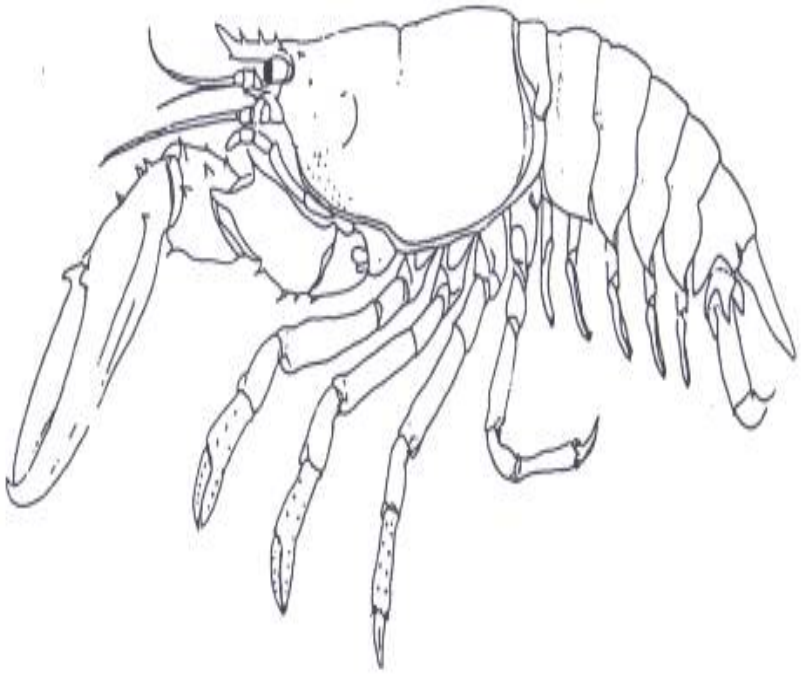
JAKEJ

THE EARLY HISTORY OF LOBSTER HARVESTING AMONG NATIVES AND NEWCOMERS IN ATLANTIC CANADA



VOLUME 1: REPORT

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ARCHAEOLOGICAL EVIDENCE

Oral traditions generated and recorded in post-contact times can only be projected into a pre-contact period through additional assumptions, analytical steps and analogical reasoning. The archaeological record, on the other hand, is already a product of the past that does not require further projection. In other words, once the record has been temporally located in a pre-contact period, either through relative dating (e.g., seriation) or absolute dating (e.g., radiocarbon), it becomes direct evidence against which circumstantial evidence from post-contact times can be checked. Secondly, since it is well established that many indigenous cultures underwent profound changes as a consequence of European contact even prior to the appearance of the first detailed, written descriptions about them, archaeology offers the best evidence for a reconstruction of pre-contact cultures.[17] Finally, while modern scientists are required to analyse the evidence, the archaeological record itself was originally generated by the aboriginal people who left the material remains. This overcomes at least some of the difficulties inherent in any study that otherwise relies on early records produced by outsiders.

Zooarchaeology (or archaeozoology) is a specialized sub-field that refers to the study of animal remains from archaeological sites.[18] Most archaeologists who excavate pre-contact hunter-gatherer campsites will encounter at least some faunal material and will consult with their colleagues, read the scholarly literature, and familiarize themselves with the basic analytical principles involved. Often, the species identifications provided by the sub-field specialist are used by the archaeologist to formulate opinions on the mode of subsistence of the people they study. This type of scientific evidence has become absolutely essential in the reconstruction of past aboriginal practices and no discussion of Mi'kmaq lobster use will be complete without reference to faunal analyses conducted in the Maritimes.[19]

Before proceeding further, it must be emphasized that lobsters, crayfishes and their close relatives are not considered shelled animals and, hence, are not technically shellfish. Rather, they are more properly referred to as crustaceans. It is the molluscs with their heavy calcium carbonate exoskeleton (commonly called a "shell") that are the true shellfish.[20] This scientific distinction which is not always apparent in the literature, will be followed here.

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[17] Trigger 1985:114-118.

[18] Reitz and Wing 1999:1-3.

[19] I have consulted with my colleague Debbie Berg, a zooarchaeologist who teaches this subject at the University of Toronto and is in charge of our zooarchaeological laboratory and collections. She has previously assisted me in the identification of faunal elements which I recovered on a hunter-gatherer archaeological site (see von Gernet 1993b). Furthermore, she has identified numerous crayfish remains on a pre-contact site (Berg 1989:13). In the present instance, her primary role has been to assist in tracking down some of the scholarly literature I required to prepare an informed opinion on the archaeological evidence for the aboriginal use of crustaceans. As always, the opinion is of course entirely my own and is based on my personal review of the literature. I also consulted with Stephen Cumbaa, Project Leader, Paleobiological Studies at the Canadian Museum of Nature, who advised me on technical matters relating to lobster recovery and the French consumption of lobster.

[20] Claasen 1998:16-18; Crocker and Barr 1968:Figure 20; Ganong 1889; Herrick 1895; Phillips et al. 1980

Reviewing the work of previous scholars,[21] Patricia Nietfeld has documented an astonishing variety of marine invertebrate remains recovered from archaeological sites throughout Nova Scotia. The species include Tortoise Shell Limpet, Boat Shell, Common Northern Moonshell, New England Basket Shell, American Pelican's Foot, Atlantic Oyster Drill, Atlantic Dogwinkle, Common Northern Whelk, Stimpson's Spindle Shell, Ten-ridged Neptune, Blue Mussel, Northern Horse Mussel, Atlantic Ribbed Mussel, Giant Scallop, American Oyster, Waved Astarte, Ocean Quahog, Northern Quahog, Atlantic Surf Clam, Common Razor Clam, Common Soft-shelled Clam, and Green Sea Urchin.[22] Her extensive review of the literature did not unveil any references to lobster recoveries.

More recent work, such as Kevin Leonard's excavation of a fourteenth-century Mi'kmaq shell midden at Shediac Island in southeastern New Brunswick, corroborates these findings. Careful analysis of the midden resulted in the identification of moose, dog, beaver, deer, black bear, racoon, muskrat, porcupine, marten, loon, gull, oyster, boat shell, quahog, clam, and mussel, but no lobster.[23] This pattern is repeated in other detailed lists of faunal elements recovered from thousands of archaeological sites in the Maritimes and New England.[24]

One possible explanation for the absence of lobster in Mi'kmaq and other archaeological sites is that crustaceans are particularly susceptible to decay. There is no question that representatives of the Order Decapoda, including shrimps, crayfishes, lobsters and crabs are more perishable than other invertebrates such as the frequently recovered molluscs. Since their exoskeletons can rot in reasonably moist aerobic conditions, the importance of these species may have been greater than the archaeological record suggests.[25] Bruce Bourque goes so far as to claim that crustaceans "do not survive in Maine shell middens." Nevertheless, he adds, "there is good reason to suspect that these species, primarily the lobster (*Homarus americanus*), were significant food sources."[26] Regrettably, he fails to specify the "good reason" for the latter statement[27] and is evidently mistaken in the former

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[21] Among these is J.S. Erskine who conducted extensive excavations and faunal analyses at numerous shell middens in southwestern Nova Scotia (Erskine 1960:350-355).

[22] Nietfeld 1981:603-604.

[23] Leonard 1996:196.

[24] e.g., Allen 1980:94-95; Barber 1982:59-65; Bernstein 1990a; Bernstein 1990b; Black 1991; Bourque 1995:86-93, 138-144, 214-222; Davis 1986:200-202; Lenik 1977:95; Loomis and Young 1912:24; Nash 1980:35-36; Nash 1986:103-104; Nash and Miller 1987:47-50; Nash et al 1991:217-218; Painter 1977; Sanger 1982:197-202; Sanger 1987:56-77; Sheldon 1987:28, 104-107, 119-123; Spiess et al. 1983; Smith and Wintemberg 1929:7-17; Stewart 1980a; Stewart 1980b:223; Stewart 1986; Stewart 1989; Stewart 1990; Tveskov 1997:350-352; Waters 1962; Yesner 1988:56-58,60. It should be noted that in a few instances only vertebrate remains were analyzed.

[25] Reitz and Wing 1999:45; Leach and Anderson 1979:143-144.

[26] Bourque 1995:90. Similarly, Frances Stewart (1986:142) says that "non-shelled invertebrates and plants were undoubtedly also consumed but there is no evidence for these in the archaeological record and very little mention of these food sources in the early sources." The logic does not hold. If there is no archaeological evidence and very little mention in the early sources, how does one reach the conclusion that these were "undoubtedly" consumed?

[27] As we will see, there is actually no good reason (other than the mere fact of availability) to suspect that lobster was a "significant food source" among the Mi'kmaq.

It is a fortuitous circumstance that shell middens offer unique conditions for preservation of faunal remains because the calcium carbonate of the shells neutralizes acidic soils.[29] It has also been noted that the survival of crustaceans may be higher in deposits where there are substantial quantities of ash, again since an alkaline environment is more favourable to preservation than an acidic one.[30] Shell middens, in addition to containing the alkaline ingredients of the shells themselves, are also often mixed with the alkaline ashes of camp and cooking fires, or exhibit extensive ash lenses.[31] Furthermore, the burning of faunal elements creates calcined bones which are preserved even when acidic soils decay other material.[32] Other conditions are also favourable to preservation. For instance, Mi'kmaq archaeological sites dating to the time of first European contact and shortly thereafter (i.e., the sixteenth-century Protohistoric period), contain numerous "perishables" preserved by the presence of copper salts. These include porcupine, moose, deer, bear, and beaver pelts, feathers, cloth blankets, basketry, mats, textiles, cordage, birchbark and leather arm bands, leather moccasins, and even a moose-hair roach head dress.[33]

In the absence of experimental data, it is of course difficult to ascertain the extent to which conditions favourable to the preservation of such perishables should lead to an expectation of crustacean remains. All we can say for certain is that these delicate invertebrates can, and have been, preserved in the ground for very long periods of time. In New Zealand, ethnohistoric reports of Maori crayfish harvesting at the time of first European contact[34] have been corroborated archaeologically by the recovery of 2,564 specimens dating from the 12th to 17th centuries. Hence,

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[28] As noted *infra*, lobster has in fact been recovered in a Maine shell midden.

[29] Belcher 1989:182. There appears to be a scientific consensus on this issue. Erskine (1960:350) noted quite early that "in shell heaps the volume of shell changes the chemical reaction, and bones are very well preserved there." Bernstein (1990b:327) agrees that shellfish "serve to drastically reduce soil acidity." Nash (1980:32) laments the poor preservation in acidic soils, but points to the "alkaline shell heap sites where preservation is much improved." Indeed, preservation is good "in shell heaps or where shellfish are present in sufficient numbers to favorably affect the soil chemistry" (Nash and Miller 1987:47-48). At the Delorey Island site in Nova Scotia, the presence of shellfish has, by altering the soil chemistry, "acted to preserve faunal remains" (Nash 1986:103). Sanger (1982:198,202) says that "it is the presence of shell that imparts CaCO2 into the naturally acidic soil" and he refers to sites in Maine that have "excellent preservation." Elsewhere, he again observes that "bones were well preserved in the neutral soil environment" of a site in Passamaquoddy Bay, New Brunswick (Sanger 1987:57). Stewart (1989:61) adds that, "although the natural acidity of the soils in the Maritimes results in the rapid decomposition of bone, there are coastal shell mounds rich in faunal material and other sites with smaller faunal samples." The poorly preserved remains appear to be inland sites lacking large enough quantities of shell to neutralize the natural acidity (Stewart 1989:73).

[30] Leach and Anderson 1979:144.

[31] Loomis and Young 1912:17, 19-20; see also Erskine 1960:354; Black 1991:204.

[32] Allen 1980:94; Nash et al. 1991:217; Sheldon 1987:104-105; Stewart 1989:61; Stewart 1990:168.

[33] Leonard 1996:208-209; Whitehead 1993.

[34] The reports date to the 1760s and 1770s and include the following: "We again got in shore near Cape Pallisser and was visited by a number of the Natives in their Canoes with a great quantity of Cray fish, which we bought of them for nails and Otaheite Cloath." "Of them [sea crayfish] we bought great quantities of the natives every where to the Northward." The sea crayfish "seemed to be the principle food of the inhabitants, at this season of the year" (quoted in Leach and Anderson 1979:142-143).

unlike the case with lobsters in Atlantic Canada, researchers were able to issue a confident declaration: "It is clear that crayfish as a source of food were just as important in antiquity in New Zealand as they were when the first Europeans came to these shores."[35] New Zealand may seem far afield, but there is also evidence of crayfish preservation closer to home. Numerous crayfish remains have been recovered from a pre-contact Iroquoian archaeological site in Ontario, which suggests that even in Canada exoskeletal pieces can remain intact for many centuries, particularly if calcined.[36]

Other close relatives of the lobster have been recovered along the eastern seaboard. For instance, numerous claws of the common Blue Crab (*Callinectes sapidus*) have been found in midden-pits at an over 2,000-year-old, single component site in Currituck Sound near the Virginia-North Carolina state line.[37] Similarly, hundreds of crab claws have been identified at archaeological sites in Panama,[38] as well as on the Olympic Coast of Washington.[39]

Crayfish and crab are not the only crustaceans for which we have evidence. Three hundred and fifty-eight mandibular fragments of the Cape Rock Lobster (*Jasus lalandii*) were found in the excavation of a standloper midden-cave in South Africa.[40] A more modest recovery of the North American species was made in Atlantic Canada. In 1886 James P. Howley excavated a Beothuk grave in a cave on Swan Island, Bay of Exploits, Newfoundland. Among the material uncovered were "numerous fragments of broken shells of mussels and clams, some pieces of lobster claws."[41] Elsewhere he specified that he found "shell fish such as mussels, *Mytilus edulus*, salt and fresh water clams, especially *Mya arenaria*, the scollop, *Pecten islandicus*, and some broken lobster claws."[42] If these remains were contemporaneous with the Beothuk burial, then they appear to have survived in identifiable form for quite some time.[43] Significantly, a lobster element was recovered from a pre-contact site on the southwestern shore of Pell Island in East Penobscot Bay, Maine.[44] All of this suggests that despite their perishable nature lobsters and other closely related crustaceans are archaeologically recoverable.

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[35] Leach and Anderson 1979:162.

[36] Berg 1989:13. The chelipeds and mandibles of crustaceans are heavily calcified and preserve best; hence, they are most often recovered on archaeological sites (Reitz and Wing 1999:50-51; Leach and Anderson 1979:144). Crayfishes are of course closely related to lobsters and share a similar anatomy (Crocker and Barr 1968).

[37] Painter 1977:47.

[38] Ranere and Hansell 1978:49, 51-53, 56.

[39] Huelsbeck and Wessen 1994:127, 129-130.

[40] Grindley 1967.

[41] Kirwin et al. 1997:226; see also Marshall 1996:413.

[42] Howley 1915:291. A photograph showing these "fragments of lobster shells" is given in his book on the Beothuks (Howley 1915:Plate XXXV).

[43] It should be kept in mind that the Beothuk became extinct in 1829. Shanawdithit, the last surviving Beothuk, recalled that her people ate dried lobster tails (Marshall 1996:296-297). There is of course also a possibility that the lobster remains in this cave were intrusive and, hence, more recent, but this seems less likely

Since the record that has survived and is known to us is always a small sample, an occasional practice may not have an archaeological manifestation, irrespective of whether the practice involves perishables or non-perishables. On the other hand, it is reasonable to suggest that a practice that was both integral to a culture and involved faunal material that is known to have survived the ravages of time, should have at least some zooarchaeological evidence rather than none at all. In any event, a review of the evidence leads to a firm conclusion: there is currently no evidence that lobster was important to the Mi'kmaq prior to, or at the time of, their first contact with European newcomers.