Archaeological Investigations in the St. Andrews Area, New Brunswick

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RÉSUMÉ

Trois sites récemment découverts dont la date faite par radiocarbon est environ 2,000 A.P., ont été creusés dans la région de St. Andrews, Nouveau-Brunswick, Canada. On conclut que leur affiliation est Early Woodland.

Southwestern New Brunswick[1] is an area of mixed forest, long rivers, rockbound coasts and estuaries with many off-shore islands. The St. Croix, Magaguadavic, and Digdeguash Rivers drain a forested area which extends to Fredericton, near the centre of the province. The St. Croix River has been damned in many places, and many sites have been lost, but the coastal area is still rich in shell heaps. Passamaquoddy Bay is the focal point in this region.

Champlain (Ganong 1903:192) gives a general description of the richness of the edible shellfish in the area of St. Andrews, and also mentions the occurrence of minerals. Copper, found by his party at several points between St. Croix Island and St. John, and at other points along the coast toward the head of the Bay of Fundy occurs in the form of artifacts in several prehistoric sites in the area.

The shore of Passamaquoddy Bay has been the scene of archaeological activity on the part of both the United States and Canada since the early work of Baird (1881).

[1] The survey, excavation and reporting of these sites was carried out by the National Museum of Canada in 1960, 1962 and 1964.

Although undisturbed Archaic sites from southwestern New Brunswick are yet to be discovered, their existence is anticipated and one would be amiss in excluding the Archaic culture from this discussion. The non-pottery sites which appear to be the earliest in the Northeast Archaic of the Atlantic area are Tadoussac, on the St. Lawrence River, and Ellsworth Falls, in Maine (Byers 1959). The fact that many sites ascribed by Byers to the Archaic lack shell remains (1959:234) has been attested as evidence that the earliest coastal people subsisted on birds, fish and mammals, but did not rely heavily on shell fish.

The Archaic is a term used to describe cultures which do not have agriculture, with settlement in small, often impermanent communities, dependent on hunting and gathering. Such a description applies to most of the peoples who lived in the Maritimes. These early forms of community and subsistence patterns are called the *Boreal Archaic;* their ways of life show particular adaptations to northern forests and the methods of subsistence which are necessary. From available evidence, it appears that at a later stage of development of the Archaic known as Woodland, clams from coastal flats became a staple food supply.

From the Ellsworth Falls site, excavated by the Robert Abbe Museum and the R.S. Peabody Foundation from 1947 to 1950, comes the most comprehensive information about the Boreal Archaic. There are four levels at this site, and the second from the top, Occupation 3, which may be considered an expression of the Late Boreal Archaic, is dated at 1400 B.C. $\pm$ 400 years. Polished slate spears, plummets, pieces of stone, rods, and natural pebbles and large spalls (crude flakes of stone) were found. Occupation 2, the third from the top, is considered very similar to the one immediately above it. It is probably Early Boreal Archaic. The side notched and straight based knives from this level resemble some of the surface finds from Central New Brunswick. Bola stones, slightly ridged axes, scrapers, polished stone spear points, and leaf shaped knives, are all found at this level. In the early Boreal Archaic cultures, the artifacts were shaped by hitting them with a secondary tool of a variety of forms; whereas, in the later cultures they were finished by pressure from a second tool. From New Brunswick, there is one example of a bannerstone, or spear-thrower-weight, now in the American

Museum of Natural History Collection (Junius Bird, personal communication).

The early Boreal Archaic at Ellsworth Falls has been dated at 2009 B.C. ± 310 years, if we can rely on single carbon dates. From this period we have adzes and gouges made from pebbles or blanks which have been chipped all over, then 'pecked' with a stone percussion tool, and finally polished on the cutting edge. Polished slate spears and large chipped, stemmed or side-notched points were found. Although they are not preserved, we can infer that a great many artifacts were made of bone. Stone rods, rather like very large pencils, have been found in considerable number. Their use is not known.

The Boreal Archaic was the foundation on which the later cultures were built. Let us examine the nature of some of these later settlements in southwestern New Brunswick.

The information comes largely from a group of sites which I excavated in 1960 and 1962 under the auspices of the National Museum of Canada. Other sites have been excavated by T. Stoddart of the R.S. Peabody Foundation, and by early researchers such as Baird (1881).

In addition to several small, badly eroded shell mounds in the immediate area of St. Andrews which have yielded to surface collectors corner-notched quartzite points and small friable potsherds, six undisturbed sites have been excavated. One site excavated by Baird is at Oak Bay; most of the collection is at present in the United States National Museum. Another site was excavated by the R. S. Peabody Foundation, and another, the Bocabec site, will be mentioned later. Attempts to locate the collection from the Bocabec excavation have been unsuccessful.

Three sites, termed BgDsl, BgDs6, and BgDs10 using the Canadian national catalogue system, yielded stone artifacts, pottery, animal remains, and dateable materials. Since the collection from BgDs6 is the most comprehensive, it is mentioned first. The total excavated area, which was investigated in units 5 feet square, was 375 square feet.

BgDs6 is a shell mound, approximately 33" deep in the deepest areas. It is situated at the edge of a stream which is now

very small, flowing into the mouth of the St. Croix River near a Sandy Point to the northeast of St. Croix (or Dochet's island). Behind the site are low hills, and in front, mud flats which are exposed at low tide.

On St. Croix Island, the major difficulty facing the settlement of Champlain and DuMonts in 1604 was the fierce north wind, from which it was impossible to escape while isolated by the unpredictable ice jams between the island and the mainland. The inhabitants of site BgDs6 avoided this by camping with protective hills and forest behind them. Long after the occupation of the site the immediate areas must have served as the mainland gardens for Champlain. The site was noted by Dr. C. Medcof of the Atlantic Biological Station and reported in 1960. From its proximity to the historic Champlain settlement it was suspected that it might yield historic trade material; however, historic Indian sites are yet to be found in the area. A carbon sample from level 8 (21"-24" below the surface) was dated by the Yale Geochronometric Laboratory at 50 A.D. $\pm$ 100 years.

The artifacts from BgDs6 show the use of a diversity of raw materials to produce a restricted spectrum of tool forms. From the excavations, all the tool chippings were saved. About 60 per cent of the flakes were quartzite or metamorphosed schist; 15 per cent were red jasper; 8 per cent were very fine quartzite; 6 per cent were quartz; and the remainder were shale, traychite or flint.

The primary source of material was beach pebbles. The traychite ressembles strongly the felsite common in archaeological sites from Maine, from the Mount Kineo region.

Four adzes, of basalt and quartzite, were found. Two of plano-convex cross section, have polished bits, while the remaining portions have been roughly finished. The two quartzite adzes were both chipped. A large artifact of quartzite, trimmed to a quadrangular cross-section and pounded on one end may have been used for breaking up bones or nuts. Several kinds of knives were discovered. One of the most common forms was made from spalls struck from large quartzite pebbles. The retouched edge is crude and there is no polishing. Such a knife may have been used for tearing the skins of moose, seals, and large fish. Also common were leaf shaped knives chipped from thick flakes or spalls often

with part of the cortex or outer surface remaining. Secondary flaking is not present, and the primary flaking is very crude. The cross-section of these artifacts is very thick, and the specimens are made from quartzite or grey chert. Another kind of knife, of chert or quartz, is small, broad, and leaf shaped. Generalized cutting tools, fashioned extemporaneously from large flakes, show secondary flaking from use. They could have been used unhafted, simply held in the hand. One round-based, half-shaped knife, of thin cross section and fine finish was also found. Lozenge-shaped spear points of quartzite and flint, and a crescent shaped knife were also found. Two scrapers were made from igneous beach pebbles, in which one face of the pebble has been removed to form a flat plane surface, and long flakes were removed to form the bevel of the plane. At least one pebble with a slightly pecked surface may have been used for heating and boiling water, or as a bola stone for catching small game. Modified pebbles were used as hammer stones. One rolled native copper bead was found. The pottery of BgDs6 was not very abundant, and was rather poorly preserved. It will not be described here. Samples of shells were collected from BgDs6, as well as from site BgDs1 and BgDs10, to be mentioned below.

The most common shell in all the sites is the soft-shelled clam *Mya arenaria,* which is of intertidal habit. Other bivalves which occur are the common mussel (*Mytilus edulis* Linne), the horse mussel, and the Surf Clam (*Spissula solidissima* Dillwyn). The last three are extremely rare in proportion to the soft-shelled clams. The horse mussel occurs in deeper water than clams, while the surf clam is usually found on sand bars slightly removed from the shore. Of the univalves, the most common is *Buccinum undatum* L. (the waved whelk), which occurs in shallow as well as deep water, and would be easily obtained by wading, or by setting out bait. It is a virtually omnivorous snail. From the BgDs6 excavations, every shell of this species was saved, in the hope that quantitative evidence for ecological changes, if such occurred, might be found. One of the most striking facts about the distribution of waved whelks throughout the shell mound is that almost twice as many occur in each of levels 3 (6"-9"), 4 (9"-12"), and 5 (12"-15"), than in any of the other levels. Several factors could contribute to this distribution: there may have been seasonal

changes in diet, since the whelks are more abundant during the times of very low and very high tides; perhaps they were exploited until they became very scarce in the area, after which the number in the midden dropped off considerably. Rarer univalves present in the site in small quantities include *Placopecten magellanicus* (Gmelin), *Thais lapillus L., Littorina Littorea* L, *Lunatia heros* (Say) and *Neptuni decemcostata* (Say). From level 11, there was one unaltered scallop shell. The partially disintegrated remains of small, greenish sea urchins *(Echinus)* were found in all the sites mixed with the shells. Sea urchins were also mentioned by Baird (1881), who stated that they were probably cooked in eel grass.

Fish remains were found. Although they were extremely poorly preserved, Dr. Lavett Smith of the American Museum of Natural History has been able to identify the remains of sculpin and cod.

A considerable quantity of mammal bones was excavated. They were identified by Dr. C. S. Churcher of the Royal Ontario Museum and the University of Toronto. It is interesting that there are very few signs of fire decalcification on the bones; apparently the meat was partially raw when eaten. Dr Churcher framed his analysis in terms of the number of individuals represented in each species present. By far the greatest number of individuals found were beaver, with thirteen specimens present. Porcupine, dog, fox, black bear, harp seal, grey seal were present, although there was only one individual of each. Slightly more abundant were white-tailed deer, moose and possible caribou specimens.

From BgDsl, on the southeastern tip of the St. Andrews peninsula, a sample from 36" to 39" below the surface yielded a date of 70 A.D. $\pm$ 80 years. The site, which is about 42" deep in its deepest portion, extends for several hundred feet along a small stream which has recently been extensively altered. In front of the site there are extensive clam flats, and behind the site low but well forested ground.

The site yielded fewer artifacts per unit of shell refuse excavated than BgDs6, although it is hard to generalize, however, since the size of the excavation was only 100 square feet. One adze blank, roughed out from a quartzite pebble and a crude leaf

shaped knife were found as well as a firecracked, rounded beach cobble which was probably used for some sort of cooking. The latter was found in the ashy deposit in the site. A flat, ovoid, sandstone pebble, which has been pecked on the edges has an exact counterpart in the Nova Scotia Museum collection; its use is not known. Four small polished bone awl tips occurred in level 9 of square 1. Very fragmentary pottery, similar to the sherds from BgDs6, was also found.

Although the sample of animal remains from BgDsl is small, it shows close similarities with BgDs6. The beaver remains far exceed those of any other species in number. There are 12 individuals represented, whereas there are only 3 of the next most numerous species, the porcupine. Also present are the snowshoe hare, muskrat, wolf, dog, red fox, otter, walrus, seal, grey seal, hooded seal, Virginia or white-tailed deer, moose and possibly caribou. There are fragments of a large young, unidentified whale, and other fragments of pinnipeds. Fragments of iron pyrites, often found in graves of the Red Paint or Moorehead Complex, were found; they are very poorly preserved. Harper (1955:8) states that hematite nodules are known to occur *in situ* along the St. Croix River near Oak Bay.

BgDs10, on the south shore of Minister's Island, presents a slightly different picture. The site is on a slight point, just above the level of the highest tides. It was dated by the Yale Geochronometric Laboratories at 740 B.C. $\pm$ 80 years.

Although the site has been ploughed on the surface, the disturbed area does not exceed 9 inches. It consists of a series of shell-filled depressions extending along the shore for approximately 200 feet. Most of the shells are the soft shelled clam *(Mya arenaria)*, the whelks, which occur with less frequency than at BgDs6, and at the same time are considerably larger.

On the surface of the site a large plano-convex adze 9⅞" long, roughly polished all over, was found. There was also the polished bit of a basalt axe, and a large, oblong beach pebble which was used as a mortar or pounder. A round-based, leaf shaped knife with thin lenticular cross-section and a general lack of retouch was found in the excavation, and a second knife, of the crude retouch and thick cross-section noted in BgDs6 was also

excavated. Large, rough, quartzite scrapers, which resemble crude planes, are similar to specimens from Prince Edward Island.

Bone awls from this site are of two types. The most common ones are simple, pointed instruments made from bone slivers; however another example is approximately 12" long, and the material is probably the bone of some large sea mammal. It may have been a wedge or dagger rather than a tool for fashioning garments. It is unbarbed, and rather smoothly finished.

Although the size of the excavations was only 75 square feet, mammal remains were relatively abundant and show some interesting proportions. Beaver (2 individuals), Harp seal (2), grey seals (2), Virginia or white-tailed deer (1), moose (1), and caribou (2, of different ages) were found.

Churcher has commented that, if we can accept the smallness of the samples, we can see a marked change in the diet from BgDs10 to BgDs6 or BgDs1 (Churcher, personal communication). The chief factor in the change is the increased quantity of beaver remains in the later sites.

A shell heap at Bocabec excavated in 1884 sheds further light on the prehistory of the area. The Bocabec site is on a clay flat flanked by a long protecting hill of felsite rock. Most of the shells are *Mya arenaria* although small quantities of long whelks and horse mussels were noted. The lower half of the beach is stony and may not have supplied shell fish for the site. Some data are presented by Mathew (1884) on settlement patterns, although it is difficult to assess some of the statements clearly, since we have no comparable data from modern excavations. Mathew describes depressions in the unploughed area of the site, which, when excavated, were shown to be gravel house bottoms, with sleeping platforms built up of gravel on one side. He states that on the basis of 4 persons per hut depression, the village would have contained 300 people. Such depressions may have been tree falls over which the people built their houses. In the bottom of one of these depressions he found a number of parched peas, which resembled beach peas (*Lathyrus maritimus*) and other seeds including those of grass.

The author summarizes the 10 designs which he found on the pottery. The most common design had continuous incised parallel

lines. The decorating tools included implements for incision — one with a square point, and one which could produce shell impressions. Other sherds show impressions of stamps and 'basket work'.

Of the stone implements there were lance heads and lozenge-shaped, lanceolate, leaf shaped, and triangular side-notched, projectile points.

A stone pendant with incised crossed lines in the form of a lattice was found; these are also found in Woodland sites in Maine. Lunate or oval knives are mentioned. Mathew states that the artifacts from the upper levels are made from black petrosilex; whereas from the lower levels the materials are usually brown petrosilex.

The bone artifacts include harpoons barbed on one side, and beaver teeth with the cutting surfaces worked to make cutting tools or small chisels and gravers. Such gravers are also common in the St. Andrews sites mentioned above.

Lacking independent means of dating the Bocabec site, we have two clues about its chronological position relative to the dated sites in the area. Incised pottery is generally later than cord impressed pottery in the Northeast, and side-notched points, of which there is only one in the sequence of sites mentioned above, are found in quantity at Bocabec. Side-notched points are generally late in the Woodland sequence. It is dangerous to make interpretive statements about the site when the collection of artifacts cannot even be located; nevertheless, Bocabec is probably later than the BgDs group of sites.

We know that the scattered finds from the shore immediately north of the town of St. Andrews are later than BgDs1, 6, or 10. Unfortunately, since they are extremely eroded, these sites lack more than a few diagnostic artifacts, such as pottery and side-notched points. We have no further details on human settlement in the area at the time period of these later sites. Finally, there are accounts of the Passamaquoddy Indians catching porpoise in historic times on Grand Manan Island. Investigation of sites reported in the 19th century and discussion with local fisherman revealed that the remains of the porpoises, which were shot with

guns from canoes, were carried away by the high Fundy Tide. Since there was no refuse in any quantity, and the settlements were only seasonal, few remains were found. One broken flint knife was found in one of the areas. However, at Ingalls Head on Grand Manan, there are excavatable shell heaps.

There are many hiatuses in the chronology of Southwestern New Brunswick. We anticipate Archaic components as well as information from the immediate pre-contact period.

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REFERENCES

BAIRD, S.F.
1881 Notes on certain aboriginal shell mounds on the coats of New Brunswick and New England. *In* Proc. of the U.S. National Museum, vol. 4. Washington, Government Printing Office.

BYERS, D.S.
1959 The Eastern Archaic, some problems and hypotheses. American Antiquity 24(3):233-256.

GANONG, W.F.
1903 Champlain's Narrative on the exploration and first settlement of Acadia. Acadiensis 3:179-216.

MATHEW, G.F.
1884 Discoveries at a village of the Stone age at Bocabec. Bulletin of the Natural History Society of New Brunswick, No. 3:6-30.