During June, July, and August 1985 crews from Memorial University once again returned to Red Bay to continue excavations at 16th century Basque whaling stations. In addition to further explorations at the Red Bay whaling stations, surveys were conducted up and down the southern Labrador coast to record other whaling stations of the same period. In both cases our efforts resulted in new information and interpretations of the late 16th century in southern Labrador. The 1985 excavations were financed by a grant from the Department of Culture, Recreation and Youth, Government of Newfoundland and Labrador, and conducted under permit # 85-04 issued by the Historic Resources Division. As in years past valuable assistance was rendered by the Canadian Conservation Institute.

Four areas on Saddle Island were further explored, several ponds excavated, and a series of small scattered living sites partially explored.

Excavations at Area C, apparently one of the largest and most extensively used shore stations on Saddle Island, was nearly completed during the past summer. Except for a small, but deep, deposit of clay containing well preserved organic materials — textiles, baleen, and wood—and a concentration of burned stone, tile, and fat near the southern edge of the area, the entire shore station has now been exposed. As reported previously the station consisted of a number of structures which can be summarized as follows. Most obvious, and clearly visible as a long rock mound prior to excavation, is a large tryworks, frequently repaired and probably more than occasionally rebuilt, which was capable of supporting five large copper cauldrons in which the actual rendering of oil from blubber was done. A small structure of uncertain function located on a small terrace above and behind the tryworks may have been a cooperage although no coopers' tools were found within or near the remains of the structure and a large cooperage on a second terrace immediately to the north of the tryworks more likely supplied the casks into which the oil
recovered from this tryworks was placed. A large grindstone suggests that some industrial activities were carried out in the former location, however, although the structure is perhaps best interpreted as a shelter for men tending the tryworks; even this, however, is by no means certain. In front of the shore station was a now submerged wharf or cutting-in stage where the whales were flensed and no doubt where supplies were landed and casks of oil launched to be towed to the whaleships anchored in the harbour. A reconstruction of this area by artist Richard Schlecht appears in National Geographic, Vol 68, No. 1, July 1985, on pp. 46-47. As mentioned above, a few small areas remain to be excavated, particularly at the south end of the area where it is suspected that a deep deposit of clay and refuse could conceal still another small structure. Excavations during the summer of 1986 will explore this area more fully and complete the exposure of this entire shore station.

In addition to the 16th century features described above the 1985 excavations revealed additional material pertaining to the mid-19th to early 20th century occupation of the area by the ancestors of the present day inhabitants of Red Bay as well as artifacts and one feature which may pertain to aboriginal utilization of the area. In 1984 a native potsherd was recovered from the small structure of uncertain function overlooking the tryworks (Tuck 1985: 233,247) and the 1985 excavations revealed an area where sections of copper from one of the rendering cauldrons were modified, perhaps also by native people. A number of rivets were discarded on the spot as were several asymmetric copper triangles which could have served as projectile points or perhaps are simply "offcuts" from the manufacture of such weapon parts. The context of these objects was such that contemporaneity or very near contemporaneity with the Basque occupation is indicated. No such objects have been found in Inuit sites along the Labrador coast, despite the extensive excavations of Susan Kaplan, Richard Jordan and others, suggesting that these artifacts may be further indication of Indian presence in the Strait of Belle Isle during the 16th century.

Excavations were also completed at the whalers cemetery, discovered in 1982 and the object of investigations since that time. Once again, Brenda Kennedy of the University of Calgary participated in the excavations and is now in the process of analysing the skeletal material. The 1985 season
brought the number of burials to 56 which, with Feature 1, the unburied dead which first brought the cemetery to our attention, and several kinds of random human bones, brought the total number of individuals to somewhere in the neighborhood of 130. If the port of Red Bay was in use for 60 years between about 1540 and 1600 the number of graves revealed by our excavations amounts to less than one per year. If the seasonal population averaged 500, and it seems that during the peak of the whaling period it may have been considerably larger, a death rate in the neighborhood of well below one per-cent is indicated. Both of these figures seem remarkably low for a 16th century population, but why they are so remains something of a mystery. Several factors, in addition to the possibility that there are other cemeteries which we have not located, may account for what appears to be a remarkably low death rate. Brenda Kennedy will consider these in much more detail, but it is worthwhile to point out some of them since four years' work at the cemetery are now complete and the area has been restored to approximately its original form.

The first factor which might account for the apparent low death rate among the 16th century whalers is that the individuals who came to Red Bay as whalers were doubtless not representative of the entire population of the Basque Provinces on northern Spain and southeastern France. We know, for example, that females were not present and that most of the whalers were between 20 and about 45 years of age. Factors such as death during childbirth, infant mortality, and death from old age were not features of the Red Bay population. Those men who did participate in whaling were doubtless chosen at least partly for their physical prowess; it is doubtful whether infirm individuals would have made voyages to Terranova. These two factors—a selected and healthy population—doubtless contribute to the relatively low number of burials recorded at the Saddle Island cemetery. Other factors may also have been at work, however. The most obvious of these is that the bodies of whalers lost at sea during the undeniably dangerous business of hunting and retrieving whales from the Strait of Belle Isle may not have been recovered and therefore are not represented in the cemetery. Since the custom of raising memorial stones to those whose bodies were not recovered apparently did not exist in the 16th century, as it did among 18th and 19th New England
whalers, it is impossible to determine what effect this might have on the size of the population represented in the cemetery. Nor does the study of surviving documents in Spain yet shed much light on this point. Wills exist which clearly indicate death and burial in Terranova (Barkham 1977), but the exhaustive research needed to quantify these data will require years to carry out.

It is also conceivable that the diet of the Red Bay whalers may have been such as to promote relatively good health. No positive evidence of scurvy, which was responsible for a large proportion of the deaths at the slightly more recent Dutch whaling station at Smeerenburg (Maat 1984; Louwrens Hacquebard, personal communication), has yet been observed on the Red Bay skeletons. Once again, however, these studies are just beginning and many of the skeletons are in a very poor state of preservation, hence it may be impossible to address this question with a great deal of confidence. It might be noted, however, that faunal remains from both the land and underwater excavations indicate a diet rich in protein which included most of the fish, birds, and mammals typically available along the southern Labrador coast during the summer months (Stephen Cumba, personal communication); I doubt whether the amount of protein available to the population in northern Spain approached that regularly consumed by the whalers of southern Labrador. While a high protein diet probably contributed something to the general good health of the whalers, such a diet would not have prevented scurvy, perhaps the worst enemy of seamen before the discovery of the preventative powers of citrus fruit in early 17th century. It is conceivable, however, that the abundant berries in Southern Labrador—blueberries, crowberries, and bakeapples—were consumed in sufficient quantity to prevent the disease during years when the return to Spain was made at the normal time, usually no later than the first of the year. During those years when rapidly forming ice forced crews to overwinter deaths were common in the following spring, perhaps not as much from starvation or exposure as from deficiency diseases against which the whalers had no protection.

Also remaining to be explained are a number of burials which deviate significantly from normal burial practice. The majority of the graves are in the extended position, on the back, oriented with the head to the west. So closely do these burials parallel our own grid that it almost appears as if
these burials were made with the aid of a compass. Others are slightly "of-axis", probably because of natural obstacles such as bedrock outcrops or large boulders which made precisely oriented east-west graves impossible to dig. Several burials, however, are considerably out of line with the majority, some actually reversed with the heads to the east. There appears no natural reason for this diversion from the normal practice; it is hoped that analysis of the skeletons themselves might reveal some differences between those buried in a typical fashion and the majority of the interments. These and other questions have been posed by the cemetery on Saddle Island. Clearly we have more questions than answers.

Excavations at a third area on Saddle Island revealed a large feature which as yet cannot be explained. A large scatter of wood charcoal, in places several centimetres thick and covering an area about ten metres in diameter, was completely exposed during the last weeks of the 1985 season. Stratigraphically it lies above a layer of peat which, in turn, covers a small Dorset component, and beneath a layer of sod not unlike that which has formed over most of the 16th century deposits thus far revealed. An apparently intrusive 19th century pit, possibly a trash pit or at least a shallow feature which became filled with refuse, intersects the usual stratigraphy but does not seem to pertain to the original formation of the charcoal layer. Artifacts associated with this feature, although limited in number since only a few one-metre squares have been excavated into and below the charcoal, include coarse earthenware, hard grey-bodied Normandy stoneware, a few fragments of glass including a stem fragment, nails, and other less diagnostic objects. While the coarse earthenware and iron nails with large flat heads are not unlike those from the 16th century structures excavated elsewhere on Saddle Island, the high percentage of Normandy stoneware is at some variance with the percentages of this distinctive ceramic ware in other assemblages. Unique are fragments of at least two small (not more than five centimetres high) "ointment" jars unknown from earlier excavations. The fragment of stemware has been examined by Ann Smith, Material Culture Researcher with Parks Canada who specializes in archaeological glass. She reports that the first impression is of an 18th century French origin of the majority of the early glass from Red Bay. It is just possible, therefore, that this area represents
utilization of Red Bay between the cessation of Basque whaling in the early 17th century and the start of the Labrador summer fishery carried out by Newfoundlanders beginning about 1830. It is probably too much to hope for, but we know that Pierre Constantin, a Quebec merchant, established a post at Red Bay in 1715 which was sacked and burned by Inuit in 1718. The evidence at hand — a thick charcoal layer and at least a suggestion of French artifacts — is suggestive, but only the research planned for the summer of 1986 will tell us whether we have in fact located a part of this establishment.

Following the successful excavation of the small pond on Twin Island (Tuck 1985) which produced a wealth of organic artifacts of 16th century origin, including both Basque and Inuit material, several small ponds on Saddle Island were excavated. The technique of excavation, which initially depended on siphon action to remove silt and water from the pond was improved with the addition of an in-line suction dredge powered by a three inch pump which resulted in a much more efficient system and the elimination of breakdowns which plagued the 1984 excavations.

The 1985 excavations produced a wide range of artifacts from the 16th century and more recent times. These include barrel and tub parts, about one-half of a ceramic vessel typical of the 16th century Basque material, and other containers which appear to have been lost, broken, or abandoned at places where drinking water was collected in the 16th century and more recent times. Other objects included fragments of leather, ship and small boat parts not unlike those from Twin Island, and the remains of what appear to be the complete skeletons of a number of harp seals which, for reasons still unknown, found their way into a pond more than 100 metres from the nearest salt water.

Also in 1985, after years of searching, we discovered the locations of a number of small dwellings used by the 16th century whalers. Until 1985 we were misled by what we thought was our exhaustive knowledge of Basque ethnography and searched carefully at the bases of large rock faces for traces of structures analogous to those built by shepherds in the Pyrenees. In some cases these efforts were successful, and two such areas were excavated during the summer of 1985. At least one of these was the scene of multiple occupations, in places separable on the basis of thin layers of sod between deposits of baleen, scraps of wood, charcoal, and other artifacts. This par-
ticular location, immediately below the crest of a small hill on the extreme southern end of Saddle Island, may have been associated with a lookout established on the top of the hill, thereby accounting for its repeated utilization.

Other, and far more numerous, shelters were not located at large rock faces but took advantage of the smallest crevices in bedrock outcrops which were utilized as hearths. Some were modified by the addition of rocks and small boulders to contain the fires of wood and fat (probably the "fritters" remaining after oil was rendered from them), while others appear to have had no such modification. In most cases scraps, and occasionally sizeable plates, of baleen were preserved, in association with nails typical of the 16th century which suggest insubstantial structures framed with wood and covered, at least partly, with baleen. The use of baleen, which was later to become a valuable commodity in commercial whaling suggests that this market was not yet as important in the 16th century as it was to become a short while later. These small living sites, of which a brief preliminary reconnaissance located more than a dozen on both Saddle and Twin Islands, will be further explored during the 1986 season and it is anticipated that others, perhaps a significant number of others, will be found.

Other surveys

Finally, surveys between the Quebec border and Pleasure Harbour, about 20 km north of Chateau Bay, revealed the locations of several apparent whaling stations which had not previously been reported. Fragments of distinctive red roofing tile were found at Capstan Island, West Ste. Modeste., and at Finware. The latter site has long been sought but, once again we were looking in the wrong place. Our efforts had been concentrated in the area of the present settlement which is sheltered by a large headland and where long, sandy beaches afford opportunity to land and launch small boats with comparative ease. It was not these sandy beaches that the Basque sought in Terranova, however. They chose instead to build their shore station to the west of the present settlement in a much more exposed and rocky area where today only a few small gardens are to be found. Whether this location was chosen for the apparently deeper water to be found there (although there are a few deep spots
along the shoreline of the present community), or because of the rocks available for construction of tryworks, or simply because they preferred the rocky shore which is not unlike that of northern Spain is hard to say. Other similar locations in Henley Harbour were chosen to locate tryworks in the 16th century and the remains of them are visible on Stage Island and the opposite shore today. Perhaps the most impressive site visited during 1985, however, is that at Pleasure Harbour, reported originally by Dr. John Kennedy, Department of Anthropology, Memorial University, and later visited by Robert Grenier and other employees of Parks Canada. Pleasure Harbour itself is without doubt the most sheltered harbour on the southern Labrador coast. The entrance is difficult to navigate but once inside the deep inlet turns to parallel the coast line for almost a mile and provides safe anchorage from any wind. The Basques apparently also realized this for there are traces of more structures at this location than at any other known site along the Labrador coast except for Red Bay itself. We were not able to visit Cape Charles where Parks Canada personal also observed scatters of tile throughout the community and which also must be a whaling station similar to those recorded at more southerly locations.

In all, the 1985 season was a profitable one. The amount of new information, and more important potential new information, gained from the site continues to be impressive. Equally impressive was the number of visitors to the site during 1985. Approximately 700 people toured the laboratory and the excavations on Saddle Island during July and August. The onslaught continued during September, particularly when the Lindblad Explorer unexpectedly disgorged some 400 tourists. They were accommodated insofar as possible by the people of Red Bay who showed them the site and discouraged several fully equipped SCUBA enthusiasts from making a close inspection of the wreck sites. We anticipate an even greater number of visitors during the 1986 season.
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