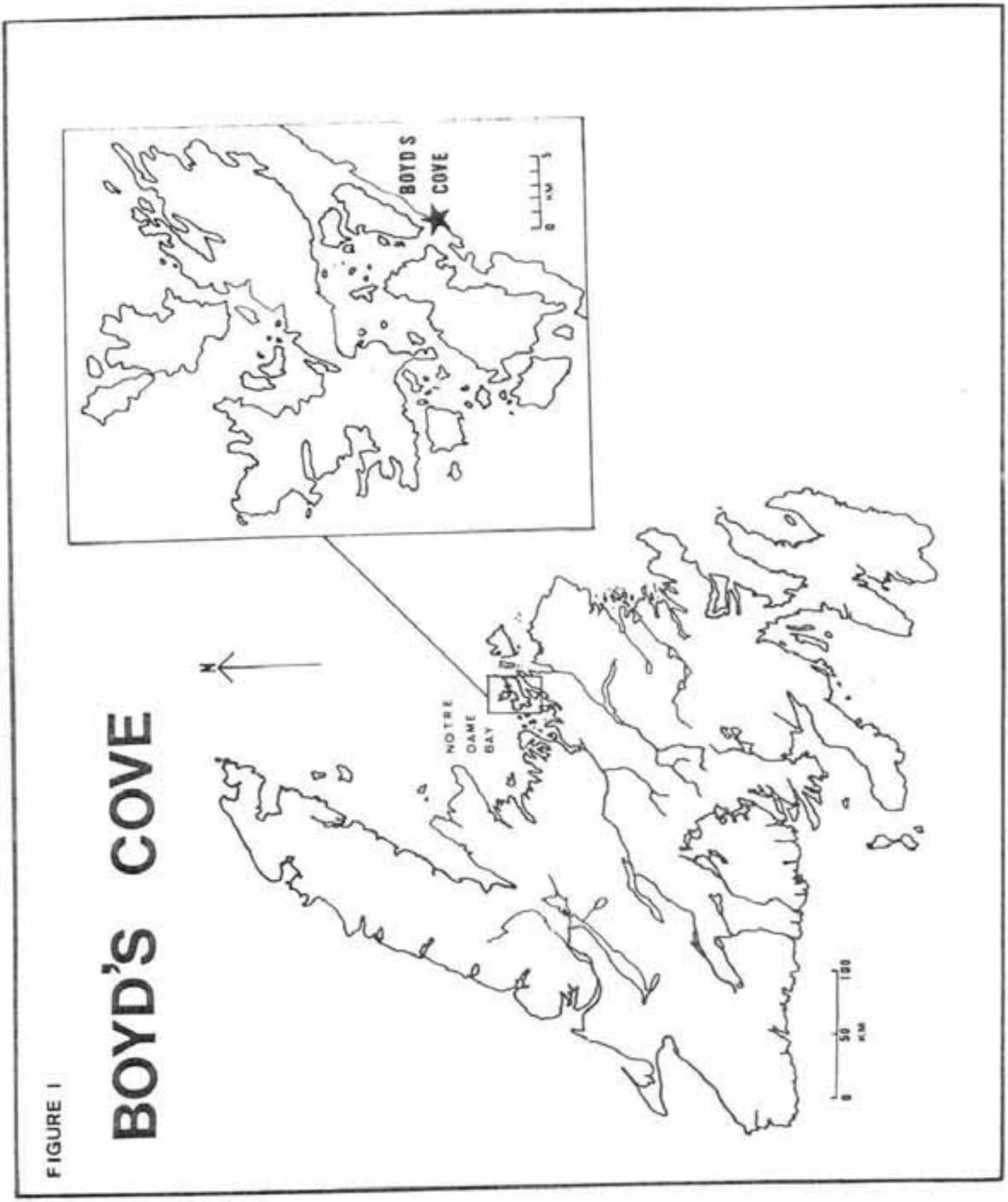


FIGURE 1

Figure 2

Boyd's Cove Excavation Area 1985

FIGURE 2

BOYD'S COVE

AREA B

1985

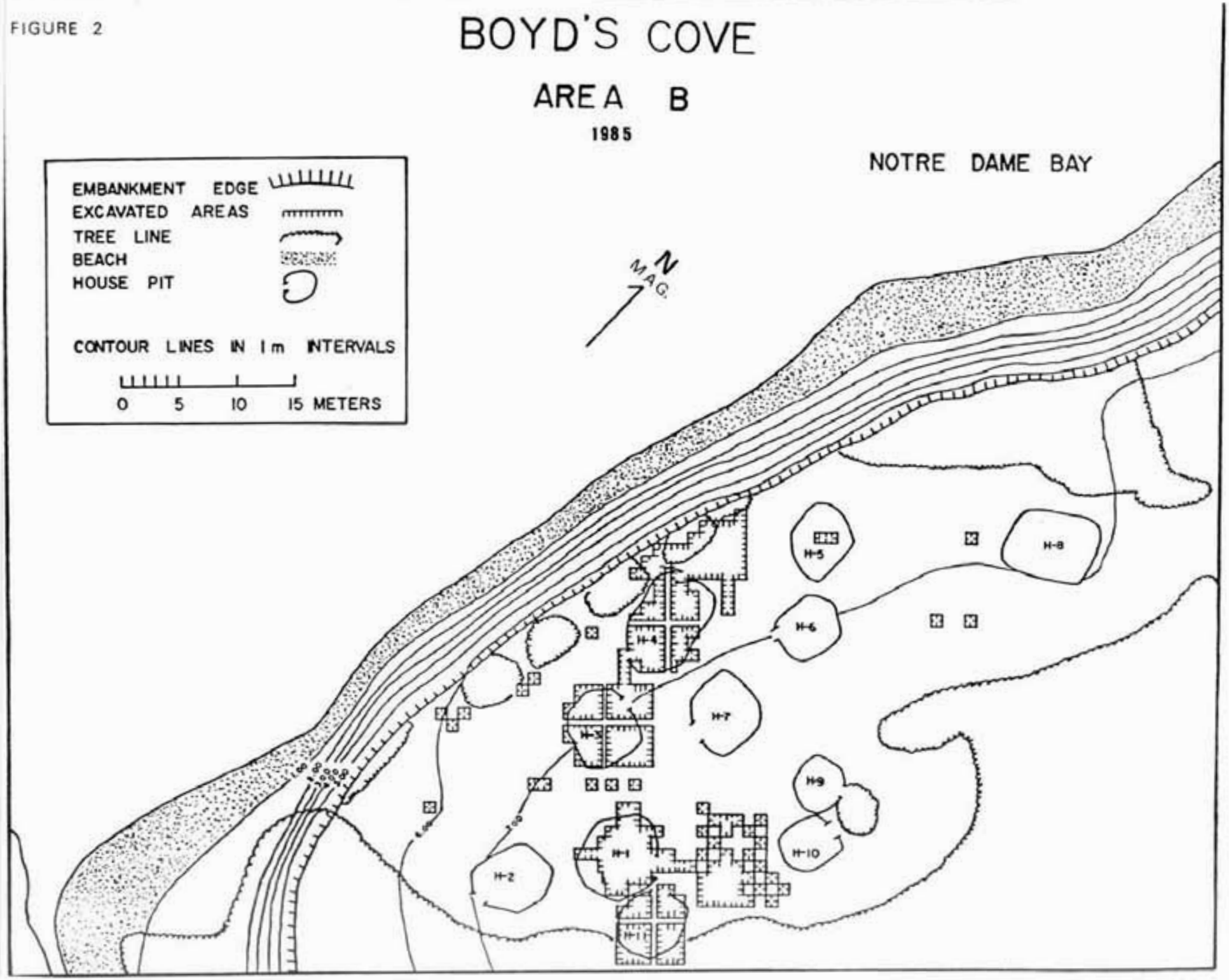
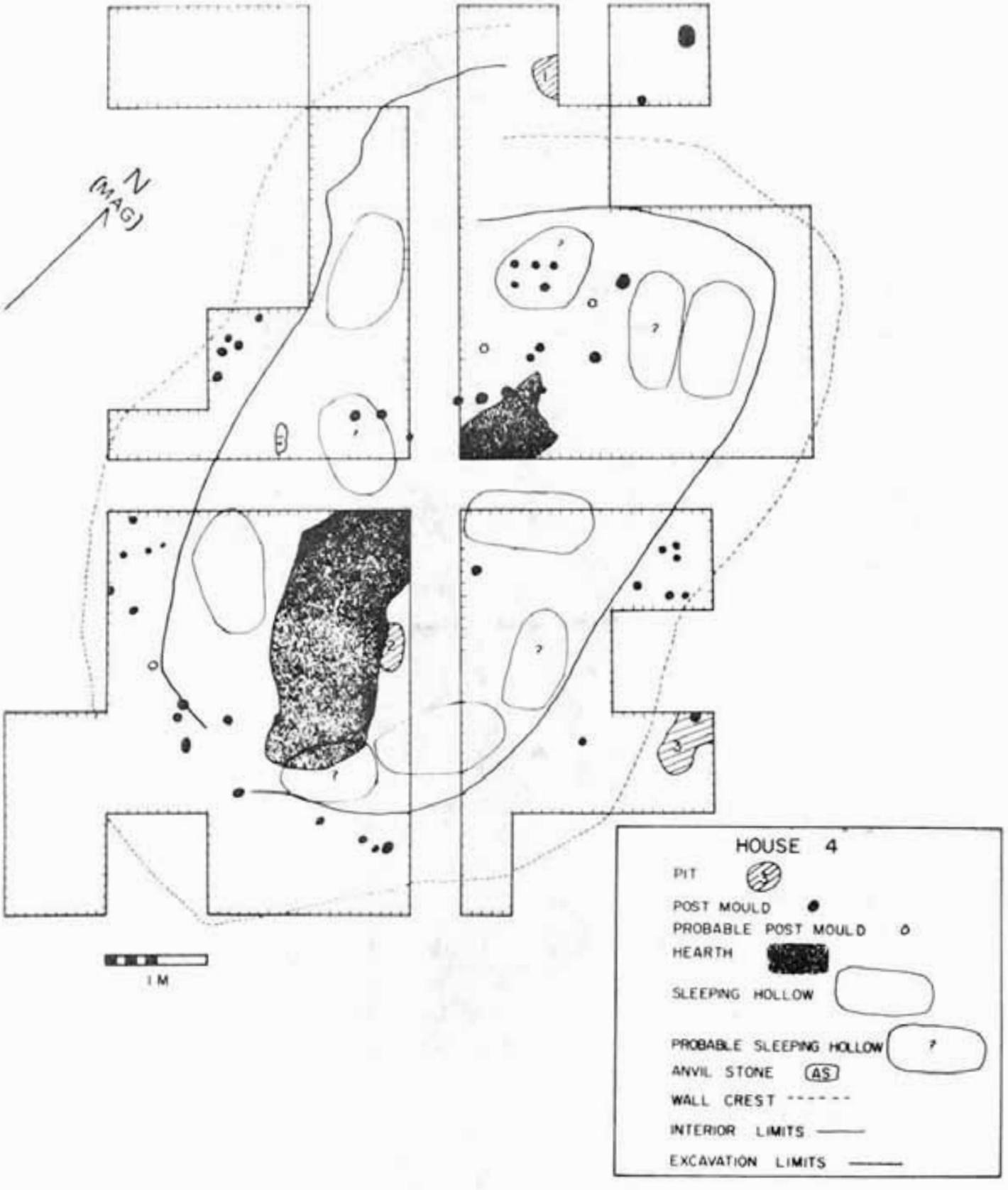


Figure 3

House 4 looking North. At this stage of the excavation, only what was perceived as the interior floor of the house has been excavated in order to make the contrast between floor and wall clearer. Ultimately, the interior floor turned out to be slightly larger than portrayed here. The mound of the central hearth is clearly visible; sleeping hollows and possible sleeping hollows are outlined with string.

FIGURE 4


N
(MAG)
1 M
HOUSE 4
PIT
POST MOULD
PROBABLE POST MOULD
HEARTH
SLEEPING HOLLOW
PROBABLE SLEEPING HOLLOW
ANVIL STONE
AS
WALL CREST
INTERIOR LIMITS
EXCAVATION LIMITS

SALVAGE EXCAVATIONS IN THE CITY OF ST.JOHN'S

James A. Tuck
Memorial University

Development in the downtown area of St. John's, which has been responsible for the destruction of a number of known and potential historic sites, continued during 1985.

Construction at the convention centre west of the city hall appears to have done little if any damage to archaeological resources in that area. Inspection of the construction site revealed no artifacts older than the late 19th and 20th centuries.

Of particular note, however, and much more destructive of the archaeological heritage, was construction at a former Ayre's premises near the west end of the harbour between Water Street and Harbour Drive. During the spring of 1985 the City Council of St. John's kindly provided a backhoe and operator for one day to conduct test excavations in the area following the removal of the Ayre's building. Three tests were made, all at the eastern edge of the property, a necessity because of an impenetrable layer of concrete over most of the site. The test excavation nearest the harbour revealed large timbers which were a part of the finger piers which characterized the harbour until after World War II when they were covered by fill and the present Harbour Drive created. Water was encountered within about a metre of the surface, and the test clearly did not penetrate the virtually sterile fill to the original harbour bottom.

The second test was located midway between Water Street and Harbour Drive. Water and timbers were again encountered as well as a few artifacts dating from the late 18th and 19th centuries. The presence of water made it impossible to continue the excavation, nor could any stratigraphy be observed in the pit.

The third test was made as close to Water Street as feasible. Only a small opening could be made in the thick concrete, but the pit revealed ceramics, glass, and smoking pipes of the mid - to late 18th century and early

19th centuries. Considerable brick was also revealed, some of it apparently a portion of a short section of wall or footing, probably dating to the late 18th century.

During the fall of 1985 the site was again visited, this time after excavation for the footings and pilings of the new structure. In the northwest corner of the construction site a large number of ceramic sherds dating from the late 18th century were visible on the surface. Inspection of a nearby excavation revealed the source of the ceramics to be a layer of nearly pure ceramic fragments, up to 50 cm thick in places and originally covering at least 30 square metres. How much of the deposit was lost before our arrival we have no way of knowing. Owing to the sympathetic nature of the construction foreman, who related stories of other discoveries of ceramics, bottles, pipes, and other material at a number of other projects he had worked on in downtown St. John's, we were able to collect seven five-gallon buckets of ceramics from the exposed profiles in approximately 90 minutes. At this point our salvage excavation was temporarily discontinued when we learned that no construction work was planned for the immediate area for several days. The ceramics, upon cleaning and preliminary analysis, proved to be comprised almost exclusively of creamware and salt-glazed stoneware with a small percentage of "scratch blue" stoneware, all of British origin and all dating from the third quarter of the 18th century. Virtually absent from the deposit were smoking pipes, coarse earthenwares, bottle and other glass, and organic refuse, despite the excellent preservation of the few bits of bone and leather recovered. Clearly this was no simple accumulation of household refuse deposited in St. John's harbour.

Close inspection of the ceramics revealed them to be burned, with many sherds fused together by the heat of a sizeable fire. The conclusion that this represented the contents of a ceramic wholesaler or retailer is inescapable. Lacking pearlware and transfer printed refined earthenwares the deposit at the Ayres premises does not appear to bear witness to any of the fires of 1816, 1817 or 1846. A Mr. Hart, of the St. John's firm of Messrs. Marmaduke Hart & Co. of St. John's wrote to his insurers, the Phoenix Fire Office, London, that "...no Accident of Fire has happened since 1780" (O'Neill 1976:619), a date which fits perfectly with the ceramic assemblage. Realizing

that this site would provide an unusual opportunity to inspect the contents of the place of business of a ceramic importer in a specific year and thereby provide an unusual look at the patterns of ceramic consumption in St. John's at that time. We consulted the Provincial Archaeologist obtained a permit. The Provincial Archaeologist also undertook to contact the project managers and the developer of the area. Both gave permission to continue our excavations.

Unfortunately, the supervisor who had allowed the original work had been replaced in the meantime and his successor was far less sympathetic to archaeology. We were ordered to leave the site. When this matter was resolved we once again visited the site only to learn that the area in which we proposed to dig had been flooded and that it could not be emptied. It was proposed to fill the area shortly. No further work was possible.

At the same time the Water Street basement wall of Ayre's building had been removed revealing more than three metres of stratified deposits between the present-day level of Water Street and what was the basement floor of the Ayre's building. Clearly visible were what appeared to be evidence of the great fire of 1892, at least two earlier fires, perhaps those of 1846 and 1817, and several other clearly defined refuse bearing strata. As we began a closer inspection of the profile still another foreman ordered us from that area because it "was too dangerous", and within a few minutes from the construction site itself. At this point , I admit somewhat embarrasedly now, I gave up.

Disappointing as this first venture into urban archaeology in St. John's might have been, several valuable lessons were learned. The first is that the city that bills itself as "North America's Oldest City" still has a great deal to offer to those interested in archaeology as a means of reconstructing the history of the urban environment. The second lesson was that education of city officials and developers is needed to ensure that a healthy attitude toward the protection of what archaeological heritage still remains undisturbed develops before it is too late. New provincial legislation may prove useful, but unless developers and city officials can be made aware of the benefits which have accrued to other North American cities and the developers who must operate within them through sensible management of historic resources much more will be lost.

Finally we have learned that the oldest parts of the St. John's waterfront probably do not lie on the harbour side of Water Street. If the Ayre's property is any indication, structures on that side of the street probably do not date much before the end of the 18th century, although there may be earlier deposits on the original harbour bottom if it is ever revealed. Judging by our limited test excavations and a glimpse at the stratigraphy beneath Water Street, earlier material and structures, dating to the 17th and 16th centuries, will be found when development proceeds northward from the harbour. This should be borne in mind and a program of evaluation, and if necessary salvage, of the archaeological resources of the area organized prior to, as well as during the construction, which seems more than likely to take place.

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A GLIMPSE AT THE COLONY OF AVALON

James A. Tuck
Douglas T. Robbins
Memorial University of Newfoundland

Beginning in the late 16th century with the ill-fated attempt to plant a colony at Roanoke Island, Virginia, the English government actively encouraged settlement in eastern North America. In 1607 the successful Jamestown colony was founded, and within the following decade several other settlements sprang up in the Colony of Virginia. The stories of the Plymouth, Massachusetts Bay, and other New England colonies are more or less familiar to most North Americans but the attempts at English settlement on the Island of Newfoundland are far less well-known—at least outside of that Province.

It seems likely that fishermen were remaining in Newfoundland year round prior to any "official" attempt at settlement by the English but the impact on history of these settlements remains unknown; it may, however, have been as great as the plantations which followed James I's ascension to the English throne. In 1610 Alderman John Guy of Bristol planted a colony in Conception Bay, probably somewhere near the present-day community of Cupids (cf. Prowse 1895: 92ff). Seven years later Sir William Vaughn planted a far less successful colony on the southern shore of the Avalon Peninsula either at Trepassey or Renews, depending upon which interpretation you believe. The following year the Bristol's Hope colony was founded at the present-day community of Harbour Grace. In 1621 Capt. Edward Wynne arrived at Ferryland with twelve settlers to found the Colony of Avalon on behalf of Geroge Calert, later the first Lord Baltimore.

From earliest times it is clear that the fishery was of considerable, if not prime, practical and financial importance. The "Instructions to John Guy from the Associates of his Company", for example, suggest that he buy trade (cod) oil, dried fish, and prepare himself to receive salt to be used in the fishery or sold to other fishermen (Prowse 1895: 94-96). Still there remained some of the idealism of a slightly earlier age and, it seems, influence of the

Virginia adventures. Guy was also instructed to check out the local sarsaparilla situation, make wine (?), make glass (which was also an early experiment at Jamestown), search for oak trees for timber, and so forth. The first colonists at Avalon brought with them wheat, barley, oats, peas, and beans— none of which remains a staple Newfoundland crop, although many were grown successfully through the 18th century.

It almost seems as if there was a plan for colonization which all companies of settlers attempted to follow regardless of the location of the settlement. "Palisados" were to be erected for protection from natives and, presumably, Europeans as well, a large dwelling for the "governor" constructed, crops and "beastials" familiar to England sown or bred, and whatever other things necessary for the survival of the colony and profit of the investors done as quickly as possible.

Archaeology has borne out many of the early descriptions of the Virginia colonies and, in many cases added information not otherwise available. The former is to be expected and the latter, we think, demonstrates the value of archaeological investigation of European sites. It is the points where archaeology and history disagree which are the most interesting and which require our attention. Unfortunately none of the early 17th century Newfoundland colonies has been archaeologically investigated to the point where such questions have presented themselves much less having been answered. As far as we know neither the Bristol's Hope colony nor Vaughan's colony of the southern shore has ever been looked for. Excavations at Cupids more than a decade ago provided results which were far from convincing; Guy's colony may be there but most archaeologists would not be willing to swear to its discovery.

An exception is the Colony of Avalon, the location of which has never really been lost to history but which nobody ever bothered to investigate seriously until the fall of 1984 (Tuck 1985). Descriptions of the location of the colony are well known, particularly that provided by Daniel Powell in a letter to Baltimore written from Ferryland in 1622:

> His House (and presumably the rest of the settlement) standeth very warme, at the foote of an easie ascending hill, on the South-east, and defended with a hill, standing on the further side of the Haven on the North-west: the Beach on the North

> and South sides of the land locke it, and the seas on both sides are so neere and indifferent to it, that one may shoot a Bird-bolt into either Sea...and the Seas doe mak the land behind to the South East...almost an Island...

This description so closely approximates the area around the inner harbour at Ferryland, known as "the Pool" that it is hard to escape the conclusion that this was the location of the Colony of Avalon. This is, of course, nothing new, for Arch Williams, a local resident better known for his artistic endeavours, always maintained that the site was in that area and Russell Harper (1960) conducted a brief excavation there in the late 1950s which produced early 17th century material from the lowest levels. When we began our excavations there in 1984 we followed the same reasoning as Williams and Harper and, in fact, appear to have dug in the same garden as the latter, although we have not been able to locate his test pit nor can we duplicate the stratigraphy he reported.

The area around the Pool many have been occupied more or less continuously since the early 17th century; it is occupied today and a number of houses, stores, a fish plan, and other structures have made our endeavours something like urban archaeology in a rural setting. Considerable land presently is not built upon, however, and in a small garden which coincidentally is still in the Williams family, we began our excavations in 1984.

A north-south test trench through the property revealed an upper zone which has seen much cultivation and contains a mixture of artifacts dating from the 18th century (and occasionally earlier) to the present day. An initial attempt to record the depth of each specimen showed that the deposit was hopelessly mixed, hence further plotting was done only by section. Below this lay a deep layer of tan clay and gravel which we at first thought to be subsoil. Subsequent excavation, however, revealed artifacts of the 17th century within this layer and at its base a third stratum which contained exclusively material of the early 17th century. This includes ceramics, which while not particularly useful in precise dating, nevertheless do not contradict the more convincing material to be mentioned directly. Most ceramics are coarse earthenwares of so-called North Devon origin of which jars and pipkins appear to comprise the majority. Smaller amounts of "sgraffito" ware,

Rhenish stoneware, and tin-glazed earthenware have also been recovered. Bottle glass is exclusively of the so-called "case" bottle type, vessels which are square in cross section and which were shipped in wooden or wicker cases from which the bottle style takes its name. One example retains a pewter mouth which threads for a screw top. This type of bottle began to be replaced in the 1640's by the larger and more durable "onion" bottles which are found in some numbers in the upper levels of the site.

Smoking pipes from the earliest level have the very small "acorn" bowls with a reeded lip and large bore diameters in the stem characteristic of the early 17th century. This evidence, then, suggested to us that we had indeed found some part of the earliest settlement. The question then was - and to a large extent still remains - which part?

Captain Wynne reported to Calvert in 1622 that in the first year his twelve settlers had completed what has become known as the "mansion" or "manor" house. This measured 44 by 15 feet and contained a cellar of 20 feet in length as well as a kitchen of 12 by 18 feet, which was apparently at least partially excavated into the ground, for Wynne reports that the earth "...digged both for cellar and kitchin roome (which we found a very laborious worke)..." was used to raise a face of defense toward the waterside. Other buildings included a "parlour" of 14 by 18 feet, a "tenement", a forge, salt works, brew room, 16 foot deep well, and a hen house. It is presently impossible to say how these structures, and others which were built in succeeding years, were arranged. Wynne gives us a hint when he mentions his plans for "another row of building...so pitched that the whole may be made a prettie streete". We suspect, therefore, that a row of buildings was situated on the only fairly level land in the area, probably roughly parallel with the shore of the Pool.

Several features associated with the earliest occupation level were revealed during 1985 and some of them are suggestive, at least, of structures mentioned by Capt. Wynne. The most obvious such structure is a rectangular stone constructions measuring about four by six feet and standing more than a foot clear of the subsoil. Surrounding it are concentrations of slag, coal, charcoal, bits of iron, and other objects, one of which, the stone forge, was a central feature. As the forge excavation proceeded, and artifacts of the

first half of the 17th century emerged, we became increasingly certain that we had found the forge mentioned by Captain Wynne in his 1622 dispatch to George Calvert. Then during our absence from the area a small pile of earth appeared to the east of the site near the present-day location of Parks Canada's historical marker. It contained slag, coal, charcoal, bits of iron, pipes, glass, ceramics and other material almost identical to that from the forge we were excavating. After two weeks during which we were unable to determine the origin of this material we learned that it had been removed from a small excavation (to plant trees) not more than 20 metres from "our" forge. Excavation in this area is impossible so we are not really certain whether this material is from another forge or is merely refuse from the one we have exposed. If it is another forge we cannot be certain which of the two is the original.

There is, however, one scrap of very circumstantial evidence which suggests that the one we excavated may be somewhat more recent than the one under the trees. "Our" forge appears to have been housed in a structure at least partly excavated into a hillside. Wynne mentions only two such excavations - one for the cellar which was located beneath the mansion house and apparently not dug into a hillside, and one for the kitchen room. The kitchen room's width matches pretty closely that of the excavation which contains our forge. The length is presently unknown and will not be known until further excavation is undertaken beneath the three metres of overburden which now conceals it. Nevertheless, it is possible that the forge which we exposed during the fall of 1985 is not that originally built by Capt. Wynne, but is, in fact, a later forge built in the then abandoned kitchen. Only additional work may answer this question.

A second feature associated with the earliest occupation layer is an irregular, but linear, arrangement of rocks and earth to the north of the forge and running roughly parallel to the shore of the Pool. At first we thought this to be some sort of foundation, perhaps for one of the other structures mentioned in the various letters from Ferryland. As more of the "wall" was exposed, however, it became clear that either this was a very atypical and sloppy wall or that we were dealing with some other type of structure. The stones are irregular in size and shape, do not appear to have

been very carefully piled, and most are separated from one another by several centimetres or more of dirt. Again, it is impossible to say what this feature represents but a hint is offered by Wynne's mention of the earthwork which he had built on the waterside of the settlement. Could this be the remains of a low earthen embankment on the inside of a post, rail, and plank enclosure built for defense? Several probable post molds are located along the outer edge of the feature and bits of rotted wood associated with this feature contain large spikes of the types which might have been used to fasten such a defensive work.

We know that the settlement was surrounded by a palizado some seven feet high. Noel Hume, using the historical evidence from Ferryland and archaeological remains from the contemporaneous Martin's Hundred settlement in Virginia, suggest that such palizados might have had a low interior earth and wood platform upon which marksmen could have stood to fire over the wooden defensive works (Noel Hume 1982: 221-224). We cannot be certain at this early stage in the excavations, but if this is a portion of the palizado it just might be the most significant discovery of the 1985 season. Enough undeveloped land remains in the settlement to allow us to follow the earthworks and wooden defenses to define the perimeter of the colony. If, as Wynne reported, the palizado enclosed four acres some of the site must lie on land presently fallow. Some good settlement and other information should be recoverable from such areas.

Several other features have also come to light during our brief excavations. A short wall built some time not too long after the abandonment of the forge spans the mouth of the excavation in which the forge stood. Whether it served simply as a retaining wall or as the foundation for a more recent structure we presently cannot say. At a level about equivalent to the top of this wall is one feature which seems, for a change, clearly identifiable. It consists of an intermittent layer of charcoal, burned planks and beams, and associated artifacts which appear to date from the third quarter of the 17th century. Embedded in one of the charcoal deposits was a cast iron cannon ball about three inches in diameter; nearby was an English dog lock from an early firearm. No more eloquent testimony to the violent destruction of the settlement could have been found. From the associated ar-

tifacts this seems to have happened during the middle of the latter half of the 17th century and probably represents the Dutch raid of 1673 at which time, according to Governor Lovelace of New York who was a prisoner aboard one of the Dutch vessels, the settlement was "...plundered, Ruin'd, fir'd, & destroy'd...".

It seems, therefore, that we have discovered a slice of time beginning with the first settlement at the Colony of Avalon until its destruction by the Dutch in 1673. We have found little evidence of occupation between that time and the mid-19th century; artifacts of the 18th century are surprisingly scarce. The slice of time represented at the small excavated area remains, as has probably become obvious in the last few pages, very poorly understood. Our efforts to date represent only a small fraction of the work which will need to be done to understand the Ferryland site and to achieve our long term objectives for the project.

Additional work planned for 1986 will include further testing of the site to locate additional features and to attempt to reconcile the archaeological and historical information. This does not mean trying to fit the archaeology to history, tempting though it may be. We expect that the two lines of evidence will be at some variance with one another. We hope that from our excavations we will be able to develop a plan of the settlement as it was first constructed and as it was modified during the decades which followed. Once this is done the Colony of Avalon should provide an interesting comparison with the Virginia and New England colonies, established in quite different environmental zones, and with the whaling stations along the Strait of Belle Isle which were not colonies at all, but more closely resembled the seasonal northern mining, exploration, and construction camps of much more recent times.

In conclusion mention should be made of the religious aspects of the Colony of Avalon. Geroge Calvert, and later his son and successor Cecil, are often said to have introduced Roman Catholicism to British North America. There were Catholics at Ferryland, but there were also Anglicans (David Kirke corresponded with Archbishop Laud himself, for example) and The Protector Cromwell appointed several Puritans to oversee the affairs of the colony in the 1650s. This religious aspect was brought to the fore in the fall of 1985

with the discovery of an iron cross about 10 inches tall, inlaid and adorned with other metals and fitted with a socket at its base (Figure 1 and 2); it may therefore have been some sort of processional cross. Thus far, however, no institutions or individuals with whom we have corresponded have been able to identify the cross. Who carried it to Ferryland, or at Ferryland, remains unknown, as do its date and place of origin. Even more perplexing is how it found its way into the earth immediately above the floor of the forge sometime in the mid 17th century. It is easy to imagine such Papist or Anglican trappings being discarded by a zealous Puritan governor during the 1650's, but we may never know for certain how it found its way into the refuse.

These and other questions we hope to answer in the coming season, probably, to paraphrase Baltimore's comment to Charles I in 1629, sometime between "the middest of May and the middest of October when the sadd face of wynter is no longer upon this land."

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FIGURE 1

Photograph of an iron cross recovered from fill immediately above the early 17th century forge. Visible are four equally spaced open-work orbs around a solid core and decorative finials still in place at the ends of the orbs at the top and to the right. Actual height is approximately 24 cm. Photograph by Jack Martin.

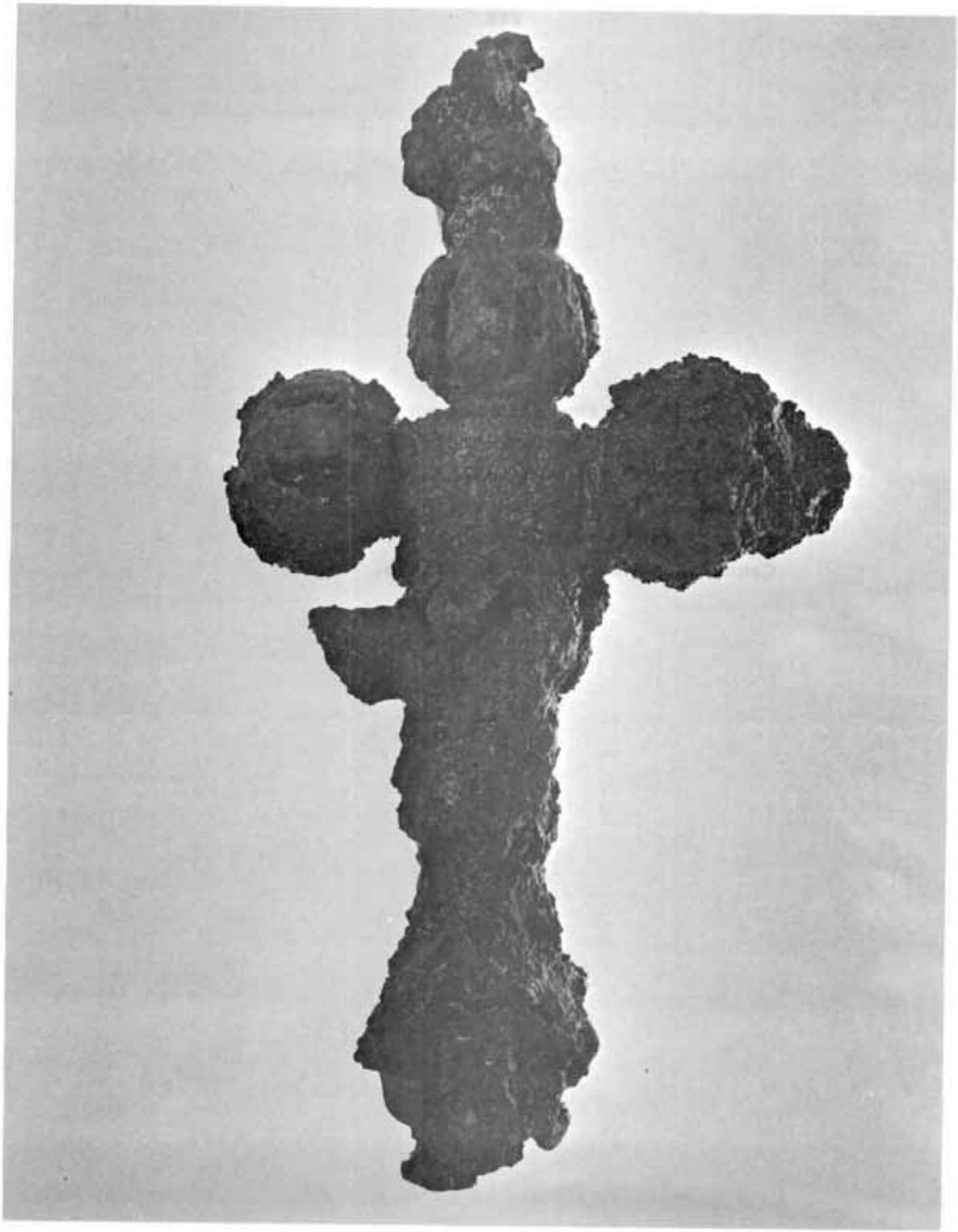

FIGURE 2

Radiograph of the cross shown in Figure 1. Detail of the openwork orbs, decorative bands around the orbs and shaft, and a socket in the base are visible in this illustration. Radiograph by W. Bokman, Canadian Conservation Institute.