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Prehistory of the Alaska Peninsula as Seen from the Hot Springs Site, Port Moller

HIROAKI OKADA
Hokkaido University

Fieldwork at Port Moller, in 1977, provides new information on the placement of this site in Alaska Peninsula prehistory. Seven cultural strata overlie sterile soil on the highland portion of the site. Only the three uppermost of these cultural layers (overlying sand) are present in the lowland portion of the site. Eight of 11 new radiocarbon dates confirm previous evidence suggesting an extensive second millennium B.C. occupation. Two other occupations dating around 600 and 1400 years ago have also been defined. Three periods of occupation have been identified. The oldest (1500-1000 B.C.) is characterized by large grooved and perforated stone weights, flaked stemmed points, and possibly round to oval houses. The middle period (middle of the first millennium A.D.) witnesses the appearance of small notched pebbles, flaked points of triangular outline, toggle harpoon heads, ornaments, and ivory carvings of humans and animals. Houses are rectangular. A late period (second millennium A.D.) with rather poor organic preservation resembles the middle period in inventory. There is considerable stability in the organic artifact inventory throughout the occupation. Closest cultural connections are seen with stone inventories dated around the beginning of the Christian era at Chignik on the Alaska Peninsula and with the long sequence at Chaluka on Umnak Island in the Aleutians, but some connections are also seen with Norton-related cultures at the base of the Alaska Peninsula, reinforcing previous conclusions that the geographic position of the Port Moller site exposed it to ideas emanating from several different directions. Virtual absence of ground slate artifacts and total absence of pottery at the site render detailed comparison with the last several thousand years of Pacific Eskimo prehistory difficult. [Prehistory, Alaska Peninsula, Aleut, Eskimo]

Three seasons of fieldwork were conducted at the Hot Springs site, Port Moller, by H. Okada, A. Okada, Y. Kotani and others in 1972, 1974 and 1977, with financial support provided by a grant from the Japan Ministry of Education for overseas field research projects. E. M. Weyer's work in 1928 first revealed the presence of an extensive village site and associated shell middens which proved to be highly productive of artifacts as well as of organic materials. Further information has been brought to light by the private collecting activities of Doris and Frank Cowden and by a joint survey by the University of Wisconsin and Meiji University team, in 1960.

These previous investigations, however, did not provide enough data to clarify the cultural affinities of the Hot Springs site. The C-14 dates obtained from the bottom layers of the giant T-shaped trench in 1960, of about 730 B. C. and 1010 B. C. (Table 1), provide only a stop date backward in time [WORKMAN 1966: 145].

The results of our fieldwork in 1972, 1974 and 1977 have been briefly summarized in preliminary reports [OKADA and OKADA 1974a, 1974b; OKADA *et al.* 1976; OKADA, OKADA and KOTANI 1979]. While we succeeded in acquiring a substantial body of new data in order to re-examine the previous work at Port Moller, we still find difficulty in determining the placement of the Hot Springs site in the prehistory of the Alaska Peninsula. However, in the course of our most recent fieldwork on the site in 1977, we discovered some clues to modify and reinforce our picture of this huge settlement site. In this paper I will try to establish successive cultural periods in the light of our new discoveries, although much has yet to be done to classify the numerous stone and bone artifacts into a well defined chronological sequence.

The first and foremost clue to the establishment of cultural periods at Port Moller lies in the pattern of occupation. As has been repeatedly described, the Hot Springs Village site is divided into two parts, a highland portion and a lowland portion. These are demarcated by the hot-water stream that crosses most of the site area (Fig. 1). By examining the soil profile on the highland portion, particularly in Trench T, seven different layers can be distinguished. They are, from top to bottom: Layer I, dark brown humus; Layer II, consolidated cockle shells; Layer III, some broken mussel shells in dark brown soil; Layers IV and V, broken mussel shells, fish bones and charcoal intermingled with brown soil; and Layers VI and VII, broken mussel and sea urchin shells in loamy soil. Below Layer VII lies a layer of sterile loam. On the lowland portion of the site, which overlies a sand spit, soil is replaced by sand, and no loam layer has been recognized at the base of the previously excavated trenches. The layers of mussel shells, fish bones and charcoal of Layers III through VII are not recognizable here either. Apparently the lowland area was uninhabitable at the time when these layers were deposited on the highland portion of the site. A series of environmental changes, including the silting-in of Moller Bay, might well have occurred sometime after the formation of Layer III. This phenomenon is discussed by Kotani in this volume, in relation to the excavated faunal remains.

From what has been stated above, there seems to be no reason to question why all five of the early C-14 dates, ranging from c. 730 B. C. to 3040 B. C., were derived from the highland area. The 3040 B. C. date seems too early, and should be omitted since the layers in Trench J are not too well defined, reducing the range of the four remaining dates to c. 730 B. C. to 1570 B. C. The only date we have from the lowland area is c. 580 A. D. for the floor of Lowland House No. 1. The Highland Houses No. 1 and No. 2 are dated c. 1340 A. D. and 510 A. D. respectively.

Eleven new radiocarbon dates from Trenches T-7, U-7 and Q-7, all of which were collected from the highland area in 1977, were recently released by the Isotope Institute of Japan (Table 1). These new dates are in good alignment with each other and do not contradict the stratigraphic data, except for three marked with asterisks.

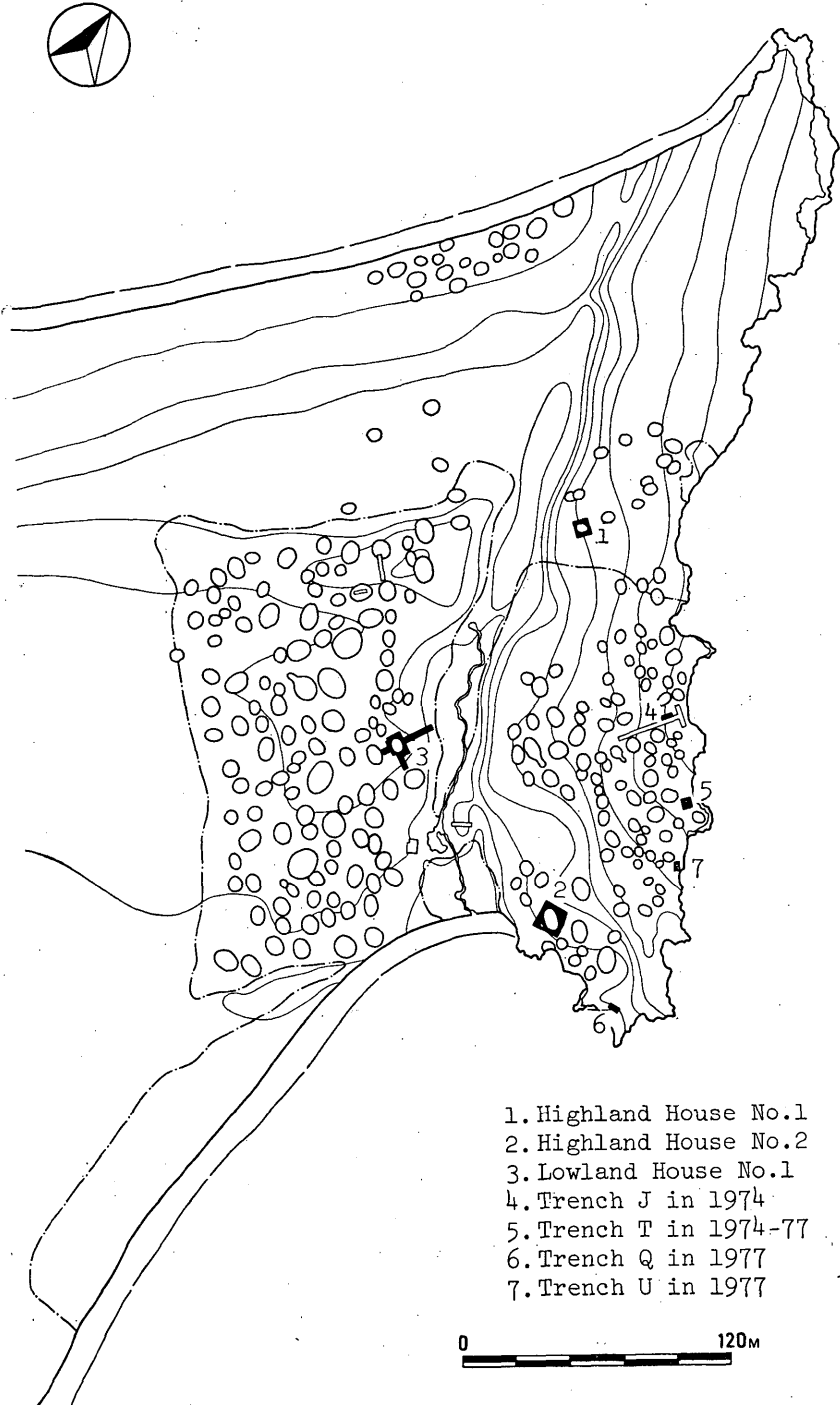


Figure 1. General map of the Hot Springs Village Site.

Table 1. Radiocarbon Dates from Port Moller.

[?/*: questioned dates]

Period	Provenience	Date in Radiocarbon Years	B.C./A.D.	Laboratory Number
Late	Highland House 1	610±90	1340 A.D.	TK-125
Middle	Lowland House 1 (floor)	1390±70	560 A.D.	TK-124
Middle	Highland House 2	1440±75	510 A.D.	GaK-5414
Early	Bottom Tr. I (1960)	2680±250	730 B.C.	I-1507
Early	Q-7 Layers III, IV, V	2930±90	980 B.C.	N-3236
Early	Bottom Tr. II (1960)	2960±320	1010 B.C.	I-1508
Early	U-7 Layer III	3000±90	1050 B.C.	N-3244
Early	Q-7 Layers II, IV, V	3030±90	1080 B.C.	N-3239
Early	U-7 Layers VI, VII	3160±90	1210 B.C.	N-3246
Early	Q-7 Layers III, IV, V	3160±90	1210 B.C.	N-3240
Early	T-7 Layer III	3240±80	1290 B.C.	N-3242
Early	T-7 Layers IV, V	3270±100	1320 B.C.	N-3243
Early	T-4 Layer VI	3430±95	1480 B.C.	GaK-5415
Early	T-4 Layer VII	3520±95	1570 B.C.	GaK-5416
Early	Q-7 Layers VI, VII	3540±120	1590 B.C.	N-3241
?	Q-7 Layers III, IV, V	*3890±120	*1940 B.C.	N-3237
?	Q-7 Layers III, IV, V	*4710±130	*2760 B.C.	N-3238
?	J-4 Layer VII	*4990±120	*3040 B.C.	GaK-5417
?	U-7 Layers IV, V	*5560±100	*3610 B.C.	N-3245

Our second key to the cultural periods at the Village site lies in the successive occurrence of houses, all of which are semi-subterranean. It should be admitted that no generalizations can be made at this stage about the dates of more than two hundred and thirty houses that are recognizable as surface depressions, for only three of them have been thoroughly investigated so far. It has been clearly demonstrated, however, that dwellings were occupied about 600 years ago and about 1400 years ago. Stratigraphically speaking, Highland House No. 1 is contemporaneous with Layer I, while Highland House No. 2 and Lowland House No. 1 are attributed to Layer II, according to the soil profile described above.

In the process of our work on the site in 1977, three new houses were discovered in excavating different layers in Trench T; either two or three more houses in Trench U and additional two in Trench Q. Due to time constraints, we could not expand the trenches to investigate entire structures, but the presence of more than two houses not visible from the surface in every two by four meter trench testifies to the surprisingly high incidence of early houses. Taking the example of Trench T, House A is contemporaneous with Layer I, for it was constructed after the formation of Layer II, while House B was apparently built after most of Layer III had been deposited.

There is remarkable conformity among the dates for the earliest houses in three different trenches. House B of Q-7 was dated about 1590 B. C., which comes very

close to the date of 1570 B. C. from House C of combined Trenches T-4 and T-7, while the date of House C, Trench U-7, is slightly younger than these two at about 1210 B. C. Layer VII, T-4, was previously dated at about 1480 B. C., which looks quite legitimate in the new series, since it directly overlies the earliest house in that trench. The date of c. 980 B. C. from sub-layer 2.5, Q-7, on the other hand, pertains to the closing part of the lower horizons, because stratigraphically it corresponds to the uppermost substratum of Layer III. The remaining four dates in the new series fall into a time span of 500 years, i.e., c. 1480 to 980 B. C., and thus amply cross date the period when Layers III to VII were being deposited in T-7, U-7 and Q-7.

On the basis of the new radiocarbon dates and as a result of our previous investigations, it seems fairly well established that the Hot Springs site was occupied at three different time periods. The most recent period, dating to the early second millennium A. D., is represented by Highland House No. 1, House A of Q-7, and Layer I in all the trenches. The second period must be that of Lowland House No. 1, Highland House No. 2 and Level II in the trenches. Two radiocarbon dates suggest a middle first millennium A. D. temporal placement. The third and earliest period, represented by the newly discovered early houses and Layers III to VII in the trenches, dates between 1500 and 1000 B. C. It should be noted here that not much is yet known about the structure of these early houses. They are round to oval in ground plan, the wall height being as much as 50 to 70 cm; a probable appendage pit and a post hole were found in House A of Trench T. They differ from the later houses in lacking clay bowls, as well as in being much less productive of stone and bone artifacts, posing difficulties in assessing the changes in life style from the earlier to the later periods.

In the entire collection of stone artifacts from Port Moller, there are some traits that appear only in the later periods; numerous double-notched pebble sinkers and an extremely restricted number of ground slate knives were found only in the middle and late periods. The appearance of a great many pebble sinkers from Lowland House No. 1 is obviously related to net fishing in shallow sea water, which was possible only after the environmental changes briefly discussed above. Grooved or perforated sinkers, on the other hand, are more characteristic of the early period at Port Moller (Fig. 2). Two ground slate knives, one from Layer I, Trench T, and the other from Highland House No. 2 and a gouge from Highland House No. 1 comprise the whole polished stone implement collection from our work at the Village site. As far as slate polishing is concerned, Port Moller was only slightly influenced by the northern cultural tradition even in the middle and the late periods of cultural succession. Flaked arrow points represent one of the persistent traits that appear throughout the sequence, but, on close examination, the triangular type occurs only in the late periods, while stemmed varieties comprise a majority in the early period (Fig. 3).

Turning to the bone artifact assemblage (Fig. 3), such features as toggle harpoon heads, decorated ornaments, human images and animal figures of ivory made their appearance only in the middle period. For the rest of the bone or antler implements, stability appears to be more remarkable than change over a long period of time at the

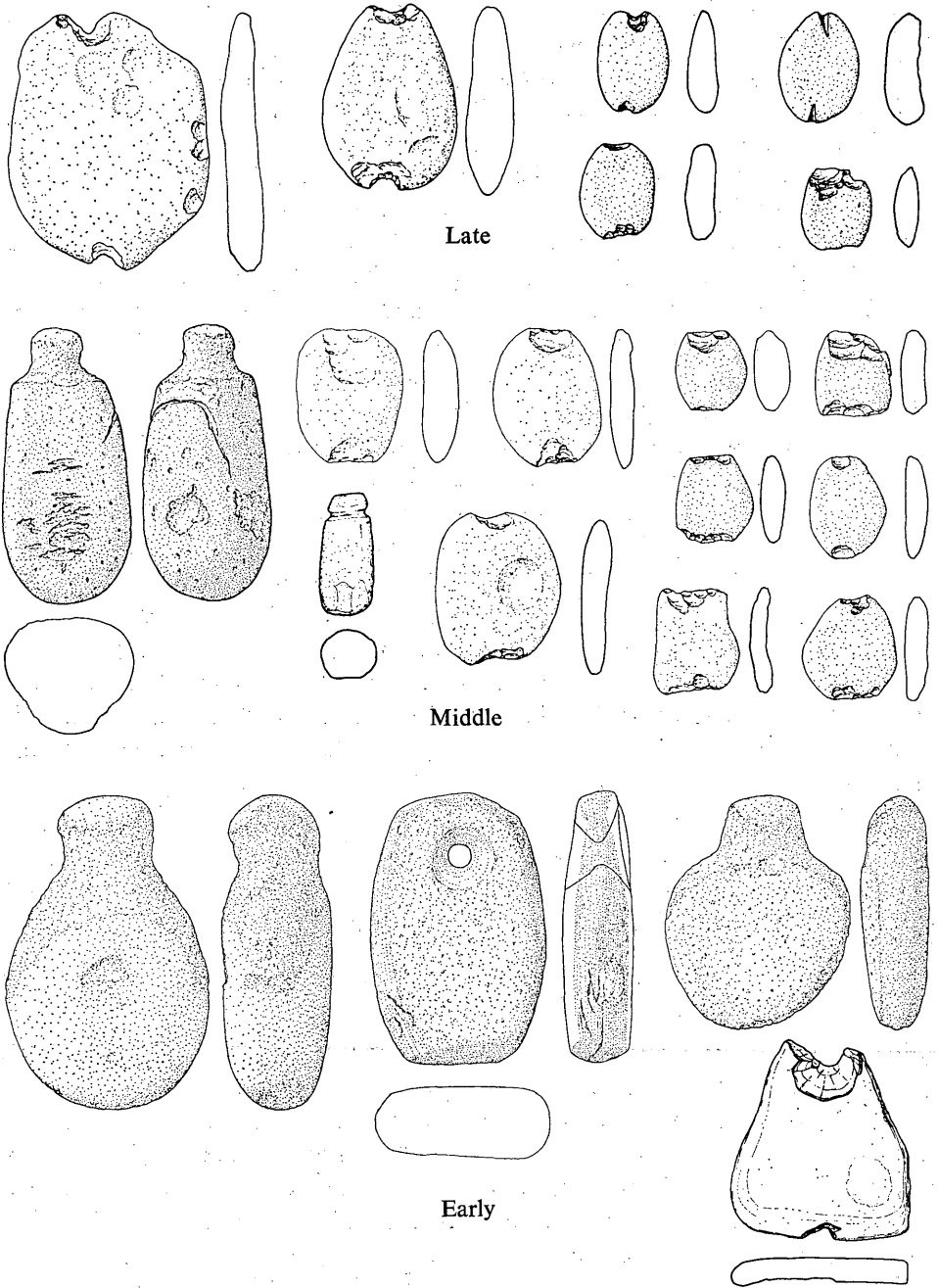


Figure 2. Stone Weights from Port Moller.

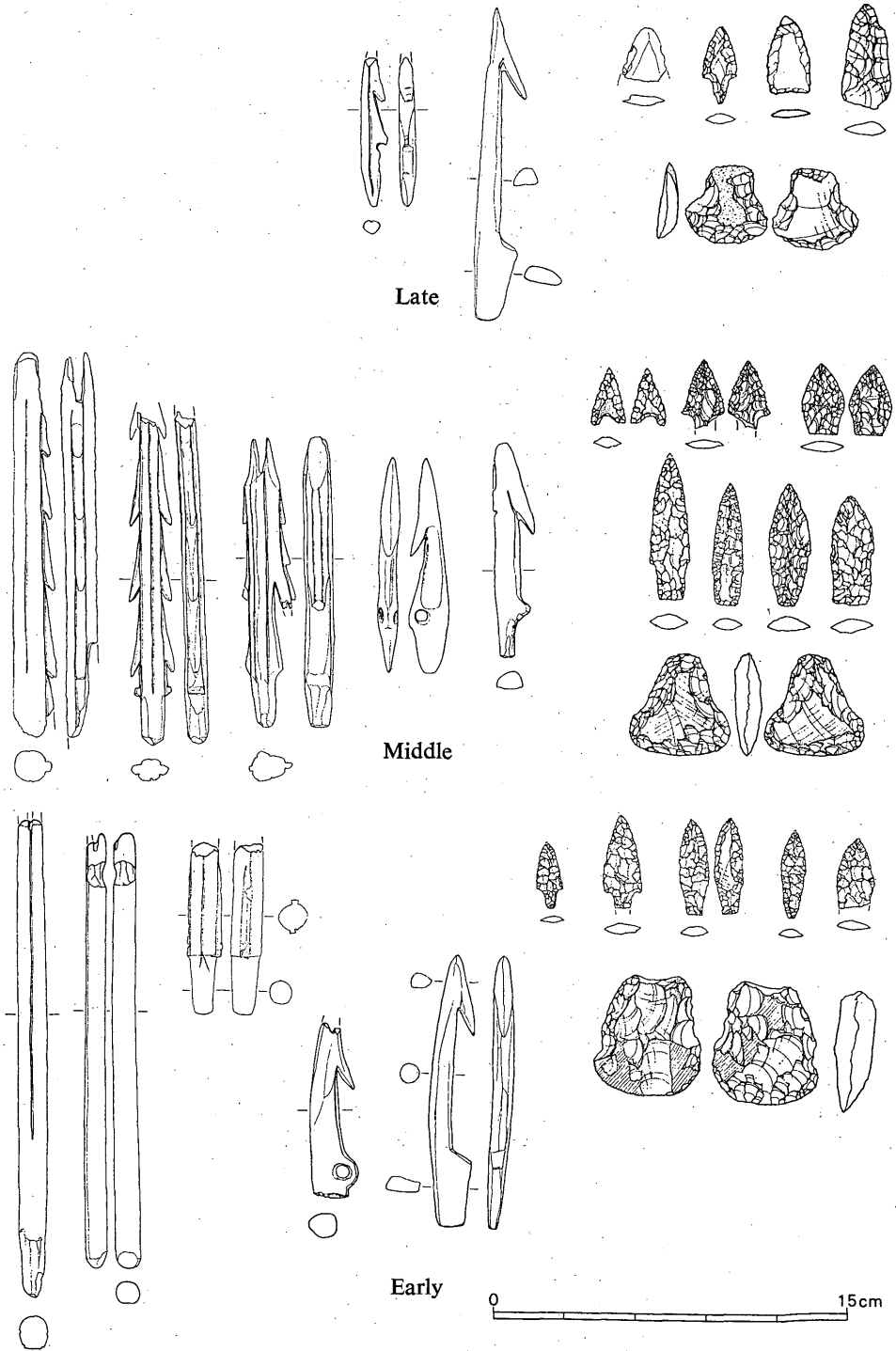


Figure 3. Bone and Stone Implements from Port Moller.

present stage of laboratory analysis. Evolutionary changes, however, have been detected for some of them. A whalebone harpoon, for example, was originally simply a straight rod with a somewhat rounded base and a slit at the tip to receive the end of a blade; later in its development, the base of the rod was worked into a slightly tapering form and a longitudinal groove was incised on both sides; by the middle period of the sequence, it took the form of a sophisticated whalebone harpoon with a groove along the sides (Fig. 3). Similar changes through time should be discernible in the process of analyzing the materials from the 1977 excavations. At the present stage of analysis, however, stability is more remarkable than change in most of the bone, antler or ivory objects.

On the basis of our field surveys at the Hot Springs site, it seems to have been demonstrated that there were at least three different periods of prehistoric occupation in this area of the Alaska Peninsula. Although the proposed cultural periods are still provisional, such a framework is essential to the proper assessment of the cultural affinity of the Port Moller materials. As previously indicated, the three periods in our scheme are not supported by an equal amount of evidence. The latest period, i.e., that of Highland House No. 1, has been proposed on much more meager evidence than the other two in terms of radiocarbon determinations as well as of cultural materials. Only further work in house depressions of this period, however, will answer the question whether the 610 B. P. date is erroneous or not [MCCARTNEY 1974: 80; DUMOND 1977: 70].

With this provisional sequence of cultural periods at Port Moller now in hand, more difficulties seem to arise in any attempted inquiry into cultural relationships. The absence of pottery and the very limited occurrence of ground slate objects pose difficulty in correlation with the firmly established sequence in the basal Alaska Peninsula area. The radiocarbon dates for the early period at Port Moller are significantly older than those for the Norton culture, and are roughly the same as those for the Arctic Small Tool tradition, both of which are quite different from Port Moller in cultural content. Looking to the west, we have no less difficulty in correlating our materials with those from the bone house at Izembek, where pottery and ground slate objects are amply represented [MCCARTNEY 1974]. The collection of chipped stone artifacts from Chignik, on the other hand, looks very similar to the Port Moller assemblage, although no bone objects have been found. At Chignik, one chipped stone assemblage from site 49-CHK-7 was radiocarbon dated 2130 ± 90 radiocarbon years: 180 B. C. (SI-2706) and 2165 ± 70 radiocarbon years: 215 B. C. (SI-2707), while polished slate tools from site 49-CHK-11 are dated to 545 ± 60 radiocarbon years: 1400 A. D. (SI-2708) (Dumond, Personal Communication). It should be noted that the dates from site 49-CHK-7 correspond to a transition from the early to the middle period at Port Moller.

The bone and stone assemblages from Chaluka on Umnak Island seem to be more similar to Port Moller. In chronological sequence, lower and middle Chaluka correspond with the early period, and upper Chaluka with the middle period at Port Moller [DENNISTON 1966: 84-87]. Although closer analysis is needed, a seemingly

similar evolution of whalebone harpoons to that briefly described above may have occurred at Chaluka [cf. AIGNER 1966]. It should be noted in this connection that the lower Chaluka house dating to 4000 B. P. bears similarities to Highland House No. 2 at Port Moller in having such traits as the rectangular ground plan and interior features such as subfloor depressions with or without stone slab lining and a stone-lined shallow basin as a possible drain or urine trough, all confined to the area adjacent to the house walls [AIGNER 1978: 14-17]. While Highland House No. 2 is much later in time and has to be compared with the upper Chaluka house, if possible, instead of lower Chaluka, it will not be irrelevant to see a certain significance in the similarity in house structure between the two widely-separated areas. Port Moller houses have some features such as clay bowls in common with the Norton Culture in the basal Peninsular area, but on present evidence, they seem to have more resemblances to the lower Chaluka house. This reminds us again of the statement made by Workman to the effect that Port Moller, being located between areas of Aleut and southern Eskimo influence, must have received ideas from several directions [1966: 145]. Essentially the same conclusion has been reached by McCartney [1969] and by Dumond, Conton and Shields [1975].

As has been repeatedly emphasized, the cultural affinity of the Hot Springs site, Port Moller, will be accurately assessed only by further work at this huge and important site, as well as the development of studies in the adjacent areas, particularly in the Aleutian Chain.

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