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Red Bay National Historic Site of Canada

Archaeology of a Sixteenth-Century Basque Whaling Boat

by the Ontario Service Centre of Parks Canada.

In the second half of the 16th century, whale oil was a rare and highly prized commodity. It burned brighter than the more common vegetable oils, and was used in the manufacture of soap, treatment of fabrics and in pharmaceutical products. By the mid-16th century, European fishermen were pursuing these valuable commodities by exploiting the rich marine resources of the Strait of Belle Isle. Basque merchants and ship owners in France and Spain mounted regular seasonal expeditions to the south coast of Labrador and the north shore of Quebec, to hunt whales for their oil and other products. They favoured the port they called *Butus*, now called Red Bay. Archival research and on-site archaeology revealed a sophisticated industry previously not witnessed in Canada.



Chalupa

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Archaeology of the Site

Underwater archaeological excavation began in 1978 and over the course of the next six years, The Red Bay Project developed into one of the most comprehensive marine archaeological projects ever undertaken in Canada. The discovery of three Basque whaling galleons and four small whaling craft makes up one of the most precious underwater archaeological sites in the Americas. One of the small craft, an eight-metre whaling *chalupa* was found pinned beneath the collapsed starboard side of a 200- *tonelada* whaling vessel. The *chalupa* was excavated and meticulously recorded prior to its complete disassembly, recovery, conservation and re-assembly. Its 400 plus-year old remains are highly valued for the following reasons:

- exceptional state of preservation of physical qualities reflecting specifically Basque design, craftsmanship and materials used in the construction of vessels for the whaling industry.
- representation of a significant phase in the evolution of boat design, construction and assembly in the 16th century.
- the essential role of the *chalupas* in the whaling operation, in the hunting stages (pursuing, killing and towing), and
- with the other small boats - their representation of the scale and complexity of the support services necessary for the operation of whaling stations.

The archaeology of the *chalupa* was a small part of a much broader study of understanding the Basque whalers of Labrador. Its historic value and contribution to Canada's system of National Historic Sites have been formally recognized with the establishment of Red Bay National Historic Site. As of July 1, 1998, this incredible discovery was returned to Red Bay for permanent display and public appreciation in the newly constructed Red Bay NHS, Visitor Centre.

The Conservation

When the marine archaeologists had finished recording all of the information about the artifacts they had excavated, the work of the conservators at the site began. All of the objects were stored in the field lab until the end of the excavation season. In autumn, the artifacts were packed and shipped back to the main lab in Ottawa.

In Ottawa, the conservation of the *chalupa* followed the same treatment that is used for most waterlogged wood that is preserved in conservation laboratories around the world. The process is as follows:

- when the objects arrived at the lab, a request for conservation was completed for each one and they were logged into the artifact tracking system.
- a report of the condition of the artifact was completed and it was photographed or sketched.
- a treatment proposal was written and approved.
- the wood surface was cleaned with soft bristle brushes and dental tools. Any unusual features or tool marks that were discovered during cleaning were documented and the archaeologist was informed.
- after the artifact was clean, it was time to replace the water in the wood with a wax that would stay in the wood and help prevent cracking during drying. The wood was soaked for several years in a tank that contained the wax dissolved in water. The wax that was used is called Polyethylene Glycol (PEG).
- to dry the wood, we usually use a vacuum freeze-dryer. This is a device that removes the water from the artifact while it stays frozen to reduce the amount of shrinkage that can occur during drying. This is the same process that is used to make freeze-dried food or instant coffee.
- the longer planks did not fit in our freeze-dryer so we had to dry them with another method. They were left uncovered in our walk-in freezer for 18 months and the surface of the wood dried out. This is the same process that we call 'freezer burn' when it happens to your meat in home freezers.
- we weighed the artifacts as they were drying and when the weight no longer decreased the drying was completed.
- the dry wood was stored in a lab at a relative humidity of 50%, which is best for organic materials such as wood.
- the surface was brushed and vacuumed clean, and any areas with a fragile surface were consolidated with a solution of dilute white glue. Pieces that had come off during the treatment were glued back in place.

At this point the keel, frames, planks, thwarts and gunnels were ready to be re-assembled into an almost complete boat.

The Re-assembly

Re-assembly of an archaeologically recovered boat is the final phase of a long process of reconstruction that begins in the field as the first timbers are revealed in the sediment. As with all archaeology, careful numbering, recording, and the precise locating of each component in relation to the next is critical for all future analysis and interpretation. The resulting maps, photos, drawings of individual timbers, and the catalogues that tie all this data together, become the principal reference tools for the middle phases of reconstruction. By creating composite drawings, pin-up boards, and perhaps a wooden model, archaeologists are able to establish the relationship of the pieces to one another and get an idea of the original shape of the boat. Most reconstructions of ships and boats go only this far. But this *chalupa* from Red Bay presents a rare opportunity for archaeologists to re-assemble original timbers. These have to be reshaped and fastened with great care, as the re-assembly team follows consciously in the footsteps of the ancient Basque builder while using entirely different methods along the path. Not only is the result a wonderful display for public interpretation, but also the process of re-assembly allows for reconstruction analysis to be taken to the ultimate level.

Some chalupa features to look for :

- the higher end of the boat is the **bow** (front). Note the hole cut through the **stem** (vertical timber in bow) for securing a line.
- the vertical holes through the surviving fragments of **gunwale** (a timber along the top of the sides) show the locations of the wooden **hole pins**, which held the oars. The one near the **stern**, or back of the boat, was for the steering oar.
- the top two planks are lapped (or **clinker**) while the lower planks are flush-laid (or **carvel**). This shows how the Basque builders could draw on the boat-building traditions of both northern (clinker) and southern Europe (carvel), in a mix that was still being used on 19th-century whaleboats built on both sides of the Atlantic.
- there are seven **thwarts** (seats which also provide reinforcement) in the boat, the same number as drawn on the inscribed plank.
- the main **mast step** is the block of wood near the centre of the boat with the square hole cut in it for supporting the mast. The thwart above it also functioned as a **mast partner** holding the mast upright.
- the rear holes in the uppermost plank that served as **fairleads** through which the **sheets** (ropes attached to the bottom of the sails) were fed. The holes are actually knotholes used for the natural strength in density of the wood around them.
- the rib-like timbers going from side to side in the boat are called **frames**; the part of each frame that crosses the **keel** (the large timber which forms the backbone to the ribs) is called the **floor** and the parts, which curve up each side, are called **futtocks**. These were not bent to shape, but were selected from tree limbs of the right shape.
- the **fastenings** of the boat were originally wrought-iron nails, often clenched over to work like bolts. In the re-assembly of the boat we have used real bolts of brass painted black. One end is custom-shaped to match the impression left by the original clenched end of the nail, the other is capped with a wax "nail head."

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