

University of Groningen

A bed of ochre

Jelsma, Johan

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version

Publisher's PDF, also known as Version of record

Publication date:

2000

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Jelsma, J. (2000). *A bed of ochre: mortuary practices and social structure of a maritime archaic Indian society at Port au Choix, Newfoundland*. s.n.

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

3 The Port au Choix-3 Site and its Setting

"No-where else on earth does the arctic verge drive so far into middle latitudes."

(Hare 1952:47).

3.1 The Physical Environment

The Port au Choix-3 site lies on the west coast of the Great Northern Peninsula on the island of Newfoundland at 50°42'30" north latitude and 57°21'30" west longitude. The island of Newfoundland is approximately 106,000 km² in size, roughly the size of Iceland and, along with Labrador, presently forms Canada's easternmost province. The island is separated from Labrador, mainland Canada, by the Strait of Belle Isle which is 17.6 kilometres wide at its narrowest point.

Newfoundland was formed by palaeozoic continental drift and collision (Wilson 1966). There are four tectonic zones on this island (Williams 1979). The Great Northern Peninsula, on which Port au Choix is located, is part of the Humber zone. The Long Range Mountains form the most distinctive geomorphological feature of this area.

Glaciations had a profound impact on the land surface. The island has a rugged coastline with sheltered harbours and beaches. During the late-Wisconsin glacial maximum, approximately 15,000 years ago, Newfoundland had its own ice cap (Brookes 1970), which probably consisted of a number of coalescing ice domes (Rogerson 1983). Around 11,000 BP high peaks such as the Doctors Hills in the Long Range mountains were hardly protruding through the ice caps (Grant 1977).

The weight of the ice caused isostatic depression of the earth's crust; it pushed the land down. After the ice had melted, the land started to rise again. At one location on the Great Northern Peninsula, Flat Pond, it was established that deglaciation occurred some 12,600 years ago (Brookes 1972). At the northern tip of the Great Northern Peninsula the land rise following the last ice age, was as high as 150 metres (Grant 1977). The speed of this uplift has decreased from approximately 4.3 metres per century right after the melting of the ice (13,000-11,000 years ago), to 0.14 metres per century during the last millennia (Grant 1972). Because of the melting ice caps however, releasing enormous quantities of water, the sea level also rose. At some coastal localities, for example along the coast of the Great Northern Peninsula, the uplift of the land was greater than the sea level increase and consequently more land was formed. At the southern coasts of Newfoundland and those of the Maritime provinces and the northeastern U.S.A., the sea level rise exceeded that of the land, and land was submerged by the sea (Grant 1972).

Although Newfoundland has the same latitude as northern France and Belgium, the present climate is rather harsh. This is caused by the Labrador current, which brings cold water and pack ice to the northern coastal areas, which influences the climate of the whole island. Pack ice can be found off the northern coasts until the summer. Particularly the Strait of Belle Isle region at the Great Northern Peninsula has a near arctic climate (Hare 1952). The area of Port au Choix is part of the Strait of Belle Isle ecoregion as described by Damman (1983). The annual precipitation in this area is 800 to 900 millimetres a year (*ibid.*). In winter there is a continuous snow cover of, on average, three months a year in the most northern part of this peninsula. On average 2.5 to 3 metres of snow fall yearly (Hare 1952). The summers are rather cool although occasional days with temperatures around 25°C do occur. The average cloudiness during this season is high (Banfield 1981). Fog is very common, especially in July and August (Hare 1952). More than 60% of the days of June, July and August have fog. In the other months of the year this is 40% (Damman 1983, calculated from Hemmerick 1971).

There are indications that the climate was somewhat warmer in the past. Macpherson (1981) suggests a deterioration of the Newfoundland climate since 3000 BP associated with a reduction in ocean surface temperatures. Analysis of isotope ratios in Greenland ice cores made clear that this cooling trend started approximately 5000 years ago (Dansgaard 1980). Pollen diagrams from localities in northern Labrador indicate the presence of birch shrub tundra zones at 9000 BP - 6700 BP, followed by alder-birch shrub tundra zones between 6700 BP - 4000 BP, which are interpreted as relatively warm periods with a productive vegetation. The Boreal forest reached its northernmost extent shortly after 4500 BP, after which date the tree line moved south again. Palynological evidence from several sites indicates a reduction of the forest extent in the period 3000-2400 BP (Diaz *et al.* 1989).

3.2 The Natural Environment

As a result of the harsh climate, the present vegetation of the Strait of Belle Isle ecoregion consists of unforested coastal barrens. A common form of vegetation is tuckamoor, a combination of Balsam Fir (*Abies balsamea*), White Spruce (*Picea glauca*), and Black Spruce (*Picea mariana*), twined into low scrub thickets (Damman 1983). As the thaw attains the area of Port au Choix, on average, around April 30, and the frost periods begins around November 10, there is an average period of 190 days of persistent thaw; approximately half of the year. The duration of the vegetative season, when plants are able to grow in the area around Port au Choix is 120 to 130 days (Hare 1952).

It seems that the vegetation of the Strait of Belle Isle ecoregion has changed little over the last few thousands of years. A pollen analytical study of eight bog localities in the environment of L'Anse aux Meadows did not indicate any major vegetational change during the last approximately 7500 years (Henningsmoen 1977). Therefore it seems reasonable to argue that the ecological circumstances encountered by the Maritime Archaic were roughly comparable to those known from historical sources of the area.

Tundra and boreal zones are not very productive in terms of biomass, also the ecosystems present in such areas are relatively unstable. Because of the limited number of species and a limited diversity in food web relations, the ecosystems in tundra and boreal zones are subjected to cyclical population fluctuations. Marine ecosystems however are relatively more stable than those of tundra or boreal zones. This is caused by the greater diversity in species and food web relations. Marine resources are more reliable, and they are available on a year round basis and in greater numbers (Fitzhugh 1975b:353). Therefore the coastal areas, where resources from terrestrial, tundra/boreal, and marine ecosystems can be harvested, were and are very suitable places for human settlement. Such settlement might have been continuous but could also have happened on a seasonal basis.

In Newfoundland the most productive resources were seals, found near the coast, caribou, hunted inland, and salmon, harvested in the rivers. The presence of vegetable resources was of limited importance. Of the historical native inhabitants of Newfoundland, the Beothuk, it is known that in order to take full advantage of what nature had to offer, they migrated between the different ecosystems of the island on a seasonal basis. The following is a description of the most important animal resources found, or previously found, in Newfoundland. In addition to the species which we know were important to the Beothuk or other Native American groups outside Newfoundland, a number of species, mainly birds, are included for which bone fragments were found in the burials of the Port au Choix-3 locus II cemetery.

Resources during Spring

At the coast seals are one of the most stable food resources. Three species are abundant during spring. One of these is the Harbour Seal (*Phoca vitulina*) which is common along the coast of Newfoundland but not in areas with land-fast ice. The Harbour Seal can be found in rivers and lakes as well (Mansfield 1963:4). The other two species are the Harp Seal (*Phoca groenlandica*) and the Ringed Seal (*Phoca hispida*), which is the most common and widely distributed arctic seal (*ibid.*:17).

Of interest to the first Europeans in the Newfoundland area were the tremendous numbers of fish that occurred there. In particular the cod fisheries were very productive. During prehistoric times marine in-shore fisheries are likely to have played some role as well. In addition to the skate and shark teeth, a few remains of the Atlantic Cod (*Gadus morrhua*) were reported from the burials Port au Choix-3 locus II (Tuck 1976:64) but other marine fish species such as Halibut (*Hippoglossus hippoglossus*), Smelt (*Osmerus mordax*), and Capelin (*Mallotus villosus*) were probably caught also.

Almost all of the bird remains reported from the Port au Choix-3 site are from aquatic species. Particularly during spring and summer those birds can be hunted. From the Naskapi in Labrador we know that they hunted the Canada Goose (*Branta canadensis*), which arrived at the end of May in the bays, and nested in marshes near the coast. These birds are common summer residents in Newfoundland as well. In spring and autumn these geese can be seen along all of the coast (Threlfall 1983) and some birds may be present year round (Peters & Burleigh 1951:83). Among other birds hunted by the Naskapi were the loon (*Gavia* sp.), the American Black Duck (*Anas rubripes*), the Common Eider (*Somateria mollissima*), and the Black Guillemot (*Cepphus grylle*) (Henriksen 1973:5). Of all these species, with the exception of the American Black Duck, remains were found in the Port au Choix-3 burials (Parmalee 1976:65-69).

Some of the bird species found in the Port au Choix-3 locus II cemetery can only be found in Newfoundland seasonally. An example of this are the remains of an unidentified species of shearwater (of which three species occur in the area: the Greater Shearwater [*Puffinus gravis*], the Sooty Shearwater [*Puffinus griseus*], and the Manx Shearwater [*Puffinus puffinus*]). The great majority of these birds can be found near Newfoundland waters from May to early September (Peters & Burleigh 1951:54-6; L.M.Tuck 1967:268; Brown *et al.* 1975:52,148). Also other bird remains found in the cemetery (Parmalee 1976:65-69) suggest that the people were present at the coast during the spring or summer in order to harvest such migratory birds and their eggs.

An accidental visitor to the coasts of Newfoundland is the Polar Bear (*Ursus maritimus*). It travels on south drifting ice floes (Cameron 1958:96). Bone remains of this species were found in the Port au Choix-3 locus II cemetery and might also indicate presence of the people in the coastal region during spring or summer.

Resources during Summer

In addition to the three seal species mentioned above, in summer a fourth kind of seal can be found in the Newfoundland coastal waters. This is the Grey Seal (*Halichoerus grypus*), which breeds in the New Brunswick-Nova Scotia area (Mansfield 1963:9). Coastal fishing can be practised during summer as well. In addition to the yearly present Atlantic Cod (*Gadus morrhua*), spawning Capelin (*Mallotus villosus*) can be harvested from the beach in great quantities.

From the ethnographical record we know that the Beothuk visited the breeding grounds of the Great Auk (*Pinguinis impennis*) on an island north of Newfoundland, probably Funk Island, in order to collect their eggs (Cartwright 1792 cited in Howley 1915:48) and possibly to hunt the birds themselves. The Great Auk breeding colony on Funk island 49° 46' N, 53° 13' W, was first reported by Jacques Cartier in 1534, who found a great abundance of these birds (Peters & Burleigh 1951:247). The Great Auk, which could be found year round in all Newfoundland coastal waters, disappeared from Newfoundland as early as 1800 AD and became extinct as a species in 1844 AD (*ibid.*). Numerous remains of the Great Auk were found in the Port au Choix-3 locus II burials.

Regarding the presence of a number of summer residents among the bird species in the Port au Choix-3 burials (Parmalee 1976:65-69) it is likely that for the Maritime Archaic people birds have been an important summer resource. Notable are the remains of the Common Merganser (*Mergus merganser*) and Red-breasted Merganser (*Mergus serrator*) both breeding in the interior of the island and wintering off the coast, south of Newfoundland (Peters & Burleigh 1951:127,129; L.M.Tuck 1967:270; Bellrose 1980:447,454). In addition to a number of bills of these species, several merganser, or loon-like, effigies were found among the grave goods of the Port au Choix people (Tuck 1976:57).

Also hunted by the Maritime Archaic during summer were gannets and terns. The Northern Gannet (*Sula bassana*) is a fairly common summer resident (Peters & Burleigh 1951:66; L.M.Tuck 1967:268) and large breeding colonies of this species can be found in Newfoundland today at Cape St. Mary's, Baccalieu Island, and Funk Island (Nettleship 1976). Both species of terns, the Common Tern (*Sterna hirundo*), and the Arctic Tern (*Sterna paradisaea*), currently breed extensively throughout this island (Peters & Burleigh 1951:241,244) and are summer residents as well

(L.M.Tuck 1967:277). These species leave Newfoundland by early September (Brown *et al.* 1975:148). For a full list of the bird remains encountered at the Port au Choix-3 burials the reader is referred to Parmalee (1976:65-69).



Figure 3.1. Toggle-type harpoon (attribute 86) from burial B 33. Length of the object is approximately 10 cm. Drawing by Katherine Scott. (EeBi-2:909).

During the summer the Beothuk depended upon Atlantic Salmon (*Salmo salar*), which could be collected in great quantities in the rivers in the interior of Newfoundland (Marshall 1996:295). Also other fish species such as Brook Trout (*Salvelinus fontinalis*) can be caught in those rivers.

Although a great amount of labour is involved, it is possible to collect a large variety of berries in late summer. Examples of these are the Blueberry (*Vaccinium angustifolium*), the Partridgeberry (*Vaccinium vitisidaea*), and the Bake-Apple (*Rubus chamaemorus*). It is likely that these resources were part of the Maritime Archaic subsistence as well.

Resources during Autumn and Winter

One of the most important terrestrial resources was the Newfoundland Caribou (*Rangifer tarandus terraenovae*), which used to be abundant on the island. It was estimated that in the early 1900's 400,000 caribou were still present in Newfoundland (Bergerud 1971:15). The Beothuk were highly dependent upon the caribou. These animals formed their primary resource during autumn, winter, and spring. Even during summer caribou would have been available in Newfoundland (Spiess 1979:123,138). The Beothuk were reported to have made deer fences on the banks of Exploits River, for the purpose of 'funnelling' the caribou, who intend to cross the river, towards a ford selected by a group of hunters waiting to meet them (Cartwright cited in Howley 1915:30).

At the coastal regions fishing and seal hunting can also be practised in the autumn. In late autumn, and winter the hunt of fur-bearing animals in the interior becomes favourable. The pelts of those animals are then in prime condition, and their meat contains a lot of fat. Among those animals was the Newfoundland Wolf (*Canis lupus beothucus*), which was common at the time the first European settlers moved in, but probably did not occur in very great numbers (Dodds 1983). It became extinct in 1910 /1911 (Northcott 1974:51). The Fox (*Vulpes fulva deletrix*) occurs in all the ecological zones of Newfoundland, and must have done so in the past as well. The Black Bear (*Ursus americanus hamiltoni*) seasonally migrates over great distances, and occurs throughout Newfoundland (Dodds 1983). The Black Bear hibernates during winter in a den. Hunters who have localised such a den can kill the bear whenever there is a shortage of food. Of all these furry animals, remains of bones and teeth were excavated at the Port au Choix-3 locus II cemetery (Tuck 1976:52). Particularly the remains of jaws or paws indicate the use of hides as grave goods. Also found were remains of the Marten (*Martes americana atrata*), which was once present in most parts of Newfoundland with the exception of the Avalon-Bonavista areas and the northern part of the Great Northern Peninsula (Northcott 1974). Presumably it was highly dependent upon the Arctic Hare (*Lepus arcticus bangsii*) as its major food resource (Cameron 1958:98). The introduction of the Snowshoe Hare to Newfoundland probably caused the decline of the Arctic Hare (Peters 1967:327). The Ermine or Short-tailed Weasel (*Mustela erminea*), also used to be abundant on the island (Cameron 1958:99). Remains of this species have not been found at Port au Choix-3. Also important as a fur provider is the Otter (*Lutra canadensis*), can found throughout the island, predominantly in major aquatic areas (Dodds 1983). A few teeth of this animal were found in the Port au Choix-3 locus II cemetery. No traces were found of the Lynx (*Lynx canadensis*) which used to be distributed throughout Newfoundland (Cameron 1958).

One of the most numerous seals of the area is the Harp Seal (*Phoca groenlandica*) of which large breeding concentrations can be found on the land-fast ice off the Labrador and Newfoundland coast. In January part of the Harp Seal population migrates south through the Strait of Belle Isle. The seal pups are born on the sea ice in the period February-March. In May the adult seals start migrating back north (Mansfield 1963:10-13). Most common and widely distributed is the Ringed Seal (*Phoca hispida*) which breeds in all the areas where stable pack ice is present. Around the beginning of April the young, which are hidden in a lair in the snow, are born (*ibid.*:17). Another pack ice breeding species is the Hooded Seal (*Cystophora cristata*) found on the ice off the northeast coast of Newfoundland (*ibid.*:13). Present in low numbers is the Bearded Seal (*Erignatus barbatus*) which is an inhabitant of the arctic zones (*ibid.*:23). Remains of seals were found in several Port au Choix-3 locus II burials.

Other Resources

The Arctic Hare (*Lepus arcticus bangsii*) used to occur in the forested areas of Newfoundland (Cameron 1958:75) and was available throughout the year. Another reliable resource was the Beaver (*Castor canadensis caecator*), which can be found in the barrens and forests (Cameron 1958:80) and also on coastal islands, which they reach by crossing salt water channels (Dodds 1983). It can be caught year round. Especially in winter beavers are easy to catch as they have little activity then and are usually at home in their easy traceable houses.

A number of birds are present in Newfoundland throughout the year. Three species, of which remains were found in the Port au Choix-3 locus II cemetery, are mentioned here. The first is the Herring Gull (*Larus argentatus*), which is present all along the coast of Newfoundland. It breeds on coastal islands and on islands in inland ponds (Peters & Burleigh 1951:228, Threlfall 1983). Another year-round resident is the Common Eider (*Somateria mollissima*), which breeds along the coast from Ellesmere Island to New Hampshire (Bellrose 1980:355). In Newfoundland eiders are common along the coast during winter and summer (Peters & Burleigh 1951:115; L.M.Tuck 1967:270; Threlfall 1983). The third species is the Common Loon (*Gavia immer*), which breeds on freshwater ponds and lakes. As with the merganser, several bills of this species of loon were found in the Port au Choix-3 locus II burials.

The Moose (*Alces alces americana*) found in such great numbers today is not native to Newfoundland, but was introduced by humans in 1878 and 1904 (Pimlott 1953). The possibility that moose visited Newfoundland however cannot be ruled out, for bone remains of this species were found at

the Port au Choix-3 locus II cemetery (Tuck 1976:81). It is possible that moose have crossed the ice of the Strait of Belle Isle during winter time, as was seen of caribou (Cameron 1958:104). Of course just like the animals, the Maritime Archaic people could have crossed the Strait of Belle Isle, in order to hunt for moose in Labrador. Several large breeding colonies of the Walrus (*Odobenus rosmarus*) used to exist in the Gulf of St. Lawrence, as far south as Sable Island, Nova Scotia. Because of excessive hunting during the historic (European) period this animal has virtually disappeared from the Newfoundland waters. It breeds on pack ice but can be found in ice-free inshore areas as well (Mansfield 1963:25). Hunting activities have also affected the whale populations. Several species used to occur abundantly in the Newfoundland waters. The Killer Whale (*Orcinus orca*) was present, as indicated by a tooth and a stone effigy of this species among the grave goods at the Port au Choix-3 locus II cemetery. Another available resource is shellfish. Clams and mussels can be collected at many localities on the coast in ice-free periods.

Notably absent from the cemetery of Port au Choix-3 locus II is the Dovekie or Little Auk (*Alle alle*) which is probably the most numerous bird in the North Atlantic (Threlfall 1983). The Dovekie is very abundant off the coast of Newfoundland during wintertime (L.M.Tuck 1971). These very small and unwatchful birds breed in the high arctic. Another fairly common winter resident not found in the Port au Choix-3 locus II cemetery is the Oldsquaw (*Clangula hyemalis*). Among the common Newfoundland summer residents (Peters & Burleigh 1951:80,104) which have not been found in the cemetery are the American Bittern (*Botaurus lentiginosus*) and the Common Goldeneye (*Bucephala clangula*). Also notable is the absence of the Common Raven (*Corvus corax*), which is a numerous year round resident of the coastal and interior areas (Peters & Burleigh 1951).

Present in the cemetery but currently 'absent' from Newfoundland are the Trumpeter Swan (*Cygnus buccinator*) and the Tundra Swan or Whistling Swan (*Cygnus columbianus*). Newfoundland is not part of the current breeding and winter areas of these swans (Bellrose 1980:87,94). For a checklist on Newfoundland birds the reader is referred to Mactavish *et al.* (1999).

3.3 The Port au Choix-3 Locus II Cemetery

Long before (one of) the Port au Choix-3 cemeteries was excavated archaeologically, Maritime Archaic burials, or artifacts associated with them have turned up in the town (Harp 1951, 1964). Three of those discoveries were described by Harp and Hughes (1968) who studied the artifacts and bones that could be located. A grave containing three males, one adult of unknown sex, and a child of seven to ten years old was discovered in 1939. Only a few spatulate bone tools were present, four of which are decorated by longitudinal series of short parallel lines, comparable to geometric motif 3, later described by Tuck (1976:186).

Another burial was discovered in 1959. This individual was buried with red ochre and was accompanied by a great number of artifacts, including four gouges, an adze and one adze blank, slate knives, a leaf shaped bifacial chert blade, a foreshaft, two square barbed bone points, three beach pebbles, and two bone scrapers, one of which was decorated (Harp & Hughes 1968) resembling geometric motif 7 (Tuck 1976:186).

In 1960 a burial of an individual in foetal position was found. Among the grave goods were two stone blanks, a knife handle decorated with motif 3 (Tuck 1976:186), a barbed harpoon, perforated walrus and seal teeth, and two bear canines. Also two rather unique artifacts were found in this grave. One was a steatite 'amulet' 5 cm in height, with a double lined triangular decoration; the other a copper point encapsulated in a casing of mud, in which a number of shells were impressed (Harp & Hughes 1968). In none of these graves were bayonets discovered.

The Port au Choix-3 cemetery was located on one of the raised beaches of the present-day town of Port au Choix (Figure 1.1.). The alkaline soil of this limestone beach has an average pH. of ± 8.0 (Tuck 1976:2). This, combined with the good drainage of the beach, provided ideal conditions for preserving the skeletons and the associated organic artifacts. The raised beach is 9 to 21 metres in width and approximately 6 metres above the current high water level (*ibid.*). The uplift of the land, after the melting of the ice cap, had not yet reached current elevations, and therefore the land-sea distribution at the time the Maritime Archaic people created the cemetery, was different from the distribution today. Probably the location of the cemetery was on a little island. With this in mind it is interesting to consider the practice of burying the dead on islands, which was a custom of several Native American groups such as the Micmac of Nova Scotia (Bock 1978:114). It was believed that the spirits of the dead were not able to cross stretches of water, and therefore were not able to bother the living if burial took place on an island (Hall 1976).

The Port au Choix-3 cemetery consisted of at least three spatially segregated loci. These were locus I, II, and IV. Locus I was a small group of eight burials. Unfortunately this locus was badly disturbed during its discovery. One ^{14}C date was made on charcoal of unknown grave provenience; 3410 ± 100 BP (I-4677) (Tuck in Wilmeth 1978:197). Locus IV had two infant graves. These graves were not spatially associated with those of the other loci. One ^{14}C date was made; burial 2: 3230 ± 220 BP (I-4380) on carbonised birch(?) bark (Tuck in Wilmeth 1978:197).

Locus II was a largely undisturbed concentration of 52 graves, containing 93 skeletons in 95 burials. A burial is the interment of only one individual. Some graves in Port au Choix-3 locus II consist of two, three or four burials. In one grave (C 37) as many as 15 burials were encountered. Two locus II burials (A 13 and B 17) lacked skeletal remains. How this was caused is unclear. The red ochre and grave goods made these features recognisable as burials. The locus II burials were found in three spatial burial clusters (Figure 3.2.). The most northern group, burial cluster A, consists of 18 burials, with 17 skeletons, distributed over 14 graves. The central group, cluster B, has 29 skeletons in 30 burials, interred in a total of 17 graves. In burial cluster C, the southern group, 21 graves, including 47 skeletons and the same number of burials were encountered. The following ^{14}C dates were obtained; burial 22: 4290 ± 110 BP (I-3788), 3370 ± 80 BP (Y-2608) (Tuck in Wilmeth 1978:197), and 3690 ± 90 BP (I-4682) (Tuck 1976:10,162), all three dates being conducted on the same charcoal sample; burial 42: 5120 ± 120 BP (Y-2609) on wood inside a bog iron nodule (Tuck in Wilmeth 1978:197); burial 50: 3930 ± 130 BP (I-4678) on human bone (Tuck 1976:10,162).

In addition to these radiocarbon dates of locus II, a series of nine dates was conducted in 1997 at the Accelerated Mass Spectrometer (AMS) of Groningen University, The Netherlands. One of the advantages of the AMS radiocarbon dating technique is that, compared to the conventional technique, less than 1 % of the sample quantity is needed. Another advantage is that those dates are more accurate (CIO 1994). For a detailed text on radiocarbon dating the reader is referred to Taylor (1987). The very small sample quantities required made it possible to date the human skeletons themselves without inflicting too much damage to them. From each burial cluster three individuals were dated. The results are presented in Figure 3.3. and Appendix 3.1.

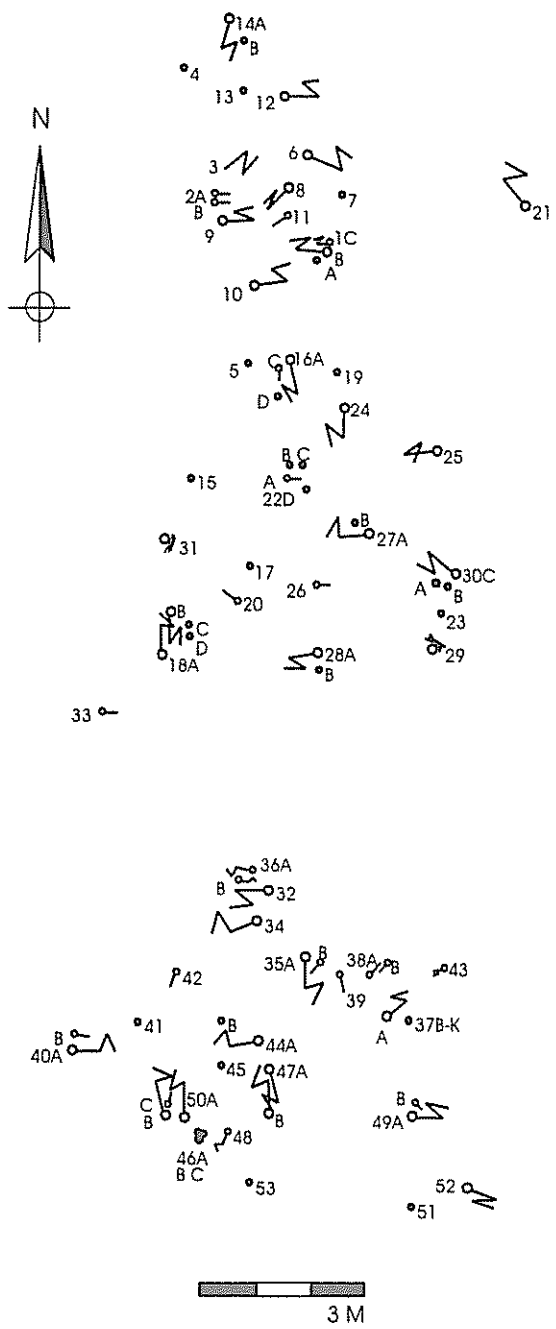


Figure 3.2. The burials of Port au Choix-3 locus II. Disturbed graves are indicated by a dot.

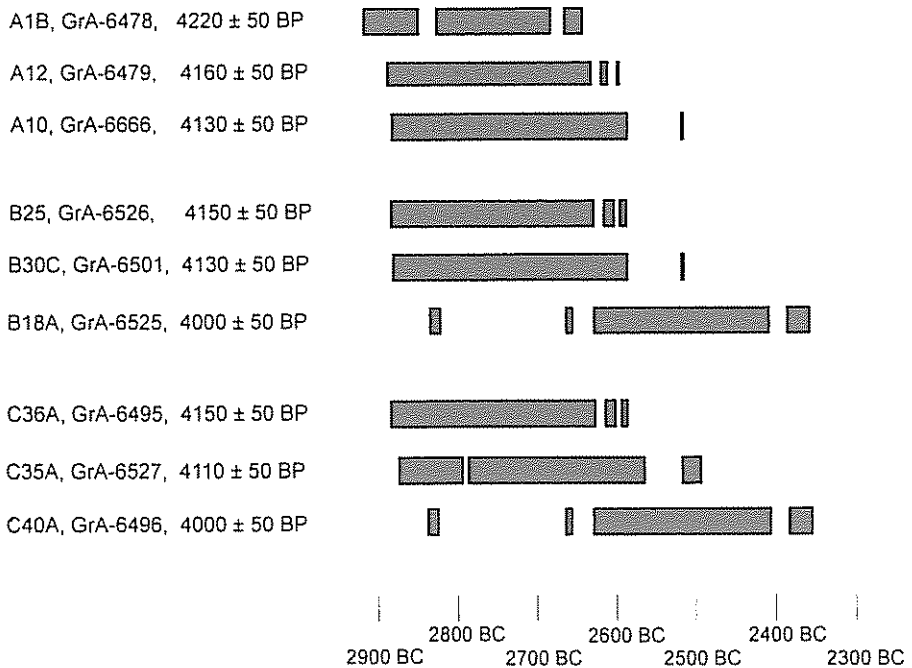


Figure 3.3. Port au Choix-3 locus II AMS-radiocarbon dates from human bone samples, showing uncalibrated dates (BP) and a graphic presentation of calibration intervals with 95.4% confidence (Cal BC). The exact calibrated dates can be found in Appendix 3.1. Calibrations were conducted with the Cal25 curve (Stuiver et al. 1999).

Because of the differences in radiocarbon techniques and the incomparability of samples sources (charcoal, wood, human bone) only the AMS dating results, all conducted on human bone, were used in this research. The calibrated dates roughly range from 2900 to 2400 BC. However this does not take the 'reservoir effect' into account. Radiocarbon that is formed in the atmosphere is not directly absorbed in seawater, which causes marine ecosystems to have lower radiocarbon concentrations than terrestrial ecosystems. As a consequence of this lower concentration, radiocarbon dates of marine organisms and marine food consumers, are too old. This deviation ranges from 300 to 400 years. An, arbitrary, reservoir effect correction of 300 years would bring the calibrated dates of Port au Choix-3 locus II in the range 2600 to 2100 BC.

In addition to a large number of graves, some other features were found in the locus II cemetery. Mentioned here are some hearth features, concentrations of clam valves (Tuck 1976:20-21), and an area of 1 square metre paved with limestone slabs (Tuck 1976:21, feature 8). Whether these features were associated with the cemetery is unclear.

For two reasons locus II is very suitable for a study of the social structure of the Maritime Archaic people who lived in today's Port au Choix. Firstly it contained a unique, well-preserved sample of the human skeletons and accompanying organic artifacts, secondly it is limited in space and time (see Figures 3.2. and 3.3.). The other loci are less well suited for a study of prehistoric social structure because locus I was disturbed badly during its discovery and because of the small numbers of individuals found in loci I and IV. Locus III was a, much later, Palaeo-Eskimo occupation site (Tuck 1976:22), and obviously not a part of the Maritime Archaic cemetery.

How mortuary variability, such as observed in Port au Choix-3 locus II, is related to social structure is described in the next chapter.