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Archeological Survey on the Northern Northwest Coast

By PHILIP DRUCKER

With Appendix

Early Vertebrate Fauna of the British Columbia Coast

By EDNA M. FISHER

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ARCHEOLOGICAL SURVEY ON THE NORTHERN NORTHWEST COAST¹

By PHILIP DRUCKER

INTRODUCTION

This paper has a twofold aim, first to present the results of an archeological survey in the northern British Columbia coast in 1938, and second to attempt to integrate the various materials, published accounts, and museum collections, relating to Northwest Coast archeology. The Northwest Coast, so well studied by ethnographers and linguists, has been grievously neglected as a field for archeological research, despite the fact that numerous features of custom and myth point to strong relationships with Eskimo cultures on the one hand and those of northeast Asia on the other, and raise intriguing problems of historical development. The reasons for this neglect stem from the belief that the coastal sites are small and few, that they are poor in artifactual material, and that much of what material they contain is so poorly preserved owing to climatic conditions as to be irrecoverable. Actually, along the entire coast, sites, consisting of middens of occupational debris on which the villages stood, are both numerous and large. Their artifact content is not high, compared, for example, to that of Eskimo sites, and the lack of pottery is a handicap to survey and stratigraphic testing, but the fact remains that they do contain a moderate per-yard quantity of artifacts, and that objects of bone and horn, and even pieces of wood, are well preserved even in the deepest of the perpetually damp levels. Human skeletal material, too, can be recovered. Archeological research in the area is not only desirable but entirely practicable. It is hoped that this summary of available data, incomplete as it must necessarily be, will stimulate further investigations on the Northwest Coast and thus lead to an understanding of the historical processes involved in the development of

¹ The research on which this study is based was made possible by a fellowship from the National Research Council. Typing and drafting for this paper was done by personnel of Works Projects Administration Official Project No. 65-08-3-30, Unit A-15.

the complex, and in many respects unique, civilization found by the first European explorers to touch on these shores.

It may be well to make clear that the present work deals primarily with the northern portions of the Northwest Coast culture area, which in its entirety extended from Yakutat Bay in Alaska to the vicinity of Mad River in northern California. Some data from the lower Columbia River are drawn on for comparative purposes. This is a somewhat arbitrary division, although ethnographic data indicate that this northern section was a unit distinguishable at a considerable series of points from the southern province or subarea composed of the Oregon and northern Californian coasts. So little is known of this southern province archeologically, however, that it is next to impossible to deal with it in conjunction with the distant northern regions.² It is highly desirable that investigations be made throughout the Oregon-California coast, to establish the relationships of the cultures of this district with the northern ones on the one hand, and those of central California on the other.

The survey here described was made during the fall of 1938. Accompanied by R. K. Beardsley, an undergraduate anthropology student of the University of California, I located and tested a series of midden sites from Prince Rupert to Rivers Inlet (Coast Tsimshian and Northern Kwakiutl territories) and located a number in Southern Kwakiutl territory. The aim of the survey was to apply the direct historical approach to the regional archeology, testing sites which on historic or other evidence were known to have been inhabited during historic times, to define if possible the historic and protohistoric horizons, and to set the stage for linking them with, or distinguishing them from, the prehistoric cultures of the area. It was found that the coast sites lend themselves exceptionally well to this method, for because of their considerable size many of them reveal a series of levels underlying the historic ones (identifiable through the occurrence of contact goods of various sorts) which by reason of their depth must have been laid down in prehistoric times. Conditions are thus extremely favorable for checking possibilities of culture stratigraphy or change.

It is only fair to state that in the light of the ethnographically determinable diversity of the coastal cultures, and evidence of populational changes (Smith, 1903, p. 190), I feel that the probabilities are quite high that culture change should be manifested in these archeological deposits. While definitive evidence of such change was not found, suggestions of it were noted, as will be brought out in a subsequent section. The failure to get conclusive evidence pro or con stratigraphy

² Such investigations as have been made (see Schumacher, 1877; Loud, 1918, Cressman, 1933) have been at the southern end of the province.

is attributable to the relatively small sampling it was possible to get with a small party on a program that entailed covering a large region. Nonetheless, I am thoroughly convinced that the results obtained justify themselves by proving the possibility of archeological research in the area. More important still, they form a nucleus of carefully collected data around which more intensive operations may be built, and with which the scattered, illy documented, but surprisingly numerous lots of specimens in museum collections can be coordinated and evaluated. Typologies based on the museum materials as well as those collected on the 1938 survey, and distributions of some of the more common types, have, therefore, been included in this paper with the aim of making these materials more easily available to future investigators in Northwest Coast prehistory.

THE HISTORIC PERIOD

An attempt to apply the direct historical approach to a new archeological field ordinarily must be based on the records of the period of early European contacts, utilizing them to determine tribal distributions and to identify sites. For the Northwest Coast, however, historic records are less essential, though of unquestionable value as a check and guide, because of the fact that the native cultures there persisted little modified much longer than in many other parts of the New World. The nature and effects of European contacts on the Northwest Coast differed markedly from those in other areas. The chief difference rests in the fact that there have been no major population movements, voluntary or enforced, since earliest historic times. Even despite the steady numerical decrease of population, and the tendency for survivors of decimated groups to assemble in central or stronger villages, the sites of early historic times (and many of them go well back into the prehistoric period) are not only still known and occasionally utilized, but are also considered the property of the rightful heirs of the past occupants. Most of these sites in British Columbia have been set aside by the Canadian Government as Indian Reserves. Consequently, the identification of historic horizons with ethnically known groups does not constitute anywhere near as difficult a problem as in the Plains or the Southeast. Any tolerably well-informed modern native can tell to what ethnic group, and what division within the group, a given site belongs; indeed, he can ordinarily point out a number of the older people who were born there.

The first important date in Northwest Coast history is that of Cook's voyage in 1778. Bering and Chirikoff had made landfall on the southeast Alaskan Coast in 1741. In 1774 Perez, and Heceta in 1775, had sailed up from the south and put in at a few places, but the cultural effects of these early voyages could have been only

infinitesimal. Even Cook's visit was indirectly rather than directly influential on native life, for it was the sale in Canton of the sea-otter furs his men bought at Nootka Sound that drew the fleets of adventurers to the coast—Hanna in 1785, Dixon, Portlock, Meares, and the rest in 1786, and after them a veritable multitude. In the course of a few years, the seafaring traders had pretty thoroughly combed the coast from the mouth of the Columbia to Prince William Sound. Real exploration culminated in the painstaking surveys of Vancouver, 1792-95. The sailing trade continued for some years, until the golden harvest of sea-otter pelts was exhausted. 1835 may be set as the final date of this first contact era on the coast.³

So far as native life is concerned, the sailing trade era affected it but little. True, the people acquired quantities of new material objects—knives, copper kettles, guns, red silk parasols, and the like—and the hunting of fur-bearers undoubtedly came to have a greater importance than formerly, but the ancient patterns of life prevailed with little change. The fact is that these first contacts were of an ephemeral sort. A ship would anchor off a native village, waiting until the people came out with their furs. Often the traders did not go ashore at all; at most they spent but a few days in the vicinity, making sail for another village as soon as it appeared there were no more pelts to be bought. Relations were not always pleasant, of course. The traders were a hard-bitten lot, and some did not scruple to take by force or stratagem furs they thought were priced too dear. On the whole, however, the numbers and warlike proclivities of the natives were a constant enough threat to ensure them reasonably good treatment at the traders' hands. The Northwest Coast was never the scene of long and bitter wars of the kind that climaxed Indian-White relationships in most other areas.

From the historical ethnologist's viewpoint, the sailing trade era is tantalizingly sterile. Not only were the trader's opportunities for observing anything but the most obvious features of native life quite limited, owing to the short and casual nature of the contacts, but only a few of the journals kept are known. Much more valuable are the journals of the two scientific observers, Vancouver and Caamaño, who explored the region with which the present paper is immediately concerned. For our purposes it will suffice to point out that in addition to village-site locations, both accounts show that the tribal distributions at the end of the eighteenth century were the same as those of the more recent ethnographically documented era. Caamaño (1938, pp. 273, 278; compare Garfield, 1939, p. 336) speaks of a "Samoquet" (Tsimshian; sam-ó get, "chief") in the Nepean

³ For a summary of voyages of the early period, see Wagner, 1938, and Howay, 1928.

Sound region, called Gitejon (probably a tribal, not a personal, name), and Vancouver (1798, vol. 2, pp. 276, 278) mentions a number of chiefs of the Restoration Cove and Roscoe Inlet vicinity: Keyet (qai'd), Comockshulah, Whacosh (wokas), Amzeet (hãmtzid), Nestaw Daws, Moclah (mãLo), all good Heiltsuk names.

The sailing-ship traders were finally driven off the coast by the Hudson's Bay Company which, under Simpson, began a vigorous campaign for a monopoly of trade in the region. By 1835 the Company had established Fort Nass (later moved to modern Port Simpson) in Tsimshian territory, Fort McLoughlin, near the site of the modern village of Bella Bella, and Fort Langley on the Fraser, and was in complete control of the coast from the Columbia north to the Russian-held Alaska. With the leasing of the Russian post on the Stikine in 1840, and the building of another on the Taku, the entire area came into Hudson's Bay Company's hands. Under Company rule, a new era came into being. The natives for the first time—save for a few localities such as Nootka, the lower Columbia, and Sitka, where there had been permanent stations for some time—were subjected to sustained contacts with Europeans. The increasing importance of European goods is reflected in the tendency of the people to move in close to the posts. Important Indian villages grew up at Fort Rupert, Fort McLoughlin, Port Simpson, Massett, etc. At the same time, the Company under its *laissez-faire* policy did little to interfere with native life. What changes came about were voluntary adjustments to new materials and new values offered at the trading posts. There appears to have been an actual florescence of native culture. Well supplied with tools, with a new and unlimited source of luxury, or wealth goods, native art reached a new peak, and elaborate rituals and festivals came to be everyday rather than occasional occurrences. Even despite the steady shrinking of population, this was a Golden Age. It has only been in recent times, with the coming of the salmon cannery and the missionary, that native culture has been drastically and more or less forcibly altered. Yet through it all, the fact that the Indian has not been torn from his ancestral homeland but has remained in close contact with it has aided him in the difficult period of reassortment of culture patterns.

For present purposes, the chief significance of the modern condition of the natives is that it so markedly simplifies the task of identifying historic horizons, as previously remarked. There can be little question regarding the exact group to which an historic site is to be referred. Even in the case of places of which we have no documentary notice, reliable ethnographic identifications can be made.

TRIBAL DISTRIBUTIONS ON THE NORTHERN BRITISH COLUMBIA
COASTS ⁴

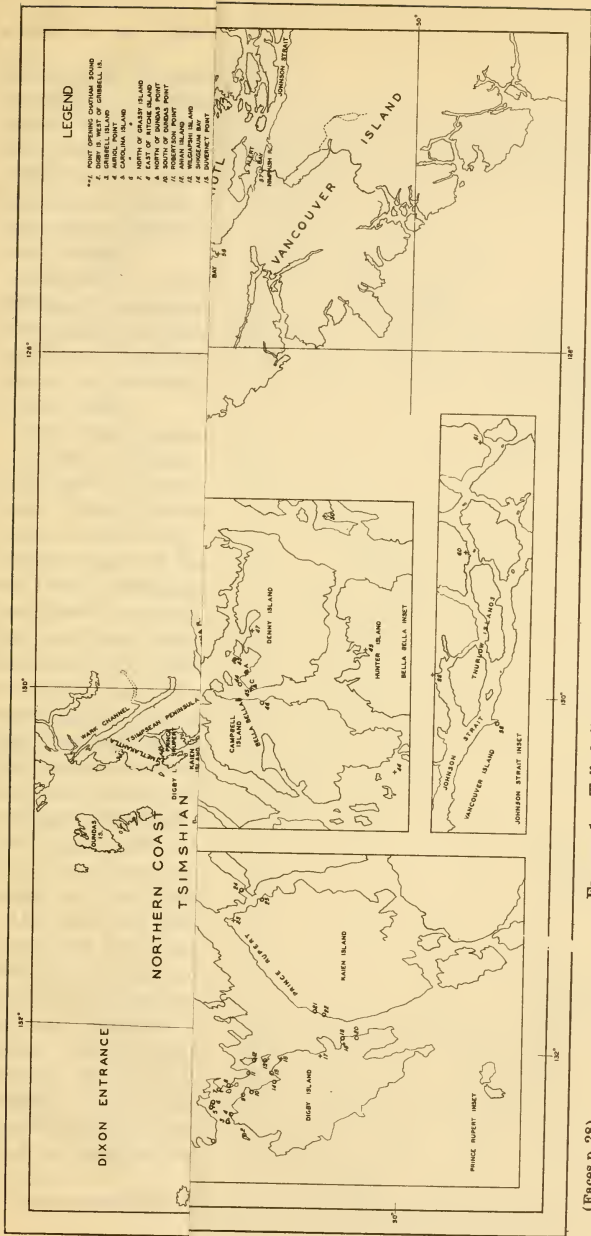
From ethnographic and historical sources, the following divisions can be mapped out (fig. 1). The Coast Tsimshian held the outer seaboard from the mouth of the Nass to the northern shores of Milbanke Sound. There were several major divisions of these people: The Northern Coast Tsimshian, consisting of nine "tribes" (really local groups), who fished on the lower Skeena as far up as the cañon in summer and fall, wintered in separate tribal villages along Venn Passage, and held olachon fishing rights at the mouth of the Nass where they went in the spring. There were three southern groups: The Kitkahtla, whose main village is on Porcher Island; the Kitqata (or Hartley Bay) group, of lower Douglas Channel and Nepean Sound; and the Kitasu tribe, of the Laredo Sound vicinity. The inner waterways adjacent to Southern Tsimshian territory were held by Northern Kwakiutl groups; the Xaisla at the heads of Douglas and Gardner Channels, and the Xaihais ("China Hat") of Poison Cove and Kynoch Inlet. From Milbanke Sound south, the outer coasts were held by groups speaking the Heiltsuk variety of Kwakiutl (also spoken by the Xaihais). These groups cut the Salishan-speaking Bella Coola off from the sea. The southernmost Heiltsuk were those of Rivers Inlet. From Smith Sound south to Cape Mudge, lived the Southern Kwakuitl tribes, on both the mainland and Vancouver Island shores.

THE LAND AND THE PEOPLE

As an introduction to the regional archeology, the salient features of the natural landscape and of the civilization of its native inhabitants, at least those features likely to be reflected in archeological findings, may be summarized. The northern British Columbia coasts are extremely rugged. Great mountain ranges rise boldly from the water's edge to barren crests 2,000, 3,000, and even more thousands of feet above. The coast line is cut by a network of channels and fiords, and dotted with islands, large and small. Heavy glaciation, followed by general subsidence, is responsible for a great part of this irregularity. Tortuous ironbound coasts are typical of the region. Here and there, one sees a level terrace, a shallow beach, or an alluvial fan at a river mouth, but such places are not frequent. There are hundreds of miles of shoreline but few places to land.

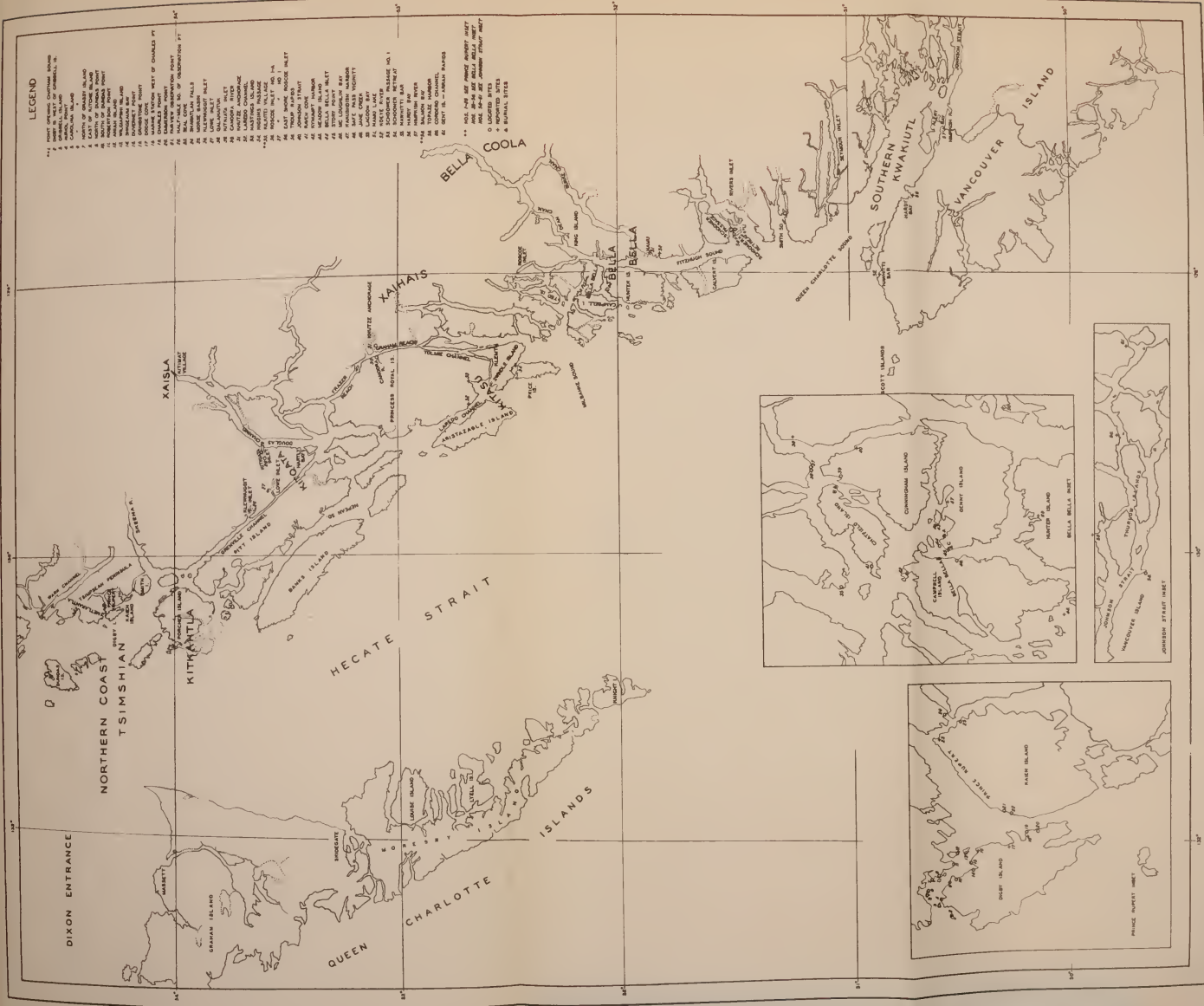
The coast ranges have an important climatic effect, acting as a barrier to the sea winds, which are saturated with moisture after

⁴ The allocations of tribal territories are based on : Garfield, 1939, pp. 175-177 ; Boas, 1897, pp. 328 ff ; and supplementary information obtained by the present writer.



(Faces p. 28)

FIGURE 1.—Tribal distribution on the northern Northwest Coast.



(Faces p. 28)

Figure 1.—Tribal distribution on the northern Northwest Coast.

passing over the warm Japanese current offshore. As a consequence, the coast is a region of heavy rainfall and moderate if not warm climate, while just across the mountains, a hundred miles from the outer coasts as a crow flies, dry sub-Arctic conditions prevail. Even at the heads of some of the longer inlets, such as Dean and Douglas Channels, a marked difference may be noted—less rain than on the outer coasts, colder winters and warmer summers, and very obvious floral changes.⁵

Temperature correlates of the prevailing winds emphasize the difference between coast and interior. A southeaster, the storm wind, often of gale intensity, is always accompanied by heavy rain, as are the westerly winds which are common in summer. Offshore winds (north or northeast) are in winter accompanied by clear skies and dry cold.

The typical portions of the coast are covered with a dense tangle of forest. Conifers dominate—Douglas fir (*Pseudotsuga taxifolia*), Sitka spruce (*Picea sitchensis*), hemlock (*Tsuga heterophylla*), red cedar (*Thuja gigantea*, or *plicata*), and yellow cypress (*Chamaecyparis nootkatensis*). Aside from alders (*Alnus oregona*, *A. sitchensis*), most of the deciduous forms are bushes, many of which are berry producing. Salmonberry, wild currant, red and black huckleberry, and salal are among the more common varieties. They form well nigh impenetrable thickets at the edge of the timber along the shores and stream courses. Once through them, one enters a silent gray realm of moss-covered ground and tree trunks, and jutting rocky slopes. The woods are relatively open, for the trees branch high, but are dank and sunless. So abrupt are the slopes that the precipitation runs off nearly as fast as it falls. Perhaps because of this, there is very little soil. The thick layer of needles and leaves remains half rotted and half leached out, and seems never to form good black earth. Occasional blocked basins contain black icy lakes if they are large, muskeg swamps if they are small. All in all, the woods are grim, forbidding.

One need not wonder that the natives were beach dwellers who penetrated the woods but rarely. Dwelling along the shore, they were conveniently situated to exploit the vast aquatic food resources of the area—fish (salmon of five species, herring, olachon, halibut, cod, etc.), mollusks, and, for variety, various marine mammals, and birds. Such land game as was used was “hunted” chiefly by means of traps set along the river banks. The sea even provided some vegetable foods: Several kinds of edible sea weeds were utilized. The important vegetable products, such as berries and roots of one kind and another, could, however, be obtained close to the beach or

⁵ Data on precipitation, etc., in the area can be found in Koeppel (1931).

river. Thus it was that the people lived at the water's edge, derived most of their livelihood from the water, traveled waterways in preference to trails, and regulated their activities by the tides quite as much as by daylight and dark.

Though there were numerous minor differences of culture between the various groups, a few major trends and patterns were common to all. Economically, dependence was not only on fish, but on species—particularly salmon—seasonally available. This brought about a series of annual movements of each group, for a settlement adjacent to a salmon stream might not be conveniently located for digging clams when the salmon run was over or for the herring fishery, or, in late spring and summer, for halibut fishing and sea-mammal hunting. Each tribe, and often each lineage within the tribe, had a series of sites used at different times during the year. Some ranked as important settlements, while others were little more than camps in use but a short season. Within the territory claimed by each tribe there would, therefore, normally be a considerable number of sites, large and small.

Of no little importance is the fact that the chief staple, salmon, could be obtained in great quantity, and was fairly easy to preserve. A surplus could be put up at the fall fishing that would last well through the winter, or to the time of the herring or olachon run. Not only did this almost inexhaustible food source support a dense population, and allow for leisure time in which the native arts could be developed to the peak for which Northwest Coast culture is justly famous, but it permitted the assembling of large groups in the winter villages. In each tribe, lineages returned from their several fishing places to congregate in the winter village for a season of festivity and ceremonial. It was here that carved ornaments and masks and the like were made and used, and here that the great potlatch houses stood.

The dwellings of both Tsimshian and Northern Kwakiutl conformed to the general areal pattern: they were large rectangular structures of split planks. Specifically, they were of the northern type, nearly square in plan with the side planking morticed into slotted plates between the corner posts, and gabled roofs. Southern Kwakiutl houses are known to have changed in type during the late historic period. The old type was long and narrow, the roof, gabled or occasionally of "shed" type,⁶ supported by massive posts and beams against which the planking was laid up. These southern houses were usually stripped of their planking when time came to move to fishing stations, the planks being taken along to be used

⁶The occurrence of shed-roof houses in this region is reported on the basis of a photograph taken in the 1870's, in the possession of W. A. Newcombe, which shows both shed and gabled roofs at Alert Bay.

there. All the groups constructed houses at important fishing places similar in plan to those at the winter village, although sometimes smaller and usually less carefully built. Among minor patterns, we may note frequent use of pile dwellings, use of cribwork foundations to compensate for inequalities in ground level, and sporadic occurrence of central pits (often "stepped," having four levels) throughout our region.

Like all Northwest Coast groups, Tsimshian and Kwakiutl emphasized woodworking in their manufactures. The presence of a variety of trees—straight-splitting, easily worked red cedar, the finer-grained yellow cypress and alder, and the tough elastic yew—made possible the use of wood for a great number of purposes, and permitted the development of a trend toward woodworking unique in western North America. Not only were there dwellings of wood, but the all-essential canoes that made possible efficient exploitation of the country were cedar dugouts, and food vessels and spoons, storage containers, quivers, and a great deal of the ceremonial paraphernalia—rattles, drums, masks, and headdresses—were made of wood. A variety of tools served the native craftsman. Stone mauls, hand-held among Southern Kwakiutl, both hand-held and hafted among their northern kin and the Tsimshian, served to drive wooden or whale-bone wedges; stone-bladed splitting and planing adzes (the former a Tsimshian tool), and hafted stone chisels were for cutting and planing. Drills with bone points were used to make holes for lashings or dowels at joints. For fine carving, it is probable that knives of beaver teeth were used, although steel blades were adopted so early that no modern natives are sure of the ancient implement.⁷ Sandstone and shark or dogfish skin gave smooth finish. With these tools, and a few simple techniques, the natives were able to make neatly and often beautifully finished objects for whatever purpose they required.

A glance at a collection of tools and weapons from the region makes apparent the pattern of preference for bone, horn, and shell for cutting edges. Arrow, harpoon, and spear points were made most often of these materials. Women's knives were usually the sharpened shells of the large mussel *Mytilus californianus*. Most noteworthy is the dearth of chipped stone. The stone projectile points, and occasional stone knives, were of ground slate. Stone mauls, adzes, and celts were pecked to shape and polished. That the absence of chipped stone was a matter of cultural preference, not environmentally con-

⁷ The pre-European occurrence of iron tools on the coast has been noted by Barbeau (1929) and has been critically analyzed by Rickard (1939). It is worth noting here that presence of small amounts of iron in an archeologic horizon is not of itself diagnostic of the historic period.

ditioned, is indicated by the fact that stone suitable for flaking occurs in the region, although perhaps not in vast quantities.

The trees that furnished material for so many articles of manufacture were the source of another product, textiles. Dress consisted of furs and woven robes and capes. In such a humid climate native leathers are of little service. Neither Tsimshian nor Kwakiutl equalled the Tlingit or Coast Salish in excellence of their woven goods (though traditionally the Tsimshian are supposed to have invented the Chilkat blanket), but they were able to make technologically rather simple robes of shredded cypress bark. The inner layers of the bark were stripped off, soaked, beaten with a heavy grooved mallet, loosely spun, then twined together on a suspended warp loom. Sometimes mountain-goat wool was woven, but less was used than by Coast Salish or the Chilkat Tlingit. The bark of the red cedar was utilized for making the ubiquitous checkerwork mats, used for a thousand purposes—to sleep and sit on, to cover canoes, to gamble or cut fish on, to wear as a rain cape. Checkerwork baskets of red-cedar bark met nearly as many needs.⁸ The same bark was hackled with a whalebone “shredder” to make ceremonial insignia, bandages, cradle padding, and, in the days of muzzleloaders, gun wadding.

The Kwakiutl and Tsimshian were important centers of ceremonialism on the Northwest Coast. Their rituals were for the most part dramatic performances at which supernatural beings and deeds were represented realistically. Deities, spirits, and other beings were personified by masked dancers, who performed to an accompaniment of carved rattles, wooden drums, and wooden whistles. Elaborate and ingenious devices were made to reproduce supernatural events. Great wooden birds flew from one end of the house to the other, a supernatural mink might come up through the floor, run across the room, and disappear, a human dancer would be dragged down into the ground by a spirit from the underworld. Shamanism, too, had a wealth of regalia and tricks that depended on mechanical contrivances.

The social system of our region is of interest on several counts. First of all, the area was heavily populated. Estimates in terms of number of persons per square mile mean little in a region where just the shoreline was habitable, but even such figures indicate a large population. Kroeber (1934, p. 12) has calculated the prehistoric density of the Northwest Coast from the Straits of Georgia north to be 26.3 per 100 square kilometers. At the winter villages, where numbers of clans or lineages assembled, large groups were the rule. Within the group, individuals occupied fixed statuses of graduated rank, the system of grading closely linked with heritage and wealth. Token

⁸ Some spruce root, cedar withe, etc., twined basketry was made, but less, and of poorer quality, than by Tlingit and Haida.

wealth consisted of "coppers" and copper ornaments, *Dentalium* shells, furs, and slaves, all of which were articles of trade. The chief source of copper was far to the north (though there appear to have been several places in the interior from which placer copper was obtained); the dentalia came from the west coast of Vancouver Island. The wide occurrence of these articles throughout the area and in neighboring regions points to a network of trade routes—channels by which not only token wealth but other culture items could be transmitted.

Along with the system of graduated status in part based on ancestry was a marked interest in historical tradition. Genealogies were systematically remembered, to be recited on formal occasions. These family legends, which purport to cover the family's history from the time of its earliest ancestors, are far more than a recital of personal names and relationships—they tell also of war and conquest, and of movements of families from one place to another. The places referred to are actually long-abandoned village sites. So matter-of-fact and internally consistent are these relations, and above all, so consistent are those of one family line with the traditions of their neighbors, that no ethnographer who has worked in the area has denied their historic value. Coast Tsimshian traditions trace the spread of the several tribes coastward and north and south along the seaboard from an ancient site above the cañon of the Skeena—Temlaxam. Heiltsukan folk-history brings these people from the landlocked heads of long inlets, Rivers Inlet, Dean and Burke Channels, through a series of movements down to the outer coasts and northward. One of the most fascinating possibilities of archeological research in the area is that of checking these traditions once the various archeological components have been defined. Nor should it be hard to do, for, as previously remarked, the sites of villages founded during the process of pushing out to the open sea coast are well known by name to modern natives. Archeology may thus be the means of determining the actual historical worth of these traditions; should they prove reasonably sound they could become an aid to research in the regional prehistory.

Differences in social position were reflected in the treatment accorded the dead. Men of standing were accorded great honor; the bodies of the aged, and of slaves, were disposed of with a minimum of formality. The Northwest Coast as an area is one in which there was great diversity in mortuary customs. Among the Tsimshian, bodies of chiefs were sometimes put in caves in cedar boxes, but most people were cremated; while "the body of a slave was thrown out on the beach." Interment is reported by some informants, denied by others. Kwakiutl did not practice cremation. Among the northern groups, small gravehouses were built, and bodies of relatives were put in them from time to time. Among Southern Kwakiutl, a common

mode was to put the cedar box containing the body in the branches of a tree. Cave (or better, rock shelter) burials were also common. All the groups destroyed quantities of property, at least at the death of a person of note. Much of it was burned, although in late historic times valuables were placed at or near the grave. Graniteware dishes, Hudson's Bay blankets, and even sewing machines and gramophones may be seen scattered about near recent graves. Mortuary potlatches, often involving the setting up of a memorial pole, may be construed as another form of the prevalent property destruction. More recently, erection of an expensive tombstone has been equated with the mortuary potlatch and memorial column.

The foregoing all-too-brief résumé of Tsimshian and Kwakiutl culture may serve to preface an attempt to link the ethnologic and archeologic data at hand. The major trends of native life, as we know it ethnographically, should be expressed in material remains from historic archeologic horizons, enabling us to identify and define the culture of the upper levels so that with some surety we may trace it back in time.

ARTIFACTS FROM THE NORTHWEST COAST

As a part of the survey of Northwest Coast archeology, a number of museum collections from the area were examined, with the twofold aim of placing comparatively the materials recovered from the sites tested, and of assembling as many of the scattered data as possible for the convenience of future workers in the area. Collections in the following museums were utilized: American Museum of Natural History (AMNH)⁹, Field Museum of Natural History (FMNH), National Museum of Canada (NMC), Peabody Museum of American Archaeology and Ethnology (Cambridge) (PMAAE), Prince Rupert City Museum (PRCM), Provincial Museum of British Columbia (PMBC), United States National Museum (USNM), and the Vancouver (British Columbia) City Museum (VCM). Since so little archeology has been done on the northern coasts previously, ethnologic materials were drawn upon to fill out the comparative picture. Their inclusion seems quite compatible with the direct historical approach, which aims first of all at a definition of historically identifiable archeologic components. It must be granted that, quantitatively, the sampling error introduced by use of ethnologic specimens is considerable. These collections ordinarily contain many more masks than harpoon points and celts put together. The material, therefore, can be expected to show only gross patterns, not refined regional differentiations and linkages. Nonetheless, it seems

⁹ Abbreviations in parentheses are those used in the following sections to indicate provenience of specimens.

worth while to set up some preliminary classifications of materials found or likely to be found archeologically, and the following paragraphs are concerned with the problem of typology.

A heterogeneous lot of material objects may be classified in various ways. Theoretically, it should be advantageous to group them primarily according to a single one of the several possible criteria—form, material, or function. To follow this procedure consistently would mean that it would be possible to compare components widely separated in time and/or space. In practice, any single criterion is insufficient for specific and detailed classification. The present body of material has been classified according to whichever of the three aspects—material, form, or function—seemed to meet immediate demands. In some cases, material seemed the primary factor of classification; in others, function or form played this role. This procedure has the advantage of flexibility, which outweighs its theoretically objectionable inconsistency.

The ultimate test of any classification of cultural material, of course, is whether or not it is meaningful. Basic to classification is the assumption that the traits differentiating types reflect not random variations of pattern but real cultural differences—differences of manufacturing methods, of motor habits, of use of the finished objects. Thus sometimes no particular significance can be attached to what first appear rather wide differences in form, while certain minute variations are the critical ones. In other words, the validity of any typology must be determined empirically. The best testing ground for material such as the present is that of distribution, vertical or horizontal. Traits that can be shown to occur consistently within a certain archeologic horizon, or throughout a certain region, may be considered valid criteria of culture. Features of sporadic distribution cannot be considered significant. I have attempted to put the present typologies to the proof (tables 1, 2). Many variations of form and material noted in comparing a series of objects without regard as to provenience turned out to have no demonstrable meaning, and, consequently, have been lumped together, so that certain "types" cover a wide range of variants. As fuller and more precise data are recovered from the Northwest Coast, and our knowledge of its prehistory grows, it is probable that we shall be able to discover cultural significances in some of these variations. For the present, however, it is preferable to simplify the classifications as much as possible. Refinement of the typologies will keep pace with the accumulation of information.

Harpoon points.—Harpoon points constitute a class of artifacts easily recognizable in any collection. They may be defined as detachable projectile points usually of bone or horn (metal forms are known only from postcontact collections), equipped for the attachment of a

retrieving line. The harpoon points from the Northwest Coast fall into one or the other of two major categories: one-piece heads with lateral barbs, and composite forms.¹⁰ One-piece toggling heads, the common Eskimo variety, do not occur in the collections from the area except for some late metal types which approximate the more northerly implements.¹¹

The one-piece laterally barbed points at first glance present a confusing range of variation of several form criteria, which may be variously combined in a single specimen: Type of barbs (isolated or enclosed; high or low);¹² application of barbs (unilateral, bilateral, trilateral; in case of bilateral or trilateral: opposed, staggered); cross section of head (heavy rectanguloid, heavy cylindrical, heavy elliptical, thin elliptical, thin ovate); type of tip (simple sharp, wide spatulate, slotted); type of attachment (drilled, slotted, or crescentic line hole; unilateral or bilateral line guard; notch or groove; line shoulder); type of butt (conical, spatulate, truncated, pyramidal, wide flat squared).

Despite the apparent great range of form, however, the barbed harpoon points from the area fall into a fairly small number of types and subtypes. These types are as follows:

Type I. Point of moderate length, 4 to 6 inches), relatively heavy (cylindrical to rectanguloid) in cross section, 1 to 3 high isolated unilateral barbs, simple (unslotted) point, bilateral projectiles for line guard, heavy truncated-conical butt. (See fig. 3, *a, b*.)

Variants of this basic type, which may eventually prove to be distinct subtypes but which for the present had best be lumped into the major group, are as follows: *Ia*, same as type I, with drilled line hole in addition to line guards (fig. 3, *c*); *Ib*, same as type I, but with unilateral instead of bilateral projection for line guard; *Ic*, same as type I, with wide rectanguloid butt with line shoulder instead of conical butt with guards; *Id*, same as *Ic*, with drilled line hole in addition to shoulder.

Type II. Short heavy point (length usually 2 to 4 inches), heavy elliptical cross section, 1 or 2 low enclosed unilateral barbs, simple point, rounded laterally tapered spatulate butt, slotted line hole. (See fig. 3, *g, h*.) Frequently the line of the under side of the barb is continued along the shaft by carving or incising.

¹⁰ "One-piece" and "composite" refer to the structure of the body of the harpoon point, not to the presence of inserted end or side blades. Thus, one type of one-piece heads is frequently slotted for insertion of a cutting point of stone (or in recent times of metal).

¹¹ See Niblack, 1890, figs. 137, 137e.

¹² While barb types are quite varied, basically they fall into two major classes: Enclosed and isolated, within each of which there are two or three subtypes. The critical feature is whether or not the barbs are enclosed within the silhouette of the specimen or stand out detached from the shaft. This actually depends on the relative areas of the barbs as compared with the spaces between them. If the barbs are larger than the intervening spaces, the silhouette will be of the enclosed type. (See fig. 2, *a, b*.) The backs of enclosed barbs necessarily are convex (either curved or rectanguloid), those of isolated barbs may be concave or convex. (See fig. 2, *c, d*.) The terms "high" and "low" refer to the relative proportions of length of the barbs and thickness of the shaft. Occasional specimens may be found in which the barbs are intermediate as to type, and cannot be classified on this basis, but for the present these may be disregarded.

Type II variants include: IIa, same as type II, with crescentic line slot (fig. 3, *i*); IIb, same as type II, with drilled line hole instead of slot; IIc, same as type II, but with low enclosed bilateral barbs (fig. 3, *j*).

Type III. Medium to long point (6 to 9 inches) with heavy cylindrical cross section, 2, 3, or 4 staggered rows of low enclosed barbs, slotted point, wide laterally tapered spatulate butt, drilled or slotted line hole (see fig. 3, *k*). The underlines of the barbs are often continued as in type II.

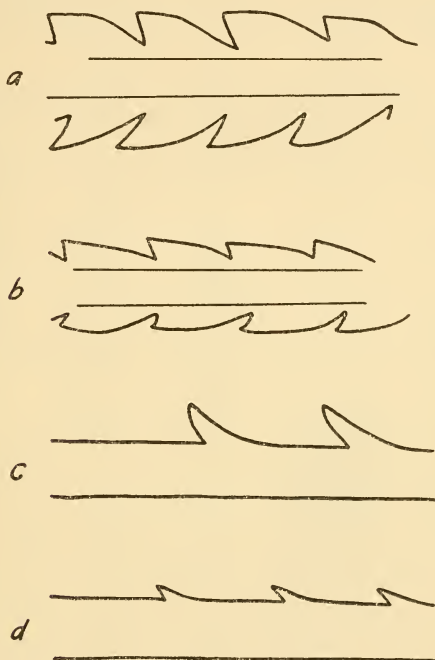


FIGURE 2.—Types of harpoon barbs.

a, High, enclosed. *b*, Low, enclosed. *c*, High, isolated. *d*, Low, isolated.

Type III variants are: IIIa, same as type III, with low isolated barbs (fig. 3, *l*); IIIb, same as type III, with simple point.

Type IV. Harpoon-arrow points (usually under 5 inches long), thin elliptical cross section, low enclosed or isolated barbs, rounded base, drilled line hole (fig. 3, *m*).

Type V. Medium to long point (6 to 10 inches), thin elliptical to lozenge-shaped cross section, 3 or more high isolated (occasionally enclosed) unilateral barbs, simple point, spatulate butt, drilled line hole (fig. 3, *n*). This appears to be a simple unspecialized form, which can be duplicated in collections from many other areas.

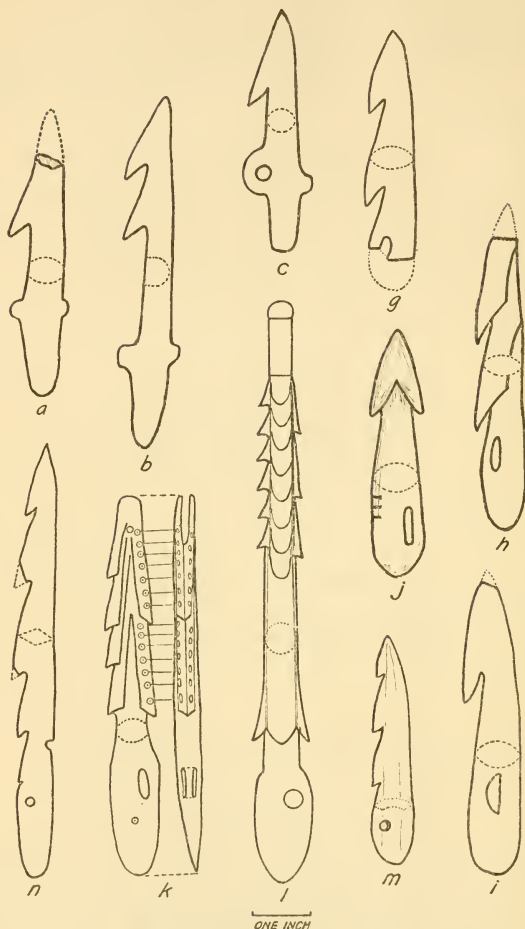


FIGURE 3.—Harpoon points.

a, Type I (VCM, no number). *b*, Type I (AMNH 16/5055). *c*, Type Ia (AMNH 16/5054). *g*, Type II (AMNH E/836). *h*, Type II (NMC XII-B-268). *i*, Type IIa (AMNH E/1983). *j*, Type IIc (FMNH-18045), Tsimshian. (Sketch, scale approx.) *k*, Type III (NMC XII-B-272). *l*, Type IIIa (AMNH 16/8476). (Sketch, scale approx.) *m*, Type IV (NMC XII-B-861). Massett. *n*, Type V (1938/14).

It would be possible to alter the present classification to make it more elastic, indicating the various diagnostic features by factors or symbols as Gillin (1938) has suggested might be done with Southwestern potsherds, so that any combination of elements can be represented by a compact formula. Until a larger series of Northwest Coast specimens is assembled, however, the foregoing classification will serve. Occasional specimens which fit no single category may be regarded as typological sports until the particular combination of traits occurs often enough to warrant designation as an additional type.

Composite harpoons.—A type of implement in fairly common use, though not well represented in archeological collections, is the compound harpoon, made of two proximally diverging barbs fitted to form a basal socket, and at their outer ends to hold a point or blade. Two types may be distinguished:

- Type I. Barbs channeled for tip (i. e., for a tip with a stem or slender base) (fig. 4, a).
 Type II. Barbs scarfed to form a blade slot (i. e., for a wide cutting blade). Many of these barbs have lashing grooves as well (fig. 4, b).

Ethnologically collected specimens unfortunately can be used but seldom, as a rule, because the lashing and pitch conceals the structural features.

Fixed bone (or horn) projectile points.—From ethnographic sources we know that bone and horn were often utilized as materials for arrow and dart points. Such objects may be recognized by the following features: Sharp tip, more or less symmetrical outline, and base modified for mounting or hafting. It must be admitted that all the objects classed as "points" may not have been made for tipping arrows—some may have been tips for composite harpoons or even halibut hook barbs (although the mounted hook barbs of bone that I have seen are more slender than the objects in the present category).

The bone points present a considerable range of form. The most obvious division is that between those with, and those without lateral barbs. These two major classes designated as: (A) Fixed points with lateral barbs, and (B) fixed points without lateral barbs, may be treated separately.

Class A.—Fixed bone points with lateral barbs: Several types of laterally barbed points are distinguishable according to type of cross section, placement, and type of barbs, and form of butt. Some of these points which are very long may have been end prongs for multipoint bird darts. The barbs of this class of points are more variable than those of the barbed harpoons, many being very elaborate and delicate. Presumably strength was less of a consideration than in the harpoon points where the barbs had to be strong

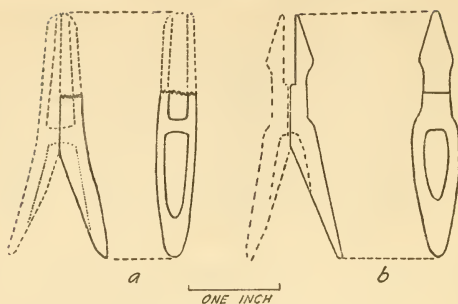


FIGURE 4.—Composite harpoons.

a, Type (NMC XII-B-425. N. S.) *b*, Type II (AMNH 16/6210). Comox.

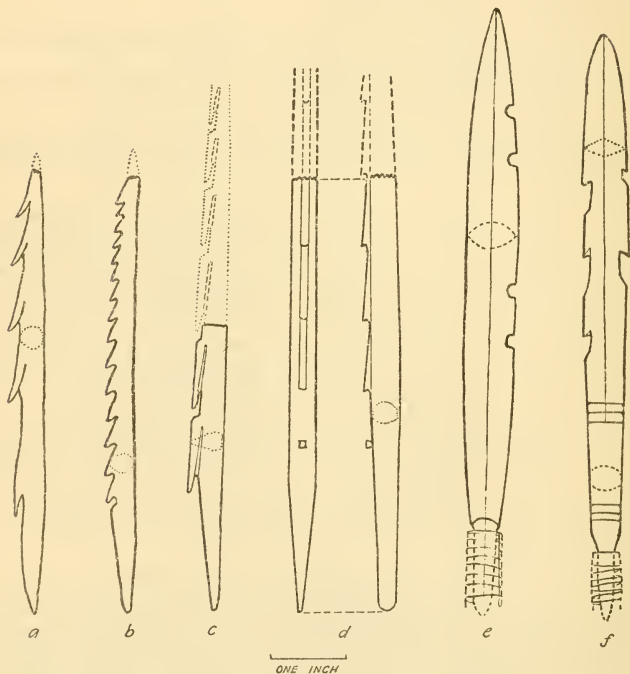


FIGURE 5.—Fixed bone (or horn) projectile points. (Class A.)

a, Type AI, low isolated barbs (AMNH 16/5131). Eburne. *b*, Type AI, low enclosed barbs (VCM, no number). (Sketch, scale approx.) *c*, Type AI, long angular enclosed barbs (AMNH 16/4536). Port Hammond. *d*, Type AI, low ridged barbs (AMNH 16/5125). Eburne. *e*, Type AII (FMNH 19900). S. Tlingit. (Sketch, scale approx.) *f*, Type AII (FMNH A 78725). Chilkat Tlingit.

enough to hold a drag or float. The following barb varieties may be distinguished (see fig. 5): Isolated (fig. 5, *a*), enclosed (fig. 5, *b*), long angular enclosed (fig. 5, *c*), low ridged (fig. 5, *d*), and notched (fig. 5, *e*). Heavy high barbs are rare. The following types may be distinguished among the complete specimens:

- AI. Rounded cross section (flattened to heavy ellipsoid or ovoid); unilateral barbs, ridged, isolated, enclosed, or long angular enclosed; spatulate or conical butt (fig. 5, *a-d*).
- AII. Thin lozenge or lenticular cross section (i. e., 2 cutting edges); unilateral or bilateral barbs, notched, often irregularly spaced; stemmed butt (fig. 5, *e, f*).

In addition to the foregoing, collections from some regions, particularly northern Tlingit territory, contain points of obvious Eskimo or Aleut type—heavy cylindrical pieces, with rows of long enclosed, or low isolated barbs, and reduced tang.¹³ These indicate alien influences, if the specimens themselves are not trade pieces of Eskimo manufacture.

Class B.—Fixed bone points without lateral barbs: A series of formal features relating to outline, hafting, base form, and cross section occur in various combinations in these points. Type of hafting and silhouette seem at present the most significant criteria for definition of types:

- BI. Points with thin squared or rounded bases, produced by convergence of the faces. Such points were made to be inserted in the cleft end of a shaft. Two subtypes may be distinguished:

A. Full (unconstricted) silhouette. Four variants within this form have been noted, but as yet do not appear to have diagnostic significance: (a) parallel sides, abrupt tip (fig. 6, *a*); (b) parallel sides, gradually tapering tip (fig. 6, *b*); (c) gradually tapering sides, abrupt tip (fig. 6, *c*); (d) gradually tapering sides and tip (fig. 6, *d*).

B. Constricted sides (fig. 6, *e*).

- BII. Points with shaft bed and basal barb(s). These points were meant to be lashed against a scaffold or beveled shaft end. Informants probably have reference to this type when they tell of arrow points which detached from the shaft, and "worked around" in the quarry's body. Subtypes are based on silhouettes like those of the preceding type:

A. Full (unconstricted) silhouette (fig. 6, *f*).

B. Constricted sides (fig. 6, *g*).

Chipped stone points.—Chipped stone is of peculiarly restricted distribution on the Northwest Coast, occurring only in certain localities. In the collected materials, a fair range of point types are found: NAa, NAb1, NAb2, NBa, NBa1, NBb, NE, SAa, SAb, SBa, SBc, SCb2, SCb3.¹⁴ In order of frequency, NAb1, NBa, SAa, and SBa

¹³ Collins figures a variety of points of this general type (Collins, 1937, pl. 34, figs. 1-13, pl. 74, figs. 5-10).

¹⁴ Classification following Strong, 1935, pp. 89-90.

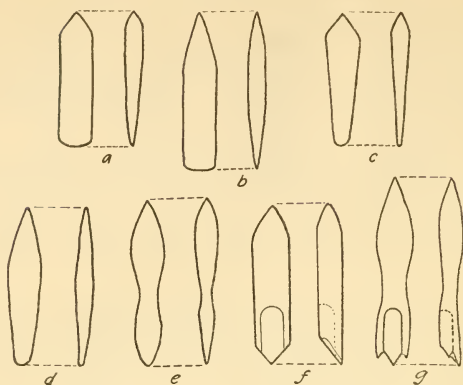


FIGURE 6.—Fixed bone (or horn) projectile points. (Class B.)

a, Type BIA. b, Type BIA. c, Type BIA. d, Type BIA. e, Type BIIA. f, Type BIIA. g, Type BIIIB.

types predominate, the others being represented by a few specimens only. Basalt and slate figure prominently as the materials for chipped points in most localities.

Ground slate points.—Points made of ground slate are common along the coast as also in the regions farther north. They run for the most part to elongate triangular and leaf shapes (NBa, NAb1, NAb2) proportionately much longer than chipped points, some in fact suggesting ND forms, though with long tapering tips. Stemmed forms (SBa, SBc) also occur, though rather infrequently (these seem to be the commonest forms in southwest Alaska) (de Laguna, 1934, pp. 70 ff., pls. 31, 32). In cross section the points range from elongate hexagonal (flat sided with bevelled edges), lozenge shaped, to lenticular. No significant correlations of outline and cross section have been noted as yet. A distinctive form is represented by a few species only: This is a very wide point, vaguely suggesting in its proportions the shell cutting blade of the recent Nootkan whaling harpoon. Two such points from Tlingit territory had drilled lashing holes near the base (fig. 7, *d*). The very long heavy "bayonet" points should be classed separately. A number of such objects have blunt or even rounded lateral edges, so that they must have been made for a purpose rather different from that of the small points. The function of these objects on the coast is unknown; they would have made serviceable lance or dagger points.

Type I. Slate points, variable cross section, usually unstemmed (fig. 7, *a*, *b*).

IA. Very wide short points (fig. 7, *c*, *d*).

Type II. Long "bayonet" points (or blades) (fig. 7, *e*, *f*).

Splitting adzes.—The designation of heavy adze blades modified (usually by a one-quarter groove) for hafting to a T-shaped handle

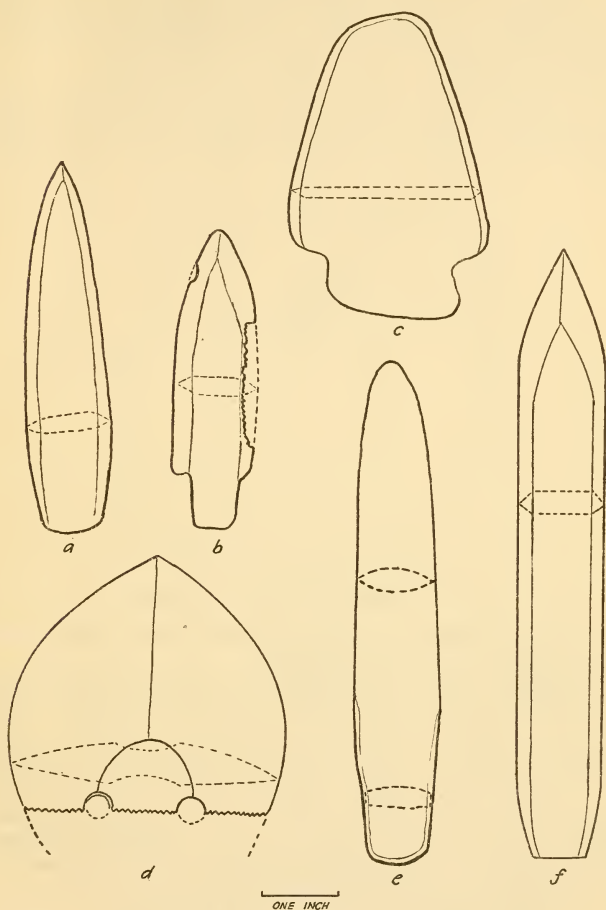


FIGURE 7.—Ground slate points.

a, Type I (AMNH E/122). Angoon, Alaska. b, Type I (AMNH E/1803). Sitka. c, Type IA (NMC VII-B-207). N. Saanich. d, Type IA (USNM). SE. Alaska. (Sketch, scale approx.) e, Type II (AMNH E/122). Angoon, Alaska. f, Type II (PMBC 983). N. Saanich.

as “splitting adzes,” in accordance with de Laguna’s suggestion (1934, p. 57), is a convenient one for typological purposes. It should be

noted, however, that large flat celts sometimes served the same purpose.¹⁵ The Northwest Coast splitting adzes¹⁶ are of various materials, tough igneous stones being preferred, and vary in size from 4.6 inches long, 1.8 inches wide, and 1.2 inches high¹⁷ to huge unwieldy-appearing blades, the approximate measurements of one of which are: Length, 11 inches; width, 1.5 inches; height, 5 inches.¹⁸ Most adzes are from 6 to 8 inches long, with width-height measurements from 2 to 3 inches (though width-height ratios vary considerably). It is interesting to note that the polls of many of the adzes

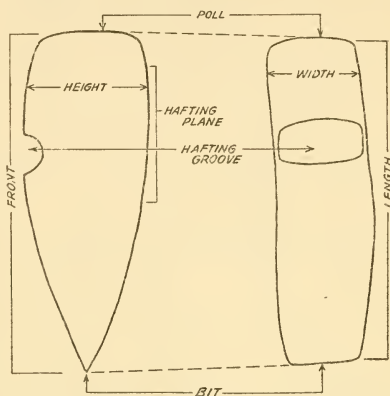


FIGURE 8.—Nomenclature of splitting adzes.

from Tlingit territory are rough and battered; some apparently were never completely trimmed and polished.

The splitting adzes are rather difficult to classify, for they present considerable variation of form, and the several traits which might have had typologic value—type of poll, type of cross section, number of grooves, fluting, etc.—seem to occur in all possible combinations with little tendency to cluster. Nonetheless, a few major divisions may be made based on examples which are extremes in one or another respect, with intermediate groups for the in-between specimens. When further examples have been collected, it should be possible to refine, or entirely revamp, the present classification.

Type I. Elliptical cross section, flat (i. e., wider than high), rounded poll (fig. 9, *a*). (I have seen but few of this type; they are quite distinct from the other forms, and may, indeed, be cultural sports.)

¹⁵ AMNH No. 16.1/297, 19/106.

¹⁶ See fig. 8 for nomenclature of splitting adzes.

¹⁷ AMNH 19/133.

¹⁸ PRCM (no number).

- Type II.** Rectanguloid cross section, much higher than wide; heavy squared poll, height as great or greater than at shoulder, giving the adze a more or less triangular profile (fig. 9, *b*).
- Type III.** (Transitional.) Cross section like type II; poll laterally narrowed, and rounded from front to back (fig. 9, *c*).

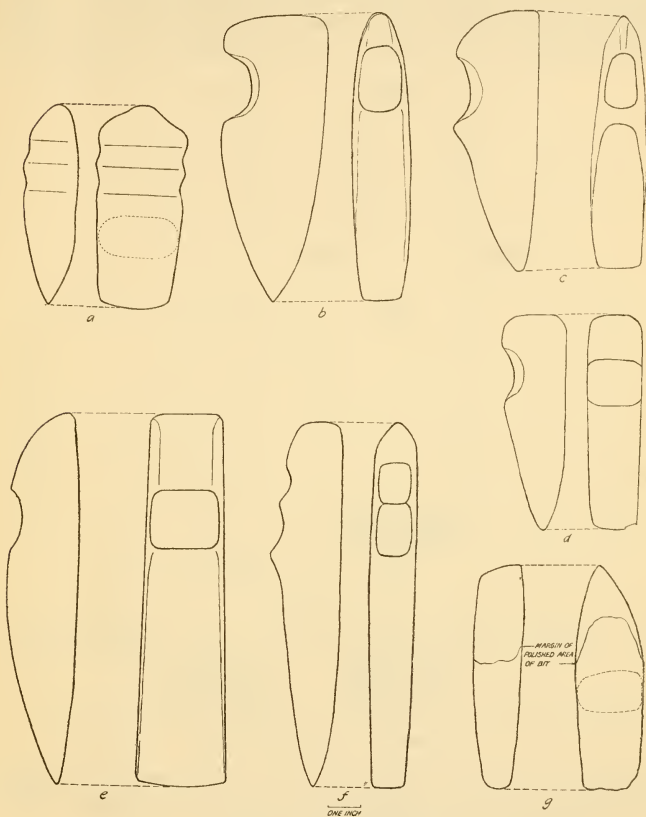


FIGURE 9.—Splitting adzes.

a, Type I (AMNH E/1265). *b*, Type II (PRM-32). *c*, Type III (PRM-33). *d*, Type IV (PRM-14). *e*, Type V. *f*, Type VI. *g*, Type VII.

Type IV. (Transitional.) Rectanguloid cross section, width and height nearly equal, poll as in type II (fig. 9, *d*).

Type V. Rectanguloid cross section, width and height nearly equal, poll rounded from front to back (fig. 9, *e*).

Type VI. Long slender adzes, rectangular with rounded corners to cylindrical in cross section (fig. 9, *f*).

In addition to the foregoing, a group of adzes from southeast Alaska¹⁹ appear to form another type, distinguished chiefly by their rudeness. On these pieces only the bit ends are well worked, the remainder being only rudely pecked to form, and not too symmetrically. Only two of the dozen had good deep hafting grooves. (See fig. 9, *g*.) The high polish and signs of use of the bits indicates these are not unfinished blanks, but finished pieces. As will be pointed out later, other

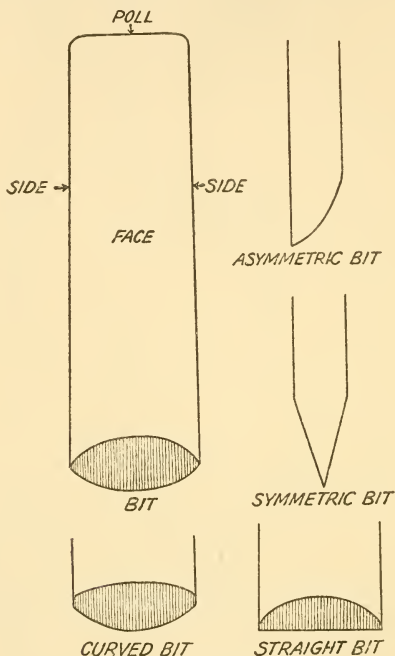


FIGURE 10.—Celt nomenclature.

utilitarian objects from Tlingit territory—celts—characteristically show the same sort of roughly blocked out asymmetric polls. These rough-polled adzes will be listed as type VII.

Celts.—Northwest Coast celts were an important part of the wood-working complex. A series of typologic differences to be seen in them probably reflect different modes of use. Some were hafted as adze blades, on either the “V-shaped” or the “elbow” adzes, others served as chisels, being mounted in socketed antler hafts in the Georgia Straits

¹⁹ USNM Nos. 150075-76, 150080-81, 150083-84, 150088, 150091-92, 150094-95, 287515.

region (Smith, 1903, fig. 29, *d*), in scarfed or bedded wooden handles (Boas, 1909, fig. 45, *a, b*, and pp. 319-320), or, as the battered polls of some specimens indicate, struck directly without a haft to absorb the blow. The most common materials of which the implements were made are jadeites in the Straits of Georgia and southeast Alaskan regions, and serpentines in the intervening districts. A fairly high percentage of the jadeite specimens show traces of sawing on one or both sides.

A preliminary classification of celt types is as follows:²⁰

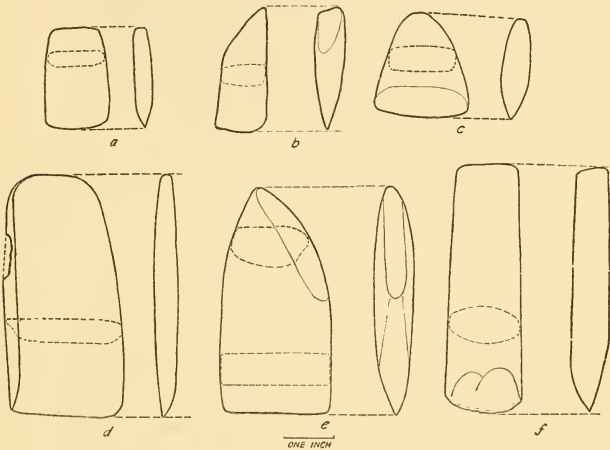


FIGURE 11.—Celts.

a, Type IA (NMC XII-B-425). N. Saanich. *b*, Type IB (AMNH 19/142). Chilkat. *c*, Type IC (NMC XII-549). Lower Fraser. *d*, Type IC (AMNH 16.1/1529). *e*, Type IIA (AMNH E/2627). (Not to scale.) *f*, Type IIA (PRCM, no number).

I. Celts with symmetrical outlines, sides parallel or tapering very slightly toward the poll. A number of variations in form set off the subtypes of this group.

IA. Small, very thin celts, with flat faces, usually flat or square-cut poll, slightly curved symmetrical bit (fig. 11, *a*).

IB. Larger celts, with square-cut poll, cross section elliptical to rectangular, bit symmetrical, usually curved (fig. 11, *b*).

IC. Celts with rounded poll, elliptical to rectangular cross section, bit usually asymmetric, straight (fig. 11, *c, d*).

IIA. Celts with asymmetric outline, sides tapering strongly to poll, poll rounded or coming to round point, cross section elliptical, bit straight, usually asymmetric (fig. 11, *e, f*).

IIB. Same, but with roughly finished (unpolished) faces and poll.

²⁰ See fig. 10 for nomenclature of celts.

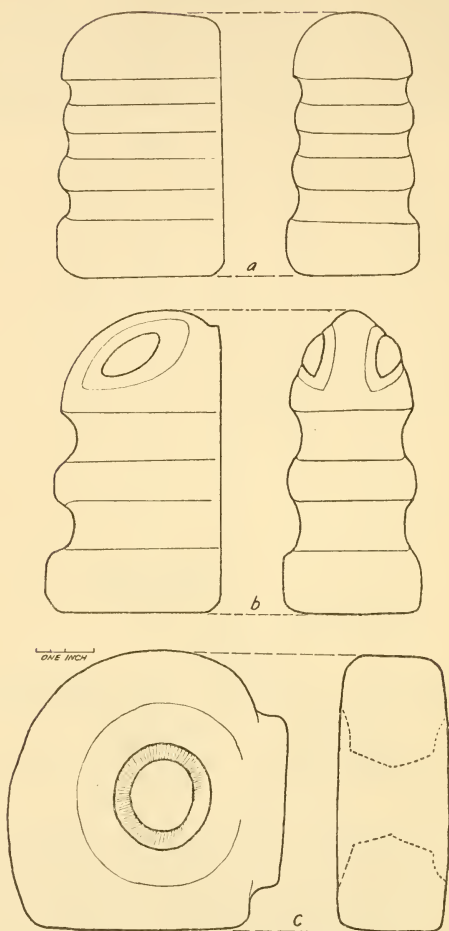


FIGURE 12.—Stone mauls, hafted.

a, Type I, plain (FMNH-A/18611). (Sketch, scale approx.) *b*, Type I, zoomorphic (FMNH-A/18607). (Sketch, scale approx.) *c*, Type II (FMNH A/18617). (Sketch, scale approx.)

Occasionally, one sees a double-bitted celt in a lot of material from the area. These are variants of the widespread type IB.²¹ They may have been hafted to T-hafts as adzes.

Hafted mauls.—Stone mauls, intended for hafting, to be used like our sledge hammers, show few significant typological differences. The chief point of difference is mode of hafting, that is (three-quarter) grooved (type I) (fig. 12, *a, b*), and perforated (type II) (fig. 12, *c*)



FIGURE 13.—Hand mauls, stone.

a, Type IA (FMNH-A-18562). Bella Coola. (Sketch, scale approx.) *b*, Type IB (FMNH-A/23318). Bella Coola. (Sketch, scale approx.) *c*, Type 1B1 (PRCM-H-114), *d*, Type 1B1 (PRCM, no number). *e*, Type IC1 (PRCM, no number). *f*, Type IC2 (AMNH 16/6276). Nimkish River. *g*, Type II (NMC-XII-B-365). Port Simpson. *h*, Type II (NMC-XII-B-365). Port Simpson. *i*, Type III. 1938/307.

forms. The latter are usually higher (the same nomenclature is applied to these implements as to the splitting adzes, q. v.), and more nearly elliptical in cross section (parallel to the striking surface) than the former, which tend to be more nearly equal in height-width dimensions, and D-shaped. Grooved mauls vary chiefly in type of poll (round, pointed, or carved zoomorphic), and in number of grooves (one, two, or three), but no clearly defined subtypes appear.

²¹ AMNH E/2663 (Angoon, Alaska), CNM-XII-B-1630 (Bella Coola).

The dimensions of the hafted mauls range as follows: Length, 4 to 7 inches; height (type I), 2.5 to 3.6 inches; (type II) 3.5 to 5 inches; width 2 to 3.5 inches.

Hand mauls.—A considerable variety of stone mauls or hammers meant to be used without hafts occur in collections from the coast. They fall into a number of types, as outlined below.

- I. Mauls cylindrical to elliptical in cross section, striking surface(s), with
 - IA. Plain to slightly expanded ends (fig. 13, *a*).
 - IB. Flanged end(s)²² (fig. 13, *b*).
 - IB1. Cone or nipple top (fig. 13, *c, d*).
 - IC. Elliptical cross section, longitudinally tapering, square-cut ends, both ends used, occasional traces of lateral wear, with or without the following:
 - IC1. Very slight longitudinal taper, long (fig. 13, *e*).
 - IC2. Pronounced longitudinal taper, short, markedly elliptical (fig. 13, *f*).
- II. Mauls with T- or stirrup-shaped handle (fig. 13, *g, h*). All mauls of this type are grouped together because the T-handled specimens seem mostly to be broken and reworked variants of stirrup-handled forms.²³
- III. Rectanguloid mauls (rectangular with rounded corners), D-shaped cross section, striking surface at one end (often concave), other end rounded (fig. 13, *i*). These implements may have been hafted, the one flat surface being a hafting plane; however, there are no definite modifications for hafting, and most of these implements are much smaller and lighter than the usual hafted stone mauls.
- IV. Battered cobbles. Beach cobbles of convenient size were often used for pounding. Either or both end or lateral battering indicates such use. They are probably much more common in the area than number of examples in collections indicates.
- V. One-piece handled mauls with lateral striking surfaces. (See Boas, 1909, fig. 44, *a, b*.)

Pile drivers.—Large flat stones, often 20 to 30 pounds in weight, were used for driving stakes for fish weirs, etc. They ordinarily have grooves cut near the ends for grips; some have the grips cut in the form of hands, to fit the thumbs and fingers of the user. Occasionally one sees an object of this class with low-relief decorative carving. Boas has distinguished the main types:

- I. Circular (Boas, 1909, fig. 42).
- II. D-shaped to rectanguloid (Boas, 1909, fig. 43).

Stone bark shredders (?).—These objects, whose identification is quite speculative, resemble in form the IB type of bone cedar-bark shredders, though the latter are generally thinner, longer, and wider. The stone implements have a perforated grip a little above the

²² Hand mauls with flanged end(s) exhibit a complete range of all possible combinations: flanged striking end with plain poll, flanged poll with plain (slightly expanded) striking end, both ends flanged. Those with flanged polls may or may not have cone or nipple tops. So far no distributional significance appears to attach to any particular combination of features, so all flanged forms are lumped together.

²³ Niblack refers to these mauls as "paint-pestles" (Niblack, 1890, p. 281).

middle, and taper rapidly to a rather dull, often slightly battered, edge; they were certainly pounders or choppers of some sort (fig. 14). A typical example (FMNH-A 18981) is roughly D-shaped, 6.3 inches long, 4.7 inches wide, and 1.3 inches thick. The objects are usually of rather coarse material; I have not seen any well-finished and polished pieces of this kind.

Slate blades.—Wide flat blades of ground slate are common in some regions. Complete specimens are usually rectanguloid in form, with slightly curved edge and back, and vertical sides. Numerous pieces occur, however, which appear to be reworked or modified fragments of the large blades. These are irregular in outline, though the backs are polished from use. The cutting edges are often straight. Occasional examples of a third type of blade are found: small, el-

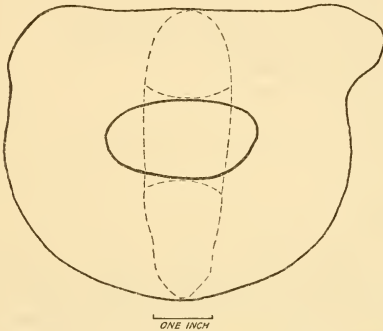


FIGURE 14.—Stone bark shredder (PRCM, no number).

liptical blades, notched or tanged for hafting, similar to certain types of Eskimo ulos. Narrow parallel-sided blades, similar in form to the Eskimo man's knife, also occur, though infrequently; they may be a subvariety of the second type—the reworked, straight-edged fragments of large blades. The use of these various types of slate blades is not known. Smith (1903, p. 159) has assumed that those he found were all knives for cutting fish, drawing attention to their similarity in form to present-day fish knives of metal.²⁴ As a matter of fact, however, while such knives were in use in recent times, they were far less common than blades of the shell of the large mussel (*Mytilus californianus*). I believe that many of the blades, particularly the reused fragmentary forms with straight edges, were used as saws for cutting stone and bone. The regions in which these implements occur commonly are just those in which sawing

²⁴ Smith has pointed out other types of objects as well which may have served as saws (1903, p. 167).

was a common cutting technique. The wide blades with curved edges and the hafted forms may have been knives, of course.

- I. Wide rectanguloid blade, no modifications for hafting, cutting edge usually slightly curved (fig. 15, *a*).
- II. Small irregularly shaped blade, wear-polished back, straight edge (fig. 15, *b*). (Distinguished from fragments of type I by wear on back.)
- III. Small, elliptical blade, hafted (or modified for hafting) (fig. 15, *c*).

Bone awls and awllike forms.—Kidder's classification of bone awls,²⁵ with some modifications and additions, serves very well for our Northwest Coast material. Many of the pieces in collections unfortunately are unclassifiable because of their fragmentary condition. The types found on the coast are as follows:

1. Mammal leg bone.
 - a. Head of bone intact.
 1. Ulna.
 - b. Head unworked except by original splitting.
 - c. Head partly worked down.
 1. Square-cut head.
 - d. Head wholly removed.
 - e. Splinter awls.
2. Mammal rib.
 - a. Whole rib.
3. Bird bone.
 - a. Whole bone.
 - b. Splinter.
 - c. Hafted in another bone.

Bone needles.—Eyed needles, similar to those used in recent times for making sewn tule mats, are found in some sites. Typically, they are long, flat, and thin. Very fine needles like those of the Eskimo do not seem to occur, although moderately small forms are sometimes found. The criterion of size suggests a basis for a primary division. Such traits as type (drilled or ground) and location (distal or proximal) of the eye may be serviceable characters when we have enough specimens to have use for detailed classifications.

- I. Long flat thin needles (mat needles).
- II. Small needles.
 - A. Mammal bone.
 - B. Bird bone.

Bone (and horn) knives.—Several kinds of bone implements identifiable as knives occur in the collections. The most easily recognized are the ulnae pointed and sharpened for slitting herring and other small fish for drying. Knives of this type may have either intact or trimmed heads. Blades of similar form were made of mammal leg bone. Another type consists of the "bark splitters," blades used for prying loose the inner layers of cedar bark used in matting and basketry. These have rounded sharpened tips and edges. Two sub-

²⁵ Kidder, 1932, pp. 202, 203-220. For convenience in making comparisons, Kidder's order of types and numerical designations have been retained, new forms or subforms being added on at the end of each series.

types—one short, wide, and flat; the other long and curved, with a perforation at the butt—may be distinguished.

I. Ulna knife.

II. "Bark splitting knives."

A. Short, flat, side.

B. Long curved (often of sea mammal rib), perforated.

Bone scrapers and gouges.—Two major and several minor categories of bone implements which may have served for scraping hides, re-

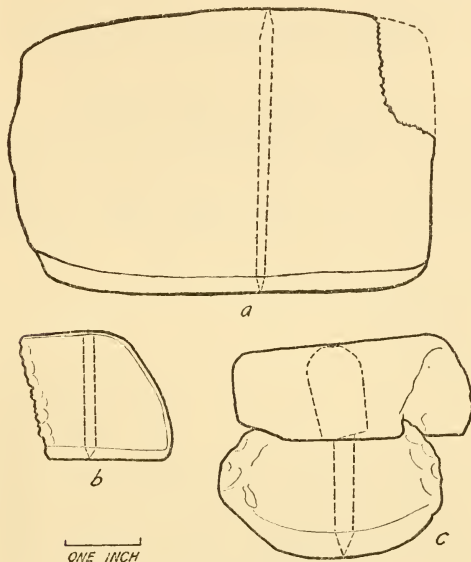


FIGURE 15.—Slate blades.

a, Type I (AMNH 16/6686). Comox. *b*, Type II (AMNH 16/4070). Port Hammond. *c*, Type III, horn-hafted chipped and ground ulo (PRCM, no number). Marine Station site, Digby Island.

moving the edible inner layers of spruce and hemlock bark, etc., can be recognized. These tools seem fairly widespread, but are by no means numerous.

I. End scrapers (characterized by a flat, square-cut to spatulate working end, which may be wide or laterally tapering).

A. Mammal bone (usually leg), head intact, one end cut away in a long bevel to produce rounded tip. Wear usually on back of tip.

B. Mammal leg bone, split, part of head remaining tip as in IA.

C. Mammal leg bone, split, head entirely removed, blade wide rounded, dentate.

1. Same as C, blade at both ends.

D. Ulna with spatulate tip.

II. Sidescrapers (usually split mammal leg bone).

Bone drills (?).—Several objects which may have been drills were noted. The identification of the first type, hand drills, seems fairly sure because of the wear on the points; that of the shafted drill points less certain, because no complete specimens, or specimens with recognizable wear, were seen. (Boas (1909, fig. 50 and pp. 321, 323) describes one form of shafted drill point of bone.)

I. Hand drill of bone, sharply reduced (shouldered) cylindrical tip.

A. Of ulna.

B. Of mammal leg bone.

II. Hafted drill of bone, cylindrical, square to rectangular butt (cf. Boas, loc. cit.).

Flaking tools (?).—Tools which may have served for flaking stone occur in the districts in which this technique was in use. Of course, some of the heavier, blunter "awls" may have served this purpose; there are, however, a few distinctive types which may be designated as flakers. Some are of antler tines, usually hacked or whittled off, some with unworked (but worn) points, others with reduced, but heavy, shouldered tips. Bone implements of this class are usually short heavy rods of dense bone.

I. Antler flakers.

A. Plain tip.

B. Reduced tip.

II. Bone flakers.

Stone vessels.—Stone vessels occur practically throughout the entire area. They vary considerably in size and form, and probably also in use. The northernmost groups, Tlingit, Haida, and Tsimshian, are known to have used small stone vessels as mortars for grinding the native "tobacco," and the larger ones served occasionally for smashing berries (presumably for drying) (Krause, 1885, p. 206). This use seems hardly important enough to account for the many vessels one finds. Northwest Coast foods (save in the southern periphery of the area) were not of the sort that had to be pulverized, nor is grinding reported as an important culinary technique. Some of the vessels, particularly the decorated ones, were very likely dishes used on special occasions. Birket-Smith has argued that some may have been lamps,²⁶ although they are not quite similar to any known Eskimo form.

A preliminary classification may be made as follows:

²⁶ Birket-Smith, 1929, vol. 2, pp. 189ff, esp. p. 190. His view is lent some substance by Krause's mention of use of shallow oval stone lamps among the Tlingit (Krause, 1885, p. 206). However, in the absence of any evidence (ethnographic reports, indications of burning on collected specimens), his interpretation of all shallow stone vessels along the coast as lamps seems dubious. Further, the use to which he puts this view—linking Eskimo lamps, Northwest Coast dishes and/or mortars, and Californian mortars, thus proposing a genetic relationship of objects differing in both form and function—is logically unsound.

I. Vessels with unshaped (or slightly shaped) exteriors (usually round to elliptical boulders), cavity usually shallow.²⁷

1. Plain.

2. Decorated (usually by incising. Sometimes irregularities have been accentuated or modified to produce a representative form).

II. Vessels of completely modified forms.

A. Relatively high straight sides, usually wider at top than bottom, flat bottom.²⁸

1. Plain.

2. Decorated.

B. Low, round to oval forms, sides straight to convex. (Such vessels, when decorated, are often completely carved into zoomorphic forms, which consequently cannot easily be differentiated as a class).

1. Plain.

2. Decorated (including zoomorphs).

C. Vessels "with seated human figures." (See Smith, 1907, pp. 420-424.)

III. Paint dishes. These are small vessels, with shallow elliptical cavities with traces of wear indicating that paints were ground in them by rubbing, metate-fashion, rather than by pounding.

Wedges.—Splitting wedges of bone and horn are common Northwest Coast tools. They vary considerably in size, from small forms for fine work to great heavy implements for splitting logs. (In some parts of the coast wooden wedges, of yew or seasoned spruce knots, were preferred for heavy work.) Typological distinctions can best be made according to material.

I. Wedges of mammal bone.

II. Wedges of antler.

Long bone rods.—Long slender cylindrical or rectanguloid rods of bone, usually of sea mammal bone, are of rather wide occurrence. Most of them are broken, so it is difficult to tell how they were finished. Some, however, had one rounded or subconical end, and at the other a tapered though not very sharp tip. Cross section varies from round to rectanguloid. The purpose of these objects is unknown. Some may have been fixed foreshafts of harpoons, though one would expect to find the butts modified for hafting in this case. They may have been points for killing lances (the Nootkans describe using very long slender bone points on lances for finishing off harpooned whales). One unusual specimen from Digby Island²⁹

²⁷ These vessels correspond in form to Lillard, Heizer, and Fenenga's B.2, B.4, and B.3 mortar types (Lillard, Heizer, and Fenenga, 1939, pp. 8-9).

²⁸ This type corresponds in external form to Lillard, Heizer, and Fenenga's A.1 to A.5, B.1 mortar types (1939, pp. 8-9). I have not noted such marked differences in cavity shape (wear-produced in the California mortars), which suggests the Northwest Coast vessels were used chiefly as receptacles rather than for heavy grinding. Reexamination of the Coast specimens, however, may reveal some distinctive features of wear.

²⁹ PMBC 1830.

has a projection on one side like the unilateral line guards of certain barbed harpoons.

Bone mallets.—Heavy mallets of whale bone, with a longitudinally grooved lateral striking surface, shouldered and reduced handle, are known to have been used in preparing cypress bark for weaving into garments. They all seem to conform fairly closely to a single type, although variant forms may eventually be found.

Cedar-bark shredders.—For shredding or hackling the bark of the red cedar, wide whale-bone blades, with a perforated grip, were used. Two types of these may be distinguished.

I. Short, rather heavy choppers.

A. Rectanguloid form, straight edge.

B. Round to ovate form.

II. Long, thin choppers.

Small slender pointed bone objects.—Almost any collection of archeological materials from the area contains numbers of small pointed bone artifacts, which may have served various purposes: hook barbs, herring rake teeth, hafted drill points, pins or skewers, etc. Worked and/or polished butts show them not to be fortuitous scraps, broken awls, needles, etc., but purposefully designed implements. The following classification is tentative; further information may enable us to distinguish at least some of the types according to function.

I. Bipointed forms.

II. Single pointed forms.

A. Sharpened mammal bone splinter.

B. All-over worked mammal bone.

C. Bird bone splinter.

D. Fish spine "pins."

Stone disks (rolling targets ?).—A distinctive group of objects is that consisting of well-worked thick stone disks, usually of lava, which are supposed to have been targets for a local version of the widespread hoop and pole game (Culin, 1907, pp. 490, 521-522). The disks range in size from 2.5 inches in diameter by 0.6 inches thick to 8 inches in diameter by 3 inches thick; most are from 4 to 5 inches in diameter and 1.5 to 2 inches thick. Slightly more than half of them are perforated; some imperforate specimens have pits pecked into the two faces. Some have a wide groove concentric to the perforation or pit. Similarly placed grooves occur on unpitted imperforate specimens. In general, the objects are so similar that these variations are probably not significant, and the disks may be considered essentially of a single type. The lava of which most of the disks are made may be identifiable; it is possible that most of them are trade pieces, coming from certain localities only.

Slate "pencils."—Slender rods of ground slate, usually hexagonal or octagonal in form, are classed separately at present. Some appear to have been bevelled or pointed at the ends, and may have been projectile points. Most of those in collections, however, are fragmentary, so that it would be quite hazardous to speculate on their function.

Chipped stone (except points).—A few pieces of chipped stone-work, other than the previously mentioned points and blades, occur in the collections. Of these, small discoidal "scrapers" constitute a fair proportion; the remainder are miscellaneous blades and fragments.

Biconical stones.—From several sites elliptical stones with conical ends have been obtained. They are usually of limestone or sandstone, show few signs of battering, and no modification for attachment or hafting. Their use is unknown; I would suggest that they may have been grindstones, for sanding down large pieces of worked wood. A typical example is 6.8 inches long and 3.5 inches in greatest diameter.

Grooved, notched, and perforated stones.—The objects in this class are stones unworked except for modifications for the purposes of suspension. Most of them were probably sinkers, e. g., for fish lines, nets, anchor lines, etc. These objects are not common in Northwest Coast collections, not occurring in anywhere near the quantities that de Laguna (1934, pp. 51-56) found in Cook Inlet. For that reason elaborately divided classifications will not be necessary.

I. Elliptical grooved stones.

A. Grooved about middle.

B. Grooved about middle and over one end.

1. Small stones.

2. Large (10 lbs. and over). (These are presumably anchor stones, or sinkers for deep-water angling.)

II. Notched stones; small flat beach pebble with lateral notches made by percussion.

III. Perforated stones.

Whetstones.—Small stones used for sharpening various cutting implements, or perhaps for bringing them to their proper shape, have been recovered from some sites. They vary from neatly finished flat rectangular blocks to irregularly shaped fragments with a central depression produced by the grinding. The former can be set off as a well defined type, the latter form a rather loose and heterogeneous group.

Stone polishers (?).—Numbers of small round to elliptical beach pebbles of various materials averaging 2 or 2.5 inches in diameter, occur at certain sites, sometimes in considerable quantities. None show any evidences of working, but a number show wear facets,

indicating that they have been used as polishers or rubbing stones for some purpose. Whether this was their only use, or whether some were collected for other purposes (e. g., for sling stones, or for throwing) is impossible to decide. They certainly have been selected for size, and are much smaller than the stones used for cooking.

Drinking tubes and whistles.—Tubes formed by cutting off the ends of large bird bones occur in some sites, as do bird-bone whistles (tubes with a single stop). Fragmentary specimens cannot always be determined as one or the other, of course. Drinking tubes are known from ethnographic evidence to have been used at various life-crisis observances, and by the Southern Kwakiutl for drinking from the covered wooden water "buckets" taken in canoes.³⁰ Bone whistles are very rare, so far as I know, perhaps having been supplanted by the various wooden whistles associated with the widely diffused Kwakiutl ceremonial patterns.

Stone and bone clubs.—Boas (*in* Smith, 1907, pp. 403–420) has discussed the more common varieties of these implements in Northwest Coast collections; there is little that can be added to his summary at present. The major categories are:

I. Bone clubs.

A. Whale bone, flat, spatulate, decorated (Boas, 1909, 165–171).

II. Stone clubs.

A. Flat, edged or spiked, "zoomorphic" (Boas, 1909, figs. 179–180).

B. Heavy, pointed, square to cylindrical, daggerlike outline. (Boas, 1909, figs. 175–176).

1. With ringed top and guard.

Spindle whorls.—Boas (1909, p. 373) has summarized most of the available information of these objects. A simple classification would be the following:

I. Large (5 inches in diameter or more) (of bone).³¹

A. Plain.

B. Decorated.

II. Small (bone or stone).

A. Plain.

B. Decorated.

Ornaments.—Inspection of ethnographic collections from the area impress one by the profusion of ornaments of various materials made by natives. Such objects are relatively less numerous in archeological collections, but whether this is to be attributed to lack of investigation in the centers of manufacture, to increased interest in ornamentation in historic times, or simply to unequal sampling of the two types

³⁰ Boas, 1909, p. 447 (tubes of elderberry twigs; my informants have described bone tubes also, however).

³¹ Wooden examples of both types were made, but since they are less likely to be found archeologically, they are omitted from the classification.

of material, it is impossible to say. At any rate, eventually these objects should have some significance in both vertical and horizontal distributions, and for this reason an outline of the more common classes and types of them will be given. Future work will doubtless require more refined classifications of most of the types.

- I. Shell beads.
 - A. Dentalia.
 - B. Clamshell disk beads.
- II. Bone beads.
 - A. Bird bone.
 - B. Narrow (0.4–0.5 inches), of mammal bone.
- III. Cannel-coal beads (asymmetric polished lumps).
- IV. Pendants.
 - A. Animal tooth or claw.
 - 1. Grooved about end.
 - 2. Perforated.
 - B. Bone or horn.
 - 1. Long cylindrical rods.
 - a. Plain.
 - b. Decorated.
 - 2. Representative carvings on flat pieces of bone.
 - C. *Haliotis* (historic only?).
 - D. (Native) copper.
 - 1. Flat crescents or rings (Smith, 1907, p. 178).
 - 2. Conical rolled tubes (historic only?).
 - E. Deer and/or goat hoof pendants.
 - 1. Plain.
 - 2. Carved.
 - F. Stone, carved.
- V. Labrets.
 - A. Elliptical, grooved around circumference, of wood, stone, or bone.
 - B. T-shaped, of stone.
- VI. Flat curved bone bands (brow bands?).
 - A. Plain.
 - B. Decorated.
 - 1. Geometric design.
 - 2. Realistic design.

Miscellaneous objects recovered in 1938.—In addition to the several classes of artifacts described in the preceding section, a few unique or unidentifiable forms, not duplicated in the collections examined, were recovered from the site tests in 1938. Some of them may prove to be of significance when further work has been done in the area, and therefore they will be described briefly.

37.³² Bone handle (?) with carved bird head. A well polished bone fragment with a somewhat impressionistic bird head (raven?) at the unbroken end. The object may have been the handle of a sopallalli-berry spoon, or part of an ornament. Length, 3.6 (+) inches; width of shaft, 0.42 inch; thickness, 0.1 inch.

³² Numbers preceding the descriptions are field catalog numbers of the 1938 expedition.

78. Antler pendant (?). An unfinished object of antler with a drilled hole near one end may have been intended for a pendant. The horn was sawed longitudinally from both sides, broken off, and the cancellous material partly ground down. Two transverse cuts were made opposite each other, and the piece was broken off to length. The perforation is parallel sided, though somewhat irregular, perhaps from reaming out after drilling. A shallow pit was cut or gouged in one side to start the drill.

122. Heavy whittled wooden point. A fragment of rather dense wood whittled to taper to a sharp four-sided point. The object could have served as a heavy awl, a marlinspike, or it may have been an unfinished foreshaft for a (composite point) salmon harpoon.

124. Bird bunt (?) fragment. A whittled stick fragment, cylindrical, with a sharply shouldered expanded end roughly cut off to a blunt point, suggests in form the head of a bird bunt, or the end of a float plug.

128. Small whittled wooden object. A small piece of carved wood, with a blunt point and a lateral projection near the point, an expanded base reduced by a square shoulder to a cylindrical peg; it resembles an antler of a forked-horn buck, and may have been attached to a mask or other carving. Length, 2.5 inches; average width, 0.3 inch; width of base, 0.6 inch; diameter of peg, 0.4 inch.

183. Worked deer parietal. A fragmentary object made of the right parietal bone of a deer, with part of the "burr" remaining; it may have been a scraper, or a spoon. The anterior portion of the bone has been cut to a neat rounded corner and straight edge; the corners are sharp, indicating polish rather than wear. The posterior portion has been cut irregularly anterior to the suture line, the unbroken portions of this side are rounded off; the end is missing.

210. Heavy wedgelike bone object. A whale-bone object with tapering squared off ends and elliptical cross section; it resembles a symmetrical wedge in outline, but the head is not battered, the tip is square cut and blunt, and a wide groove, perhaps for lashing, runs across the cancellous side of the object at right angles to its long axis. Length, 7.95 inches; maximum width, 1.6 inches; width at head, 1.18 inches; width at tip, 0.74 inch; maximum thickness, 0.78 inch; thickness at head, 0.64 inch; thickness at tip, 0.12 inch.

269. Bird head ornament (?) of bone. A small fragmentary carving representing the head of a long-billed bird is made of whale bone. The tip of the bill is laterally tapered and cut off by a bevel from the under side. Eyes are incised on either side of the head. The object is broken just back of the head, but traces of a groove or perforation remain. It appears too fragile for any utilitarian purpose, and was probably an ornament of some sort. Length, 2.2 (+) inches; diameter of the bill, 0.24 inch.

277. Notched or perforated long flat bone (needle?). A long flat pointed bone, with a laterally expanded head with what appears to be part of a slotted eye remaining, may have been a bone needle type I. However, the V-shaped notches along the sides of the head would seem awkward for any sort of sewing. The object apparently broke in manufacture, for it shows numerous work marks (was not well polished like most bone objects) and shows no wear. Length, 6.6 (+) inches; width of tip, 0.48 inch; width of head, 0.76 inch; thickness, 0.14 inch.

334. Bone peg with expanded head. A small bone peg with cylindrical shaft, rounded tip, and flat laterally expanding head (not the original head of the bone) might have been meant for any one of a number of purposes: a peg or pin, a float plug, a fine drill point (though it shows no wear indicating use as a drill, and seems fragile for this use), or a novice's labret. Length, 1.54 inches; width of head, 0.26 inch; diameter of shaft, 0.12 inch.

336. Socketed harpoon (?) fragment. A bone fragment which appears to

have been the butt of a small socketed harpoon is made by cutting the proximal end of a humerus off diagonally, then making a deep notch in from one side to accommodate a rather wide spatulate-tipped foreshaft. A triangular line hole has been cut through close to the socket. The shaft of the bone was left unaltered to the point of the break; if the object was to be a serviceable harpoon, it must have been slotted for an inserted blade with barbs. It has a superficial resemblance to certain types of Eskimo toggling harpoon heads, but the similarity is more apparent than real.

374. Whale-bone object (fragmentary). A piece of whale bone split and rounded off to an elliptical cross section, tapers rapidly to a blunt, apparently rounded end. The object was fairly carefully made, but is too fragmentary at present for us to determine its use.

397. Cut deer mandible. A fragment of a deer mandible cut 1.06 inches anterior to the premolar. One of the molars is in place, the others are missing. The edges of the cut are rounded and suggest wear, though what purpose such an object could have served is not known.

Manufacturing techniques.—There are a number of important technological processes manifested in the specimens examined. They may be described briefly according to material to which they were applied.

Work in stone.—Stone was worked by pecking, grinding, chipping, and sawing. Tough rocks, used for splitting-adze blades, mauls, and the like, were pecked to shape, and then polished, the latter probably with fine-grained sandstone grinders. Slate points and blades were ground to form from thin sheets of the stone; some pieces, however, appear to have been roughed into shape by chipping before being ground down. Stone chipping (as mentioned elsewhere, p. 41) is restricted to certain regions. Some of the materials (obsidian, etc.) may have been imported,³³ but chipped objects in local rock, such as the coarse basalts of the Georgia Straits and Puget Sound districts, attest to no little ability in this craft. That sawing of stone was an important technique was pointed out by Smith (1903, pp. 164, 167). In both the interior and Straits of Georgia regions, he notes many instances of its application. Jadeite (used for celts) was the material most often so treated. The jadeite tools of southeast Alaska were similarly worked. The possibility that the common slate blades may have been used for cutting out celt blanks and the like has been mentioned elsewhere (p. 51).

Work in bone.—Bone, of course, lends itself very well to shaping by grinding-polishing techniques, and an emphasis on ground bone characterizes Northwest Coast tool and weapon patterns. Large bone, such as that of whale and other sea mammals, must be worked into blanks before the finer techniques can be applied efficiently. Several methods were in use. A piece of whale bone was sometimes reduced to workable size by hacking along the grain of the bone with a jagged cobble until it split. In other instances unfinished speci-

³³ Obsidian occurs only in the interior, not on the coast, and the occasional worked pieces one sees were doubtless traded in.

mens show clear traces of an initial sawing, probably with the common slate blades. Small bone objects were sometimes given a preliminary shaping by battering to crack and chip them to approximate form; others were sawed out.

Perforations in bone were made in a variety of ways. Biconical holes were rather common. Cylindrical perforations, drilled from one side only, were also made. The type of drill used for this operation is not well known, even from the better ethnographic reports; it must have been a very efficient one. In addition, slotted holes were put through, for example, in certain types of barbed harpoon points, and some bone needles, by sawing or gouging. The method by which the crescentic slots of some type II harpoons were made is not clear.

Little data are available on woodworking techniques, except as these may be inferred from the tool complex. Adzes, celts, wedges, hafted and hand mauls, grinding stones, and the rest, represent the same woodworking methods that have been described ethnographically for the area (cf. Boas, 1909, pp. 327 ff.).

SURVEY IN 1938

In the following pages, archeologic sites located during the survey of Coast Tsimshian and Kwakiutl territory in 1938 are described. The methods used in the reconnaissance were as follows: Each site found was located on a chart of the district, and a site-card was made out for it, recording the following information: Site designation, chart reference, location, water supply, type of deposit, length, width, height, house remains visible, burials, cover, owned by, mapped, photo, remarks, date.

Sites to be tested were trenched, laying out the test pits to cut across the edge of an historic house, where traces of these could be seen. Artifacts recovered from the tests were located as to vertical position, and in the case of cuts made partly in the sloping face of the midden (for drainage) the horizontal distance from a fixed datum was also recorded. During the latter part of the survey it was found very helpful to note also the matrix in which the artifact lay, as a check on depth measurements, which are sometimes difficult to make accurately in deep pits and ones put down from sloping or uneven surfaces. This makes it possible to locate every artifact precisely on the trench profiles. All these data were recorded by means of artifact slips of the type used by the University of California archeologic surveys. Most of the digging was done with shovels, scraping the bottom of the trench, then shoveling out the dirt thus piled up. It was thus possible to uncover most of the artifacts without disturbing them. Want of time and somewhat low artifact yield prevented use of trowels as the chief tools. Faunal remains

recovered were kept in foot-level bags. After completion of each cut, profiles were drawn, vertical measurements from top to bottom being taken at 3- or 4-foot intervals. The dip of various layers was read off with a Brunton compass. Samples were taken of the various layers. The point at which each sample was taken was noted on the profile, as a check. A sketch map was then made of the site with a Brunton and tape. Large measurements are in whole feet and tenths (as: "36.8 feet" means 36 whole feet and 8/10); small measurements are in inches and tenths of inches (as: "7.5 inches" means 7 whole inches and 5/10).³⁴

Method of designating sites.—The designations given the sites refer to the island, headland, or bay on which they are situated, and have been taken from the standard marine charts of the region.³⁵ Following the site designation, the chart reference is given. Canadian Hydrographic Office charts are indicated by "Can." followed by the chart number; United States Hydrographic Service charts by "U. S." and the chart number; British Admiralty charts by "B. A." and the number. This procedure should facilitate the recording of additional sites as they are reported from the area.

COAST TSIMSHIAN SITES: PRINCE RUPERT DISTRICT

ANIAN ISLAND (Can. 301)

A large midden on Anian Island, on the north side of the inner end of Venn Passage, was located and tested. (See pl. 5, *a*.) Entirely surrounding the island are sand and mud shoals which dry at low water. These shoals, which extend most of the way along Venn Passage, are rich clam beds, and are probably the source of the shell material of the Anian Island and other middens of the vicinity. Near the beach, on the south side of the midden, is a spring which is said to flow constantly, even in rainless periods.

The site consists of a large mass capping the southern promontory of the island, with a lower terrace along the southern face. (See fig. 16.) The terrace is relatively narrow (about 50 feet in width) and somewhat longer than the main upper midden; since it was in cultivation, testing was confined to the main portion. The latter extends 350 feet (measured along the crest) in a northwest-southeast direction; the greatest width is 180 feet. On the southwest side, the deposit rises gradually from the terrace, falling away sharply (30°–40°) on the northeast face. The crest is about 30 feet above the high-tide line (the terrace is about 10 feet lower). The subsoil on which the deposit rests rises to the northwest, so that the deposit, with little

³⁴ 1 foot = 0.3048 meter; 1 inch = 2.54 centimeters.

³⁵ Native designations have not been used, except in one instance (Qalahaituk) in which the locality is not indicated on any published chart.

change in altitude becomes progressively shallower, until it dwindles away entirely. To southeast the deposit slopes away gently to merge with the lower terrace. In form, the midden is irregular, tending to parallel the south beach frontage. Owing to clearing, the natural cover could not be determined. Mr. Wearmouth, the owner, informed us that formerly there were several large shallow depressions visible

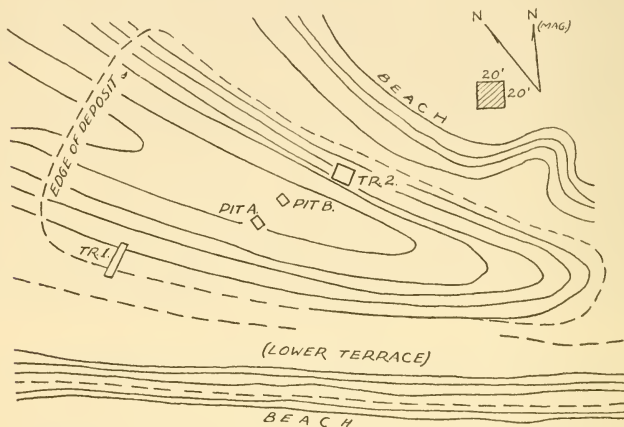


FIGURE 16.—Anian Island midden. (Sketch, contours only approx.)

(which he had filled in), which may have been house pits. It was not possible for us to test these pits, however, to determine if they were houses or not.

Two trenches and two test pits were dug in the main midden. Trench 1, at the western corner of the deposit, was 20 feet long (northeast-southwest) by 4 feet wide. The deposit at this point proved to be quite shallow, 31 inches deep at the inner northeast end of the cut, while a rock outcrop rose nearly to the surface at the outer end. Trench 2 was cut into the northern face of the midden at about the midpoint. When completed, it was 13.5 feet long by 9 feet wide. At the outer end of the trench the midden material was 35 inches deep; at the inner, where the upper edge was approximately 48 inches below the highest portion of the midden, 103 inches. Pit A, sunk near the crest of the deposit, was 6 feet by 4 feet by 110 inches; pit B, nearby, was 6 feet by 4 feet, and discontinued at a depth of 60 inches. Human skeletal remains, occurring near the surface 6 to 10 feet east of pit B, were exposed and excavated.

The composition of the midden material exposed by the four cuts was essentially uniform. A layer of black earth with broken shell varying in thickness from 4 inches (pit A) to 16–27 inches (trench 2)

capped the midden. Below this mantle was a mass, chiefly of shell, with small quantities of dirt, charcoal and ash, stones, animal bone, and occasional artifacts, overlying a thin layer of finely divided black-dark brown material (organic ?) which overlay the clay subsoil. In the shell which composed most of the deposit a variety of species were represented in varying proportions.³⁶ There were pockets or thin horizons in which one species noticeably predominated, but no well-defined and significant horizons could be noted. In every cut the lay of the shell lenses, etc., conformed roughly to the surface slope. A good deal of the unworked stone encountered had been burned; particularly common were chunks of a rather coarse laminated slate which acquires a vivid red color on oxidation. Ledges of this slate are common along the beach in this locality. Nothing determinable as a house-floor or habitation level was encountered, with the possible exception of the black dirt with sand and yellow sand with charcoal layer noted at a depth of 90 inches in pit A and the dark organic (?) layer at the base of the midden. (See fig. 17.)

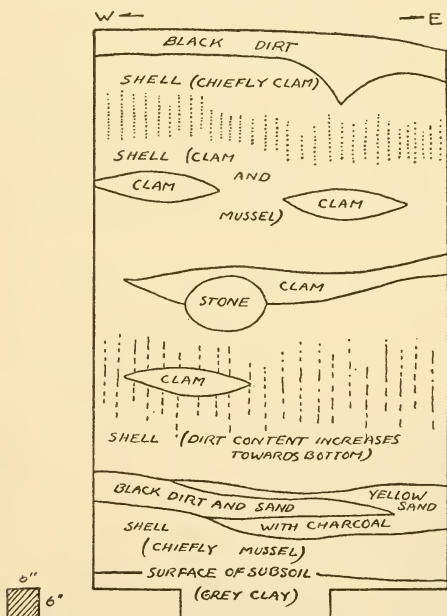


FIGURE 17.—North face of Pit A, Anian Island.

³⁶The most common forms were: *Saxodomis nuttali* Conr., *Venerupis staminea* Conr., and *Cardium clinocardium nuttali* Conr. *Strongolo centrotis* spines were plentiful in restricted areas.

The most noteworthy feature of trench 2 was the apparent indication of wave-cutting at the edge of the midden, at the juncture of the shell material and the dirt-with-shell layer; this point is at present 10 to 12 feet above highest tides.

The artifact yield of the tests was disappointingly low. Pit A yielded most; from it 20 worked pieces, chiefly bone, were recovered. Subsequent operations at other sites suggest a possible reason for the dearth of cultural remains, as will be brought out later.

One complete burial and portions of a number of fragmentary burials were found. Burial 1 lay in the shell material just below the black dirt, 13 inches below the present surface, near pit B. The remains were those of an adult male, laid on the back, head to the west, and legs semiflexed to the left. (See pl. 8, *a*). A worked bone fragment and a ground slate point were found near the burial, but not in definite association. A few dissociated human bones occurred near the burial, and 2 feet to the east, in an irregular shallow pit penetrating the shell for a foot or so and filled with black dirt, were disturbed and fragmentary remains of a small adult and an infant. Of the adult, only the leg bones, more or less articulated, a lower arm with the hand, and a fragmentary innominate remained. The legs were loosely flexed. Enough remained of the infant to indicate a semiflexed position with the head to the east. There were no associated artifacts. Mr. Wearmouth, the owner of the site, states that in clearing and leveling he has encountered a considerable number of skeletons, consistently at shallow depth—either in the black dirt or immediately below it. Two human metapodials were noted at a depth of 32 inches in pit A.

TABLE 1.—*Artifacts from Anian Island*

PIT A

No.	Description	Measurements ¹ (inches)			Depth in inches	Levels by inches
		Length	Width	Thickness		
11	Bone gouge tip fragment, type IB (?)				5	0-12
3	Bone gouge tip fragment, type IB (?)				20	
4	Bone awl, type Ie	4.2			22	12-24
10	Hand maul, type IV				24-36	
12	Bone point, class B (or awl fragment ?) parallel sides, abrupt tip				60	60-62
17	Chipped bone fragment (point blank ?)				66	
14	Barbed harpoon head, type V	7.5	0.7	0.3	73	72-84
19	Sawed bone fragment (awl tip?)				74	
15	Serpentine celt tip, fragment				77	
20	Bone point, type B-IA	2.8	.46	.18	78	
21	Bone point, type B-IA	3.7	.45	.16	78	
26a	Hand maul, type IV				60-84	84-96
26b	Stone polishers				60-84	
16	Chipped and ground slate point (medial), fragment		.9	.38	85	
23	Bone gouge tip fragment (type IB ?)				92	
28	Stone polishers				84-110	
24	Bone awl (?), type Ie				98	96-110
	Total artifacts	17	(+3 indeterminate worked fragments).			
	Total yardage	8.2	cu. yards.			
	Artifact yield	2.	(+ per yard (excluding indeterminables).			

TABLE 1.—*Artifacts from Anian Island—Continued*

PIT B

No.	Description	Measurements ¹ (inches)			Depth in inches	Remarks
		Length	Width	Thick- ness		
5	Small bone awl (tip missing), type 1b.....	-----	-----	-----	42	

TRENCH

37	Bone handle (?) with carved head.....	-----	-----	-----	48-60	See p. 59.
39	(2) Stone maul chips, type indeterminable.....	-----	-----	-----	48-60	

 VICINITY OF BURIAL ¹

9	Bone awl, type 1cl.....	3.8	-----	-----	8	
7	Ground slate point, type I, sharp beveled sides, unworked faces, tapered squared base.....	-----	-----	-----	11	
8	Bone awl, type 1e.....	-----	-----	-----	11	

¹ See p. 63.

In addition to the foregoing, through the kindness of the owner of the site, Mr. Wearmouth, the expedition acquired a number of stone artifacts, most of which had been found in leveling some of the higher portions of the midden, i. e., apparently the later levels. The implements are: Splitting adze (poll broken), height 2.6 inches, width 1.5 inches, type II or III; splitting adze, length 6.5 inches, height 1.8 inches, width 1.9 inches, poll broken and reworked, originally type IV or V; hand maul, top broken, diameter of shaft 2.2 inches, diameter of striking face 3.5 inches, type IBb1 (the sharp edge at the break has been roughly trimmed by percussion-chipping); three battered cobble (type IV) hand mauls; two squared whetstones, one rectanguloid, with rounded corners and bevelled edges, length 6.4 inches, width 2 inches, thickness 0.7 inch; the other fragmentary, with two worn troughs on one side, the other side fairly smooth, 2.55 inches wide, 0.55 inch thick (length 2.2 inches +); one stone polisher (?) with wear facet, and two stones of same size without wear facet; a decorated (?) stone—a small crescentic stone, waterworn to that shape, slightly trimmed along the concave surface, and roughly grooved near the thick end, apparently to suggest the gill opening of a fish.

CHARLES POINT

(Can. 301)

A small midden site on the north shore of Charles Point, just east of the Department of Marine Station on Digby Island, was tested. The size of the site indicates that it was probably a camp rather than a main village. Though documentary evidence is lacking, the

occurrence of a few articles of Caucasian make in the deposit indicates use in historic times. The site is in a relatively sheltered situation, the high ground and timber behind it breaking the force of the southeast winds. A wide though somewhat rocky beach fronts the site; on the end of the point, directly east of the fog bell, a number of parallel rows of sizeable rocks, apparently canoe runways, are exposed by low tides. Several ephemeral springs occur just west of the midden.

The midden extends 120 feet in an east-west direction, following the contour of the beach (see fig. 18). The natural subsoil, on which the deposit rests, rises, forming a 5-foot bank at the eastern end of the site; to the west, the lower edge of the midden is only slightly above

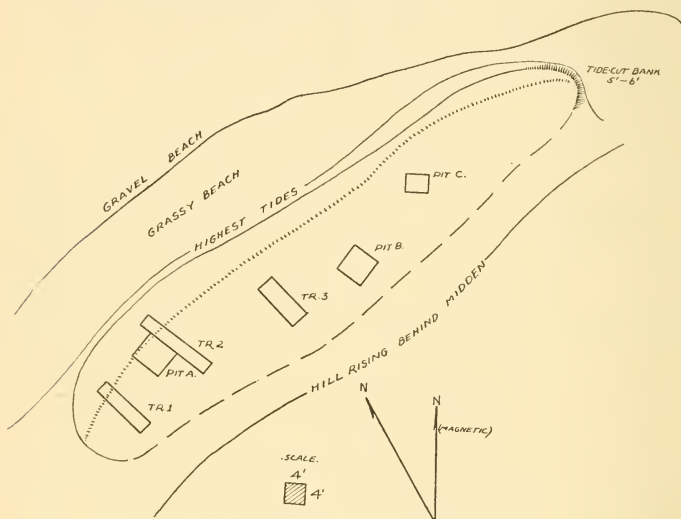


FIGURE 18.—Plan, Charles Point.

average high water. The front of the midden consists of a rather steep face, 5 or 6 feet in width, the top is fairly level for the most part, running back to merge with the rising ground of the hill behind the site. The average width of the deposit is in the neighborhood of 25 feet. A dense thicket, chiefly wild currant and salmonberry bushes, covers the surface. No indications of house pits, posts, etc., could be seen on the surface.

Three trenches and three test pits were put down (see fig. 18). Trench 1 was 12 feet by 3 feet, with a maximum depth of 48 inches; trench 2 was 15.5 feet by 2.5 feet by 52 inches; trench 3 was 10 feet by 4 feet with a maximum depth of 70 inches. Pit A, adjoining trench

2, was 6 feet square with a maximum depth of 50 inches. Pits B and C were both 3 feet by 4.5 feet, and were put down to a depth of 48 inches.

The nature and structure of the deposit at this site differed considerably from that of the Anian Island midden. Although shell (of the same species represented at Anian Island) formed the chief constituent of the deposit, there was a considerably greater proportion of dirt in the Charles Point midden, and in addition the profiles showed very well defined horizons separated by dark layers 1 to 2 inches thick (see fig. 19). Determination of the nature of these

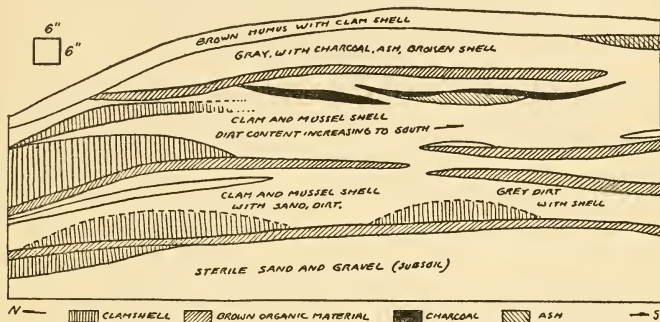


FIGURE 19.—Profile of east face of trench 1, Charles Point.

dark layers appears to be of importance. They consisted of finely divided material, varying in color from a dark reddish brown to black, apparently being decomposed wood with varying amounts of charcoal and ash (the decomposed outer portions of pieces of wood in the deposit had the same color and texture; a number of such pieces of wood, still relatively sound at the center, occurred in these layers). One firepit was found directly connected with such a layer at the Charles Point site, and such associations were noted at sites tested elsewhere. The layers were noticeably more compact than the shell-and-dirt horizons on which they rested. It seems fairly clear that the dark layers represent habitation levels, and are the equivalents of the floors found in other areas. These levels would likely yield information on house types if they were traced out.

A number of minor features of the Charles Point midden must be noted. A very large (6 feet in east-west diameter, 5 feet in north-south diameter, 6 to 8 inches deep) rock-filled fireplace was found in the area of trench 3, in the uppermost layer (of brown mold with fresh-looking clamshell). (See pl. 7, *a*.) This was the type of fireplace commonly described in ethnographic accounts, in which a large quantity of stones were kept in the fire to be used for stone-boiling as required. This same upper level was the one from which

the European articles—sail grommets, and a small piece of glass—were obtained. Burned stones were found at all levels in the cuts, but not in concentration. Some burned slate occurred, but infrequently as compared with Anian Island; most of the stones appeared to be ordinary beach cobbles. Relatively little animal bone was found in the cuts. No burials were encountered.

TABLE 2.—*Artifacts from Charles Point*

TRENCH 1 ¹						
No.	Description	Measurements			Depth	Remarks
		Length	Width	Thick-ness		
62	Irregular elliptoidal stone vessel, with elliptical depression, containing red-brown stain (pigment?).....	<i>Inches</i> 10	<i>Inches</i> 5.5	<i>Inches</i> 3.5	<i>Inches</i> 10	Depression, 6×2.6 ×1.3 inches.
63	Bone point blank (?).....	1.9	.6	.25	36-48	
64	Bone hand drill (?) of ulna with unmodified head, reduced tip.....				34	Diameter of tip, 0.15 inch.
66	(Several) elliptoidal stones, like "polishers" but lacking wear facets.....				12-24	
73	Slate blade fragment, with strongly curved beveled edge.....				24-36	
TRENCH 2						
67	Contact goods (2 brass sail grommets).....				1-3	Very slender sharp tip.
68	Stone hand maul fragment, type IV.....				0-12	
69	Elliptoidal stone, like "polisher" but lacking wear facets.....				0-12	
70	Bone awl or flaker (?) of sea mammal bone (butt fragment), rectanguloid cross section, round base.....		0.55	0.35	12-24	
77	Bone awl fragment, type 1e.....				38	
78	Sawed and perforated piece of antler (unfinished pendant?).....				45	
80	Splitting adze, tip fragment.....				30	
81	Stone hand maul, type IV.....				36	
82	Elliptoidal cut whalebone object, smoothed rounded end.....		6	2.2	34-36	
TRENCH 3						
99	Contact goods (glass fragment, one end opaque [due to heat?]).....				2-6	From close to fire-place area.
102	Stone hand maul, type IV.....				24-36	
103	Bone awl fragment, probably type 1d.....				43	
104	Bone awl, type 1c1.....	2.75			36-48	
PIT A						
84	Stone hand maul, type IV.....				12	
87	Pin (?) of fish spine.....	5.7			12-36	
106	Stone hand maul, type IV.....				24-36	
PIT C						
90	Splitting adze tip fragment.....				18	
	Total yardage.....	29cu. yds.				
	Artifacts per yard.....	.75				

¹ Two feet from the end of trench 1 were found a rectanguloid knife blade of schistose material with a curved cutting edge, 3.5 by 3.1 by 0.2 inches, at a depth of 6 inches; and a crude (incomplete?) stone vessel of unmodified rectanguloid form 7.4 by 4 inches, with a depression 3.1 by 3.3 by 0.6 inches at depth of 6 inches.

A biconical sandstone "grinder," found on the beach near the site, was acquired by the expedition.

OTHER SITES IN THE PRINCE RUPERT DISTRICT

In addition to the Anian Island and Charles Point sites, a number of other middens in this same region were located. They will be listed and described briefly.

Wilgiapshi Island (Can. 301).—A large midden is situated on the west side of Wilgiapshi Island, at the east entry to Venn Passage. (See pl. 5, *c.*) The dimensions of the midden were estimated as follows: Length, 400 feet; width, 80 feet; external height (i. e., from the lower edge, at high-tide line, to the highest adjacent point), 18 feet at the southern end, 22 feet at the northern. The front slopes very steeply from the water's edge to a sharp crest, the top is relatively level. The shape of the midden conforms to the beach line, swinging around a little cove on the south end. A dense stand of salmonberry, bracken, fireweed, and nettle covers the site.

Robertson Point (Can. 301).—Another large midden stands on the south side of Robertson Point, fronting on Venn Passage. (See pl. 5, *b.*) As in the previous instances, the midden is irregular in plan, following the beach line around a little point and bight, making the dimensions difficult to estimate. The length along the beach is in the neighborhood of 800 feet, the average width probably 100 feet. The external height of the midden is about 15 feet. The front of the midden is rather steep, the top fairly level, merging into the rising timbered ground behind the site. Salmonberry bushes, bracken, nettle, and tall grasses dominate in the cover. A few small areas have been cleared and planted to potatoes by Metlakahtla people. A muskeg swamp, drained by a small stream, lies at the west end.

Emerson Point (Can. 301).—A midden of roughly triangular shape, fronting on the beach on either side of the point, is situated on Emerson Point, on the east shore of Digby Island, about 7 (nautical) miles south of Charles Point. The length along the northeast beach is about 700 feet, along the opposite beach, about 300 feet. The midden rises in three terraces (probably conforming to rising of the natural subsoil), so that the highest point is about 30 feet above tide line. Most of the site is under cultivation at present; around the edges of the garden plots salmonberry bushes grow, and may have dominated in the former cover. Some timber is said to have stood on the midden; if this is so, it was probably along the back (inland) edge. The present occupant, in the course of cultivation, has recovered a number of artifacts, chiefly worked stone, and also a few glass trade beads and bits of iron, indicating the presence of a historic horizon. He reported that he had encountered no burials.

Shawatlan Falls (U. S. 1584).—A small site, apparently a fishing station, is located on the north shore of the inlet a quarter mile from the falls draining Shawatlan Lake. (See pl. 5, *d.*) The midden is 165 feet long by 20 feet wide, with an average external height of about 6 feet. Mosses, ferns, and grasses form the cover. The place is still used when the sockeye salmon run. The beach is rocky and abrupt.

Morse Basin (U. S. 1584).—Another small site is situated in a cove with a wide sloping beach on the south side of the channel nearly due south of the preceding one. The high cone behind the city of Prince Rupert bears 223° (true) from the site. The dimensions of the deposit were estimated as 100 feet by 40 feet, the external height, 7 feet. There is a small stream just to the south. A depth test near the middle of the site showed the deposit to consist of a thick layer of gravel, dirt, and ash overlying material consisting chiefly of mussel shell. The depth of deposit at the point tested was 48 inches. The vegetation is the same as that of the Shawatlan Falls site.

Due to the distinctive features of middens in this region—the plant cover (which, though differing somewhat from one site to the next, invariably differs from the surrounding woods, and has a characteristic light green color), and the typical midden form; a steep front rising from the beach giving way to a fairly level top—a number of sites were located by cruising, marked on the chart, and not further investigated. Most of these are on Venn Passage, at or near the following points, beginning at the eastern entry (Can. 301): DuVernet Point; on the west side of Shkgeaum Bay; directly across from the preceding, in the cove south of Dundas Point; in the cove west of Dundas Point; on the north shore due east of Ritchie Island; on the next point north (north of Grassy Island); two sites on Carolina Island; one on Auriol Point; on Gribbell Islet (U. S. 1584); a point on Digby Island west of the preceding; a point opening on Chatham Sound; west of Modern Metlakhtla (the last mentioned is probably also a site). Most of these are quite large. The total number of sites along this one short stretch of water (including those previously discussed) is thus 16. Two small sites were noted on the west shore of Kaien Island not far from Prince Rupert; one at Fairview Observation point, and the other about a half mile farther south.

Reported sites.—Several sites were reported which were not investigated.

Marine Station site.—There was a very large site at the place where the present Marine Station stands, on the east side of Digby Island (west of Charles Point). The site is well-sheltered from most storm winds, and is fronted by a moderate beach of fine gravel. The

cover of the remaining portions of the midden at the west end, appears about the same as that of the Charles Point site. Most of the deposit has been disturbed in excavating and leveling for the station. The deposit consisted of shell and dirt. In addition to a considerable number of artifacts, numerous burials were encountered. According to modern Tsimshian, the site was not occupied by any of the known divisions, but is attributed to a long extinct tribe in the traditions.

Other sites were reported at Dodge Cove and Grindstone Point, on the northeast shore of Digby Island (Can. 301), and at Seal Cove, at the north end of the city of Prince Rupert. The Tsimshian fishing stations on the lower course of the Skeena were not visited but are probably easy enough to find; one should have local pilotage to survey on the river, however, because of the numerous sandbars.

SOUTHERN COAST TSIMSHIAN

One site in Southern Coast Tsimshian territory (i. e., territory of groups who did not winter in the Prince Rupert district) was tested, a number of others located and reported.

QALAHAITUK ³⁷

An interesting small site, belonging to the Kitkiata (Hartley Bay) Tsimshian, was tested. The site is situated on a low island a mile up the main river flowing into Kitkiata Inlet, on the north side of Douglas Channel (U. S. 1584). (See pl. 5, *e.*) The head of tide-water lies several miles farther upstream; at low water only the natural stream-flow covers the bottom of the channel around the island, while at the bimensal spring high tides most of the island is awash. There is no fresh water close at hand (the river, of course, is brackish). We were informed that, when occupying the site, the people had to go more than a mile up river by canoe to get drinking water. The site was used regularly as a fishing station and as a refuge in time of war (being protected by the numerous bars too shoal after half tide for a war canoe) until the time that Duncan assembled the people at Metlakahtla (1862), but only occasionally since.³⁸ Some house posts still stand (see pl. 7, *c*), and the remains of timbers are to be seen at the location of each of the 10 house remains. House 1, in fact, was said to have been standing more or less intact up to about 30 years ago. The vegetation is somewhat varied; wild rose, nettle, wild currant, and salmonberry, in mixed stands, are most common. A few "crabapple" trees occur on the center of the island,

³⁷ This site is designated by its native name because its location does not appear on the coastal charts.

³⁸ The Kitkiata people went to Metlakahtla, but most of them returned to their old territory at the time of the removal to New Metlakahtla in Alaska (1887).

and a few large spruce and hemlock grow over the ends of the timbers of some of the houses.

The Qalahaituk site was of special interest because of its peculiar situation. Owing to tidal flooding, the houses had to be built on

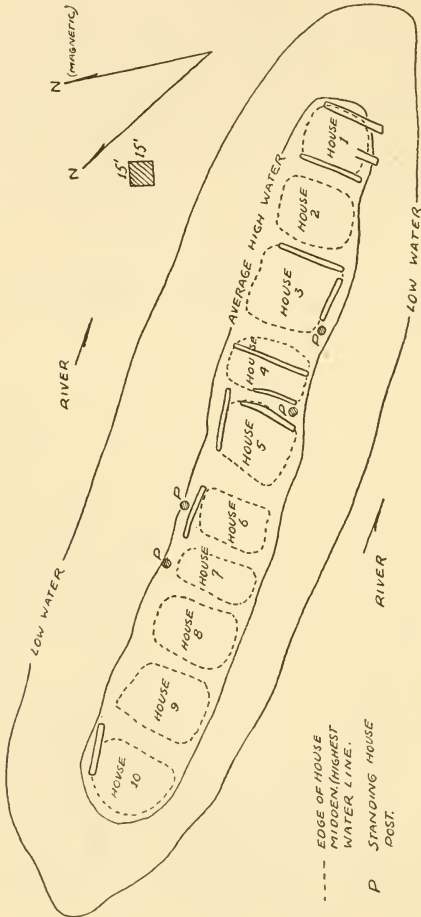


FIGURE 20.—Plan, Qalahaituk.

raised foundations. The deposit is not continuous, but consists of 10 separate house middens, each containing the timber foundation and refuse of its house (see fig. 20). The 22.0-foot tide of October 11,

1938,³⁹ came close to the upper edges of most of the visible foundation timbers of the houses. The single row of house middens extends 400 feet northwest-southeast, and averages about 50 feet wide. The subsoil rises slightly toward the northwest end. The maximum depth of deposit encountered was 52 inches.

Work done at this site was as follows: To investigate the structural details of the houses a section 12 feet by 6 feet by 50 inches was taken out of the northwest quadrant of house 1, a cross trench

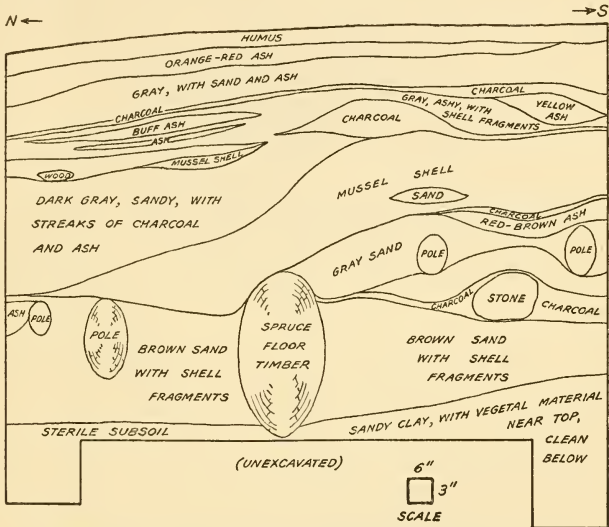


FIGURE 21.—Profile of east face of trench 1, house 9, Qalahaituk.

20 feet by 3 feet was driven across the middle of the house, and a test pit 3 feet by 3 feet by 56 inches was dug at the center of the house just off the cross trench. In house 9, two stratigraphic trenches, each 12 feet by 3 feet by 40 to 44 inches, were dug longitudinally in the central portion of the midden.

The stratigraphic trenches in house 9 will be described first. Both trenches revealed a series of horizons, in each of which ash, shell,⁴⁰ or ash-and-charcoal-stained sand predominated, making the layers immediately discernible. The contact lines were brought into further prominence in several cases by the occurrence of a black charcoal layer, 0.5 to 2 inches thick (see fig. 21). The dip of all the horizons

³⁹ Height at Prince Rupert, B. C., port of reference for the locality; the mean rise of springs at Hartley Bay is about 2 feet less than at Prince Rupert. Tide Tables, 1937, p. 7.

⁴⁰ Shell horizons were chiefly of mussel; both *Mytilus edulis* and *M. californianus* were represented. The "clam" shell which occurred was so broken up that it could not be identified.

was in general to the north-northeast and west-northwest across the trenches, i. e., from the center to the outer walls. A number of foundation timbers and poles were encountered in positions indicating that the mode of construction was essentially the same as that of house 1 (q. v.), though structural details of house 9 were not worked out. A considerable amount of stone, mostly unworked river cobbles which had been subjected to fire, occurred in the deposit, with a definite concentration in trench 2 in the 12- to 24-inch level from 3 to 8.5 feet from the south-southwest end of the trench, presumably a fireplace. Just beneath and in contact with this stone concentration was an extensive charcoal area in which pieces of bark matting and textile were preserved. At the 18- to 24-inch level in the same trench, north of the burnt stone area, a pair of juvenile human parietals were recovered. The maximum depth of occupational debris in either trench was 41.5 inches. There was little significant difference in the profiles of the two trenches. Underlying the midden material was a sandy clay, brownish in color owing to the presence of vegetal fibers, apparently the roots or decayed stems of the coarse beach grasses growing outside the deposit. The sandy clay became progressively freer of these brown fibers downward, assuming a gray color.

The most important feature of the profiles is the sorting of the midden constituents, ash, shell, etc., into well defined and extensive horizons (the length and combined breadth of the trenches, and up to 12 inches thick), just as occurred in the Charles Point site.

Investigation of house 1 resulted as follows: The house appears to have been approximately square, about 38 by 38 feet (exact dimensions could not be determined because of the washing away of most of the timbers on the southeast side). Nearly all the superstructure was gone, only a few stubs of posts, stray poles, and large stones (probably roofing weights) atop the midden mass remaining. The subsoil over which the house was built rose somewhat to the north and west. The foundation consisted of a series of heavy timbers, mostly cedar (see fig. 22, and pl. 7, *d*). The main central support was an 18-inch log lying northwest-southeast across the middle of the house. At either end, and at least at one point near the middle, it rested on large cedar blocks. It was not possible to determine if these blocks were shaped to fit the log; their function was clearly to steady and level it. At right angles to this cross timber were four longitudinal timbers, three of which rested on the cross support. These ranged from an average of 13 to 19 inches in diameter. Presumably there was at least one more of these on the southeast side. These timbers had not been adzed; some had stubs of branches remaining. Their ends, where preserved, showed both charring and adze-marks, indi-

cating the manner in which they had been trimmed to length. The timber along the northwest side lay directly on the ground, not on the cross log. The longitudinal timbers in the central portion of the house were covered with unbroken strata of midden material. The southwest ends of these timbers, extending out over lower ground, seem to have been supported by short vertical posts. Across the longitudinal timbers, poles averaging 5 to 8 inches in diameter were laid fairly close together. (See pl. 7, *b*.) Traces of strips

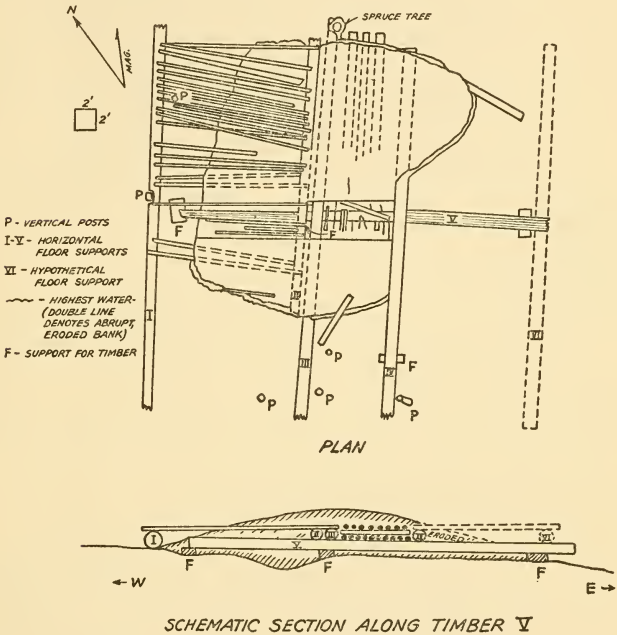


FIGURE 22.—House 1, Qalahaituk.

of spruce bark running at right angles to the poles were noted in a number of places, and perhaps represented the final layer of flooring. In the central section the floor poles were laid parallel to the set of innermost timbers, resting on subsidiary cross braces.

The foundation timbers enclosed a small midden, the outer edges of which had been washed away by the tides. The highest (central)

portions of the deposit covered the longitudinal timbers to a depth of 7 to 8 inches, thin unbroken layers of ash and charcoal running across the central timbers. Ash, charcoal, shell, and sand, for the most part separated into thin strata and lenses, composed the midden mass. Contact goods (iron fragments, trade beads, etc.) were found in quantities in the upper levels.

Trenching below the floor poles in the north quadrant next to the inner longitudinal timbers showed the midden material to dwindle away fairly rapidly toward the north and west. Some fine gray beach sand had been washed in and overlay the floor poles and midden material. Below the sand, ash, and charcoal layers was a layer of decomposed shell, containing some charcoal and sand. Under this was an area of brown sandy clay, apparently the same as that on the flooded margins of the island, but containing a great quantity of wood chips, cedar bark fragments, pieces of bark matting, withes, rope, etc. The general appearance of the material was that of carpentering debris. This layer, which, though its full extent was not traced, appeared to be a sort of pocket, began suddenly 2 to 3 feet from the edge of the central cross timber (no pit outline could be noted there, however; the soil—a brown sandy clay—seemed identical with the matrix of the wood chips, etc.). Below this pocket, a layer of gravel and cobbles apparently indicated the original beach surface.

It seemed probable that the pocket of carpentering debris dates from the time of building the house, particularly since it rests on the sterile subsoil underlying house and deposit. That it does not represent an earlier structure is indicated by the fact that no traces of habitation levels or of timbers, etc., unrelated to the house 1 remains were encountered. Since we have a terminal date, 1862, for regular seasonal use of the site, it is of interest to note evidences of time required for the formation of the small house midden. No datable contact objects were recovered from the pocket of wood-working debris. However, the appearance of the chips, their rather large size, and cleanly cut surfaces, indicates that they must have been cut with metal tools—if not axes, steel-bladed adzes. House 1, then, must be placed entirely within the historic period, and probably was built at most no more than a couple of generations before its abandonment.⁴¹ The state of preservation of the foundation timbers bears out this dating.

⁴¹ Despite the pre-European acquisition of iron on the coast, metal axes and/or adzes indicate a postcontact date. The early iron tools seem to have been reserved for carving, etc.; heavy chopping was done with stone blades until trade times.

TABLE 3.—Artifacts from Qalahaituk

HOUSE 1

No.	Description	Measurements			Depth (inches)	Remarks	
		Length (or diameter)	Width	Thickness			
109	Contact goods (glass bead, clay pipe fragment, etc.).				Surface		
109a	Imperforate ground disk of schistose material.	2.5		0.22	do		
110	{Contact goods (glass beads; lead shot; copper bracelet; glass, iron, and copper fragments).				Layers above flooring.		
111							
114	Diorite sinker, grooved about middle and over one end.	8	6.5	3.7	Surface		
116	{Contact goods (glass beads, glass and iron fragments, clay pipe fragments, ax-cut wood chips).				Sand and shell layers below floor.		
117							
122	Heavy wooden point (fore-shaft fragment?).			.7	} Pocket of carpentering debris.	See p. 60.	
124	Wooden bird bunt (?) fragment.					See p. 60.	
125 133	{(4) pieces fine matting.						Elements 0.10 to 0.14 inch and 0.10 to 0.12 inch; 0.18 to 0.20 inch and 0.10 to 0.12 inch; 0.12 to 0.14 inch and 0.12 to 0.14 inch.
125a	} Large piece coarse checker-work matting of cedar bark. (2) pieces 3-strand plaited bark rope. 2-ply twisted bark rope (fragment). Carved wooden "antler"..... (5) pieces twisted withes..... 2-ply twisted bark rope (fragment). Metal-cut (?) wood chips.....				} Pocket of carpentering debris.	} Elements 0.28 to 0.3 inch and 0.18 to 0.22 inch. See p. 60. Longest piece 30 inch.	
126							
127							.25
128			2.5				.3
129							
131							
136							
130				.35			
134							

House 9, Trenches 1 and 2 (combined)

139	Contact goods (glass bead, metal tweezers, copper, glass and iron fragments).				0-12	
140	Splitting adze fragment, type ?				12	
141	Bone point, type BIIA.....	1.88	0.48	0.18	12-18	
142	Bone point fragment, type BIA (?).				12-18	
143	Bone point fragment, type ?.....				23	
144	Bone point, type BIIA.....	1.84	.26	.15	24	
147	Bone point, type BIIB.....	2.24	.34	.25	36	
148	Bone point, type BIIA.....	2.2	.38	.23	37	
149	Bone awl, type 1d (tip broken).				36-42	
150	Bone awl fragment, type 1e.....				36-42	
152	Bone point fragment, type BIB.....	2.62	.48	.16	21	
	{Charred textile fragments.....				21-24	0.08 to 0.11 inch and 0.13 to 0.18 inch; 0.09 to 0.12 inch and 0.16 to 0.18 inch; 0.10 to 0.13 inch and 0.18 to 0.22 inch.
	{Remains of 3 (?) plain checker cedar-bark matting.					
154	{Small fragment of twilled checker cedar-bark matting. Cypress bark robe fragments (twined).					0.08 to 0.10 inch and 0.08 to 0.10 inch. Wefts each 0.5 inch apart.

OTHER SOUTHERN COAST TSIMSHIAN SITES

A few other sites in this district were inspected by or reported to the expedition.

Kitkiata (U. S. 1584).—The former winter village of the Hartley Bay Tsimshian is situated at the mouth of a stream on the east side of Kitkiata Inlet, off Douglas Channel. The site is still in use as a fishing place. In addition to modern frame houses, three plank houses still stand, and a number of sets of posts and beams. Wave-cutting at the outer end has disclosed a thick black-dirt layer, overlying an equally thick horizon consisting chiefly of mussel shell; the two together are about 48 inches deep. The midden is long and sprawling, though the Indians maintain that a good half of it has been washed away. A heavy growth of nettle stood between the houses and bordered the walks, despite the fact that the people had been there some weeks drying fish at the time of our visit.

The presence of sites was reported at the following localities: Near a small lake a short distance from the salt water at Klewnuggit Inlet; on the east side of Grenville Channel (U. S. 1584, also 1763); at the stream mouth on the north arm of Lowe Inlet; on the same channel (U. S. 1584, also 1763); on the east shore of the south entrance of Laredo Channel (U. S. 1584) (large house frames are said to be standing here); on Hastings (?) Island in the mouth of Laredo Inlet (U. S. 1584); on an island in Higgins Passage (between Price and Swindle Islands) (U. S. 1584). These three last-named localities should be inspected only during the summer season, when reasonably good weather may be expected. This is true also of the localities in the Nepean Sound district described by Caamaño in 1792, in the recently published translation of his journals (Caamaño, 1938).

HEILTSUK (NORTHERN KWAKIUTL) SITES

The territory with which this section is chiefly concerned is that part of the coast from Seaforth Channel on Milbanke Sound to the mouth of Rivers Inlet, exclusive of Dean and Burke Channels. This has been known as the range of groups speaking the Heiltsukan variety of Kwakiutl since earliest historic times.⁴² The Heiltsuk were never confederated until the historic period when a number of the tribes assembled at Bella Bella; formerly each local group or tribe had its own winter village and set of fishing stations and camps. Sites in this region are very numerous, and many are of considerable size. One small Xaihais ("China Hat") site in Khutze Anchorage off Graham Reach was examined, and another nearby was located.

⁴² It was not practicable to include the territories of the northernmost Heiltsuk, the Xaisla of Douglas and Gardner Canals, during the present survey.

KHUTZE ANCHORAGE
(B. A. 1927)

A small Xaihais site lies on a point on the south shore of Khutze Anchorage, which opens off the east side of Graham Reach. The site is a fishing station (a salmon river empties into the salt water about a quarter mile past the point), and is used to the present time, as remains of temporary shacks and very recent Caucasian goods testify. A sheltered cove with a gentle gravel beach fronts the site. Some 30 yards to the south is a small spring. A growth of young conifers between the midden and the beach partly screen it from view, though none grow on the site itself. A few bushes (wild currant, devil's club) and a good deal of nettle grow on the midden material. The maximum length of the deposit is 90 feet, the average width about 30 feet. Twenty feet farther out on the point traces of an older, that is, less recently used, camp were noted, heavily overgrown with alders and brush.

Three test pits, each 6 by 4 feet, and one 5 by 4 feet, were dug. The maximum depth of deposit noted was 34 inches. Shell formed a relatively small proportion of the midden material, which consisted mostly of ash, charcoal, and layers of sand and dirt with admixtures of ash and charcoal. There were also several layers composed of a brown soil which seemed to be chiefly rotten wood, with some sand, charcoal, etc., mixed in. Burnt stones and animal bone were noted throughout. There were almost no artifacts recovered.

ROSCOE INLET 1 AND 1A
(Can. 320)

In a cove just west of the mouth of Roscoe Inlet (near the junction of Johnson and Return Channels), two large middens were found about 100 yards apart and on either side of a small point (see fig. 23). Several trails run through the bush connecting them. The sites are fronted by a gently sloping beach that dries for a good hundred yards at low water, though rather exposed to the lash of sou'easters blowing up Johnson Channel. On the beach in front of midden were several rows of stones, probably canoe runways, and on the west side of the cove was a tidal salmon weir of stones. Several small streams from the mountain behind the sites run along the edge of, and through the midden material.

According to ethnographic information I obtained, the two middens were used as the winter village of the Owiklit (ōwīLit.^x) tribe. They were occupied contemporaneously. The eastern site (1) was known as "Landslide (place)" (hwinis), referring to the landslide scar on

the mountain behind it; the western one (1A) was called "Ready (i. e., to fight)," (tīai'is). The statement that both were simultaneously used is borne out by the presence of house timbers on both middens, although those on midden 1 are better preserved (apparently more recent) than those on 1A. The general nature and order of the midden strata were likewise similar.

In general conformation the two middens are similar. Both follow the shoreline; midden 1 is roughly crescentic in plan. Both rise from the high-tide line in a rather steep (ca. 30°) slope or face which forms an abrupt angular crest where it meets the level midden top. The

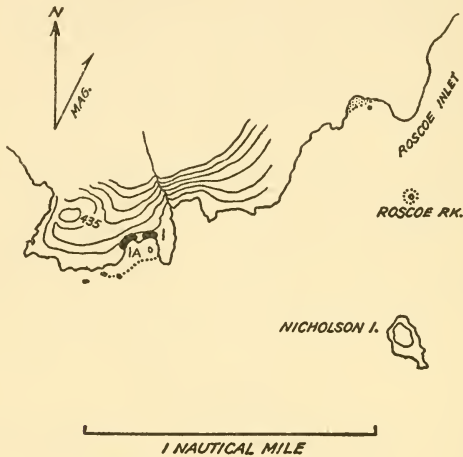


FIGURE 23.—Roscoe Inlet 1 and 1A.

tops of both 1 and 1A extend back to meet the hillside at the rear. The back part of 1A rounds off slightly, forming a shallow trough 1 to 2 feet deep between the midden and the sidehill. Midden 1 is more nearly level, so that no such depression is formed. Midden 1 is about 300 feet long and averages ca. 60 feet wide. Its top is 12 to 15 feet above tide line. A creek cuts through the deposit two-thirds of the way from its eastern end. The dimensions of 1A are nearly the same: Length, 360 feet; average width, 60 feet; height, 12 to 15 feet. One-third of the distance from its eastern end the midden is cut through by a small stream, and at its southwestern end is another slightly larger creek. The cover of the sites is unusual. The eastern half of midden 1, and most of the face (the slope to the beach) supports a growth of long tough grass of a distinctive light

green color. Occasional nettles grow among the grass. The rest is wooded. 1A is, in fact, covered with such a heavy stand that it was not recognized as a midden from the foreshore. (See pl. 6, *d*.) The timber consists entirely of young hemlocks (*Tsuga heterophylla* [Raf.] Sargent) except for a small clump of alders which follow the course of the creek cutting through midden 1. The hemlocks grow in most cases on decaying logs, house posts, and fallen beams, ex-

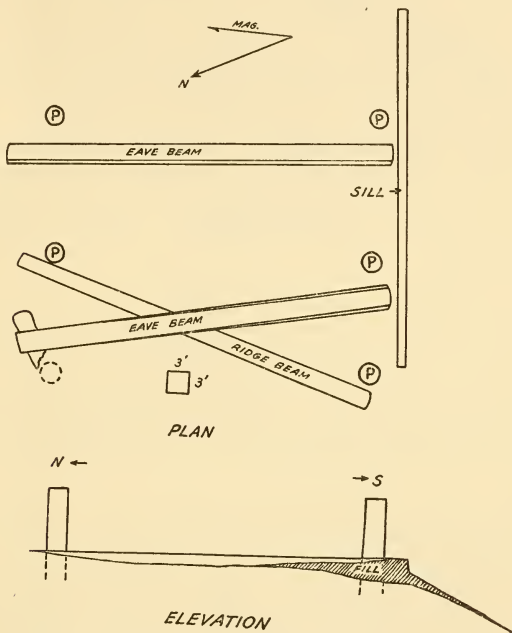


FIGURE 24.—House 1, Roscoe Inlet 1.

tending their roots along the grain of the timber—a type of growth noted by Sudworth as characteristic of the species (Sudworth, 1908, p. 93). (See pl. 7, *e, f*.) This habit probably has enabled them to become established where other conifers could not. In a number of instances sizable hemlocks were seen growing in a row on a very slight ridge—seedlings had become established on a fallen beam and had continued to grow after the beam had almost completely decomposed.

As previously mentioned, remains of a number of houses are indicated by the presence of posts and beams on the surface. House 1,

midden 1, is represented by three pairs of posts (see fig. 24), one of which has rotted out and fallen over. The posts are all from 32 to 35 inches in diameter; the central pair, front and rear, are 94 and 106 inches high, the eastern side pair 83 and 72 inches. Height of the other pair could not be determined. They stand in two rows, along the front and rear walls, each pair formerly connected by a heavy adzed beam. Three of the posts are sound enough at the top to show that they had been concavely notched to fit the beam. The dimensions of the house, as indicated by the posts, were: Length, front to rear, 46 to 47 feet (the central pair of posts were 46.5 feet apart); width, 38.5 feet. The side beams are larger than the ridge timber, being 32 and 36 inches in diameter. The beautifully fluted central beam has an average diameter of 21 inches. In length, the timbers are from 51 to 52 feet. Along the front of the house, 2.5 to 3.5 feet from the front posts, and exactly on the edge of the midden face, lies a 16-inch timber embedded in the soil so that only its upper and outer surfaces are exposed. (See elevation, diagram, fig. 24.) This was a structural part of the house, a sill laid down to bank dirt against, in order to level off the floor.

Just west of house 1, its near posts within a foot of the line along the outside of the western pair of house 1's posts, are the remnants of a similar set of three pairs of posts and beams. The timbers of this house (house 2), are much smaller than those of house 1, as are its dimensions (37 by 33 feet). To the east of house 1, stubs of several posts indicate another house (house 3), but a complete set was not found and it was not measured. It was probably about the size of house 2.

On midden 1A (see fig. 25), a rectangular area, 38 by 36 feet, was identified as a house (house 4). It is outlined by a row of hemlocks growing along a low ridge on one side, a rounded bank of earth about 2 feet high along the rear, and a ridge 1 foot high along the third side. The area thus enclosed is noticeably more level and slightly lower than adjacent portions of the midden. No posts or visible timbers remain. Adjacent to it is a smaller level area marked by low ridges, 35 by 23 feet, also a house. House 6, next to the last described, is indicated by a similar level area, 48 by 38 feet, with a slight bank along the rear side. In addition, two heavy beams lie, one along one side of the floor area, the other along its center. Probably more traces of houses could be found on the surface; these six are the most obvious ones.

Two trenches were dug, one in midden 1, the other in 1A. The former was put down 20 feet in from the sill in house 1; its dimensions were 13 feet by 5 feet by 36 inches. At the 36-inch level percolation of

surface water made excavation impossible. An attempt was made to dig a drain in the face of the midden, but this proved unsatisfactory. On midden 1A, a small pit (trench 2), 8 to 5 feet, was staked out just behind the crest of the face, and a drain 2 feet wide was dug down the face. The drain, when completed, extended 12 feet out (horizontally) from the crest and revealed a maximum depth of deposit of 150 inches.

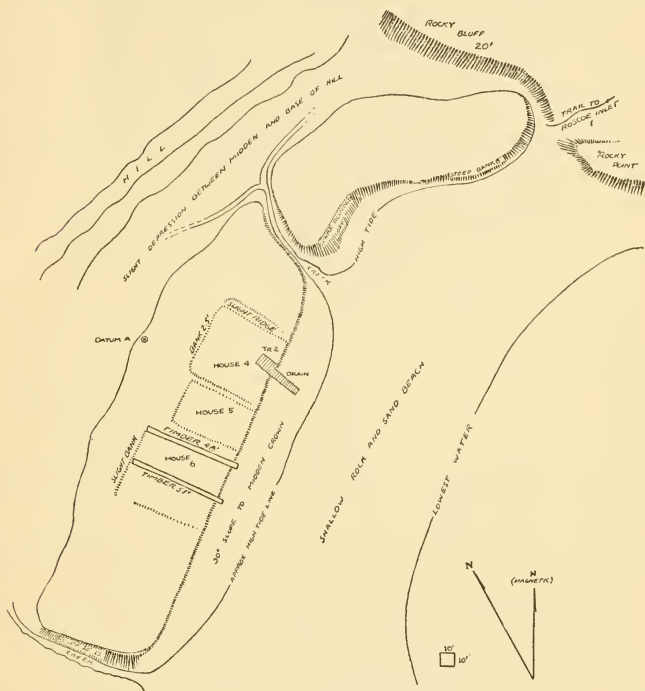


FIGURE 25.—Plan, Roscoe Inlet 1A.

It was slightly narrower at the bottom than at the top. The depth of deposit made it impossible in the available time to complete trench 2, and the structure of the layers in the drain made it unnecessary to do so, so the trench was discontinued at 42 inches.

The results of the excavations at Roscoe Inlet 1 and 1A are of some importance. Both middens were shown to be composed of well differ-

entiated and extensive horizons of ash, charcoal, dirt, or shell. The artifact yield was relatively high, and moreover, there appeared to be a tendency for the artifacts to be concentrated in certain levels which on the basis of other evidence, probably are habitation levels or floors.

A profile of trench 1 (see fig. 26) showed beneath the dark brown surface layer a thick horizon of light brown dirt with considerable sand and burnt stones. A few small lenses of charcoal and charred woods, or ash, and one relatively large pocket of charcoal and stone occurred in it. The large lens was probably not a fireplace, but a dump of hearth refuse, for it contained no ash layers. It appears likely that this whole horizon is fill. It certainly is not ordinary occupational debris. Beneath it, at an average depth of 20 inches, was a thin stratum of finely divided brown to black material. In appearance, the layer was identical with the "decomposed wood" layers identified as habitation levels at the Charles Point site. In the east end of the trench, continuing into the south wall but cutting off just short of the north wall (and, therefore, not shown in the profile) were the charred remnants of a number of large boards or slabs. Caving of the wall during profiling disclosed a vertical stake, 2 inches in diameter, 1.25 feet north of the trench wall, whose point of origin apparently lay above the floor. Below the floor level in the east end of the trench a series of black sandy layers alternated with layers in which mussel shell predominated. In the west end an intrusive pit antecedent to the floor had been cut, then filled with brown soil and with coarse sand and stone. The west edge of the pit cut sharply back to the west wall of the trench, then around eastward 3 or 4 feet from the north wall. Unfortunately, the exact size and shape of this pit was not worked out, nor could its purpose be ascertained. There was a notable dearth of artifacts and faunal remains in this material as compared with the corresponding levels in the east half of the trench. Rapidly dug test holes could be put down to a depth of 72 inches (36 inches below the bottom of the trench) and would not fill with water for several minutes. Two of these, one at either end of the trench, indicated that the deposit continued downward in a series of alternating shell and dark soil levels, similar to those in the east end of the trench between 20 and 36 inches.

The drain cut from the south wall of the trench to the midden face to carry off seepage water showed the upper dark brown layer to ex-

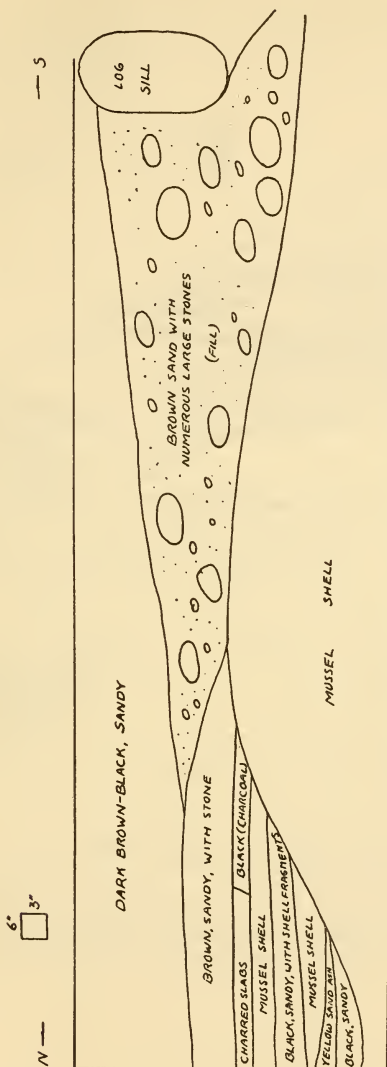


FIGURE 26.—Profile of east face, trench 1, drain, Roscoe Inlet 1.

tend unbroken, though thinning out, to the sill (fig. 27). Against the sill was an area of brown sandy dirt with numerous large stones. This apparently was an artificial fill to level off the latest house floor, that

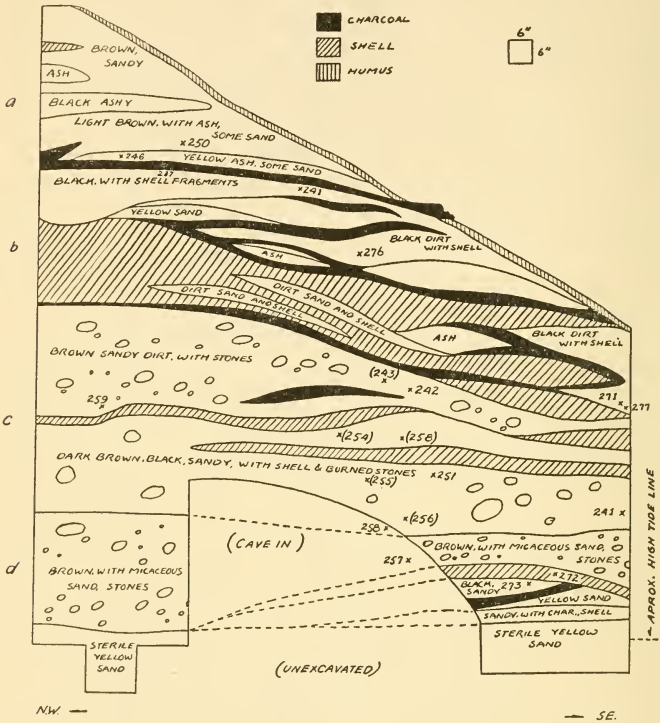


FIGURE 27.—Drain, Roscoe Inlet 1A. (X=location of artifact; numbers in parentheses indicate indeterminable worked fragments.)

of house 1, represented by the uppermost black horizon. Beneath the fill, the mussel-shell horizon rose to a slight crown 19 inches from the surface (from 35 inches at the north wall of trench 1), then dipped beachward.

Contact goods (trade beads and iron) were found in trench 1 in the uppermost (dark brown) horizon, and in the light brown sand with stone horizon (fill) beneath it.

The drain of trench 2 (see fig. 27) exposed a series of differentiated layers in which the predominating constituent was sandy soil, with varying amounts of charcoal, ash, burnt stone, faunal remains, and cultural material, alternating with ash layers and layers of shell (chiefly mussel). A number of dark brown or black strata containing a considerable quantity of organic matter, and occasionally small amounts of broken shell, seemed of the same type as the dark brown to black horizons in trench 1.

Tests to determine the back edge of the deposit showed the midden to contain a fairly large proportion of clam (*Saxidomus nuttalli* Conr., *Venerupis staminea* Conr.) and cockle (*Cardium clinocardium nuttalli* Conr.) shell there, rather than mussel shell as in the outer (and probably older) part of the site.

The artifact yield of the drain and trench corresponded to that of trench 1.

The most striking feature of the profile of the drain is the change in the trend of the habitation levels. The uppermost level carries straight out to meet the sloping face at a definite angle. Presumably this reflects the use of a type of house similar to that found around the point at Roscoe Inlet 1, where the house was built as far out over the edge as possible, filling in against a sill where necessary to level off the floor. The lower strata (again as in the adjacent site) indicated a gradual, more usual type of deposition, in which the layers slope off gradually, and the areas of occupation kept moving backward as well as upward.

To summarize, the middens Roscoe Inlet 1 and 1A represent an extensive site extending downward in time from the historic period. The very characteristic conformation of these middens, steep face joining the top at a pronounced angle (as in some Tsimshian sites), is probably to be associated with a late feature of house construction, and the tendency to build houses as close to the midden front as possible, artificially filling and leveling when necessary. The occurrence of certain distinctive strata which seem to be habitation levels should make it possible with more extensive excavation to define the earlier as well as the recent dwelling types of the region.

TABLE 4.—*Artifacts from Roscoe Inlet 1*

No.	Description	Measurements			Depth	Levels by inches	Remarks
		Length (or diameter)	Width	Thickness			
172	Contact goods (glass bead)-----				5		
176	Bone point fragment (class B)-----				6		
178	Bone awl, type 1b-----	2.86	0.8	0.45	8		
173	Stone hand maul, type III-----	4.77	2.4	1.96	9		
174	Stone hand maul, type IV-----	3.4	2.79	1.73	10		
180	Bone awl, type 1a1-----	3.68			10		
181	Bone point, type BIIA (4 asymmetrical proximal barbs)-----	2.28	.32	.21	10	0-12	
182	Bone point, type BIA-----	3.22	.47	.16	11-12		
183	Scraper (?) of deer parietal-----	3.6	1.78	.15	12		
177	Elliptical chipped bone (point blank?)-----	1.97	.42	.14	7-12		See p. 62.
184	Contact goods (chinaware fragment)-----				0-12		
192	Whale-bone cypress bark beater, handle missing-----		1.85	1.65	10	(1)	
185	Serpentine celt fragment, type IA (?)-----		1.43		14		
226	Contact goods (iron object)-----				16		
187	Bone awl, type 1d-----	4.6	.54	.24	19	12-24	
188	Bone gouge or scraper, small, type IA-----	2.63	.27	.23	19		
201	Rectanguloid slate straight-edged stone blade ("saw")-----	1.78	1.52	.34	24		
195	Bone awl (?) fragment, type 1b (?)-----				25		
197	Whale-bone object (blank?), one side hacked, one sawed-----	14.5	.93	.6	27		
202	Serpentine (?) celt poll fragment, type IB (?)-----			.63	27		
206	Fish-spine pin (?) fragment-----	4. +			27		
207	Bone point fragment, type BIIA (?)-----	2.7+	.3	.15	27-28		
208	Sawed bone fragment-----				28		
210	Blunt tipped "wedge-shaped" object-----				30		See p. 60.
211	Bone awl fragment, type 1e-----				30		
212	Composite harpoon point fragment, type II-----		.54	.22	30		
200	Stone hand maul, type IV-----				30	24-36	
199	Bone point, type BIIB-----	3.22	.44	.3	27-30		
191	Stone hand maul, type IV-----				24-32		
215	Harpoon point butt fragment, type I-----		.96	.34	33		
216	Bone scraper (?) fragment, type IB (?)-----		.88	.22	33		
203	Large flat chip of serpentine (celt fragment?)-----				34		
217	Bone awl (or gouge?) fragment, sawed, type 1b (?)-----		.4	.25	34		
219	Small bone (sea mammal rib) wedge-----	3.3	.96	.53	35		
220	Bone point, type BIB-----	3.5	.42	.22	36		
205	Bone awl, type 1e-----	3.66			24-36	24-36	
222	Stone polisher with wear facets-----	1.67			24-36	24-36	
227	Splitting adze fragment-----				No loc.	(?)	
228	Harpoon fragment, spatulate tip type, V (?)-----				No loc.	(?)	
Total number artifacts from trench I-----					37		40-3 from drain.
Total yardage-----					7.2 yards		
Artifact yield-----					5.2 per yard		Also 6 indeterminate worked bone fragments recovered.

¹ From drain.² From drain.

ARTIFACTS FROM ROSCOE INLET 1A

For descriptive purposes, four levels may be distinguished on the basis of type of midden material. It must be made clear that these

levels are not culturally defined, but represent periods of different usage of the portion of the midden through which the trench cut. Level *a* (see diagram fig. 27), extending to a depth of 39 inches at the northwest face, consisted chiefly of ashy strata, with one black dirt (habitational) horizon. Level *b*, 39 to 60 inches at the northwest face, consisted of several habitational layers, interspersed by layers of lenses of mussel shell, and of ash. Level *c*, 60 to 125 inches may also represent a type of habitation, although the composition of the midden material differs somewhat from that of other habitational layers. Level *d*, 125 to 151 inches, differs again, containing as it does quantities of stones and sand (fill). The small habitation area at the bottom of the deposit might be distinguished from "*d*" had we enough material to make it worth while to do so.

 TABLE 5.—*Artifacts from Roscoe Inlet 1A*¹

DRAIN

No.	Description	Measurement			Depth	Remarks
		Length	Width	Thick-ness		
		<i>Inches</i>	<i>Inches</i>	<i>Inches</i>		
250	Ulva knife fragment.....				Level <i>a</i> ...	
246	Bone point, type BIA heavy, blunt tip.....	2.26	0.48	0.2	Level <i>a</i> ...	
237	Bone point, type BIA.....	3.54	.41	.25	Level <i>b</i> ...	
247	Split piece of whale bone, hacked to length, split sawed from cancellous surface.....	11.5			Level <i>b</i> ...	Saw cuts 0.26 in. wide.
276	Sea mammal bone rod, ellipoidal cross section, tapered toward one end (tip broken).....	5.2(+)	.58	.39	Level <i>b</i> ...	
271	Bone awl (? tip missing) type IaI.....				Level <i>b</i> ...	
277	Thin flat bone object (needle?).....	6.6(+)	.5	.18	Level <i>b</i> ...	See p. 60.
242	Bone point, type BIA.....	4.12	.5	.26	Level <i>c</i> ...	
259	Bone point, type BIA.....	2.6	.62	.2	Level <i>c</i> ...	
251	Bone gouge (scraper), type IA, narrow rounded tip.....	5.58			Level <i>c</i> ...	
241	Hacked sea mammal bone object (point blank?).....	3.1	.56	.44	Level <i>c</i> ...	
258	Small bone awl fragment, type Id (?).....		.42	.24	Level <i>c</i> ...	
257	Cylindrical, tapered, sea mammal bone rod, (broken medial portion missing).....		2.44		Level <i>d</i> ...	
273	Awl tip (broken and reused), original type indeterminate.....	2.18	.53		Level <i>d</i> ...	
234	Sea mammal bone rod, rectangular cross section, one rounded end, one end missing.....	3.7(+)	.39	.29	Level <i>b</i> ...	Objects 234-245 were improperly located, so that their loci are not certain, except that they came from levels <i>a</i> and <i>b</i> .
245	Bone awl, type Ia.....	5.44			Level <i>b</i> ...	Objects 274, 275, 278, 260, 289 from the drain are without location.
274	Cylindrical whale-bone rod fragment, with rounded end.....		2.56			
275	Bone awl, type Id.....	4.21	.61	.21		
278	Small pointed bone, square-cut base.....	1.6	.28	.14		
260	Bone point, type BIA.....	2.59	.44	.19		
289	Stone polisher.....					Several noted not saved. In addition, a total of 15 pointed or otherwise worked bone fragments indeterminable as to form, were recovered from the cut.

TABLE 5.—*Artifacts from Roscoe Inlet 1A*¹—Continued

TRENCH 2

No.	Description	Measurement			Depth	Remarks
		Length	Width	Thick-ness		
279	Bone awl, type 1e.....	<i>Inches</i> 3.27	.....	.....	14.....	Level a, depth 0-39 inches.
266	Slender sea mammal bone rod, slotted for point, (arrow fore-shaft?) butt broken.	9.9(+)	² 0.45	.....	16-17.....	Point slot, 0.08 inch wide.
267	Ulna knife.....	.....	.....	.....	17.....	
264	Hand drill (?) fragment reduced cylindrical, blunt point.	.....	² .19	.....	14-18.....	
263	Small sea mammal bone rod fragment, 1 rounded end (drill point?).	1.9(+)	² .17	.....	11-21.....	Level a, 0-39 in.
269	Bird head ornament(?).....	.....	.....	.....	21.....	See p. 60.
281	Barbed harpoon point tip fragment, whale bone, type ?	1.34	.62	0.25	22-25.....	
280	Bone awl, type 1e (tip broken).	5.2(+)	.....	.....	21.....	
282	Bone awl fragment, type 1e, partly sawed on one side.	.....	.....	.....	23.....	Objects associated.
283	Bone awl, type 1e.....	.....	.....	.....	23.5.....	
284	Bone awl, fragment type 1e (?)	.....	.....	.....	24.....	
285	Mountain-goat horn core with cut base.	.....	.....	.....	11-24.....	
286	Bone point, type B1A.....	.....	.....	.....	24-28.....	
287	Bone awl, type 1c (ulna, head partly worked).	.....	.....	.....	40-41.....	Level b.

Total artifacts.....	14
Total yardage.....	4.5
Artifacts per yard.....	3.1

Also 6 indeterminable worked fragments. Excluding indeterminables.

In a depth test at the rear side of the midden, a short heavy rectangular cedar-bark shredder of whale bone: length, 6.23 inches; height, 7.38 inches; thickness, 0.6 inches; with an irregular elliptoidal perforation near the upper end, 1.46 inches by 0.61 inches, was found at a depth of 18 inches.

¹ See profile diagram (fig. 27) and indicated artifact loci.

² Diameter.

KILKITEI VILLAGE (Can. 320)

A site designated on the chart as "Kilkitei Village" is situated on a small promontory on the southwest end of Yeo Island, at the junction of Spiller and Return Channels. (See pl. 6, *b*.) It belongs to the Qoqwaiat (qōqwaiat^x) division of the Heiltsuk, and is known as "kaba."⁴³ The site is fairly well sheltered, being protected from heavy seas in so'easters by the islands to the south (though the force of the wind is not abated), and from westerlies by Grief Island directly in front. A narrow beach, wide enough, however, for launching canoes, and rocky in some places, fronts the site. At either end of the promontory is a narrow sheltered cove; the one to the north

⁴² It was probably the village from which the attempted massacre of the Atahualpa was made in 1815. (See Howay, 1928 a.)

has a good landing, from which a trail leads to the village. Remains of several native houses are to be seen on the site, as well as a modern frame house. The site is used by people from Bella Bella for growing potatoes, and a good part of the surface has been cultivated at one time or another. On the little knoll at the north end of the promontory are several modern graves with marble headstones, in a fenced plot. Next to them are a pair of carved grave posts (ca. 15 feet apart) between which a gravehouse once stood. (See pl. 8, *g*.) A landslip, caused by the fall of a large tree over the bluff, has carried away the house. A creek running into the cove to the north

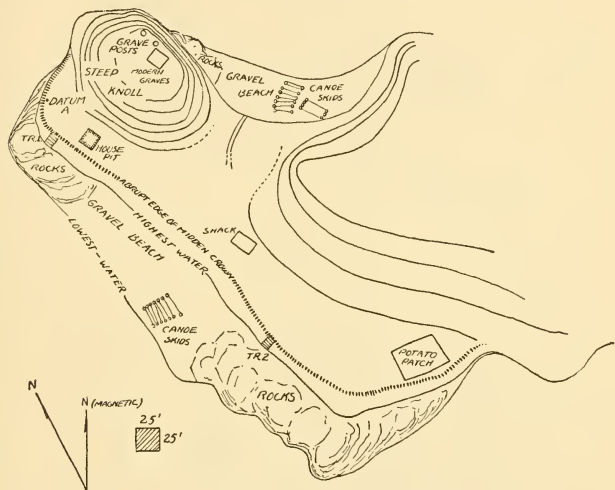


FIGURE 28.—Plan, Kilkitei Village.

provides water, for a well-defined trail leads from the site to the stream. Three canoe runways were seen on the beach, one directly in front of the site, two at the landing in the cove to the north. Unlike those previously seen, these have been kept in repair, poles about 8 feet long being laid across, 2 to 5 feet apart and weighted down with the rocks of the row of stones on either side. The arrangement is a most effective one, as we learned by sliding our skiff up the one in the cove.

The midden is long, straggling along the front of the promontory (see fig. 28). Its dimensions are: Length, 575 feet (along the top); average width, 50 feet. Formerly, it must have been both longer and wider, for the north end appears to have been considerably eroded, and the front has suffered from wave cutting. Height of

the midden varies from 5 to 8 feet about tide line. Some midden material, black dirt with shell fragments, was noted over the low saddle to the landing in the north cove, but whether this is but a thin mantle or deep deposit was not determined. The portions of

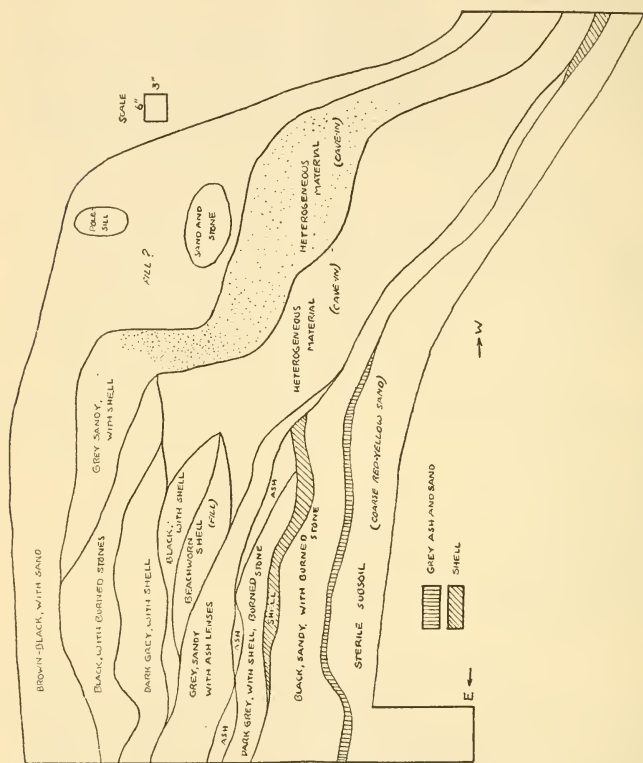


FIGURE 20.—Profile of south face of trench 1, Kilikitei Village.

the site which have not been cultivated support coarse grasses, nettles, and some salmonberry bushes.

Various stubs of house posts and miscellaneous timbers were noted, but none of the houses was measured, save for a rectangular pit, 19 feet by 22 feet, at the northern end. The pit is surrounded by a low bank, 1 to 2 feet high, and 3 or 4 feet wide. Pieces of boards, etc., were noted in the pit. Presumably, this is the remnant of a plank house with a central pit, like those so often described ethnographically, although this pit seems rather small for such a structure.

Two trenches were dug in from the outer face in apparently undisturbed portions of the site; trench 1, 12 by 4 feet, showed a maximum depth of deposit of 38 inches; trench 2, 9 by 4 feet, horizontally, had a maximum depth of 73 inches.

Trench 1 was complex in the stratigraphy of the undisturbed portions (fig. 29). The outer 5 to 6 feet proved to be mixed, owing to wave undercutting and caving-off of the midden face. The remainder of the deposit at this point consisted of numerous small lenses and strata of differentiated material—dirt, sand, shell, and ash.

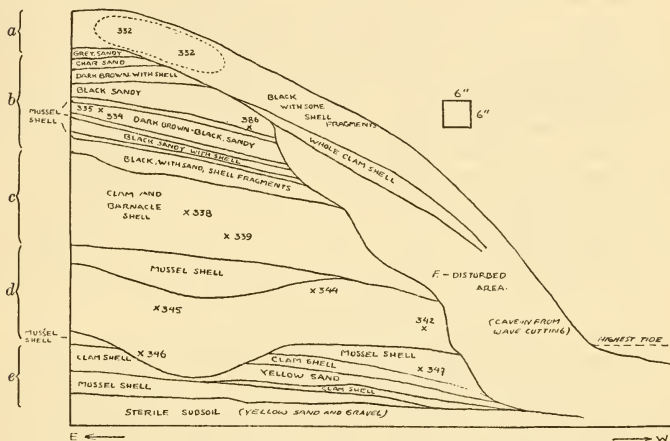


FIGURE 30.—Profile of south face of trench 2, Kilkitei Village.

Apparently the trench cut across the former point or corner of the midden, for the layers in general dipped both north and west. The trench cut through an historic house. In the upper layer a 6-inch pole with iron spikes lay horizontally along the edge of the midden. This may have been a sill similar to that of house 1 in Roscoe Inlet 1, though no clear evidence of artificial fill behind it could be noted. There were traces of fill at lower depths which, however, were not related to the same sort of house construction: a few bone fragments, chiefly in the black dirt with burnt stone layer (4 to 8 inches below the surface) lay at rather acute angles, suggesting loading of this material, and at 19 inches a 4.5-inch lens of beach-worn shell and gravel extended in a tongue to 1.7 feet of the head of the trench, widening rapidly beachward to cover the width of the trench.

A few other observations may be recorded here. In the northeast corner of the trench an ovoid pit, 1.4 feet by 1.8 feet, extended downward 15 inches from its point of origin at the bottom of the black

sandy surface layer. Its purpose could not be ascertained. In mid-trench in the 0- to 12-inch level and again at the base of the deposit (overlying the lowest midden layer) at the edge of the cave-in material, were a number of large unworked stones, 20 to 40 pounds in weight. There was no determinable purposeful arrangement of either of the two lots. The artifact yield of the trench was moderate, as compared to the Roscoe Inlet middens; the layers below 24 inches yielded little artifactual material or animal bone.

Trench 2, like the preceding, cut through a recent house on the surface, as indicated by stubs of house posts on either side. The outer edge of the deposit for about 5 feet from the present face has been disturbed by undercutting and sloughing of upper levels. The undisturbed portion presents a simpler stratigraphy by far than did trench 1. (See fig. 30.) The layers, again well differentiated, are for the most part thicker and apparently continuous, and slope gradually beachward. The original face of the midden must have been much farther out than is the present one. In the upper levels a series of horizons resembling the habitation levels of previously investigated sites were noted. They did not occur at this point below the 30-inch level. The artifact and animal bone yield of the lower levels (51 to 73 inches) was somewhat less than above that point. A pit penetrating the lower levels for 10 inches had its point of origin in dark brown dirt horizon at 65 inches.

In general, the Kilkitei Village midden paralleled those at Roscoe Inlet in structure, though it was considerably shallower. Again the latest houses were built out to the midden edge with sills to hold and level the floor, while the strata below dipped gradually beachward, indicating that houses of a different type were in vogue anciently.

TABLE 6.—*Artifacts from Kilkitei Village*

TRENCH						
No.	Description	Measurements			Depth	Remarks
		Length	Width	Thick-ness		
		<i>Inches</i>	<i>Inches</i>	<i>Inches</i>		
311	Stone celt (burned).....	5.93	1.62	0.68	6-12	Objects that cannot be definitely located as to depth, since they came from the disturbed ground at the outer (wavecut) portion of the trench.
310	Contact goods (glass fragment).....	-----	-----	-----	12	
317	Contact goods (glass, iron).....	-----	-----	-----	0-12	
318	Small cylindric bone object, 1 end pointed, 1 spatulate (hook barb?).....	1.35	1.12	-----	17	
323	Bone point, type BIA.....	2.98	.39	.21	32	
309	Contact goods (iron).....	-----	-----	-----	-----	
312	Small hand maul, type III.....	2.4	1.39	1.24	-----	
13	Hand maul, type IV.....	4.66	2.68	1.68	-----	
314	Hand maul, type III.....	3.38	1.65	1.07	-----	
315	Small pebble with abraded ends (hand maul, type IV?).....	2.28	1.19	1.08	-----	
222	Bone awl, tip missing, sawed, type 1d.....	2.7(+)	.41	.21	-----	
330	Stone celt, type IB.....	3.65	1.47	.73	-----	
331	Hand maul, type III.....	2.95	1.7	1.21	-----	
327	Worked clam shell fragment.....	-----	-----	-----	-----	
Total artifacts.....					11.....		Excluding contact goods, 5 indeterminate worked fragments.
Total yardage.....					4 to 5.....	Approximate.
Artifacts per yard.....					2.2 to 2.7.....	Excluding contact goods, indeterminables.

 TRENCH 2¹

No.	Description	Measurements			Level	Remarks
		Length	Width	Thick-ness		
		<i>Inches</i>	<i>Inches</i>	<i>Inches</i>		
332	Contact goods (iron, etc.).....	-----	-----	-----	a	See p. 60. Tip diameter, 0.12 in.
336	Socketed bone harpoon fragment.....	-----	-----	-----	b	
335	Hand drill (?) fragment (reduced cylindrical tip).....	-----	-----	-----	b	
334	Small blunt bone pin with expanded head (drill point?).....	-----	-----	-----	b	See p. 60.
338	Bone gouge (?) fragment, type IC (?) (shorter and narrower than Tlingit skin-scrapers of this type).....	3.92	-----	-----	c	Diameter of haft, 0.38. Width at tip, 0.22 in
339	Bone gouge tip fragment, type IA or IB.....	-----	0.66	0.27	c	
342	Bird bone awl (?) fragment hafted in another bone.....	-----	1.24	-----	d	
344	Flat, elliptical cross section bone pin (?) fragment, with tapering rounded butt.....	1.8(+)	.27	.11	d	
345	Bone point (?) tip fragment, type B-IB (?).....	1.2(+)	.41	.15	d	
346	Bone gouge tip fragment, type IB (?).....	3.2(+)	.58	.24	d	Width at tip, 0.22 in
347	Bone awl fragment, tip broken, type 1e (?).....	2.4(+)	.46	-----	e	
					Area	
348	Bone point, type BIA (?) , butt broken.....	2.6(+)	.34	.15	f	Objects recovered from the disturbed area (f).
351	Slate blade fragment, with beveled blade, unworked sides (saw?).....	-----	-----	.22	f	
Total artifacts.....					12.....	Excluding contact goods, 3 indeterminate worked fragments.
Total yardage.....					5.0 to 5.5.....	Approximate.
Artifacts per yard.....					2.1 to 2.4.....	

¹ Diameter.

² As in the case of material from Roscoe Inlet 1A, artifacts from trench 2 will be listed according to location levels. The various strata can be grouped according to type into 5 main levels, a-e, with an area f to designate the disturbed area at the outer end of the cut. (See profile, fig. 30.)

KYNUMPT HARBOR
(Can. 320)

A small site is situated on the north end of Campbell Island, on the narrow peninsula between Kynumpt Harbor and Norman Morrison Bay, fronting on the former body of water. The site is locally reputed to be the place in which Vancouver wintered and careened his vessels in 1793; however, Vancouver did not winter on the coast that year, nor can I identify the harbor from his account. The navigator entered Milbanke Sound by way of Return Channel, and probably never came near this place. A pit, 25 feet square, enclosed by low ridges of earth, marks the site of a native house.

According to native testimony, Kynumpt Harbor (qainám't is the Heiltsuk name) was a minor camp, used chiefly in late summer for berry-picking. The site is fairly well sheltered, and fronted by a long gravel beach. Its actual extent was difficult to ascertain owing to clearing and cultivation of a considerable portion of it. The length is in the neighborhood of 200 feet; from the beach the deposit sprawls back following the rising contour of the hillside for about 100 feet. The maximum depth of deposit noted was 69 inches.

Several test pits were dug, but all proved to be in disturbed ground; the present occupants of the site were unable to inform us of the full extent of cultivating and leveling that had been done by previous white settlers. Pit A had undisturbed deposit below 24 inches; the upper portion being fill to level off the slight terrace at that part of the midden. Below this point were well-defined horizons of charcoal, decomposed wood (similar to habitation levels seen elsewhere), and shell, resting on the clean gravel bottom (apparently an old beach). A small number of artifacts were recovered. Of some interest was the incidence of fragmentary human remains in the deposit. Those in the disturbed ground, of course, indicated only presence of skeletal material, perhaps burials or just fragments, in the site. A skull fragment (portion of parietal), however, occurred in the undisturbed black dirt with shell layer at a depth of 30 to 36 inches.

SCHOONER PASSAGE 1⁴

An important site in Wikeno (southernmost Heiltsuk) territory on lower River's Inlet was tested. The midden is located on the northwest end of a small island just off the entry to Schooner Passage, the northern entrance to Rivers Inlet. (See pl. 6, *c.*) According to ethnographic information, the site was an important

⁴The general locality is sketched in on B. A. 1927 and U. S. 5381, but no accurate charts of the Rivers Inlet region have as yet been published.

Wikeno center until about the contact period (accounts vary as to whether the date is to be put just before or just after). At that time a number of other Heiltsuk groups, chiefly at the instance of the Oyalit division, made a very successful raid, killing a great number of the inhabitants. The survivors fled to their kindred villages farther up the inlet. As I understand, the site was never actually occupied by the victors, who sought control of the rich fishing and sea-hunting grounds at the mouth of the inlet, and after a time the

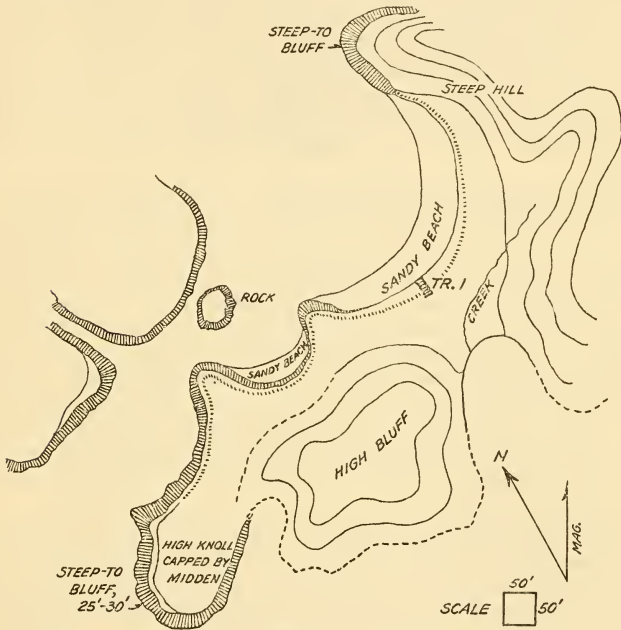


FIGURE 31.—Schooner Passage 1. (Sketch, scale approx.)

Wikeno repossessed the place, using it as a camp, however, not as a main winter village. It is from the incident of the raid that the site gets its local name: "Slaughter Illahee."⁴⁵ Another version of the story adds that quantities of human remains are to be found lying about at the site, which are interpreted as corroboration of the massacre. We found none on the surface, however. Those that have been found may have washed out of the deposit, which contains both burials and fragmentary skeletal material.

⁴⁵ "Illahee" is Chinook jargon for "land," "place," and is used at present on this part of the coast for the middens.

The midden follows an irregular shoreline around three coves and out on the western point of the island for 1,050 feet. (See fig. 31.) In width it averages at present about 60 feet, except in one place near the north end, where it cuts back across a narrow neck to a cove on the shore for 150 feet. The creek which cuts through this back portion of the midden has exposed a vertical section 48 to 60 inches high. External height of the deposit varies considerably, for the point of the island rises to the west, forming steeply bluffs 20 feet high. The extent of actual deposit varies from 10 to 17 or 18 feet, 15 feet probably being the average external height. Notwithstanding the excellent shelter afforded by the surrounding islands, a considerable portion of the midden front has been cut away. The deposit was much more extensive at one time. A dense thicket, mostly salmonberry and wild currant, covers the site. No traces of native houses were seen on the surface except for remnants of two or three very recent shacks.

A strip of the midden face was cleared on the largest cove, and a trench 4 feet wide was dug back to 9 feet from the edge of the bank. At the 72-inch level, the trench was narrowed to 3 feet and carried down to the seepage level at 191 inches. The outer end of the completed trench was 21 feet from the inner face. At 108 inches a block 5 feet long (from the inner face) was left, and the trench walls were brought in slightly so that at the bottom the cut was 2 feet wide. At this level seepage prevented further excavation, although depth tests put down 36 inches showed the midden material to continue (i. e., 227+ inches). The bottom of the trench, at 191 inches, was 47 inches below high-tide line. Several depth tests were dug at low tide down the beach in front of the site, in an effort to determine the extent of the midden material.⁴⁶

Inspection of the profile of the cut brings out a number of significant features in addition to the impressive depth of the deposit (see fig. 32). Perhaps most important of all was the occurrence of definite firepits containing charcoal, ash, and burnt stone (with the underlying shell, etc., definitely calcined, showing that burning had taken place in situ) definitely connected with dark horizons (of heavy organic content) similar to those tentatively identified as habitation levels at other sites. In addition to those which appear in the profile, a number of firepits were encountered in the trench, at the 28-inch, 60- to 72-inch, and 99-inch levels.⁴⁷

⁴⁶ The species of shells represented at this site in quantity were more varied than at other sites. In addition to *Saxidomus nuttalli* Conr., *Cardium clinocardium nuttalli* Conr., and a mussel (*Mytilus* sp.), quantities of a large barnacle (*Balanus* sp.), *Thais lamellosa* Gmelin, and *Thais canaliculata* Ducl. were common in some levels.

⁴⁷ The second in the series (at 60 to 72 inches) was a fireplace of considerable size, 5 feet across and about 20 inches deep. It was cut through, leaving a cross section in the south wall of the trench to be noted and photographed, but was lost in a cave-in.

In general trend, the strata appear more uneven than those at Roscoe Inlet 1A, indicating a different type of midden growth.

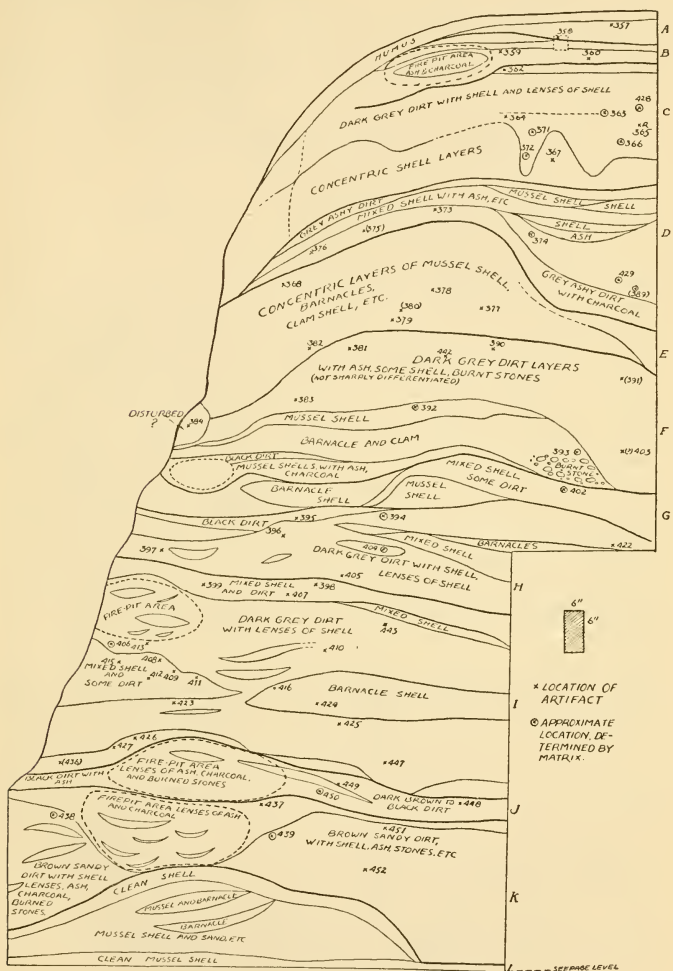


FIGURE 32.—Profile, Schooner Passage 1.

Erosion of the outer face, of course, makes interpretation of so small a section as the present one difficult, but the small well-defined peak in the lowest exposed section, succeeded by lenticular horizons

whose apices appear to have been beachward (at present eroded away), seems to have been followed by a period of retreat of the midden landward. This irregular growth brings up the problem of the mode of deposition of the lower levels. Tests on the beach showed, at a point of 40 feet from the datum, shell material to a depth of 38 inches, at which point the hole flooded. The upper 10 inches consisted of fine particles of white shell (apparently crushed clam and barnacle), overlying a thick bed of mussel shell with fragments of white shell. Both layers contained some ash, and in the lower layers bits of charcoal and burnt stones were noted. At 60 feet from the datum (by eye, 4 feet below the beach line), shell material was found to extend to a depth of 36+ inches (the seepage level.) At the surface was a layer of beach gravel, followed by a 9-inch layer of mussel shell with clam and/or barnacle fragments and considerable ash and charcoal. Inferior to this was a very compact layer of broken mussel shell 8 inches thick, which overlay a bed of mussel shell with ash (lighter in color than the preceding) which continued to the bottom of the hole. The presence in several of these apparent strata of materials of differing specific gravity (different types of shell, charcoal, ash, and burnt stone) argues against the differentiation being due to water-sorting. If this is correct, the midden formerly extended much farther outward, which means that there has been a sharp subsidence of the island. It must be noted, of course, that the possibility of subsidence does not demand the assumption of profound geologic changes over a long period of time, for the northern Pacific coast is notoriously unstable, numerous minor local subsidences and emergences being known (Dawson, 1877; 1880, p. 94 B ff.).

One burial and numerous isolated human bones were found in the trench. The burial, that of a child of 10 or 12, was found in a layer of mussel and barnacle shell with ash at a depth of 106 inches, 1.25 feet from the head of the trench, level *h* in the profile. The body was laid on the back, tightly flexed, with the head to the east. (See pl. 8, *f*.) No pit outline could be traced but the lay of the remains—the pelvis and feet slanted upward—indicated there had been a pit. An undisturbed mussel-shell horizon 92 to 97 inches (part of level *g*) lay above the burial, indicating the point of origin of the pit was below 97 inches. Finely divided black material covered the entire burial; no artifacts were found in association. The bones were somewhat crushed, but articulated. Fragmentary remains were found as follows: Skull fragment (sphenoid, adult) 89 to 94 inches; a tibia and several fragmentary vertebrae (juvenile), 123 to 126 inches; a group of bones consisting of a humerus, radius clavicle, two ribs, portion of a tibia, and a cervical vertebra (all juvenile) in an area of 1.8 feet by 1.5 feet at 131 to 133 inches.

The predominance of juvenile remains is of interest. None of the bones showed traces of gnawing, indicating that they were not from burials dug up by animals.⁴⁸

The artifact yield of the trench was moderate compared to that of the Roscoe Inlet middens, although there was a decrease in quantity in the lower level (in part, at least, owing to reduction of the horizontal area excavated).

TABLE 7.—Artifacts from Schooner Passage 1

No.	Description	Measurements			Level	Remarks
		Length	Width	Thick- ness		
		Inches	Inches	Inches		
357	Contact goods (glass bead).....				a	
358	Bone point, type BIA.....	1.66	0.46	0.19	a	
361	Contact goods (iron bucket bale).....					
359	Serpentine celt fragment, type ?.....				b	Probably level a, depth 0-12 inches.
360	Small flat elliptical cobble with abraded ends (type IV, hand maul).....	2.71	2.22	.92	b	
362	Serpentine celt fragment.....				c	
363	Composite harpoon barb, type II.....	2.54	.46	.28	c	
428	Small bone pin, one end pointed (?) (tip missing), one cut to steep bevel hook or rake point?.....	1.6	.24	.19	c	
364	Bone point, type BIA.....	3.28	.41	.35	c	
365	Hand maul, type IV (burned).....	5.54		1.9	e	
371	Longitudinally split bear (?) canine, with encircling groove at base for suspension.....				c	
372	Serpentine chip with rounded sharp ground tip (knife of reworked celt fragment?).....	3.09	.78	.16	c	
367	Bone awl, type 1e (?) tip missing.....	4.5(+)			e	
429	Bone point, type BIA.....	3.05	.45	.21	d	See p. 61.
374	Split whale-bone fragment, tapering with rounded edges.....	5.8(+)	1.9(+)	.5	d	
373	Bone awl fragment, type?.....				d	
376	Bone awl, type 2d.....	3.4	.43	.23	d	
368	Split bone awl (or gouge), tip missing, head unmodified except by original splitting (awl, type 1b).....				e	
378	Composite harpoon barb, type II (broken).....	1.8(+)	.43	.19	e	
377	Bone awl, type 3 (a head broken).....	5.5(+)			e	
379	Bone point, type B1B.....	2.1	.38	.19	e	
382	Bone point, type BIA (butt broken).....	2.8(+)	.55	.22	e	
384	Bipointed bone pin (gouge?).....	3.12	.28	.18		From disturbed area (or pit?).
381	Rounded cut whale-bone fragment.....			.6	f	
390	Elliptoidal cut whale-bone object.....	3.76	1.52	.5	f	
442	Whale-bone fragment with slanting beveled edge (chisel or wedge fragment?).....		1.38	.28	f	
383	Small bone gouge, type IA.....				f	Width at tip, 0.28.
403	Worked whale-bone fragments.....				f	
392	Ulna knife, with partly modified (square cut) head.....				f	
393	Whale-bone fragments.....				f	
402	Small (bird-) bone pin fragment with slender tapering point.....	1(+)	.09	.07	g	
394	Bone awl, type 1c.....	4.07	.78	.28	h	
395	Bone awl, fragment, sawed, type 1d.....		.54	.3	h	
422	Small cylindrical bone "pin" (1 end missing), rounded end (drill point?).....		1.11		h	
396	Sea mammal bone "bark splitter," fragment, type IIB.....	5.7(+)	.73	.58	h	
404	Small bone awl (?), unfinished (?), type 3a.....	2(+)	1.2		h	

¹ Diameter.

⁴⁸ Natives state that occasionally wolves and bears molested graves in former times. Modern graves are often covered with a layer of concrete, apparently to prevent this.

TABLE 7.—*Artifacts from Schooner Passage*¹—Continued

No.	Description	Measurements			Level	Remarks
		Length	Width	Thick-ness		
		<i>Inches</i>	<i>Inches</i>	<i>Inches</i>		
397	Cnt deer mandible.....				h	See p. 61.
405	Bone awl, type 1e.....	2.64			h	
398	Bone awl or gouge fragment, with whole head, square-cut.....				i	
399	Bone awl, sawed, type 1d.....	5.6	0.63	0.33	i	Occurred in same general area, but not definitely associated.
407	Bone awl, type 1b.....	2.64	.48	.27	i	
443	Split whale-bone fragment with cut and worn end.....				i	
406	Bone awl, type 1a1.....	3.37			i	
413	Bone point, type B1A.....	2.42	.39	.15	i	
408	Bone awl, type 1d.....	4.04	.44	.27	i	
410	Bone awl, type 1d.....	3.25	.62	.22	i	
415	Bone awl, type 1c1.....	2.08	.72	.53	i	
409	Perforated bird-claw pendant.....				i	
411	Ulna knife fragment.....				i	
412	Small pointed (bird-) bone object, stemmed, one end broken.....	.9(+)	.14	.06	i	
417	3 stone polishers.....				i	
416	Small bipointed bone.....	1.85	.16	.1	i	
423	Bone awl with sawed end, type 1d.....	3.14	.34	.27	i	
424	Bird bone with cut ends (drinking tube).....	3.1			i	
425	Sea mammal bone rod fragment with steeply beveled end.....		.36	.25	i	
426	Small pointed bone fragment, sawed.....	.9(+)	.12	.07	i	
448	Elliptical bone rod fragment with tapered end.....		.36	.23	j	
449	Bone awl, medial portion missing, type 1d.....		.62	.23	j	
450	Small cylindrical bone object, broken, square-cut end.....		1.1		j	
437	Bone awl, type 1c.....	4.06	.59	.34	k	
438	Small bipointed (? tips broken) bone object, rectangular cross-section.....	1.1(+)	.15	.12	k	
439	Sawed bone fragment with square-cut end (point butt?).....		.34	.16	k	
451	Bipointed bone object, elliptoidal cross-section.....	3.73	.33	.19	k	
452	Long slender bone awl fragment, probably type 1d (?).....	5.4(+)	.44	.22	k	
369	Bone fragment, probably type 1e.....				a or b	Objects that cannot be located with certainty.
387	Small pointed (bird-) bone object, 1 end missing.....	1.3()	.13	.06	d or e	
00	Ulna knife.....	3.2			e or d	
54	Thin elliptical cross section bone fragment with sharp parallel edges (point fragment)?.....		.45	.12	j or k	
459	Split piece of whale bone, sawed on one side, hacked on other.....					
421	} Stone polishers, from various depths.....					
434						
Total artifacts.....					69	Not including contact goods, and 10 indeterminate worked fragments. Approximate. Do.
Total yardage.....					22	
Artifacts per yard.....					3.1+	

¹ Diameter.

SITES LOCATED AND REPORTED

A number of other sites in Heiltsuk territory were inspected, in addition to those reported, which lack of time prevented our investigating.

Canoora River (U. S. 1584).—On the north bank of Canoora River, which runs into Graham Reach from the west, and nearly

opposite the mouth of Khutze Anchorage, a fishing station was located. The river empties into the channel at this point over a series of small falls and rapids, making an ideal fishing place. The site lies a short distance back from the salt water on a small terrace, occupying an area of about 250 feet by 100 feet, with an external height (including the terrace) of 8 to 9 feet. It is remarkable among sites located in the total absence of a beach. The shore line ends in a steep to rocky ledge, 8 to 10 feet above high-water line, that drops abruptly to a considerable depth. The place is still used occasionally.

McLoughlin Bay (Can. 320).—McLoughlin Bay on Campbell Island, about a mile and a half south of the modern Indian village of Bella Bella, was the site of the early Hudson's Bay post in the region (established 1833). (See pl. 6, *a*.) A midden, apparently not very deep, extends about 1,000 feet northward from the mouth of the creek, flowing into the bay, and rises landward, following the rising hillside, for about 100 feet. Salmonberry and wild currant bushes alternate with patches of bracken to form the cover. Several abandoned recent shacks stand on the site.

Raven Cove (Can. 320).—A peculiarly situated site was examined in Daven Cove, on the northwest end of Chatfield Island near the southern entrance of Return Channel. A small isolated knoll, steep to on all sides, is connected to the main island by a narrow low saddle. The southern side of the knoll drops off in a rocky bluff 50 feet to a slough between it and the island. The entire knoll is capped by depositional material. On the front north side are two terraces, the lower, containing three leveled areas about 20 to 30 feet each; the upper, one such an area, perhaps marking the position of former houses. Midden material covers an area of about 200 by 100 feet, though it was not ascertained how much of that is undisturbed deposit and how much slough-off from the top of the knoll. The cover consists of grasses and nettles. The beach is very rocky, making landing difficult, although the slough may serve for landing at certain stages of the tide. The site conforms to ethnographic descriptions of "refuge island" settlements.

Troup Rapids (Can. 320).—A fishing station was inspected in a cove on the northwest end of Cunningham Island just east of the rapids in Troup Passage. It lies on the south bank of a salmon stream flowing into the cove over a series of rapids—an ideal fishing place. The midden is roughly L-shaped, with a 90-foot front along the wide gravel beach, and an arm 60 feet long fronting on the river. The maximum width determination is 40 feet. Depth indicated a maximum depth of deposit of 26 inches. The midden consists mostly of sandy soil with occupational debris. A few poles, boards,

and scraps of iron on the surface prove recent use. Wild currant and salmonberry dominate in the cover; at the southern (lower) end a few young hemlock and spruce have encroached upon the site. A small tidal salmon weir of stones was noted on the beach.

Meadow Island (Can. 320).—Another small site is situated on the southern shore of Meadow Island, opposite Kliktsaatli Harbor on the northwest shore of Denny Island. The deposit (black sandy dirt with shell) is situated on a terrace above the moderately sloping gravel beach. The site is used for a Caucasian cemetery at present; it is possible, however, that this portion is but a segment of a more extensive midden around the point to the east. A series of very interesting petroglyphs occur nearby (see p. 110).

Sites were reported as occurring at the following places: Eastern shore of Roscoe Inlet, 4 or 5 miles from the mouth; School Bay (or Swede Bay), northwest end of Denny Island; Bella Bella Islet, off the northwest end of Denny Island (at present used as a cemetery); head of Kakushdish Harbor; a place on the western shore of Johnson Channel across from Walker Lake Cannery; (all the preceding shown on Can. 320); Jane Creek, northern end of Hunter Island; Lagoon Bay, opening off the east side of Fisher channel; Namu Lake (remarkable as one of the few sites inaccessible from salt water); Koye River, eastern shore of Fitzhugh Sound; Safe Pass vicinity, west of Campbell and Hunter Island; several large sites in Schooner Retreat, southwest of Schooner Passage on lower River's Inlet.

SOUTHERN KWAKIUTL TERRITORY

Lateness of the season and inclement weather made it impossible to survey the extensive territory of the Southern Kwakiutl divisions. The village site at the mouth of the Nimkish River was inspected, and several others reported. The Nimkish River site is Vancouver's "Cheslakee's village" (Vancouver, vol. 1, p. 345 ff., and plate facing 346). (See pl. 6, *e.*) It is situated on the west bank of the river, just across Broughton Strait from the modern town of Alert Bay. The deposit lies on two high terraces, the uppermost 45 to 50 feet above tide line, the other about 10 feet lower. The sketch of the village in Vancouver's account shows four rows of houses; apparently the two lower terraces have been eroded away. Subsoil outcrops along the bank between the upper and lower terraces. Depth of deposit was not ascertained. The upper trace measured 405 feet long by 95 feet wide. Remnants of one set of house posts are visible, and several depressions which may represent house pits. Tide and river have formed a fair beach in front of the site. Long coarse grasses, and mixed patches of wild rose, salmonberry, and wild currant bushes form the cover. A creek runs down either side.

Sites are reported at the following localities: Inside Nawhitti Bar, Goletas Channel; in Hardy Bay; Salmon Bay, upper Johnstone Strait; Topaze Harbor, off Sunderland Channel (midden reported to contain skeletal material); cove on northern shore Cordero Channel, just west of Green Point Rapids; cove on mainland between Dent Islands and Arran Rapids. There are numerous other sites in Southern Kwakiutl territory, of course, many of them being in use to the present.

MORTUARY CUSTOMS

Some information was obtained on mortuary practices in the region surveyed. The incidence and types of midden burials have been described in connection with the excavations—burials were encountered in deposits at Anian Island (also reported from the Marine Station site), and at Schooner Passage 1.⁴⁹ Dissociated skeletal remains were encountered at Anian Island (pit A), Qalahaituk, Kynumpt Harbor, and Schooner Passage. The significance of this latter feature is not clear, though the numerous occurrences suggest that more extensive operations may show it common to most sites. Several possible explanations suggest themselves, any or all of which may be valid. Some of the fragmentary material may represent midden burials disturbed in digging post holes, house pits, etc., as might happen in any region where the custom of midden burial obtained.⁵⁰ Ethnographic data suggest two other possibilities: We know that human bones were used in various ceremonials, particularly those of the Cannibal cycle, and human remains (though not always bones) were frequently used in witchcraft. (The Nootkan method of using human bones in individual hunting rituals and at shrines is denied by modern Tsimshian and Kwakuitl informants.) Evidences of working (cutting, perforating) of the bones which would definitely indicate one of the two last modes of use were not found, however.

In addition to midden burial other mortuary customs were known, as mentioned in the ethnographic sketch of areal culture—cremation, box burial in caves, in trees, and in gravehouses being reported from various districts. Lack of time prohibited search for ancient cemeteries in each of the localities investigated, but two Heiltsuk burial places were found. One was a fairly recently used rock shelter in Whisky Cove on the northwest shore of Denny Island. (See pl. 8, *b.*) The shelter is rather small. The area of the overhang is

⁴⁹ The skeletal material reported from Topaze Harbor was said to have consisted of complete skeletons (i. e., burials).

⁵⁰ de Laguna (1934, p. 50) so interprets fragmentary remains in the Cock's Inlet middens.

13.25 feet along the back edge, 8.6 feet deep at the north end, 5.4 feet deep at the south end. Height varied from 5.7 feet at the front to 5.25 feet at the rear of the north end, and 5.4 feet to 3.1 feet at the south end. Within this space are four boxes containing burials (two of kerfed and bent cedar, two of sawed lumber with nails), and the remnants of a fifth, cedar-bark matting, and a variety of grave goods (mostly Caucasian objects, so far as could be seen without disturbing them). Seven or eight split-cedar boards lay horizontally

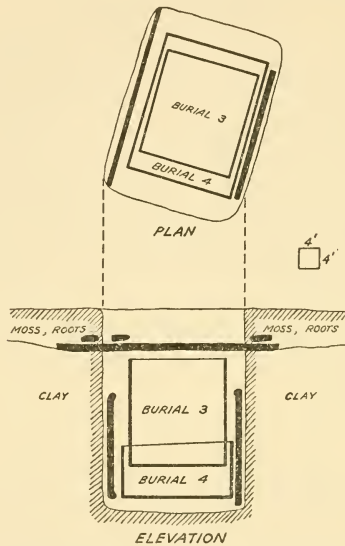


FIGURE 33.—Pit burials Nos. 3 and 4, Troup Rapids Cemetery.

against the boxes, partly sheltering them, but it was not possible to determine if these represented remnants of an attempt to close the front of the shelter entirely or not. None of the covers were in place on the boxes. A few bones had been dragged out of the boxes, probably by animals: most of a leg (femur, tibia, fibula, in articular relation) lay outside the enclosing boards. The interesting point was the position of the bones, in the undisturbed or apparently less disturbed boxes. Uniformly they formed a small heap or layer in the bottom of the box, due to slumping down and collapse of the body with decay of the tissues, the bodies having been crammed into the boxes diagonally, i. e., partially upright. The shelter and burial boxes were photographed, but not molested.

On the promotory at the southwest end of Troup Rapids a burial was found of a type not ethnographically reported. The burial was situated on a low clay terrace about 5 feet above high tideline, and 8 feet back from the bank. There was almost no surface indications, except for a very slight rise of the moss, and scant growth of bushes. The rotted and moss-covered stumps of three smallish trees on the bank in front of the burial may have been associated with it, that is, the trees may have been felled to expose the burial place. Under 6 to 7 inches of root-bound moss several boards and poles were found (fig. 33, and pl. 8, *c*), covering a pit in the clay 2.2 feet by 2.9 feet by 36 inches. Within this pit were two kerfed and bent-cedar boxes, one (1.6 feet by 1.75 feet by 21 inches) nested in the other (1.75 feet by 2.25 feet; original height of sides not determinable). (See pl. 8, *d*, *e*.) The lids of the boxes had been put edgewise and horizontally on the long sides of the pit. Both boxes were of native manufacture, with no nails, the bottoms rabbetted and doweled. Each contained a fragmentary burial. That of the uppermost box lacked (among the more obvious parts), the skull and mandible (though an incisor was found), one entire leg and foot, sacrum, and one innominate. The remains were those of an adult. No grave goods were present. In the lower box, only two femora, a tibia, a scapula, a few vertebrae, and one unidentified bone fragment were found. Some material which appeared to be partly decomposed textile underlay the bones in the bottom of the box. Below the lower box, a layer of gravel with bits of charcoal overlay dark gray dirt and stones. All the bones found were fairly sound, indicating decomposition would not account for the missing parts. Also the presence of a tooth in the upper box suggests skull and mandible had formerly been present in the box. Apparently the burials had been opened, a miscellaneous set of parts removed, after which the grave was carefully re-covered. It seems likely that the disturbance may be attributed to need for human bones for ceremonials, or for witchcraft.

OTHER ARCHEOLOGIC REMAINS

In addition to the middens and cemeteries described, a number of other types of remains were found. Some of these, the canoe-runways (represented by parallel rows of stones along the beach below tideline), and the stone tidal fish weirs, have been mentioned in the site descriptions. Neither are very elaborate structures, being simply low walls of sizeable beach boulders. As was noted in the description of Kilkitei Village, the canoe runways formerly had rows of poles lying across them, held in place by the uppermost rocks. Mr. Newcombe has shown me photographs of such runways at Alert Bay, in Southern Kwakiutl territory; Smith (1907, p. 432) refers to fea-

tures apparently of the same sort in the Georgia Straights region.

The fish weirs noted were all rather small and simple in form. Some very elaborate extensive weirs are reported in the (uncharted) channels and lagoons on the southern end of Hunter Island in Northern Kwakiutl territory.

Petroglyphs are not uncommon along the coast. We saw them at the following places: Near Robertson Point site (Venn Pass); near Kitquiata (off Douglas Channel); on Meadow Island. Others were reported in localities which we were not able to visit; there are probably many more. Several distinct styles were recognizable. In addition to the unusual intaglio human figure near Robertson point, Venn Passage,⁵¹ there are several small beach rocks with designs representing faces. The faces are indicated by a rectanguloid outline with rounded corners, with circles for eyes, etc., very similar in treatment to the petroglyphs along the beach near Kitkiata (see pl. 9, *c, d, e,*) although in some of the latter there was no facial outline indicated. At Meadow Island, in Northern Kwakuitl territory, a large number of petroglyphs were exposed when a large tree (with 75 ascertainable annual rings) blew over. Three styles are represented here: (1) relief carving, in which human faces, grease-dishes, etc., were carved in very realistic fashion on the rock; (2) intricate line incising, in which figures (the clearest is a Raven) were indicated in the manner of the very highly conventionalized intricate designs painted on boxes, etc., and (3) rather simple crude line incising, in which irregular geometric figures (nonrepresentative) were delineated. These last may possibly be the work of tyros at the art. A number of "coppers" are depicted among the carvings on the rock at Meadow Island. (See pl. 9, *f.*)

Pictographs seem to be less frequently met with. The only group we found was at Troup Rapids, in an almost inaccessible part of the bluff. The painting was done with a reddish-brown pigment, and consisted of several rows of large round dots, and with these, a few traces of conventionalized figures in classic (recent) Northwest Coast style.

RESULTS OF THE 1938 SURVEY

The survey of Coast Tsimshian and Kwakiutl territories resulted in the location of a considerable number of midden sites, 61 in all, as well as certain other types of archeologic remains. From the information collected on the sites certain conclusions as to the regional cultures may be derived. First of all, it is apparent that the habitation sites (middens) are nearly all at the water's edge, indicating that substantially the same subsistence and transportation patterns

⁵¹ Known locally and described by Smith as "the Man who fell from Heaven." Smith, 1936.

as those in vogue in the historic period have prevailed throughout the period represented by the accumulations. This interpretation is substantiated by the fact that the prime requisite of an important site was clearly a good beach where one might land at any stage of the tide; shelter from storms, defence, and the like, were far less important, although native legends speak often of refuge sites occupied in time of war. From the time of first occupancy of the sites, good landing places were sought, and ipso facto canoe navigation and all that it signifies in recent native life and economy was an integral part of the culture. The great number of sites in the area bears out the same interpretation. The survey located only a fraction of the total sites in the region surveyed. To account for so many middens we must assume that the dense population of the early historic period, which was functionally linked with the basic economy of the area, was no new condition but one of moderately long standing. The only alternative would be that the region has been occupied by a small population for an extremely long time, a view for which I can see little justification.

It should also be pointed out that the midden sites of the area are extremely well suited for the type of approach used in the survey—that of beginning with historic horizons and working back from the ethnically identifiable known cultures to the prehistoric horizons. At all but one of the sites tested (Anian Island) European goods were encountered in the upper levels, with a series of underlying horizons which carry well back into prehistoric times. The value of the direct historical approach has been discussed elsewhere, and I do not need to go into it, but I feel bound to point out that, as facile as it is to follow on the Northwest Coast, no future investigations in the area should slight it.

MATERIALS RECOVERED IN 1938

The most obvious fact concerning the artifactual material recovered by the 1938 survey is the varying quantitative yield of the sites. It seems possible to account for this in terms of type of site, although a certain allowance must be made for sampling error. Two of the three Tsimshian sites tested were camps rather than winter villages; the major site, Anian Island, yielded but little apparently because we missed the inhabited areas, i. e., the houses. Even there, pit A, near the midden crest, yielded moderately well, especially from the 60-inch level down. The trench on the back slope (trench 2), on the other hand, patently was not in pay dirt. The tests in Northern Kwakiutl winter sites, which yielded well, all by good fortune cut through habitation levels (floors). Camp sites, whether Tsimshian or Kwakiutl—Charles Point, Qalahaituk, Khutze Anchorage, and

Kynumt Harbor—are plainly poor digging. A reasonable explanation of this site difference is that natives did not take much beyond the immediately necessary tools and gear to camp sites and thus might be expected to leave less in the way of artifacts. Consequently, the increase in the horizontal area worked in a given time by no means increases the yield. On the basis of our exploratory work, therefore, it is possible to make certain recommendations in regard to choice of sites in the future. Winter village sites (identifiable both by ethnographic data, and size) should be selected, and if there are no surface indications of houses, the floor or habitation levels should be prospected for by small test pits before laying out the major trenches. The matter of yield in general may be brought up here appropriately: The moderate yield even at the better sites indicates that the middens require a fairly large investment of man-hours before really definitive results can be obtained. While there are well preserved artifactual and skeletal remains in the middens, one must be prepared to move a fairly large yardage of dirt to get them. Had our party consisted of six or eight men instead of two, or had we been able to treble or quadruple the length of our stay at each site, I am convinced that it would be possible to define the various components with some precision. Since the 1938 expedition was primarily exploratory, and not at all aimed at solving all the problems of Northwest Coast prehistory at a blow, it was felt preferable to cover as much ground as possible rather than to devote enough time at a single site to get a full sampling of artifact material.

The general impression given by the collections made is that, allowing for minor site differences and sampling error, there is little difference between the archeological cultures and those ethnographically recorded. The chief division appears to be between Tsimshian and Northern Kwakiutl, as will be emphasized in the discussion of horizontal distributions of traits. Vertically, at none of the sites was there any indication of early cultural components radically different from those of the uppermost, i. e., historic, levels. While the sampling is not at all adequate to permit us to state that no changes have occurred, it appears that the cultures of the earliest horizons explored were essentially coast cultures of the same general order as those of the historic period. Nonetheless, I see no reason for assuming that Northwest Coast culture has remained perfectly static all that time, particularly since series of cultures have appeared in regions both to north and south (in Alaska and central California). A few vertical distributions at Schooner Passage hint at change which future investigation may verify or negate: The occurrences of human remains only in levels *f* to *i*; objects (bone knives, awls) with square-cut heads; and increased quantity of whale bone, from level *f* downward.

Whether the simultaneous appearance of these traits is fortuitous and due to sampling error, or whether the items are among those indicative of cultural stratigraphy cannot be stated as yet. Two other suggestions of culture change may be pointed out from our present data. Whether they are veritable changes or only due to our limited sampling must be checked by more intensive investigations; whether they are to be reckoned of major or minor significance can be determined only after the areal archeologic complexes have been defined more precisely. The first concerns the absence of splitting adzes from the lower levels of the Anian Island tests. It will be recalled that a number of these objects have been found in the surface layers (p. 67). Their apparent absence in our tests may be due to sampling error, or it may mean that they are relatively late introductions.⁵² It is impossible to estimate at present to what extent the entire woodworking complex must have differed from that of the ethnographic horizon without this important tool; certain it is that some changes must have accompanied its introduction.

Perhaps of more import than the addition of a new tool to the woodworker's outfit is the change in house type suggested by the results of the tests in the Heiltsuk sites. The squarish house built out over the front of the midden slope, with a sill to level off the floor, apparently is the "Northern" type. Its recency in Kwakiutl territory is attested by the changes in midden structure close below the surface at the Roscoe Inlet middens and at Kilkitei. Erosion of the midden face at Schooner Pass has made it impossible to determine if the type was ever in use there even in late times, although the lower horizons clearly show it absent anciently.

All in all, while the present collections are insufficient for the certain determination of presence and extent of culture change over the period represented by the middens tested, they suggest that more extensive excavation will show some local and temporal differences, but that in the main the various components are intelligible as pertaining to the same phase and aspect as their latest (historic) manifestations.

AGE OF THE SITES

There is no key as yet to the temporal span represented by the midden deposits. The tremendous extent of some of the winter village sites suggests a fairly long period of accumulation, particularly in view of the fact that they were occupied only part of the year (the annual shifting of residence reported ethnographically may be predicated for early times as well because of the distance of these sites from salmon streams). A few possible approaches to the problem, however, are worth suggesting.

⁵² de Laguna (1934, p. 172) has suggested that the splitting adze may be a late element on the basis of its position in the Cook Inlet horizons and its limited distribution.

The first and most obvious line of attack is through dendrochronology. As yet I am not certain that woods from the area are suitable for this type of analysis—whether annual fluctuations in rainfall and/or sunlight are marked enough to be reflected consistently in the growth rings. If the wood can be used, it should be no great task to work out a master chart, beginning with standing trees and then beams and posts still in place above ground, as at the Roscoe Inlet middens, or at Qalahaituk. Wood from the various levels in the middens should make it possible to carry the ring count back, for not only charcoal but large pieces of wood occur in deposits, even at considerable depth. The wood comes out fairly sound, although on drying it tends to check and crack. Whether any of the present techniques for salvaging ancient wood would suffice to preserve these pieces, I am not certain, but a method could surely be devised.

The house middens at Qalahaituk suggest the possibility of working out a rough time scale of yardage-accumulation of midden material. That is, had one a dateable house deposit (or even one belonging entirely in the historic period, as presumably did house 1), it might be possible to calculate an approximate deposition rate. The numerous variant factors—length of time the site was used each year, size of the house group, seasonal differences in food habits, etc.—would render it impossible to reach more than an approximate figure, although the ethnographic data that could be acquired with reference to specific historic horizons should partly correct the error here. Even an estimate with a probable error of a couple of centuries would be useful in default of a more precise time gauge.

Another time indicator—although this one is even rougher than the preceding—is the type of cover on the sites. It will be recalled that at all but one place (Roscoe Inlet) the sites were devoid of the normal forest cover, supporting instead deciduous bushes, grasses, and the like. The apparent reason is that conifers require a slightly acid soil, whereas the shell content of the middens makes the deposit basic. The hemlock cover at Roscoe Inlet is less a contradiction than it appears, for there the trees grew chiefly on the fallen house timbers. Both Smith (1903, p. 137; 1907, pp. 331, 373, 399, 400) and Reagan (1917), however, report sites covered with normal forest. Seemingly, the only way to account for such sites is that sufficient time has elapsed since their abandonment to allow precipitation to leach out the calcium carbonates of the upper levels. Whether this leaching process proceeds at a rate near enough constant to make it possible to calculate the time represented by such strata is a matter for a soils expert or chemist, but other things being equal, a site which supports a stand of mixed conifers can safely be assumed to be considerably older—at least, last occupied at a much earlier date—than sites with distinctive

deciduous cover.⁵³ Although the 1938 survey found no such wooded middens, it cannot be assumed they do not occur in the regions surveyed. Obviously, such places would be difficult to find except by very careful combing of each district. Our party was looking for late sites with historic levels. The possibility that ancient hidden sites may occur should not be overlooked when the time comes to do intensive work in the area.

PREVIOUS INVESTIGATIONS

The prehistory of the Northwest Coast has been sadly neglected. What little work has been done north of the Columbia cannot be compared in point either of quantity or of scientific precision to the investigations made in recent years to the north and south. The meticulous researches of Jenness, Collins, and de Laguna in west and southwest Alaska, and of the University of California surveys in central California, have brought order and intelligibility to cultural melanges as confused and complex as that of the Northwest Coast. The prehistory of this vast intervening stretch has been left to the mercies of specimen collectors, who in their quest for beautiful jadeite celts and objets d'art have failed to unravel the first skein of culture history. The contrast with our ethnographic knowledge of the area is incredibly great. Thanks to the efforts of a series of scholars, early and late—one need cite only a few outstanding names of the many worthy ones: Krause, Dawson, Swanton, Boas—the recent culture of the region is about as well known as that of any comparable part of North America. The archeology is the least known, with the possible exception of that of the Mackenzie-Yukon, and northern Plateau hinterland.

One of the first to concern himself seriously with coast archeology was Hill-Tout (1895-96, pp. 103-113; 1900, pp. 492-494), who has recorded his impressions in a series of papers, although various earlier notices had been made of the occurrence of sites, and of "relics" picked up here and there in the region. (Eells, 1889; Wickersham, 1900; Dawson, 1877.)

Hill-Tout called attention to the occurrence of large middens at the mouth of the Fraser River, and described some of the artifactual and skeletal material they contained. He was the first to note the presence of two sharply differentiated physical types in the skeletal material from these sites. He also described some of the burial cairns of the vicinity.

⁵³ The possible significance of distinctive midden cover may be of value in many other regions. (See Hrdlička, 1937; Lillard, Heizer, and Fenenga, 1939, p. 65.) Of course, temporal interpretations of midden flora would have to be based in each instance on local factors of climate, drainage, soil chemistry, etc. In the New World, where exact dates are exceptional, all possible leads to chronology must be tested.

As a part of the American Museum of Natural History Jesup Expedition program, intensive archeological investigations were to be conducted on the Northwest Coast. Harlan I. Smith carried on this work for a number of years, chiefly in the Fraser-Columbia River drainages and the Straits of Georgia-Lower Puget Sound region. Later he extended his operations northward on the coasts, but, lacking time and facilities, these later explorations have borne less fruit than did his initial ones.

Smith has published full accounts of his work, in addition to a series of preliminary and summary papers.⁵⁴ His results can be briefed as follows: Although he dug in a considerable number of sites in the Georgia Straits-Puget Sound district, Smith's important localities were Eburne midden near the mouth of the Fraser, Port Hammond near the upper part of the Fraser Delta, and North Saanich on the southeastern end of Vancouver Island. Despite minor differences in material from these sites, Smith maintains that, by and large, they represent a single culture, and one which was but slightly different from that of the historically known Coast Salish occupants of the region. Nor is there, according to Smith, any evidence of culture change from bottom to top in any of his sites. Nonetheless, he did find evidence of population change. In the three sites mentioned above there were remains of two markedly different physical types. Boas' description (*in* Smith, 1903, p. 190) makes their difference apparent:

The one is characterized by a narrow head, the narrowness of which was emphasized by lateral pressure, with a marked median ridge on the forehead, narrow and high nose, and rather narrow face . . .; the other, by a wide head (produced partly by antero-posterior pressure) and a wide face.

The brachycephals appear to be essentially the same in type as the recent inhabitants of the region. Stratigraphically they are reported to be later. The sequence appears only at North Saanich, where only the dolichocephalic type occurred in the lower levels, the brachycephalic in the upper (Smith, 1907, p. 354). At Eburne, both types were found "in the same layers," and at Port Hammond only the brachycephalic type occurred (Smith, 1903, p. 187). The sequence I would suggest to be:

<i>Period</i>	<i>North Saanich</i>	<i>Eburne</i>	<i>Port Hammond</i>
	Brachycephals	-----	Brachycephals.
Transitional (?)	-----	Brachycephals and dolichocephals.	
Early	Dolichocephals.		

Smith's (1929, p. 4) interpretation is that the broad-headed type represents an intrusion from the interior, which, in view of recent linguistic distributions seems reasonable enough. The anomalous

⁵⁴ See bibliography.

thing is that he denies any correlated culture change, despite the fact that he sees the culture of the adjacent interior as quite distinct from that of the coast. Yet at the same time he feels himself forced into the position of postulating culture change, to account for occurrence of interior traits: Stone chipping, tubular stone pipes, decorative art (geometric representative) (Smith, 1903, p. 190). Smith's views on the way this came about are not altogether clear; he seems to link these elements (and there are others that can be pointed out as probably of interior derivation) with the migration of interior people to the coast (i. e., presumably the brachycephals), yet treats the traits as reflecting strong cultural influence from the interior (Smith, 1907, pp. 439, 441), by which one would understand something different from migration-borne introductions, and really more consistent with his denial of abrupt change. If these interior elements correlate perfectly with the intrusive physical type, it should have shown up at North Saanich—in other words, there should be stratigraphic change there, else the change must have transpired still earlier, and so cannot be associated with the brachycephalic intrusion. Smith recognizes the decrease of "interior influence"—another culture change, though perhaps slight—in the period between the occupancy of his sites and proto- or early historic times (Smith, 1907, p. 441). His plight is that of an archeologic Ancient Mariner: culture stratigraphy all about, but not a sequence could he find. It is to be regretted that neither his published accounts nor his catalogs give vertical distributions consistently enough to make it possible to re-examine his results. One can say only that there may or may not be determinable sequences in the Lower Fraser and other middens of the district; properly conducted excavations remain to be made.

Among the various archeologic remains of the Georgia Straits-Puget Sound region, Smith found numbers of burial cairns of stone, or stone and earth, some containing interments made in the flesh and others apparently cremated remains. These he has been unable to correlate with any particular time interval, especially since there are no ethnographic accounts describing such a mode of burial in the region (Smith and Fowke, 1900, see especially p. 55). I would suggest that some at least are relatively late, on the following grounds: Some are situated on top of middens (at North Saanich, Point Roberts, etc.) (Smith, 1907, pp. 331, 362); while we have no data on physical types found, it is reported that the same antero-posterior type of skull deformation prevalent in historic times in the district occurred among the cairn burials; and, finally, in at least one of them contact goods have been found (Smith, 1907, pp. 60, 63).⁵⁵

⁵⁵ AMNH No. 16.1/1922, "7 white porcelain beads found in skull of 99/1698 from cairn. North Saanich, British Columbia."

Smith's investigations in the adjacent interior regions, on the middle Fraser (1899, 1900) and in the Yakima Valley (1910), should be of significance in their relation to the archeology of the coast. He excavated burials at a number of sites in both districts. His interpretations are that the archeologic cultures were essentially the same as those of the ethnographically known natives of the region, and that, despite a few points of difference, the middle Fraser and Yakima Valley (middle Columbia) are closely akin (Smith, 1899, p. 161; 1900, pp. 432-433; 1910, p. 143 ff.). We have but little data for temporal placing of the materials; they would have to be examined with considerable care to determine whether or not there are but two components—a middle Fraser, and a Yakima Valley one—represented. By and large, the material in Smith's figures and plates suggests that these two would stand, and that, as Smith sees it, the two foci are related. The logical conclusion must be that both foci are to be placed as relatively late in time, the northern one slightly earlier, on the basis of scarcity of such elements as: Contact goods (unless some of the plentiful copper found should prove to be of European origin), and small triangular chipped points reminiscent of late Plains types.⁵⁶ Nonetheless, the presence in many poorly sheltered graves of such perishables as tule matting, woven textile of sagebrush, birchbark, deer and bird skins, and the like (Smith, 1899, p. 135, 159 ff.; 1900, pp. 434, 436-440), indicates that to none of the finds can much antiquity be attributed. The lateness of the Yakima Valley graves is attested by the frequency of contact goods, late Plains type points, and quantities of perishable materials of the same sort as those just mentioned.⁵⁷

All in all, it is probable that in comparing this material from the interior with that from coastal middens of Georgia Straits, Smith is crossing boundaries not only of space but of time. The floral cover of Smith's coast middens suggests a fairly long time since their abandonment (see p. 114) and they are said not to have yielded contact goods (although one of the burial cairns did; see p. 117).

Reagan (1917), in a brief sketch, refers to sequences of archeological components in northwestern Washington, beginning with historically occupied horizons (in which contact goods occur). He finds three components (including the historic) in Quileute territory, four in that of the Makak-Ozete, the third of which (counting from the historic downward) he links with the prehistoric Quileute, and several—it is not clear whether three or four—in the Clallam and

⁵⁶ Contact goods (aside from the doubtful copper) consisted of an iron awl found in grave 1, Government Hill site (Smith, 1900, p. 436); European textiles, grave at mouth of Niola Lake (Smith, 1900, p. 438) and (probably) the spiral end copper hair ornaments from the "main burial site" at Lytton (1899, p. 151). Small triangular points were found in graves 9 and 10 (these are the only ones figured) at Kamloops (Smith, 1900, p. 435 and fig. 332, *f-j*).

⁵⁷ Smith, 1910. See lists of grave lots 152-171 for contact goods; pl. 2 for point types.

Lummi-Nootsak region, one of the older again being linked with an early member of the Quileute series. The most serious difficulty from the point of view of intelligent criticism of his results is that Reagan gives no information at all as to the diagnostic elements of his various components, beyond saying that some—the historic and supposedly prehistoric Makak-Ozete horizon and the earliest—are distinguishable from the intervening “Quileute,” and the other components in Quileute territory, by an abundance of stone implements and decorated objects (Reagan, 1917, pp. 18–20). Lacking these pertinent data, there is no way to judge how he has arrived at his conclusions, nor to compare his horizons with those of adjacent regions.

Reagan also extends the distribution of the burial cairns to include northwest Washington.

Strong, Schenck, and Steward's (1930) excavations in the Dalles-Deschutes region represent the first systematically conducted researches on the Northwest Coast. Properly speaking, however, their sites were less coastal than interior in culture, though Wakemap mound and adjacent localities are in territory held in historic times by Chinookan groups, who, of course, are culturally coast people. The occurrence of semisubterranean earth lodges, cremation, mortars, metates, tubular stone pipes, etc., indicates to the authors an Interior Salishan culture, rather than one of coastal genre. Coastal trade connections, apparently up the Columbia, are indicated by presence of dentalia, whale-bone objects, etc. The upper levels at Wakemap and the cremation material seem to be referable to the protohistoric period, indicating that a cultural change had taken place sometime during this period but previous to the arrival of Lewis and Clark, who saw near the midden the “Echeloot” (Wishram) village of rectangular plank dwellings.

The components revealed in the Dalles-Deschutes region are not, however, identical to those of the Yakima Valley and Thompson River regions. Different types of mauls, absence of celts, absence of large carved stone objects, comparable to the zoomorphic “mortars” and “vessels with a seated human figure,” occurrence of small stone statuettes or figurines of northern Basin type, different point types, the “throwing stones” and notched pebble sinkers, all point to considerable local deviation from the culture configurations to the north. The problem of the relationships in time and space of these various cultures is a critical one, and must be solved before that of their bearing on coast cultures can be approached. It is to be hoped that presentation of Krieger's (1927, 1928, 1935) extensive operations further upstream, as yet only summarily recounted, will bring solution near.

TABLE 8.—*Distribution of northern Northwest Coast artifact types*

Artifacts	Tlingit	Haida	Tsimshian (general)	Anian Island	Charles Point	Qalahahtuk	Bella Coola	North Kwakiuti (general)	Roscoe Inlet 1	Roscoe Inlet 1A	Kynumpt Harbor	Kikitei	Schooner Pass.	South Kwakiuti	Strait of Georgia (general)	Comox	North Saanich	Port Hammond	Eburne
One piece barbed harpoons:																			
Type I			¹ 1														4		35
Type II	15	2	2																
Type III		6																	
Type IV	2	6																	
Type V	5			1											2			1	2
Total	22	14	3	1					(1)	(1)					3		4	1	37
Composite harpoons:																			
Type I									1				2	2	5	2	2	2	
Type II													1	1	10	2	2	1	
Total									1				2	3	6	12	4	3	
Fixed bone points:																			
Class A (barbed):																			
Type I	3	3	2											3	2		12	5	56
Type II	4	2												1				2	
Total	7	5	2											4	2	¹ 5	12	7	56
Class B (unbarbed):																			
Type 1A		2	14	2					1	6	1	1	2	6		6		11	12
Type 1B						1							1			1		1	
Type 1IA						3													
Type 1IB						1			2										
Total		2	14	2		5			4	6	1	1	3	6		7		12	12
Ground slate points:																			
Type I	18		5	1			1								72	3	6	4	23
Type 1A	2														1		3	1	
Type 1IA	3														14		1	1	2
Total	23		5	¹ 2			1								87	3	10	6	25
Chipped stone points:																			
NAa															7				
NAb1	2		1				1	¹ 1							48	2			9
NAb2															2				3
NBa															19			1	
NBa1															2				
NBb															5				
NE	16																		
SAA	1														18				
SAB															5				5
SBA																			2
SBe	3														2		1		7
SCb2															1				1
SCb3															1	1		1	2
Total	22	¹ 1	¹ 3				¹ 2	1							123	¹ 3	1	2	29
Splitting adzes:																			
Type I	2	1	1																
Type II	4		3																
Type III	3	1	4				1												
Type IV	3	2	4																
Type V	6	2	4				1												
Type VI	4		2																
Type VII	12																		
Total	¹ 35	¹ 11	¹ 25	¹ 2	¹ 2	¹ 1	2	¹ 1	¹ 1										

See footnotes at end of table.

TABLE 8.—*Distribution of northern Northwest Coast artifact types.*—Continued

Artifacts	Tlingit	Haida	Tsimshian (general)	Anian Island	Charles Point	Qalahaituk	Bella Coola	North Kwakiuti (general)	Roscoe Inlet 1	Roscoe Inlet 1A	Kynmpt Harbor	Kilkitel	Schooner Pass.	South Kwakiuti	Strait of Georgia (general)	Comox	North Saanich	Port Hammond	Eburne
Celts:																			
Type IA.....	5		3				1	1	1					1	3		1		
Type IB.....	7	3	1				11	2	1		1	2		4	20		4	4	14
Type IC.....	2		1				4								9			4	6
Type IIA.....	3														12	1	6	1	6
Type IIB.....	4														5		1		
Total.....	21	3	5	1			16	3	2		1	2	14	5	50	1	12	9	26
Hafted stone mauls:																			
Type I.....	2	5	3				19	7											
Type II.....		2					1												
Total.....	2	7	3				20	7											
Hand mauls:																			
Type IA.....	3						1				1								
Type IB.....	15		8				6							7				1	
Type IB1.....	20		7				1							2				6	7
Type IC1.....			2				12	1			1			2					
Type IC2.....		3	2				1	6						3					
Type II.....	5	X	6																
Type III.....							13	4	1		1	3							
Type IV.....			2	3	1		2		2		1	1		11				2	
Type V.....														1					
Total.....	43	3	27	3	1		36	11	3		4	4		26				6	10
Slate blades:																			
Type I.....	3				1										8	1	3	4	1
Type II.....															3	1	3	19	16
Type III.....	1		1																
Total.....	4		1		2				1						8	1	11	133	126

¹ Fragment(s) (type indeterminable) included.

² Specimen is from the Interior Tsimshian (Gitksan) (PMAAE 85849).

³ Provenience not certain.

⁴ Smith reports recovering 24 points at North Saanich and figures some NAa, NBa, SAa, SB6, and SC61 forms from the vicinity (Smith, 1907, p. 332, and fig. 118).

⁵ Specimen from Xaisla (Katamat).

⁶ Specimen type IB or IB1 fragments noted.

⁷ Five type IB or IB1 fragments noted.

TABLE 9.—Distribution of northern Northwest Coast artifact types (occurrence, not frequency)¹

Artifacts	Tlingit	Haida	Tsimshian (general)	Anian Island	Charles Point	Qalahaituk	Bella Coola	North Kwa-kuitl (general)	Roscoe Inlet 1	Roscoe Inlet I.A	Kynumpi Harbor	Kilkitel	Schooner Pass	South Kwa-kiutl	Strait of Georgia (general)	Comox	North Saanich	Port Hammond	Eburne
Bone awls:																			
Type 1a		X			X														
Type 1a1									X	X									
Type 1b											X								
Type 1c																			
Type 1c1																			
Type 1d																			
Type 1e		X	X	X		X				X					X	X	X	X	
Type 2d																			
Type 3a	X	X											X	X					
Type 3b		X											X	X					
Bone knives:																			
Type I	X	X	X				X			X			X						
Type II																			
Wedges:																			
Type I	X	X							X										X
Type II																			X
Bone or horn flakers																			
Horn celt hafts	X	X					X			X				X					X
Bone mallets																			X
Cedar-bark shredders:																			
Type I	X						X			X									
Type II		X	X				X	X						X					
Bone needles:																			
Type I							X			X?									X
Type II																			X
Stone "bark shredders"			X																
Pile drivers							X							X					
Biconical stones (grinders)	X		X		X														
Whetstones				X															X
Grooved sinkers			X				X												
Notched sinkers			X				X								X				
Perforated sinkers			X				X								X				
Spindle whorls:																			
Type I							X	X			X			X					
Type II																			
Stone vessels:																			
Type I-1		X	X											X					X
Type I-2															X				X
Type IIA1	X	X	X												X				X
Type IIB1		X	X												X				X
Type IIB2		X	X								X				X				X
Type IIC															X				X
Type III		X	X	X											X				X
Stone disks			X											X					X
Slate "pencils"		X	X											X	X				X
Cut bird-bone tubes			X												X				X
Bird-bone whistles			X												X				X
Shell beads:																			
Dentalia (archeol.)																			X
Clamshell disks		X																	X
Bone beads																			X
Cannel-coal beads																			X
Pendants:																			
Tooth or claw			X										X						X
Long bone rods	X	X	X				X												X
Flat carved bone	X	X	X																X
Copper crescents														X					X
Copper tubes														X					X
Deer or goat hoof	X	X	X											X					X
Stone	X	X	X																X
Labrets:																			
Elliptical	X	X					X												X
T-shaped	X	X																	X
Flat bone bands																			
Stone pipes															X				X
Massive stone carving															X				X
Geometric incised design	X	X	X												X				X
Stone chipping	X	X	X												X				X
Stone and bone sawed															X				X

¹ The artifacts in this table are those whose frequency, because of insufficient number of examples from the several parts of the area, is not worth recording at present. For this reason occurrences only are indicated by (X). Blanks mean no specimens seen; they are not necessarily true absences. In a number of cases, however, where fair samplings of material have been recovered, the blanks are probably significant.

DISTRIBUTIONS OF ELEMENTS ON THE NORTHERN
NORTHWEST COAST

If we turn now to an examination of the horizontal distributions of archeological elements in our area (see tables 8 and 9), without regard to possible vertical differences, some striking facts appear. There are, first of all, three fairly well set off divisions, which in the main fit geographic and linguistic groupings. It is possible that this seeming regularity may be in part a result of generalized information as to provenience of some of the museum material (i.e., "Tlingit," "Tsimshian," "Bella Coola," etc.) that further research may modify. At present, however, we may suggest a Northern aspect⁵⁸ which would include Tlingit-Haida-Tsimshian territories; a Milbanke-Queen Charlotte Sound aspect, coextensive with the Kwakiutl territory of historic times, and a Straits of Georgia-Puget Sound aspect, all belonging to the Northwest Coast pattern. (Our data are inadequate for placing the Bella Coola. Some strong affiliations of this group to the Northern aspect are indicated; in other respects they align with their Kwakiutl neighbors.) It is worth stressing that ethnographic materials indicate essentially the same divisions. The diagnostic features of these aspects can be summarized from the distribution charts:

THE NORTHERN ASPECT

One-piece barbed harpoons, Types II, III, and IV.

(Composite harpoons rare?)*

Class A fixed bone points.

Chipped stone points (not common).

Ground slate points.

Splitting adzes.

Hafted stone mauls.

Hand mauls, *type I.*

Slate blades, especially *type III.*

Few bone awl types (?).

Celts, types I and II, usually *jadeite.*

Stone "bark shredders."

Stone vessels, especially *type IIA1.*

Grooved, notched, perforated stones (?).

Cut bird-bone tubes.

Bird-bone whistles.

* Parentheses denote a significant absence. Italics denote relatively high frequency.

⁵⁸ The taxonomic designations proposed by McKern (1934) for the Middle West are used here in a modified sense, indicating cultural divisions of differing order. By "pattern" is meant a group of cultures sharing the same basic industries and general cultural orientation. In the present instance, the Northwest Coast "pattern" is synonymous with the Northwest Coast culture area. "Phases" are subdivisions of the pattern which are alike in the trend of their specializations of the basic trends of the pattern. I would group the coast cultures, from the Columbia north, into one phase, as opposed to those of coastal Oregon and northwest California (this is on the basis of comparative ethnography). Within the phases are the "aspects"—cultural-regional divisions of fairly high degree of similarity of culture.

Tooth and/or claw pendants.
Long rodlike bone pendants.
Deer and/or goat hoof pendants.
Elliptical, T-shaped labrets.
 Stone polishers.
 Biconical stones.
 Geometric incised designs (occasional).
 Midden burial, cave burial in boxes, cremation (ethnographic).

MILBANKE-QUEEN CHARLOTTE SOUND ASPECT

(One-piece barbed harpoons rare).
 Composite harpoons (probably common)
 (Class A fixed bone points rare).
Class B fixed bone points, highly specialized types.
 (Chipped stone points rare or absent).
 (Ground slate points rare).
 (Splitting adzes very rare).
 Hafted stone mauls(?).
 Hand mauls, *types III and IV.*
Considerable number of types of bone awls.
 Celts, *type I, chiefly of serpentine.*
 Stone pile drivers.
 Stone vessels, especially Bella Coola.
Stone disks, especially Bella Coola and southern Kwakiutl.
 Grooved stones.
 Spindle whorls, *type II.*
Long bone rods.
Bone mallets for shredding cypress bark.
Rock-shelter burial in boxes, midden burial, grave houses, box burial in trees
 (ethnographic).

STRAITS OF GEORGIA-PUDGET SOUND ASPECT

One-piece barbed harpoons, types I and IV.
Composite harpoons, type I (lacking at Eburne).
Class A fixed bone points
 Class B fixed bone points, *types IA-IB.*
Chipped stone points, [especially Eburne].
Ground slate points, all types.
 (No splitting adzes).
 (No hafted mauls).
Hand mauls, type I.
Slate blades, types I and II.
Variety of bone-awl types.
Celts, types I, and II, commonly of jadeite.
 Bone needles [Eburne only].
 Flaking tools.
Stone vessels, type IIC.
 Bone and horn wedges.
Horn celt hafts.
 Perforated stones.
 Cut bird-bone tubes [Eburne].
 Bird-bone whistles [Eburne].
 Spindle whorls, *type I.*
 Clamshell disk beads (not common).

Cannel-coal beads (not common).
 Tooth, claw pendants.
 Copper crescents.
 Labrets, T-shaped.
 Stone pipes (not common).
 Flat bone "browbands."
 Massive stone carving.
 Geometric incised designs.
 Midden burial, cairn burial, occasional cremation.

THE NORTHERN ASPECT

An interesting feature of materials from the Northern aspect, particularly from Tlingit territory is the lack of finish of many of the pieces, particularly adzes and celts. This would seem a minor point, were it not for the well-marked tendency on the Coast as a whole to finish all manufactures well and neatly. So pronounced is this habit that it seems basic to Northwest Coast material culture and technology. The rough-polled celts and adzes suggest again influences from the ruder culture of the interior, where expediency took precedence over pride in workmanship.

In addition to the interior affiliations of the Northern aspect, it has strong ties in another direction, namely, to the southwest Alaskan variants of Eskimo cultures. The parallels in our limited sampling from the Northern (Northwest Coast) division—numerous barbed harpoon points, splitting adzes, hafted mauls, mirrors, sawing in stone working, and the like (cf. de Laguna, 1934, *passim*)—are amply corroborated by the occurrences of Eskimoid barbed bone arrow points, Eskimoid harpoon-arrow points (type IV), and ethnographic parallels such as the Tlingit throwing-boards, lamps, and umiaks.⁵⁹ Which way the major trend of influence has moved cannot be known until we have the results of investigations on the northern part of the Coast to compare with de Laguna's meticulous studies in Cook Inlet.

That the two regions have exerted mutual influences at many points cannot be doubted. It may even be that each owes its distinctiveness—the Northern from other Northwest Coast phases, the southwest Alaskan phase from the rest of the Eskimo pattern—to contacts with the other. This is once more sheer speculation, yet it seems to help place transitional aspects whose relationships to each other are very nearly as strong as those binding each to its distinctive pattern.

THE MILBANKE-QUEEN CHARLOTTE SOUND ASPECT

With the few data that we have at our disposal, it is difficult to say much about this phase, other than to point out the apparent basis

⁵⁹ (Throwing boards) : Niblack, 1890, fig. 127; Dalton, 1897, p. 230. (Lamps) : Krause, 1885, p. 206. (Umiaks) : La Perouse, p. 35 and pl. facing p. 34; Olson, 1936, p. 214.

of its distinctiveness. I would stress that its outstanding characteristic, that which differentiates it from adjacent divisions, is the absence (or much smaller quantity) of elements traceable to interior influences. This is intelligible enough on the ethnographic time level. We know that the historic occupants of the region had very little contact with interior tribes (save for the Bella Coola, themselves presumably intrusive). In this regard the Kwakiutl differed from Tlingit and Tsimshian to the north, and from the Coast Salish in the south. What interior influences there are in Kwakiutl cultures must have come in a roundabout way. The apparent absence of abrupt cultural change during the time interval represented by the Heiltsuk deposits tested indicates that this isolation was a condition of at least moderately long standing. This hints that in the Milbanke-Queen Charlotte Sound phase may be seen the coastal culture of purest strain. Whether not only the purest but the oldest coast-dweller culture is to be found in this region, only further investigations can determine.

THE STRAITS OF GEORGIA-PUGET SOUND ASPECT

Perusing the foregoing lists of elements brings out the surprising fact of the numerous parallels between the Northern and the Straits of Georgia-Puget Sound divisions, emphasizing, though in a negative fashion, the distinctiveness of the central Milbanke-Queen Charlotte Sound aspect. Although classifications based on ethnographic data indicate three divisions similar to these proposed from archeologic distributions, this high similarity does not appear so clearly. If we analyze the group of parallel elements—one-piece barbed harpoons, class A fixed bone points, chipped stone points, ground stone points, hand mauls type I, celt types and materials (especially jadeite), stone vessels, cut bird-bone tubes and whistles, geometric incised designs, cremation—it becomes evident that we have to do with a series of traits most of which can safely be attributed to interior influences.⁶⁰ Many appear to be characteristic of the middle Fraser-Columbia River cultures, described by Smith, and Strong, Schenck, and Steward; others, like the one-piece barbed harpoons and ground slate blades, have a wide if not altogether regular distribution across the northern part of the continent. Lacking stratigraphic evidence, it is impossible to say whether in either or both of these coastal phases the interior elements form an old substratum or late overlay. The fact that the longest series of interior items of very restricted coastal distribution—bone mat needles, clamshell disk beads, tooth and claw pendants, flat bone "browbands," cut bird-bone tubes and whistles (numerous)—

⁶⁰ It is interesting in this connection to note that the only Type I harpoon point noted north of Georgia Straits is from the interior-dwelling Gitksan of the Upper Skeena (table 8, and note 2).

come chiefly from Eburne (which, on the basis of physical type occurrence, has been suggested as possibly transitional) or from Eburne and Port Hammond, suggests that for the Straits of Georgia phase at least the interior elements may overlie an older purely coastal component.

CULTURE OF THE FRASER-COLUMBIA BASINS

It becomes pertinent to bring up the question of relationship between the block of interior traits apparently intrusive on the coast in the Georgia Straits region, and the archeologically known cultures of the interior. Our data, unfortunately, are so indecisive as to the interrelations of the Fraser-Columbia cultures that the most that can be done at present is to point out certain possibilities. For the most part we have to do with late manifestations; apparently late prehistoric to full historic in the Thompson district, mostly historic in the Yakima Valley, and only in the Wakemap material do we have remains suggesting a temporal span even possibly comparable to that of the coastal middens.

Smith's conclusions as to the downstream trend of culture flow on the Fraser (whether by migration or diffusion is beside the point) appear logical enough. They raise the problem whether or not the coastal components at Eburne and Port Hammond, and their equivalents at other sites in the district, may not be derivatively interior in genre; in other words, whether these cultures might not be viewed as a specialized or modified aspect of a Plateau, or, perhaps better, Fraser-Columbia River phase. In default of conclusive evidence, this much may be offered: The massive stone carving appears so widely distributed in the interior as to suggest that region as its source, particularly when we include the "sculptured ape heads" from eastern Oregon as part of the complex (Terry, 1891). This stone carving is the oldest art style of which we have any knowledge on the coast; the many stylistic similarities to northern wood carving of the classic period have been pointed out (Boas *in* Smith, 1907). Its place of origin inevitably must be regarded as the fountainhead of everything we consider "Northwest Coast" in culture in the sense of the coast culture of historic times. The antiquity of this art in the Georgia Straits region is not known. Yet Smith reports no example of it from the lower levels of North Saanich—those containing only the older type dolichocephalic skeletal material, and by far the greatest quantity comes from Eburne, the site with mixed (transitional?) population and with the greatest number of interior traits. This at least hints at an interior provenience of the carving complex. While we have no evidence of this massive art at Wakemap, there are traces of a rather similar stone carving of small animal forms which

may well be related to the complex and which extends far down into the Great Basin.⁶¹ Also it is probably significant that the very distinctive bone carving tradition that seems to center on the middle Columbia⁶² is patently linked with the massive stone art, as indicated by the carved "ribs" and "vertebrae" on a number of the stone pieces. (See Smith, 1907, figs. 183*a*, 185*c*, 190, 196, 198.)

I can see nothing impossible about the suggestion advanced by Strong, Schenck, and Steward (1930, p. 145) that "in coast Salish [I would say simply 'Salish'] territory we may yet distinguish the early manifestations of the widespread northwest coast culture," if by that they mean Northwest Coast culture of the classic or ethnographically known period. Such an origin would involve the assumption that the center of dominance or focal center (in Kroeber's sense) shifted northward in the course of time. Such shifts have occurred more times than one. The dominant center of Anasazi culture has not been the San Juan for many years; and the rude Pima and Papago gaze uncomprehendingly at the cultural remains of their Hohokam predecessors.

On the other hand, it is entirely possible that the culture hearth lay to the north, in the Northern phase, where stimulus to new developments may have grown out of the welding of inland, Eskimoid, and coastal elements. Or, as a matter of fact, the Milbanke-Queen Charlotte Sound phase may have produced the new trends autochthonously. The truth of the matter can be determined only by careful and extensive investigations. My aim here, however, is not to soar off into the realms of speculation, but to point out a series of problems, and specifically at this point, the vital need for more rigidly controlled excavations in the Fraser-Columbia region as well as on the adjacent coast.

⁶¹ R. F. Heizer has recovered a series of surprisingly well done stone figurines, etc., in his surveys of the Humboldt Basin region in Nevada. They are quite similar to the objects figured by Strong *et al.* 1930, pl. 26, *c-d*, *h-i*, fig. 17, *b*, *c*, *e*, *f*.

⁶² See Smith, 1904; Steward, 1927; Strong, *et al.*, 1930, pl. 9, *a-j*, and pp. 142-143 (distribution).

BIBLIOGRAPHY

BARBEAU, CHARLES MARIUS

1929. Totem poles of the Gitksan, upper Skeena River. Nat. Mus. Canada, Bull. 61, Anthropol. ser.

BIRKET-SMITH, KAJ

1929. The Caribou Eskimos: Material and social life and their cultural position. Pt. 2, Analytical pt., Rep. 5th Thule Exped. 1921-1924, vol. 5.

BOAS, FRANZ

1897. The social organization and the secret societies of the Kwakiutl Indians. Ann. Rep. U. S. Nat. Mus., 1895, pp. 311-738.
 1901. A bronze figurine from British Columbia. Amer. Mus. Nat. Hist., Bull. 14, pp. 51-52.
 1905-1909. The Kwakiutl of Vancouver Islands, Mem. Amer. Mus. Nat. Hist., Anthropol. ser., vol. 8, pt. 2.
 1916. Tsimshian mythology. 31st Ann. Rep. Bur. Amer. Ethnol., 1909-1910, pp. 27-1037.

CAAMAÑO, JACINTO

1938. The journal of Jacinto Caamaño. Trans. by Capt. Harold Grenfell, R. N., ed. with an intro. and notes, by Henry R. Wagner and W. A. Newcombe. Brit. Colum. Hist. Quart., vol. 2, pp. 189-222, 265-301.

COBB, JOHN N.

1921. Pacific salmon fisheries. Bur. Fisheries, Doc. 902.

COLLINS, HENRY B., JR.

1937. Archeology of St. Lawrence Island, Alaska. Smithsonian Misc. Coll., vol. 96, No. 1.

CRESSMAN, LUTHER SHEELEIGH

1933. Contributions to the archaeology of Oregon; final report on the Gold Hill burial site. Univ. Oreg., Studies in Anthropol., vol. 1, bull. 1, pp. 1-24.

CULIN, STEWART

1907. Games of the North American Indians. 24th Ann. Rep. Bur. Amer. Ethnol., 1902-1903.

DAWSON, GEORGE MERCER

1877. Notes on some of the more recent changes in level. Canadian Naturalist, vol. 8, p. 241.
 1880. Report on the Queen Charlotte Islands. Geol. Surv. Canada, Rep. Prog. 1878-1879.

DEANS, JAMES

1891. Burial mounds of Vancouver Island. Amer. Antiquarian, vol. 13, pp. 171-172.
 1892. Antiquities of British Columbia. Amer. Antiquarian, vol. 14, pp. 41-44.

EELLS, M.

1889. The stone age of Oregon. Ann. Rep. Smithsonian Inst. 1886, pp. 283-295.

EMMONS, G. T.

1921. Slate mirrors of the Tsimshian. Indian Notes and Monogr., Misc. No. 15, Mus. Amer. Ind., Heye Foundation.

GARFIELD, VIOLA E.

1939. Tsimshian clan and society. Univ. Wash., Publ. Anthropol., vol. 7, No. 3, pp. 167-340.

GILLIN, JOHN

1938. A method of notation for the description and comparison of South-western pottery sherds by formula. Amer. Antiquity, vol. 4, pp. 22-29.

HILL-TOUT, CHARLES

1895. Later prehistoric man in British Columbia. Roy. Soc. Canada, Proc. and Trans., ser. 2, vol. 1, sec. 2, pp. 103-122.
1912. Neolithic man in British Columbia. Amer. Journ. Archaeol., 2nd ser., vol. 16, pp. 102-103.
1932. British Columbia ancestors of the Eskimo. Illus. London News, Jan. 16, pp. 90-92.

HOWAY, F. W.

1928. British Columbia, the making of a province. Toronto.
1928 a. The trading voyages of the Athahualpa. Pacific Northwest Quart., vol. 19, pp. 3-12.

HRDLIČKA, A.

1937. Man and plants in Alaska. Science, vol. 86, pp. 559-560.

KIDDER, ALFRED VINCENT

1932. The artifacts of Pecos. Phillips Acad., Pap. Southwest Exped. No. 6.

KOEPPE, C. E.

1931. The Canadian climate. Bloomington, Ill.

KRAUSE, A.

1885. Die Tlinkit Indianer. Jena.

KRIEGER, HERBERT W.

1927. Archeological investigations in the Columbia River Valley. Smithsonian Misc. Coll., vol. 78, No. 7, pp. 187-200.
1928. A prehistoric pit house village site on the Columbia River at Wahluke, Grant County, Wash. U. S. Nat. Mus. Proc., vol. 73, art. 11, pp. 1-29.
1935. Salvaging early cultural remains in the Valley of the Lower Columbia River. Explor. and Field work of the Smithsonian Inst. in 1934. pp. 53-56.

KROEBER, A. L.

1934. Native American population. Amer. Anthropol., n. s., vol. 36, No. 1, pp. 1-25.

LAGUNA, FEDERICA DE

1934. The archaeology of Cook Inlet, Alaska. Univ. Mus., Univ. Pa. Press.

LA PÉROUSE, JEAN FRANÇOIS DE GALAUP, COMTE DE

1937. Le Voyage de La Pérouse sur les côtes de l'Alaska et de la Californie (1786) avec une introduction et des notes par Gilbert Chinard. Inst. Français de Washington, cahier X. The Johns Hopkins Press, Baltimore.

LILLARD, J. B., Heizer, R. F., and Fenenga, F.

1939. An introduction to the archeology of Central California. Sacramento Junior Coll., Dept. Anthropol., Bull. 2.

LOUD, LLEWELLYN L.

1918. Ethnogeography and archaeology of Wiyot territory. Univ. Calif., Publ. Amer. Archaeol. and Ethnol., vol. 14, No. 3, pp. 221-436.

NIBLACK, ALBERT P.

1890. The Coast Indians of Southern Alaska and Northern British Columbia. Ann. Rep. U. S. Nat. Mus. 1888, pp. 225-386.

OLSON, RONALD L.

1936. Some trading customs of the Chilkat Tlingit. Essays in honor of A. L. Kroeber, pp. 211-214. Berkeley.

REAGAN, ALBERT B.

1917. Archaeological notes on Western Washington and adjacent British Columbia. Calif. Acad. Sci., Proc., 4th ser., vol. 7, No. 1, pp. 1-31.

RICKARD, T. A.

1939. The use of iron and copper by the Indians of British Columbia. Brit. Colum. Hist. Quart., vol. 3, pp. 25-50.

SCHUMACHER, PAUL

1877. Researches in the Kjökkenmöddings and graves of a former population of the Coast of Oregon. Bull. U. S. Geol. and Geogr. Surv. Terr., vol. 3, No. 1, pp. 27-35.

SMITH, HARLAN I.

1899. Archaeology of Lytton, British Columbia. Mem. Amer. Mus. Nat. Hist., vol. 1, pt. 3, pp. 129-161.
1900. Archaeology of the Thompson River region. Mem. Amer. Mus. Nat. Hist., vol. 2, pt. 6, pp. 401-442.
1903. Shell-heaps of the lower Fraser River. Mem. Amer. Mus. Nat. Hist., vol. 3, pt. 4.
1904. Costumed human figure from Tampico, Washington. Amer. Mus. Nat. Hist., Bull. 20, pp. 195-203.
1906. Noteworthy archaeological specimens from Lower Columbia Valley. Amer. Anthrop., n. s., vol. 8, pp. 298-307.
1907. Archaeology of the Gulf of Georgia and Puget Sound. Mem. Amer. Mus. Nat. Hist., vol. 4, pt. 6, pp. 303-441.
1910. The archaeology of the Yakima Valley. Amer. Mus. Nat. Hist., Anthropol. Pap. 6, pt. 1, pp. 1-171.
1913. Archaeology; the archaeological collection from the southern interior of British Columbia. Mus. Geol. Surv. Canada, Ottawa.
1924. Trephined aboriginal skulls from British Columbia and Washington. Amer. Journ. Phys. Anthrop., vol. 7, pp. 447-452.
1936. The man petroglyph, near Prince Rupert. Essays in honor of A. L. Kroeber, pp. 309-311. Berkeley.

SMITH, H. I., and FOWKE, GERARD

1901. Cairns of British Columbia and Washington. Mem. Amer. Mus. Nat. Hist., vol. 4, pt. 2, pp. 55-75.

STEWART, JULIAN H.

1927. A new type of carving from the Columbia Valley. Amer. Anthrop., n. s., vol. 29, pp. 255-266.

STRONG, WILLIAM DUNCAN

1935. An introduction to Nebraska archeology. Smithsonian Misc. Coll., vol. 93, No. 10.

STRONG, W. D., SCHENCK, W. E., and STEWARD, J. H.

1930. Archaeology of the Dalles-Deschutes region. Univ. Calif. Publ. Amer. Archaeol. and Ethnol., vol. 29, No. 1, pp. 1-154.

SUDWORTH, GEORGE B.

1908. Forest trees of the Pacific Slope. U. S. Dept. Agric., Forest Service.

TERRY, JAMES

1891. Sculptured anthropoid ape heads found in or near the valley of the John Day River, a tributary of the Columbia river, Oregon. New York.

TIDAL AND CURRENT SURVEY DIVISION

1938. Tide tables of the Pacific Coast of Canada for 1938. Dept. Mines and Res. Ottawa.

VANCOUVER, GEORGE

1798. Voyage of discovery. 3 vols. London.

WAGNER, HENRY RAUP

1937. The cartography of the northwest coast of America to the year 1800. 2 vols. Berkeley.

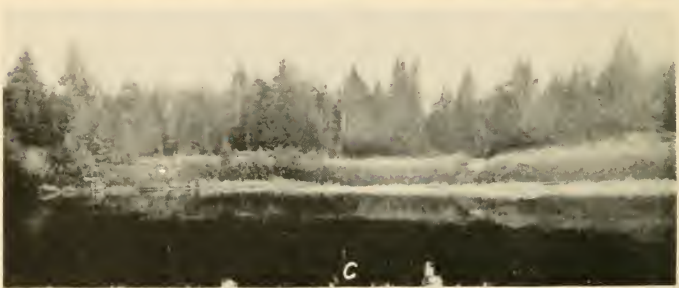
WICKERSHAM, JAMES

1900. Some relics of the Stone Age from Puget Sound. Amer. Antiquarian, vol. 22, pp. 141-149.



TSIMSHIAN SITES.

a, Anian Island midden. *b*, Robertson Point midden. *c*, Wilgiapshi Island midden.
d, Shawatlan Falls camp site. *e*, Qalahaituk midden.



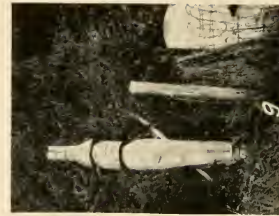
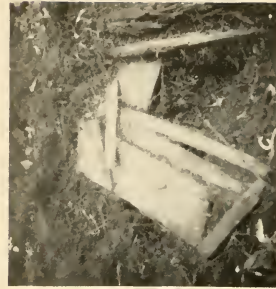
KWAKIUTL SITES.

a, McLoughlin Bay site. *b*, Kilkitei Village midden. *c*, Schooner Passage 1 midden.
d, Roscoe Islet 1A, front slope of midden. *e*, Nimkish River 1 site.



HOUSE REMAINS.

- a*, Rock-filled fire pit, Charles Point midden. *b*, Flooring, northwest corner House 1, Qalahaituk, from west. *c*, Standing house post, House 6, Qalahaituk. *d*, Cross trench through House 1, Qalahaituk, showing supporting timbers, from center of house. *e*, Southwest cornerpost, end of beam, and front sill, House 1, Roscoe Inlet 1. Note hemlock growing over end of beam. *f*, Southeast cornerpost and beam, House 1, Roscoe Inlet 1. Note hemlock which has split post from top, and others growing on beam.



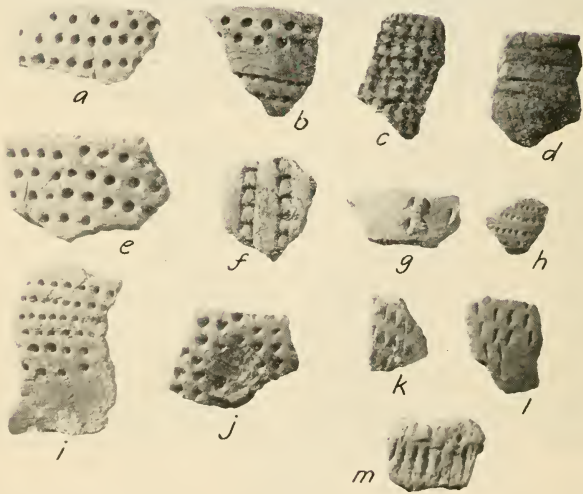
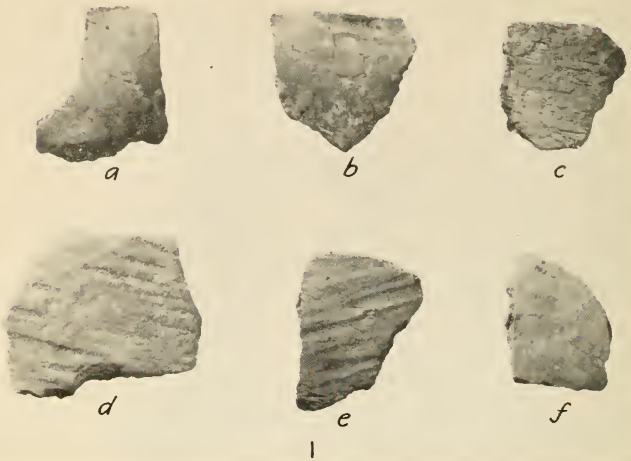
BURIALS.

a, Burial 1, Anian Island. *b*, Whisky Cove burial cave. *c*, Boards covering burial pit, moss humus removed. Troup Pass. *d*, Box containing Burial 3, board covering removed. Troup Pass. *e*, Box containing Burial 4 (box of Burial 3 removed). Troup Pass. *f*, Burial 6. Schooner Passage 1. *g*, Gravepost, near Kilkitei Village.



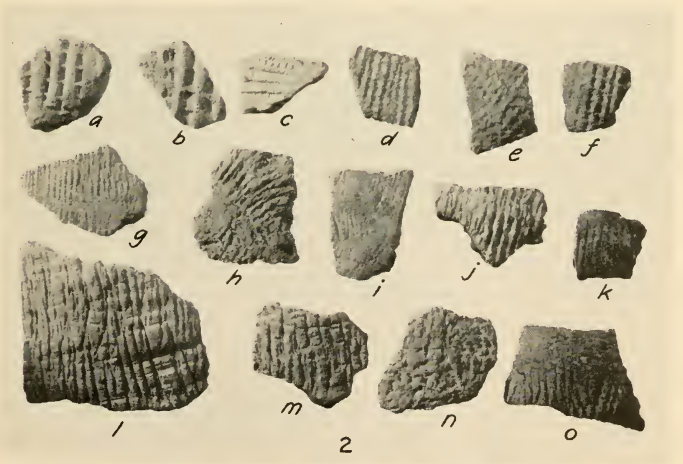
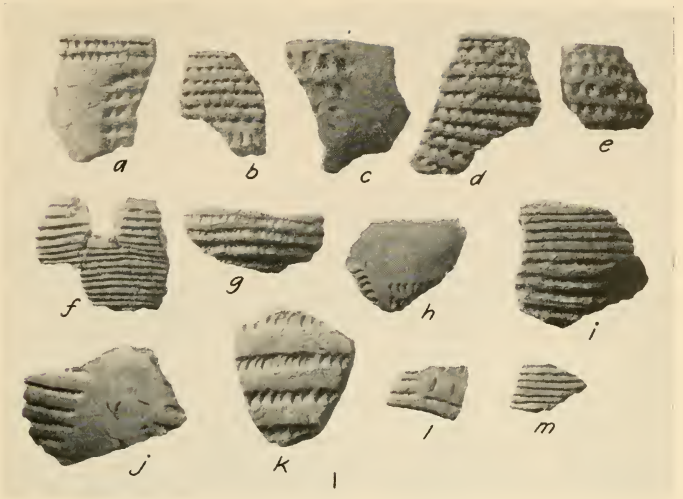
MISCELLANEOUS VIEWS.

a, Rows of rocks for canoe skids, east of Charles Point. *b*, Midden face cleared for trench, Schooner Passage 1. *c*, Petroglyphs, Kitkiata Inlet. *d*, Petroglyphs, Kitkiata Inlet. *e*, Petroglyph, Kitkiata Inlet. *f*, Petroglyphs, Meadow Island.



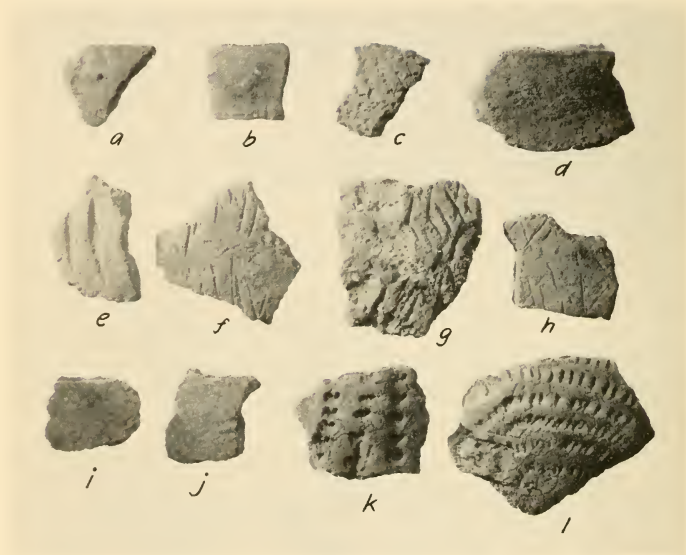
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STALLINGS PLAIN AND PUNCTATE SHERDS FROM THE CHESTER FIELD SITE.
(For explanation, see page 168.)



STALLINGS PUNCTATE SHERDS FROM THE CHESTER FIELD SITE AND CHECK STAMPED AND CORD MARKED SHERDS FROM THE LAKE PLANTATION.

(For explanation, see p. 168)



MISCELLANEOUS SHERDS FROM LAKE PLANTATION AND TWO STALLINGS PUNCTATE SHERDS FROM JONES ISLAND.

(For explanation, see p. 168)

APPENDIX A

EARLY VERTEBRATE FAUNA OF THE BRITISH COLUMBIA COAST

By EDNA M. FISHER

The excavation of several kitchen-middens along the coast of British Columbia resulted in the collection of numerous animal bones of interest. The animal bones are on the whole in a poor state of preservation; several are cracked and most of them are broken; flaking and peeling are a common condition; and in many instances all important diagnostic characteristics are gone. Owing to this fragmentary condition, it has been impossible to do more than assign some of the bones to certain major vertebrate groups. For example, there are many bones that surely belong to three genera of the Order Artiodactyla, but only a relatively few of these that can be definitely identified as those of either mountain sheep, mountain goat, or Columbian black-tailed deer.

I wish to thank Edward W. Gifford, Curator of the Anthropology Museum, Berkeley, Calif., for his most cordial cooperation in this study. Also I wish to thank Dr. Alden H. Miller, Director of the Museum of Vertebrate Zoology, University of California, for the privilege of consulting the osteological collections under his care.

The identification of the bones brought no unusual finds. No form was found that might not have been expected to occur within the regions studied. In fact, fewer species occurred in the sampling of the kitchen-middens than had been expected; particularly is this true for the water birds. Evidently, the elements recovered represent some of the species that were hunted by the early inhabitants for food and as a source of clothing. The comparatively small number of elements is most surprising. Why so few? Was it due to lack of equipment for capturing the game, the small number of natives living at a given site at any one time, or the lack of interest in large amounts of animal food as compared to plant materials? Surely it could not be that there was a scarcity of animals in the region.

In a study of the vertebrate remains no species was found that was not already known from this province. Food and clothing needs

would account for the largest number of bones, but hardly for the many bones of the domestic dog that were found. For details concerning the age of the different levels and of the respective deposits, the reader will be referred to Dr. Drucker's discussion of the subject (pp. 113-114). No attempt has been made here to evaluate the various areas of relationships.

The different localities from which animal bones were saved have been grouped in this study into five major areas. These major areas are as follows: 1, Anian Island (a winter village), Kaien Island, and Charles Point (the northernmost group included here); 2, Qalahaituk; 3, Khutze Anchorage; 4, Roscoe Inlet and Kilkitei Village (both winter habitations), and Kynumpt Harbor; 5, Schooner Passage (a winter village site). By winter village is meant the permanent home site that supposedly was occupied throughout the year with, perhaps, short trips inland at certain seasons.

The following is the list of genera and species which it has been possible to identify to date among the vertebrate remains in this collection:

MAMMALIA

<i>Euarctos americanus perniger</i> (Allen)-----	Black bear.
<i>Euarctos americanus pugnax</i> (Swarth)-----	Black bear.
<i>Euarctos americanus altifrontalis</i> (Elliot)-----	Northwestern black bear.
<i>Ursus</i> or <i>Euarctos</i> -----	Bear, genus and species unknown.
<i>Canis familiaris</i> Linnaeus-----	Domestic dog.
<i>Lutra canadensis periclyzomae</i> Elliot-----	Alaskan river otter.
<i>Enhydra lutris lutris</i> (Linnaeus)-----	Northern sea otter.
<i>Zalophus</i> -----	Sea lion, species unknown.
<i>Eumetopias jubata</i> (Schreber)-----	Steller sea lion.
<i>Callorhinus alascanus</i> Jordan and Clark-----	Pribilof fur seal.
<i>Phoca richardii richardii</i> (Gray)-----	Harbor, or hair seal.
<i>Erethizon epixanthum nigrescens</i> Allen-----	Poreupine.
<i>Castor canadensis canadensis</i> Kuhl-----	Beaver.
<i>Odocoileus hemionus columbianus</i> (Richardson)---	Columbian black-tailed deer.
<i>Ovis canadensis</i> ¹ -----	Mountain sheep, subspecies unknown.
<i>Oreamnus americanus columbiae</i> Hollister-----	Mountain goat.
<i>Phocaena phocoena</i> (Linnaeus)-----	Harbor porpoise.

AVES

<i>Gavia immer immer</i> (Brünnich)-----	Common loon.
<i>Gavia arctica pacifica</i> (Lawrence)-----	Pacific loon.

¹ It is doubtful at present if the bones of mountain sheep are included in the collection. There is insufficient comparative material available at present to settle this point. The bones herein listed as mountain sheep are probably those of mountain goat. So far as is known there is no record of the natural occurrence of mountain sheep in the area studied, either in paleontological or recent times. It is known that the coast Indians did trade with the inland tribes for the horns of the sheep and there is the possibility that some Indian might have traded for more of a sheep than just the horns.

<i>Cygnus columbianus</i> (Ord)-----	Whistling swan, probable species.
<i>Branta canadensis canadensis</i> (Linnaeus)-----	Canada goose.
<i>Branta canadensis occidentalis</i> (Baird)-----	White-cheeked goose, probable subspecies.
<i>Dafila acuta tzitzihoa</i> (Vieillot)-----	American pintail duck.
<i>Glaucionetta islandica</i> (Gmelin)-----	Barrow golden-eye duck.
<i>Oidemia americana</i> Swainson-----	American scoter, probable species.
Accipitriidae-----	Genera and species unknown.
<i>Haliaeetus leucocephalus alascanus</i> Townsend-----	Northern bald eagle.
<i>Buteo swainsoni</i> Bonaparte-----	Swainson's hawk.
<i>Larus glaucescens</i> Naumann-----	Glaucous-winged gull.
<i>Larus occidentalis occidentalis</i> Audubon-----	Northwestern gull.
<i>Larus heermanni</i> Cassin-----	Heermann's gull.
<i>Larus canus brachyrhynchus</i> Richardson-----	Short-billed gull.
<i>Cerorhinca monocerata</i> (Pallas)-----	Rhinoceros auklet.

AMPHIBIA

Several leg bones of a medium-sized species of amphibian. Owing to the complete lack of comparative material, it is quite impossible to further identify them. The size of the bones suggests that they might be from either a frog or toad.

PISCES

Again owing to insufficient comparative material, accurate identification is not possible at this time. That the bones are from salmon and bass seems a logical suggestion since these two types of fish are relatively numerous along this northern coast line.

The bones of the domestic dog were found at almost all levels explored on the Anian Island site. Of all the sites excavated Anian Island contained the most dog bones. In some of the other mounds there were a few dog bones but these were usually at lower levels only. Artiodactyls (deer, sheep, or goats) were present in most deposits and at most levels. The deer bones identified certainly outnumbered by far the bones of sheep or goats. There were numerous bones or fragments that were from some carnivore but due to the condition of the bones it has been impossible to date to identify them further. This group may contain pieces of fox or wolf since these forms probably did occur within the region. There are numerous bones too fragmentary to even hazard a guess as to the kind of animal to which they belonged.

The number of species represented and the number of elements, that is, the volume of material recovered, is small in the northern deposits and increases with each area studied to the south. Perhaps more extensive collections from the northern areas would change the picture somewhat.

The following is a list of the species for the various areas beginning in the north and continuing to the southward:

ANIAN ISLAND

Mammalia:

- Odocoileus hemionus columbianus* (Richardson) Columbia black-tailed deer.
son).
Erethizon epixanthum nigrescens Allen Porcupine.
Canis familiaris Linnaeus Domestic dog.
Canidae Genera and species unknown.
Enhydra lutris lutris (Linnaeus) Northern sea otter.

Aves:

- Dafla acuta tzitzihoa* (Vieillot) American pintail duck.
Oidemia americana Swainson American scoter, species uncertain.

KAIEN ISLAND

Mammalia:

- Canis familiaris* Linnaeus Domestic dog.

CHARLES POINT

Mammalia:

- Odocoileus hemionus columbianus* (Richardson) Columbia black-tailed deer.
son).
Canidae Genera and species unknown.
Enhydra lutris lutris (Linnaeus) Northern sea otter.
Canis familiaris Linnaeus Domestic dog.
Phoca richardii richardii (Gray) Harbor seal.

Aves:

- Branta canadensis canadensis* (Linnaeus) Canada goose.
Cerorhinca monocerata (Pallas) Rhinoceros auklet.

QALAHAITUK

Mammalia:

- Odocoileus hemionus columbianus* (Richardson) Columbia black-tailed deer.
son).
Enhydra lutris lutris (Linnaeus) Northern sea otter.
Euarctos americanus perniger (Allen) Black bear.
Euarctos americanus Black bear, subspecies unknown.
Phoca richardii richardii (Gray) Harbor seal.
Oreamnus americanus] *columbiae* Hollister Mountain goat.
Callorhinus alascanus Jordan and Clark Pribilof fur seal, probable species.

Aves:

- Haliaeetus leucocephalus alascanus* Townsend Northern bald eagle.

KHUTZE ANCHORAGE

Mammalia:

- Odocoileus hemionus columbianus* (Richardson) Columbia black-tailed deer.
son).
Canis familiaris Linnaeus Domestic dog.
Ovis canadensis Mountain sheep, subspecies unknown.

KHUTZE ANCHORAGE—Continued

Mammalia—Continued.

<i>Phoca richardii richardii</i> (Gray).....	Harbor seal.
<i>Erethizon epixanthum nigrescens</i> Allen.....	Porcupine.
<i>Castor canadensis canadensis</i> Kuhl.....	Beaver.
<i>Euarctos americanus</i>	Black bear, subspecies unknown.
<i>Enhydra lutris lutris</i> (Linnaeus).....	Northern sea otter.
<i>Ovis canadensis</i>	Mountain sheep, probably.

Aves:

<i>Branta canadensis canadensis</i> (Linnaeus).....	Canada goose.
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ROSCOE INLET

Mammalia:

<i>Phocaena phocoena</i> (Linnaeus).....	Harbor porpoise.
<i>Odocoileus hemionus columbianus</i> (Richardson).	Columbian black-tailed deer.
<i>Erethizon epixanthum nigrescens</i> Allen.....	Porcupine.
<i>Enhydra lutris lutris</i> (Linnaeus).....	Northern sea otter.
<i>Phoca richardii richardii</i> (Gray).....	Harbor seal.
<i>Lutra canadensis periclyzomae</i> Elliot.....	Alaskan river otter.
<i>Lutra canadensis</i>	River otter, subspecies unknown.
<i>Castor canadensis canadensis</i> Kuhl.....	Beaver.
<i>Zalophus</i>	Sea lion, species unknown.

KYNUMPT HARBOR

Mammalia:

<i>Phocaena phocoena</i> (Linnaeus).....	Harbor porpoise.
<i>Enhydra lutris lutris</i> (Linnaeus).....	Northern sea otter.
<i>Odocoileus hemionus columbianus</i> (Richardson).	Columbian black-tailed deer.
<i>Zalophus</i>	Sea lion, species unknown.

KILKITEI VILLAGE

Mammalia:

<i>Phocaena phocoena</i> (Linnaeus).....	Harbor porpoise.
<i>Odocoileus hemionus columbianus</i> (Richardson).	Columbian black-tailed deer.
<i>Euarctos americanus pugnax</i> (Swarth).....	Black bear.
<i>Enhydra lutris lutris</i> (Linnaeus).....	Northern sea otter.
<i>Erethizon epixanthum nigrescens</i> Allen.....	Porcupine.
<i>Castor canadensis canadensis</i> Kuhl.....	Beaver.
<i>Zalophus</i>	Sea lion, species unknown.
<i>Phoca richardii richardii</i> (Gray).....	Harbor seal.

Aves:

<i>Larus heermanni</i> Cassin.....	Heermann's gull.
Accipitridae.....	Hawks, eagles, genera unknown.
<i>Cygnus columbianus</i> (Ord.).....	Whistling swan, probably.

SCHOONER PASSAGE 1

Mammalia:

<i>Odocoileus hemionus columbianus</i> (Richardson)-----	Columbian black-tailed deer.
<i>Zalophus</i> -----	Sea lion, species unknown.
<i>Phoca richardii richardii</i> (Gray)-----	Harbor seal.
<i>Enhydra lutris lutris</i> (Linnaeus)-----	Northern sea otter.
<i>Phocaena phocoena</i> (Linnaeus)-----	Harbor porpoise.
<i>Eumetopias jubata</i> (Schreber)-----	Steller's sea lion.
<i>Canis familiaris</i> Linnaeus-----	Domestic dog.
<i>Erethizon epixanthum nigrescens</i> Allen-----	Porcupine.

Aves:

<i>Dafla acuta tzitzihoa</i> (Vieillot)-----	American pintail duck.
<i>Branta canadensis canadensis</i> (Linnaeus)-----	Canada goose.
<i>Gavia immer immer</i> (Brünnich)-----	Common loon.
<i>Larus occidentalis occidentalis</i> Audubon-----	Northwestern gull.
<i>Haliaeetus leucocephalus alascanus</i> Townsend-----	Northern bald eagle.
<i>Larus glaucescens</i> Naumann-----	Glaucous-winged gull.
<i>Glaucionetta islandica</i> (Gmelin)-----	Barrow golden-eye duck.
<i>Buteo swainsoni</i> Bonaparte-----	Swainson's hawk.
<i>Gavia arctica pacifica</i> (Lawrence)-----	Pacific loon.

Amphibia----- Probably frog or toad.

The following tables give the vertical distribution of the various animal remains. These tables are also arranged from the north group to the south. Blank spaces indicate that no animal bones were found at those levels. All measurements of depth are given in inches unless otherwise stated.

TABLE 2.—Vertical distribution of animal remains, area 2

Depth in inches	Qalahaituk		
	House 9: Trench 1	House 9: Trench 2	¹ House 1: X.
0-12....	Sea otter, deer.....	Carnivore, bear?, deer?.....	Bird, seal, deerlike, deer. House 1: A
12-24....	Fish, salmon?, sea otter, harbor seal, deerlike, deer, mountain goat.	Fish, bird, Northern bald eagle, mammal, sea otter, seal, harbor seal, bear, mountain goat.	Carnivore, sea otter, deer? House 1: B Deer? House 1: C
24-36....	Mammal, sea otter, harbor seal, deer?	.....	Carnivore, bear, deer? House 1: D
36+....	Mammal, carnivore?, sea otter, harbor seal.	.....	Fish, carnivore, sea otter, bear? (<i>Euarctos americanus perniger</i>), deer?

¹ Explanation of levels: X, Trench in house 1; house 1: A, northwest quadrangle, in sand below floor poles; house 1: B, northwest quadrangle, sand horizon with large shell fragments; house 1: C, northwest quadrangle, sand with charcoal lenses; and, house 1: D, sandy muck with wood chips.

TABLE 3.—Vertical distribution of animal remains, area 3

Depth in inches	Klutze Anchorage			
	Pit A	Pit B	Pit C	Pit D
0-6....	Fish, harbor seal, dog, deer?, mountain sheep, deer.	Mammal, carnivore, sea otter, bear, seal, porcupine, deer, mountain sheep?	Bird, Canada goose, mammal, harbor seal, porcupine, deer, mountain sheep?	Bird, sea otter, seal, harbor seal, porcupine, deer.
6-12....	Fish, harbor seal, mountain sheep?	Mammal, carnivore, seal, porcupine, deer?	.....	.....
6-16....	.....	.....	Bird, Canada goose, carnivore, sea otter, beaver, deer.	.....
12-18....	.....	Fish, mammal, deer.....	.....	.....
16-26....	.....	.....	Deer.....	.....
18-24....	.....	.....	.....	Deer?.
26....	.....	.....	Bear (<i>Euarctos americanus perniger</i>), deer.	.....

TABLE 5.—*Vertical distribution of animal remains, area 5*

SCHOONER PASSAGE 1

Depth in inches	Trench 1	Depth in inches	Trench 1
Surface....	Seal?, bear?, deer.	72-84.....	Fish (salmon?), bird, deer.
<i>Inches</i>		84-96.....	Fish (salmon), birds, mammals.
0-12.....	Fish (salmon?), American pintail duck, Canada goose, common loon, mammal, seal, harbor seal, sea lion, sea otter, Canidae (dog?), bear?, deer?	96-108....	Fish (salmon?), Swainson's hawk.
12-24.....	Fish (salmon?), western gull, northern bald eagle, mammal, sea otter, seal?, deer.	84-128....	Fish, salmon?, birds, sea otter, deer?
24-36.....	Fish, salmon?, Canada goose, Barrow golden-eye duck, mammal, sea otter, seal, carnivore, Steller's sea lion, deer, porpoise.	130-138....	Fish, bird, deer?
36-48.....	Fish (salmon), birds, mammals, seal, deer.	136-150....	Fish, salmon, Amphibia, birds, American pintail duck, northern bald eagle, mammals, sea otter, dog, porcupine, deer.
48-60.....	Fish, salmon, American pintail duck, mammals, sea otter, deer.	150-162..	Fish (salmon?), carnivore, dog, deer.
60-72.....	Fish, salmon?, glaucous-winged gull, Barrow golden-eye duck, mammal sea otter, seal?, deer.	162-174..	Birds, Pacific loon, mammals, porpoise.
		108-120....	Fish (salmon), American pintail duck.
		120-132....	Fish (salmon?), birds, American pintail duck.
		132-144..	Fish (salmon?), birds.
		144-156....	Fish, bird, sea otter, porcupine, deer.
		156+.....	Fish, salmon, birds, glaucous-winged gull.