

ON THE OCCURRENCE OF THE *KJOKKENMOEDDING*, ON THE SHORES OF NOVA SCOTIA.

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AT the January meeting, 1864, of the NOVA SCOTIAN INSTITUTE OF NATURAL SCIENCE, held in Halifax, an interesting paper was read by the Rev. JOHN AMBROSE, Rector of St. Margaret's Bay, upon certain mounds, formed by a race of men of whose habits and general mode of life no record at present exists,—and with a view to revelations which would help to identify the period of their formation, and also throw considerable light upon the character of the fauna of the Province in times of remote antiquity, a subscription list was opened among the members to defray the expense of excavation, &c.

Accordingly, on Saturday, the 11th June, a number of the Members of the Institute, and their friends, proceeded to St. Margaret's Bay, for the purposes named, and after a pleasant ride of 22 miles, arrived at the French Village, so called, and proceeded to Mr. Garrison's, on whose land are some of the mounds referred to, who very kindly placed at their disposal all the facilities in his power for the prosecution of their design.

The mound examined is at the foot of a rising ground, not twenty-five feet from the salt water. The situation proved that the people by whom it was accumulated had a fine eye for the picturesque, and a good judgment in the selection of a sheltered spot for habitation. The place, although on the shores of the Bay, appears completely land-locked, and at the time of their sojourn must have been covered, like all the land around, with a luxuriant growth of spruce, fir, birch, beech, and other woods, down to the water's edge. A beach composed of granitic debris runs along the shore for a considerable distance, where canoes could lie in safety. It was, likewise, an aid to cleanliness, and must have made an excellent bathing place for the juveniles of the tribe, where they might disport themselves in the tide, as the juvenile Indians of the present day are so fond of doing. Granite boulders crop out here and there on the land in the vicinity—but their position is evidently accidental—an indication that the race who made this place their habitation had no idea of making metes and bounds to their encampment by such land marks. Some of the boulders were in the mound itself, covered up, which also seemed to prove that no excavation had been made wherein to throw the debris of the camp, a feature of their life that corresponds with the habits of the Nova Scotian Indians of the present day.

The mound is but little elevated above the surrounding soil. It must be recollected, however, that the plough had passed over the

land, and the periodical rains had greatly denuded it. It may therefore, at a previous period, have been much higher above the general level than it is now. Its length is over 100 feet, breadth about 25 feet, and it lies N. W., and S. E. On pulling up the turf shells were immediately visible—the common clam (*Mya arenaria*) embedded in a black, cindery soil. At a depth of two or three inches these became quite numerous, intermingled with bones of birds, beasts, and fishes—the latter unfrequent, and apparently of small species, as though they may have been caught near the shore, and not in deep water. A loose, friable black substance was disseminated throughout the mass, and occasionally pieces of charcoal, which seemed to indicate that the mollusks had been roasted or baked rather than boiled. The clam shells formed the chief deposit, but frequently large shells of the quhog (*venus mercenaria*) were found, and there was one scallop shell (*pecten islandicus*) gathered. The quhog, as we understood from the owner of the soil, is not now found in any part of St. Margaret's Bay—so that a secret must have died with the tribe, or they may have been transported from some other and distant quarter. They are found at Prospect, an adjacent harbour, and are common at many places on the coast in deep water.

At about six inches beneath the surface, a loose layer of clam shells, quhog and mussel shells (*Mytilus-edulis*) three inches deep, was reached. The quhogs were few, and the mussels very much decomposed, so that the latter could be easily squeezed to a fine pearly powder between the fingers, and two small white pearls, which had suffered no decay, were found in some of this powder. Occasionally, throughout this substance, the bones of animals occurred, chiefly of the smaller species. It was somewhat significant that the remains of larger animals, (large molar teeth and bones) and also two very perfect stone arrow-heads, and two sharpened pieces of bone, between two and three inches long, which may have served for needles, with a stone chisel, highly sharpened, and attempts at arrow-head making out of pieces of jasper or agates, which must have been brought from some other place, were found at a much greater depth in the mound. It would thus appear that at the time of the first visit or encampment the larger game were plenty, and had been gradually driven away, leaving the smaller species of animals to the hunters—a circumstance, perhaps, that may at length have induced the abandonment of the site. Pieces of broken pottery of very rude manufacture, but with some attempt at ornament, were also collected and preserved. The bones were all cracked and broken lengthwise to extract the marrow.

The intermixture of bones and shells continued to a depth of eighteen inches from the surface, and in one place several large rounded stones about six inches long by three or four in their longest diameter were dug out, which to use the language of the land owner, may have been their fire-place. At this depth, and beneath these stones, there was a layer of white sand, similar to that of the beach, and about three inches thick, which at some distant period may have formed part of the beach itself. At a greater depth the soil became harder, was of a brownish yellow colour, sandy, and exhibited no further traces of animal or vegetable remains.

The bones found were conjectured to belong to the elk or moose, the bear, the cariboo, the fox, or dog, the porcupine and the beaver,—to the crane, the gull and the partridge among the birds,—and to the smaller species of cod or haddock among the fishes. None of the remains were supposed to be human, and no instruments of iron, or brass, or bronze, or copper, or wood, or horn, were found.

It will be perceived that with little exception the foregoing description may be read for the description by Sir C. LYELL, of the Danish kitchen middens. There appears therefore to have been little variation in savage life between the old world and the new; and that the more frequently tribes and families divided, and the further they roamed from the centres of civilization, the more degenerate they became, until as mere hunters and fishers they lost all trace and remembrance of the arts of civilization. The early part of the stone age of Europe, 4000 years ago, according to Sir C. LYELL, differed but little from the stone age as brought almost within the memory of the civilized emigration of Nova Scotia. True, we have not yet correctly estimated the time when the mound was in process of formation; or how long the dwellers around it may have remained there; or at what successive periods it may have been added to or revisited by the ancient people: but from the fact that the remains occur just beneath the sod, and that the shells (those of the mussel excepted) are very little decomposed: and that although many of the bones are decayed, and in one instance apparently fossilized, others are comparatively fresh, the fractures still sharp and well defined,—we do not feel disposed to attribute a very high antiquity to the race that dwelt there. The layer of sand at the bottom of the mound, eighteen inches from the surface, may indicate that the tide had once flowed to the spot, but it is not probable that such was the case when the shells were deposited. The thick layer of shells, six inches from the surface, seems also to confirm an idea that these people were erratics, remaining in one place just so long as it supplied their wants, or

having their summer and winter resorts,—and in so far their habits would agree with those of the Micmacs. Their food while on the coast must have consisted largely of shell fish, which could be procured with less labour and appliances than that obtained by hunting the wild denizens of the forest. The question therefore, of their being a different race to the Micmacs, and supplanted by them, does not seem to be answered in the affirmative by the examination just recorded—which after all, however, was but a superficial one—and can scarcely be fully depended on as affording conclusive data. Yet if five or six hundred years be allowed as the remotest antiquity of the oldest portion of this mound, and fifty years before the country was settled by Europeans may be supposed as the last visit to this locality, it may, probably, be near the truth, and at the same time approximate to the advent of the Indian tribe to Nova Scotia. So much may be hazarded without absolute proof; but the whole subject at the present time is specially interesting, and deserves a greater amount of scientific research than has been hitherto bestowed upon it.

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A SECOND attempt on the part of the Institute to prosecute this enquiry, took place on the 21st of September, 1864, when a Field Day was devoted to a visit to Cole Harbour, an inlet of the Atlantic some ten miles to the eastward of Halifax.

Some deposits along the shore at a short distance below Mr. Robinson's house were first examined, where a quantity of shells, very much decomposed, were found just below the surface of the soil. The ground here had been so frequently ploughed, and the shells so incorporated with it, that no definite character could be attached to the site, except that it had been undoubtedly an Indian encampment and refuse heap of great age. Mr. Robinson pointed out some remarkable geological features at this spot, which go far to prove that a fresh water lake had existed where now was dry land.

The next place visited was Cranberry Cove, so called. Its present appearance is a hollow in shore, surrounded by broken metamorphic rocks, which slope upward more or less gradually, to a height of 20 to 30 feet, and are covered with a growth of young trees—birch, maple, spruce, oak, sumach. The bottom of this hollow is fringed with a scanty growth of alder, and exposes a flat surface of swampy peat and moss, about six yards wide near the salt water, but gradually expanding towards the upper boundary,

where it approaches a circular form, and is from 20 to 30 yards in diameter. The thickness of peat could not be satisfactorily ascertained. A drain about a foot in depth and width had been cut through it. The surface was covered with cranberry vines, which yield in some seasons a plentiful crop—from which circumstance the cove takes its name. The place appeared to be much frequented by hares, which perhaps find the cranberry and other tender plants desirable food.

At 20 or 30 yards from the salt water up the cove, on the right slope, there appeared to have been an Indian encampment—not, however, within the memory or tradition of the inhabitants of Cole Harbour. On digging near the foot of the slope, it was discovered that for a length of 21 and a breadth of 10 feet, there were a bed of shells and black loose soil, of an average depth of 18 inches. Amongst this stuff were intertwined the roots of trees and shrubs that had grown around since its deposition. The shells were chiefly clam (*mya arenaria*), mussel (*mytilus edulis*), a few *purpura lapillus* and remains of an oyster shell (*ostræa virginiana*.) The only mammalian remain found was a sharply angular piece of bone about two inches long, which may have belonged to a porcupine. The clam shells presented much the same appearance as those at St. Margaret's Bay—the mussels were more perfect, having in many instances, the outer coat of shell of the usual bluish color, but were easily reduced to powder by squeezing between the fingers. The *purpuræ* were quite perfect and hard; the oyster shell was only a fragment. There were no well defined pieces of charcoal, or burnt wood, as in the mound at St. Margaret's Bay. The mixture also of mould with the shells was softer than at that site, which may have occurred from the ground being wet at this season, a good deal of rain having fallen within the previous two or three weeks. No arrow-heads or implements were found.

The facts as detailed connected with the Cole Harbour deposits, seem to bear out the following inferences. They may be more recent than those at St. Margaret's Bay—the shells being better preserved. This hollow may at one time, perhaps during the visits of the Indians, have been a small lake, draining the higher lands around. During some extraordinary rainy season, it may have made a breach at its lower extremity seaward, and as a lake been drained and left swampy, a thick growth of peat succeeding the water. The place was admirably adapted for seclusion or concealment, for either or both of which it may have been used. Cole Harbour may once have been a lake into which the salt water flowed, and may owe its present character to gradual encroachment of the ocean—but it must have been a harbour when this place was

inhabited by the Indians. This was probably the summer residence of a family—the squaws and papooses may have been left here to feed on shell fish, and other marine provision, while the Indian master was abroad at the chase—an inference which the absence of bones, arrow-heads and implements, remarkable as compared with the St. Margaret's Bay deposits, seems to favour. The oyster shell would imply a great age to the deposit if it represented a live mollusk of the period, as none are so found at present in Cole Harbour. This was attributed by our guide to the rapid filling up of the harbour, which is becoming very shallow from the great influx of sand, which has covered up and killed the oysters. He informed us that oysters must at one time have been in great plenty, as numbers of shells, often of very large size, are dislodged and brought up whenever an anchor is heaved.

The peat of Cranberry Cove rests on the metamorphic rock, but its depth was not ascertained. On top it is a thick green moss, full of cranberry vines. The peat itself has a strong sulphureous smell, owing perhaps to the decomposition of iron pyrites in the strata on which it rests, or a sulphur spring may be indicated. The exploration of some of the peaty growths in this Province would be of much scientific interest, and might throw additional light upon the history and antiquity of extinct mammalia. There may be no remains of the kind in the peat at Cranberry Cove, which however seems a likely spot wherein to discover the fossilized relics of some bog foundered animal, which would supply a link in the chain of animal creation.

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