FACTORY COVE: RECOGNITION AND DEFINITION OF THE EARLY PALAEO-ESKIMO PERIOD IN NEWFOUNDLAND

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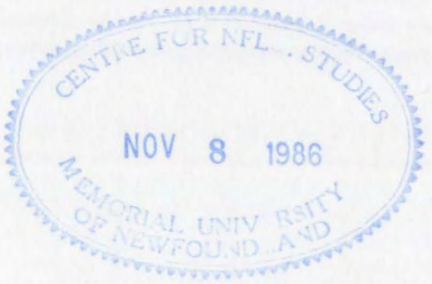
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FACTORY COVE: RECOGNITION AND DEFINITION OF THE EARLY PALAEO-ESKIMO PERIOD IN NEWFOUNDIAND

by

©Réginald Auger, B.Sc.

A thesis submitted to the School of Graduate Studies in partial fulfillment of the requirements for the degree of

Master of Arts

Department of Anthropology

Memorial University of Newfoundland

December 1984

St. John's Newfoundland

ABSTRACT

This research was originally designed to document what was then called "Early Dorset" on the Island of Newfoundland; however, analysis of the data suggested that we should not refer to the Factory Cove remains as "Early Dorset" but rather as "Groswater" since it now appears most closely related to Fitzhugh`s (1972; 1976a) Groswater Dorset for Labrador. The investigation of on early Palaeo-Eskimo phase different from the so-called "Typical Newfoundland Dorset" was in itself a new approach to Newfoundland Eskimo archaeology.

The present research is a contribution to establish the Eskimo cultural history for the time period of 2700 to 2100 B. P. The data reported here were collected over the summers of 1978 by Dr. James A. Tuck and by the author in 1981. Altogether 160 square metres were excavated.

The faunal remains recovered included 13 species; season-specific species suggest a late winter to early summer occupation. The variety of the architecture though, is suggestive of a year round occupation. We were able to identify a house which had been slightly dug, a mid-passage hearth structure, a lean-to, and a tent circle. In my

opinion the section dealing with the lithic remains represents the main contribution to our understanding of the Groswater phase. The multiple occupations that occurred over six centuries allowed us to pinpoint certain changes in the lithic tools.

The main conclusion of this research is the rejection of the traditional view of seeing "Early Dorset" metamorphosing into Middle Dorset in Newfoundland. It is proposed instead that Groswater is the last phase of an early Palaeo-Eskimo period lasting in Newfoundland no later than 2100 B. P. After an apparent gap of approximately 200 years from the end of the Groswater phase, the carriers of the late Palaeo-Eskimo period arrived on insular Newfoundland from Labrador.

ACKNOWLEDGMENTS

Giving credit to everybody who helped me out throughout those three years at Memorial is a feat in itself. I am indebted to Faculty members at the Department of Anthropology who helped me straighten my thoughts, to support staff, including Val Andrews, who agreed to put my scribblings in a readable format, and to fellow students for challenging discussions. Above all I owe gratitude to Dr. James A. Tuck who not only as a faculty member but as a supervisor supported the present research in many ways.

The completion of the present thesis would not have been possible without financial support from the School of Graduate Studies at Memorial University through its scholarship system. Financial support was also generously provided for field research by the Historic Resources Division, Government of Newfoundland and Labrador, the Institute of Social and Economic Research at Memorial as well as a Vice-President Grant MUN, and a Northern Studies Training grant through Dr. Tuck.

I also want to thank the three people in my field crew at Factory Cove: Sue Kearsey, Ken Reynolds, and Anna Sawicki all of whom contributed to the success of the excavation. From Cow Head, Frank and Eileen Hynes are only

two among numerous people who were helpful in many ways. I thank them too. Technical assistance and precious advice was often received from Clifford (Tip) Evans who also put his artistic skills to work on the illustrations. Harold Berghuis and Kerry Gosse also contributed their skills to render a topographic map of the site. Dr. Stephen Cumbaa, of the National Museum of Man, through conscientious work turned the faunal remains into meaningful data. As for the photographs, their neatness is due to Jack Martin`s good work at ETV, Memorial University.

The editorial advice of Fred Schwarz and Peter McCartney was very helpful in improving the present thesis.

I cannot possibly mention everyone who helped me out in one way or another. Nonetheless, I can extend fond gratitude to those people who brought me special support, especially my parents, and Carmen Cameron.

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CHAPTER I

INTRODUCTION

This study is based on a two-month research project at the Factory Cove site (DlBk-3), Great Northern Peninsula, Newfoundland. Since this is the first study of a single-component early Palaeo-Eskimo site in Newfoundland, most of the work consists of establishing the culture history. This is accomplished through a description of the basic tool kit of these people, their subsistence, and their settlement patterns. The data are compared to the results of other research in Newfoundland and placed in the culture historical framework of the early Palaeo-Eskimo period.

Although the term Early Dorset (Groswater) in a Newfoundland context first appeared in 1972 after a survey of the Gros Morne National Park, (Bishop 1977), it never became very popular until five years ago, during the excavation of the Cow Head site. At that time, Tuck (1978) applied the term Early Dorset to designate some strata of this multi-component site. We now have enough evidence to reinterpret that part of the culture history previously classified under the nomenclature "Typical Newfoundland Dorset" (Linnamae 1975). We define the characteristic tool kit of the early Palaeo-Eskimo during the first millennium

before the Christian era, highlight new evidence on their subsistence patterns, and speculate on their cultural origins. This study is also intended to lay the groundwork for future research on early Palaeo-Eskimo in Newfoundland and Labrador.

LITERATURE REVIEW

Even though Palaeo-Eskimos occupied a territory from Alaska to southern Newfoundland, this review will concentrate on the research done in Newfoundland and Labrador. However it is appropriate to discuss briefly the origins and the diffusion of Palaeo-Eskimo culture in order to put this review into a larger perspective.

Until 1925 most Arctic culture history was based upon data from the Fifth Thule Expedition directed by Knud Rasmussen. Upon receiving a collection of artifacts from Coats Island and Cape Dorset, Diamond Jenness, then at the National Museum of Canada, proposed the idea of a culture older than the Greenland Thule. On the basis of the degree of patination on the organic remains and the presence of gouged holes, Jenness (1925) suggested a greater antiquity for these artifacts. He specially used the presence of gouged holes by opposition to drilled holes to suggest that:

> "No tribe that had once known the bow drill would have forgotten its use. The Eskimos often employ it today in preference to the brace and bit. Its absence in the Cape Dorset culture proves

> that it was not one of the earliest invention of the Eskimos: the harpoon preceded it, probably also the kayak. If the Thule arose in the Bering Strait and spread eastward, as Birket-Smith believes, the bow drill perhaps came with it."
>
> (Jenness 1925:435)

While Jenness made a convincing argument in favour of the antiquity of this culture, the idea was not easily accepted. Once it was, however, further research concentrated on looking for the origins of Dorset culture. A polemic among Jenness (1928, 1929, 1933), Mathiassen (1927, 1930) and Birket-Smith (1930) soon began (Taylor 1959). Jenness argued (after his work in Newfoundland) that the roots for Dorset should be sought in the Beothuck culture while Birket-Smith suggested that the interior of the Northwest Territories was a more likely source. Mathiassen, on the other hand, maintained that Dorset was a locally-stamped phase of Thule (Taylor 1959). The idea of an Indian origin persisted well into the 1960's when Meldgaard (1960a, 1962) proposed again an Indian form of culture migrating north and crystallizing into an Eskimo-like culture. In the meantime Collins (1940) had rejected the proposition of an Indian origin in favour of an Alaskan and Eskimo origin for Dorset (Taylor 1959).

This brings us to a discussion of the nature of this Alaskan origin. When Collins (1940) suggested an

Alaskan origin for Dorset no probable parent cultures were known from the western Arctic. Later this argument was strengthened when Irving (1957, 1962) defined the ASTt (Arctic Small Tool tradition) on the basis of his collections, and collections from Alaska and the Eastern Arctic. Irving (1970) included Sarqaq, Independence I and pre-Dorset as regional variations of the ASTt sharing diagnostic traits with its progenitor, the Denbigh Flint Complex. Furthermore he suggested that Dorset seemed to be at least in part a regional derivative from the ASTt (Irving 1970:340). As a general description the ASTt material culture includes:

> "Special types of burins, small bifaces, side and end-blades, and microblades. In addition, most of the Central and Eastern Arctic cultures include some special types of knives and scrapers which elsewhere in the New World are known only from the Arctic Small Tool tradition of Alaska, and particularly the Denbigh Flint Complex."
>
> (Irving 1970:340)

In the same article, Irving suggested that the ASTt originated from the Aldan region in Eastern Siberia, early in the third millennium before Christ (Irving 1970:341). The other interpretation of the origin of the ASTt is through a continuous development of microlithic cultures in Alaska where the Denbigh Flint Complex dating 4500 years B.P. is the classic representative. The proponents of this scheme (Anderson 1972, Gal n.d.)

considered that even given the historical connection as reported by Irving (1970) such a large migration in such a widespread area seemed far fetched (Anderson 1979:20). Furthermore current data from Greenland (Knuth 1978) suggest that there is a phase from Greenland at least as ancient as the Denbigh Flint Complex. Knuth places that initial occupation of Greenland around 4,200-5,000 years ago preceding the mid-passage-hearth-using Independence I people.

The origins of the Dorset culture are still debated today. On one hand, McGhee sees initial peopling of the Arctic around 4,000 years ago by the Independence I, which he links to cultures from the Siberian neolithic or ancient northern Pacific cultures (McGhee 1976:18). Around 3,700 years ago, he suggests, the arrival of a second wave of population called "pre-Dorset" which is best represented in Low and Eastern Arctic regions. The comparison of his Independence I and pre-Dorset material from the High Arctic leads McGhee (1976) to propose that Independence I is a co-tradition alongside pre-Dorset. According to this hypothesis the latter group eventually replaced Independence I in the High Arctic and gave birth to the Dorset culture. On the other hand, Anderson (1970) suggests that based on the continuity of artifactual styles or types in successive complexes in the same regions we should include all the pre-Thule complexes in the ASTt. As a result the safest but

not necessarily conclusive explanation to account for the Dorset origin is to see this period as a slow in-situ development from earlier ASTt phases, themselves being offsprings of the Alaskan ASTt and ultimately related to the Siberian neolithic.

Explanations for the reasons behind the Palaeo-Eskimo eastward migration are still very speculative. Robert McGhee writes that their eastward expansion may have been facilitated by a warmer climate at the end of the post-glacial climatic optimum (McGhee 1974). The climatic argument is also used by Dekin (1969) to explain the rapid culture change between pre-Dorset and Dorset. Taylor's idea of the Eskimo economy can also be used to explain this rapid eastward migration:

> "Seen everywhere the Eskimo world is an economy that is omnivorous or tending to be so by which the band exploits a wide range of faunal resources-even man, if starving. Fundamentally Eskimo economy is neither inland nor coastally adapted but arctic (and to some degree occasionally sub-arctic adapted), and the degree to which species are exploited reflects primarily the environment, the faunal resources, and only secondarily an economic heritage.
>
> (Taylor 1966:118)

Both Taylor's idea of an adaptable Eskimo economy and McGhee's identification of a favourable climatic period can be seen as determinant factors in the rapid Eskimo expansion to Eastern Arctic.

Once the Dorset are brought to the Eastern Arctic how do we explain the pattern of Eskimo diffusion? An approach to this problem was suggested by Maxwell (1976) and partially supported by McGhee (1976) in the same volume. Essentially the concept of a core area as defined in Maxwell (1976) implies a resource rich region which supported a 2,500 year Palaeo-Eskimo cultural continuity for the Eastern Arctic. It encompasses both shores of Hudson Strait, the islands at its western mouth, the vicinity of Fury and Hecla Strait, northern Baffin Island, and at least southern Bylot Island (Maxwell 1976:5). In contrast to the core area, the occupation of the fringe areas was sporadic in nature and resulted from population expansions and contractions from and toward the core area. In this pulsating model the shifts of population are related to changing climatic conditions.

A reply to this approach of a single core area for the Eastern Arctic did not take long to come from the researchers working in the so-called fringe areas. For instance, there is considerable evidence of a cultural continuity for northern Labrador (Tuck 1975, Cox 1977, Archambault 1981). Furthermore, diagnostic early Dorset traits are reported to be earlier in the fringe areas such as the High Arctic (Helmer 1980) and Newfoundland (Tuck 1982). As a result of these researches, Maxwell has since qualified his diffusion model as less tenable (Maxwell

1980:168). Recent work has further shown that this concept of a single core area for the Eastern Arctic does not satisfactorily explain the early Palaeo-Eskimo diffusion.

Unsatisfied to work within the context of a loosely defined central core area for the Eastern Arctic, Cox (1978:114) postulated the presence of more than one core area. Cox's second core area to account for the cultural parallels between Independence I, Independence II, and Sarqaq on one hand and Labrador pre-Dorset and Groswater Dorset on the other would encompass the eastern High Arctic, Greenland, and Labrador. The argument he used to propose a second core area was that this eastern core area would be as resource rich as the central core area and therefore could sustain a stable population. Although Cox (1978:114) postulated an eastern core area, he did not preclude external contacts with the central core area. Instead he maintained that the geographical distance was not a factor separating the two populations, but interpreted the distinctiveness between the two areas as a result of differing adaptations to different environments and resources.

Even though Cox sees similarities in the material culture on a north-south axis from High Arctic to Northern Labrador, the proliferation of core areas is not a solution to him. He would rather work at a smaller scale by placing emphasis on regional development both within and outside of

the central core area. Then, he suggests, we may eventually find a number of regional centres of cultural development with a high degree of communication among areas.

To summarize, the published literature recognises the central and eastern Arctic Palaeo-Eskimos as belonging to the Arctic Small Tool tradition. This Eskimo tradition originated from Alaska through successive developmental stages, the best known being the Denbigh Flint Complex (Giddings 1964). It should be noted, though, that in a paper delivered in April 1983, Robert McGhee re-assessed this question of an Alaskan stopover from Siberia, since there are dates from the eastern Arctic known earlier than those from Alaska. In any case once established in the Eastern Arctic, the Early Palaeo-Eskimo did not take long to spread throughout the adjacent territories; they developed various regional branches, each retaining characteristics of the Arctic Small Tool tradition. The next section will discuss the aspects of the Palaeo-Eskimo once they started to inhabit Newfoundland and Labrador.

PALAEO-ESKIMO RESEARCH IN NEWFOUNDLAND AND LABRADOR

With the brief introduction presented above we will now review in more detail the Palaeo-Eskimo research done in Newfoundland and Labrador. Dekin's (1978) periodization of Arctic research can be adapted to the study of Newfoundland and Labrador Palaeo-Eskimo prehistory. The

first period prior to about 1970 is exploratory, the second, as Dekin puts it, is "a time of interpretation and synthetic flux" (Dekin 1978:159).

The pioneer accounts of Newfoundland archaeological discoveries go back to Lloyd (1875), and Howley (1915). Although they were searching for Beothuck remains, they did not discard the possibility that their collections were containing elements of an unknown origin; even possibly Eskimo. Following his identification of the Dorset culture, Diamond Jenness undertook a survey on the Great Northern Peninsula in 1927. Based on the similarity of the Beothuck and the Dorset bone industry, Jenness (1928, 1929) postulated close ties between the two cultures prior to the fifteenth century A.D. He suggested that contacts took place around Nain on the Labrador coast. No work was done in the area, however, except for that of William Duncan Strong (1930) who concluded that his "Old Stone Culture" in Labrador was ancestral to both Eskimos and Beothucks.

Shortly after Jenness' survey W.J. Wintemberg also visited western Newfoundland although an account of his 1929 research was not published for more than a decade (Wintemberg 1939, 1940). He reported on Beothuck findings and at the same time attributed much of his material to the Dorset presence. His main intent was to postulate Indian and Eskimo influences on one another.

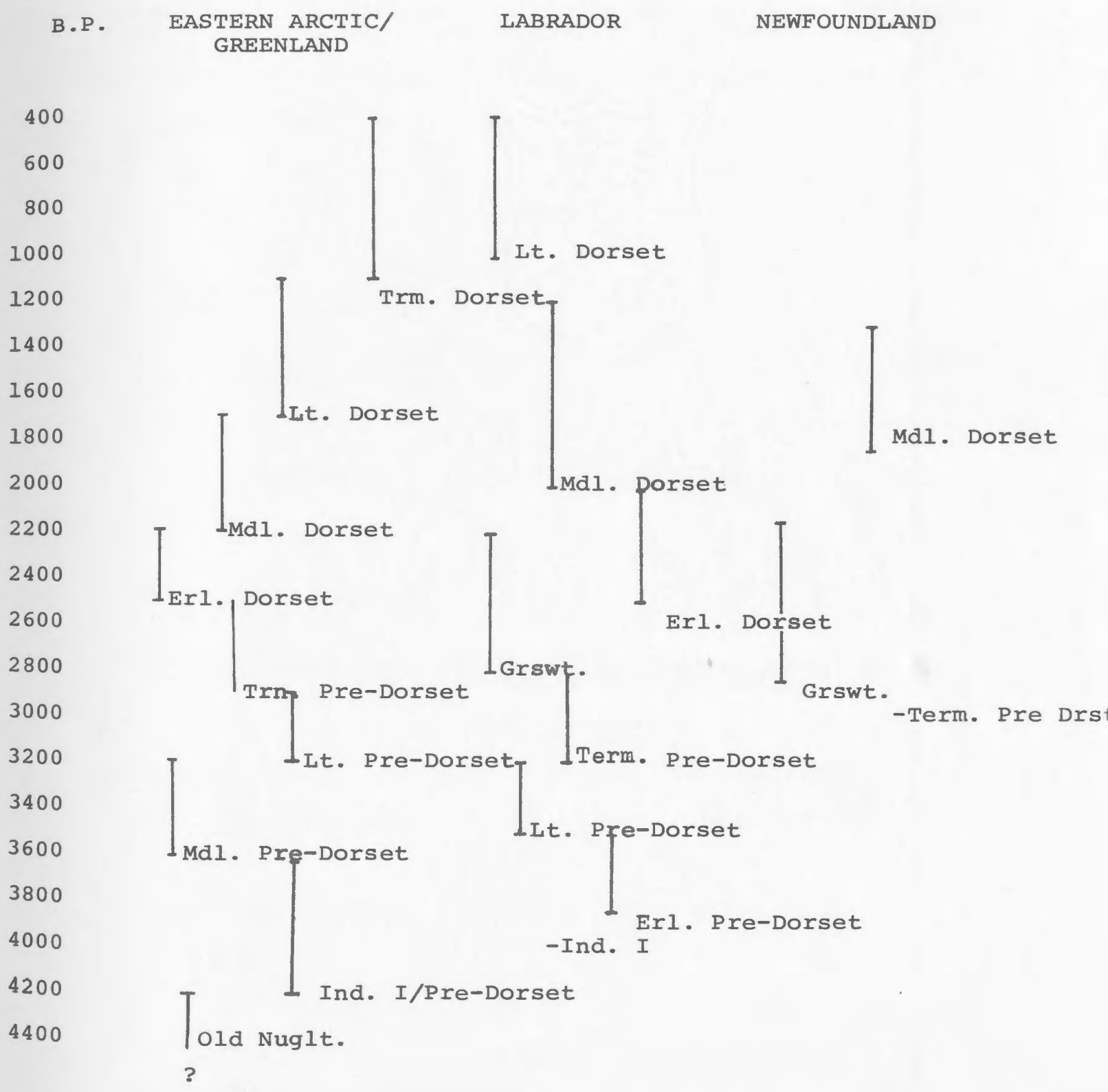
In 1945 Junius Bird described Thule and Dorset artifacts from Hopedale, Labrador and advanced the idea that Strong's Old Stone Culture had more affinities with Dorset culture than with the Indian culture. In the meantime Leechman (1943) suggested that the material from Port Burwell, Labrador, demonstrated that Dorset was an Eskimo culture. Wintemberg, Bird, and Leechman while reaching no conclusions, at least had opened the discussion regarding the Indian and Eskimo relationships of Dorset culture.

With the arrival of the 1950's the amount and the variety of archaeological research increased. Harp (1951, 1953) basically accepted Wintemberg's premises that the Dorset culture of that area had affinities with the Cape Dorset material and by expansion was of Alaskan origin. In his dissertation, Harp (1964) maintained that the Dorset and the Beothuck Indians had different origins and described an Eskimo culture which he called "Typical Newfoundland Dorset." This first period of Eskimo archaeological research in Newfoundland and Labrador terminated with the work of Devereux from White Bay to Bay of Exploits during the period 1964 to 1966. She located and excavated several Dorset sites in the course of her research on Beothuck. One of her Dorset sites was located further inland than any other Dorset site found so far on the island (Linnamae 1975).

The second period, that of interpretation and synthetic flux began with the work of Fitzhugh (1972) on the Labrador coast. He used an environmental approach to the study of Labrador culture history, which in effect combined the social and natural sciences. But as discoveries have accumulated the prehistoric peopling scheme has become more and more complex and the variations in chronology as well as in terminology have multiplied. A glance at Table I illustrates this clearly. Also included in this table is the corresponding chronology for Eastern Arctic and Greenland. One result of this research suggests that we might lump all the pre-Thule Eskimo phases in a single Palaeo-Eskimo tradition. Fitzhugh (1980a) suggests that we divide this Palaeo-Eskimo tradition into two major parts, an Early Palaeo-Eskimo and a Late Palaeo-Eskimo period. The Early Palaeo-Eskimo period includes Independence I, pre-Dorset, transitional pre-Dorset, and the Groswater phases. The Late Palaeo-Eskimo period can be divided into the Early Dorset, the Middle Dorset, and the Late Dorset phases.

TABLE 1

EARLY AND LATE PALEO-ESKIMO CHRONOLOGY FOR THE EASTERN ARCTIC, LABRADOR AND, NEWFOUNDLAND



INDEPENDENCE I - 3830 B.P.

The earliest evidence of Palaeo-Eskimo in the area comes from several small components at Saglek Bay, northern Labrador. Based on the small sample, Tuck (1975) hypothesized a small maritime oriented population having its closest links with the Independence I material from Greenland and the High Arctic. These similarities also suggest that the interaction sphere is on a north-south axis linking areas with similar resources -including the harp seal, whose seasonal migrations follow this axis. A radiocarbon date of 3830 B.P. shows their temporal proximity to the latest Maritime Archaic populations in the area, which they eventually remove from their niche. Briefly described their tool kit includes distinctive contracting stemmed and trianguloid endblades, frequently serrated, and a variety of thin asymmetric bifaces that are probably knives (Tuck 1975:140). The Independence I choice of raw material is peculiar; while they had the Ramah cherts and a variety of black cherts in the area, they preferred the vari-colored fine-grained cherts. Unfortunately, these stone tools are not associated with any architectural remains such as the mid-passage structures and upright slab fireplaces which are characteristic of the Independence I phase elsewhere. More recently Fitzhugh (1981) mentions finding such Independence I material at Bouviere Island- 3

site in Nain. He believes this site to be a candidate for one of the earliest Palaeo-Eskimo sites in Nain and perhaps in Labrador.

PRE-DORSET 3800-3100 B.P.

This seven hundred year period is usually divided into Early pre-Dorset and Late pre-Dorset but for the sake of shortening this review we will refer to it simply as the pre-Dorset phase, meaning that Palaeo-Eskimo phase preceding the Dorset, as the term was originally presented by Giddings (1956:265). After a survey of the literature it appears that the reason for dividing this phase into an early and a late stage is that through time we notice the appearance of new traits and the disappearance of others. Tuck (1975) reports for the beginning of the pre-Dorset phase that a diagnostic artifact sample comprises the bi-pointed and tapering stemmed points with serrated edges. On the other hand Cox (1978) describes the later stage of this phase as containing relatively large concave base triangular points, endblades with parallel sides instead of tapering stems and an absence of serration. The ground and/or notched burins from the later stage are lacking at the sites yielding early dates.

Tuck (1976a) with his radiocarbon date of 3830 B.P. postulates a 400-500 years occupation of the north Labrador coast by what he calls Independence I, while Cox

(1978) refers to the same period as pre-Dorset. Despite the overlap in terminology, Tuck (1975, 1976a), Cox (1977, 1978), and Fitzhugh (1981) agree that the Labrador pre-Dorset has strong typological affinities with the Greenland Independence I phase. These affinities also extend to subsistence and settlement patterns. Like the Greenland Independence I, the Labrador pre-Dorset emphasized the exploitation of inner bays and islands rather than the outer islands (Cox 1977:314). More specifically, Fitzhugh (1980a) suggests that the higher site density at caribou crossings corresponds to a strong reliance on land resources. In fact their subsistence and settlement patterns resemble those of the Maritime Archaic who preferred the more southerly wooded regions to the north Labrador coast. The typical pre-Dorset dwelling reported in Fitzhugh (1976b, 1977a) and Cox (1977) is a structure with an axial or mid-passage boulder pavement having a square hearth constructed with upright slabs. Again this compares very well to the Independence I phase from Greenland.

TERMINAL/TRANSITIONAL PRE-DORSET - 3200-2800 B.P.

The description of this phase as both "terminal" and "transitional" represents very well the state of our knowledge of this phase. Cox (1978) uses terminal to refer to the end of pre-Dorset while Tuck (1978) uses the term transitional. Cox identifies it as the final stage of

pre-Dorset before it is called Groswater/Early Dorset. In Newfoundland, Tuck (personal communication) refers to it as the earliest yet known Palaeo-Eskimo occupation on the island, having been typologically dated around 3,000 years ago. The data come from a collection at the Cow Head site where the structure consists of a cobble and stone slab mid-passage hearth containing diagnostic tools such as true spalled burins with surface grinding and bifaces often made of fine-grained colorful cherts (Tuck 1978:139). According to Fitzhugh (1977b) and Cox (1978), their subsistence and settlement patterns are essentially the same as the earlier Palaeo-Eskimo phases classified as interior-maritime. The presence of a later Maritime Archaic phase, namely Rattlers Bight, is suggested to be a factor of their low population density on the Labrador coast (Fitzhugh 1977b).

GROSWATER/EARLY DORSET - 2850-2130 B.P.

Originally defined by Fitzhugh (1972), Groswater Dorset is the last phase of the Early Palaeo-Eskimo period. It is essentially the same as what has been called Early Dorset in Newfoundland by Bishop (1977), Tuck (1978), and Auger (1982a).

It appears that Groswater/Early Dorset sites are rare in northern Labrador. Fitzhugh (1980a) writes that they are absent from the Torngat region but Archambault (1981) describes artifacts from Nunainguq which she compares

to Labrador Groswater Dorset, and Tuck (1975) reports on "Early Dorset" from Saglek Bay. Despite these traces found in the Northern Labrador collections, this culture is much better represented in more southerly regions. Groswater/Early Dorset sites are well known from Groswater Bay, central Labrador (Fitzhugh 1972), from southern Labrador (Fitzhugh 1982, Tuck 1982b) and from the adjacent Quebec North Shore (Martijn 1974). Recent excavations have also revealed a number of such sites from insular Newfoundland. Effectively elements that were previously interpreted as representative of the Early Dorset phase are now referred to as Groswater.

People of this phase left traces, though sometimes in small quantity, all around the island. There is now ample evidence from the west coast; the south coast (Penney 1981) and also the east coast, in Trinity and Bonavista Bays (Evans 1982, Robbins personal communication, Sawicki 1981, and Tuck 1982c, 1983b). Finally a recent examination of the lithic material from the L'Anse aux Meadows site allowed us to identify some elements of the Groswater phase in this collection.

Groswater/Early Dorset forms a homogeneous phase in terms of its tool assemblage. The appearance of new traits in the artifact sample which do not exist in the preceding Early Palaeo-Eskimo phases is the major criterion for the identification of this phase. For instance, the

chipped and ground burin-like-tool is fully developed at the beginning of this phase after it has passed through a series of modifications from the true spalled burin. Nonetheless, the sudden appearance of plano-convex side-notched, or "box-based" (Fitzhugh 1972) end blades is also a time indicator of this phase. Some other highlights of the Groswater/Early Dorset material culture as seen from Newfoundland are the use of fine-grained cherts as opposed to Ramah chert; and much importance is given to the blade industry which forms the largest tool class. The tip-fluting technique is unknown in this phase.

Data on Groswater dwelling types are rare, often as a result of disturbance by later occupants at the same locales. However, Fitzhugh (1976a) reports a subrectangular dwelling at the Buxhall site, Tuck (1978) refers to mid-passage hearths at the Cow Head site, and Auger (1982b) describes bi-lobate features from Factory Cove. We think their economy to have been similar to earlier Palaeo-Eskimo phases with an interior-maritime adaptation (Fitzhugh 1977b).

While the Groswater people maintained their way of life in Newfoundland until 2,100 years ago, they were replaced on the northern Labrador coast by a second Eskimo migration referred to as the Late Palaeo-Eskimo period, which is first dated around 2500 B.P. (Fitzhugh 1980a).

DORSET - 2500-400 B.P.

As mentioned earlier, the Late Palaeo-Eskimo period is usually divided into three phases, namely Early, Middle, and Late Dorset. It appears that the Early Dorset people came to Labrador about 2,500 years ago bringing with them a complex of traits resembling those from contemporaneous sites in northern Hudson Bay. While Fitzhugh (1980b) traces some elements of continuity from Early Palaeo-Eskimo to the Early Dorset phase, he interprets the Early Dorset arrival as a case of population replacement. Furthermore their arrival coincides with a cooling in climate after 3000 B.P. (Short 1978).

The Late Palaeo-Eskimo people represent a major change in the subsistence and settlement patterns in Labrador. As opposed to an interior-maritime subsistence system centering on the inner bays during the Early Palaeo-Eskimo period, the Dorset people maintained a modified-maritime system (Fitzhugh 1977b). This model parallels closely the later Labrador Eskimo economy. Fall and winter settlements were located on inner islands in semi-subterranean houses, but unlike the Labrador Eskimo who spent the cold season in units of 2-8 dwellings, the Dorset people established only a single dwelling at each fall/winter site. Spring activities were carried out in tent camps at the outer islands (Cox 1978).

Besides these adaptive changes we notice a preference for different raw materials. There is a substitution of Ramah cherts for the earlier Groswater/Early Dorset cherts (Fitzhugh 1976a); soapstone is also used, both in the manufacture of kitchen implements (Nagle 1982) and for art forms (Jordan 1979/1980, Thomson 1981, 1982).

Although Dorset culture is reviewed here as a whole, it should be pointed out that three phases of the Dorset culture can be distinguished on the basis of artifact typology. Even though there is still a minor gap between the two most recent phases (see Table I), it is thought to be the result of site sampling. Consequently, there is an Early Dorset phase between 2500-2000 B.P., best represented in Labrador by the appearance of the tip- fluting technique on end blades. This is transformed into the Middle Dorset around 2000 B.P., and the use of unifacial triangular endblades becomes diagnostic in Labrador until 1200 B.P. There is still a 200 year gap to fill between Middle Dorset and Late Dorset but the Late Dorset, distinguished by the use of the triangular concave base end blades, persists virtually until the arrival of the Thule people 4-500 years ago.

In Newfoundland the story seems somewhat similar since the publication of Linnamae's (1975) summary. Strongly influenced by Harp's concept (1964) of a "Typical Newfoundland Dorset" which develops a certain provincialism

in isolation from the rest of the Eskimo world, Linnamae proposes that the Dorset culture in Newfoundland spans the period from 2400 B.P. to A.D. 600-700. The peculiar traits of this culture are the presence of side-notched endblades along with tip-fluted specimens. However, recent data from Middle Dorset sites in Trinity Bay (Evans 1981, 1982, Robbins 1982) and from the west coast (Tuck and Auger 1983) and most importantly a reconsideration of radiocarbon dates lead Tuck (1982a) and Auger (1982b) to suggest a gap in the Newfoundland Eskimo occupation centering around the beginning of the Christian era; that is between the Groswater and Middle Dorset occupations.

PROBLEM STATEMENT

The reason for brevity in reviewing the evidence on Newfoundland Palaeo-Eskimo in the above section is that it is precisely this problem to which this thesis is directed. First the literature seldom mentions Palaeo-Eskimo manifestations in Newfoundland earlier than 2300 B.P. Accordingly Linnamae (1975) approaches her research within the accepted framework established for the Eastern Arctic. This framework implies a unique root for the Dorset culture which is manisfested as the Early Dorset from 2800 B.P. to 2300 B.P., the Middle Dorset from 2300 B.P. to A.D. 500, and the Late Dorset from A.D. 500 to A.D. 1300. Furthermore, since most of her dates fall in

the time span of the Middle Dorset from Eastern Arctic and her collections from two sites are comparable to the one from Port au Choix-2, as reported in Harp (1964), she arrives at conclusions similar to Harp who characterizes the Newfoundland Dorset culture as one displaying a "strong primitive provincialism" (Harp and Hughes 1968). However, in my opinion it seems that this "strong primitive provincialism" expressed by Harp and Hughes (1968) and conceptualized as the "Typical Newfoundland Dorset" by Linnamae (1975) exists for two reasons. First the scarcity of research between Linnamae's excavations and the publication of the Port aux Choix research resulted in a lack of material available to her for comparison, besides that presented in Harp's publication. The second reason is that the collections reported by Linnamae(1975) and Harp (1964) very likely come from mixed components, in at least a few cases salvaged from eroded and/or looted sites. As a result the studies reported by these two authors group too many traits in a loosely defined Middle Dorset phase.

While surveying in Gros Morne National Park in 1972, Bishop (1977) dicovered Palaeo-Eskimo material at Norris Point which to him seemed typologically older than any other Palaeo-Eskimo material from insular Newfoundland. Consequently he proposed the term Early Dorset for this material. Aware of this Early Dorset component reported for the west coast, Carignan (1975:133) speculated that his

Palaeo-Eskimo material from the Beaches site was likely to date as early as 2400 B.P. Even more recently Tuck (1978) reported on similar assemblages from the Cow Head site which he also named Early Dorset. Tuck's material was to a certain extent comparable to what he had excavated at Saglek Bay, Labrador and called Early Dorset as well (Tuck 1975).

From this date onward, the research on Early Dorset in Newfoundland and Labrador is of a confusing nature and one of the problems stems from the use of two terms applied to the same phases. Tuck's (1975) use of the term Early Dorset corresponds to Fitzhugh's (1972) appellation, Groswater Dorset. Cox (1978) epitomizes the terminological difficulties when he states that there is, as a result of his research in northern Labrador, good evidence to indicate that during the period from 3100 B.P. to 2700 B.P., there was a gradual transition in northern Labrador from Transitional pre-Dorset to an Early Dorset form termed Groswater Dorset. This Early Dorset manifestation lasted in Labrador until around 2,300 years ago (Cox 1978:104).

The above information should be sufficient to point out that:

(1) The concept of a single "Newfoundland Dorset" is erroneous, for it encompasses two Palaeo-Eskimo phases.

(2) The use of two different terms is applied to the same phase in Newfoundland and Labrador.

Consequently, following the discovery of a single component Palaeo-Eskimo site, a research proposal was presented by the author in April 1981 in which the stated purpose was to establish the cultural chronology at the Factory Cove site. In addition, it was intended to define Early Dorset in Newfoundland and to take advantage of an estimated late date for this Early Dorset material to investigate the nature of its influences on Middle Dorset. With some slight re-adjustments following the actual fieldwork, these are essentially the problems addressed in this thesis, except with respect to the possible influences of the Groswater/Early Dorset on Middle Dorset as suggested in Fitzhugh (1980b); this part of the research is deemed unfeasible since we failed to locate any traces that could be used without reasonable doubts to link the two phases. Instead, after a reconsideration of the radiocarbon dates from the west coast of the island, a 200-300 year gap is proposed to exist between the end of the early Palaeo-Eskimo and the beginning of the Late Palaeo-Eskimo period (Tuck 1982a, Auger 1982b). Consequently with reference to Fitzhugh's (1980b) proposal that Groswater Dorset contributes to the "Typical Newfoundland Dorset" now simply called Middle Dorset, it appears that it is not substantiated by this research. However as a result and for consistency we have decided to apply the term Groswater without the suffix Dorset to refer to the Factory Cove

assemblage. The adoption of this term is based on the premise that the Groswater phase is the last phase of the Early Palaeo-Eskimo period as seen in Labrador (Fitzhugh 1980a) and in Newfoundland (Tuck 1982a).

Shifting the Groswater phase to the terminal portion of the early Palaeo-Eskimo period involves a certain re-interpretation of the Newfoundland and Labrador Palaeo-Eskimo prehistory. Furthermore, it shows that there is clearly more than one approach to the study of Palaeo-Eskimo culture history. The questions that remain are: What is the nature of the Groswater phase? Was it really a transitional phase leading into the Dorset period? Or instead was it the last phase of the Early Palaeo-Eskimo period? As a reminder it is essential to analyze in detail what we know of the period preceding the Groswater phase in Labrador. This will constitute at the same time our theoretical framework.

THEORETICAL FRAMEWORK

We reviewed earlier the concept of a "core area" discussed in Maxwell (1976) to account for the diffusion of the Palaeo-Eskimo into the Eastern Arctic. McGhee (1976) refined that concept further for the High Arctic to suggest that Independence I was a co-tradition along with pre-Dorset. In this scheme the Independence I did not last long in the High Arctic and was replaced by the pre-Dorset

phase. The stronghold of this pre-Dorset phase centered around Maxwell's (1976) "core area" and eventually gave birth to the Dorset.

With this replacement hypothesis there is the problem of including the distinctive Groswater phase in this continuum. Even though Groswater and Early Dorset in Labrador show some contemporaneity for three centuries from 2500 B.P. to 2200 B.P., they are basically two distinct Palaeo-Eskimo phases. Further it has been demonstrated earlier by Cox (1978) that the arrival of Early Dorset in northern Labrador coincided with the disappearance of the Groswater phase from this coast, and at the same time a higher Groswater concentration is noticed in more southerly regions. Thus I propose that Groswater is a remnant Early Palaeo-Eskimo population that was there before the arrival of the Late Palaeo-Eskimo.

There are some problems if it is maintained that the Groswater phase is the transition between pre-Dorset and Dorset (Cox 1978), since we have seen that pre-Dorset in Eastern Arctic developed into Dorset and that Groswater and Early Dorset are dissimilar and discontinouus on typological grounds. The root of the problem might lie in the beginning of the Early Palaeo-Eskimo period in northern Labrador. In fact the earliest Palaeo-Eskimo remains from this area were more often than not referred to as pre-Dorset by Fitzhugh (1976a), even if Tuck (1975) considered his material from

Saglek Bay to be typologically comparable to Independence I. It seems that the reason for Fitzhugh (1976a) to call it pre-Dorset was for the contemporaneity of his material to other Palaeo-Eskimo remains termed pre-Dorset in the adjacent Eastern Arctic territory.

Incidentally, in a recent correspondence Fitzhugh reaffirmed that there is no difference between the Independence I and the pre-Dorset in Labrador. Therefore, Tuck's (1975) hypothesis of a typological link between his Saglek Bay material and the Greenland Independence I might find more acceptance from others than Cox (1978). Furthermore, to accept a link between Greenland Independence I and Groswater would necessarily help to explain the marked difference between the Groswater phase and its partly contemporaneous but dissimilar early Dorset phase which appeared in northern Labrador around 2500 B.P.

In summary, the above information allowed us to formulate the following hypothesis. If the Factory Cove assemblage effectively represents the last phase of the Early Palaeo-Eskimo period, then one should be able to trace it back to earlier phases in the Early Palaeo-Eskimo period. If it is not the last phase of the Early Palaeo-Eskimo period but rather a transition between pre-Dorset and Dorset, one should therefore be able to see some traces of it in the Late Palaeo-Eskimo period in Newfoundland.

CHAPTER II

CASE STUDY

ENVIRONMENTAL SETTING

Three physiographic zones were readily exploitable by the people living on the Cow Head Peninsula around 2500 years ago. These were the plateau, the coastal lowlands, and the Gulf of St. Lawrence.

The Long Range Mountains form a barren rocky plateau with summits ranging over 700 m. This relatively flat surface slopes gradually to the southeast and its western side is deeply carved by glacial valleys. The vegetation is a stunted, open and patchy or sometimes continuous cover of black spruce and balsam fir, alternating with moss-and-heath, or rock outcrops on a generally featureless, windswept terrain (Rowe 1977:61). This sub-Arctic environment offers a habitat for the caribou, and a few small mammals such as hare and fox. The numerous lakes of the plateau abound with fish and with migratory birds nesting on their shores in summer.

The second physiographic zone of importance to us is the coastal lowlands, in which the Factory Cove site is located. These lowlands constitute the western coastal plain stretching from Bonne Bay to St. Anthony. Sometimes its width is modified where the advance of the Long Range

Mountains terminates in steep cliffs at the shore; the coastal plain is around ten kilometers wide at Cow Head. The lowlands are underlain by relatively undeformed Paleozoic sedimentary rocks which fault against Pre-Cambrian crystalline rocks or highly folded Paleozoic rocks of the highlands area (Loring 1973:15).

According to Rowe (1977:59), the Northern Peninsula lowlands support a boreal forest. While the closed forest grades into the open lichen-woodland of the forest-tundra transition at L'Anse aux Meadows, the shrub, fir, and spruce grow on a thin cover of glacial drift. The drainage system is a series of low-gradient rivers draining the foothill lakes; usually shallow peat bogs are a common feature of this poor drainage system.

Finally the third important zone is the Gulf of St. Lawrence. Its waters, cooled by the Labrador current, would have been particularly important to the Palaeo-Eskimo people. Cold currents coming down from Baffin Bay bring with them the seal herds that constituted the pillar of the Palaeo-Eskimo economy. The osteological remains from the 1976-1978 seasons of excavation at Factory Cove reported by Stewart (1979), indicate that the harp, ringed and bearded seals were the main part of the diet.

CLIMATE

Newfoundland's climate is constantly moderated by the influences of the Atlantic Ocean. Coastal Newfoundland is the meeting place of the Labrador current, the Gulf Stream, and the Gulf of St. Lawrence. The mixture of cold and warm airs produces a variety of local and regional climates with fog as the common denominator. Accordingly, Loring (1973:18) classifies the Northern Peninsula climate as sub-Arctic. The area is characterized by a cold, snowy, long winter, with temperatures ranging between minus 6-17 degree centigrade for January, while the summers are cool, wet, and short, with a mean July temperature between 13-16 degree centigrade.

QUATERNARY EVENTS

The Wisconsin glacial history for Newfoundland was still poorly known during the first half of this century. The interpretation at the time was that the Labrador ice sheet had covered the island entirely. Even though there is still work to be done on this subject, the theory of an independent ice cover for Newfoundland became generally accepted during the 1970's. Grant (1977:249) synthesizes the data this way: The theory of an independent ice cover for Newfoundland appeared around 1940; this was in opposition to the former theory that a Labrador ice sheet had influenced the island at the maximum Wisconsin. With

new mapping in the early 1960's, geologists obtained convincing evidence to demonstrate that the Labrador ice sheet had invaded only the lower part of the northern extremity of the Northern Peninsula (Grant 1969). Grant (1969, 1972) re-evaluated his previous data concluding that the moraine complex on the western Lowlands was constructed by the piedmont glaciers coming down from the Long Range Mountains during the re-advance circa 11,000 years ago, and that no evidence of a Laurentide ice cap was found.

Finally Brooks (1969, 1970, 1974, 1975) proposes that Newfoundland had its own ice sheet which, after the marine incursion, made a final re-advance circa 12,750 years ago. It is likely that the Gulf of St. Lawrence waters between the Maritimes and Newfoundland stopped the influence of the Laurentide ice sheet, except for the crustal warping.

Geological studies dealing with earth rheology, isostasy and, eustasy are still in progress for some areas. Nevertheless recent works on the west coast shed light on what occured during the recent glacial phase. Grant (1972:102) suggests as a result of his study of the palaeo-shorelines that, for the region comprising the Maritimes and Newfoundland, the maximum marine inundation varied from 128 m to 69 m above present sea level. The upwarp decreased exponentially from 430 cm per century shortly after de-glaciation to 14 cm per century in the last few thousand years. On the basis of submerged holocene

features, Grant (1980:212) proposes that the southern part of the zone comprising the Maritimes and Newfoundland is in a wave of subsidence, brought by stability or slight renewed transgression, while the northern part of the Gulf of St. Lawrence is now completing its uplift. We cannot infer too much for the Factory Cove locality from these data. It is about half way between the northern part of the Gulf and the Maritimes, in a zone considered to be near isostatically stable. The present site elevation above sea level is 7.5 m at its lowest point and, if we use Grant's (1972) scale for the isostatic rebound and not counting the eustatic rise of sea level, it suggests that the site when occupied was 3.5 m lower than today.

FACTORY COVE (DlBk-3)

The extended surrounding of the site (Fig. 1) is a tree-covered peninsula protruding in the Gulf of St. Lawrence. The site locality itself, at 49 o 55" North and 60 o 10" West, is a fairly level terrace formed by sediments of the Middle Cambrian to Lower Ordovician. James (James et al.1980:20) observes that the sediments consist of a relatively thin sequence of limestone breccias, with interbedded lime mudstones to grainstones, calcareous sandstones, siltstones and shales. The breccias were transported from a sedimentary basin to the east and deposited into a shallow water carbonate bank to form

fourteen well defined beds. Of these beds, which now appear obliquely, James (James *et al*. 1980) identified four containing some chert. It is very likely, then, that the availability of cherts in outcrops as well as on the beach was a determinant factor in the Palaeo-Eskimo exploitation of the area.

The campsite location would have offered both a good view out into the Gulf and at the same time protection against the northerly and easterly winds. Although the edge of the terrace is continuously eroding, the lowest point of the terrace containing *in situ* cultural remains is 7.50 m above sea level, while the highest point, where a one-metre square was dug at the back of the site, is around 11 m above sea level. Vegetation consists of grass and moss covering seventy percent of the surface while the remaining thirty percent is a growth of spruce and fir. Fresh water is readily available nearby since the higher grounds drain into a bog which delimits the northeastern part of the site. The bog is wet throughout the year and a surplus runs on the surface after heavy rainfalls. The estimated surface of the site is 13.2 ares of which 1.6 were excavated, totalling 12 percent of the surface.

METHOD OF EXCAVATION

The 1981 excavation represents a continuation of the work started in 1976 when James A. Tuck, Memorial

University of Newfoundland, discovered the site. Since the grid was still in place, we decided to use the same grid lines and datum. In addition to the systematic excavation, we selected a number of locations to sink 50x50 cm test-pits. Those test-pits (Fig. 1) were later used to delimit the extent of the artifact distribution at the site. Their locations were selected to include potential localities for setting up a camp as well as a representation of different elevations and distances from the edge of the terraces.

Although the one-metre grid was used, the excavation unit was a two-metre square. All formed artifacts were recorded to the nearest centimetre and by natural level. The debitage was picked up by fifty centimeter quadrant according to its natural level. Besides mapping the non-movable features such as stone dwelling features, hearths, and storage boxes, a daily photographic coverage of excavations was maintained. The stratigraphic profiles throughout the site supplement these data.

Since one of the aims of this project was to define this enigmatic Palaeo-Eskimo phase on the island, we attempted to gather the maximum of information on all aspects of the settlement community. To this end, systematic excavation was carried out at five areas using methods currently used in Palaeo-Eskimo archaeology.

Accordingly, we started the excavation of the

previously identified Area I (Fig. II) contiguous to the eroding terrace. Area II to the south of Area I, was opened next for the possibility of its yielding a semi-subterranean house, as suggested by Tuck (personal communication). Further south, test-pitting to delimit the artifact distribution, revealed a depression circled by three bedrock outcrops and designated it Area III. To the east seven metres from the edge of the trees, a few meters were opened in Area IV. These were at a higher elevation than the three previous areas. Finally, the one-metre square in the forested area is numbered Area V. These divisions are arbitrary and do not correspond to any archaeological entities. Instead their selection was aimed to sample a broad horizontal and vertical distribution.

CHAPTER III

RESULTS OF EXCAVATION

AREA I

The 1981 excavation in Area I (Plate I, Figure III) is contiguous to the area dug in 1976 and 1978. The recent work was designed after observations bearing on the artifact distributions from the previous seasons. We concentrated on the southeast portion of Area I although additional work was carried out north of this area. The latter surface was considered to offer the best chance of discovering defined habitation features.

Except for the previous work on the artifact distribution, we had no indication of what the excavation was going to yield. The surface was a flat grass cover without any apparent stone configurations. Upon removal of the sod level, a thin discontinuous pebble lens appeared, underlain by a dark brown humus and some limestone rocks and boulders. Altogether, 50 one-metre squares were added to the 42 already dug bringing the total to 92 for the Area I. The results shown on Figure III combine the locations of stones from all strata for the three seasons as well as the natural features of the terrain. When identified during the excavation, the stone patterns interpreted as originating

from human activity were given an arabic number for the fireplaces and the storage boxes while the habitation remains were given a capital letter. Since the work was carried out at more than one location at a time, the numbering is not consecutive for one area. For the profiles, we gave an even number to the humus-bearing strata and an odd roman number to the humus-free strata, such as the pebble and/or sand lenses. When there was more than one such stratum, a small letter was added to the roman number.

STRATIGRAPHY

The stratigraphy at Area I, is graphically displayed in Figures IV to VI; The legend is presented in Figure II. Stratum I is the present sod with an average thickness of 8 cm. Stratum Ic, at the base of the sod, and within stratum II is a discontinuous angular pebble lens. Stratum II is a brownish humus averaging 10 cm in thickness and present throughout Area I. There is a noticeable pattern of these discontinuous angular pebble lenses (Ic) within stratum II. Stratum III is a local gravel lens. Stratum IV is a black stained humus averaging 4 cm in thickness; it contains flecks of charcoal. Stratum IVa is also a black stained humus but it is localised underneath the gravel lens numbered III and sits on the original beach surface. The sterile stratum V is a mixture of angular pebbles, with limestone blocks piercing through it.

In summary, stratum IVa is stratigraphically the earliest occupation layer. Its component is tentatively considered to be earlier than the ones from the strata II and IV. Stratum IV was first identified in the profile of a fireplace; its sporadic horizontal distibution and its charcoal content suggest that it represents the remains of combustion areas within stratum II. Stratum II is the result of an intensive occupation in which the cultural content results from repeated uses of the area by closely related people, and shows a high degree of homogeneity. The pebble lenses within Stratum II may have come from the decomposition of building material such as sod blocks.

It was difficult to identify preserved architectural remains, probably because in the intensive occupation at the site building material was repeatedly borrowed. As a result we were left with numerous stone patterns imbricated into each other. They were associated throughout area I with a dark brown humus called stratum II, which was darker close to the hearths and numbered level IV. In general level IV contained bits of wood charcoal and red ochre. Faunal remains were rarely preserved except for a zone where they underlay a charcoal concentration.

FEATURE 1

Feature 1, interpreted as a fire place, is a rectangular stone alignment 1.6 m wide. It includes some

football sized stones on the sides and front, and two larger flagstones found in an oblique position at its back. The combustion area (Figure IV) contains some wood charcoal in a black humus stratum. It is placed over a fine grained sand.

STRUCTURE A

Even though our interpretation must be cautious whenever we deal with multiple occupations, structure A is interpreted as some form of tent ring resting on the upper stratum. It is tentatively associated with a hearth (Feature 1). This tent is roughly square in outline measuring 4 by 4 m, and it is identified from the stones forming its outline, which are larger than those occuring naturally in the immediate vicinity.

FEATURE 4

This 50 by 50 cm square deep stone configuration resembles a storage box of the type commonly associated with the Palaeo-Eskimo. Although its excavation did not reveal any conclusive evidence to support that assumption, its location towards the edge of Structure A suggests that it is associated with that occupation.

FEATURE 5

Feature 5 was defined on the basis of a concentration of wood charcoal and fire-cracked rocks

located at the base of stratum II (Figure XV). It measured 1 by 1.25 m, and no structure was associated with it. The abundance of charcoal seems to have been a determining factor in the relatively good bone preservation underneath. The radiocarbon determination of 2100 ±60 B.P. (Beta 4046) for this feature is our latest at the site (see Table II).

FEATURE 6

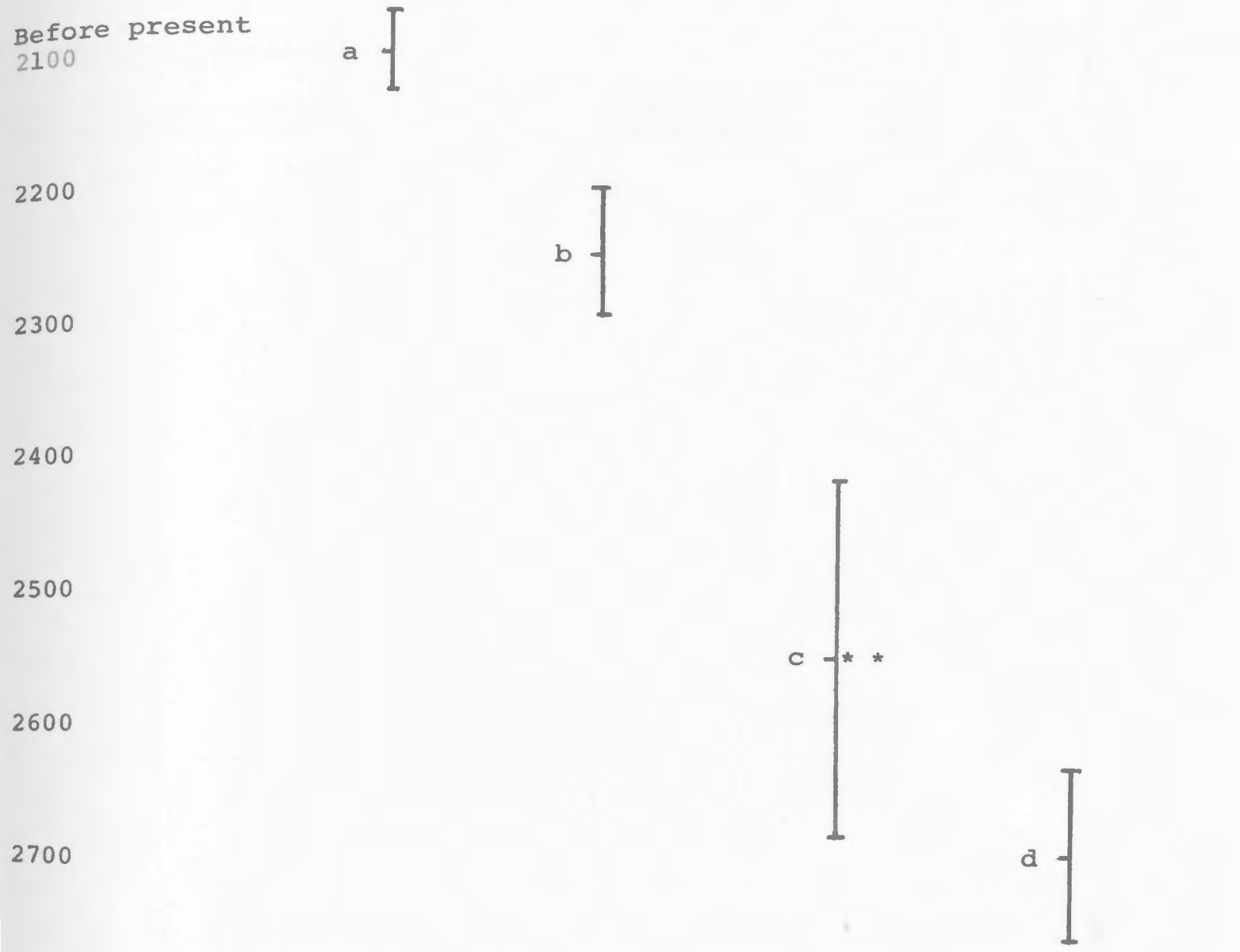
Feature 6 (Figure III) is an amorphous concentration of fire-cracked rocks and charcoal. It measures 1 by 0.75 m. Even though it is partly resting within the limits of Structure B, it is believed that it results from an occupation prior to that of Structure B.

FEATURE 11

Feature 11 (Figure III) is also an amorphous concentration of wood charcoal and fire-cracked rocks that were part of a fireplace. It is roughly 75 by 75 cm in diameter and rests on the original beach surface. Its origin is attributed to a previous occupation which was eventually disturbed by later occupants. As in the case of Feature 6, there was little information to be gained from Feature 11.

TABLE II

RADIOCARBON DATES FROM FACTORY COVE (D1Bk-3)*



a- Beta 4046 N4/E7, N5/E7, Area I, Feature #5, 2100±60 (380BC-AD15 cal.)

b- UQ 409 S27/E7, Area III, Feature #12, 2270±100 (595BC-155BC cal.)

c- UQ 413 S18/E3, Area II, Feature #7, 2530±280 (1320BC-25BC cal.)

d- Beta 4047 S2/E5, Area I, Feature #14, 2700±140 (1235BC-580 cal.)

Note: * Libby half-life of 5568
** The larger-than-usual statistical error is due to small sample size.
Not included is UQ 407 10,960±140 B.P. from the Feature #3.

FEATURE 3

This is a flat stone pattern measuring 60 by 80 cm across; its dimensions coupled with the presence of fire-cracked rocks suggest a fireplace. Furthermore, profile 4 (Figure V), which cuts across its centre, shows the black stained humus stratum containing wood charcoal. Although the outline of this hearth is well defined, we failed to identify any definite dwelling associated with it. Unfortunately the apparently reliable wood charcoal sample produced a radiocarbon determination older than the terrace itself (see Table II).

STRUCTURE B AND FEATURE 14

Structure B and Feature 14 (Figure III) were identified during the excavation as a bilobate dwelling with a mid-passage hearth. The dwelling outline was defined by a stone pattern bordering two lobes free of stones on both sides of the hearth. The dimensions of this habitation were 4.40 by 2.60 m. The hearth associated with this habitation and numbered Feature 14 (Figure V) rested directly on the original beach surface. Owing to its low stratigraphic position, observed during the excavation, it was interpreted as the earliest occupation for that area. A radiocarbon date of 2700±240 B.P. (Beta 4047) from this feature confirmed our original interpretation.

FEATURE 15

Brief field examination of the artifacts coming from this feature revealed a slightly different chipping technique. Consequently, the lower stratigraphic position of this feature plus the peculiarity of the chipping style make us believe that it represents a part of the initial occupation of Area I. A closer analysis of the tools from this zone (level IVa) should confirm this working hypothesis.

Preliminary interpretation suggests a relatively intensive Palaeo-Eskimo occupation spanning the period from 2700 ±140 B.P. (Beta 4047) to 2100±60 B.P. (Beta 4046) for Area I. It is best represented by the thick cultural level II and its black stained cultural level IV. This main occupation of Area I is preceded by a short term occupation, level IVa, which is likely to be ancestral to the cultural levels from above.

AREA II

Excavation of Area II was our second priority for the 1981 season. This area was reported after Tuck's exploratory work as being the possible location of a semi-subterranean house. The idea of digging such a feature was indeed very appealing since previously recorded Early Palaeo-Eskimo sites in Newfoundland reported only surface dwellings. It was a shallow depression bordered by an

almost imperceptible ring that had led Tuck to hypothesize a semi-subterranean feature for Area II. Besides this feature the topography did not have any additional indications of a structure. Generally speaking the surface vegetation was a grass cover with some moss in the centre of the depression where it was more humid. We proceeded to excavate starting from the outside of the depression and moving towards the inside, leaving two baulks crossing at the centre (Figure II) in the eventuality of a habitation dwelling. It was assumed that by starting to excavate one quarter of the apparent house, we might identify more easily the limits of two walls.

Once the sod was removed, we met a dark brown humus containing some cultural remains and different sizes of stones scattered throughout the 33 one-metre squares. Their plan (Figure VII) included the stones sitting on all levels as well as the bedrock outcrop. At first it was disappointing not being able to identify any meaningful stone patterns consistent with the hypothesis of a semi-subterranean dwelling. But as we pursued the excavation by natural levels we were able to distinguish a ring of loose humus mixed with sand (stratum IIb), shown on profiles 5 and 6 (Figure VIII).

STRATIGRAPHY

We can tentatively propose two periods of occupation for Area II. The earliest is represented by a depression in the original beach surface delimited by a raised loose earth ring. This was followed shortly after by multiple occupations in surface dwellings, creating the thick cultural level II and level Ic.

The stratigraphy in Area II (Figure VIII) differed slightly from what obtained in Area I. Stratum I is the actual sod, averaging 9 cm in thickness. Centering towards the north of Area II is the discontinuous stratum Ic at the base of stratum I. As in Area I, stratum Ic is composed of angular limestone pebbles and is 2 cm thick. Stratum II is a brownish humus level throughout Area II and varies in thickness from 6 cm to 16 cm. It becomes darker, owing to its charcoal content, around the hearths, and there is named stratum IV. Stratum IIb is sporadic and can best be described as a mixture of sand and humus.

STRUCTURE C

As mentioned earlier, this structure is not delimited by any stone pattern. However, its shape is recorded by the presence of decomposed building material, as seen on profiles 5 and 6 (Figure VIII). Its shape (Figure VII) is more or less square, with the approximate dimensions of 3 m by 2 m It is likely that the bedrock outcrop was a

determining factor in the location of this dwelling. Even though it is hard to pinpoint the hearth emplacement with certainty it may have been placed where the bedrock outcrop raises abruptly, since some wood charcoal and fire-cracked rocks were located on the structure floor in this zone.

FEATURES 2, 9 AND 16

These features are much alike, and bear very little information. They are the remains of former combustion areas as represented by the concentrations of black stained humus with bits of wood charcoal, fire-cracked rocks and occasional small stains of red ochre. The amorphous condition of these features prevents any estimation of their dimensions, and we cannot with any certainty associate them with any architectural remains.

FEATURE 7

This feature did not reveal much more information than the three features previously described except for the fact that it is radiocarbon dated to 2530 $\pm$280 B.P. (UQ-413; see Table II). Again, it is a concentration of fire-cracked rocks and wood charcoal but in this case it is located against the outcrop. Since the sample was resting on Stratum II and the dating fell within the range of the estimated intensive occupation at the site, this probably represents the occupation in the upper level in the northern

portion of Area II. Feature 7 is located outside the limits of structure C and we can only conjecture that feature 7 was associated with a possible surface dwelling to the west of structures C and D, or was simply an outdoor hearth. If it was the fireplace of a surface dwelling, it appears that the later occupants scavenged the building materials of this postulated dwelling and obliterated any trace of it.

STRUCTURE D

Structure D is a bilobate dwelling with a mid-passage hearth, probably opening towards the north. It was not identified as such during the excavation but was suggested after various classes of data were combined. Not only was there a stone configuration (Figure VII) to define the structure, but a higher debitage frequency within the limits of this pattern was noticed during the excavation, a charcoal concentration showed on profile 6 (Figure VIII) was found in its centre. This pattern measured 4.7 m by 3.0 m.

FEATURE 8

The location of feature 8 in the wall of structure D was reminiscent of the association of feature 4 with structure A in Area I. As a result, Feature 8 was interpreted as a storage box. It measured 50 by 50 cm across and was made of flat stones placed in a circular outline. The interpretion of this feature as resulting from

the occupation in structure D results from the fact that when it was built, feature 8 was slightly dug into the previous Level IV. Thus this level surrounded feature 8 but was absent in the inside. Another peculiarity of this storage box was that it had been filled with lithic raw material, which is interpreted as the material being stored.

In retrospect we were able to identify a first period of occupation that left a slight depression (Structure C) along the bedrock outcrop and probably took advantage of this outcrop. Contemporaneous with structure C were features 2, 9 and 16. Thereafter, feature 7 represents the second period of occupation of area II, as do structure D and feature 8. If we trust the frequency of debitage to reflect the intensity of occupation, it seems that the northern portion of area II was as heavily occupied as area I. However, the frequency of debitage from the southern portion of this area is lower. Consequently it suggests that the northern portion of area II best represented by structure D and features 7 and 8 corresponds temporally to the phase of occupation previously depicted as cultural level II in area I. On the other hand, the southern portion of area II, represented by structure C, would slightly predate the occupation represented by structure D and the features 7 and 8.

A summary of the building materials and the techniques used in the construction of the dwellings seems

appropriate here. The stratigraphic data suggest that two types of material were used for two types of dwellings in Area II. During the first phase of occupation, when structure C was built, we found the traces of a homogeneous matrix of sand and humus numbered IIb. It seemed that the Early Palaeo-Eskimo had selected this emplacement for the presence of a thick level of sod in this zone. Its proximity to the bedrock was likely another important factor, as mentioned earlier. Unlike the sod blocks used in the surface dwellings as in Area I (or for that matter structure D), the sod blocks used in the building of structure C were probably from the same zone on which structure C was erected. We noticed during the excavation that the surroundings of the outcrop tended to be less well drained than more distant areas. Owing to the dampness around the outcrop and probably its thermic effect, the sod tended to be thicker. Consequently when the blocks were cut out, they did not catch the angular pebbles on the original beach surface as did the thinner sod slabs cut from the bog.

The other technique of construction, as represented by the remains of structure D, seemed to involve placing the stones and sod blocks on the surface without previous excavation of the surface. Furthermore an experimentation at cutting out sod blocks from the adjacent bog (Figure I) showed that a lot of pebbles similar to the ones from level Ic came with the roots. This experiment

suggested to us that the bog was probably the source of the blocks used in structure D. The presence of level Ic as evidenced in the vicinity of structure D suggested a certain architectural contemporaneity with the surface dwellings described for area I.

AREA III

The discovery of area III resulted from systematic test pitting, intended to delimit the extent of the occupation at Factory Cove. Two bedrock outcrops separate it from area II and the vegetal cover is a mixture of moss and grass 50 cm lower than the surrounding grounds. Since the surface is lower and surrounded on most sides by outcrops, it tends to catch surface water after heavy rainstorms. The water-saturated milieu surrounded by limestone outcrops made this area a likely unit to yield good organic preservation.

The initial test-pit through the 40 cm thick decomposed peat level revealed the presence of some bones, wood charcoal, artifacts, and a few flakes. The presence of artifacts with very few flakes made the area very appealing after the experience of recovering thousands of flakes from areas I and II. Therefore we proceeded to open a full two-metre square around the test-pit in order to detect any pattern of artifact distribution. As Figure IX shows, this excavation was then expanded to include 23.25 other

one-metre squares. They were not especially productive in artifactual remains but yielded data on the type of house construction the Groswater people practised.

First thought to be a semi-subterranean dwelling, the structure in this area now appears to represent a single occupation in a "lean-to" type dwelling. Two stratigraphic profiles in the walls of the structure and an inventory of the features do not indicate more than one occupation. While the back of the structure consists of a low stone wall, the front does not seem to have had hold-down stones. If the habitation was effectively a "lean-to" type dwelling, it would explain the absence of any hold-down stones to the east of it, which was the front of the dwelling. This side was probably made of semi-movable materials such as hides which were probably tied to the ground with stakes when necessary. We also have evidence of two combustion zones discovered along the outcrop, as well as a food cache. Unlike the two previous areas, area III has a very impermeable clay sub-stratum which impeded the drainage in the area; this also probably explains why the occupants raised the back of the structure, and used the bedrock ledge to make a sleeping platform.

STRATIGRAPHY

The stratigraphic data from area III are of special interest if we want to understand the construction

techniques of the dwelling. The centre of the dwelling comprises the cultural level, stratum II, which is a thin dark brown humus buried under a 40 cm thick peat. Stratum II becomes more enlightening when we look at the profile of the southern portion of the dwelling. If we start at the base of profile 8 on Figure XI, stratum II is the same as at the centre of the structure, a thin, dark brown level. Stratum Ie is a brown organic matrix, while stratum Id is a mixture of clay and sand. The thin stratum Ib represents the leaching at the base of stratum I, which is the sod.

It might be difficult to conceptualize on paper but the reconstruction of the lean-to dwelling seems to be as follows: Once the Palaeo-Eskimo people decided to build a dwelling in Area III, they started to cut the thick peat level circled by the bedrock outcrops. As they cut through it, they met some stones previously fallen from the outcrop which they used to erect the west wall, while the peat blocks were stacked on the south wall. This suggestion of a sod wall to the south came after we uncovered the buried organic brown level Ie shown on Figure XI. This level is believed to originate from the decomposition of sod blocks stacked on the south wall. As they reached the clay level, they dug some of it which they put on the outside of the south wall, forming a low wall of peat and clay. When they left the area, erosion brought down towards the centre of the depression first the peaty portion of the wall (level

Ie), and later on, the clay (level Id) which had slumped on top of it. Thus, on profiles 8 and 9 (Figure XI) the cultural level II is buried under the slumping of a peat level Ie and a clay level Id which had been stacked on the southern portion of the dwelling. To the west, cultural level II was buried under the stones when the wall collapsed.

STRUCTURE E

Structure E is approximately 4 m by 4 m. These dimensions are based on the horizontal distribution of the dark brown cultural level. It seems that the occupation floor was on two levels; the lower, where a fireplace rests on the clay sub-stratum, and the upper part which is on a ledge of the bedrock. Since the cultural level is buried under a jumble of stones (Figure IX), I believe that at one time these stones were placed on top of each other forming a low wall to the west of the lean-to dwelling.

FEATURE 12

This feature was observed during the initial test-pitting of the area. It comprises a ring of decomposed rocks and the matrix includes some sand, wood charcoal, bones, and lithic material. Due to the excavation conditions, often submerged under a few centimetres of water, it was virtually impossible to record any traces of

fugacious remains such as decomposed bones or red ochre. The radiocarbon determination of 2270 ±100 B.P. (UQ-409)(see Table II) for this feature is within the range of Palaeo-Eskimo occupation at the site. However, it is as we will see later, typologically somewhat younger than estimated.

FEATURE 13

Feature 13 is a large concentration of red ochre, wood charcoal, and fire-cracked rocks scattered over 1.5 square metres. This feature is not easy to interpret but it may be a combustion area probably contemporaneous with feature 12 since both features rest on the same stratum.

FEATURE 10

Feature 10 (shown on Figure X) is interpreted as a food cache. It measured 80 cm at its opening, and 40 cm deep. The pit had been dug along the bedrock outcrop but was buried under a 15 cm thick peat stratum. It was interpreted as a storage pit because of the numerous bones it contained, even though stratum If (Figure X) indicated the presence of wood charcoal mixed in with the bones. As a result of the presence of wood charcoal, we re-assessed our original interpretation but concluded that the proximity of feature 10 to the feature 13 probably resulted in the spreading of charcoal from the latter. Finally it is likely

that the presence of charcoal, along with the peat, the water, and the limestone all contributed to the unusually good organic preservation of the contents of this feature.

AREA IV

We chose to dig in area IV (Figure XII) for two reasons. First, since the area was at least 25 metres from the edge of the terrace and one metre higher than the three previous areas, we thought that there would be the possibility of a different component. Second, we thought that there might be a single occupation in a well-defined dwelling. The latter observation came as we were walking over the area and felt some stones through the sod. Unfortunately due to time constraints we did not open more than eight one-metre squares, but nonetheless recovered over ten thousand flakes. By and large, the cultural remains are comparable to the ones from stratum II in area I. Unfortunately, we did not recover the well defined dwelling we had hoped for.

The plan of area IV (Figure XII) suggests no particular habitation features. Instead, it appears that we dug either the centre of an activity area where the building materials were carried away to be used to make another structure, or simply the midden of a adjacent dwelling.

The latter is more likely, since we do not have any combustion traces. Furthermore, the presence of a

fire-cracked rock concentration, and a higher debitage density towards the south of the plan suggest that a dwelling remained in the unexcavated portion to the south.

AREA V

The circumstances surrounding the discovery of Area V belong to the camp activities rather than pure archaeological research design. A hole was initially dug back in the bush approximately 70 m from the edge of the terrace. A few days later, to our surprise someone came back with a handful of flakes. We decided that the area warranted more investigation, considering its isolation from the areas previously investigated. Accordingly, we opened a one-metre square.

There is an abundance of cultural remains underneath a peat level approximately 40 cm thick (Figure XIII). However the only diagnostic artifact from this area is a triangular straight base endblade. The specimen is comparable to some end blades from Band 5 at the Cow Head site which has dates of 2845 $\pm$120 B.P. and 2480$\pm$110 B.P. Tuck (personal communication) estimates this occupation as dating somewhere around 2700 B.P. Since this type of end blade is very rare elsewhere at Factory Cove, it suggests that if more squares were opened in Area V, they might produce material dating around 2700-3000 B.P. This hypothesis is based on the facts that the area is higher

than the rest of the site and that the Early Palaeo-Eskimo were already in the region.

TEST-PITS

The reasons for test-pitting the Factory Cove site (Figure I) were first, to delimit the extent of the cultural remains and second, to see if the horizontal distribution indicated more than one component. All we knew after the 1976, 1978 exploratory work was that the cultural remains were present in a 60 by 20 m stretch along the eroding terrace. We also knew from the two squares excavated in area II that this material was culturally comparable to the material from area I. Based on these data we decided to judgementally test pit the extended surface outside areas I and II as shown on Figure I.

Due to time constraints, it was virtually impossible to test-pit systematically the whole surface. Instead we divided the site into four micro-physiographic zones and aimed at sampling the four zones. Two zones, the bog and the forested portion of the site, were seen as low potential for human occupation while the grassy ledge to the west as well as the remainder of the terrace behind the excavated areas suggested a high potential for occupation.

The grassy ledge is spread out from eight to ten metres above the present sea level. It constitutes a relatively flat surface sheltered against a small cliff.

The stratigraphy of test-pits 1 to 7 shows a sod level 15 cm thick above the yellowish brown sterile sub-stratum. None of the test-pits yielded any cultural remains.

We test-pitted the bog at four different places. Test-pit 11 is the lowest in the boggy zone, close to a rock jumble. Its stratigraphy shows a 25 cm thick sod level with some pebbles in it; it is underlain by the sterile stratum. Test-pit 13 further up in the bog is much the same as test-pit 11. Test-pits 9 and 12 lie towards the edge of the bog; they have a very wet sod level 30 cm thick and both test-pits contained some cultural remains comparable to the material from Area I but in a lesser density.

Both test-pits in the wooded area, numbered 8 and 14, contained cultural remains. The first one has an artifact density comparable to the test-pits at the edge of the bog. The peculiarity of test-pit 14 is that it shows the occupation layer buried under a 40 cm thick peat level, suggesting that the occupation at the site took place prior to any forest colonization.

The grassy terrace surrounding the excavation was more intensively sampled. The data from test-pits 10 and 15 to 21 suggest that the cultural level is continuous in the space between the areas I to IV although it is less certain if it is continuous between the areas IV and V. Test-pits 22 to 28, located to the north, east and, south of Area III did not reveal any cultural remains.

SUMMARY

This chapter gives a description of the results of the excavation at the Factory Cove site. We highlighted the particularities of the physiographic setting, the stone patterns forming the structures, and the features. When possible, the data were put into a meaningful stratigraphic context. Also suggested were some working hypotheses which are tested below.

With this excavation, we have demonstrated that there is a Palaeo-Eskimo phase at Factory Cove securely dated between 2700 ±140 B.P. and 2100±60 B.P. Even though there is a 600 year range between the earliest and the latest date, we proposed that the height of the occupation at the site was between 2500 and 2300 B.P. This proposition is based on the data from level II as seen in Areas I, II, IV and, to a certain extent, Area III. It is also suggested that there was, prior to level II, a less intensive Palaeo-Eskimo occupation; this left fewer remains, although those recovered were diagnostic of an earlier occupation. This last proposition is based on observations bearing on the material recovered from the depression in Area II as well as the structure B in Area I. The material from Area V is perceived as even earlier than these two phases.

For the most part, we can only speculate on the types of dwellings used at the site since their identification is made difficult by the intensive

re-occupation. We have at least been able to define four types of dwellings including: basic tent circles (Structure A) the bilobate structure with mid-passage hearth feature (Structures B,D) one dwelling in a shallow depression (Structure C) and a probable "lean-to" (Structure E).

CHAPTER IV

ARTIFACT DESCRIPTION

METHODOLOGY

This chapter is devoted to the description of a portion of the Factory Cove site assemblage. This sub-assemblage includes 1327 lithic artifacts shaped by grinding and/or chipping, or used expediently. The term artifact is used throughout this chapter to refer to any object modified by a set of humanly imposed attributes (after Clarke 1968:665). These artifacts were recovered from five different sampling areas and were recorded by natural levels.

Not described are those artifacts usually called blanks, preforms, or unfinished tools. Although they constitute 36 percent of the assemblage, these artifacts and an additional 87,006 flakes represent essentially the workshop aspect of the site. Since this research aims to define an early Palaeo-Eskimo phase in Newfoundland for the purpose of comparison, it seems preferable to concentrate on the finished tools; the unfinished artifacts from Factory Cove have no counterparts in any Palaeo-Eskimo collections known to the author and are therefore considered, for the time being, useless for comparative purposes. Consequently,

a separate project, already under way, will discuss this workshop aspect of Factory Cove.

Meanwhile, we are left with 1327 lithic artifacts but without any standardised system for their classification. This lack of a classification system for the Arctic Small Tool tradition has been recognised for some time; Badgley (1978) has noted that 11 different names are used by as many authors referring to seemingly the same type of scraper. It is beyond the scope of the present thesis to establish a typology for the Palaoe-Eskimo lithic industry; instead the artifacts will be described using discrete and continuous attributes. Consequently, this chapter will be descriptive, and descriptions will be limited to the Groswater material from Newfoundland. For more details on the observations carried out, a list of attributes is given for each class in Appendix A. Prior to describing the artifacts, we separated them into "functional" or "pseudo-functional" classes using McGhee's (1981:22) terminology (Table III). The "pseudo-functional" classes in Table III can be re-grouped into five major categories related to the activities inferred for tools (Table IV).

TABLE III

FREQUENCY OF ARTIFACTS PER CLASSES

CLASS	NUMBER	PERCENTAGE
Blades	419	31.5
Knives	208	15.6
Retouched and/or utilised flakes	203	15.3
End-blades	137	10.3
Scrapers	118	8.9
Hammerstones	73	5.5
Cores	66	5.0
Burin-like-tools	53	4.0
Side-blades	26	1.9
Whetstones	13	1.0
Adzes	4	0.3
Burin spalls	3	0.2
Burins	2	0.2
Lamps	2	0.2
	----	----
Total	1327	99.9

The first category in Table IV, manufacturing, includes tools that were made for the manufacture of stone, bone, or wood tools and weapons. The hunting category includes the tools usually assumed to have been used in the killing of both land and sea mammals. The clothing category includes tools that were used to prepare hides and transform

them into clothing. The tools in the butchering category are, to a certain extent, very close to those in the clothing category; therefore, the clothing and butchering category are best seen as complementary. Finally the two lamp fragments are included in the household activities. It should be noted that these five "ideal" categories are not mutually exclusive, especially for the blade categorie as shown in Table IV; morever they unfortunately represent only a small portion of the Groswater culture.

TABLE IV

DISRIBUTION OF ARTIFACTS PER "FUNCTIONAL" CLASS

MANUFACTURING	HUNTING	CLOTHING	BUTCHERING
Hammerstones	End-blades	Scrapers	Knives
Burin-like-tools	Side-blades	Blades	Retouched and/
Burins			or utilised
Burin spalls			flakes
Whetstones			Blades
Adzes			
Blades			

n.b. The two lamp fragments are included in the household category.

It must be acknowledged that certain categories may be over-represented. The fact that only stone tools and weapons were preserved at Factory Cove should be emphasized; there is a relatively uneven representation of the material culture, due to the absence of organic preservation. Analogous research at Palaeo-Eskimo sites from the High Arctic, where there is better organic preservation, has shown that organic artifacts constitute at least one third of the assemblage.

The 1327 artifacts herein reported are made mostly from those vari-colored silicates loosely termed Cow Head cherts (Table V). Altogether they represent 88% of the finished tools. The remaining 12% include quartz crystal, quartzite, granite, and slate. The only two raw materials reported to be allochtonous to the Island of Newfoundland are the Iceberg chert known from sites in southern Labrador and a few pieces of Ramah chert. The near absence of allochtonous raw material suggests that, among other things, the profusion of raw material at Factory Cove was likely a factor that influenced the extended occupation of the site. Although there is a wide range of quality and color among these local cherts, field observations revealed that they are readily available, whether in vein or as beach cobbles. Generally speaking the apparent finer-grained cherts were used to make delicate tools such as end blades, microblades, and burin-like-tools while the more porous black cherts

dominate among the unfinished tools (blanks and preforms) not described here.

TABLE V

TYPES OF RAW MATERIALS FOR THE FINISHED TOOLS

RAW MATERIAL*	Number	Percentage
Black chert	305	23.0
Green chert	303	22.8
Blue chert	172	13.0
Brown chert	144	10.9
Grey chert	92	6.9
Quartz	64	4.8
Quartzite	61	4.6
Red chert	59	4.4
Flint **	55	4.1
Granite	25	1.9
Beige chert	10	0.8
Molten chert	9	0.7
Ramah chert	9	0.7
Slate	7	0.5
Light green chert	5	0.4
Iceberg chert	3	0.2
Schist	1	0.1
Sandstone	1	0.1
Yellow chert	1	0.1
Conglomerate	1	0.1
Total	1327	100.1

* Only the color is given for the local Cow Head cherts.
** A high quality semi-translucent raw material.

The artifact descriptions that follow constitute a synthesis of what was considered meaningful quantitative data. These data were obtained according to the attributes reported for each classes (Appendix A). Through a combination of certain attributes, some qualitative observations are also offered. The order of the

descriptions follows the ordering of the five categories of Table IV. Another class of artifacts not included in Table IV, the core class, is placed at the end of the artifact descriptions.

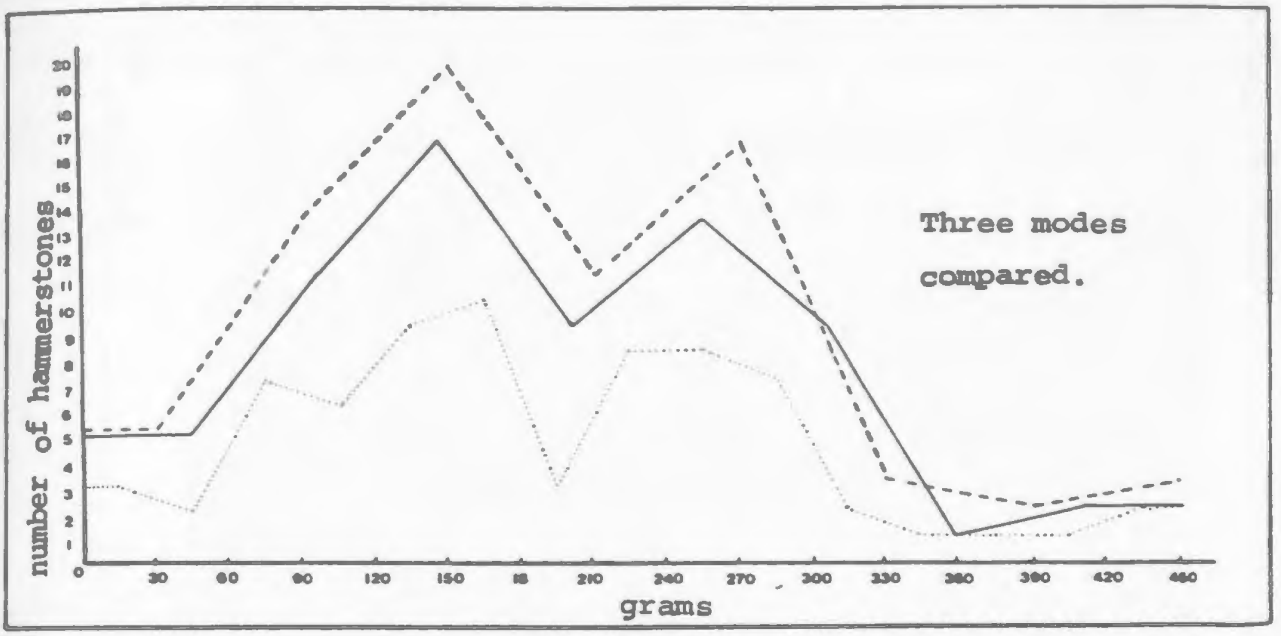
DESCRIPTIONS

Hammerstones (Plate II)

Hammerstones constitute 5.5% of the assemblage. A majority (n=46) is made of a pinkish quartzite, although some (n=27) are made of granite. The 66 complete specimens can be classified into four basic categories based upon shape. These are, in order of frequency : elongate (n=22); oval (n=19); triangular (n=15); and circular (n=10). Since in most cases one shape grades progressively into another, it is suggested that their weight might have been a determinant factor in the selection of a hammerstone. The weights range from 7 to 436 g; Table IV presents a graphic distribution of these weights according to three modes.

TABLE VI

HAMMERSTONE WEIGHT DISTRIBUTION



The distribution of the hammerstone weights forms three clusters. One ranges from 7 to 190 g, another ranges from 191 to 330 g and, the last one ranges from 331 to 436 g. The first cluster represents 55% of the hammerstones and has an average weight of 110.6 g. The second cluster, containing 37.7% of the hammerstones averages 273.9 g. Finally, the last cluster is not represented by a large number of specimens, 7.2% fall between 331 and 436 g, and the average of this cluster is 398.8 g.

Approximately one third of the hammerstones display a single battered facet while the remaining two thirds show battering on two or more facets, including some displaying a continously battered surface along the

periphery. To generalize, in both the 7 to 190 g category and the 191 to 330 g category, there was a preference for the elongate and oval shape cobbles. The two other shapes, triangular and circular, are present in both categories but to a lesser extent. Furthermore, it appears that all shapes have a relatively comparable percentage in either categories. The heavy weight hammerstones (n=5) are not represented by enough specimens to warrant any meaningful speculations.

TABLE VII

RELATION BETWEEN SHAPE AND WEIGHT OF THE HAMMERTONES

	Elongate	Oval	Triangular	Circular	Other
7-190g	12 (31.6%)	11 (28.9%)	7 (18.4%)	6 (15.8%)	2 (5.2%)
191-330g	8 (27.6%)	10 (34.5%)	6 (20.7%)	4 (13.8%)	1 (3.4%)
331-436g	2 (40%)	1 (20%)	2 (40%)	0	0

Two factors should be noted in conclusion. The first concerns the specimens at the base of the light weight interval (7 to 190 g). These small pebbles were found in an archaeological context but it is difficult to determine what information they convey. The second concerns the nature of the presence of the hammerstone class. Hammerstones are related to the initial stages of tool manufacture rather than to the finishing process. It is suggested that the

high quality Palaeo-Eskimo craftmanship displayed in the Factory Cove material resulted from using the pressure flaking technique rather than percussion flaking with a hammerstones. Unfortunately, no soft percussors or pressure flakers were recovered.

BURIN-LIKE-TOOLS (Plate IV)

Burin-like-tool, pseudo-burin, and graver are three different terms found in the literature to designate the same type of tool, one which originated from the earlier Palaoe-Eskimo true spalled burin. For the period under study, the burin-like-tools with their absence of rectilinearity, have an appearence reminiscent of true burins and are usually made from vari-colored cherts. Six colors are present in the Factory Cove collection. In order of importance, they are green (37%); brown (22.2%); red (20.4%); grey (14.8%); blue (3.7%); and mottled chert (1.8%). Towards the end of the Palaeo-Eskimo tradition (i.e. in the Dorset culture) there is a substitution of nephrite for the vari-colored cherts used in the Groswater phase, and generally the Dorset burin-like-tools have larger dimensions and are more fully ground.

The predominant choice of the green chert for manufacturing the burin-like-tools is consistent with the preference encountered in the rest of the assemblage. The fact that the brown and the red cherts each comprise approximately 20 percent is somewhat unusual. This is

especially true for the red chert since this color is underrepresented in the remaining artifact classes. It may be that the red cherts are either easier to grind or more resistant to breakage, or their over-representation may simply reflect the aesthetic preference of the artisan. With one exception, all the specimens are ground flat on both faces. They all have some hafting modification varying from a slight constriction of the edges to deep notches.

A typical burin-like-tool from Factory Cove displays the following attributes: It has been chipped to give it a rough shape, then ground transversely on both faces. Even though the grinding covers most of both surfaces, chipping is still visible at the periphery. Since the burin-like-tools were designed to be hafted and used in an engraving motion, the artisan kept clearly in mind which edge was going to be the back edge and which one was going to be the working edge. In fact, examination of the cross sections of the burin-like-tools reveal that one edge is consistently thicker than the other. The thicker or back edge (see Table VIIIa) usually displays two ground facets. The wider facet seems to be the direct result of the burin-like-tool manufacture while the purpose of the small facet was likely for blunting the larger one. I assume that blunting the back edge would have prevented it from splitting the support it was resting on. The thin edge, most often bifacial, is considered to be the working edge.

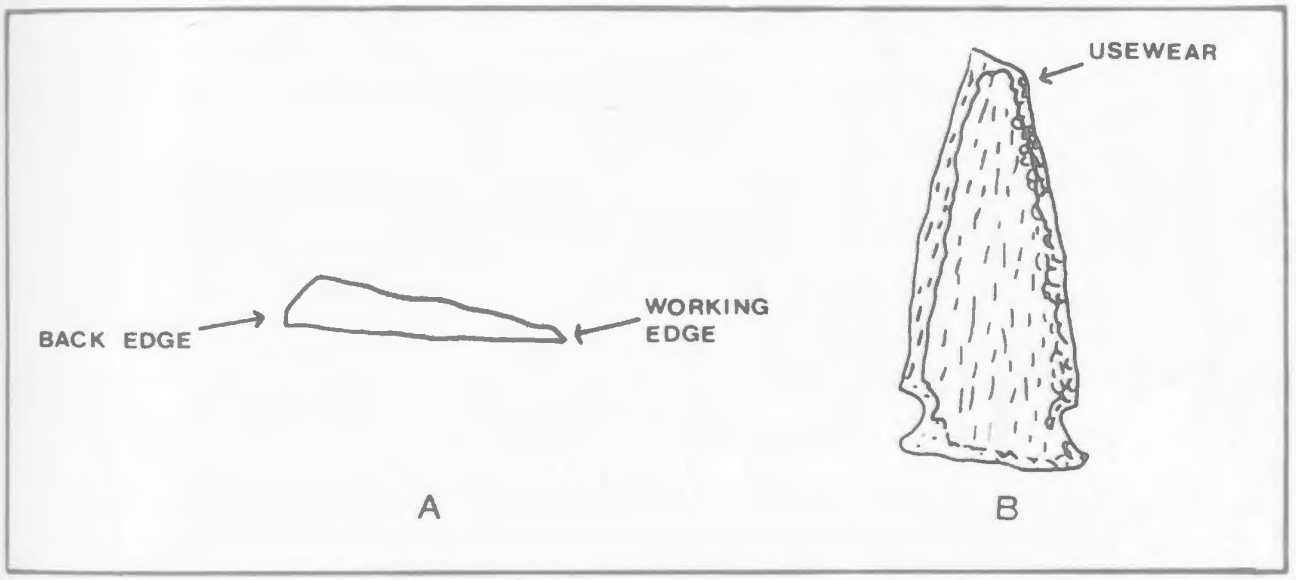
This observation is supported by the presence of use wear, in the form of surface alteration on the upper corner of the thinner edge where it meets with the distal edge (see Table VIII,b).

TABLE VIII

BURIN-LIKE-TOOL

a- Schematic cross section of a burin-like-tool

b- Location of surface usewear



The 53 burin-like-tools from Factory Cove represent 4 percent of the assemblage. There are 26 complete specimens while among the 27 fragments recovered,

the proximal fragments alone outnumber both their medial and distal counterparts. Out of 44 specimens from which we can gather enough data 79.6 percent have their working edge on the right hand side and 20.4 percent are on the left hand side. The method used to determine this side is as follows: Generally speaking the cross section of a burin-like-tool is trapezoidal (Table VIII,a); the right and the left hand sides may be determined by placing the burin-like-tool with the proximal end closer to the analyst while the artifact lies on its longest face (the longest face of the trapezoid when the artifact is seen in cross section).

The maximum thickness of the burin-like-tools varies from 2 to 5 mm averaging 3.29 mm. No apparent correlation exists between the thickness of a burin-like-tool and its type. Presumably, a thicker burin-like-tool will have longer use than a thinner one. The length and width of the burin-like-tools are considered significant but are discussed according to types.

Based on the shape of our specimens, (excluding the two burin-like-tool preforms), four types are indicated. There is a marked morphological difference from one type to another and variation within this class suggests that the burin-like-tool is an artifact for which the grinding time needed results in a high cost of manufacture. As a result, it is more likely to be curated. It seems that the burin-like-tool was curated as long as it was still possible

to use the remaining part. Consequently, the suggested morphological types could be the result of artifacts which have been heavily modified from their original shape through usewear, and curation, rather than reflecting specific stylistic changes. The four varieties include:

Rectangular

The rectangular type (Plate IV, a,b) comprises 11 complete specimens with an average length of 31.8 mm and an average width of 16.6 mm as taken on 12 specimens. Some examples have well defined notches while others have barely constricted proximal edges. These burin-like-tools are rectangular in outline with both their back and their working edges parallel. Their bifacially ground working edge meets at a more or less right angle with the distal edge.

"Windswept"

The term windswept expresses clearly the shape of this type (Plate IV, c-e). The windswept burin-like-tools resemble sails, with one side more or less concave and the other convex. This type is represented by six specimens, which have an average length and width of 24.8 mm and 17mm. A seventh example not included in the above statistics is unusually large, having a length of 45 mm and a width of 20

mm. In addition to their odd shape, the "windswept" burin-like-tools tend to have a unifacial working edge.

Angled Tip

This type name (Plate IV, f-g) describes a burin-like-tool which, instead of having a square distal edge giving it a rectangular appearance, has a distal edge making either an acute or an obtuse angle with the working edge (Plate IV, f,g). The back and the working edges have basically the same attributes as for the rectangular type, i.e. a bifacial working edge and a back edge which has been blunted. All specimens have marked side-notching.

Triangular

This category includes only two specimens, both made of green chert (Plate IV, h,i). They are termed triangular since their working and their back edges meet at one point only. This type, therefore, does not have any distal edge.

BURINS

Only two artifacts can be classified as true burins as opposed to burin-like-tools. The first specimen is made of a brownish red and blue chert, and measures 37 mm long by 27 mm wide and 6 mm thick; it displays the scars of two spalls removed from two different corners. It is

rectangular in outline. Holding the artifact with the hafting portion towards the analyst, one burin blow started from the upper left corner going transversally, and the other blow started from the upper right corner and ran longitudinally. Its dorsal face is entirely worked by chipping applied to the four edges, while its ventral face does not show any chipping except for some bilateral modification restricted to the lower half of the tool, which may be interpreted as hafting modification. None of the faces shows any sign of grinding.

The second specimen of this class is a blue chert biface fragment showing the scar of a single eight millimetre burin spall on one of its edge. There are no usewear traces to indicate that this burinated artifact was in fact used as a burin.

BURIN SPALLS

Not surprisingly the near absence of burins is reflected in the small number of burin spalls recovered.

The smallest specimen, 13 mm long, bears the general characteristics of a burin spall. It has parallel sides and a distinct bulb of percussion. The negative bulb scar on its dorsal face marks it as a secondary spall. Although none of the burin-like-tools are clearly burinated, the Factory Cove collection includes what seem to be two burin-like-tool spalls. One measures 24 mm long, 5 mm wide,

and 2 mm thick, the other measures 17 mm long, 3 mm wide, and 1 mm thick; both are made of green chert. They are primary spalls with parallel sides and a triangular cross section. Both have the characteristic features of the back of a burin-like-tool as described earlier. It seems possible that these two spalls were not intentionally removed from the burin-like-tools but were accidentally pressure flaked from an angled tip burin-like-tool in use.

WHETSTONES (Plate V)

Although seldom reported from other Palaeo-Eskimo sites, the presence of whetstones from Factory Cove is not surprising given the relative frequency of the grinding technique evidenced in the burin-like-tools and the adzes.

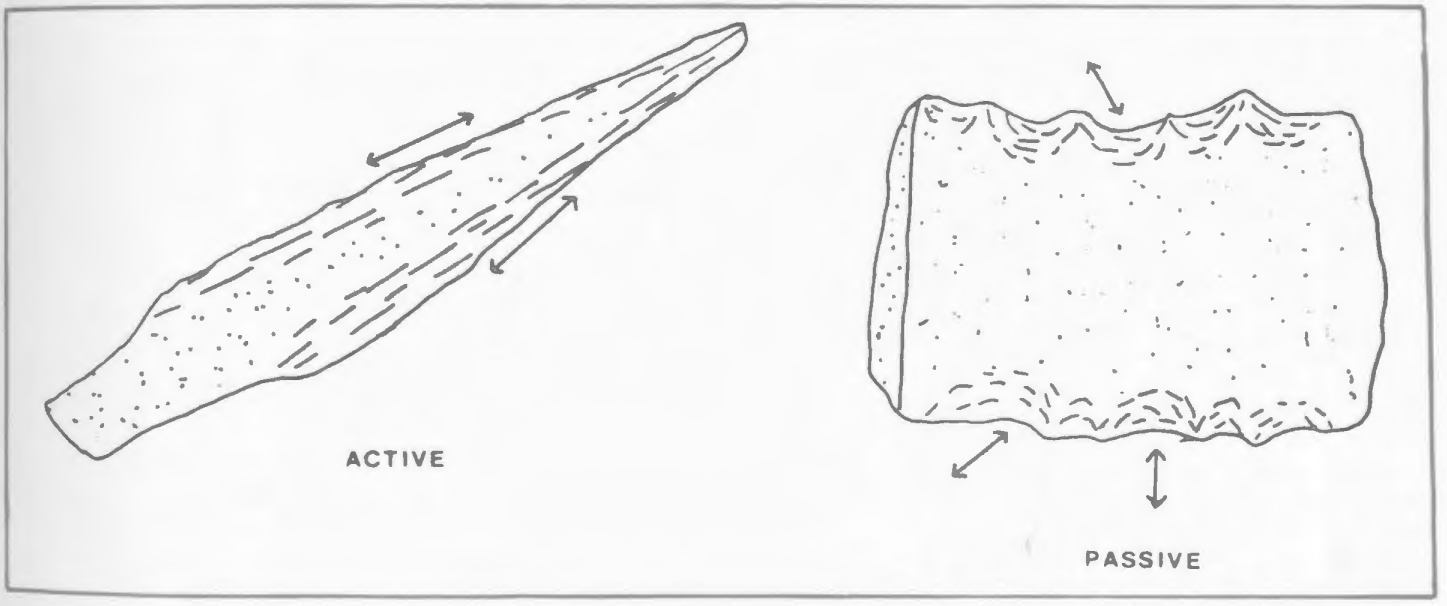
All 13 whetstones are made of a pinkish quartzite. While one specimen seems to be a whetstone preform, the twelve others can be classified in two basic types: four are active (Table IX,a), seven are passive (Table IX,b), and one displays attributes characteristic of both an active (hand-held) and a passive (stationary) whetstone. They all have been broken at one time or another. The larger specimens are particularly brittle.

Shape and usewear orientation are the two indications which suggest two types of whetstones. The active type seems to have been hafted or hand held while the grinding motion was applied to the artifact. The passive

type on the other hand, was not rubbed on the artifact, but rather the artifact was apparently held and rubbed on the whetstone, thus creating the notch-like usewear illustrated below (Table IX). The specimen illustrated on Plate V,a is complete and measures 282 mm long; it represents the active type. The passive type (Plate V,b) has an average length of 87 mm.

TABLE IX

WHETSTONES



ADZES (Plate VI)

The class of woodworking tools is represented by only two complete adzes, the fragment of another, and what seems to be an adze preform.

The preform illustrated on Plate VI,c is made of dark slate and has a triangular outline with partial bifacial chipping and some bifacial grinding. It is fragmentary. The incomplete grinding seems to be intended to create a steep convex bit for the adze. Its dimensions are 90 mm long, by 40 mm wide and, 16 mm thick.

The two complete specimens are almost completely ground and made of purple slate. The first (Plate VI,a) measures 42 mm long, 33 mm wide and 6 mm thick. It appears that the upper right corner was broken at one time and that the artisan continued to use the broken adze, creating some chipping on the remaining edge. The transverse and longitudinal cross sections are, respectively, plano-convex and concavo-convex. Most of the surface of the artifact is ground, except for the area around the notches, where it is bifacially chipped. The narrow resharpening facet, making the working edge more efficient, is located on the ventral face.

The other adze (Plate VI,b) is still in very good condition; given the sharpness of its working edge, it could still be used. Like the previous specimen, this one has its ground dorsal and ventral faces meeting at the distal end

and forming a convex edge. Again there is a resharpening facet but this time it is on the dorsal face. Both non-working edges are shaped by bifacial chipping and a constriction towards the base forms the hafting element. The hafting modification is longer on the right than on the left hand side suggesting that the adze was hafted and probably used in an asymmetric motion.

END-BLADES (Plate VII)

Except for the presence of a bipoint (Plate VII,i), we have essentially two types of end blades in the Factory Cove collection, namely side-notched end blades and unnotched end blades. All but one are made of the local Cow Head cherts, the exception being a specimen of unidentifiable cultural origins made of Ramah chert. As mentioned in the general comments on the raw material, black chert is usually underrepresented among the delicate tools in comparison to the place it occupies in the debitage, and the end blade class illustrates this point well.

TABLE X

END-BLADES: RAW MATERIAL DISTRIBUTION

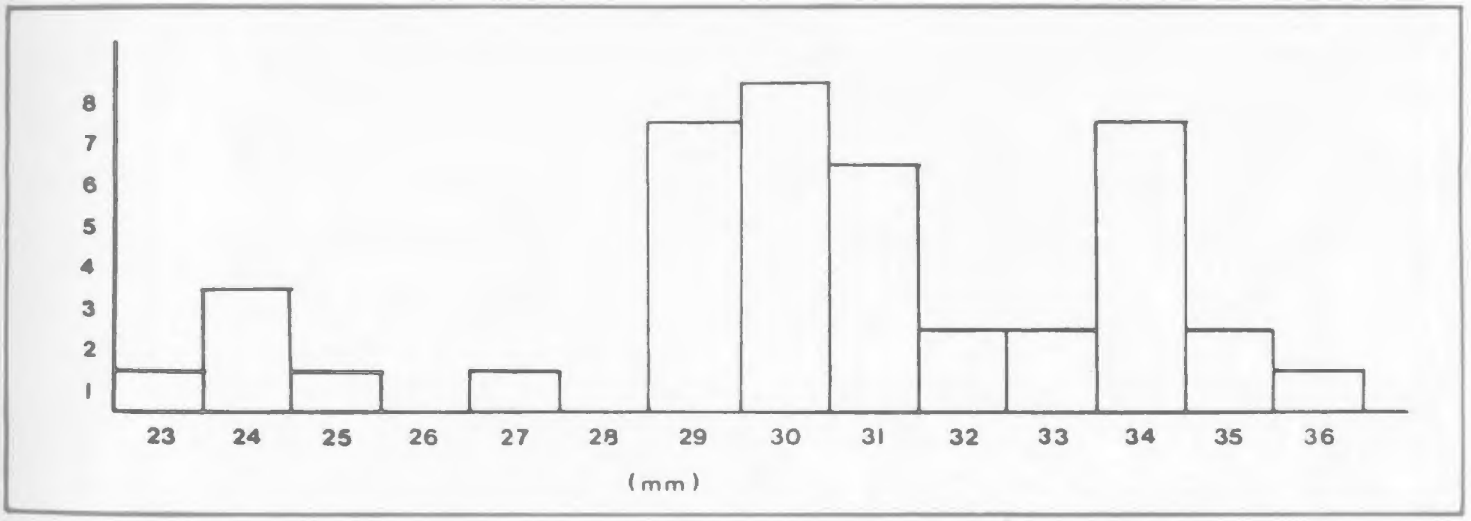
Raw material	Number	Percentage
Ramah chert	1	Ø.9
Flint	1Ø	8.5
Blue chert	11	9.4
Red chert	13	11.1
Brown chert	14	12.Ø
Black chert	14	12.Ø
Grey chert	23	19.7
Green chert	31	26.5
	---	-----
	117	1ØØ.1

For the period represented at Factory Cove , the most numerous type (n=72) is the finely chipped side-notched end blade (Plate VII, a-h). Variation within this type may be a function of time or may be simply idiosyncratic. Nonetheless, there is a sub-type (n=6), which Tuck (1975) has referred to as "high side-notched" and which Fitzhugh (1972) describes as "box-based". The distance between the base of the notches to the base of the end blade for these high side-notched end blades averages 8.7 mm. The other type, low side-notched (n=66), has an average notch height of 4.4 mm.

Grouped together, the low and the high side-notched end blades average 31.7 mm long with a standard deviation of 4.5 mm; their average width is 13.7 mm with a standard deviation of 2.2 mm. Although Table XI suggests three length concentrations for the end blades, we can not see any major attribute differences from one length cluster to another, except for the fact that an end blade averaging 34 mm long has wider and deeper notches than one averaging 24 mm long.

TABLE XI

SIDE-NOTCHED END-BLADES LENGTH DISTRIBUTION



Generally speaking, "typical" side-notched end blades from Factory Cove (Plate VII, upper row), may be described as follows: side shapes range from bi-convex (c,h) to straight (a-b,g), while the base is generally straight (a-c) to slightly convex (f) or concave (e). The

blade element of the artifact can have an elongate appearance (d) or may be more triangular in outline (g). Even though they display complete flaking of their ventral surface, the majority of the side-notched end blades have a plano-convex cross section (a-h), except for one (f), which is biconvex and presumed to be earlier.

The second type of end blade, less numerous (n=32), is the unnotched end blade. According to its provenience at the site and its association with the earliest date, this type (Plate VII, lower row) is interpreted to be earlier, although gradually evolving into the later side-notched type. The unnotched end blades show complete chipping of their ventral and dorsal faces; as a result their transverse cross-section tends to be biconvex more often than what we observed for the side-notched end blades. The mean length of 36.4 mm is 4.7 mm greater than that obtained for the previous type. A standard deviation of 10.1 mm for the length of the unnotched end blades expresses well the variety within this type, though the sample is small with only 14 complete specimens.

As among the side-notched end blades, morphological variations within the class are evident. It is unclear, though, whether they represent variations in time or simply idiosyncracies. By and large the unnotched end blades (Plate VII, lower row) can be elongate (j), or nearly triangular with biconvex sides (k,l); they may have a

squat appearance (n), a constriction of their base (p), or even a more familiar triangular shape (m,o).

Despite the variations described above for both types of end blades, an impression of gradual change through time stands out as the main feature of the Factory Cove assemblage. Although observations of minute details as shown on Tables XII and XIII could have led to the creation of numerous sub-types, I believe that this variation reflects a gradual change of the end blade style through time.

TABLE XII

RELATION BETWEEN TRANSVERSAL AND LONGITUDINAL CROSS SECTIONS

		Transversal cross section	
		Plano-convex	Biconvex
Longitudinal cross section	Plano-convex	39 (36.1%)	16 (14.8%)
	Biconvex	0	20 (18.5%)
	Cncv-convex	30 (27.8%)	3 (2.8%)

TABLE XIII

SIDE SHAPES FOR ALL END-BLADES

Biconvex	Plano-convex	Biplano	Concavo-convex
70	3	20	1
(74.5%)	(3.1%)	(21.3%)	(1.0%)

The end blade style change may be summarized as follows: There is a preponderance of the unnotched end blades at the beginning of the Groswater phase with a tendency towards biconvex transverse cross sections. A minority show indentation presumably designed for hafting purposes. The unnotched specimens are excurvate in outline or elongate for the indented ones. Later on in the Groswater phase there develops a better definition of the hafting modifications in the form of a pair of small notches. From then on the transverse cross section is not as biconvex as previously but has a tendency to show a flatter ventral surface. The blade element of the end blade becomes less elongate nearing a triangle in outline, and later in time the plano-convex cross section predominates.

Finally, the single bipoint "contracting stemmed end blade" (Plate VII,i) has some similarities with specimens from Saglek Bay early Palaeo-Eskimo collections. Tuck (1975:141) suggested that his early material had affinities with the Independence I culture.

SIDE-BLADES

Unlike end blades, side-blades are relatively scarce and it is difficult to generalize about this class of tools; furthermore, out of 26 specimens, only nine are complete. By opposition to the end blades the small sample available shows a wide variety; the average length of the nine complete side-blades is 26.6 mm with a standard deviation of 6.4 mm, and the average width is 15.4 mm with a standard deviation of 6.2 mm.

All but one of the side-blades are made of the local Cow Head cherts with green preferred to any other colors; the only exception is made of a translucent quartzite. Most of the side-blades are bifacially worked and two examples have unifacial grinding. They can be divided into the following three categories: one is semi-lunate, two are ovate, and a bipointed type with markedly convex sides dominates the class, with 18 representatives.

SCRAPERS (Plate VIII)

Altogether, there are 118 artifacts in this class. These can be divided into eight types, although 87.2 percent fall into four main types. Thus, since the rectangular, the quadrangular, the side scraper, and the random types contain very few examples, they are deemed unrepresentative types for the present collection. Therefore the observations reported bear on four main types which are distributed thus:

triangular (37.0%), flared (28.2%), on flake (18.4%), and expanded corners (15.5%).

The 103 remaining scrapers are all end scrapers; their distribution into raw material frequency is similar to that of the end blades, with a preponderance of the green chert (Table XIV).

TABLE XIV

FREQUENCY OF RAW MATERIAL DISTRIBUTION FOR THE SCRAPERS

Raw material	Number	Frequency
Red chert	6	5.0
Grey chert	9	7.6
Flint	12	10.1
Brown chert	15	12.7
Blue chert	19	16.1
Black chert	25	21.1
Green chert	32	27.1
	---	----
	118	99.7

Without taking the type into account, the scrapers from Factory Cove have an average length of 31.7 mm and an average width of 24.2 mm. There also does not seem to be a marked difference in the angle of the working edge from one type to another; the angle average of the four types investigated range between 68.4 and 69.3 degrees. Most

(63.3%) do not have any hafting modification. Some have a constriction of their lateral edges (17.8%), others have a pair of notches (16.8%), or a stem (2.6%). Most of the scrapers, have a symmetrical working edge (i.e. their working edge is at a right angle to the body of the scraper), although a minority have a working edges bevelled to either the right or the left.

Scrapers on Flakes

Nineteen scrapers are on flakes (Plate VIII, a-e). These scrapers are flakes with slight modifications to provide a steep working edge. The mean length and width of the scrapers on flake are 30.9 mm by 22.1 mm.

This type could be an opportunistic type of tool, in which a flake with a suitable shape was readily made into a scraper by means of a few modifications. These scrapers tend to be made on elongate flakes which show a large variation in size as shown by a standard deviation of 7.6 mm for their length and one of 4.8 mm for their width. Furthermore the most popular raw material for this type of tool was the black chert (Table XV) which covers the living floors of the houses excavated. There is also a marked absence of ventral or hafting modifications on this type.

TABLE XV

RAW MATERIAL VERSUS TYPE OF SCRAPER

	Green chert	Black chert	Blue chert	Brown chert	Flint	Grey chert	Red chert
Triangular (37.0%)	9 (8.7%)	6 (5.8%)	4 (3.9%)	5 (4.9%)	4 (3.9%)	5 (4.9%)	5 (4.9%)
On flake (18.4%)	3 (2.9%)	6 (5.8%)	2 (1.9%)	1 (1.0%)	4 (3.9%)	3 (2.9%)	0
Flared (28.2%)	12 (11.7%)	5 (3.9%)	9 (8.7%)	2 (1.9%)	1 (1.0%)	1 (1.0%)	0
Exp. cner. (15.5%)	6 (5.8%)	2 (1.9%)	3 (2.9%)	5 (4.9%)	0	0	0

Triangular

The triangular scraper is the most common type, numbering 38 specimens. As is evident in Plate VIII (f-j), they are shaped by precise chipping. They have an average length of 28.2 mm, and an average width of 22.8 mm. The standard deviations are, respectively, 5.1 mm for the length and 3.9 mm for the width. Scrapers of this type are made on all raw materials (Table XV). Although some of them show retouch on the ventral face, the bulb of percussion is still visible on most examples.

Expanded Corners

The main characteristic of the 15 expanded corner scrapers (Plate VIII, k-o), is that their mean length (23.6 mm) is smaller than their mean width (25.5 mm). Their standard deviations are 5.2 mm and 3.5 mm respectively. A constriction of their sides emphasizes their expanding corners, sometimes called spurs. It is likely that these specimens were hafted in some kind of a handle. No particular geometric form can be ascribed to this shape and, like the flared type, they have a shape that more or less resembles a fan.

Flared Scrapers

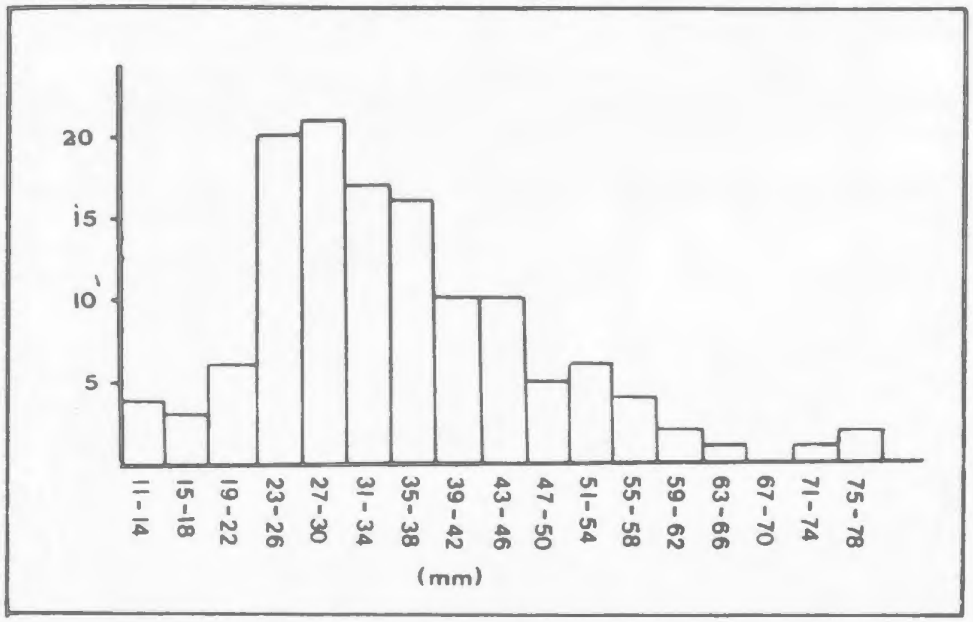
This type (Plate VIII, p-t) looks like a compromise between the triangular and the expanded corners types. It flares like the triangular forms, although the presence of a pronounced flattened base gives it a fourth side. In contrast to the expanded corner type, the distal corners of the flared scrapers flare out more gently. I believe that some of the flared end scrapers were hafted, judging from the battering on their lateral edges. There are 30 specimens in this class, with a mean length and width of 28 mm and 26.4 mm; their standard deviations are, respectively, 6.6 mm and 4.1 mm.

BLADES AND MICROBLADES

In describing this class of tools no distinction is made between blade and microblade since there is no bimodal distribution of blade and microblade width such as has been observed by Taylor (1962) at other Palaeo-Eskimo sites. Therefore the terms blade and microblade will be used interchangeably without necessarily referring to the width of the artifact. The blade and microblade class is the largest artifact class (n=418), representing 31.5 percent of the sub-assemblage under study. Table XVI presents their length distribution; it includes 28.7 percent of the class (i.e. the number of specimens complete enough to be given a length measurement). The shortest is 12 mm long and the longest is 77 mm long. They average 34.9 mm in length but as Table XVI shows, the majority fall between 20 and 30 mm in length.

TABLE XVI

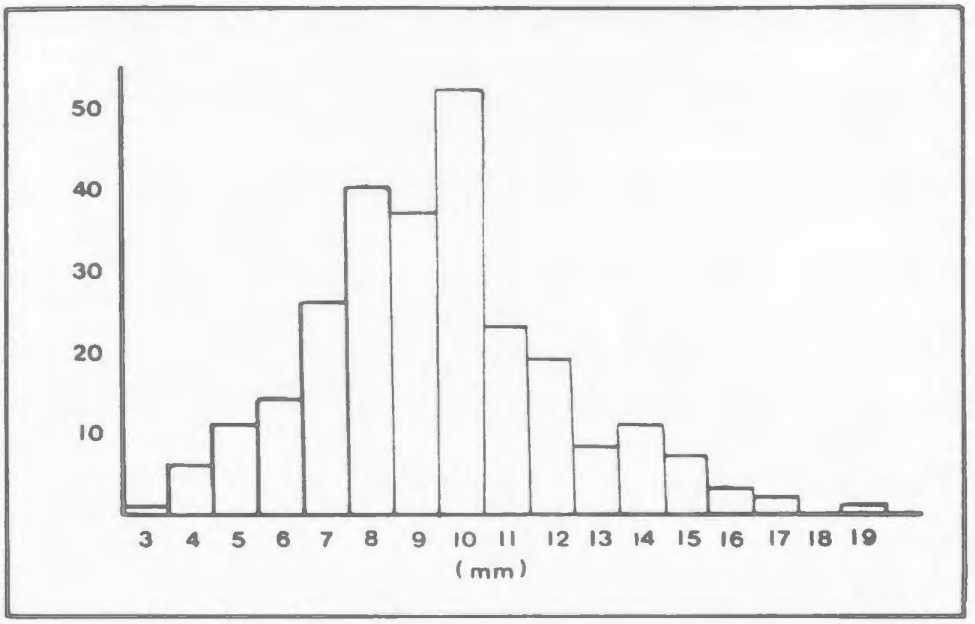
LENGTH DISTRIBUTION OF BLADES AND MICROBLADES



The width measurements taken on 261 specimens (Table XVII) show a unimodal distribution, with most examples being between eight and ten millimetres wide. The thickness, measured at the end of the bulb of percussion on 268 specimens, averages 2.6 mm. The number of arrises continuous from the proximal to the distal ends ranges from one to five but the average number of arrises is 1.6.

TABLE XVII

WIDTH DISTRIBUTION OF BLADES AND MICROBLADES



The raw material distribution for the blade and microblade class is similar to that for the end blades and the scrapers, demonstrating a preference for the green cherts. The only exception is the presence of quartz crystal. Furthermore, allochtonous raw materials such as Ramah and Iceberg cherts suggest external trade networks and imply occasional population influx from Labrador. This class is the only one in which quartz crystal is well represented, with quartz crystal microblades numbering 38. Generally, the microblades from Factory Cove do not show any hafting modifications. A few examples show either a constriction of their proximal edges, a stem, or even a

small pair of notches; those having any hafting modification are made of quartz crystal. As mentioned earlier, some blades served as end blade preforms.

KNIVES (Plate IX)

The striking fact about the knives from Factory Cove is that no two are alike, as is well illustrated on plate IX. Moreover, it is difficult to distinguish systematically between the knives and the preforms from which they were made. The main attribute used for the separation of knives from preforms was the presence of pressure flaking on the former; by the same token, pressure flaking was reflected as greater degree of completion of the knives.

In general the length and width of the knives vary too much to be usefully expressed by an average. However, the thickness of the 53 specimens complete enough to be recorded averages 4.5 mm with a standard deviation of Ø.9 mm. Although they are made from a variety of colorful Cow Head cherts, Table XVII illustrates a preference for black chert, a raw material noted to be numerous among the retouched and/or utilised flakes and the flake scrapers. It suggests that because of the relatively large size of the knives, the artisan had to select a nodule of raw material with regard to size as well as quality. Black chert was available in large chunks on the beach near Factory Cove. The careful workmanship involved in the manufacture of some

knives, as well as the impossibility of assembling many fragments suggested that these knives were curated, assuming that the probability of recovering distal, medial, and proximal fragments was equal.

TABLE XVIII

RAW MATERIAL DISTRIBUTION OF KNIVES

Raw material	Number	Percentage
Yellow chert	1	0.4
Slate	1	0.4
Red chert	5	2.4
Flint	6	2.8
Grey chert	7	3.3
Brown chert	23	11.0
Blue chert	27	12.9
Green chert	61	29.3
Black chert	77	37.0
	---	----
	208	99.5

The 16 specimens illustrated on Plate IX are representative of the variation within the collection. No specific types dominate, and it would be unprofitable to attempt individual description.

Unlike the end blades, which tend to be predominantly plano-convex, four knives out of five are biconvex in cross section. The few plano-convex specimens are made from blades (i) or on flakes (h) although those are but a minority. The remaining knives on Plate IX (a-g, j-p) are made from larger size nodules, most of them have a well fashioned pair of bifacial notches, and a few have a stem or simply a slight constriction of their base. Generally speaking, most of the knives have an odd asymmetric shape. Their sides can be biconvex (a,c,d,k,m) but lopsided, others have one side convex and the other straight (f,j) or even slightly concave (b,e,n-p), or have both of their sides straight (g,l). None have serrated edges.

RETOUCHED AND/OR UTILISED FIAKES

This class of artifacts (n-203) represents 15.3 percent of the sub-assemblage. These tools are assumed to be flakes which had the physical characteristics suitable performing tasks such as scraping and/or cutting. Their ad hoc selection is also reflected in the distribution of their raw material (Table XIX). Black chert is the most numerous raw material among the debitage, and this likely explains why the black chert dominates in the raw material distribution of the retouched and/or utilised flake class.

TABLE XIX

RAW MATERIAL DISTRIBUTION OF
RETOUCHED AND/OR UTILISED FLAKES

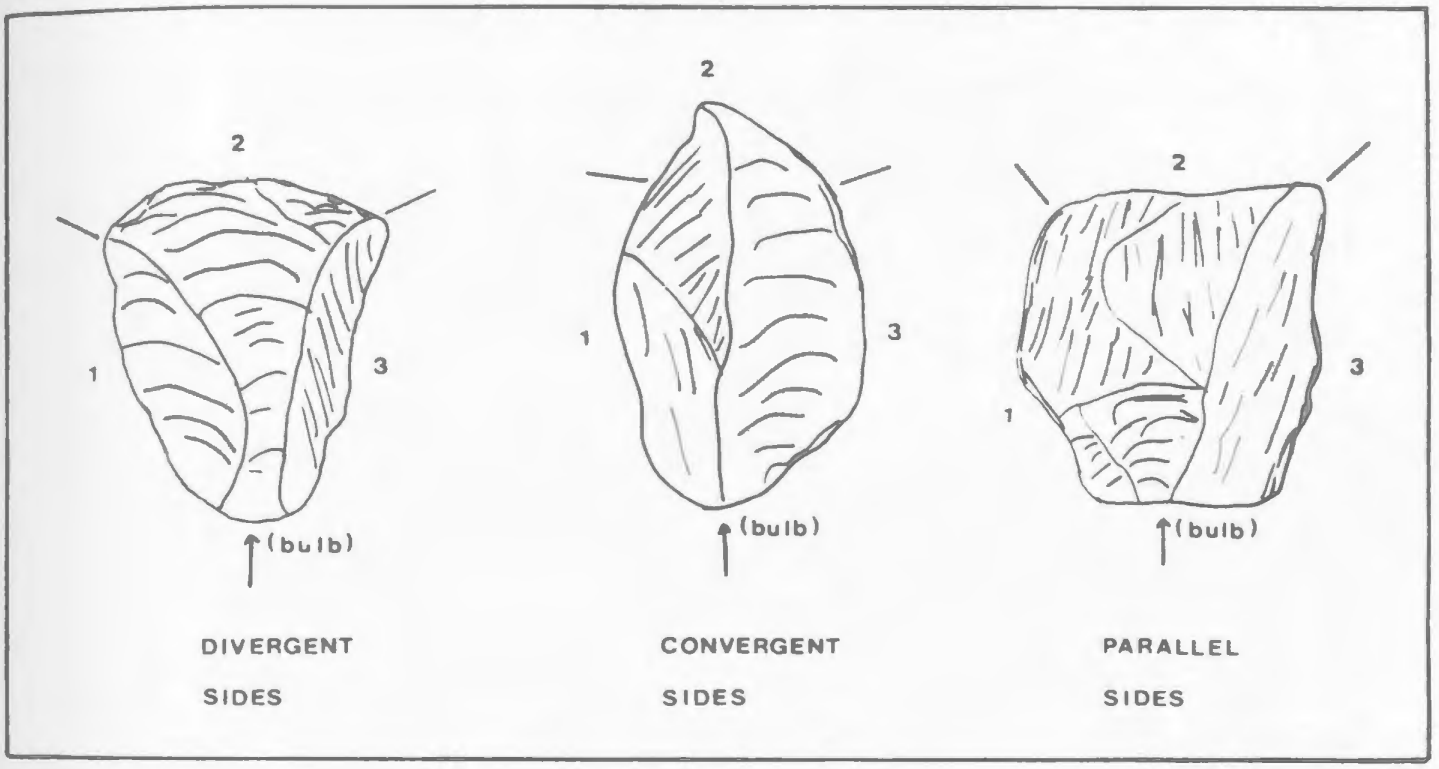
Raw material	Number	Percentage
Sandstone	1	0.5
Iceberg chert	2	1.0
Slate	2	1.0
Grey chert	3	1.5
Brown chert	7	3.4
Flint	13	6.4
Red chert	14	6.9
Blue chert	25	12.3
Green chert	48	23.6
Black chert	88	43.3
	---	----
	203	99.9

This class was not subdivided into types since retouched and/or utilised flakes show very few intentional modifications. Three basic working edge shapes or flake outlines may be discerned, however, and Table XX illustrates these three shapes. The retouch and/or the usewear is located by dividing the periphery of the artifact into three equal segments; segment one is that on the left hand side

when the artifact rests on its ventral face, as sketched on Table XX.

TABLE XX

SHAPES OF RETOUCHED AND/OR UTILISED FLAKES



There seems to have been a preference for flakes with diverging sides which represent 47.4 percent of this class. Those with converging sides comprise 37.1 percent and the remainder have parallel sides. Specimens with retouch and/or usewear on more than one segment are seldom encountered, usually only one segment has been modified. The type of modification however, is comparable from one segment to another (Table XXI). The mean length of these

tools is 37.8 mm taken perpendicular to the bulb of percussion. The mean width perpendicular to the length is 28.7 mm, and the average maximum thickness is 6.9 mm.

TABLE XXI

RELATION BETWEEN SHAPE AND MODIFIED SEGMENT

	Divergent	Convergent	Parallel	Other	Total
Segment 1	47	39	16	2	104
Segment 2	61	33	14	0	108
Segment 3	43	46	17	0	106
	151(47.4%)	118(37.1%)	47(14.7%)	2(0.6%)	

LAMPS (Plate VI)

The first fragment is not a particularly impressive piece of work; it is the rim sherd of a shallow ovate lamp made from a piece of dolomitic limestone. The exterior was left with its natural surface unmodified while the interior was ground to give it a smooth finish. The other fragment (Plate VI,d) is somewhat more informative although it too, is made from an unusual raw material. Again, it is the fragment of a shallow lamp but this time made of micaceous schist. An approximate reconstruction of its dimensions suggests that it originally measured about 165 mm by 95 mm and was ovate in outline with a round

bottom. In cross section both sides and bottom have approximately the same thickness (17 mm) although the walls become thinner closer to the lip.

After analysing the two lamp fragments, it is tempting to suggest that the early Palaeo-Eskimo who settled on the west Coast of Newfoundland did not discover the location of any soapstone quarry. The recovery of only two fragments made of a rather unusual raw material might signify that the Groswater people were led to alternative techniques of cooking. The large number of fire-cracked rocks from open hearths in which locally abundant wood was burned supports the hypothesis that they made extensive use of the available wood.

CORES (Plate III)

The core class includes 66 specimens representing 5 percent of the assemblage. The identifiable specimens can be divided into two main types. Most are blade cores, as identified by the parallel scars on their fluted surfaces. Flake cores represent approximately 10 percent of the class, and are characterized by random removal of flakes from several directions. It is suspected that the flake core is simply a core preform shaped by flaking but which never came be used for striking blades. The remaining 12 core fragments can not be assigned to any particular class because of their fragmentary state.

The complete specimens which are not expended (i.e. where the striking platform is still large enough to allow further blade removal) have a fluted surface averaging 27.8 mm long. The angle between their fluted surface and the striking platform averages 78.7 degrees. The dominant type of raw material is quartz crystal, which comprises 41 percent of the class, followed by black chert (26 percent), and blue and green cherts, each comprising approximately 16 percent.

Among the 66 cores, 30 are expended. Three cores show that they were rotated to detach blades from more than one striking platform, and four specimens bear the traces of the bipolar technique to produce blades. Also recovered were six unmodified crystals which have been assigned to the core class since their raw material suggests that they would have eventually been used to produce fine crystal quartz blades.

SUMMARY

Although brief, the above descriptions should provide a clearer picture of the Groswater lithic material culture in Newfoundland. I have tried in the preceeding pages to be concise, and to present in a tabular form the data obtained following the observations reported in Appendix A. In summary, a distinct early Palaeo-Eskimo

component has finally been recovered on the island of Newfoundland. The Factory Cove assemblage represents a component tightly placed in time which changes gradually over time, but is relatively homogeneous. Unfortunately the relatively meagre organic preservation at the site prevents us from learning anything about the Groswater organic material culture. This summary, therefore, is a synthesis of what was learned from the lithic industry recovered at Factory Cove.

There are very few raw materials allochtonous to the island, these consisting of a few pieces of Ramah and Iceberg cherts. Although geological formations similar to on the Cow Head Peninsula exist on the Quebec North Shore they do not seem to contain "high quality" vari-colored Cow Head-like cherts (Desrocher personal communication). Cow Head-like cherts, however, are found at numerous Groswater sites north of the Strait of Belle Isle. Another point worth mentioning with regard to the raw materials is that although there are soapstone sources on the island, not a single soapstone artifact was recovered at Factory Cove. The absence of soapstone artifacts could be due to the inability of the Groswater people to locate soapstone sources in Newfoundland, since in Labrador (Fitzhugh 1972; 1976a), lamps such as the two recovered are normally made of soapstone.

In terms of tool classes, we now have a better understanding of what constitutes a Groswater assemblage. Starting with the hammerstones, there are four basic shapes but the elongate and the ovate shapes were preferred. It is suggested that weight might have been a more important factor in selection. Concerning burins and the burin-like-tools, it is evident that the former are near absent, while the burin-like-tools were first chipped to give them a rough outline and then almost entirely ground on both faces. Furthermore, all burin-like-tools were made of the Cow Head-like cherts; the four morphological types identified are: rectangular, windswept, angled tip, and triangular.

There is seldom mention of whetstones from early Palaeo-Eskimo components; however, a fair number were recovered from Factory Cove. All are made of pink quartzite. It is proposed that two basic types may be distinguished, according to the usewear observed. The presence of whetstones is obviously closely related to the presence of polished tools like the burin-like-tools and the adzes. Concerning these adzes, two finished specimens made of slate were recovered, and both showed traces of hafting in some kind of handle.

The end blade class was, by far, the most informative class of tools. Seriation of this class of tool suggested that the unnotched type was most frequent earlier

in time, and the side-notched type predominated towards the end of the Groswater phase. This proposed change through time, though still tentative, seems to hold true for Labrador as well (Fitzhugh personal communication). The importance of this observation rests on the fact that it is generally assumed that the unnotched end blade type was used as an inset in a harpoon head, while the side-notched type was used otherwise. This alone is a clue to a change in harpoon heads.

Four main types of scraper were recovered; they include, in order of importance, triangular, flared, "on flake", and expanded corner types. No side-scrapers were found. Ventral retouch was observed most often on the triangular type.

Blades and microblades again outnumber any other class. Some have a pair of notches but usually the only traces of hafting are the bashing of the edges. It appears that definitive side-notching was restricted to the microblades made of crystal quartz.

Finally, the knife class is represented by a variety of shapes, no two of which are alike. In opposition to most classes, (excepted for the retouched and/or utilised flakes and the flake scrapers) black chert is the dominant raw material in this class.

CHAPTER V

INTERPRETATION

The main problem in interpreting the data from Factory Cove results from the intensity of occupations and their compression into a thin stratigraphic sequence. Although vertical stratigraphic refinement can be used for little more than the establishment of a general seriation, the horizontal distribution holds more promise. The data as used in the present thesis are intended to answer questions of a culture-historical nature rather than more specific questions dealing with individual occupations at Factory Cove. The latter will be dealt with in a separate study of the debitage which offers promise in this direction. Another limitation of this interpretative chapter is that only that part of the Palaeo-Eskimo technology represented by stone tools is accessible for analysis; except for the small faunal assemblage and the radiocarbon dates, the other data are few. Effectively the tools are associated with a meagre sample of animal bones which provide information on diet, and some architectural features which have been in the ground for two and one-half millennia and even these show considerable post-depositional displacement.

Artifacts from Factory Cove do not indicate the presence of any other tradition besides the Arctic Small

Tool tradition, although within this tradition there is evidence of at least two phases of the early Palaeo-Eskimo period. The best represented is the Groswater phase, to which most of the assemblage belongs; however the two burins, some burin spalls, a bipoint and possibly the small ground slate adze suggest a restricted occupation prior to the main occupation. This earlier phase may be poorly represented because of a low Palaeo-Eskimo population density at this time, or simply because the area was not used with the same exploitative scheme as it was during Groswater times. The first explanation would best fit the evidence, since there is elsewhere on the Cow Head Peninsula an isolated early Palaeo-Eskimo component dating around 3000 B.P. (Tuck 1978). At any rate it seems clear that the first occupants at Factory Cove were certainly not as numerous as were the later Groswater people.

INTRA-SITE COMPARISONS

Given the presence of a meagre early Palaeo-Eskimo occupation, perhaps as old as 3000 years by and large the intra-site comparisons also reveal differences in time and very likely in site utilization within the principal occupation. The intensive occupation often resulted in the obliteration of the previous architectural traces. Nevertheless this intensive occupation left other useful information. The high debitage frequency from area IV, as

well as from the northern part of Area II, and the upper strata of Area I, was a common factor which links the three strata. The high debitage frequency from the three areas is interpreted as resulting from an intensive occupation post-dating 2500 B.P. in which people were heavily involved in stone tool manufacturing. Prior to 2500 B.P. but after 3000 B.P., a chipping style herein identified as the "transverse flaking technique" was used. This chipping style is found on artifacts from the lower level in Area II, which in turn is comparable to the style from Area III and suggests a greater antiquity for these occupations. Furthermore the small triangular end blade from Area V, farther away from the edge of the terrace and located at a higher elevation than the first four areas may also indicate an early occupation of the site.

As mentioned above, seriation within the Factory Cove material was difficult, since radiocarbon dated occupations encompassing at least six centuries were compressed into few centimetres of deposit. As a result vertical differentiation was almost impossible except in a few cases. However, in Area I, for instance, the combined consideration of vertical and horizontal distributions enabled the definition of some discrete occupations. Based on the assumption that the early radiocarbon date of 2700 B.P. for Feature 14 and its associated bilobate structure B represented one of the initial occupations in Area I, the

artifacts surrounding Structure B (shown on Figures III and VIII) were sorted out. Examination revealed a low debitage frequency, a concentration of unusual raw material, and a clustering of unnotched end blades. With this occupation taken as a starting point it was then possible to propose the following hypothetical seriation for the Groswater end blades.

Rather than the dichotomy of notched versus unnotched end blades characteristic of most of the Factory Cove collection (Plate VIII), Structure B (Figure XV) yielded a preponderance of unnotched end blades, presumably the earliest in the Groswater phase. The unnotched type recovered from Structure B has both faces chipped, with resulting flake scars which tend to run transversally and create a symmetric biconvex cross section (Figure XV, b,e; Plate VII, j,m,n). A minority show indentation on the edges near the base (Figure XV, c,d,; Plate VII, f) probably for hafting purposes. The unnotched specimens are generally excurvate in outline (Figure XV, b; Plate VII, j,k) while those with indentation are more nearly straight-sided, (Figure XV, c,d; Plate VII, d,f,h); although the sample is small, a preference for flint and multi-coloured cherts is indicated. Later on in this phase, there is a better definition of the hafting modifications with the appearance of a pair of discrete notches (Figure XV, f,g; Plate VII, c,e). At the same time the cross section changes from

completely biconvex to one with a flatter ventral face. The blade element undergoes a transition from elongate (teardrop shaped) to triangular. Finally the end of the Groswater phase is dominated by plano-convex end blades, distinctly triangular in outline (Figure XV, h,i,j;\Plate VII, a,b,g) and with a pair of deep side notches.

The main occupation at Area I is best represented by the artifacts from stratum II, that is, by the material not horizontally associated with Structure B (Figure III) and feature 14 (Figure V), dated at 2700±140 B.P. (Table II), and resting on the sterile stratum. The horizontal exclusion also comprises a poorly documented occupation in the north west sector of Area I. This occupation, stratum IV on figure VI is numbered Feature 15 on figure III. It was beneath the main occupation, and separated from it by the sterile stratum III on figure VI.

Except for gradual change through time, as evidenced in the end blades, it is primarily an impression of uniformity in style that one obtains from the Groswater lithic industry. Unfortunately the acidic soils prevented the recovery of any organic utilitarian objects or art work that may have been deposited.

Moreover it also seems that the Factory Cove occupants did not know where on the island to find soapstone for carving or manufacturing cooking implements. The Groswater people were using red ochre around the combustion

areas as is indicated by its association with charcoal-stained lenses such as level IV. Despite the limited nature of the information yielded by the artifacts from stratum IV, thorough recording techniques did permit the gathering of some information on types of habitation. Even though no isolated occupation, or activity areas within dwellings were identified it is clear that these people were living in some form of surface dwelling, probably a type of tent covered with hides. The hides were held down by stones placed around the base of the structure. Furthermore, it is likely that they were supplemented with sod blocks, as suggested by the distribution of angular pebble lenses forming circular patterns in this area.

Fortunately, the intensive reoccupations at the site left some architectural remains. We were able to interpret Structure A and its associated Feature 1, (Figure III), as being a more or less circular tent ring with a fireplace in its centre. Its diameter, as defined by the distribution of the bigger stones, is approximately 4.5 metres. The other features identified during the excavation and numbered 3, 4, 5, 6, and 11 had probably served the same purpose as Feature 1 during the previous occupations.

A synthesis of the Area II settlement information (Figure VII) is made easier by the fact that all excavations were carried out under the author`s direction. It has been noted that this area bears traces of a depression suggesting

the presence of a semi-subterranean dwelling. Altogether 33 square metres were excavated yielding evidence of a bilobate mid-passage hearth structure, and traces of another dwelling. These are supplemented by four charcoal and fire-cracked rock concentrations, Features 2, 7, 9, and 16 which can be interpreted as the remains of former fireplaces. The other feature, numbered 8, is a semi-circular stone pattern probably used as storage space for lithic material owned by the occupants of Structure D. This suggestion is based on the recovery of a high concentration of lithics confined within this feature.

Suggestions that the northern portion of area II is contemporaneous with the later phase of occupation in area I, are now confirmed by the occurrence of certain artifact traits. The notched end blades cluster in the northern sector of area II, while the unnotched type clusters in the southern sector. Using our theoretical scheme for the end blade seriation as established for area I, the northern portion of area II appears to have been occupied around 2500 years ago at the latest. The end blades have shallow pairs of notches, and the biconvex blades are elongate. The choice of flint as raw material is also characteristic of this suggested time period. The habitation feature, Structure D, is bilobate and the stratigraphy indicates the same kind of evidence for the use of sod blocks as we observed in the surface structures from area I.

The southern portion of Area II, as represented by a shallow depression, predates the occupation of structure D. An early phase of occupation is suggested by a preponderance of unnotched end blades which tended to be biconvex in cross section. Some others had side notches, were elongated and made of unusual raw materials. An additional indication of this early phase is the absence of the more recent deeply side-notched end blades with triangular blade element and plano-convex cross sections. The low frequency of debitage was also indicative of an early occupation as were features 2, and 16 and the unnotched end blades associated with them. The material associated with the features 2 and 16 was probably contemporaneous with Structure B and Feature 14 from Area I. The findings from Area II established the approximate time period in which the Groswater people began to practice extensive flintknapping at the site. Most of the occupation in that area predates 2500 B.P. For no obvious reasons, the period circa 2500 B.P. marks the beginning of extensive tool manufacturing at the site.

In summary, based on the end blade seriation, it does not seem that Area II was occupied for very long after 2500 B.P.; it is worth mentioning the absence of the end blade type estimated to date around 2200 years ago, namely the plano-convex, side-notched end blade with triangular blade element. Rather, there is a preponderance of the

unnotched type followed by the elongate side-notched type, not quite plano-convex in cross section. In terms of architectural evidence, Area II yielded what appeared to be evidence of a dwelling that was slightly dug in the ground and flanked by bedrock outcrops. Although no stones emphasized this structure, this suggestion is based on the distribution of level IIa (Figure VIII), as well as the terrain topography. Thereafter but close to 2500 years B.P. came the bilobate dwelling with a mid-passage hearth (Figure VII). It was probably at this time that stone tool manufacturing intensified at the site.

The data from Area III are unique for the information they convey on the period prior to 2500 B.P. (see date interpretation below). Until proof to the contrary is forthcoming, this area is best interpreted as a single occupation for some specialized activity. The term "single occupation", in this case, is taken to mean that the 20 odd square metres excavated in Area III contained the remains of a dwelling inhabited for perhaps only the period of a hunting season by a single group of hunters. This temporary type of dwelling was heated by a hearth on the open side of the dwelling, and the food gathered was cached into a conical shaped storage pit within the boundary of the living floor.

The main activities conducted during this occupation were probably hunting close to shore, butchering,

and storing meat for later consumption. There is considerable evidence from Area III to support the assumption that this area represents a special-purpose camp. First, it should be noted that hide preparation was not an important factor, since only one scraper was recovered.

If it is accepted that one of the functions of the blades is to butcher animals, then this class of tools from Area III reinforces the interpretation of Area III as a special activity camp. The size of the blades, as well as the presence of heavy alteration such as usewear on many of them are only two criteria to suggest that they were used for butchering animals. The average length (39.7 mm) of the blades recovered from Area III is five millimetres larger than the overall average from the site. While the length of the majority of the blades in the collection falls between 20-30 mm, only one here (28 mm) falls in this interval. Briefly, the blades from Area III are larger than the ones from the rest of the collection and display markedly greater usewear. The end blade class, which elsewhere at the site is less numerous than the knife class, is here slightly over-represented and two thirds of them are broken. They are, in all likelihood, fragments retrieved from carcasses butchered at the site. The high frequency of bifacial tools interpreted as knives is equally indicative of butchering activities. Little stone tool manufacture was carried out in Area III, a fact which further reinforces the idea that

this area was used as a satellite camp for the specific purpose of hunting and butchering.

It was noted earlier that the waterlogged environment in this area favoured unusually good organic preservation. The exceptional condition of the faunal remains provides information on butchering techniques, diet, and storage practises. The two first points will be discussed in a later part of this chapter, but the evidence for storage practises may be mentioned here. Feature 1Ø was at first believed to represent a storage pit later used as a hearth, since it contained charcoal (Figure X). However, this no longer seems plausible. Instead, the discovery of bones stained with red ocher suggests that meat stored in the cache was given some treatment before being deposited. By extension, it is not impossible that covering meat with charcoal was part of the same ritual.

The excavation of area IV was undertaken with the intention of investigating what looked from the surface to be a well-defined single occupation in a surface dwelling. It was anticipated that the area IV data could be used to assess the content of a single occupation. Moreover this area was potentially earlier in time than other areas since it was higher above sea level and farther away from the edge of the terrace than areas I, II, and III. This latter expectation was only partially fulfilled. area IV yielded some artifacts that fall early in the seriation but overall

the Area IV material compared well to the post-2500 B.P. time period at the rest of the site.

The assemblage from Area IV is slightly different from the three previous areas. The end blades are biconvex (or nearly biconvex) in cross section, and the notches are small. The mesio-proximal fragment of the unnotched specimen , probably older than the others, shows transversal flaking on its ventral face. By and large, if the frequency of finished tools is compared with the quantity of the debitage, few finished tools were recovered compared to the other areas.

Finally, in view of the high frequency of flakes from Area IV and the lack of any evident architectural remains, it seems that the excavated portion was probably the midden of an occupation in a surface dwelling to the south of it, or alternatively, an open air activity area where flintknapping was carried out. Any dating of this area must depend entirely on the end blade seriation since no charcoal was recovered. The most likely interpretation is that Area IV contained the remains of an early Groswater phase, as suggested by the end blades and the choice of raw materials. If this holds true, we are also able to suggest that, early in this phase, the Groswater people were using scrapers made from flakes with very few modifications. Finally, a few centuries seem to have elapsed before another generation of Groswater people deposited additional cultural

remains in area IV. This later occupation is dated neither typologically nor by radiocarbon samples; this assessment is based on comparisons with material from area I. The assemblage features from area III that are comparable to features from area I include the high frequency of debitage and the presence of crystal quartz microblades. The microblades, found in three concentrations in areas I and II, were interpreted as diagnostic elements of the later Groswater time period when intensive flintknapping was carried out at the site.

To conclude, from its position in relation to the hypothetical occupation to the south, area IV is in a sense very much like the northern part of area II, where even though there was no post-2500 B.P. date as such, we can propose through comparison, the existence of such occupation.

The interpretation of area V is in many ways similar to that for area IV, save that probably more ancient cultural remains were recovered. Even though the discovery of this area was somewhat fortuitous, it nevertheless opens the way to future research on the beginning of the Groswater phase. Unfortunately, time constraints did not permit excavation of more than one square metre. However an unnotched end blade was recovered, which, compared to those from areas I-IV, appears to be of greater antiquity.

Since the triangular, straight-based end blades with biconvex cross sections are interpreted as an early trait at the site, it is likely that if any more of the 40 centimetre thick peat stratum was removed from the surface of area V, it would probably reveal material transitional between the bulk of that material so far recovered from Factory Cove, and earlier sites on the West Coast, such as Feature 40 at the Cow Head site. It would also provide a better understanding of the period between 2700 and 3000 years ago.

CHRONOLOGY

The relative homogeneity of the Factory Cove lithic assemblage suggests that four of the five radiocarbon dates reported below are acceptable but yet require some discussion. They range over six centuries, with the most recent date extending the end of the Groswater phase in Newfoundland to 2100 years B.P. or A.D. 15 once calibrated. Moreover, regarding the work of Fitzhugh (1976b) and Cox (1978), our data prolong the Groswater phase by one hundred years since after their work in Labrador, they estimated the end of the Groswater phase to be around 2200 B.P. Thus, of the five dates shown below, the first four cluster nicely within the Groswater phase.

TABLE XXII

RADIOCARBON DATES AND THEIR PROVENIENCE

Years B.P.	Area	Association
2100+60 (Beta 4046)	I	Destructured remains of a hearth, feature 5 (charcoal).
2270+100 (UQ 409)	III	Poorly preserved hearth of the lean-to dwelling, feature 12 (charcoal).
2530+280 (UQ 413)	II	Hearth outside the structure feature 7 (charcoal).
2700+140 (Beta 4047)	I	Hearth of a bilobate structure, feature 14 (charcoal).
10960+140 (UQ 407)	I	Feature 3 (charcoal).

The eleven thousand year old date comes from what was considered a most reliable sample, based upon its good condition when excavated. The determination is obviously too old for the period in question, and this evidence is rejected without further discussion. The four remaining

dates were all determined on charcoal samples originating from hearth areas. They are all acceptable, and a succinct discussion of their importance is offered below.

The earliest date, 2700 ± 140 B.P. (Beta 4047), fits well with its stratigraphic position. It comes from Feature 14, which is the hearth of a bilobate house feature (Structure B; see Figures III and V). The architectural evidence is not readily visible but the identification of a bilobate feature is consistent with the artifact distribution and comparable to other architectural data from the early Palaeo-Eskimo period in Newfoundland and Labrador.

The next oldest date, 2530 ± 280 B.P. (UQ 413), comes from feature 7 in area II (Figure VII). This feature was originally interpreted as an element of a semi-subterranean dwelling, designated Structure C, but the ensuing analysis caused some reconsideration of this initial interpretation. In fact, too little evidence was available to associate this feature with Structure C. As a result, two alternate explanations may be offered concerning the association of this feature. Either the charcoal from Feature 7 was part of the Structure C midden, or simply, Feature 7 represents an occupation contemporaneous to Structure C but vandalised by later occupants. In either case, the 2530 B.P. date is in agreement with other data from area II which suggest human activities prior to 2500 B.P.

The radiocarbon determination of 2270 ± 100 B.P. (UQ 409) is within the range of the Groswater phase but such a result for Area III must be taken with caution. Although the provenience is reliable, (the charcoal being associated with a hearth in Area III); I would definitely increase the age of this date by about four centuries on the basis of choice of raw material, the transversal chipping style on the bifaces, and the type of end blades.

Finally the most recent date, 2100 ± 60 B.P. (Beta 4046), is the most recent date yet known for the Groswater phase in Newfoundland and Labrador. It comes from Feature 5 in Area I and is considered acceptable. From its stratigraphic position, Figure XIV, it was expected that this date would be slightly older. However, given its preservation state and the the presence of faunal remains underneath, the radiocarbon determination is not too surprising.

After this brief discussion of the dates obtained from five samples, these data may now be used to help understand the Palaeo-Eskimo population dynamics at the site. Prior to the principal Groswater occupation, dated between 2700 and 2100 years ago, there are hints of an earlier occupation though it is known from very few remains. Unfortunately due to the low frequency of that earlier component and its use of virtually the same raw materials as the Groswater people, it is hard to pinpoint the extent of

that occupation. The most obvious artifacts that lead to the proposition of this early occupation comprise one bipoint, two burins with a couple of burin spalls as well as two small adzes. It is always possible that these artifacts were found elsewhere and brought to the site but the actual data do not warrant further speculation. As suggested above, further research in area V could potentially uncover evidence of this earlier occupation.

Leaving the earliest occupation aside, the principal occupation, i.e. the Groswater phase, can be divided into two entities corresponding to different activities carried out at the site. During the first part, that is about 2500 B.P. and before, people were making, breaking, and probably curating just enough tools for their own use. Even though the same raw materials were readily available as for the later part of the Groswater phase, there is not as high a debitage frequency as after 2500 B.P. The assemblage that characterizes that period is by and large comparable to any other hunter and gatherer assemblage of the Arctic Small Tool tradition. After roughly 2500 B.P., it appears that the same Groswater people continued to use Factory Cove as a base camp but at the same time started to litter the ground with large quantities of debitage. The lithic workmanship aspect of Factory Cove was deemed beyond the scope of the present research. Suffice it to say that seemingly there has been a spread of the Cow Head-like

cherts to at least some Groswater sites located in southern and central Labrador. The possibility of a systematic trade of lithic materials from the Cow Head Peninsula is contemplated for the period between 500 and 100 B.C.

Even though there is more debitage during the latter part of this phase, the frequency of two classes of finished tools is higher during the early part of the occupation. Accordingly, it is possible to calculate the ratio of end blades per square metre, namely 1 per square metre in Area I and 1.5 in Area II. The same is also true for the scrapers, for which the percentages are 0.7 in the first area, and 1.3 in the second. Therefore, based on these ratios and assuming that the same behavior was involved in the abandonment of stone tools, several hypotheses can be proposed to account for the high ratio of end blades and scrapers prior to 2500 B.P., and the overall increase of lithic remains (including debitage) noticed after this time.

On one hand it is possible that starting around 2500 B.P., there might have been a period of a growth in the trade of raw materials with other Groswater bands from southern and central Labrador. The high tool ratio early in the phase could suggest a more intensive occupation during the time that they camped in Area II. On the other hand, based on the higher ratio of hunting implements, it is easier to suggest that the occupation prior to 2500 B.P.

was specifically oriented toward seasonal exploitation of the resources such as the seal; after 2500 B.P., it would have been a year-round occupation, thus leaving a more diversified material culture.

FAUNA: SEASONALITY AND FOOD PATTERNS

While the previous section was primarily concerned with chronology, this section will examine evidence bearing on diet, and try to determine whether the site was inhabited at a particular time of the year or on a year-round basis. The answer to this question lies in the study of the ecofacts recovered from two areas.

Two sets of material were analysed by F. Stewart and S. Cumbaa, and both faunal reports are given in Appendix B. Fortunately, due to varied micro-environments at the site, faunal remains were recovered from Areas I and III. Generally speaking, the bones from Area III were in much better condition than those from Area I. The only places in Area I where preservation was good were underneath charcoal concentrations. It is possible that there is an over-representation of the denser bones, which by their nature resist decay longer. Nevertheless the tabulation of the data below shows a surprisingly diversified Palaeo-Eskimo diet; there are bones from land and sea mammals, as well as from birds and fish.

TABLE XXIII

INVENTORY OF FAUNAL REMAINS FROM FACTORY COVE

Taxon	Area I	Area II	Area III	Total
MAMMALS				
Arctic Hare *Lepus articus*			1	1
Beaver *Castor canadensis*	1		1	2
Red Fox *Vulpes vulpes*			1	1
Harbour seal *Phoca vitulina*			27	27
Harp Seal *Phoca groenlandica*	37		87	124
Seal *Phoca sp.*	135		278	413
Caribou *Rangifer tarandus*	7		2	9
BIRDS				
Canada Goose *Branta canadensis*			6	6
Common Eider *Somateria mollissima*			2	2
Eider *Somateria sp.*			2	2
Murre *Uria sp.*		1		1
Duck *Anatinae*			1	1
Unidentified birds	2		2	4
FISH				
Atlantic Cod *Gadus morhua*	1			1

Both zooarchaeologists agree that the period of occupation is between late winter and early summer. The Groswater economy was strongly maritime oriented, although

there exists a fair representation of land mammals in the collection. By importance in terms of meat weight, the pinipeds dominate, followed by caribou. Bird bones were also identified and at least one fish bone was recovered from an in-situ cultural level.

Even though the Groswater people were living at the site when the harp seals were giving birth to their pups, it appears that the immature individuals are underrepresented. Stewart (referring to Petersen 1966), calls attention to the fact that harp seals seldom, if ever, haul out on the beach outside the breeding season. Therefore it may be that these seals were killed in April on land or alternatively, that the people living on the tip of the Cow Head Peninsula used boats to reach the seal herds or simply walked out on the pack ice. The former explanation of slaughtering seals close to shore during the breeding season fits the faunal evidence better, considering the scarcity of immature bones. There are no ringed seals, not without reason since their habitat is northeast of the island and the Labrador coast. Moreover, Mansfield (1963) mentions that they tend to be widely dispersed rather than in colonies.

The second most important food resource used at Factory Cove 2500 years ago is the woodland caribou. Cameron (1958) referring to Prichard (1911) maintains that originally the caribou herd on the island was divided into three groups, the main group living on the central and

southern part of the island. The group from the northern part of the island would migrate to join with the main group for the winter and return to the north in spring. There was also a non-migratory group on the Avalon Peninsula.

Cameron (1958) reports that although nowadays we possess airplanes to permit access to the barren plateau within a couple of hours, not long ago in this century people were still back-packing their way to the barrens. They would spend about one month away from the coast to hunt the caribou as they began to migrate to the south during the autumn. If we accept the assumption that the caribou migration pattern has not changed or at least that there was also a north-south caribou migration at the time of the Palaeo-Eskimo occupation, we can infer some subsistence patterns. It is likely that the Palaeo-Eskimo population living on the Cow Head Peninsula had to go regularly to the barren grounds to intercept the caribou migration. The estimated distance to travel from the site to the foothills is approximately 14 kilometres. The forested coastal plain is also reported to maintain a small caribou population.

As for the avifauna, given the fragile nature of the bones, their identification in the collection comes as a surprise, at least to the author. Fortunately, Cumbaa was able to identify bones of the Canada goose, which can be strongly season-specific. Effectively, the presence of medullary bones (Rick 1975) within two femurs and one ulna

reveals that the people who stored some of their wildfowl in the cache of area III killed them around the time of the year when they lay their eggs. For the Factory Cove latitude, Bellrose (1976) indicates that it would be between April 20 and May 3. These data are consistent with the season of occupation inferred from the evidence for seal hunting. Two other types of birds present are specified as eider and common eider. These duck species are found year-round in the area.

As a result of the dubious provenience of the only faunal material from area II, (surface of level II), this is rejected as evidence. In this case it is the humerus shaft of a murre (Uria sp.) mentioned in Cumbaa's report. It is my contention that this bone is intrusive to area II. First, it is the only preserved ecofact from area II and it comes from the top of level II, in other words next to the sod level. This bone is therefore likely a result of recent bird hunting in the vicinity of the site. The second reason for discounting this bone as evidence of Palaeo-Eskimo murre hunting is that it does not come from any particular micro-environment that could account for its good preservation. It was observed elsewhere at the site that waterlogged milieux and areas beneath charcoal concentrations were the main settings for good organic preservation.

Nonetheless there still exists good evidence for a widely diversified Palaeo-Eskimo diet, particularly if one accepts the presence of an Atlantic cod otolith from area I. Tuck (1976b) reported finding in a Maritime Archaic site Atlantic cod otoliths which he considered to be curios rather than direct evidence for cod fishing. His rationale is that the special shape of otoliths makes them very attractive to the eyes and can be picked up for that very same reason. It is consistent to agree with Tuck's interpretation since that is the only evidence of fish bones from the site.

Whether or not the otolith constitutes evidence of ancient fishery in Newfoundland, it can be safely said that it belonged to a cod probably about "30 inches in length and weighing 10 pounds" (Cumbaa 1983:3). It was clearly associated with Feature 5, dated around 2100 years ago. The other sea food remains encountered were a few shell fragments scattered at the site. They are, for the time being, considered as intrusive, for they have a low frequency, and as we noticed during our stay at the site, they can be easily wind blown.

The exceptional organic preservation from area III provides solid information on butchering methods and the storage of food, as well as some of the rituals surrounding the storage of food. Hence, if this is combined with to Stewart's (1979) study of the remains from area I, the

Groswater mode of subsistence becomes clearer. Stewart (1979) speculated from the absence of long bones and vertebra as opposed to the presence of cranial and flipper elements that the seals were butchered at the kill site and that it was mainly heads, muscles and skins with the feet still attached which were carried back to the house area. Had the long bones been present in the sample in any number, they would have been recognized (Stewart 1979:4). However she cautions that the skull parts represented were all dense parts and therefore this physical feature may account for their representation.

Cumbaa (1983), working with 1200 faunal remains recovered in 1981 from the areas I, II, and III and aware of Stewart`s (1979) interpretation arrived at slightly different conclusions. Contrary to Stewart (1979) (and this is probably due to the larger sample available) Cumbaa maintained that primary butchering went on at the site. He reported that all body parts are represented even for the caribou, of which he identified few bones but at least head, limb and extremity elements (Cumbaa 1983:8). The proposition of primary butchering of land mammals at the site may be difficult to accept, given the distance involved, but if we take into account the evidence of a caribou herd living in the coastal plain, it is reasonable to think that whole animals could have been transported to the base camp.

Concerning the season of occupation of the site, it was probably a year-round occupation, however, one half of this year-round occupation remains to be demonstrated. The osteological material from sea mammals and birds cover essentially a late winter to early summer occupation, but this leaves us with the questions of what the early Palaeo-Eskimo were doing for the other half of the year, and where were they going. It is not unlikely that the remains that would attest to occupation of the site during these seasons, perhaps including fish remains, were not preserved. Furthermore, considering the topography of the terrain, I can not conceive why the whole base camp would move to the barrens when the caribou herd would start its migration toward the south. It is easier to hypothesize a small group of collectors going away from the base camp for a short period of time while the coastal camp probably remained the year-round settlement.

Moreover the best evidence for that hypothetical year-round occupation comes from the architectural remains. There are substantial remains usually associated with a colder season, and perhaps snow houses were being used as well. The suggestion of summer use of the site can be based on possible outdoor fireplaces such as the feature 7 in area II. Finally a structure such as the lean-to dwelling in area III gives some basis for an occupation in warmer months.

To summarize, it may be said that the Groswater people who lived at Factory Cove carried out their predacious way of life by exploiting the marine environment, the coastal plain, and probably the plateau hunting both mammals and birds. At least nine species were recovered from these food reservoirs. Moreover since their economy was predominantly maritime oriented, the seal species dominate in terms of the number of bones recovered. The caribou comes second, and it is followed by different species of wildfowl, the Arctic hare, and the beaver. The red fox was probably exploited more for its fur than its meat. To what extent the Factory Cove people were using vegetal resources is not known. We have no data to answer such a question since no flotation studies were carried out. However, it is likely that they were collecting a certain amount of berries in season.

The exceptional conditions that favored the organic preservation of the remains from the cache in Area III kept for us what can be called an ideal (if small) representation of the Palaeo-Eskimo economy. There are bones from animals that were used for their food and for clothing. It is also probable that some of those bones were manufactured into tools such as beaver incisor woodworking tools, and some bird bones with minor transformation were probably used as needles. Unfortunately we were not able to find any traces of such artifacts during the excavation.

Given the large variety of species exploited, I tend to adopt W. E. Taylor's (1966) proposition, and see the economy of the Groswater people living at Factory Cove as widely diversified. For Taylor the Eskimo economy is neither inland nor coastally adapted but rather arctic, and occasionally, sub-arctic adapted. The degree to which the species are exploited reflects primarily the environment, the faunal resources, and secondarily an economic heritage (Taylor 1966:118). This definition would best fit the data from Factory Cove where we now know that a wide range of food resources was exploited.

SETTLEMENT AND SUBSISTENCE

After the work at Factory Cove, subsequent work at the Broom Point site ten kilometres to the south (Tuck and Auger 1983), and an overall better understanding of the maritime environment after discussion with other students of archaeology, I realised how strategic were the headlands of the West Coast of Newfoundland. These two particular settlements are strategic locations from which to intercept the migrating harp seal herds. Mansfield (1963) reports that harp seals of the Gulf herd are found wherever there is moving ice. They stay in the area until the end of the breeding season in April and then start to migrate north in May. Nowadays, local residents from Cow Head mention that occasionally youngsters would go to the shore ice in spring

and bring back live seal pups to the community. This serves to indicate how well these headlands along the Coast provide ready access to the Gulf herd; no doubt they were occupied for this reason during Palaeo-Eskimo times.

Although we dug only 160 square metres, representing 12 percent of the estimated 1300 square-metre surface of the site, we have evidence of at least four different types of dwelling. The various residence units forming the site are imbricated into each other and cover a period radiocarbon dated for six centuries. The use of the term site implies a non-random output of human choice processes which allocated structural forms, activities and artefacts to relative loci (Clarke 1977:10) of which we excavated a portion. A number of structures with their fireplaces were our best preserved architectural remains at this domestic settlement.

Although we should be cautious when dealing with a prehistoric population of which few elements are preserved, I tentatively propose that the Groswater people who lived on the Cow Head Peninsula were "collectors" in the same sense as defined by Binford (1980). They were characterised by (1) the storage of food for at least part of the year, and (2) logistically organised food-procurement parties (Binford 1980:10).

This view implies that the site was probably a semi-permanent habitat where a number of specialised parties

would depart seasonally to occupy shifting camps. It remains, however, to design a model that would account for the location of inland shifting camps.

Considering the amount of seal bones recovered from the site, we can safely suggest a primarily maritime adapation. Secondarily, but not far behind, the adaptation includes the use of land mammals as well as avi-fauna. Therefore, to put a name on this type of subsistence, I would use Fitzhugh's (1972) terminology and typifiy the Groswater subsistence as modified-maritime. The data show a major emphasis on seal hunting. However, unless conditions allowed them to store food for extended periods of time, they had to exploit non-maritime resources to a certain degree. Consequently the following section will examine the ways in which the Groswater people might have managed to carry on their way of life by adapting their settlement patterns primarily to be close to maritime resources, and secondarily to land resources. Let it be said in passing, that no time was spent surveying the region, consequently the following model is essentially hypothetical. It is based primarily on an estimation of the resources potentially available.

Three potential resource areas are identified in this particular physiographic basin of the West Coast. The mouth of the St Pauls River is six kilometres to the south of Factory Cove. This river was probably a good fishing

locality, for at its mouth it narrows before opening out into a large body of fresh water, influenced to a certain degree by salt water tides. As a result, it is likely that the place was visited by the aboriginal occupants. Therefore I suspect that a satellite camp may have been established there for a short period of time. Some data were gathered which support this idea; a cursory reconnaissance on the south side of the St Pauls River in 1982 (Tuck and Auger 1983), allowed us to locate one small site likely associated with fishing activities at the mouth of the St Pauls River.

The coastal plain, up to 100 metres above sea level and approximately 14 km wide, was also a basin containing resources exploited by the Groswater people. However these resources were at least one day's walking distance from the base camp. Nevertheless, the exploitation of that area is attested to by the presence of fox, beaver, and rabbit bones at the site. Even more easterly and at least two days from the site there was the possibility of securing some caribou during their migration to the south in the fall of the year. Access to the Plateau of the Long Range Mountains was undoubtedly gained through the forested valleys that carve the side of the mountains.

Finally, closer to the site there are the seasonally rich waters of the Gulf of St. Lawrence. In all likelihood, the over-representation of the harp seal bones

in the collection indicates a particular emphasis on that resource during the season it was available at a low cost. Of minor importance but constituting a certain part of the diet was the harbour seal. It is likely that the specimens identified in the collection constituted some of the Groswater larder during the lean season of the year. Mansfield (1963) mentions that harbour seals tend to be most common in areas where fresh water is abundant; he adds further that they are essentially open water animals and never associate with fast ice; consequently, it is likely that the specimens identified in the Factory Cove collection were killed during the summer. Harbor seals haul out on sand banks and the mud flats of river estuaries, both features are found close to Factory Cove. Nowadays, people still cannot go out fishing for a day without seeing a few harbour seals in summer time.

INTER-SITE COMPARISONS

Although the following comparisons concentrate on the sites located in Newfoundland and Labrador, it is understood that there are undoubtedly other variants of the Groswater phase scattered throughout the Eastern Arctic. The Groswater phase has been so far recognised essentially within the region where it was first identified; as a result it seems fruitless at the present time to try to compare local horizon markers with others from elsewhere in the

Eastern Arctic. Comparisons are therefore limited to the more restricted region of Newfoundland and Labrador.

Unfortunately, in this geographic province there are problems inherent in the inter-site comparisons. The first mention of the Groswater phase was made little more than a decade ago, and on the basis of a handful of artifacts Fitzhugh (1972) proposed it as a regional variant of the Dorset culture. Consequently the most obvious problem in inter-site comparison is the lack of any standardized material culture typology. Furthermore, it is my opinion that even at the scale of the Island, inter-site comparison is hard to conduct, not only because there are few Groswater elements, but because for one reason or another they have been included in a later phase which was called the "Typical Newfoundland Dorset" (Linnamae 1975). This concept of a "Typical Newfoundland Dorset", now obsolete, was defined as follows:

> "Classes that appear peculiar to Newfoundland occur in side-notched end blades,gravers, end-scrapers, microblade cores, ground slate and soapstone. Also the Newfoundland material seems to exhibit more grinding on end and side blades, more tip-fluting or thinning on end blades, larger and differently retouched microblades and blades, and the asymmetry of the angle of outslope on rectangular soapstone vessels."
> (Linnamae 1975:90).

Whereof, if we consider the end blade class as the most diagnostic, Linnamae had in her collections elements of the

Groswater phase ("side-notched end blades"), and elements of the later Middle Dorset phase ("ground and tip-fluted end blades").

In retrospect, it is evident that Linnamae (1975) was strongly influenced by Harp`s (1964) work at the Port aux Choix-2 site. Recent research allows us to place, without any doubt, the material illustrated on Harp`s plate I with the late Palaeo-Eskimo period, and link the material from his plate VI to the Groswater collection from Factory Cove. We can do the same with Linnamae`s concept of a "Typical Newfoundland Dorset". Again in light of recent research we can sort out elements peculiar to the Groswater phase and others peculiar to the later Middle Dorset phase. Tentatively the Table XXIV below highlights the most obvious differences between the Groswater and the Middle Dorset lithic material culture.

TABLE XXIV

DIFFERENCES BETWEEN GROSWATER AND MIDDLE DORSET

GROSWATER	MIDDLE DORSET
-Hammerstones tend to be elongated or oval shape.	-Hammerstones to have an elongated shape.
-Many cores are made of the Cow Head-like cherts, few are in quartz crystal.	-Use of the quartz crystal cores.
-Well fashioned burin-like-tools using chipping and grinding, use of chert.	-Ground nephrite burin-like-tools, larger in size.
-Active and passive whetstones.	-Barely modified rubbing stones.
-Few burins.	-No burins.
-Unnotched and side-notched plano-convex end blades.	-Tip-fluted end blades, ground biconvex end blades and, spear points with gouged slots.
-Side blades of all sizes.	-Absence of side blades?
-Relative homogeneity within the three classes of scrapers, some ventral chipping.	-Large variation of the scrapers, many are on flakes and some are made of quartz crystal.
-Finely chipped side-notched knives of all shapes.	-Bigger knives showing a rough workmanship.
-The blade class outnumbers all other classes.	-Extensive use of quartz crystal microblades.
-Absence of soapstone.	-Use of fine grained soapstone.

At many of the Palaeo-Eskimo sites excavated around the island, there are frequently minute quantities of distinctive Groswater elements in the collections. It is instructive to consider the two most recent works in

Newfoundland Palaeo-Eskimo archaeology (Linnamae 1975; and Carignan 1975), and see which elements clearly pertain to Groswater in both collections.

Linnamae, in her (1975) work on the Dorset culture, refers to two early dates, one from the Pittman site and the other from Cape Ray. Both were considered abnormally early and perhaps reflecting early incursions to the island by early Dorset people though no particular traits were defined as belonging to this early phase. Looking at her material with today's knowledge, we can safely transfer some of the material which she associated with a Dorset occupation and assign it to the Groswater manifestation. Examples from the Cape Ray site (Linnamae 1975) include the side-notched end blades on her Figure 15 (j,l),two knives (Figure 15 p,q), as well as the scrapers (Figure 17, a-h) and probably the side blade and burin-like-tools, (Figure 18, a-c). Linnamae's date of 2800 B.P. from the Pittman site is further convincing evidence for a Groswater presence. The end blades (Figure 28, k-n) with their elongated shapes and discrete notches correspond to the end blade seriation obtained at the Factory Cove site for the same period. The other obvious Groswater elements from this site include a burin and two burin-like-tools, (Figure 29, m-o).

The same types of Groswater material can be found illustrated in Carignan's (1975) publication on the Beaches site. The artifacts from the Beaches site collection that

are comparable to the one from Factory Cove include the side-notched end blades, (Plate 20, 1-p), the burin-like-tool, (Plate 24, i), as well as a few knives.

After comparing his material to Fitzhugh's (1972) data, and certainly being aware of Bishop's (1977) survey of the Gros Morne National Park, Carignan concluded that there was effectively evidence of an early Dorset stage in Newfoundland which he called an "early Groswater Dorset phase" (Carignan 1975:132). From these observations, he speculated that the initial occupation by the Dorset people at the Beaches site probably occurred around 2400 B.P. Since Carignan does not report any high frequency of debitage, his Groswater artifacts probably represent a small band of hunters, with their tools made of fine grained Cow Head-like cherts.

The Norris Point-1 site collection so far bears the closest analogue to our collection. Bishop (1977), in a report made available in 1973, discusses the presence of early Dorset on the west Coast of Newfoundland. His collection from Norris Point-1 is surprisingly similar to the Factory Cove collection in all aspects of its lithic material culture. Sparing the reader of the repetition of types that compare, I can say that the majority of the Factory Cove material can be duplicated with specimens from Norris Point-1.

While comparing his material to some of Fitzhugh's (1972) Groswater Bay material, Bishop proposed that Norris Point-1 was probably occupied in the vicinity of 2600 B.P. (Bishop 1977:18). Even if he based his evaluation on a few artifacts, the Factory Cove data corroborate Bishop's initial observations. The traits from the Norris Point-1 collection favouring an occupation prior to 2500 B.P. are the presence of what I identified earlier as unusual raw material, the presence of unnotched end blades along with end blades displaying very small side-notches and, finally the seeming absence of end blades having a triangular blade form and deep notches.

Bishop's (1977) survey and Tuck's repeated campaigns on the west coast probably resulted in an over-representation of the Groswater phase from this part of the Island. The nearest site to Factory Cove that yielded material comparable to the present collection is the stratified Cow Head site, only two kilometres away. That site, originally classified as early Dorset, (Tuck 1978), is now referred to as Groswater, though Tuck (personal communication) maintained that it really is a little different from what Fitzhugh (1972) called Groswater Dorset; this is probably because it is earlier.

Although most of the artifacts and the dates from bands 4 to 7 at Cow Head are comparable to the material at Factory Cove, the heuristic value of the bands varies a lot

when time comes to use them for comparison. There is a similarity of the Factory Cove collection noticed for all the bands mentioned above but band 5 with its two dates is of special interest. Although the dates 2480 ± 110 B.P. and 2845± 120 B.P. show a large variation, Tuck (personal communication) puts more trust in the older date. A stylistic comparison of the end blades added to a preference for unusual raw material, confirms that at least the band 5 occupation at the Cow Head site corresponds temporally to the sequence established at Factory Cove prior to 2500 B.P.

The current research at the Broom Point site should strengthen our understanding, since a Groswater occupation was discovered fortuitously at this other west coast site. A radiocarbon determination of 2335 B.P. at this site is taken to date the small but distinct Groswater component discovered. In addition, with the past few years Groswater artifacts have come to be recognized in numerous Palaeo-Eskimo collections from the Island. Penney (personal communication) mentions Groswater artifacts from at least three sites on the south coast, including small side-notched end blades and burin-like-tools. Unfortunately the few specimens Penney recovered were mixed within later Palaeo-Eskimo material.

In Trinity Bay Evans (1982) and Robbins (1982) respectively at the Frenchman`s Island and Stock Cove sites, uncovered material seemingly earlier than Middle Dorset.

The traces of the Groswater phase are more evident at the Frenchman's Island site where Evans has recovered a finely chipped knife, a chipped and ground burin-like-tool, some side blades as well as a scraper; all are made from the fine grained Cow Head-like cherts. At the Stock Cove site Robbins (personal communication) mentions the presence of a side-notched end blade from the lowermost stratum which compares favourably with some Factory Cove end blades.

Going further north but still on the Newfoundland east coast, Sawicki (1981) excavated two early Palaeo-Eskimo components at the Terra Nova National Park, Bonavista Bay. Both sites post-dated 2500 B.P. The most diagnostic elements in her collections which compare to the Factory Cove material are the finely chipped plano-convex end blades with deep side-notches. Most of her material is made from Cow Head-like cherts, and a small quantity of debitage was found at these two small sites. Again in Bonavista Bay but this time at the Shamblers Cove site 40 km farther north, a small Groswater component was recovered from a thin deposit amidst two other aboriginal occupations (Tuck 1983b). Fortunately, all artifacts that one could expect from a Groswater tool kit are represented in this handful of material which dates, according on the Factory Cove end blade seriation, to the vicinity of 2400 to 2500 B.P.

Three other discoveries of Groswater remains covering the wide geographic area of the northeast coast of

Newfoundland have been reported. Pastore (1982) mentions two sites from Notre-Dame Bay which have yielded Groswater artifacts to a previous investigator. Finally the last Groswater component from the Island known to the author comprises three side-notched end blades recovered at the L'Anse Aux Meadows site. The odd fact about them is that they have notches comparatively higher than the ones from Factory Cove. The paucity of material at those three locations does not warrant further attention; consequently this review will shift its attention across the Strait of Belle Isle and examine the links with some sites on the Labrador coast.

The actual geography does not seem to have been much more of a barrier in prehistoric times than it is today. Judging from the artifactual parallels between the two areas there were probably at one time regular contacts between the Groswater population living in Central and Southern Labrador and that in Newfoundland. Both populations were descended from the same ancestors and it is likely that the island was part of the accepted Groswater territory. Comparisons between the two areas suggest that the Labrador sites were not merely overnight stops in a migration south, since there is evidence for much raw material obtained seemingly from Newfoundland and traded to the Labrador people. The styles of both the artifacts and

the Labrador people. The styles of both the artifacts and the dwellings excavated at Factory Cove have their counterparts in Labrador.

The first such site to be found when one shifts across the Strait of Belle Isle from the tip of the Northern Peninsula is on Saddle Island at Red Bay. There, Tuck (1982b) recovered some Groswater artifacts from two areas, underneath the Basque stratum. He considered his material from area E to be the nearest thing to a true "transitional pre-Dorset/Dorset component" (i.e. Groswater) yet found in southern Labrador. area F is somewhat later in time and more closely related to the Factory Cove data; it dates towards the end of the Groswater phase. The data from area F show the use of fine grained cherts identical to those from Factory Cove; the plano-convex side-notched end blades from area F would also post-date 2500 B.P. Tuck (personal communication) thinks that both components reflect occupations of a short duration.

The other early Palaeo-Eskimo material found in Southern Labrador comes from the Wrinkle site. A look at this material published by McGhee and Tuck (1975) indicates that the Wrinkle site collection should be assigned to the Groswater phase, even though originally referred to as early Dorset. The lithic remains show the use of various cherts including a small percentage of Ramah cherts, and a preponderance of the blade class. Furthermore, parallels

exist for the end blades, which consist of side-notched specimens. This attribute, along with the plano-convex cross-section, would sustain a date of around 2400 to 2500 B.P. for the Wrinkle site. Finally, the use of pink quartzite abrader polished to an almost glass-like finish on one surface is another element that compares favourably with Factory Cove.

It is, however, in Groswater Bay, some three hundred kilometres to the north of the Strait of Belle Isle that Fitzhugh (1972) originally proposed the concept of a Groswater phase. Although based on very few data, most of the initial artifactual content can still be used to compare assemblages of Groswater phase.

Obvious parallels exist between the Factory Cove assemblage and Fitzhugh`s (1972) collections from Groswater Bay, more especially among the end blades and the scrapers. The striking feature in the end blade comparisons is that Fitzhugh mentions three length classes for his side-notched end blades, classes in which specimens average 20 mm long, 30 mm long, and 40-50 mm long. The same was also noticed at Factory Cove where the side-notched end blades split in three length classes. The specimens of the first class average 24 mm long, the second, 30 mm long, and the third average 34 mm long. It is undetermined whether those three classes are functional or simply reflect a difference in time. On the other hand, the Groswater Bay scrapers have

generally pronounced graving spurs; this attribute is also reported for Factory Cove but may not be as common as in Groswater Bay. An additional similarity is that the microblade class is also numerous in both regions.

The raw material from Groswater Bay compares well with that at Factory Cove. Fitzhugh (1972:126) reports the almost exclusive use of fine grained cherts (almost certainly from Newfoundland); the same preponderance of fine grained cherts was also noticed at Factory Cove, where allochtonous raw materials like Ramah chert total Ø.7 percent, and quartz crystal totals 4.7 percent, the rest consisting of the fine grained Cow Head-like cherts. The small amount of ground slate and the absence of soapstone at both places are also worth mentioning. After spending as much time in Northern as in Central Labrador, both Fitzhugh (1976a) and Cox (1978) agree that the Groswater remains are far more scarce in more northerly regions of Labrador, especially the Torngat area, than from Central Labrador, including Hamilton Inlet. However they compare their collections quite freely to collections from the Eastern Arctic, such as those from the Killulugak and Nunguvik sites, reported respectively in Maxwell (1973) and Mary-Rousseliere (1976). Whatever the reasons for the seeming concentration in Central Labrador, it is interesting that climatic changes are noticed for the period after 3ØØØ B.P. This sudden Palaeo-Eskimo adaption to more southerly

regions, as discussed in Dekin (1969), might be a very real phenomenom, given the apparently low population density in Northern Labrador. Certainly, few sites belonging to the Groswater phase are known from northern Labrador. The best known is a Groswater component reported from the Nunaingok site at the northernmost point of the Quebec Labrador Peninsula. Although the description is succinct, Archambault (1981:78) reported that her eared end scrapers and stemmed or notched microblades are similar to those Cox (1978) and Fitzhugh (1972) have obtained farther south.

The Groswater component from the Pentacostal site in Postville, Labrador is another that attracted our attention for the information it yielded on this phase as seen from Central Labrador. In a paper presented at a recent symposium on Palaeo-Eskimo prehistory in Halifax 1983, Cox and Loring made available some more elements of comparison for the Groswater phase in Labrador. The two dates mentioned for this site range from 2350 to 2250 B.P. Those dates are consistent with the plano-convex side-notched end blades recovered. Their chipped and ground burin-like-tools compare nicely with the ones from Factory Cove, and are made from the Cow Head-like cherts. The preponderance of expanded corner and flared end scrapers at the Pentacostal site and the apparent absence of triangular end scrapers reflect the abandonment of the triangular type toward the end of the Groswater phase. After examination of

the plates from the Pentacostal site, (Loring personal communication), it seems that Ramah chert played a stronger role in the Groswater phase in Labrador circa 2300 years ago than it had formerly. Furthermore the use of soapstone as evidenced from the same site, which did not exist before in this phase, might result from contact with the late Palaeo-Eskimo (i.e. Early Dorset) arrivals to Labrador.

The last interesting point of comparison concerns the architecture. Excavations at the Pentacostal site yielded the presence of mid-passage structures along with well defined square fireboxes. Those types of features are once more very similar to the data recovered at Factory Cove.

CHAPTER VI

SUMMARY AND CONCLUSION

This research was started in the academic year of 1980-1981 with the aim of establishing the culture history of the Factory Cove site. It constituted a unique research in the sense that it was the first excavation on an essentially early Palaeo-Eskimo site on insular Newfoundland. It contributed to a better understanding of what the Groswater phase was in Newfoundland as well as how and why the Groswater people were living on the Cow Head Peninsula. It partly answered the question of their cultural ancestry.

If we refer to the original premises, the proposal had the following objectives: (1) to define what was called "Early Dorset" by the researchers involved with this period in Newfoundland, and (2) to take advantage of a site estimated to be from the later part of this phase to investigate the nature of the transition between "Early Dorset" and Middle Dorset.

Following the artifact recovery and data analysis, we had to somewhat alter the original proposal. It became obvious from the data analysis that the hypothesis of a transition from "Early Dorset" to Middle Dorset could not be supported, or, in other words the so-called " Groswater

Dorset" were in no way ancestral to the succeeding Middle Dorset in Newfoundland. There were no obvious typological links between "Groswater Dorset" and Middle Dorset for Newfoundland. Late Palaeo-Eskimo contacts with the resident early Palaeo-Eskimo in Northern Labrador, (Fitzhugh personal communication) was a possible situation for cultural exchanges, but it still remains to be demonstrated. Instead, a 200-300 year gap starting from around 2100 B.P. is suggested to exist between the Groswater and the Middle Dorset phases.

The above mentioned evidence brought us to reevaluate our own terminology. If this so-called "Early Dorset" phase did not contribute to the succeeding Middle Dorset phase, then why call it so, as we did in the initial proposal. Or for that matter, why call it "Groswater Dorset". As a result, we decided to apply the term Groswater sans "Dorset" to our material. This term now refers to the time period from 2800 B.P. to 2100 B.P. and comprises a tool kit as well as architectural remains and a subsistence pattern distinct from the Dorset period. The Groswater appellation is a modification of what Fitzhugh (1972) had termed "Groswater Dorset" as identified in Groswater Bay from 2800 B.P. to 2200 B.P.

Following the above reassessment, the original objectives were then reformulated and the data analysis was carried out with the premise that the Factory Cove remains

were representing the last phase of the early Palaeo-Eskimo period. We were then able to differentiate it from a late Palaeo-Eskimo phase, and to a certain extent, to trace it back to earlier Palaeo-Eskimo phases. Was it not for the fact that both early and late Palaeo-Eskimo periods belong to the same Arctic Small Tool tradition, no typological traces of the early Palaeo-Eskimo can be said to be ancestral to the Middle Dorset in Newfoundland.

Moreover, I am aware that many avenues of the research have been left unexploited; it is specially true for the debitage. Thus the raw material variability, its distribution over the site as well as the reduction techniques did not receive any attention in this research but this aspect is deemed to deserve a systematic treatment for itself inasmuch as it can contribute to pinpointing where the numerous living floors were. As a result, the actual study concentrated on attribute analysis of the finished tools found in relation with the architectural remains. Nevertheless, it allowed us to pinpoint exactly what made a Groswater assemblage and the following summary starts by highlighting the major findings made on the lithic industry.

The hammerstones represent six percent of the collection. The most numerous type weighs between 7 to 190 g, it is usually oval or, more rarely, elongated. Two thirds of them show more than one battering facet, most are

made of the hard quartzite beach cobbles found locally. The burin-like-tools from this Groswater assemblage are all made of the Cow Head-like cherts as opposed to a later use of the nephrite during the Middle Dorset phase. A characteristic burin-like-tool from Factory Cove displays the following attributes: it has been chipped to give it a rough shape, then ground transversely on both faces. The observations on their cross sections reveal that one edge is consistantly thicker than the other where the thicker one is thought to be the back edge that was resting on a hafting device. We identified four different types of burin-like-tools: they can be rectangular, "windswept", angled tip, and triangular. The shape of the whetstones as well as the orientation of the usewears suggest that we have two types of whetstones. One type, called active, is hafted to a handle while the grinding motion is applied to the artifact to be made. I assume that the passive type is not rubbed on the artifact but the artifact is handheld and rubbed on the whetstone.

The end blade class turned out to be the most informative of all. This class was initially divided into two broad types, notched versus unnotched, when I thought that they were contemporaneous; it was then realised that this simple scheme might not have been the most accurate. Thus a seriation of the end blades was constructed showing a preponderance of the unnotched elongated type at the beginning of the Groswater phase with the plano-convex

side-notched type at the recent end of the Groswater phase (see Figure XV).

While the scrapers did not yield much information, they can be classified into four types that are: flake scrapers, triangular, expanded corner, and flared. The flared type makes up for 87 percent of the class. The knives from Factory Cove have something reminescent of the early Palaeo-Eskimo with the distinct transversal chipping. Even though there could be as many types as there are specimens, generally speaking they are side-notched and most often asymmetric, with a relatively flat to biconvex cross section.

The blade class contains the most specimens which is 31 percent of the finished tools. Their width distribution is unimodal with a concentration around 10 mm, and the most frequent length is between 24 to 30 mm.

Organic preservation at the site allowed us to understand at least a part of the Palaeo-Eskimo subsistence strategy. First it is believed that the site was possibly a base camp occupied on a year-round basis. From there, specialised parties could have left for variable lengths of time to exploit specific seasonal resources. Evidence of this exists at the site found at the narrow entrance of the St Pauls River; that site was probably used as a fishing camp. Likewise the coastal plain was probably exploited for small mammals, and the plateau for caribou hunting. The

harp seal was by far the most common dietary item. The location of the site suggests that it was used as an extension to the Gulf, in a sense so comparable to most other jutting Peninsulas on the West Coast. To fill the gap during the low resource period, the seasonal cycle was completed by bird hunting from mid-April to mid-May and harbour seal hunting. If we accept the fish bone evidence, fishing probably complemented the summer staple. As a result of repeated occupations dated for at least six centuries, the surface of the site was left littered with lithic and faunal remains of all sorts. Nothing suggested that there was any major temporal break in the site exploitation.

The question of the Groswater ancestry was not unraveled. Although the link to earlier phases in Labrador is not that evident, it is suggested that the Groswater phase is comparable to Independence II whilst Independence II is an offspring of Indepedence I (Fitzhugh 1976). If the same cultural affiliation exists between the Independence I and the Groswater phases, the long period from 3800 B.P. of the Saglek Bay Independence I material (Tuck 1975) and the 2800 B.P. Groswater phase on the Eastern seaboard is poorly documented. Even though there exist some sites dating in between, it seems that there are very few to account for the sudden resurgence of the Palaeo-Eskimo in Groswater times. Perhaps a change in settlement patterns and more emphasis on

the lithic industry made the Groswater sites more visible to the archaeologist.

As a last point, I consider that the major implication of this research since it was initiated, was to create awareness of the Groswater phase. It is now possible to sort out Groswater artifacts when mixed among later Palaeo-Eskimo material. The best example of this can be seen when we look at Tuck (1983; Plate 2, a-j) where the Groswater elements were successfully sorted out from the Middle Dorset component.

NEW QUESTIONS

This research would not be complete without stating what is envisioned as future research. It seems that this research is not more than a first step in establishing the culture-historical scheme for the Groswater phase. From this groundwork, one should go into more refinements to pinpoint the variations within the Groswater phase. The period circa 2500 B.P. was identified as a turning point at the site where we noticed an increase in the debitage frequency, and possibly the establishment of more regular contacts with the Groswater people living in southern Labrador. Was the climatic deterioration a factor in accounting for the seeming Groswater concentration in more southerly regions? This argument has been tackled over and over again. Alternatively, the arrival of a new

population of late Palaeo-Eskimos in Northern Labrador might be a more enligthening avenue to investigate if we want to explain the propensity of Groswater populations to settle in more southerly regions. At the site itself where the remaining surface left to excavate is estimated to be approximately 85 percent of the total site surface, a research should be planned to investigate area V. This area conceals the potential of discovering what went on around 3000 B.P. This type of research would be purposeful towards the investigation of the Groswater ancestry.

Figure I

Site Map of the Factory Cove Site (DlBk-3)

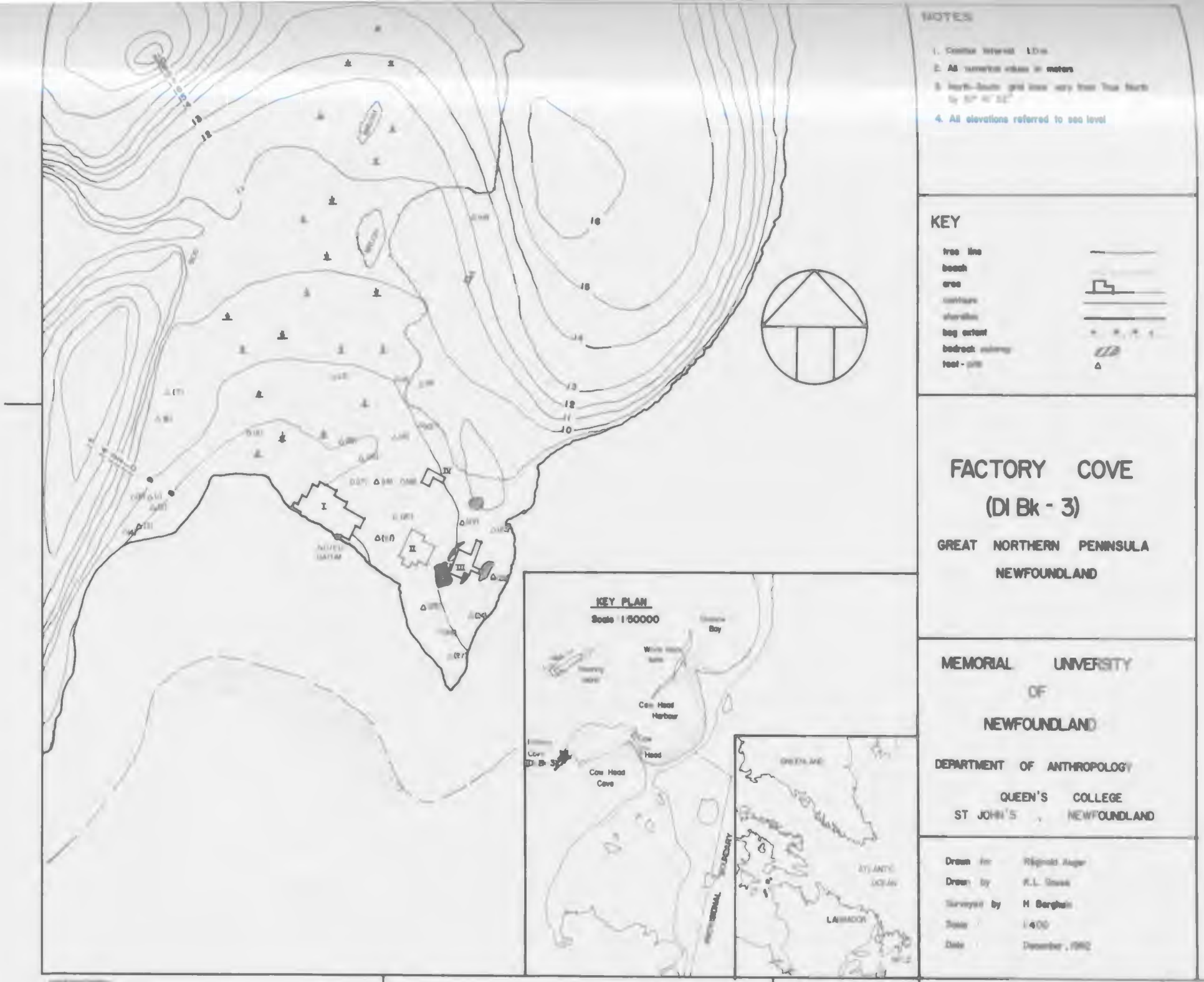
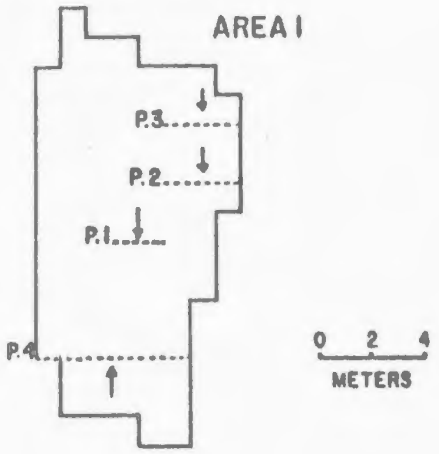

NOTES
1. Contour interval 1.0m
2. All elevations in meters
3. North-South grid lines vary from True North by 23° 41' 32"
4. All elevations referred to sea level
KEY
tree line
beach
cove
contours
shoreline
bog extent
bedrock outcrop
test - pits
FACTORY COVE
(DI Bk - 3)
GREAT NORTHERN PENINSULA
NEWFOUNDLAND
KEY PLAN
Scale 1:50000
Cow Head Harbour
Cow Head
Cow Head Cove
Cove (DI Bk 3)
PROVINCIAL BOUNDARY
LABRADOR
ATLANTIC OCEAN
MEMORIAL UNIVERSITY
OF
NEWFOUNDLAND
DEPARTMENT OF ANTHROPOLOGY
QUEEN'S COLLEGE
ST JOHN'S , NEWFOUNDLAND
Drawn for Reginald Auger
Drawn by K.L. Sloss
Surveyed by H Berghaus
Scale 1:400
Date December, 1982

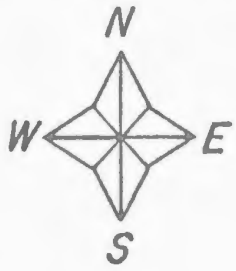
Figure II

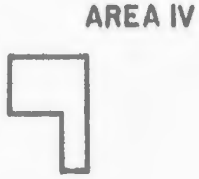
Profile and Area Locations of the Factory Cove Site

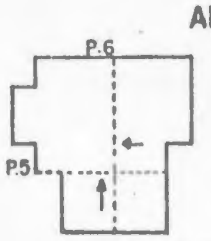
FACTORY COVE DIBk-3

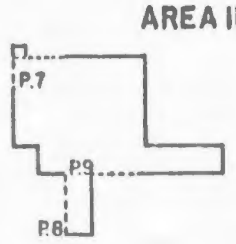
PROFILE & AREA LOCATIONS











LEGEND			
SOD/PEAT		IIA	
IA		IIB	
IB		III	
IC		IV	
ID		IVA	
IE		V	
IF		SAND	
IG		ROCK	
II			

To be used with profiles on succeeding pages.

Figure III

Area I Features and Structures

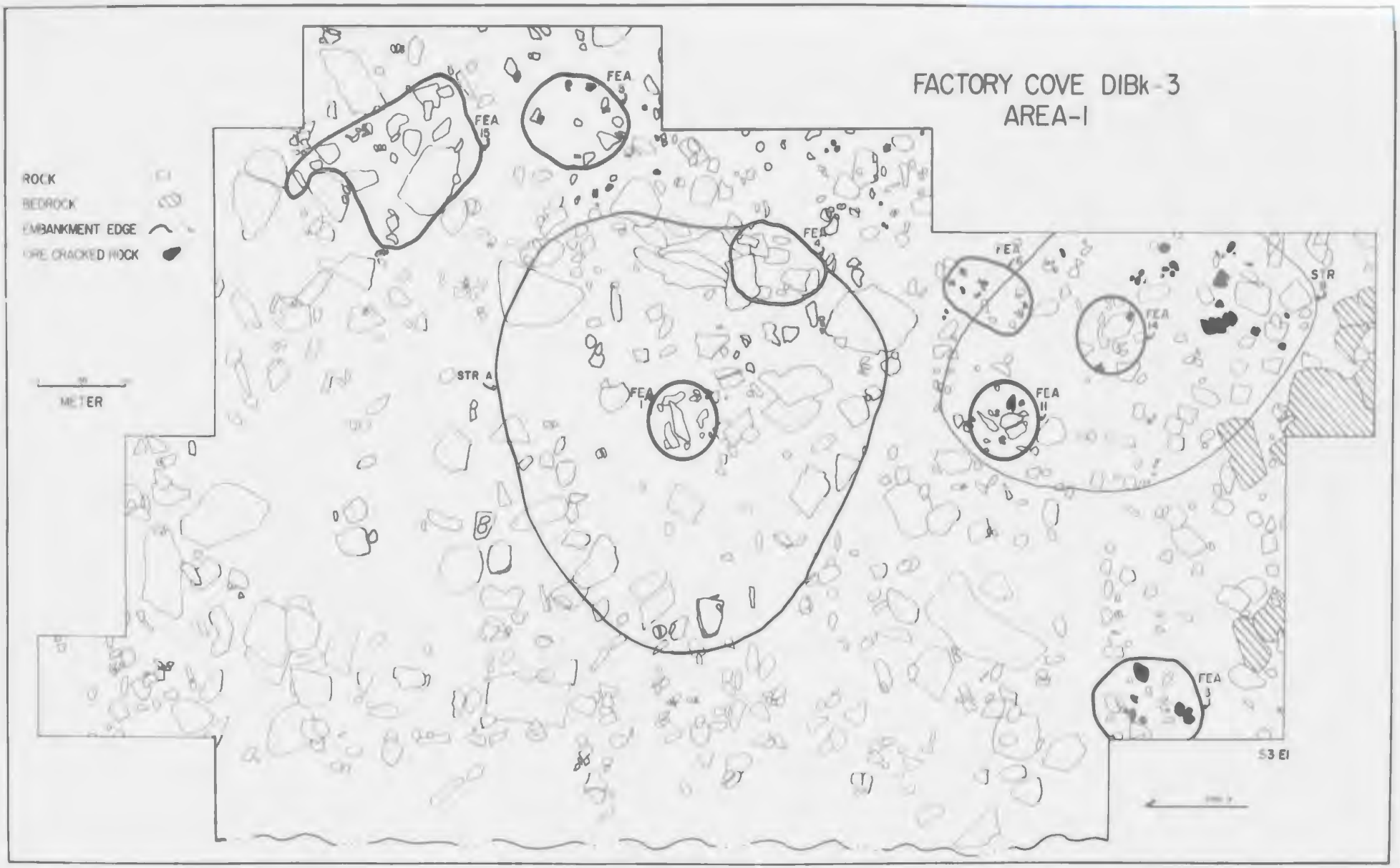

FACTORY COVE DIBk-3
AREA-I
ROCK
BEDROCK
EMBANKMENT EDGE
FIRE CRACKED ROCK
METER
FEA 15
FEA 3
FEA
FEA 1
STR A
FEA 11
FEA 14
STR
FEA 3
S3 E1

Figure IV

Profile #1

FACTORY COVE DlBk-3
PROFILE NO. I

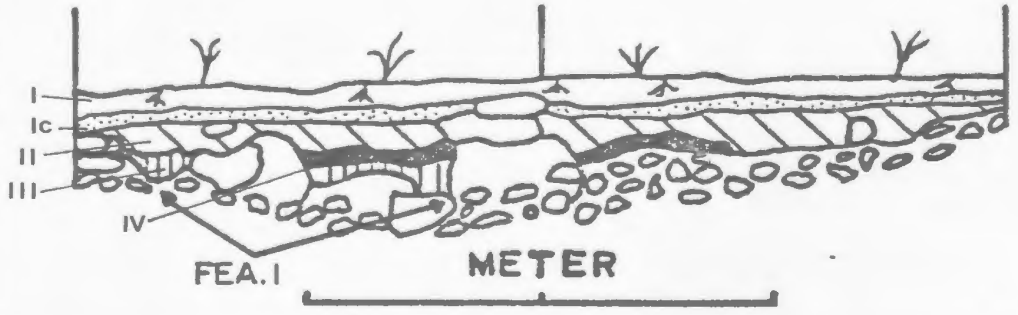
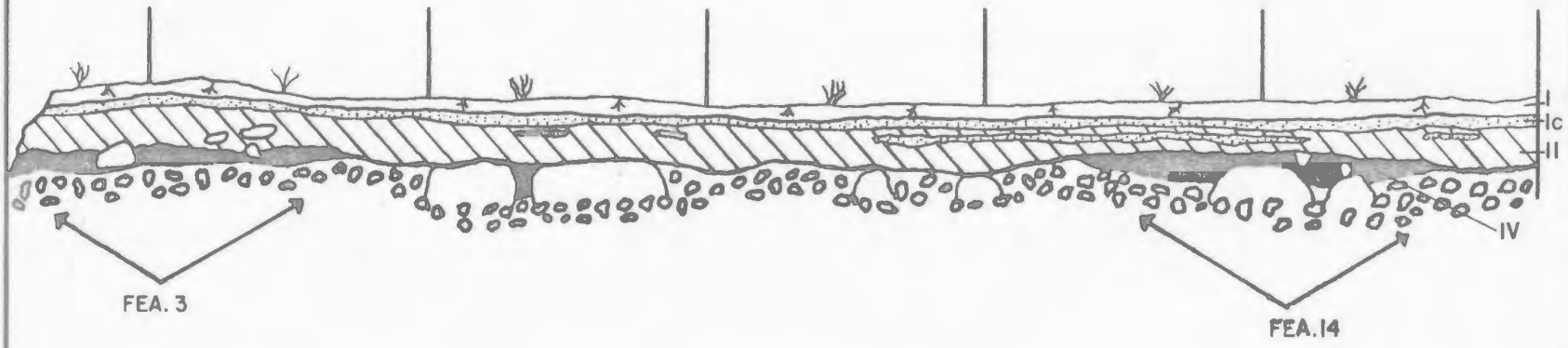


Figure V

Profile #4

FACTORY COVE DlBk-3

PROFILE NO. 4



METER

FACTORY COVE DIBk-3

PROFILE NO. 3

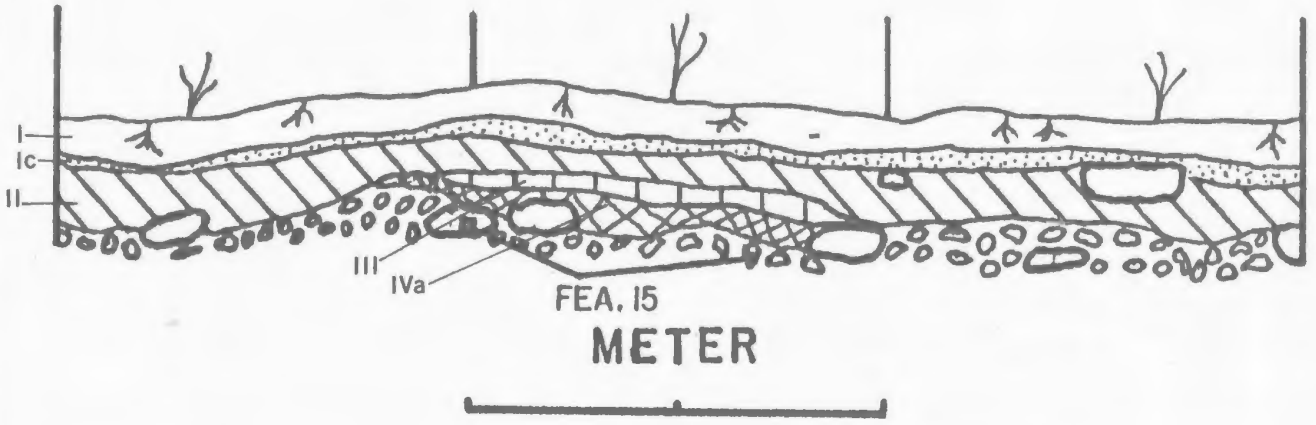


Figure VII

Area II features and structures

FACTORY COVE DlBk-3

AREA-2

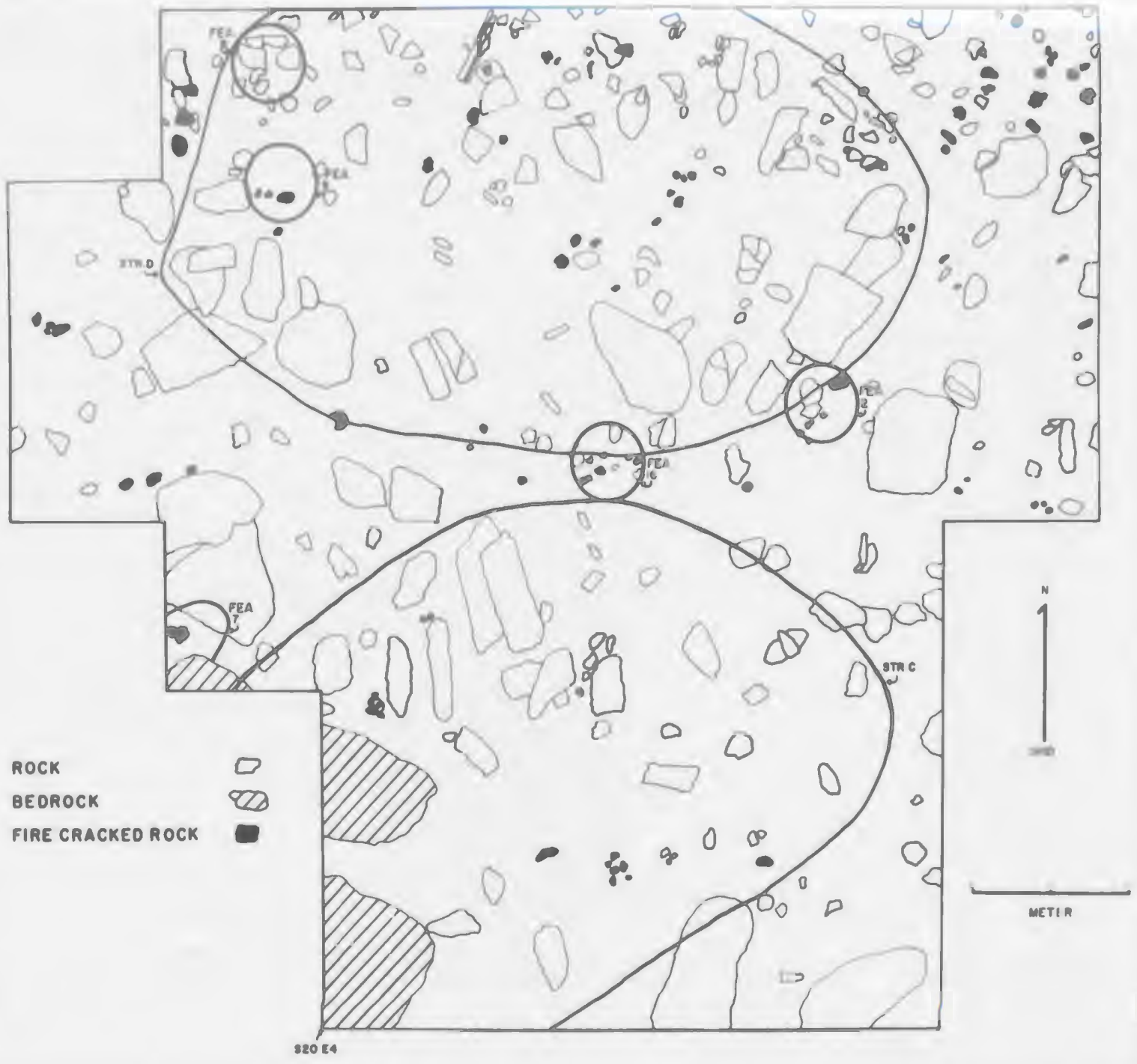


Figure VIII

Profiles #5 and #6

FACTORY COVE DIBk-3

PROFILE

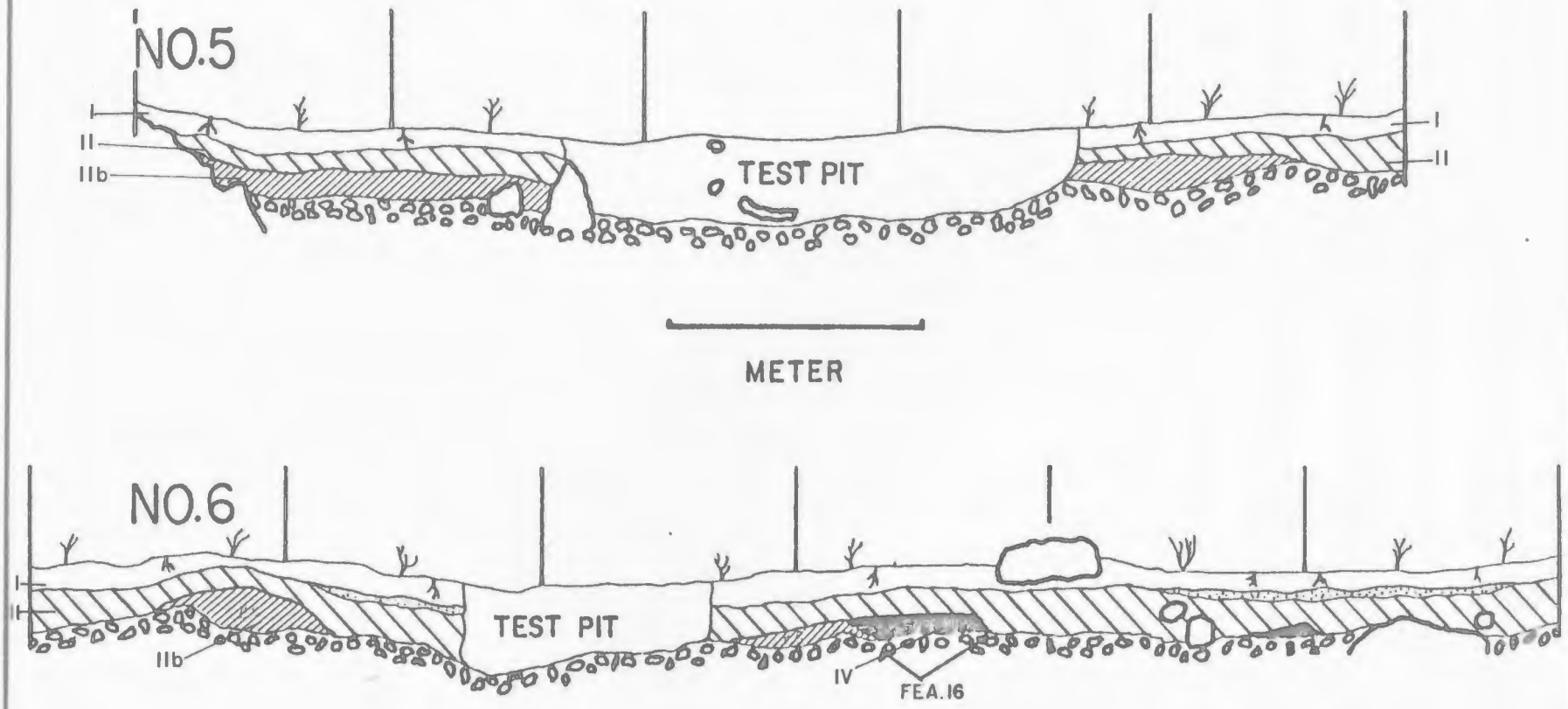
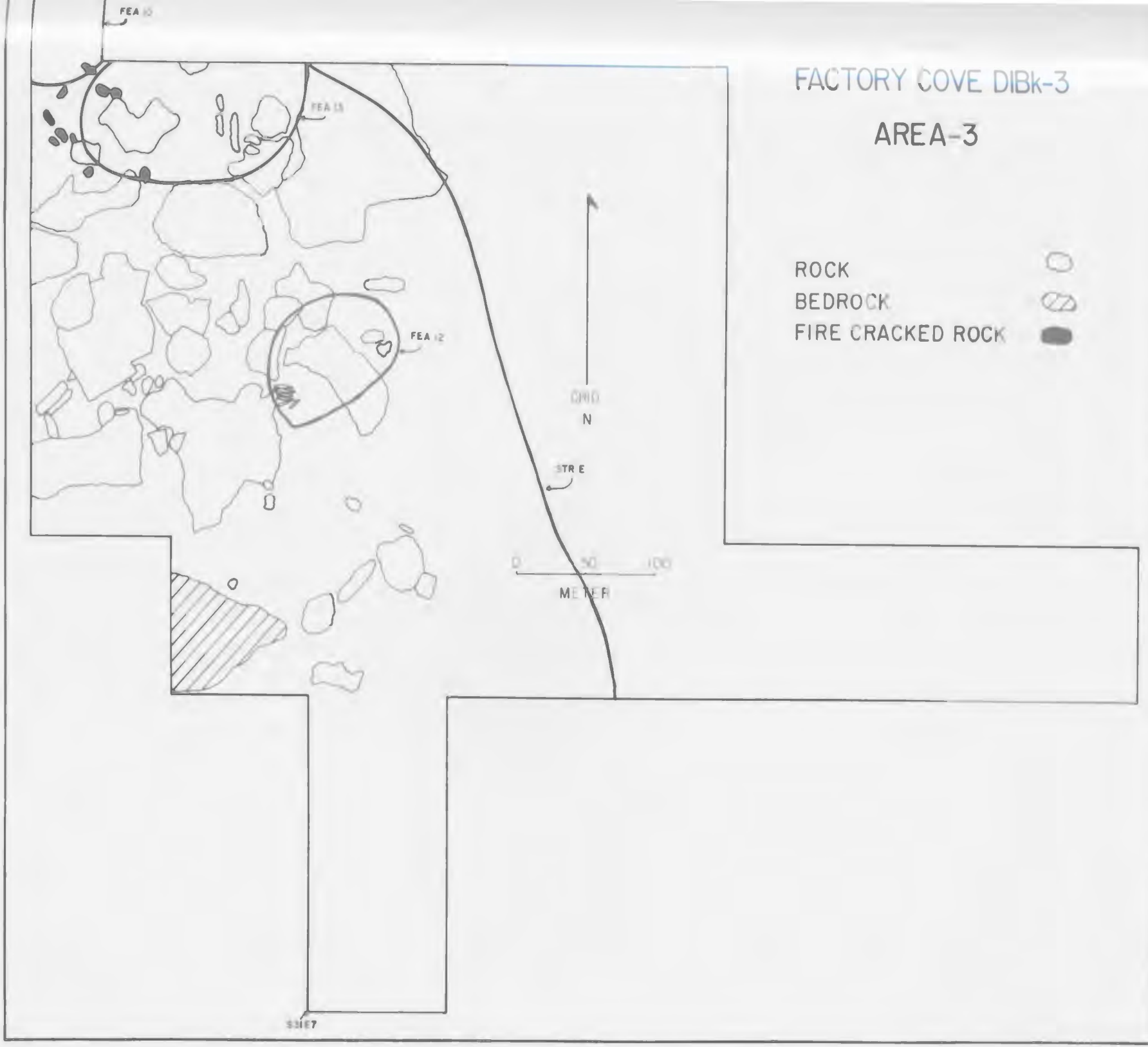


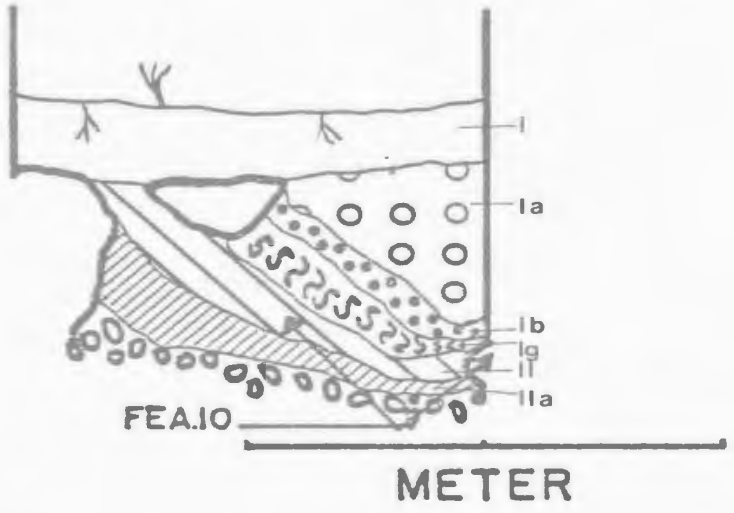
Figure IX

Area III Features and Structures


FACTORY COVE DIBk-3
AREA-3
ROCK
BEDROCK
FIRE CRACKED ROCK
FEA 10
FEA 11
FEA 12
GRID
N
STR E
0
50
100
METER
S31E7

FACTORY COVE DlBk-3

PROILE NO.7



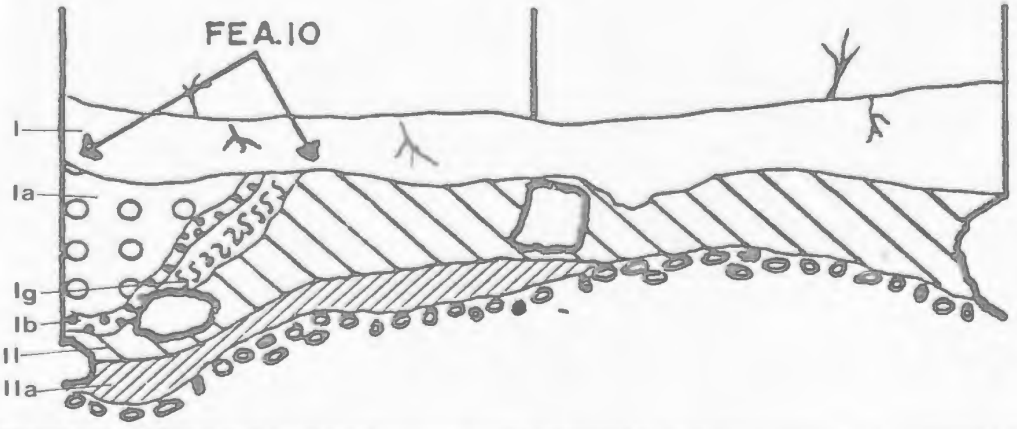
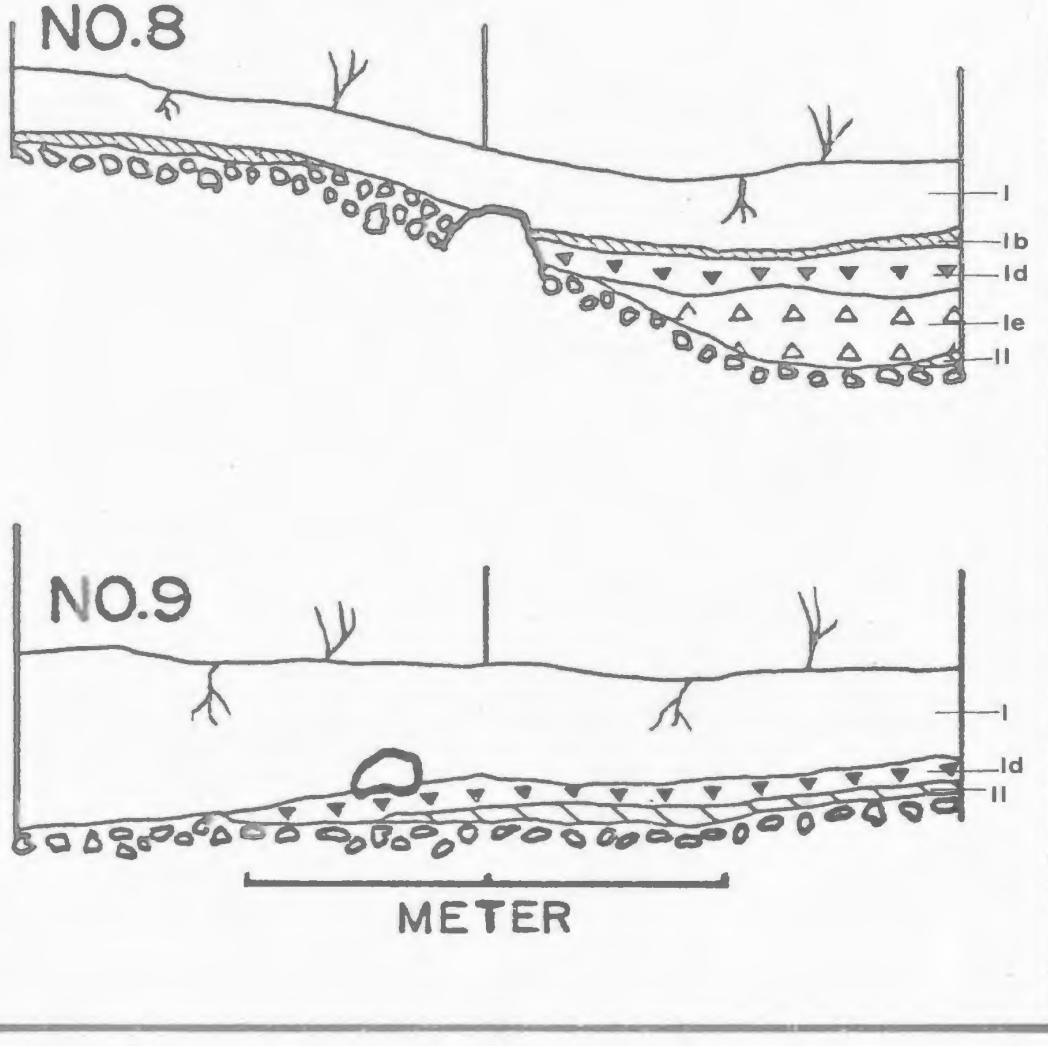


Figure XI

Profiles #8 and #9

FACTORY COVE DIBk-3
PROFILE



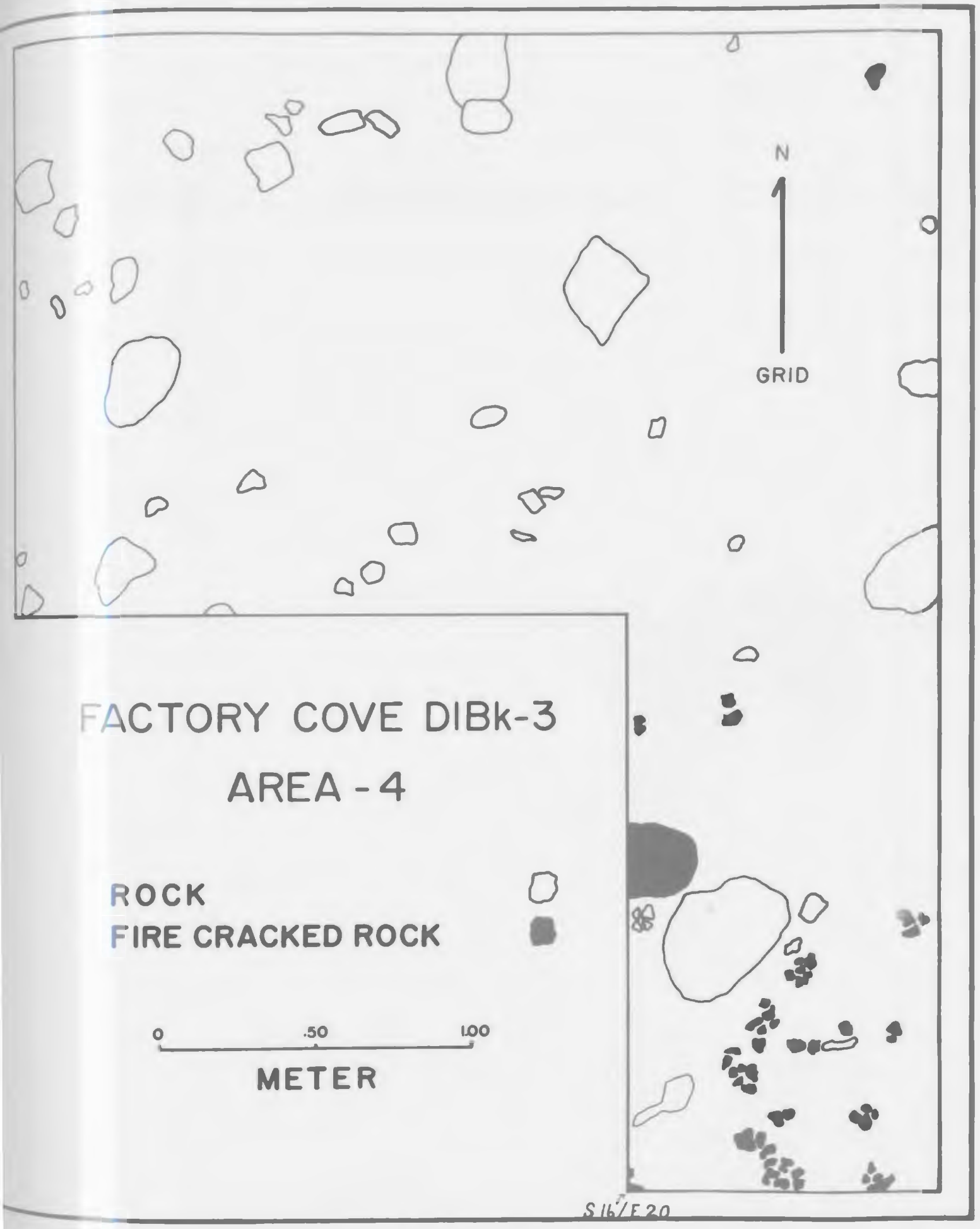
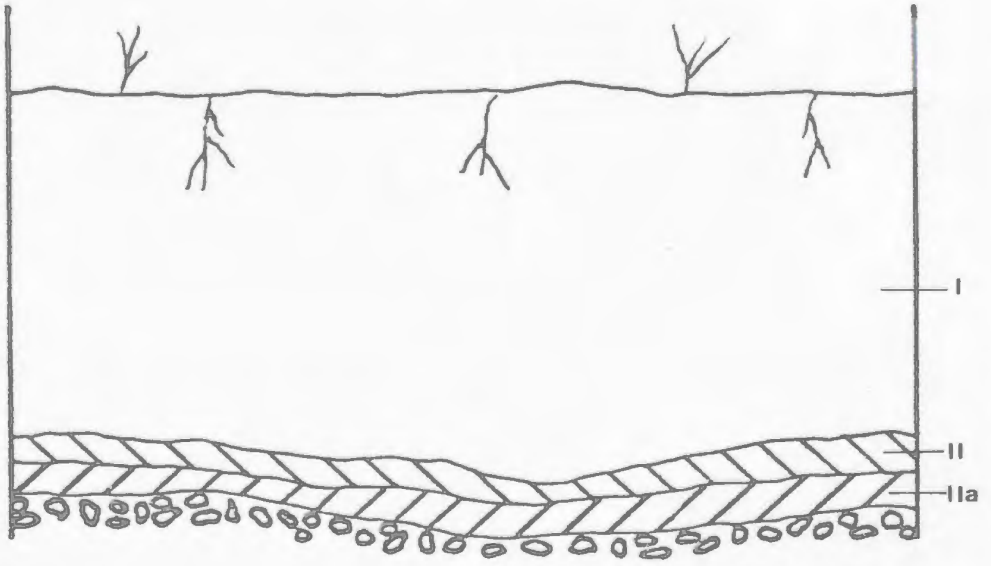

N
GRID
FACTORY COVE DIBk-3
AREA - 4
ROCK
FIRE CRACKED ROCK
0
.50
1.00
METER
S 16'/E 20

Figure XIII

Profile #10

FACTORY COVE DIBk — 3
PROFILE NO.10



FACTORY COVE DlBk-3
PROFILE NO. 2

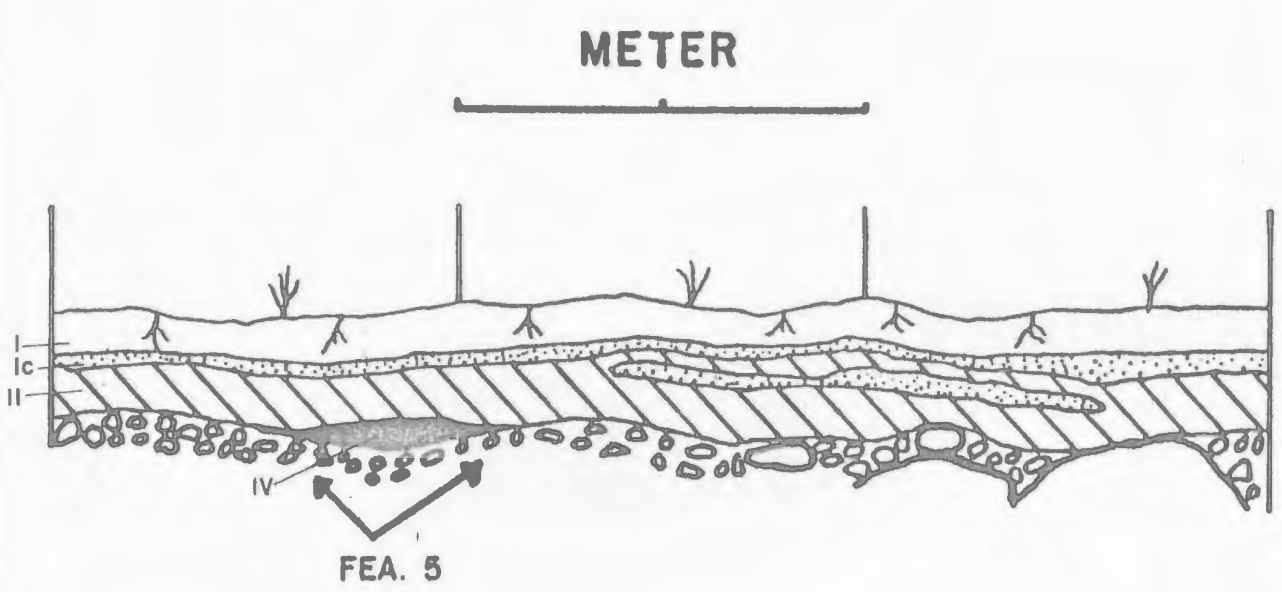


Figure XV

Groswater Endblade Seriation

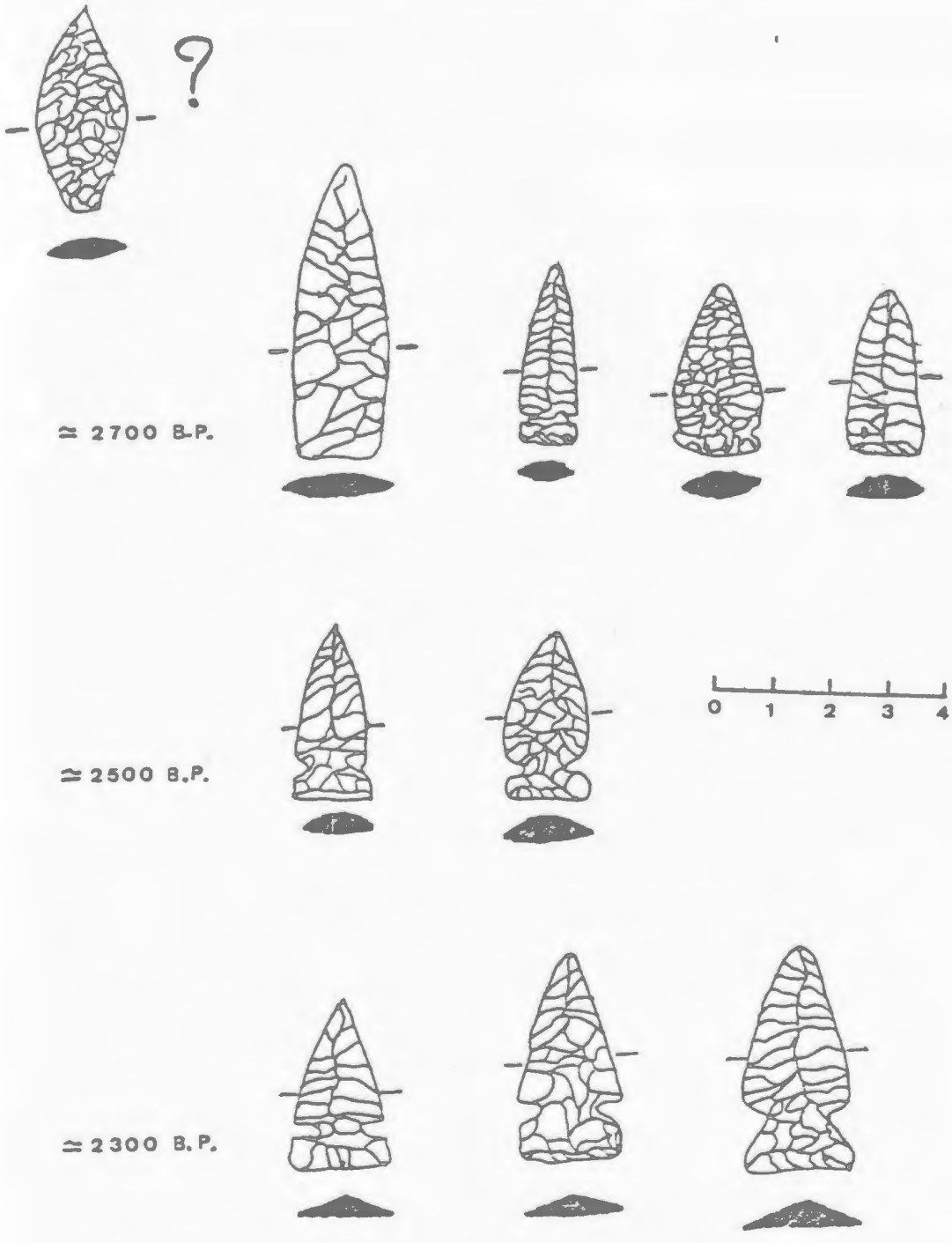

?
≃ 2700 B.P.
≃ 2500 B.P.
≃ 2300 B.P.
0 1 2 3 4

Plate I

Factory Cove (DlBk-3)

Areas I-V, looking east

Plate II

Hammerstones

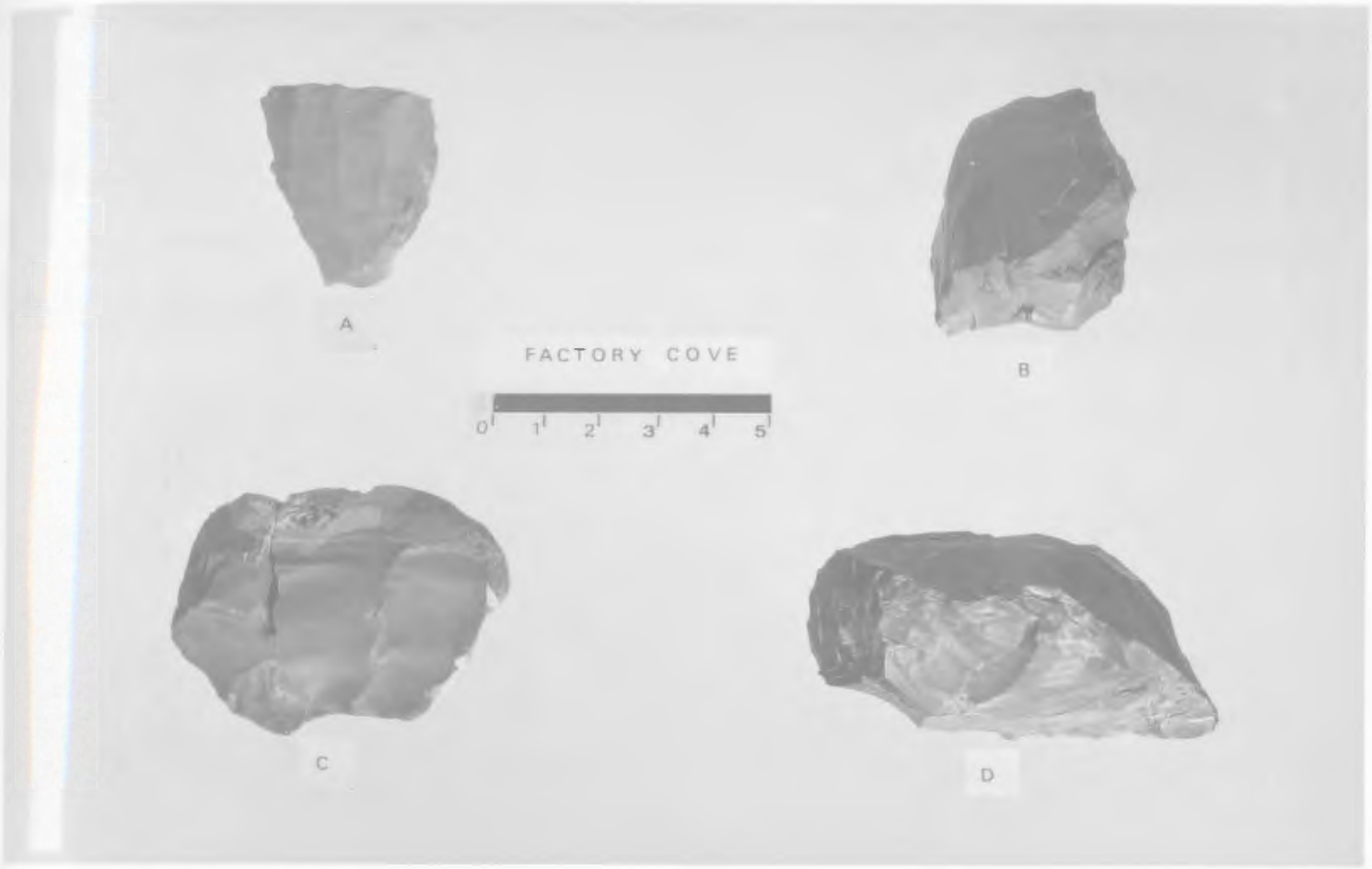

A
B
C
FACTORY COVE

Plate III

Cores

Plate IV

Burin-like-tools


A
B
FACTORY COVE
0 1 2 3 4 5
C
D

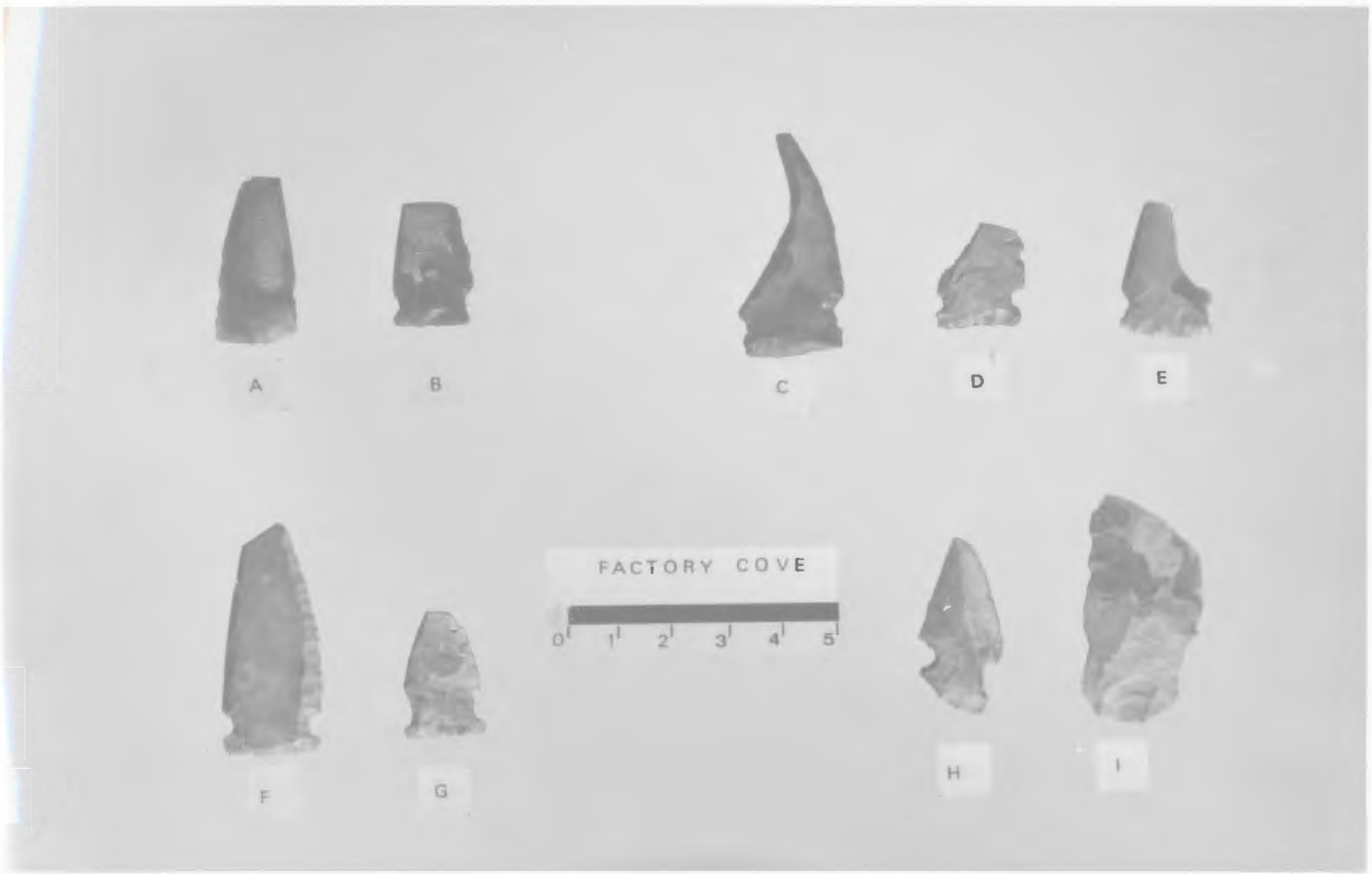

A
B
C
D
E
FACTORY COVE
0 1 2 3 4 5
F
G
H
I

Plate V

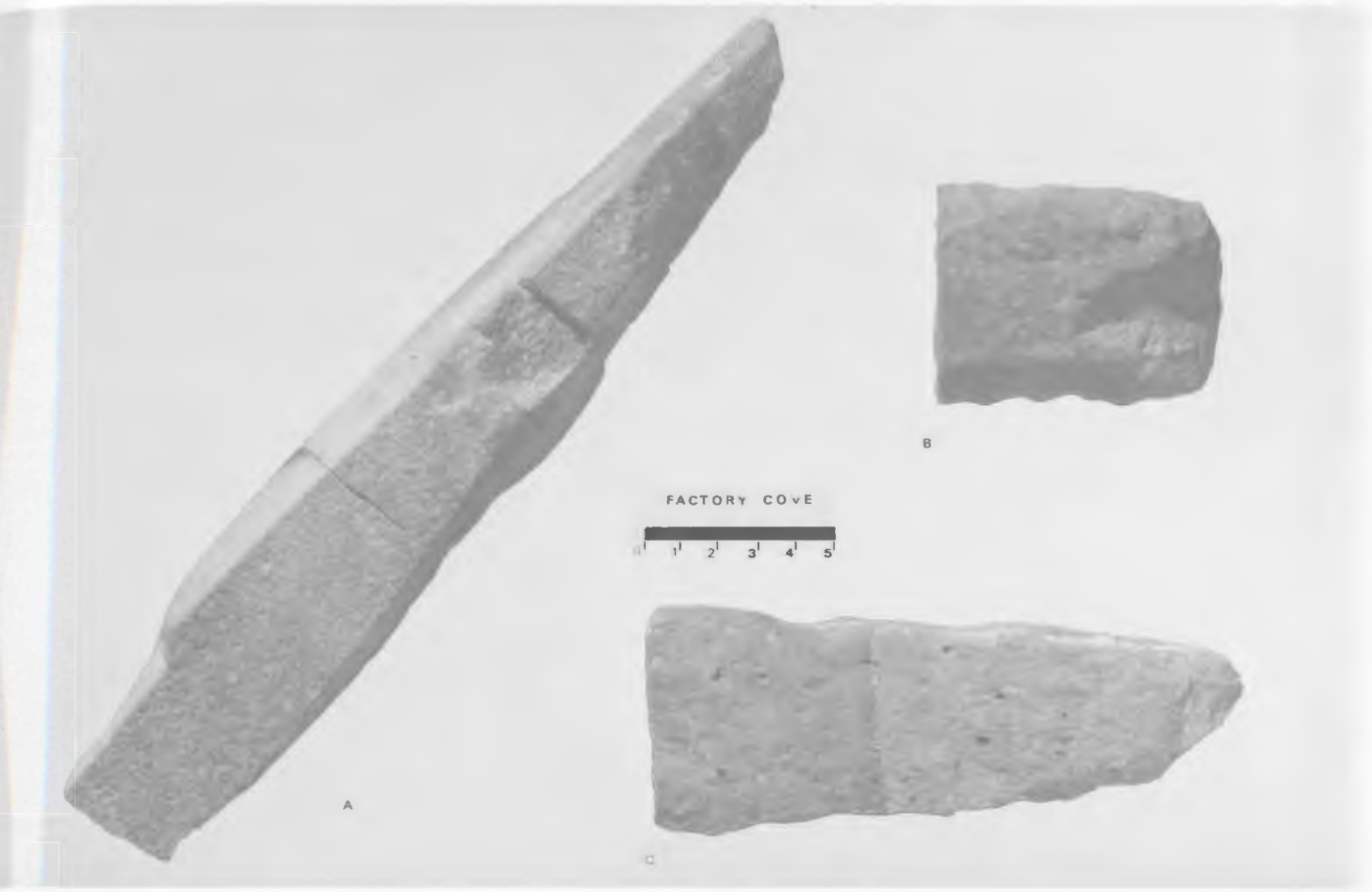
a. Active Whetstone

b. Passive Whetstone

Plate VI

a-b. Adzes

c. Adze Fragment


A
B
FACTORY COVE
0 1 2 3 4 5
C

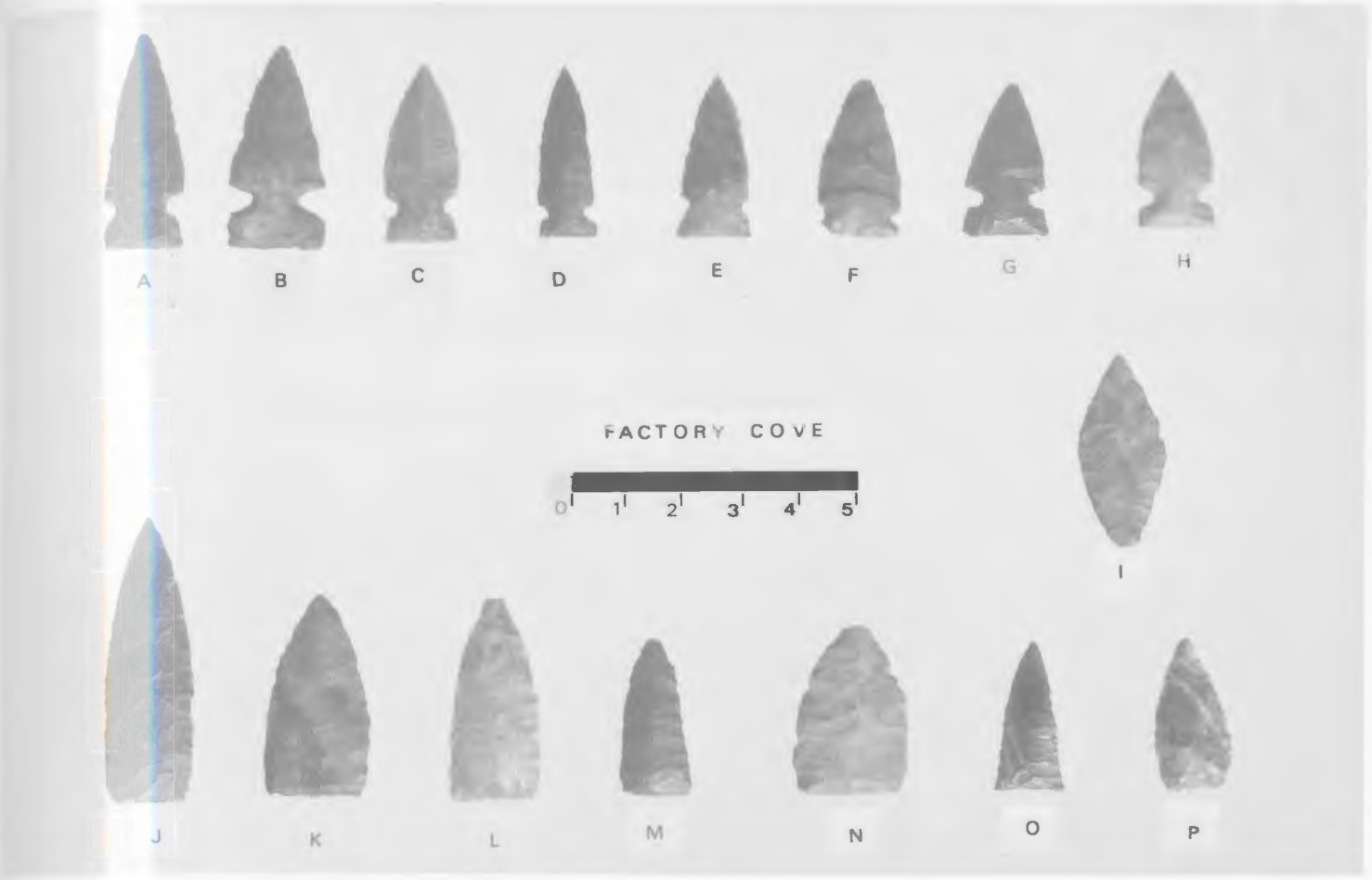

A
B
C
FACTORY COVE
0 1 2 3 4 5
D

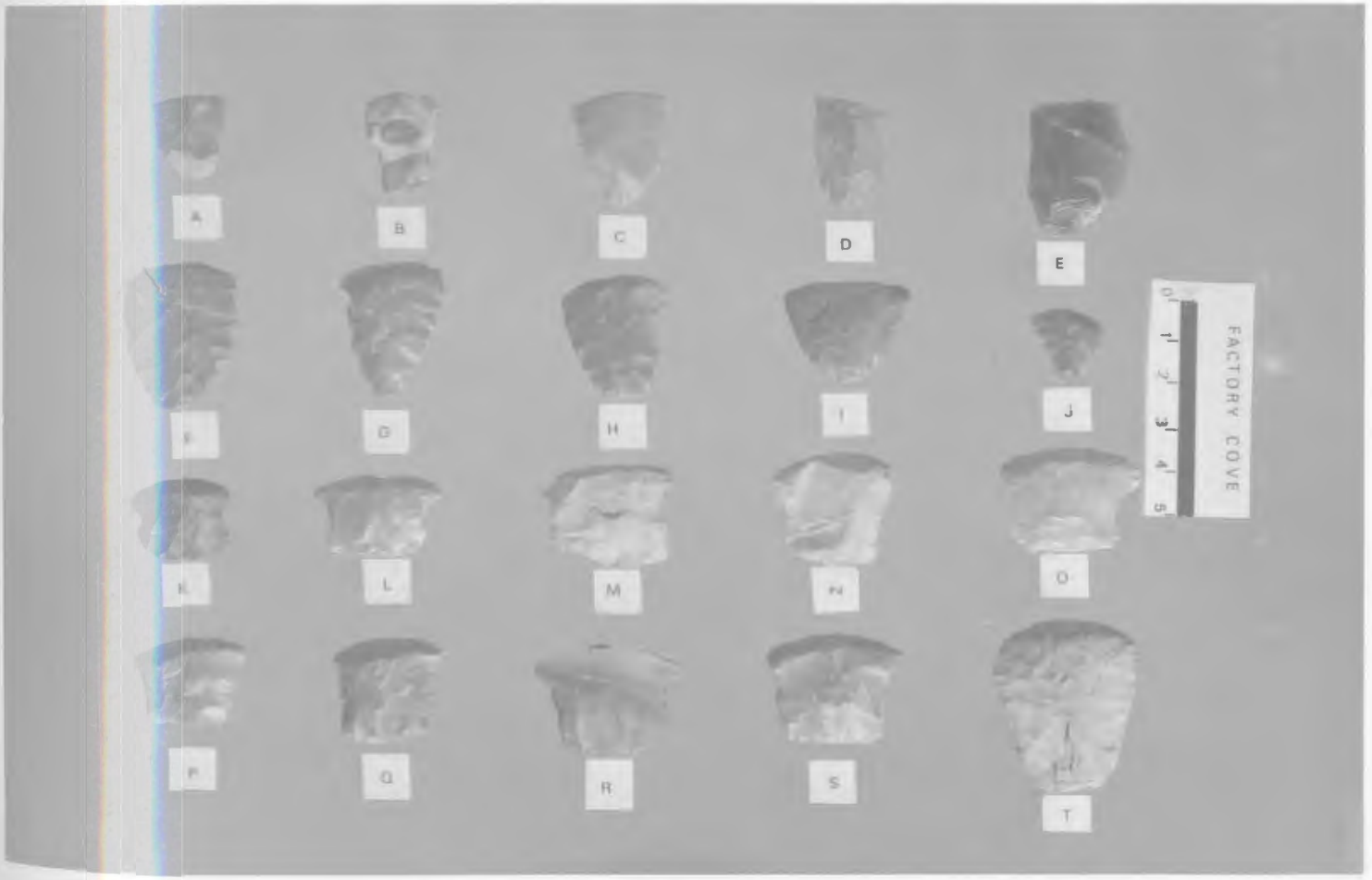
Plate VII

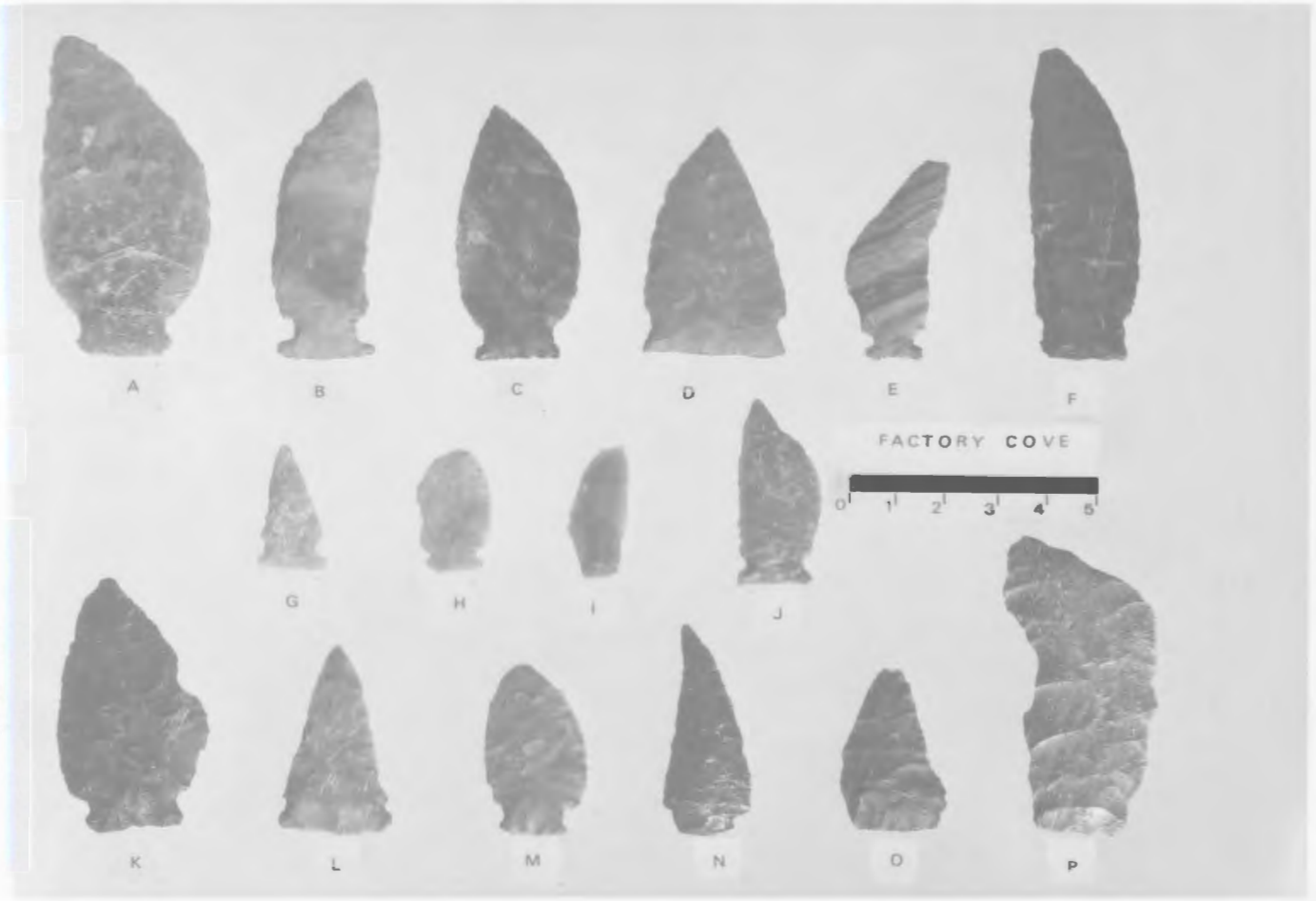
End Blades

Plate VIII

Scrapers


A
B
C
D
E
F
G
H
FACTORY COVE
0 1 2 3 4 5
I
J
K
L
M
N
O
P


A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
FACTORY COVE
0 1 2 3 4 5


A
B
C
D
E
F
G
H
I
J
FACTORY COVE
0 1 2 3 4 5
K
L
M
N
O
P

BIBLIOGRAPHY

Anderson, Douglas D.
1972 An Archaeological Survey of the Noatak Drainage, Alaska. Arctic Anthropology 9 (1):66-117.

1979 Archaeology and the evidence for the Prehistoric Development of Eskimo Culture: An Assessment. Arctic Anthroplogy 16 (1):16-26.

Archambault, Marie-France
1981 Nunainguq: Un Site de Polynie dans l'Arctique Oriental Quebecois. Activites Archeologiques 1977-1978, Dossier no. 49:73-82, Ministere des Affaires Culturelles, Quebec.

Auger, Reginald
1982a A Preliminary Report on Early Dorset Occupations on the West Coast of Newfoundland. In Archaeology in Newfoundland and Labrador, 1981. Annual Report #2, edited by Jane Sproull Thomson and Callum Thomson, pp. 130-151. Historic Resources Division, Department of Culture, Recreation and Youth, Government of Newfoundland and Labrador, St.John's.

1982a Early Dorset Occupations on the West Coast of Newfoundland. Paper presented at the XVth Annual Meeting of the Canadian Archaeological Association, Hamilton, Ontario.

Badgley, Ian
1978 Dorset Lithc Typology (Ph.D. Thesis Proposal). Ms. on File Department of Anthropology, University of Toronto, Toronto.

Bellrose, Frank G.
1976 Ducks, Geese and Swans of North America. Stackpole Books, Harrisburg.

Binford, Lewis R.
1980 Willow Smoke and Dogs'Tails: Hunter-Gatherer Settlement Systems and Archaeological Sites Formation. American Antiquity 45:4-20.

Bird, Junius B.
1945 The Archaeology of the Hopedale Area, Labrador. Anthropological Papers of the American Museum of Natural History 39 (2)

Birket-Smith, Kaj
1930 The Question of Origin of Eskimo Culture: A Rejoinder. American Anthropologist 32:608-624.

Bishop, Paul
1977 Final Report: 1973 Excavations at Norris Point, Gros Morne National Park. Submitted to Parks Canada Atlantic, Copies Available from Parks Canada Regional Office Library, Halifax, Nova Scotia.

Brookes, Ian A.
1969 Late Glacial Marine Overlap in Western Newfoundland. Canadian Journal of Earth Sciences 6:1397-1404.

1970 New Evidence for an Independent Wisconsin-Age Icecap over Newfoundland. Canadian Journal of Earth Sciences 7:1371-1382.

1974 Late-Wisconsin Glaciation of Southwestern Newfoundland, with Special Reference to the Stephenville Map-area. Geological Survey of Canada. Paper 73-40 and Map 15,.

1975 Late-Wisconsin Readvance of Piedmont Glaciers Southwestern Newfoundland. Maritime Sediments 11:47-48.

Cameron, Austin W.
1958 Mammals of the Islands in the Gulf of St.Lawrence. Bulletin No. 154, National Museum of Canada, Ottawa.

Carignan, Paul
1975 The Beaches: A Multi-component Habitation Site in Bonavista Bay. Mercury Series, Archaeological Survey of Canada, Paper No.39, National Museum of Canada, Ottawa.

Chang, K.C.
1978 Some Theoretical Issues in the Archaeological Study of Historical Reality. In Archaeological Essays in honor Irving B. Rouse, edited by Robert C. Dunnell and E.S. Hall,Jr., pp.13-26. Studies in Anthropology No.2, Mouton Publishers, The Hague.

Clarke, David L.
1968 Analytical Archaeology. Methuen, London.

1977 Spatial Information in Archaeology. In Spatial Archaeology, edited by David L. Clarke, pp. 1-32, Academic Press, London.

Collins, Henry B.
1977 Notes and News, Arctic. American Antiquity 5:233-234.

Cox, Stephen L.
1977 Prehistoric Settlement and Culture Change at Okak, Labrador. Unpublished Ph.D. dissertation, Department of Anthropology, Harvard University, Cambridge.

1978 Palaeo-Eskimo Occupations of the North Labrador Coast. Arctic Anthropology 14(2):96-118.

Cumbaa, Stephen L.
1983 Early Dorset Subsistence at Factory Cove (DlBk-3), Newfoundland. Ms. on file with R. Auger.

Dekin, Albert A. Jr.
1969 Palaeo-Climate and Prehistoric Cultural Interaction in the Eastern Arctic. Paper presented at the XXXIVth Annual Meeting of the Society for American Archaeology, Milwaukee.

1978 Arctic Archaeology. Garland Reference Library of Science and Technology, New York.

Evans, Clifford O.
1981 1980 Field Report of Frenchman's Island Project. In Archaeology in Newfoundland and Labrador 1980, Annual Report #1, edited by Jane Sproull Thomson and Bernard Ransom, pp.89-94, Historic Resources Division, Department of Culture, Recreation and Youth, Government of Newfoundland and and Labrador, St.John's.

1982 Frenchman's Island Site (ClAl-1) Preliminary Field Report. In Archaeology in Newfoundland and Labrador 1981, Annual Report #2, edited by Jane Sproull Thomson and Callum Thomson, pp. 210-225, Historic Resources Division, Department of Culture, Recreation and Youth, Government of Newfoundland and Labrador, St.John's.

Fitzhugh, William W.
1972 Environmental Archaeology and Cultural Systems in Hamilton Inlet, Labrador: A Survey of the Central Labrador Coast from 3000 B.C. to the Present. Smithsonian Contributions to Anthropology, #16, Washington D.C.

1973 Environmental Approaches to the Study of Prehistory of the North. Journal of the Washington Academy of Sciences 63(2):39-53.

1976a Palaeo-Eskimo Occupations of the Labrador Coast. In Eastern Arctic Prehistory: aPaeoeskimo Problems, edited by M. S. Maxwell, pp.139-149. SAA Memoirs No.31, Society for American Archaeology, Washington, D.C.

1976b Preliminary Culture History of Nain, Labrador: Smithsonian Fieldwork for 1975. Journal of Field Archaeology 3:123-142.

1977a Indian and Eskimo/Inuit Settlement History in Labrador: An Archaeological View. In Our Footprints are Everywhere: Inuit Land Use and Occupancy in Labrador, edited by Carol Brice-Bennett, pp. 1-41. Labrador Inuit Association, Nain, Labrador.

1977b Population Movement and Culture Change on the Central Labrador Coast. Annals of the New York Academy of Sciences 288:481-497.

1980a Preliminary Report on the Torngat Archaeological Project. Arctic 33:585-606.

1980b A Review of Palaeo-Eskimo Cultural History in Southern Quebec-Labrador and Newfoundland. Etudes/Inuit/Studies 4(1-2):21-31.

1981 Smithsonian Archaeological Surveys: Central and Northern Labrador, 1980. In Archaeology in Newfoundland and Labrador 1980, Annual Report #1, edited by Jane Sproull Thomson and Bernard Ransom, pp. 26-47. Historic Resources Division, Government of Newfoundland and Labrador, St.John's.

1982 Smithsonian Surveys in Central and Southern Labrador in 1981. In Archaeology in Newfoundland and Labrador 1981, Annual Report #2, edited by Jane Sproull Thomson and Callum Thomson, pp.32-55. Historic Resources Division, Government of Newfoundland and Labrador, St.John's.

Gal, R.

n.d. Palaeo-Indians of the Brooks Range: A Tradition of Uncontrolled Comparison. Ms. Institute of Arctic Biology, University of Alaska, Fairbanks.

Giddings, J.L.

1956 A Flint Site in Northernmost Manitoba. American Antiquity 21:255-268.

1964 The Archaeology of Cape Denbigh. Brown University Press, Providence.

Grant, D.R.
1969 Surficial Deposits, Geomorphic Features and Late Quaternary History of the Terminus of the Northern Peninsula of Newfoundland and Adjacent Quebec-Labrador. Maritimes Sediments 5:123-125.

1972 Postglacial Emergence of Northern Newfoundland. Geological Survey of Canada Paper 72-1B.

1977 Glacial Style and Ice Limits, the Quaternary Stratigraphic Record and Changes of Land and Ocean Level in the Atlantic Provinces, Canada. Geographie Physique et Quaternaire 31:247-260.

1980 Quaternary Sea-Level Change in Atlantic Canada as an Indication of Crustal Delevelling. In Earth Rheology, Isotary and Eustasy, edited by Nils-Axel Morner, pp. 201-214. John Wiley and Sons, Winchester.

Harp, Elmer, Jr.
1951 An Archaeological Reconnaissance in the Straits of Belle Isle Area. American Antiquity 16:203-221.

1953 New World Affinities of Cape Dorset Culture. Anthropological Papers of the University of Alaska 1(2):37-54.

1964 The cultural Affinities of the Newfoundland Dorset Eskimo. Bulletin No.222, National Museum of Canada, Ottawa.

Harp, Elmer, Jr., and D.R. Hughes
1968 Five Prehistoric Burials from Port aux Choix, Newfoundland. Polar Notes 8:1-47.

Helmer,James W.
1980 Early Dorset in the High Arctic: A Report from Karluk Island, N.W.T. Arctic 33: 427-442.

Howley, .P.
1915 The Beothucks or Red Indians. Cambridge, England.

Irving, William N.
1957 An Archaeological Survey of the Susitna Valley. Anthropological Papers of the University of Alaska 6:37-52.

1962 Fieldwork in Western Brooks Range, Alaska: A Preliminary Report. Arctic Anthropology 1(1):76-83.

1970 The Arctic Small Tool Tradition. Proceedings of the 8th International Congress of Anthropological and Ethnological Sciences, 3:340-342.

James, Noel P., C.F. Clappa, D. Skevington, and R.K. Stevens
1980 Trip 13: Cambro-Ordovician of West Newfoundland Sediments and Faunas. Department of Geology, Memorial University of Newfoundland, St.John's.

Jenness, Diamond
1925 A New Eskimo Culture in Hudson Bay. Geographical Review 15:428-437.

1928 The National Museum of Canada. American Anthropologist 30:178-180.

1929 Notes on the Beothuck Indians of Newfoundland. Annual Report of the National Museum of Canada for 1927 Bulletin No. 57, pp. 36-39, Ottawa.

1933 The Problem of the Eskimo. In The American Aborigines, Their Origin and Antiquity, edited by D. Jenness, pp.373-396. University of Toronto Press, Toronto.

Jordan, Richard H.
1979 Dorset Art from Labrador. Folk 21/22:397-418.

Knuth, Eigil
1978 The "Old Nugdlit Culture" Site at the Nugdlit Peninsula, Thule District, and the "Mesoeskimo" Site below it. Folk 19-20:15-47.

Leechman, Douglass .
1943 Two New Cape Dorset Sites. American Antiquity 8:363-375.

Linnamae, Urve
1975 The Dorset Culture, A Comparative Study in Newfoundland and the Arctic. Technical Papers of the Newfoundland Museum No. 1, Department of Tourism, Historical Resources Division, St.John's.

Lloyd, T.G.B.
1875 On the Stone Implements of Newfoundland. Journal of the Royal Anthropological Institution 5:233-248.

Loring, D.H. annd D..G. Nota
1973 Morphology and Sediments of the Gulf of St.Lawrence. Fisheries and Marine Service Bulletin No. 182, Ottawa.

Mansfield, A.W.
1963 Seals of Arctic and Eastern Canada. Bulletin No. 137, Fisheries Reseach Board of Canada, Ottawa.

Martijn, Charles
1974 Archaeological Research on the Lower St.Lawrence North Shore, Quebec. In Archaeological Salvage Projects 1972, edited by W. Byrne, pp.112-130. Paper No. 15, Mercury Series, Archaeological Survey of Canada, Ottawa.

Mary-Rousseliere, Guy
1976 The Palaeo-Eskimo in Northern Baffin Land. In Eastern Arctic Prehistory: Paleoeskimo Problems, edited by M. S. Maxwell, pp. 40-57. SAA Memoirs No.31, Society for American Archaeology, Washington, D.C.

Mathiassen, Therkel
1927 Archaeology of the Central Eskimos, the Thule Culture and its Position within the Eskimo Culture. Report of the Fifth Thule Expedition, 1921-1924, vol. 4, parts 1 and 2. Copenhagen.

1930 The Question of the Origin of the Eskimo Culture. American Anthropologist 32:591-607.

Maxwell, Moreau S.
1973 Archaeology of the Lake Harbour District, Baffin Island. Mercury Series, Archaeological Survey of Canada Paper No. 6, Ottawa.

1976 Eastern Arctic Prehistory: Palaeoeskimo Problems. Editor SAA Memoirs No.31, Society for American Archaeology, Washington, D.C.

1980 Archaeology of the Arctic and Subarctic Zones. Annual Review of Anthropology 9:161-185.

McGhee, Robert
1974 The Peopling of Arctic North America. In Arctic and Alpine Environments, edited by Jack D. Ives and Roger G. Barry, pp. 831-855. Methuen, London.

1976 Palaeo-Eskimo Occupations of Central and High Arctic Canada. In Eastern Arctic Prehistory: Palaeo-Eskimo Problems, edited by M. S. Maxwell, pp. 15-39. SAA Memoirs No.31, Society for American Archaeology, Washington, D.C.

1981 The Dorset Occupations in the Vicinity of Port Refuge, High Arctic Canada. Mercury Series,

Archaeological Survey of Canada, Paper No. 105, Ottawa.

McGhee, Robert, and James A. Tuck
1975 An Archaic Sequence from the Strait of Belle Isle, Labrador. Mercury Series, Archaeological Survey of Canada, Paper No. 34, Ottawa.

Meldgaard, Jorgen
1960 Prehistoric Culture Sequences in the Eastern Arctic as Elucidated by Stratified Sites at Igloolik. In Selected Papers of the Fifth International Congress of Anthropological and Ethnological Sciences, 1956, edited by A.F.C. Wallace, pp. 588-595. The University of Pennsylvania Press, Philadelphia.

1962 On the Formative Period of the Dorset Culture. In Prehistoric Cultural Relations between the Arctic and the Temperate Zones of North America, edited by John N. Campbell, pp. 92-95. Arctic Institute of North America, Technical Paper, No. 11, Montreal.

Nagle, Christopher
1982 1981 Field Investigations at the Fleur de Lys Soapstone Quarry, Baie Verte, Newfoundland. In Archaeology in Newfoundland and Labrador 1981, Annual Report #2, edited by Jane Sproull Thomson and Callum Thomson, pp. 102-129. Historic Resources Division, Department of Culture, Recreation and Youth, Government of Newfoundland and Labrador, St.John's.

Pastore, Ralph T.
1982 The Locational Distribution of Aboriginal Sites on the Island of Newfoundland. Paper presented at the XVth Annual Meeting of the Canadian Archaeological Association, Hamilton, Ontario.

Penney, Gerald
1981 A Preliminary Report on the Excavation of the L'Anse a Flamme Site (CjAx-1). In Archaeology in Newfoundland and Labrador 1980, Annual Report #1, edited by Jane Sproull Thomson and Bernard Ransom, pp. 95-102. Department of Culture, Recreation and Youth, Government of Newfoundland and Labrador, St.John's.

Petersen, Randolph L.
1966 The Mammals of Eastern Canada. Oxford University Press, Toronto.

Plumet, Patrick
1982 Pour une Revision du Cadre Conceptuel Utilise en Prehistoire de l'Arctique Central et Oriental. Etudes/Inuit/Studies 6(1):130-139.

Prichard, H.H.
1911 Through Trackless Labrador. New York.

Rick, Anne M.
1975 Bird Medullary Bone: A Seasonal Dating Technique for Faunal Analysis. Canadian Archaeological Association Bulletin 7:183-190.

Robbins, Douglas
1982 Preliminary Report on the Stock Cove Site (CkAl-3). In Archaeology in Newfoundland and Labrador 1981, Annual Report #2, edited by Jane Sproull Thomson and Callum Thomson, pp. 190-209. Historic Resources Division, Department of Culture, Recreation and Youth, Government of Newfoundland and Labrador, St.John's.

1983 "Newfoundland Dorset" Culture? Paper presented at the XVIth Annual Meeting of the Canadian Archaeological Association, Halifax, Nova Scotia.

Rowe, .S.
1977 Forest Regions of Canada. Department of Fisheries and the Environment, Canadian Forestry Service, Publication No.1300, Ottawa.

Sawicki, Anna
1981 Palaeo-Eskimo Occupations in Bonavista Bay, Newfoundland: Relationships to the Dorset Eskimo Culture (Master Thesis Proposal). Ms. on file, Department of Anthropology, Memorial University of Newfoundland, St.John`s.

Short, Susan K.
1978 Palynology: A Holocene Environmental Perspective for Archaeology in Labrador-Ungava. Arctic Anthropology 15(2):9-35.

Stewart, Frances L.
1979 Faunal Remains from the Factory Cove Site (DlBk-3), Newfoundland. Ms. submitted to J.A. Tuck.

Strong, William D.
1930 A Stone Culture from Northern Labrador and its Relation to the Eskimo-like Cultures of the Northeast. American Anthropologist 32:126-144.

Taylor, William E.,Jr.
1959 Review and Assessment of the Dorset Problem. Anthropologica 1(12):24-26.

1962 A Distinction Between Blades and Microblades in the American Arctic. American Antiquity 27:425-426.

1966 An Archaeological Perspective on Eskimo Economy. Antiquity 40:114-120.

1968 The Arnapik and Tyara Sites, An Archaeological Study of Dorset Culture Origins. SAA Memoir No 22, Society for American Archaeology, Washington D.C.

Thomson, Callum
1981 Preliminary Archaeological Findings from Shuldham Island, Labrador 1980. In Archaeology in Newfoundland and Labrdor 1980, Annual Report #1, edited by Jane Sproull Thomson and Bernard Ransom, pp. 5-25. Historic Resources Division, Department of Culture, Recreation and Youth, Government of Newfoundland and Labrador, St.John's.

1982 Archaeological Findings from Saglek Bay 1981. In Archaeology in Newfoundland and Labrador 1981, Annual Report #2, edited by Jane Sproull Thomson and Callum Thomson, pp. 5-31. Historic Resources Division, Department of Culture, Recreation and Youth, Government of Newfoundland and Labrador, St.John's.

Tuck,James A.
1975 Prehistory of Saglek Bay, Labrador: Archaic and Palaeo-Eskimo Occupations. Mercury Series. Archaeological Survey of Canada Paper No. 32, National Museum of Man, Ottawa.

1976a Palaeo-Eskimo Cultures of Northern Labrador. In Eastern Arctic Prehistory: Paleoeskimo Problems, edited by M. S. Maxwell, pp. 89-102. SAA Memoirs No. 31, Society for American Archaeology, Washington D.C.

1976b Ancient People of Port aux Choix. The Excavation of An Archaic Indian Cemetery in Newfoundland. Newfoundland Social and Economic Studies, No. 17, Institute of Social and Economic Research, St.John's.

1978 Excavations at Cow Head, Newfoundland, An Interim Report. Etudes/Inuit/Studies 2(1):138-141.

1982a Prehistoric Archaeology in Atlantic Canada Since 1975. Canadian Journal of Archaeology/Journal Canadien d'Archeologie 6:201-218.

1982b Fieldwork at Red Bay, Labrador. In Archaeology in Newfoundland and Labrador 1981, Annual Report #2, edited by Jane Sproull Thomson and Callum Thomson, pp. 56-67. Historic Resources Division, Department of Culture, Recreation and Youth, Government of Newfoundland and Labrador, St.John's.

1982c Excavations at Broom Point, A Palaeo-Eskimo in Gros Morne National Park. Submitted to Parks Canada, Atlantic Region, Copies available from Parks Canada, Halifax.

1983a Contract Archaeology at Memorial University. In Archaeology in Newfoundland and Labrador 1982, Annual Report #3, edited by Jane Sproull Thomson and Callum Thomson, pp. 57-75. Historic Resources Division, Department of Culture, Recreation and Youth, Government of Newfoundland and Labrador, St.John's.

1983b Excavations at Shamblers Cove 1982: A Stage 3 Impact Report. Submitted to the Department of Transportation, Government of Newfoundland and Labrador, Copies Available from the Historic Resources Division, St.John's.

1983c Taxonomy and Nomenclature of Palaeo-Eskimo Cultures in Newfoundland and Labrador. Paper presented at the XVIth Annual Meeting of the Canadian Archaeological Association, Halifax, Nova Scotia.

Tuck, James A., and Reginald Auger
1983 Excavations at a Dorset Eskimo Site at Broom Point, Western Newfoundland. Submitted to Parks Canada, Atlantic Region, Contract Number GM-82-02, Copies Available from Parks Canada, Halifax.

Wintemberg, William
1939 Eskimo Sites of the Dorset Culture in Newfoundland. American Antiquity 5:83-102.

1940 Eskimo Sites of the Dorset Culture in Newfoundland. American Antiquity 5:309-333.

APPENDIX A

LIST OF METRIC AND NON-METRIC OBSERVATIONS

Metric and non-metric observations were taken for all classes where it was not feasible to describe the artifacts individually. Thus the burins, burin spalls, adzes and, lamps were described one by one since very few were recovered. Consequently, the list below comprises attributes for the classes of artifacts which I thought were meaningful when the population were large enough to be treated statistically. Attributes seldom encountered, but judged worth remembering, were not given a column in the analysis sheet but were reported in the observation column. That rubric contains also a type name when given to the artifact.

The reader will notice that the amount of observation varies from one class to another. Therefore, it is important to keep in mind that the artifact analysis aims to present what is thought to be significant attributes rather than to present a uniform set of observations.

HAMMERSTONE

Length: Maximum length for complete specimens only
Diameter: Maximum and minimum
Weigth: To the nearest gram
Condition:Complte, end fracture, fragment
Shape: Elongated, oval, triangular, circular, other
Battering facet: One end pecked, two ends pecked, three or more, contiguous
Raw material:
Observations:

BURIN-LIKE-TOOL

Length: For complete specimens only
Width: Maximum width when present
Thickness: Maximum thickness
Condition: Complete, distal frg, mesial frg, proximal frg, lateral frg
Distal edge: Shape -Straight, convex, irregular
Number of facets -1, 2, 3
Working edge: Shape -Straight, convex, irregular
Number of facets -1, 2, 3
Back edge: Shape -Straight, convex, irregular
Number of facets -1, 2, 3
Hafting modifications: Two notches, one notch, constricted edges, stemmed, none
Side of working edge: Left, right, undetermined
Raw material:
Observations:

WHETSTONE

Length: For complete specimens only
Width: for complete specimens only
Thickness: maximum thickness
Condition: Complete, fragmentary
Hafting modifications: Notched, stemmed, none
Orientation of polishing: Longitudinally, transversally, both
Number of polishing facets: 1, 2, 3, 4 or, over
Raw material:
Observations:

END BLADE

Length: For complete specimens only
Width: Maximum width perpendicular to the length
Thickness: Maximum thickness
Condition: Complete, incl distally, incl proximally, mesial frg, lateral frg
Hafting modifications: Constricted, stemmed, single pair of notches, double pair of notches, unilateral notches, none
Base shape: Straight, concave, convex
Base thinning: Ventral -grinding, chipping, none
Dorsal -grinding chipping, none
Notches height: Maximum length between the proximal end and the lower part where the notches start
Notches shape: Straight, falling
Side shape: Biconvex, biplano, biconcave, plano-convex
Transversal cross section: Biconvex, plano-convex
Longitudinal cross section: Biconvex, plano-convex, concavo-convex
Edge retouch: Unifacial, partially unifacial, partially bifacial, bifacial
Surface retouch: Ventral -complete, partial, absent
Dorsal -complete, partial, absent
Raw material:
Observations:

SIDE BLADE

Length: For complete specimens only
Width: Maximum length when possible
Thickness: Maximum thickness
Condition: complete, fragmentary
Surface retouch: Unifacial, partially unifacial, partially bifacial, bifacial
Surface grinding: Unifacial, Bifacial, absent
Raw material:
Observations

SCRAPER

Length: Maximum length for complete specimens only
Width: Perpendicular to the length
Thickness: Maximum thickness
Condition: Complete, distal frg, proximal frg
Angle of working edge: Angle between the surface of the working edge and the ventral face, to the nearest 10 degrees

Hafting modifications: Constricted, stemmed, notched, none
Working edge shape: Convex, concave, straight
Working edge symmetry: Symmetrical, beveled right, beveled left
Ventral edge retouch: Complete, partial, absent
Surface retouch: Ventral -complete, partial, absent
Dorsal -complete, partial, absent
Raw material:
Observations:

BIADE

Length: Maximum length for complete specimens only
Width: Taken at the end of the bulb of percussion
Thickness: Maximum thickness at the same height as the width is taken
Condition: Complete, distal frg, mesio-distal frg, mesial frg, mesio-proximal frg, proximal frg
Hafting modifications: Constricted edges, stemmed, notched, none
Angle of striking platform: Angle between the striking platform and the dorsal face
Edge retouch: For both edges but excluding the hafting modifications
Number of arrises: 1, 2, 3, 4 or, over
Longitudinal thickness: Showing the blade curvature
Raw material:
Observations:

KNIFE

Length: Maximum length for complete specimens only
Width: Maximum width perpendicular to the length
Condition: Complete, incl distally, incl proximally, mesial fragment
Hafting modifications: Constricted edges, stemmed, single notch, one pair of notches, multiple notches, none
Notches height: Maximum length between the proximal end and the lower part where the notches start
Edge shape: Edge A the most convex -straight, convex, concave, S shape
Edge B the least convex -straight, convex, concave, S shape
Edge retouch: Unifacial, partially unifacial, partially bifacial, bifacial
Transversal cross section: Biconvex, plano-convex
Tip: Blunt, pointed
Raw material: Observations:

RETOUCHED AND/OR UTILISED FLAKE

Length: Maximum length perpendicular to the striking
Thickness: Maximum thickness
platform, for complete specimens only
Width: Maximum width parallel to the striking platform for
complete specimens only
Thickness: Maximum thickness
Condition: Complete, incl distally, incl proximally,
mesial fragment
Edge outline: Parallel sides, converging sides, diverging
sides
Retouch: Unifacial, bifacial
Retouched segment: 1, 2, 3
Shape of retouched edge: Concave, straight, convex
Raw material:
Observations:

CORE

Condition: Complete, fragmentary
Core shape: Wedge, tabular, polyhedral, cuboid, bipolar,
spheric, conical
Platform shape: Oval, triangular, rectangular, square,
polygonal, irregular
Length of striking platform: Maximum length
Width of striking platform: Maximum width perpendicular to
the platform length
Flaking arc chord: Straight line between the ends of the
flaking arc
Platform angle: Angle between the striking platform and the
fluted surface
Fluted surface length: Distance between the platform edge
and the end of the fluted surface
Raw material:
Observations:

APPENDIX B

Faunal Remains from the Factory Cove Site (DlBk-3), Newfoundland

Francis L. Stewart April 1979

INTRODUCTION

The faunal specimens collected from what was thought to be a Dorset house dating to about 2500 B.P. and located on the west coast of Newfoundland (Tuck, personal communication, 1979) at the Factory Cove Site (DlBk-3) totalled 591 of which the majority were mammalian. Two Avian bones were included and the class was not established for two others. The individual identifications are listed at the end of this report. Of the 82 mammalian specimens identified beyond their class, all but one was from one of the seal species. The one non-seal element was a caribou (Rangifer tarandus) bone. In addition to the vertebrate remains, there were two shell fragments and a few non-animal objects.

LIMITATIONS OF THE STUDY

The 81 seal elements have been tabled but caution must be practised when interpreting these identifications for a number of reasons. First, my reference collection is

incomplete. Possible seals in the faunal refuse based on the present day distributions given in Mansfield (1964) and Petersen (1966) are the following:

COMMON NAME	SCIENTIFIC NAME
Harbour seal	Phoca vitulina
Ringed seal	Phoca hispida
Harp or Greenland seal	Phoca groenlandica
Bearded seal	Erignathus barbatus
Gray seal	Halichoerus grypus
Hooded seal	Cystophora cristata

Of these, I have complete adult and immature skeletons for only the harp seal but partial skeletons for ringed, bearded and gray seals. As can be seen from the table, most of the archaeological seal bones were those of the skull or foot with a single ulna and radius portion. In my collection, there are skulls and mandibles for the ringed and harp seal and a gray seal mandible. Foot bone reference material was available only for the harp and gray seals whereas the ulna distal end could be compared to the corresponding part in harp, bearded and gray seals and the radius to ringed, harp and bearded. In sum, due to limitations in the reference material, the identifications given are not definite but rather are only the probable species from which the archaeological material originated. For certain

designations the material should be compared with those elements which are lacking in my reference collection.

Similarly, the bird ulna fragment found on the site might be identified to genus or even species if it were compared with a more representative reference collection.

Thirdly, the eroded surfaces of most of the archaeological material made identifications difficult and even impossible in many instances. Finally, the size of the sample, that is, its smallness, should be remembered.

METHODS OF STUDY

All the archaeological bones were examined and those with distinguishing features were compared to my reference material. Acknowledging its limitations, specific identifications were made. When the archaeological material could not be identified beyond the class Mammals, it was described as being mammalian bone portions or fragments. The former were 30 millimetres or greater along their longest axis whereas fragments were shorter than 30 mm.

RESULTS

The vast majority of the remains identified beyond class were from seals and there appeared to be at least three seal species represented. Harp seal specimens

were the most common and there was some evidence for ringed seal. Harp seals

> "by late February to mid-March...reach the Gulf of St. Lawrence and Newfoundland area where the 'white-coats'are born on pack ice.... They move north in the spring (by May or June) to the high Arctic and head back south about December..."
>
> (Petersen 1966:300)

Thus, although only one of the faunal remains presented for study came from an immature harp seal and the rest appeared to be from adults, it is probable that these animals were taken by the inhabitants of Factory Cove Site between February and June. Furthermore, since "harp seals seldom, if ever, haul out on land outside of the breeding season" (Ibid.), it may be supposed that these seals were killed in April on land or alternatively, that the Factory Cove people used boats to reach the seal herds on the ice pack. The former explanation fits the faunal evidence better considering the scarcity of immature bones.

Ringed seals are "common along the Labrador coast" (Ibid.), and occasionally they inhabit waters of the coast of northeastern Newfoundland (Mansfield 1964:20). This distribution combined with their habits of tending to remain in one area, of being widely dispersed rather than in colonies and of bearing their young in cavities on the snow

rather than on the open ice explains the rariety of such specimens in the Factory Cove faunal sample.

The particular elements represented are of interest. Foot bones and skull portions including teeth, were represented by 50 and 28 archaeological specimens respectively. The skull parts were all dense bones or teeth (three) and this physical feature may account for their high representation. The occurrence of a disproportionally high number of foot bones is not so easily explained. Many of the mammalian portions and fragments which were not identified beyond their class likely came from long bones but ends of long bones, had they been present in the sample in any number, would have been recognized. Perhaps the large number of foot elements is related to butchering and skinning practices of the inhabitants of Factory Cove? It can be speculated that the seals were butchered at the kill site and that it was mainly heads, muscles and skins with the feet still attached which were carried back to the house area. An unexpected find was the single caribou middle phalanx distal end fragments. Cameron's distribution map for caribou (1958:Map 28) shows this ungulate ranging along the entire west coast of the island but from his text, it appears that the "original" population did not use the central or southern coastal areas (Ibid.:104). Likely the archaeological specimen represents an animal killed when the

Factory Cove people were camped at a different (inland?) site.

None of the specimens bore signs of human workmanship. However, this may be due in large part to the eroded condition of the majority of the specimens.

CONCLUSIONS

Remembering the limitations of this study, it can be concluded that the Factory Cove site was occupied by people subsisting mainly on seal meat while they lived at this site. Furthermore it can be assumed that the seasons of habitation were late winter and spring. The bird bone if identified as spring migrant would support this suggestion. Finally, the predominance of seal skull parts can be explained by their physical characteristics but the numerous foot bones suggest cultural selection.

Faunal Remains from the Fcatory Cove Site (DlBk-3), Newfoundland

Dr. Stephen Cumbaa

Zooarchaeological Identification Centre

INTRODUCTION

The Zooarchaeological Identification Centre was asked by Reginald Auger of Memorial Unversity in the fall of 1981 to analyze about 1,200 bones recovered during the excavation of the Factory Cove site that summer. Factory Cove (DlBk-3) is an Early Dorset habitation site located on the west coast of Newfoundland, about nine metres above a cove near the tip of the south coast of the Cow Head peninsula (49o 55'N 60o 10'W).

The peninsula itself, jutting out into the Gulf of St. Lawrence about three kilometers, is narrowly attached to the mainland by a sand bar. Most of the peninsula is covered by low spruce and fir, with high cliffs along the north shore slipping down to beaches and meadows along the south shore. Fresh water is available at the site from high ground drainage into a contiguous bog, and although exposed to the elements like many Dorset sites, it is somewhat protected from north and east winds by natural features (Auger n.d., 1982). Most of the site, which covers an estimated 1300 square metres, is covered by grass and moss.

About 12 percent has been excavated by field parties from Memorial University under James A. Tuck in 1976, 1978 and Reginald Auger in 1981.

Radiocarbon dates range from 2700-2270 B.P. (Auger 1982), which link it chronologically (as well as typologically) to the nearby Cow Head site excavated by Tuck. Dates from three Dorset strata at Cow Head range from 2845-2480 B.P. (Tuck 1976).

PREVIOUS FAUNAL WORK

Frances Stewart (1979) analyzed about 600 bones recovered during the first two seasons at Factory Cove. Harp seal, caribou, and bird remains were reported. The great majority of the identified remains were seals, and although harp was the only species identified, Stewart felt there were probably two other species represented. She concluded that late winter and spring were the probable seasons of occupation.

METHODS AND MATERIALS

All of the nearly 1,200 bones examined in the present study were identified at the Identification Centre, National Museum of Natural Science, Ottawa. Identifications were made by direct comparison with these reference specimens.

As seals are not well known osteologically and extensive comparative collections are necessary for proper

identification of post-cranial elements, many bones were left identified as "seal". All specimens examined were the size of harp and harbour seals. Complete reference skeletons of harp, harbour, ringed and bearded seals were available for comparison. Gray and hooded seals, at least occasionally in the area of the site according to Mansfield (1964), were not available for comparison, but are both large species and probably outside the size range of the archaeological specimens.

Raw data are found in the appendices. Table I lists the common and scientific names of species identified, and Table II lists the spcies found by area. Table II also gives MNI figures. Each area of the site was considered as the unit of derivation for MNI calculations. Although five areas of the site were examined, only two (areas I and III) produced bone in quantity. No bone was found in areas IV and V.

ANALYSIS

AREA I

This area of the site, consisting of a tent circle with a hearth and a mid-passage structure, produced the earliest radiocarbon date, 2700 ±140 B.P. Preservation was poor, and only 61 of the 403 bones recovered (15%) could be identified to at least family level.

The majority of the identified bones are seal, with harp the only seal species confirmed. The only other mammal species recovered from Area I is caribou. One unidentified bird bone was also found, as well as an otolith from an Atlantic cod, Gadus morhua. This otolith, from a cod probably about 30" in total length and weighing perhaps 10 pounds, may be one of the earliest direct pieces of evidence for the antiquity of the Newfoundland cod fishery.

Although caribou would appear to be nearly equally as important as seals from the MNI figures in Table I, it is felt that the MNI of seals is underestimated due to breakage and other factors.

AREA II

The single bone recovered from this area, that of a murre, came from an intensively re-occupied part of the site containing a semi-subterranean dwelling and a

mid-passage structure. Charcoal from the semi-subterranean dwelling gave a radiocarbon date of 2530±280.

AREA III

This area of the site, probably due to good bone preservation as a result of an underlying fine clay sterile level which kept the bones waterlogged, produced the most bone and the greatest variety of species. Forty-two percent of the 973 bones recovered were identified to at least family level. The major structure here, a single lean-to dwelling with a permanent stone wall and with a fireplace at the center, dated to 2270 ±100 B.P. Most of the bones came from a "cache" in a conical storage pit 80 cm. wide by 40 cm. deep.

A variety of mammals and birds gives some indication that the Dorset peoples were somewhat more than seal and carbiou hunters. However, the number of these "other" species is so small by comparison with bones of both harp and harbour seals that it reinforces the picture of an almost exclusive maritime economy. Even caribou here are of relatively little importance.

Mammals from Area III other than harp and harbour seal and caribou include Arctic hare, beaver, and red fox. No fish were found, but bird species included Canada goose, common eider, other eider bones (possibly from the same individual) and bones of a large duck (possibly also the

same). The Canada goose bones contained medullary bone which is a good seasonality indicator since it occurs only in female birds during the nesting season.

TABLE I

Common and scientific names of species identified from Factory Cove

English Name	Scientific Name	French Name
Mammals	Mammalia	Mammiferes
Arctic hare	*Lepus arcticus*	Lievre arctique
Beaver	*Castor canadensis*	Castor
Red fox	*Vulpes vulpes*	Renard roux
Harbour seal	*Phoca vitulina*	Phoque commun
Harp seal	*Phoca groenlandica*	Phoque du Groenland
Seal	*Phoca sp.*	Phoque
Caribou	*Rangifer tarandus*	Caribou
Birds	Aves	Oiseaux
Canada goose	*Branta canadensis*	Bernache canadienne
Common eider	*Somateria mollissima*	Eider commun
Eider	*Somateria sp.*	Eider
Duck	*Anatinae*	Canard
Murre	*Uria sp.*	Marmette
Fish	Pisces	Poissons
Atlantic cod	*Gadus morhua*	Morue franche

Table II

Table II. Animal remains from Factory Cove (DlBk-3), 1981 season.

Taxon	Area I		Area II		Area III		Total	
	#Bones	MNI	#Bones	MNI	#Bones	MNI	#Bones	MNI
Mammals								
Arctic hare	-	-	-	-	1	1	1	1
Beaver	-	-	-	-	1	1	1	1
Red fox	-	-	-	-	1	1	1	1
Harbour seal	-	-	-	-	27	4	27	4
Harp seal	10	2	-	-	87	5	97	7
Seal	43	2	-	-	278	1	321	3
Caribou	6	2	-	-	2	1	8	3
Unidentified mammal	342	-	-	-	563	-	905	-
Birds								
Canada goose	-	-	-	-	6	3	6	3
Common eider	-	-	-	-	2	1	2	1
Eider	-	-	-	-	2	-	2	-
Large duck	-	-	-	-	1	-	1	-
Murre	-	-	1	1	-	-	1	1
Unidentified bird	1	1	-	-	2	-	3	1
Fish								
Atlantic cod	1	1	-	-	-	-	1	1
TOTAL	403	8	1	1	973	18	1177	27

DISCUSSION

SEASONALITY

Stewart (1979) suggested that the Factory Cove site was inhabited in later winter and spring, and that possibly April, when harp seals haul out on land to breed before moving north to the High Arctic, was when most of them were killed.

Results from the 1980 season would seem to reinforce Stewart's conclusion. The best evidence is the

Canada goose bones from Area III, which were filled solid with medullary bone (Rick 1975), indicating that the birds were taken between mid-April and early May, Bellrose (1976) indicates that at the latitude of Factory Cove, Canada geese lay their eggs from April 20-May 3). Murres (from Area II) are found closer to shore in spring and summer than in winter (Godfrey 1966), perhaps adding a bit of supporting evidence. Eiders are found in the vicinity year-round.

Since really young harp seals were not found, this suggests that the Dorset peoples were hunting mostly adults, either as they came down into the Gulf of St. Lawrence in January, or during the migration of the harp seals in May seems to best fit the evidence for Dorset hunting as harbour seals congregate and haul out about this time and a little later on into the summer (Mansfield 1964). Caribou start to frequent the coast in summer as well. All these indicators point toward occupation of the site from about April on into early summer perhaps at least June.

OTHER CONSIDERATIONS

Tuck (1976) has indicated that although Dorset peoples were well-equipped hunters, there is no evidence of their having had dogs. Of interest are three bones (two seal, one unidentified mammal) from the bone "cache" in Area III which have obviously been gnawed by carnivores. The tooth marks are consistent with those made by dogs, but

could of course have been made by a wolf or even a fox, both of which have similar chewing patterns. One fox bone was recovered from the site.

Several bones from this area show evidence of butchering, and it seems clear that all parts of the carcass were present in the major species. Virtually all body parts of seals are represented, and although caribou bones are few, head, limb and extremity elements are present. The evidence would seem to indicate primary butchering on the site.

CONCLUSIONS

The Dorset peoples seem to have occupied Factory Cove during spring and early summer, probably from April through June. They seem to have subsisted primarily on adult seals, and to a lesser extent, caribou with a minor component of smaller mammals, waterfowl, and fish. A seasonal maritime/coastal economy seems evident, with all resources available within a kilometer or so of the water's edge, with the possible exception of beaver. Although boats would not have been necessary to take seals, the cod, unless fished from the ice, may have required them.