

M I C M A C N O T E S , 1 9 5 9 .

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(by J. S. Erskine, Wolfville, N.S.)

The survey of the Indian archaeology of the province went on through a third summer. In 1958 the excavation of the Bear River site had been left unfinished, so this was the first objective of 1959. This was completed and has given us some suggestive facts about two phases in the shell-heap culture.

The next objective was to follow up clues to sites in Lunenburg and Shelburne Counties. These yielded little of direct value.

The last objective was a return to the sites at Port Joli, Queens County, sampled in 1957. Of these the largest and most puzzling had been that at Scotch Point. At the first testing this site had seemed to be completely lacking in stone projectile points which had suggested that it might belong to the sixteenth century when flint was giving place to iron traded from the fishermen. Later, however, a broken quartz point had turned up among the few stone chips, which left the non-conformity of the site unexplained. For rainy days I had planned to dig more of the post-office site which had yielded a type of pot familiar in Upper Bear River levels. However, the seaward edge of this site proved to overlie the landward margin of an older site eroded by the sea, which seemed of the same phase as the upper layer of Bear River, so that I spent more time on this site than on Scotch Point. Three final days were spent on the two Path Lake Brook sites in an attempt to fit these into the sequence unearthed at the post-office.

A visit was made to Vogler's Cove where the sea had been eroding an Indian burial ground on Big Island. Two arrowheads of late type were found, which proved that the burial ground had been used in ancient times, but one grave on each side of the sandy knoll showed only scanty remains of bone surrounded by an outline of coffin nails showing an extended burial.

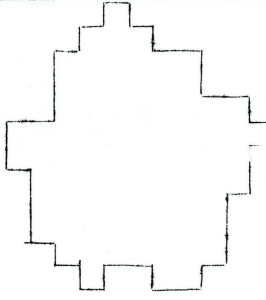
Bear River, 1959.

Site. The site, as described in Micmac Notes, 1958, consisted of three shelves levelled in the side of a kame east of the estuary of Bear River. In 1957 I had dug sample test-holes in each of the three sub-sites, although in two cases the sampling fell on the shallow and barren margins. In 1958 I excavated most of the shallow western wigwam-site and all the deep central one and dug exploratory cross-trenches across the eastern site. In 1959 Miss Jane McNeill and I, with intermittent but energetic help from Mr. Joseph Proulx, dug the rest of the eastern wigwam and a fringe of the western one. Miss McNeill noticed, in addition, a line of shell at the edge of the shore, and this, when dug, turned out to be the fringe of another wigwam-site eroded by the sea.

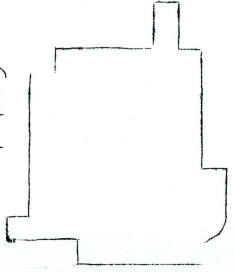
Methods. My samplings in 1957 had given me no inkling of the depth of the deposit that I should encounter in the central wigwam-site which was then covered with slash and trees. My first objective in 1958 was to test a theory of wigwam organization which I had reached in Cape Breton. Therefore I paid more attention to XIX-century deposits and disturbance and to horizontal distributions than to vertical distribution, especially as no stratification could be followed for more than two yards. However, I kept a record of all points and their depths, and these, on later examination, showed two distinct periods which had not been apparent to me during the excavation. I tried at first to fit these into the system of horizons used farther west, but this has produced so many contradictions that this time I shall name them merely after the site and leave the correlations with other areas until we know more. The phase with heavy quartzite points, usually

BEAR RIVER

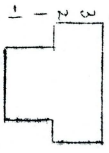
13 -A A B C D E F G H I J K L M N O P Q R S T U V W X Y Z A A B C D D E E F F G G H H
N O P P Q Q R R



Eastern



Central



Western

-6
-5
-4
-3
-2
-1
0
1
2
3
4
5
6
7
8
9
10
11
12
13

Edge of Beach.

Beach



stemmed, I shall call Lower Bear River (LBR), and the later with flat corner-removed points of slate Upper Bear River (UBR). The pottery had not been separated as to level and could not be assigned to one or other period. Dr. MacNeish described some samples sent to him as "like Point Peninsula but not Point Peninsula".

In 1959 we attempted to improve our operations by a more careful preliminary staking of the site, by excavating alternate east-west lines of square yards, by plotting the stratification across the site and by attempting to keep separate the takings from each stratum. This was not very successful, for stratifications were rarely identifiable on opposite sides of a trench. Loam-fills were definite but rarely extended more than three yards, while the beds of ash and shell represented only the centres and the margins of successive wigwams, so that the levels gave a closer picture of relationship than the erratic strata and the varying types of deposit. Where the stratification was not clear, which was usually the case, we separated the upper 12", which included the turf, recent picnic and Indian deposits and UBR, from the lower foot or more which was usually purely LBR. The marginal yards, as these became shallow and unproductive, were not divided horizontally. The nine square yards dug in the other two wigwam-sites were also too shallow for division.

In the following tables the term "units" applies to square yards or to the horizontal divisions of square yards, whether separated along lines of stratification or of level. Our practice was to list all pot-decorations, chipped-stone types, shells and bones as far as these could be identified. The abundance per unit was not recorded. This method exaggerates the importance of the rarer types, but no more satisfactory method occurred to us. As a linear comparison of abundance it is probably accurate enough.

EAST WIGWAM, PREVALENCE OF STONES CHIPPED, BY UNITS.

Rock types	Above 12"				Below 12"				Undivided			
	Units	%	Points	%	Units	%	Points	%	Units	%	Points	%
Quartz	24	63	-	-	9	38	2	14	6	30	-	-
Rhyolite	13	34	-	-	8	33	1	7	10	50	-	-
Quartzite	8	21	3	25	11	46	11	78	7	35	1	100
Jasper	5	13	1	8	1	5	-	-	1	5	-	-
Chalcedony	5	13	-	-	2	8	-	-	4	20	-	-
Basic dike	4	11	-	-	1	4	-	-	-	-	-	-
Slate	4	11	7	58	1	4	-	-	-	-	-	-
Agate	2	5	-	-	1	4	-	-	2	10	-	-
Fine-grained												
volcanic	1	3	1	8	3	13	-	-	2	10	-	-
Sandstone	1	3	-	-	-	-	-	-	-	-	-	-
Chert	-	-	-	-	1	4	-	-	-	-	-	-
Flint	-	-	-	-	-	-	-	-	1	5	-	-
	38 un. 12 pts.				24 un. 14 pts.				20 un. 1 pt.			

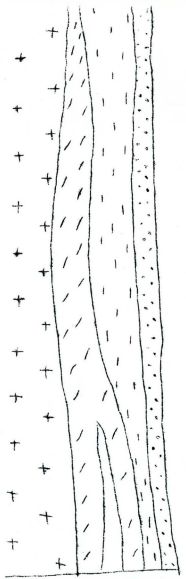
It has been my general practice to collect all chippings and cores from sites excavated. This was not practicable in Bear River where stone-working was very primitive. Great hunks of stone and unsuitable beach-pebbles had been struck once and discarded when they showed a flat cleavage. Seemingly many had been gathered by children, since bright pebbles of quartz and rhyolite too small to use were frequent. For this reason the record of chipping from this site is less complete than for others. However, certain items stand out.

First, there is the particular discrepancy between the volume of quartz handled in all periods and the rarity of resulting points. Even after making due allowance for the conspicuousness of the chips and for the greater difficulty of losing white points in the wigwam, we have to assume that the technique for handling this difficult stone was inadequate. Yet refractory quartzite was shaped, and some points of LBR show pressure-flaking, though flakes are rare.

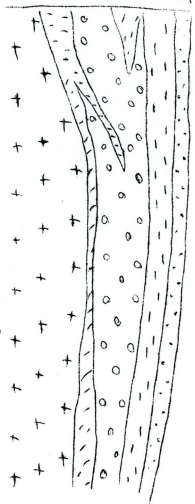
Secondly, we must note that in the upper phase points were chipped from hard slates, black or green or banded, and that chips of this material were never found in the site.

Datum Line







X6-7 Y6-7 Z6-7 AA6-7 BB6-7



Excavated
1958



Legend:

-  Turf
-  Trampled Shell and Ash
-  Fill of Loam
-  Sand
-  Untrampled Shell
-  Charcoal Hearth

West-East Cross-Section

Scale: 1/24

East Wignam.

Some of the problems of stratification may be seen here. At this yard a thick loam fill disturbed the west half of the site, but why so thick? It may have been a mixture of soil and deposit from an enlargement of the site. No points of LBR were found west of AA or north of Q. In the middle was a layer of coarse beach gravel. At the right the fill penetrated the tip of untrampled shell which fanned out eastward from the boulder at CC9. Clearly this tip was both older and younger than the fill yet has no stratification to give warning of the fact. The peculiar dive of the hearth-layer at BB,CC-6,7 was due to the compaction of the grave at CC7,8, but we had not yet suspected the existence of this. Although the loam fill separated UBR from LBR for a few square yards, in general "depth from surface" was a better guide to age. The occupied layer must always have been nearly level, and releveling would have destroyed stratification even more than it would have confused depth.

One stratum of Port Joli #8 and all PJ#7 show this same predominance of slate points of the same type but have a higher proportion of slate chips. The little that we know of fishing-sites, - Odaskwanokh, Indian Gardens, Melanson, Tusket Falls, Pleasant Lake - suggests that much, or even most, chipping was done at such places. Probably such camps were tribal gatherings, and the type of stone chipped was the suitable one available there. (The black rhyolite of Odaskwanokh may have come from Lake Ainslie twenty miles away; the North Mountain stone at Melanson from much the same distance.) The source of the slate might well be between Bear River and Lake Kejimikujik, but the archaeology of that area is not yet known. In a later period North Mountain stone & jasper from many places, chalcedony from Baxter's Harbour, agate from Scott's Bay, violet-tinted quartz from Blomidon - is later predominant from Yarmouth to Pictou and occurs at Odaskwanokh. This suggests that in later times the tribal gathering had shifted to the Minas area. John McEwen told me that the Indians used to gather from a hundred miles around for the gaspereau-fishing at Melanson. This site compares in age, though not in importance, to Indian Gardens and may have been valued both for its spring fishing and for its available stone.

EAST WIGWAM, DISTRIBUTION OF POINTS.

	W	X	Y	Z	AA	BB	CC	DD	EE	FF	GG	HH	Total	Yard
Up12"			2										2	12
Low													0	
Up12"										1			1	11
Low					1	1		2					4	
Up12"			3					1	1				5	10
Low							2				1		4	
Up12"			1	2			1						3	9
Low					1								1	
Up12"													0	8
Low					1								1	
Up12"									1	1			2	7
Low		3							1	2			3	6
Up12"							1						1	
Low		1	1										2	5
Up12"													0	
Low													0	
Up12"						1							1	4
Low													0	
Total														
Up12"	1	0	0	6	2	2	0	1	2	2	0	0	16	
Low	0	4	1	0	3	3	1	2	1	3	1	0	19	

Neither this distribution nor the stretches of loam fill suggested that there had ever been a favourite spot for pitching the wigwam on this ample shelf. A large boulder in CC9 must have excluded the area directly east of that point from occupation until very late, and this was supported by the thick bed of shell there. In the nineteenth century there were almost certainly two or even three wigwams simultaneously upon this site, and this may have been the case earlier. The distribution of points here would not support any theory of wigwam orientation, and the degree of trampling of the site was equally unhelpful.

Errata. One sad duty of every Micmac Notes is to apologize for the misstatements in the last. This time I must withdraw the identification of UBR with Early Woodland and the idea that pressure-flaking was not known in LBR. I must withdraw also the basket and fabric impressions on the pots and replace them with coil technique and rocker patterns. Wolves now seem more probable as owners of the occasional jaws than husky dogs, and the curious stone ball was not quartzite or a bolas but was basalt and a mystery. Such concentric concretions of lava seem to be natural, and in the eastern wigwam we found two basalt bowls that might have begun as the enclosing layers of such balls, though they did not fit the one found. They could have been small mortars, but were they? They showed no sign of wear or discolouration from use. The technique for making them would have come readily to Indians accustomed to making wooden bowls from maple burrs.

PHASES IN N.S. SHELLHEAPS AS SHOWN BY POINTS.

Lower Bear River.



516
BR AA9 14"
Buff quartzite.



400
BR EE7 13"
Diorite.



406
BR FF7 bottom.
Reddish quartzite.



359
BR S-1 16"
Drab quartzite

Upper Bear River.



523
BR FF11 4"
Green slate .



378
BR EE10 4"
Black slate.



451
PJ8 D-1 16"
Black slate.



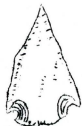
417
PJ8 D-3 deep. 448
Black slate PJ8 D-2
18"
Black slate.



Port Joli.



496
PJ2 A11 6"
Fine quartz.



487
PJ2 A-1 4"
Translucent quartz



442
PJ8 E-1 11"
Drab slate



476
PJ8 C1 8"
Black slate



460
PJ8 B-1 16"
Pink-drab
siliceous.

EAST WIGWAM, ELEMENTS OF POT DECORATION.

% of units having sherds with such decoration (not always only that).

	Top 12"	Below 12"	Undivided Units
Dentate rocker	21	24	24
Rocker zigzag	9	10	3
6orded	11	8	12
Corded zigzag	4	-	-
Comb-dotted	9	8	9
Comb zigzag	3	11	9
Triangular comb	3	2	-
Incised lines	9	8	3
Dragged lines	1	-	-
Line zigzag	11	5	12
Incised grid	4	2	-
Wavy lines	3	2	6
Thumbnail zigzag	1	-	3
Polka dots	-	2	3
Punctate (round)	4	2	6
Punch lines	5	10	12
Gash lines	1	4	-
Totals	99%	98%	102%
Occurrences in units	75	83	34

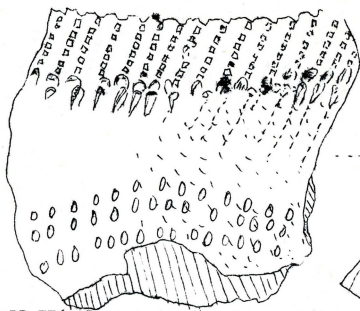
This analysis suggests no significant change in the methods of decorating pots between LBR and UBR. The styles most popular in the central wigwam were here represented, one by a single sherd from the margin, one by a pot, the others not at all. Obviously the personal tastes of the potters are more important than passing fashions. Dr. Byers points out that my assumption that women made the pots is contradicted by Champlain and Sagard who say that men did this work. The only observation of mine bearing on this is that "thumbnail zigzag", which need not have been made with a thumbnail, fits my masculine thumbnail fairly closely.

East Wigwam - Preliminary Bone Summary.

(% of units in which such remains were found)

Animal	Top 12"	Below 12"	Undivided
Bear	4	5	21
Beaver	29	24	16
Cow	2	-	-
Deer	62	89	100
Canis (wolf?)	-	3	-
Fox	-	-	5
Man (not buried)	-	3?	5?
Moose	69	70	69
Otter	-	3	5
Porcupine	4	3	-
Porpoise	4	-	5
Seal, Grey	4	-	-
Seal, Harbour	7	11	-
Small mammals (unid.)	9	5	5
Whale?	-	-	5
Birds (unid.)	55	32	26
Goose	9	13	21
Loon	-	-	5
Tern	-	-	5
Cod family	18	40	26
Sculpin	-	3	-
Shark	2	-	-
Sturgeon	31	27	26
Shells - Astarte undata	2	5	-
Buccinum undatum- whelk	18	22	16
Cepeia hortensis- snail	2	5	-
Mya arenarius - clam	100	100	100
Mytilus edulus - mussel	-	11	11
Neptunea decemcostata-whelk	4	5	5
Pollinices heros - "cockle"	7	-	5
Colus Stimsoni - whelk	2	3	5
Ostrea virginica - oyster	-	3	-
Placopecten magellanicus-scallop	-	-	5
Acmaea testudinialis - limpet	-	3	-
Strongylocentrotus droebachiensis	2	13	5 sea-urchin

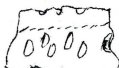
POTS. Bear River, East Wigwam, below 12".



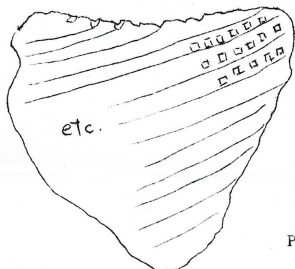
BR EE6. Dentate rockered, punctate.



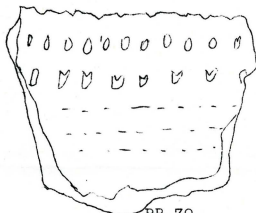
BR Y9-10.
Punctate.



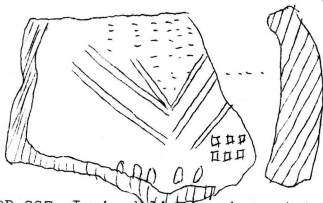
BR Y9-10.
Punctate.



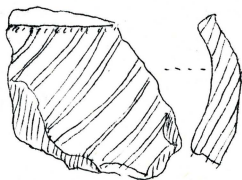
BR EE6. Dentate rocker.



BR Z9.
Punctate over faint corded or
rockered.



BR GG7. Incised lines and punctate
over dentate rocker.



BR EE6. Incised lines.

Animal	Top 12"	Below 12"	Undivided	5
<i>Spisula solidissima</i> - surf-clam	-	-	5	
<i>Venus mercenaria</i> - quahog	4	-	5	

In considering this table one must bear in mind the impossibility of distinguishing between food and items of ornament and use. Bear-canines had been pierced and were obviously meant for pendants or toggles, but others had not and may or may not have been refuse from dinner. Beaver bones were food but beaver incisors had usually been knocked from the jaws for use as chisel blades. (Half-jaws were not used as tools as in the central wigwam.) Quahog shells had sometimes been worn at the edge in use as scrapers, and one had been bored by a whelk and so must have been brought in as a tool. The tern bill was probably an awl, but no doubt the bird was eaten. The shark tooth and whale bone were probably picked up on the beach.

The nineteenth century probably contributed the cow bone cut with a saw, the porpoise vertebrae, and a small square of whale bone marked with a compass rose. Otherwise the bones and shells would not have been distinguishable from the ancient ones with which they were mixed.

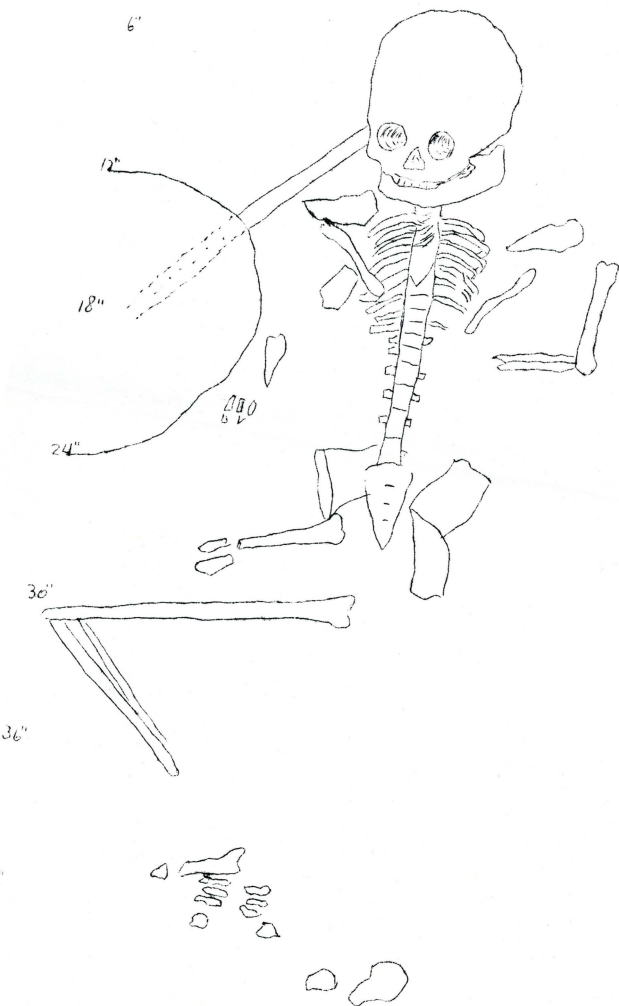
One aim in making this table was to see whether deer were already becoming less abundant during the UBR period. As may be seen, the figures did not support this. The upper twelve inches includes the occupation refuse of the last century which would have had no deer bones, so that the thickness of deer-bearing deposit would have been double that above twelve inches. If the Indians deserted the winter camps along the shore as a result of the worsening of weather during the Little Ice Age of the twelfth century, as seems probable, this cold spell had not as yet reduced appreciably the number of deer. The other animals are those of today or yesterday. Wolves, of course, went when the deer went. The grey seal, never very common, has gone from Fundy, and the harbour seal, once abundant, is now rarer. Oysters have gone, but the one valve in the site does not suggest that they were common then. Quahogs survive in deep water and were common on the beach this year after a winter of storms. Sea-urchin spines were comparatively common in the lower stratum, rare in the upper, suggesting a change of diet. One more deer skull carrying antler, many wader and goose bones and sturgeon plates suggest occupation in late summer and autumn or winter. The absence of skunk and raccoon bones was to be expected, for these are said to have arrived in Nova Scotia only in the eighteenth century, although H.I. Smith recorded raccoon bones from Merigomish sites, an isolated and therefore dubious report.

BEACH WIGWAM.

During our excavation of the eastern wigwam Miss McNeill noticed a deposit of shell along the eroded edge of the beach. This was cleared of a heavy deposit of rusty cans and turned out to be the fringe of another wigwam-site destroyed by a rise in sea-level. Only a strip five yards wide and to a maximum of four feet across and with a depth of fifteen inches remained uneroded. In recent years summer camps seem often to have been on open beaches washed by waves in winter. It is possible that this was one of many low wigwam-sites taken by the sea and that the Indians went to the trouble of levelling the higher shelves only when the lower became uninhabitable. The age of this wigwam-site remains uncertain, though probably LBR. We have assumed, perhaps without sufficient reason, that the central wigwam was the oldest and was followed by the eastern wigwam. The burial of the child at BB9 took place before the founding of the eastern wigwam. This implies the existence of an older wigwam-site. The founding of the second shelf suggests a need for room for more than one wigwam. The burial of the mother and her baby took place soon after the founding of the eastern wigwam but when it was unoccupied. This suggests two families needing wigwam-sites older than the eastern wigwam.

CC.2-8.2 BEAR RIVER- burial No. 2

24"



Beach Wigwam.

5 square yards dug. Numbers in units in which occurred.

Bones.		Shells.		Stones.	
Moose	5	Mya	5	Jasper	2
Deer	4	Buccinum	4	Agate	1
Wolf	1			Chalcedony	1
XXXX Bear	1			Chert	1
Carnivore	1			Quartzite	1
				Slate	1

Conclusions: The bones suggest an autumn or winter camp and conform to the other wigwam-sites. The ~~last~~ stones suggest a post-shellheap period. The only point, a broken tip of a broad blade of quartzite, suggests LBR. Where the evidence is so scanty, no conclusions are justified.

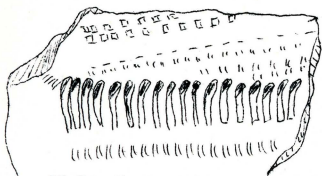
Burials. In 1958 the skeleton of a child was found in the glacial sand just beneath the lowest occupation layer at AA/BB 8/9. This was examined by Dr. Lawrence Oschinsky, physical anthropologist of the Ottawa National Museum, and he agreed that the skeleton was that of a seven-year-old girl but refused to accept my suggestion that one dared guess that she was racially Otamid. Her shovel-shaped incisors proved her to have been mongoloid, but beyond that he would only say that Micmacs should be some sort of Lenapid.

In 1959 we used the line 6/7 for our cross-section of the site and left the line 7 undug until the last in a vain attempt to keep the stratification clear. Finally we dug it inward from the east and had reached the final yard at CC7. I was plotting the strata when Miss McNeill pointed out that at one corner we had not reached undisturbed earth. With a mattock she cut a groove along the edge. The outer face of this collapsed inward, exposing the forehead of a skull. We cleared this of soil and determined that other bones lay beneath it and to the south, and then attacked the central pillar above it. The distorted stratification at the bottom had been due to the gradual collapse of the body and to the consolidation of the grave under the weight of the later camp.

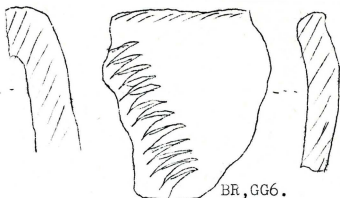
The body was then freed by digging a trench all around it to give space for careful work. (This was complicated by the arrival of several interested and conversational spectators, one of whom stole the axe.) The skull was erect and faced southward, the broken mandible resting upon the cervical vertebrae. The upper part of the body lay almost upon the back. The right humerus was under the skull and stretched southwestward to where a boulder covered the forearm. The legs, badly broken, were half-bent with the knees pointing WSW. The skull, and much of the rest of the body less noticeably, had been sprinkled with red ochre. No indications of clothing, no grave-lining and no grave furniture could be detected. The teeth of the skull had been worn smooth, the wisdom teeth to the same extent as the others, from which it seemed probable that the owner had been approaching forty. In spite of a massive mandible the smooth outlines of the skull suggested a female. On the ribs lay a little cluster of ribs hardly larger than those of a rabbit but more arcuate and one mongoloid shovel-shaped incisor, while another temporary incisor and a lump of red ochre had slipped between the ribs of the mother. There was no doubt as to the cause of death.

The dislocated position of the head had at first suggested a secondary burial, but the rest of the semi-flexed pose did not fit with that. It seems more likely that the grave had been dug too short, so that it had been necessary to force the body in with the head and neck remaining almost vertical and the knees not flat to the ground. The later subsidence of the soil would have forced the skull into its unnatural position and would have broken the legs. The skull fortunately had not been much damaged. It measured roughly 82% as broad as long, confirming Dr. Oschinsky's wisdom in refusing to assign the first skeleton to the more primitive racial group.

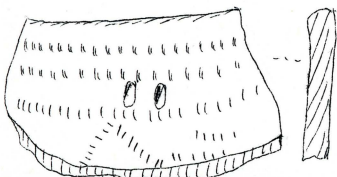
It was apparent that the grave had been dug after



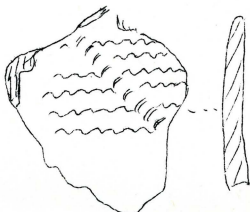
BR,X7. Incised lines, corded, dentate rocker.



BR,GG6. Thumbnail zigzag.



BR Z9. Fine corded, punctate.

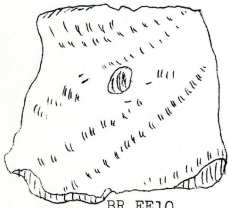


BR x7. Wavy rocker, corded.

BR AA9. Medium corded.

BR AA9. Incised lines.

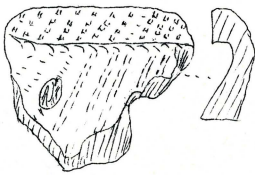
BR GG5. Gashes.



BR EE10. Corded, punctate.



BR EE5. Triangular rocker.



BR EE10. Dentate rocker, punch.

7

the first occupation of the site. The filling of the grave had included shell, ash and bits of potsherd, and some well-preserved bits of charcoal were found among the bones. However, not more than three inches of occupation had been disturbed in the digging, although superimposed layers had subsided unbroken into the consolidating grave.

Summary. The excavation of the Bear River site is now complete, although some important details remain to be settled. What we have excavated is a camp of four levelled shelves, each of which had supported one, and at times more than one, wigwam. We have also the suspicion that other wigwams were pitched upon the now eroded beach.

The dating of the beach wigwam is too uncertain to build upon, for its general contents seem LBR, its few chips Indian Gardens, and a short roll of birchbark is certainly recent. Apart from this, the central wigwam-site is the oldest with about five-sevenths of its deposit LBR in character. The eastern wigwam is the next oldest with about two-fifths of its deposit LBR. The western shelf contained nothing earlier than UBR and was mixed almost to the bottom with nineteenth-century refuse.

The typology of points was the only fruitful study here. LBR had points usually of quartzite and stemmed and too heavy for arrows. There were also many scrapers, whetstones, and heavy cleavers or spall-scrapers, and some flat adzes or wedges. The change to UBR was fairly abrupt. Later I sorted the points by eye and, among thirty-odd points, I found myself mistaken in the depth of only three and doubtful of the classification of only three more, all of which came just below the line of change in the eastern wigwam. The typical UBR point was of very hard slate, rather large but thin, showing pressure-flaking, and in shape corner-removed. A few were of quartz, fine quartzite or semi-crystalline stones; a few were leaf-shaped or side-notched. The small neat corner-notched points of the later phases were completely absent. Rounded or semi-cylindrical adzes occurred in UBR but were rare, and there was one flat adze like those in UBR.

Unhappily no other line of investigation than points and stones gave us a criterion of date. Pots were too varied and bones too consistent at all levels. Bone artifacts were more abundant and more varied in UBR but were still comparatively scarce. 170 square yards yielded 7 bone awls which might have been used as leister-points, all but one from UBR levels, whereas Port Joli #8's 39 square yards yielded 9, all but one from UBR. Seemingly spear-fishing was much more important at Port Joli. This points to weir-fishing which is still practised in this estuary and not in Port Joli.

PORT JOLI.

This area was discussed in Micmac Notes, 1957. In that year I sampled a number of small sites. This year I returned with the intention of attacking the Scotch Point site, PJ#3, the largest, the most inaccessible and the most unlike any other that I had seen. This was the outermost of the known sites, perhaps a third of a mile inside the harbour from Scotch Point. I had also sampled two sites well back in the woods from the shore, and another, partially eroded, near the post-office. My main objectives were: to try to find stratified sites, and for this Scotch Point with its yard-deep deposit seemed promising; to try to find the reason why some camps were on the shore and others far back in the woods; and to try to establish cultural parallels with the short Bear River sequence. In the post-office site I had found sherds of a type similar to some in UBR and which Dr. Byers thought to be very late, perhaps even sixteenth-century.

My intention was to concentrate upon Scotch Point, which I hoped to reach by boat, and to attack the post-office site, PJ#8, on broken and rainy days. In practice, however, I found that the Scotch Point site was separated from the water at low tide by about half a mile of soft sand and eel-grass sludge, so that it was not practicable to reach it except when both high-tides fell within daylight hours. Therefore PJ#8 received more attention than I had expected to give it, especially as rainy days were frequent.

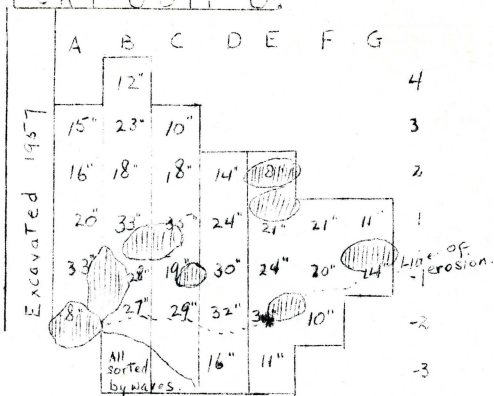
While I was working at PJ#8 Mr. Fred Vogler showed me the remains of another site destroyed in building the road, and

~~ExdaxxkixxP#10~~

Port Joli 8.

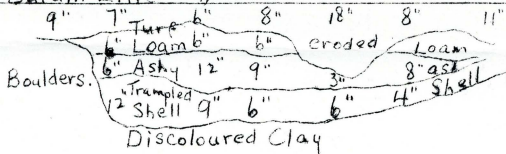
7A

NORTH



A B C D E F G

Datum Line -1, -2



Section of older site.

OTHER POINTS. Port Joli #8.



449
Slate, D-2, 22"
Transitional LBR-UBR



425
Slate, above 18"
B-2



B-2 431 26"
Quartzite LBR



446
Slate, D-2, 15"



468
Banded slate.
B-2, 8"



433
Slate, very thin
B-2

I dug this, PJ#10. I found another large site on the north side of the outlet of Robertson's Lake and sampled one yard, PJ#11. And before the end I spent two days on Upper Path Lake Brook at PJ#2 and one day on Lower Path Lake Brook at PJ#7.

Port Jell # 2, the Post-Office Site. In 1957 I had been told of a shell-heap south of the post-office and, as I had already marked down the spot as a likely one, I went there and dug for one day on a site some thirty yards south of the outlet from Robertson's Lake and inside a point of salt-marsh. The deposit averaged little more than a foot deep and was contaminated by rusty nails and bits of glass, but it yielded one broken point, some pottery and many bones.

On my first afternoon in August 1959 I began my digging with an exploratory line of trench to the south of my former one. The first square yard dropped unexpectedly to a depth of 33 inches, but this decreased rapidly as I left the eroded edge. The site rose gently from the water at about two inches to the yard. To the south of my first yard was a tangle of boulders, almost a wall, buried in shell and ash. These boulders seemed to have been rolled and piled there to clear the campsite, and my first thought was that they had been rolled downhill. A few more yards and I found that the opposite was the truth: they had been rolled there to clear a site in what is now salt-marsh. Only a fringe of this earlier camp remained, but this little was of great interest.

At the bottom was clay, stained black but undisturbed, and, when my diggings reached this level, water flowed up from below. The water table at this point probably forms a slightly arched incline from Robertson's Lake sixty yards to the east to the average sea-level. The sea must have risen at least two feet and probably much more since this camp was begun. Above the clay was a thick deposit of trampled shell so free from ash that it must have been the shell-dump fringe that surrounds a winter camp. The centre of the wigwam must have been well out in the salt-marsh, though test-holes did not find any traces of it. The pots of this lowest level were usually thick and friable, but there were some better pieces. One rather clumsy flat awl, or leister-point, and an antler "flaker" were not conspicuously different from those of higher levels. The only projectile point, a broken obtuse-pointed tip of veined pink quartzite, was of the same form and stone as two pieces from Lower Bear River. An interesting item, unique thus far in our collecting, was a cross-section of a leg-bone, carved probably to serve as the ring in the "ring-and-pin" game popular among many related tribes.

Above the shell was a layer of ash which continued up to and among the boulders. A very black two inches of this at a depth of 16-18" was traceable for about three yards, although in part of this the surface had been eroded away. This contained a deposit of slate points clearly of the same conception as those of Upper Bear River. Ten points and six leister-points in three square yards at the same depth, and three pounds of potsherds in a single square yard, all unusually black, suggested that this might be a case where the master of the wigwam had died and his lodge and possessions had been burned. (Lescarbot describes this custom, and forty years ago Peter Michael, still alive, burned his house in Gaspereau when his daughter died there.) A paving of small stones covered part of this deposit, but the ash with little shell continued upward, overwhelming the boulders and spreading widely up the slope.

I was not able to establish any line between this UBR deposit and the upper ashy loam which lacked shell almost completely in its upper six inches. Points of UBR type were found almost to the loam, while two points of later pattern, one of finely flaked quartz, the other corner-notched and of North Mountain siliceous rock, were four and six inches deeper than the uppermost UBR point. A reject of siliceous slate was only two inches from the surface, whereas wrought-iron nails had penetrated eight inches into the ground. Probably the upper part of the site had been disturbed rather deeply. However, if we accept the levels as they were, we have a glimpse of the UBR technique giving way



Punctate on corded ground
G-1 bottom (LBR)



D-2, 17" (UBR)

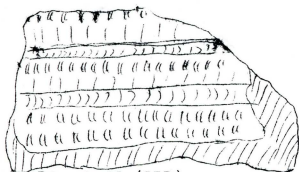


B-1 Shell (LBR)
Gash

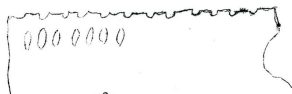
B1 (UBR)
Comb

F-2 Comb-dentate (LBR)

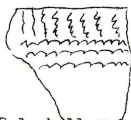
C-1
Fine Corded (UBR)



B2, shell (LBR)
Drag-lines and medium corded



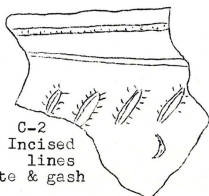
G-1
Medium corded (LBR)



B-1, shell
Wavy rocker



C1. (UBR-PJ)
Medium corded - punctate & gash



C-2
Incised
lines

gradually to the later "Port Joli" technique of finely chipped smallish corner-notched points, usually of quartz, which are transitional to the post-shellheap "Indian Gardens" technique of small, almost serrated, corner-notched points of North Mountain siliceous rocks. Of course, these are diagnostic and not inevitable characters. Quartz and fine quartzite were used in all periods as were leaf-shaped and triangular points; swallowtailed points were not uncommon from UBR; while diehard conservatives and revolutionary individualists probably confused the normal patterns as much among the Indians as among ourselves.

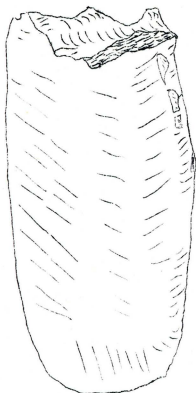
The site seems to have been abandoned before UBR techniques had been forgotten, but the fact that no points of later type were found below the line of boulders and that more than a foot of deposit had accumulated above that line, a deposit which was of occupation refuse and not of marginal dump, suggests that the lower camp had been eroded before the abandonment of the site. As usual there are no signs of occupation during IG, contact and Acadian times. It may be that the Indians of those centuries left no distinctive rubbish behind them. Then with the British period iron nails and square glass bottles mark their presence again. We know that in the eighteenth century the Indians hunted geese here and that they camped between lake and sea throughout the nineteenth century, but the recognizable remains are few.

It appears that the lowest stratum of shell was of LBR date, that the UBR wigwams crowded to the edge of the boulders until these were buried by deep deposit and then moved farther up the slope, perhaps with the sea in pursuit. Here is a difficulty to be faced. I have assumed, I think with some reason, that the winter camps along the shore were abandoned owing to the cold and storms of the Little Ice Age of the century around 1200 A.D. But the increase in the glaciers of the world which took place at that time should have lowered the level of the sea at that same time. Of course, the UBR period here was long enough to allow the accumulation of 18 inches of deposit as compared to ten or twelve at Bear River. (Both these include the uncertain recent deposit.) It would be easy to find some explanations to fit this pattern to any theory, but it is perhaps better to hold this in mind as an unexplained fact.

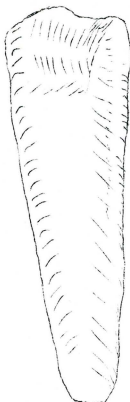
Port Joli #3, Scotch Point Site.

This site was very different from any that I had tried to dig. This time I mapped it in more detail and dug more methodically, but, owing to many difficulties, I was able to sort only a small fraction of the deposit. I dug fifty-nine square yards, but even this amounted only to exploratory trenches. It was not practicable to estimate the volume of deposit, for the regular curved mound overlay a very irregular base of knolls and boulders. Over much of the basic knoll exposed by digging there was a shallow layer of ash with many potsherds. It seems that the first camps had been made on top of the low knoll in many places and nowhere for long. Above this ash was an accumulation of loose clamshells, varying between two and three feet in depth. At every level the majority of the shells, most of them six inches long, were unbroken. I suggest that these shells were too sharp for bare feet to wish to tread them. The shells must have accumulated more rapidly than customary paths. So midden tended to become wasteland and not a level and well-drained spot on which to pitch the wigwam. Only three later wigwam-sites could be distinguished, and only one, that to the south, had any depth of deposit, and that was only a foot of trampled shell and ash with little pot, few stone chips, and four broken or unfinished points. Two harpoons scantily notched at the edges, and one awl were the only finds of worked bone.

The trivial volume of ash tells us that this site was occupied for a comparatively short period and by few people. My map gives the site 271 square yards, and I estimate the total volume of ash as about ten cubic feet, which would need not more than three cords of hardwood. This seems impossibly little when compared to my estimate of 150 cords for the central wigwam of Bear River, but, even allowing for gross inaccuracy in my figures,



492. PJ#7, A5.
Adze, semi-cylindrical.



513. BREE11.
Ground scraper.



562. BRFF6, 17".
Antler "flaker",
broken. (LBR)



504, PJ#3, -H4.
Notched harpoon, broken.
(Peculiar bone)



462, PJ#8, B-1, 28".
Bone ring of "ring-
and-pin" game? (LBR)



419, PJ#8, D-3, 3"
(eroded)
Barbed Harpoon,
broken. (UBR)



437, PJ#8, D-2, 17"
Leister-point, broken. (UBR)



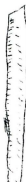
461, PJ#8, B-1, 16".
Harpoon-tip. (UBR)



564, Starr's Point, A3.
Long triangular point, drab chert.



497.
PJ#10, A2, A3.
Needles, broken.



498.



503, PJ#3, -I4.
Needle-tip.

it is evident that we are dealing with a different type of site. I suspect that Wintemberg's discouraged summary of the Mahone Bay shell-heap, "judging ~~xxxxxx~~ from the small number and variety of the finds, the culture was poor and crude", was due to his having attacked a ~~culture~~ site comparable to this one.

The dating of the site remains uncertain, for our best diagnostic feature, projectile points, failed, the critical base being lacking or unfinished in each of the four found. Two points were of quartz, two of slate, and all were on the small side. I should assign them to not earlier than PJ in type, but without firm conviction. The rocks chipped were local, which proves nothing, and in any case chipping was not a major interest in this camp. Potsherds were not uncommon and varied from huge and coarse to some of excellent quality though none of extreme thinness. If I had met these out of context, I should have assigned them to UBR and PJ on quite inadequate grounds.

Most remarkable difference of all lay in the bones. The preponderance of moose over deer seemed much greater to me while digging than when the bones were named afterwards. Birds were everywhere and were chiefly of ducks and waders. Cod bones were abundant, and this site, like PJ#8, was full of clots of fish-scales, chiefly of herring. How were these herring caught? We must assume nets, although we have no direct evidence. Only one antler of deer was in the site and that was fashioned into a tool. Rabbit outranked all mammals except the two deer, although one jaw in PJ#8 was the only other time when I have found it at all.

Everything points to the season of late summer and early autumn, when the migrations of birds were in full swing, when canoes could go far out to sea, when the weather was warm enough for the drying of fish and clams and the men could desert the women and go visiting. They had no intention of staying here for the winter. (Peter Michael says that clams were not eaten from April until July because at that season they were full of eggs and sand and were not good. In August they were ground up dried and mixed with "wild corn" to make food for the winter. He was not able to identify the wild corn.) ~~xxxxxxxxxxxx~~ It is possible that some such pemmican released the Indians from the necessity of camping beside their winter food-supply of clams, since now they could carry them with them to better hunting grounds. To judge from Patterson's History of Pictou County it must have been impossible to dig clams in winter in the eighteenth century. There would have been advantages in the new system even if the climatic change had not made winter clamming impossible. The shore was a rich fishing and clamming environment in summer, but hunting would have taken place also. Then, when winter came, the hunting would be much less good because the animals would have been killed off in summer. Now the use of the shore only in summer and the transportation of the clams to a winter camp in an un hunted area inland would have given a better living. If this is true, we should expect these heaps with a high proportion of shell to ash would begin during the PJ phase of culture and would end in the IG phase, since the early authorities agree that metal tools and stocks of winter food from the fishing boats were the first objectives of the Indian fur-traders. If we apply our rudimentary typology of points to Wintemberg's collections, we run into the same difficulties that we have found with PJ#3. His site was roughly 216 square yards with a depth of 22" and should have contained about three-quarters as much material as PJ#3. However, the amount that he excavated was roughly three times the amount that I dug of PJ#3. He found 12 points in all, of which seven are what I should have called "uncompleted". Of the others three are corner-notched, one stemmed and one corner-removed. The stones used were: quartz 3, chert 3, slate 2, jasper 2, quartzite 2. The adzes and the pottery add and contradict no part of the picture. We have here a site datable to IG rather than to PJ, but entirely comparable to PJ#3.

Port Joli #2, Upper Path Lake Brook.

After the completion of PJ#8 I returned to PJ#2, the first site that I had ever sampled. In 1957 I had not found it rich, but it had several advantages for my present purpose. It was a typical back-from-the-shore site in contrast to the on-the-shore sites of PJ#8 and PJ#3, and it seemed never to have been used by later campers. It should, therefore, give an unconfused picture if the takings were sufficient to tell anything.

My first sampling had consisted of scattered test-yards and a double line from the southern edge of the site to the central hearth. I tried samplings where I expected to find arrowheads but without profit. Then I began to the north of the hearth and there found the chipping floor and the expectable points. To judge from the distribution of these, the wigwam had faced east instead of south, which would have been sensible under the circumstances, for fresh water lay to the north and the shore to the east, two hundred yards away. A containing wall along the eastern edge was made of small boulders which must have been rolled away to clear the site.

Seven more points were added to the four found in 1957. All of them were smallish, about half as long as the average UBR point. Two of slate were uncompleted and one of quartz had lost its base, but of the remaining eight seven were corner-notched, though in two cases crudely. One of the best finished was of jasper. Chippings of slate occurred frequently in the bottom of the site while jasper was found only in the upper few inches. Nearly transparent quartz was most abundant. This and slate and fine-grained volcanic pebbles could have been collected locally, but jasper would have been a rare find. By the beginning of this site the transition from UBR to PJ, from large slate corner-removed points to smallish, quartz corner-notched ones, was almost complete, and by the end of the occupation the transition from PJ to IG, from these to small, North Mountain rock, corner-notched, had begun. No other artifacts of moment came to light. Pottery was generally rather thin and firm and was scantily decorated in patterns made probably with the edge of the cord-wrapped potting paddle.

(Port Joli #7, Lower Path Lake Brook)

For my last day I returned to PJ#7 which I had sampled in 1957. On that occasion I had found a fair amount of pottery and four points, all rather large and asymmetrical, two of slate and two of quartz. The quartz points had lost their bases, the slate were complete and corner-removed, typically UBR by my present conception. Yet the position of the site was, like that of PJ#2, some two hundred yards from the beach, and it contained less shell than any shore camp that I have seen. However, my digging through five square yards of tangled tree-roots yielded only a few potsherds, a broken cylindrical adze and a curved handle of antler.

This site is large and diffuse and thin. The deposit rarely exceeds one foot, but the site probably contains more than fifty times as much ash as the larger PJ#3. Part of this may not be ancient. White chinaware turned up in the earlier sampling. However, nothing pre-Columbian from this site was inconsistent with UBR. The thinner UBR deposit at Bear River, as compared to that at PJ#8, suggests that the retreat from the shore had begun before the end of that period, and PJ#7 may have been merely an earlier retreat than that of PJ#2. Considering the sociability of Indians and their dependence upon forest game, it may be doubted whether many of these camps could have been inhabited at the same time. A Micmac family, or wigwam, is said to have averaged ten people; about ten square miles were available for each person, which probably approached the possible limit for that culture; the winter camp of two months should have demanded 17 square miles if dependence had been wholly upon the woods; and the area of the Goose Hills Peninsula behind this site is about ten square miles. There would have been great overcrowding if severe winters had made clamming as impossible as fishing and had restricted travel by canoe.

Port Joli #10, Post-Office Roadside.

Mr. Fred Vogler showed us a place where he had seen shell in his younger days. This had been almost entirely destroyed by road construction, but we found a strip to the west of the road, some thirty yards east of PJ#8 and separated from it by a knoll of boulders. This turned out to be only the extreme western edge of a wigwam-site and was about five yards long, one yard wide and fourteen inches deep, all ably defended by roots. There were several potsherds of familiar types, two bone needles, and, from a test-hole a little farther from the road, a broken point. This lacked its base, but it was thin, pressure-flaked, of slate and rather small, which suggests late UBR or early PJ. The needles, none of which had been found in PJ#8, suggested that the wigwam had been pitched facing southwards and that the remnant was the women's edge of the space.

Port Joli #11, Post-Office North Site.

On the northern side of the outlet from Robertson's Lake is a stretch of fairly flat pasture studded with boulders and clumps of native hawthorn. At the edge of the tide a deposit of shell fifteen inches deep was being eroded. A test-hole of one square yard turned up shell and bones and a few chips and was evidently in a marginal area. Random testings showed ash widely distributed, and it seems likely that a large amount of campsite remains. Such scanty testing gives too little information to allow one to date it with any conscience, but the position and type of site corresponds to PJ#8.

Knoll Camp, Bridgewater.

Where the road from Bridgewater to New Germany crosses the LaHave River, an island lies above a long series of rips and rapids which must have given good salmon-fishing to the Indians. Patterson (1890) reported a "manufactory of pots" on the river-bank above Bridgewater, but I have been unable to find a trace of it. However, on the east side of the river opposite the foot of the island there was one grassy shelf high up beside the railway. I went up to the bridge and followed the railway down to it. The shelf was not the work of the railway and, at the edge where someone had been digging, I found a few chips of quartz. I tested twice without success and then, in a flattish place beside some hawthorns, I unearthed two undecorated sherds of eggshell pottery and a few fine pressure-flakes of quartz. This suggested a temporary camp of IG period but too thin to dig.

An Ethnological Item.

Silas Rand, when describing the many good qualities of the Micmacs, commends them as a people who took good care of their aged. When I read this, I was struck by its divergence from the general customs among nomadic hunters. Wallis records the Micmac tradition of their care for the aged, but quotes also from early missionaries more expectable anecdotes about their abandoning the aged ceremonially or even assisting them to die.

This summer Mr. Frank Adams of Deep Brook told us an anecdote of more recent date bearing on this. Many years ago a doctor was called in to see a sick Indian on the Bear River reserve. He found in the house an old man much more in need of treatment, but the family were quite indifferent about him. "He no good any more," they explained; "can't follow trail."

Seemingly the attitude survived until recently. Traditional respect for the aged had to be reconciled to the physical impossibility of adding more human burdens to the already crushing loads of nomadic life.

Comparison of 1959 PJ takings, in PJ#8 by units, elsewhere by yards.
 Pot Decoration. At times more than one type to a sherd.

	PJ8Bot	PJ8Top	PJ#3	PJ#7	PJ#10	PJ#2	PJ#11
Dentate Rocker	79%	57	12	-	33	-	-
Wavy Rocker	50	14	12	-	28	10	-
Line Rocker	7	6	3	-	-	-	-
Spaced Rocker	-	-	29	-	-	-	-
Triangular-toothed Rocker	-	-	12	-	-	10	-
Punctate	43	23	-	-	17	-	-
Comb-dotted	7	14	9	43	17	-	-
Medium Corded	36	26	6	29	-	60	-
Fine Corded	7	23	-	14	-	10	-
Coarse Corded	7	17	3	-	-	10	-
Thumbnail Zigzag	-	-	-	-	17	-	-
Line Zigzag	14	3	3	-	-	-	-
Comb Zigzag	-	3	-	-	-	-	-
Rocker Zigzag (dentate)	-	9	-	-	-	-	-
Finger-nail	-	6	-	-	-	-	-
Dentate Lines	-	3	-	-	-	-	-
Incised Lines	21	26	6	-	17	-	-
Ladder Lines	-	9	-	-	-	-	-
Gashes	7	6	3	-	-	-	-
Grid	-	-	3	-	-	-	-
Dragged Dashes	-	-	-	14	-	-	-
<u>Rocks Chipped, % units.</u>							
Quartz	79	97	52	100	100	91	100
Slate	14	19	9	50	-	18	100
Jasper	17	11	-	-	67	27	-
Quartzite	7	11	2	-	-	27	100
Basic Dyke	7	3	-	-	-	-	-
Red Rhyolite	7	3	-	-	-	-	-
Fine-grained volcanic	7	3	16	75	-	45	100
Agate	-	-	-	-	-	9	-
<u>Stone Points found 1957-1959.</u>							
Quartz	-	23%	67	38	-	64	-
Slate	-	69	33	62	100	27	-
Jasper	-	4	-	-	-	9	-
Quartzite	100	4	-	-	-	-	-
<u>Points found, number</u>	1	26	3	8	1	11	0
<u>Shells, % of units in which found.</u>							
<i>Mya arenaria</i> , clam	100	100	100	100	100	100	100
<i>Spisula solidissima</i>	50	34	20	-	-	45	-
<i>Mytilus edulis</i> , mussel	21	3	5	-	-	-	-
<i>Cepeia hortensis</i> , snail	7	6	-	-	-	-	-
<i>Polinices heros</i> , "cockle"	-	9	9	-	-	18	-
<i>Buccinum undatum</i> , whelk	-	3	-	-	-	-	-
Mytilus <i>Pitar morrhua</i>	-	3	-	-	-	-	-
<u>Bones, when identifiable.</u>							
Whitetailed deer	65	77	50	25	-	100	100
Moose	71	51	66	50	67	55	100
Birds, unidentified	65	72	80	-	33	27	100
Goose	21	37	11	25	-	-	-
Beaver	7	14	5	-	-	9	-
Sculpin	7	14	-	-	-	-	-
Fish, unidentified	14	14	-	-	-	11	-
Fish-scales, herring	29	11	-	-	-	-	-
Dogfish, spiny	7	11	-	-	-	-	-
Cod family	-	11	55	25	-	-	-
Otter	-	9	-	-	-	11	-
Rabbit	-	6	39	-	-	-	-
Bear	-	6	2	-	-	-	-
Wolf	7	6	7	-	-	-	-
Whale	-	6	-	-	-	-	-
Sturgeon	-	6	2	-	-	-	-
Harbour Seal	14	6	5	-	-	-	-
Duck, unidentified	7	3	-	-	-	-	-
Grey Seal	7	3	-	-	-	-	-
Woodchuck	-	7	2	-	-	11	-
Carnivore, unident.	-	-	2	-	-	-	-
Loon	-	-	2	-	-	-	-
Marten	-	-	2	-	-	-	-
Porcupine	-	-	2	-	-	-	-

General Summary to Date.

The picture emerging from these few sites is now much more complete than it was last year, although it remains local, undated and unconnected to better known areas. The carbon from the bottom of Bear River's eastern wigwam is bottled and awaiting treatment, so that eventually we should have dates. We must try sites in other areas to see if these confirm this sequence. We have seen that Wintemberg's Mahone Bay site fits in fairly well, although there are occasional pieces of unspecified depth which look archaic enough to be even LBR. However, poor workmanship in any period tends to look archaic. H.I. Smith's Merigomish sites were rather poor in points though rich in harpoons. The twenty complete points illustrated are made from: quartz 1, quartzite 2, metargillite (slate) 17. The shapes are: large leaf 2, triangular 3, twin-arc (cross-section of lens) 1, stemmed 7, side-notched 3, corner-removed 4 of which the clumsiest two approach corner-notching. These, like the Odaskwanokh points, parallel rather than resemble LBR and UBR and may extend into PJ. Probably Smith was right in lumping his nine sites as of a single period. Some of the most archaic-looking points are associated with the most modern, and, as no depths are recorded, we cannot reconstruct the growth of the camps.

We still have sampled only a small fraction of Nova Scotian prehistory. Possibly we had no Folsomoid hunting period, but this was followed by a fishing culture of which we have much evidence but no good sites. A fishtail point (not Folsom) from Melanson and ground-slate blades from Indian Gardens and Milton show that our salmon sites were in use long before LBR. In fact, there may an intermediate oyster-mussel phase of shellheap preceding those of clams, for such a sequence is known in New England. Our knowledge is confined to the last section of the clam culture.

Points

Period	Material	Size	Pattern	Winter-Camps	Sites
LBR	Quartzite	Heavy	Stemmed	Shore	BR, PJ8
UBR	Slate	Large	flat, corner-removed	Shore	BR, PJ8, PJ7
PJ	Quartz	Small	corner-notched	200 yds. inland	PJ2, PJ10.
IG	Jasper	Small	corner-notched	Well inland	IG2, IG3

We have as yet no satisfactory sites of IG age, for our two were mere fragments. However, the undatable "arrowhead collections" from many areas suggest that more artifacts were produced during the last phase than during the other three, but whether this was due to greater population or to longer duration cannot yet be determined.

The general picture still remains obscure. In LBR we see a hunting and gathering culture which probably lived in great part from hand to mouth. When they wanted a winter reserve of clams, they camped within reach of the clam-flats, regardless of the fact that this greatly reduced the area of land available for hunting. They must have been very hungry to have bothered with the tiny shellfish that they brought in. Nothing points to their having preserved any food for the winter, although it would be impossible to say that they did not do so. In summer they returned to the same area to fish. Probably they made brushwood weirs, since "awls" suitable for leister-points are uncommon and notched harpoons unknown, though fish-bones are frequent. Spears seem to have been more important, bows less so, than in later periods. Pottery corresponds roughly to the Point Peninsula types of Middle Woodland horizon, although points belong rather to the Archaic.

The change from LBR to UBR is rather rapid and yet is perceptible only in the points. Clearly it was not a change of population, but the change of fashion must have begun from new contacts. I suggest that a tribal gathering at some center of food-supply, probably of migratory fish, may have supplied the new technique and the new stone. The lighter points suggest a greater use of the bow, and the barbed or notched harpoons more fishing with the spear. The adze with the oval or semi-circular cross-section first appears at this time, but we find too few for safe generalization.

One flat axe, like those of LBR, was found in the western wigwam at Bear River, which was all UBR. The movement away from the shore in winter seems to have begun during this period. Worsening winters may have made the shores useless and bleak; a new technique of winter hunting in the deep snows, or merely deeper snows to make this possible, may have come about; and the introduction of the custom of making clam-pemmican in summer may have made residence on the shore in winter unnecessary and unprofitable. The first Port Joli movement to points only two hundred yards behind the shore would have added nothing to the hunting range. Dr. Raddall's idea was that this was to hide the camps from the sight of enemies, and Smith suggested the same reason for the Merigomish camps on islands. I feel very dubious about it, for in every period summer camps seem to have been placed conspicuously on the beaches, and it was in summer or autumn that raids seem to have taken place.

With the coming of the full IG phase the shell-heaps disappear. This is the culture of which the Indians still retain tribal memories, and these memories include shellfish as an important seasonal factor. We can only suppose that they camped on beaches which have since disappeared, as they did recently. Summer camps were pitched on the open sand and the summer's accumulation of refuse was removed by the winter storms.

The change in the types of stone used may have importance. The identity of slates and of chipping technique in Bear River and in Port Joli suggest contact which would have been practicable by way of the Liverpool River, where Indian Gardens was the great salmon centre. The slate could have come from many places between Bear River, Lake Kejimikujik and Indian Gardens. We do not yet know how far this fashion extended during UBR. But during IG the North Mountain siliceous stones have a tremendous range, and this suggests intercommunication over wide areas, a tightening of tribal bonds. This will probably become clear when we have a greater range and variety of sites.

Starr's Point.

In Piers' Brief Account of the Micmac Indians, 1910, he mentioned the occurrence of chipped cores at Starr's Point, Kings County. As the area covered by the name is rather wide, I did not know how to follow it up. However, Miss McNeill, in cataloguing the Museum collection, found an implement from the site which had adequate descriptive data. Mr. R.D. Sutton confirmed that arrowheads had been found at the landing where the Indians had been accustomed to cross the river and where his father had set his shad nets. The position is roughly $45^{\circ}6'50''$ N., $64^{\circ}22'14''$ W. From the farmhouse a road runs due east down the slope towards the Cornwallis River. Just before the road reaches the river, an old low dune runs southward parallel to the dyke. This dune was formerly used as a road. The Indians had evidently used the dune as a camping place where springs of fresh water appeared on the landward side, for chips and a few bits of shell could be seen for a hundred yards almost continuously and in rare patches beyond this limit.

Unhappily during the days before the first dyke had been built, very high tides had overrun the dune and had eroded and sifted the sands, and the carts had probably continued the erosion. The chips to be collected on the surface were of the North Mountain series - quartz, jasper, chalcedony, even amethyst - and others - bronze quartzite and a dark stone - of uncertain origin. Test-holes where chips were thickest showed nothing at all, but northward the sand, usually orange red, became greyish as when discoloured by overlying ash, and on one high spot there was a patch of camp deposit covering about two square yards to a depth of three inches. I dug six square yards. The deposit had a scattering of clamshells in small fragments but of a thickness suggesting large size, and there were a few bones and many chips. Two broken points were not of expert workmanship but

would have caused surprise if met with in any site earlier than Port Joli. They were of drab chert, and this stone, like the chips lying around, point to IG date. We must, however, make the reservation that the use of these stones proves less about the workers here under the shadow of Blomidon than it would at Pleasant Lake or Pictou or Little Narrows. It is noteworthy, though perhaps accidental, that not one potsherd was met with in the digging or the picking up.

In spite of its fragmentary character, this site has importance as the first summer camp of its probable period that we have discovered. As we had anticipated, it was fully in the open and not hidden from enemies, and, as we had also guessed, it was so far seaward that winter storms had eroded it almost out of existence. The season for the gathering at Melanson would seem to have been from the coming of smelts in mid-April through the gaspereau run of May. The small bands would then have dispersed to smaller camps along the shore where later harvests could be gathered. The shad season is said to be in July. It seems possible that the dating of a number of such camps would give us a picture of the widening understanding and exploitation of the possibilities of different kinds of fish, on the analogy of the development of shellfish exploitation as has been shown in New England for the earlier horizon.

Addendum et Corrigendum. A letter from Dr. J.C. Medcof corrects my naming of the quahog *Venus mercenaria* at Bear River to the sea-quahog *Cyprina islandica*. He confirms my guess as to the identity of the shark's tooth at Bear River as having belonged to *Carcharodon*, the man-eating shark.

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Gratitude to the goddess Fortuna should not be skimped, since she seems to have been very generous in bestowing sites with stratifications and yet small enough for single-handed digging.