

PROGRESS REPORT ON THE MARINE EXCAVATION  
OF THE BASQUE WHALING VESSEL SAN JUAN (1565):  
A SUMMARY OF THE 1982 FIELD SEASON.

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INTRODUCTION

Since 1979, Parks Canada has been involved with Memorial University of Newfoundland in a joint project to investigate the Basque presence in the southern Labrador coastal town of Red Bay (Figure 1). Memorial University's archaeological crew under the direction of Dr. James Tuck has been excavating the remains of a sixteenth century Basque whaling station on Saddle Island in Red Bay harbour (Figure 2). Parks Canada's Marine Excavation Unit, under an agreement with the Province of Newfoundland and Labrador, has concentrated its effort on the archaeological investigation of the submerged remains of the Basque whaling vessel San Juan which sank in 1565, and on other submerged traces of whaling activity.

The 1982 field season, the fourth year of a six year excavation program, saw field research focused on the completion of the excavation of the stern of the vessel. Included here were the excavations of both the port and starboard stern areas as well as the intervening stern cask deposit. Towards the end of the season a portion of the starboard stern structure was disassembled and excavation was continued beneath the hull. Also excavated was a substantial area around the stern, peripheral to the articulated structure of the vessel. Coupled with the excavation of the wreck site itself, further work was completed on the survey of Red Bay harbour for additional information concerning the Basque occupation. This consisted of towed searches over the harbour bottom plus partial excavation of a suspected wharf structure.

Throughout the field season 1029 individual dives were made totalling 2185.4 hours. Nearly 50 two metre by two metre excavation units were completely excavated. Much of this increase can be attributed to the introduction of surface screens which greatly accelerated the rate at which the surface overburden could be removed. Other contributing factors were more extensive use of the hot-water diving suits, better pre-excavation technical preparation and increased surface support for the diving team.

### SHIP'S ARCHITECTURE

Excavation revealed a substantial portion of intact hull structure (Figure 3). In the starboard stern area, excavation was carried down to the futtocks and exterior hull planking, revealing articulated structure up to the second futtocks. Excavation also revealed the upper broken end of the rudder just aft of the ends of the stern hull planking. The sternpost, collapsing to the starboard side along with the rudder, caused the port stern area partially to break away from the main structure of the vessel. This breaking away coupled with the more exposed nature of the port side may partly explain the survival of much less of the structure compared to the starboard stern of the ship.

Aside from the intact portion of the hull structure, numerous other important and diagnostic architectural pieces were uncovered during excavation. Some of the most diagnostic consisted of deck beams. Found off the stern of the vessel was a double deck beam 5.1 m in length. This consisted of three pieces; one complete beam which had fastened to it a second composite beam composed of two shorter pieces joined by a hook scarph. Unfortunately one of the joining scarphed pieces was missing at the time of discovery. Judging from the length of this double deck beam and the angles at the beam ends, it would have been located near the stern of the vessel at a lower deck level. Found nearer the wreck, but in the same general area, was a substantially shorter single deck beam. This timber, 3.7 m in length, had a central mortice, likely for a mast heel, plus notches along one edge for carlings. The configuration of this piece suggests that it was from a deck fairly high up in the stern of the vessel. Another partial deck beam bearing a hook scarph at one end was found in the upper level of the cask deposit. However, this piece was not the missing portion from the compound beam mentioned above.

During the excavation beneath the hull of the starboard stern a short deck beam bearing a partial hanging knee was uncovered. The mass of structural material found during the under-hull excavation was thought to have been from the upper portion of the ship which fell down and was subsequently covered by the outward collapse of the lower hull. This assumption was reinforced by the finding of the short deck beam which, because of its length and the angles of the beam ends, likely came from a narrow deck high in the sterncastle.

Other stern-related structural timbers were found in the periphery of the wreck site including a fashion piece and a stern transom knee. The

fashion piece was from the starboard side of the transom and was important as it was more complete than its port counterpart found last year. With the finding of the second fashion piece, the transom structure is now substantially complete. The stern transom knee, likely from the starboard side of the vessel, seems to be the mate of a similar transom knee found two years ago on the port side.

On the stern starboard side of the site two interesting structural features were found just beyond the edge of the coherent hull structure. One of these was a long slightly curving beam which could have been a vertical skid or fender. The other piece was a plank and frame structure which may have been a type of sliding door or hatch cover.

Last year a long circular timber was partially uncovered off the port stern. This piece was totally uncovered this season. Thought to have been a mast this piece was 7.5 m long, slightly tapered, and more oval-shaped than circular in cross-section. Evidence revealed that it had been chopped through on both ends leaving no indication of how it might have been stepped. This may have resulted from the subsequent salvage attempts made on the vessel. The only indications of fittings were two small wedge-shaped wooden objects which seemed to have been nailed to the mast.

Important discoveries made this year include most of the remaining components of the capstan assembly. One of these components was half of the lower bearing block or step which was recovered from the upper level of the cask deposit. The badly eroded other half of the step was discovered during a previous season but was only identified when compared to the one found this year. Found on the port side was one of the capstan partners which would have supported the barrel of the capstan as the shaft passed through the deck. The other capstan partner was uncovered beneath the hull structure on the starboard side. With the previous finding of the capstan and now the capstan partners and the lower step all in the stern, it is fairly conclusive that the capstan was mounted in the after part of the ship.

#### SHIP'S FITTINGS

Besides significant structural pieces, this year's excavation has also produced numerous important rigging elements. Most of these came from the under-hull excavation in the starboard stern area. Recovered here were two types of blocks, a fiddle block and a single-sheaved block, not found previously on the site. The single-sheaved block was similar to other recovered blocks

except that it had two strop holes instead of one spiralling through the top of the block (Figure 4). Also found was a short beam, bearing a single sheave, which may have been a type of knightshead or kevel block (Figure 5). From this area as well were a number of closely grouped heart blocks, some with the more common rope stropping but others having evidence of metal banding. Based on this and the lack of deadeyes, it seems that pairs of heart blocks were used instead of deadeyes to adjust the tension on the mizzen shrouds.

Ship's fittings from the other excavated areas proved to be nonexistent except in the peripheral area. The objects here consisted of a pulley sheave, a single-sheaved block with rope stropping similar to the one found under the starboard side, and a parrel fragment which because of its small size and surface contexts may not be from the San Juan.

#### OTHER ARTIFACTS

Besides fittings, excavations have produced a number of new artifacts as well as an abundance of more common artifact types and faunal remains. Common and prolific materials in the peripheral areas, and to a lesser degree in the other excavated areas, include whale bone, coopering debris, ceramic roofing tile fragments and fish bone which were deposited as a result of activity from the shore station. The faunal remains and the cask deposit will be dealt with more fully below.

Excavation around the stern of the vessel uncovered many of the more unique artifacts, including a variety of coarse earthenware vessel fragments consisting of rim parts, strap handles, base and body sherds which will add greatly to our knowledge of ceramic vessel types used both on the ship and on the shore station. Until this year ceramic vessel fragments from the site were extremely rare.

Other artifacts from the peripheral area consisted of numerous leather artifacts and fragments including identifiable shoes and shoe parts as well as a number of leather sheets and strips. Because of the presence of stitching holes in some of the sheets they could be parts of garments. Wooden artifacts included two finely turned wooden bowls (Figure 6), plus an unusual unidentified carved object. Other recovered wooden artifacts were two tool handles with associated concretions. One of these appeared to be an axe handle fragment while the other was the tip of a harpoon shaft or similar lance-type instrument.

In both cases the concretions were in very poor condition resulting in only partial recovery. An intriguing find, off the starboard side of the vessel, was that of a tightly and finely woven mat of organic fibre (Figure 7). Although its use has yet to be determined it may have functioned as a type of mattress or as a cargo packing mat. Identifiable metal artifacts are very rare on the site but the finding of the handle and lid assembly from a pewter tankard has demonstrated the survival of such objects (Figure 8).

Inside the ship, a number of important artifacts were recovered during the excavation of the stern cask deposit. One of the more interesting was what seemed to be a cask hooping tool used in levering wooden hoops onto a cask (Figure 9). A common item in the cooper's tool kit, its use is well documented in sixteenth century illustrations. Another find was a cork sheet with a small hole in it the size of sampling hole plugs found in most of the casks. These two artifacts along with a nearby discovery of an unused wooden cask hoop suggest the possibility that some cask maintenance activities were carried out on board the vessel. Other notable finds from the cask deposit included a single lead shot and the broken but complete remains of a finely decorated majolica porringer.

The collapsed and deteriorated nature of the port stern has resulted in a paucity of artifactual material. Most of the artifacts consisted of the badly disturbed and scattered remains of casks from the stern cask deposit along with a number of cask stowage articles. Unusual material consisted of fragments of organic matting, leather, ceramics and a partial heart block.

Artifacts encountered during the initial excavation of the starboard side above the hull planking included an abundance of ceramic vessel fragments, a number of pewter fragments and a turned wooden bowl. After the disassembly of the starboard hull, several intriguing artifacts were also recovered beneath the exterior planking. Besides a good collection of ceramic and pewter vessel fragments, unique complete artifacts such as a possible game board were recovered as well (Figure 10). The board consisted of an incised grid with alternate squares containing incised "x's" in a checker board pattern. The board, crudely manufactured from a reused plank, contained a number of obvious errors and superfluous graffiti. Another unique find was that of the fragmentary remains of a wooden log reel around which would have been wound the knotted log-line used to measure the speed of the ship (Figure 11). The retrieved parts included the two circular end pieces, the central axle and the partial

remains of the framing spindles (Figure 12). Associated with the log reel was the wooden frame of an hourglass that would have been used to time the reeling off of the log line. This artifact is still in situ but appeared to be broken as well. Both of these finds will greatly enhance our knowledge of sixteenth century Spanish navigational instruments and practices.

#### CASK DEPOSIT

The excavation of the cask deposit in the central portion of the stern structure comprised one of the major components of the total stern excavation. The cask deposit, as originally found, consisted of a mounding up of casks towards the centre line of the vessel. Excavation revealed that most of the casks were situated on the starboard side with only scattered remains on the port side. Fifteen complete or nearly complete cask assemblages were excavated from the stern section; all barricas. Barricas represent the predominant size of cask found on the site to date. Incomplete remains of smaller capacity casks were found mainly from the top of the cask deposit. One stave from a cask substantially larger than a barrica and tentatively identified as a pipa was recovered just aft of the stern cask area.

All of the casks were stowed horizontally in a fore-aft position with the bung stave uppermost. In the deposit there were three rows of casks laid across the hull in the ground tier (Figure 13). Excavation revealed that there were at least three distinct tiers or layers of casks. The casks were stacked in rows with each successive tier offset and between the casks below it, forming an interlocking network. This pattern was precisely that encountered during the excavation of the midship cask deposit last year.

The cask excavation revealed new information on the various uses of wooden chocks, billets and wedges in supporting the cargo of casks. In the midsection, the ground tier casks were supported between rows of ballast stone, however, in the stern, casks were generally supported by wooden stowage articles. In one case a cask was supported by two billets placed along either side with a diagonally placed square timber beneath the cask. To date this is the only instance of an attempt to keep a cask free of the bottom of the vessel. In all other cases the ground tier casks rested directly on the ceiling planking or the futtocks. The purpose of cask support seemed to be primarily to prevent side-ward rolling of the casks. This was illustrated in the stern where a billet with a wedge-shaped end was placed athwartships with the wedge part supporting the lower portion of a cask.

The lack of ballast bed supports for casks in the stern meant a great deal less ballast stone was found in this area. Virtually no ballast was found between the futtocks beyond the ceiling planking as was the case in the midship area. The recovered ballast seemed to be used principally to fill gaps in the cargo of casks.

A most interesting discovery, uncovered just aft of the stern cask deposit, was that of a large concentration of billets (Figure 13). These billets seemed to have been originally stacked athwartships. Intermixed with the billets were a number of other smaller stowage articles, such as wedges and chocks, which suggests that the concentration represents pieces left over from the cargo-lading process rather than firewood. The wood probably represents dunnage placed here to support the back wall of the casks.

#### STRATIGRAPHIC CONSIDERATIONS

The stratigraphic sequence outside the main wreckage at the stern of the vessel is now fairly clear. It consists of a layer of recent sand overburden, 15 to 50 cm thick; underlain by an organic stratum 30 to 50 cm thick, consisting of silt, wood chips, twigs and sphagnum moss; followed by a layer of sterile grey sand. The organic layer, which has contained the bulk of artifacts, can be considered as the major Basque cultural stratum. It seems certain now that much of the Basque deposit accumulated as a result of slumpage from nearby Saddle Island and therefore represents secondary deposition. During this year's excavation a new stratum, consisting of a dark silt intermixed with large quantities of crushed barnacle shell, appeared very near the stern wreckage and extended under the wreck itself. This crushed shell layer contained structural pieces, elements of the rigging and numerous artifacts. As this stratum lay between the organic layer and the sterile grey sand it thus represents the first cultural deposit from the site. It is thought that the barnacles were attached to the vessel at the time of the sinking or became attached shortly afterwards. This being the case the crushed shell stratum can be fairly precisely dated. As a result important analytical statements concerning the rest of the stratigraphic sequence will be possible.

#### SMALL BOAT

Last season the remains of a small boat was found near the stern of the San Juan. It was originally planned to complete the excavation this year but after further excavation it was discovered that the boat ran underneath

the rudder and the starboard stern hull. The starboard stern would have to be entirely dismantled, then the rudder raised before excavation could be completed. However, the partial remains of a second small craft were uncovered during excavation off the stern of the vessel.

The boat when discovered had a layer of ceramic roofing tile fragments packed tightly between its frames. These tile fragments were much larger than those normally found on the site which suggested intentional placement, for example as cargo or ballast. Its precise function, however, is unknown. After removing the ceramic fragments, the boat remains were seen to measure 3.8 m long by 1.5 m wide (Figure 14). The boat was not complete but portions of the keel, planking, floors and futtocks from one side survived. The surviving structure, it was estimated, represented approximately half the total length of the boat.

The boat was constructed from hardwood, possibly elm. The structural pieces were fastened together principally with treenails with a minimal use of iron fastenings. Notable architectural features consisted of waterway channels cut through the floors above the keel and a plain vertical scarp joining two sections of the keel itself.

The finding of the boat within the Basque cultural deposit, with structural remains of the San Juan both below and above it, indicated that the small boat was deposited sometime after the initial sinking of the San Juan, but before the total collapse of the larger vessel. Given that the boat is Basque, the remains could represent those of a harbour work craft or alternatively those of a chalupa, the small vessels used by the Basques to hunt whales. Comparison with the other small boat and further archival research should help to clarify the identification.

#### FAUNAL MATERIAL

This season, as during previous years of excavation, whale bones continued to represent a considerable proportion of the finds. These bones were most often found around the periphery of the main wreck site and included examples from both Right and Bowhead whales. Significant discoveries included two nearly complete articulated flippers. One of these was found near the starboard stern while the other was uncovered partially beneath the excavated small boat. Besides these articulated flippers, numerous elements from disarticulated flippers were also uncovered. Included among the other whale bone finds were numerous



caudal vertebrae, rostrum fragments and mandibles. The abundance of flipper and caudal elements offer further support to the hypothesis that the whales' flippers and tails were removed at the onshore cutting-in stages as initial step in the processing operation. Further, the occurrence of skull and jaw remains points to the possibility that baleen removal was practised by the Basque whalers.

Besides the whale bone, other recovered faunal remains included a variety of waterfowl including loon, eider, herring gull and white-winged scoter. A particularly intriguing find was the bone from a Great Auk, which bore butchering marks. The Great Auk, a large flightless bird, was hunted to extinction by the middle of the nineteenth century. The rest of the faunal collection was comprised of a large quantity of cod fish bone plus examples of pig, harp seal and polar bear bone. All of the above faunal remains represent animals that were likely used as food resources. Although the precise utilization pattern is not known it can be seen that the Basques had access to a good deal of variety in their dietary resources.

#### HARBOUR SURVEY

In 1982 the underwater survey of Red Bay harbour was continued. This year, towed underwater searches were conducted as the most efficient way to survey a large area in a short period of time. Several survey tracks were searched along Saddle Island, between Saddle Island and the mainland, and along the mainland (Figure 2). Significant finds from the survey consisted of four large concentrations of whale bone and ceramic roofing tile fragments, all located off the mainland shore. These concentrations likely indicate intensive Basque activity along the corresponding shoreline, and will most probably be evidenced by the remains of oven complexes and other associated structures.

Another component of the harbour survey was the partial excavation of a possible Basque wharf structure, a timber and rock structure located in front and to the side of one of the oven complexes on Saddle Island. The structure consists of a main frame of two parallel logs with an attached cross piece. The floor is made up of five smaller evenly spaced logs within the framework. The whole structure was then covered with ballast rock. One of the main frame timbers has a mortice cut into it obviously to support a vertical timber. The entire structure has yet to be excavated so the wharf interpretation is only tentative.

### FUTURE PLANS

Work on the San Juan site will continue over the next two years. A high priority has been placed on the disassembly and excavation beneath the rest of the starboard side of the vessel since the discovery of major architectural pieces and artifacts beneath the hull of the starboard stern area. Further excavation plans also include the complete exposure of the bow area coupled with the removal of the bow cask deposit. As well, further work will be undertaken on the survey of the harbour, both by expanding the survey area and by investigating the features already found. The continuation of the Red Bay project should provide considerably more insight not only into sixteenth century Spanish ship architecture but also into shipboard life and the other activities of the Basque whalers in Red Bay.

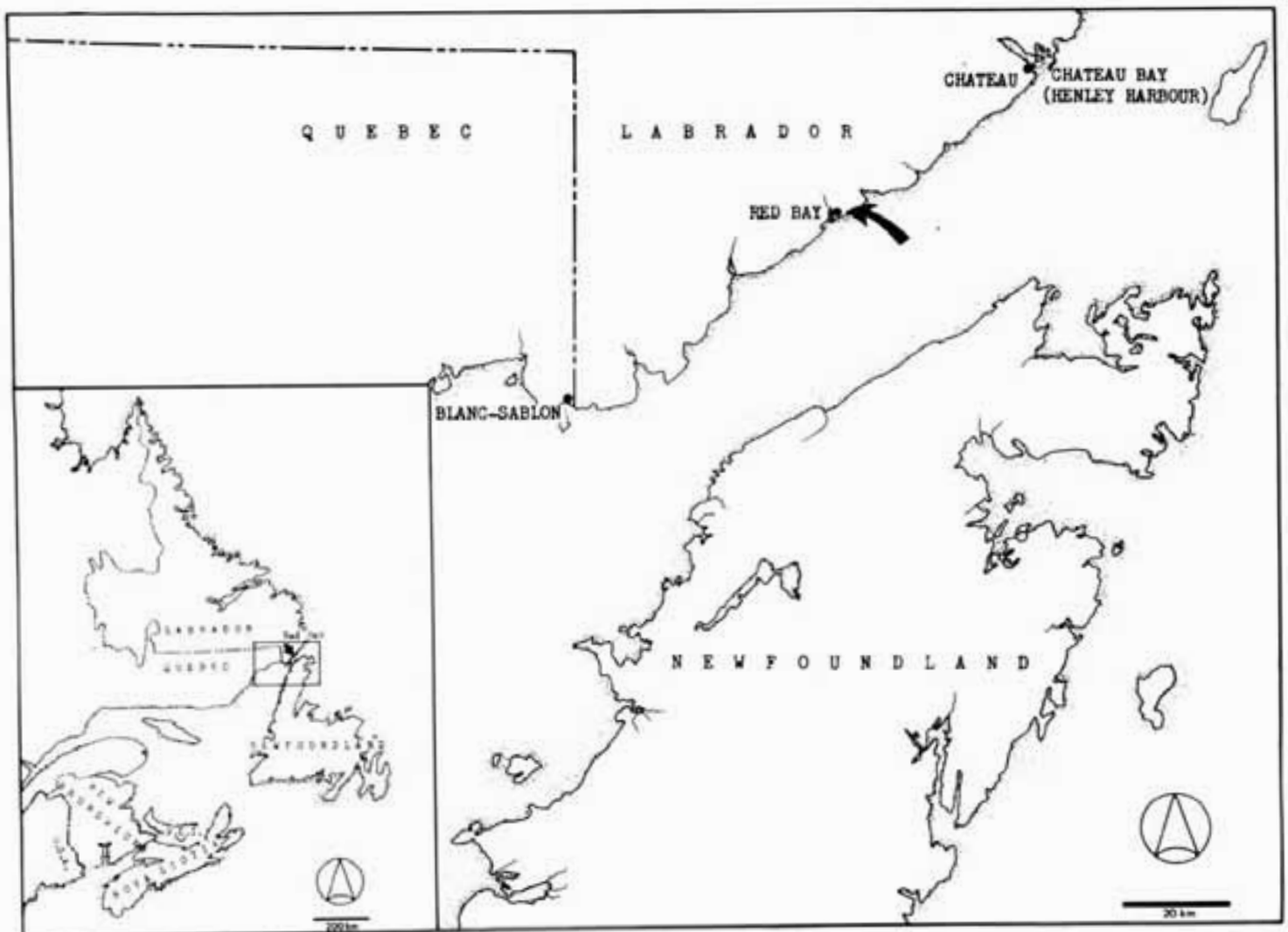


FIGURE 1  
Locational map of Red Bay

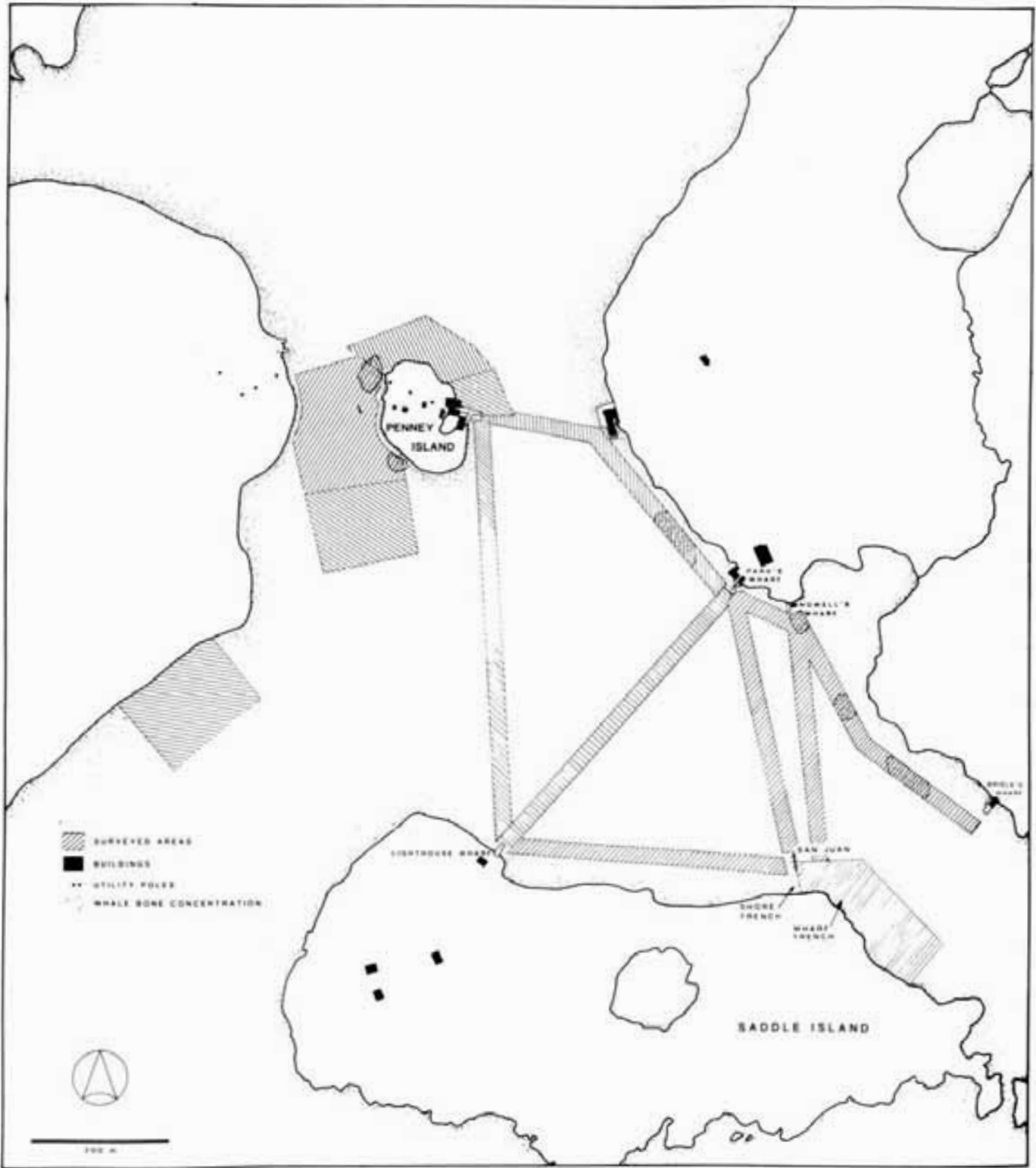


FIGURE 2

Map of the harbour of Red Bay showing location of the San Juan, wharf trench and areas surveyed.

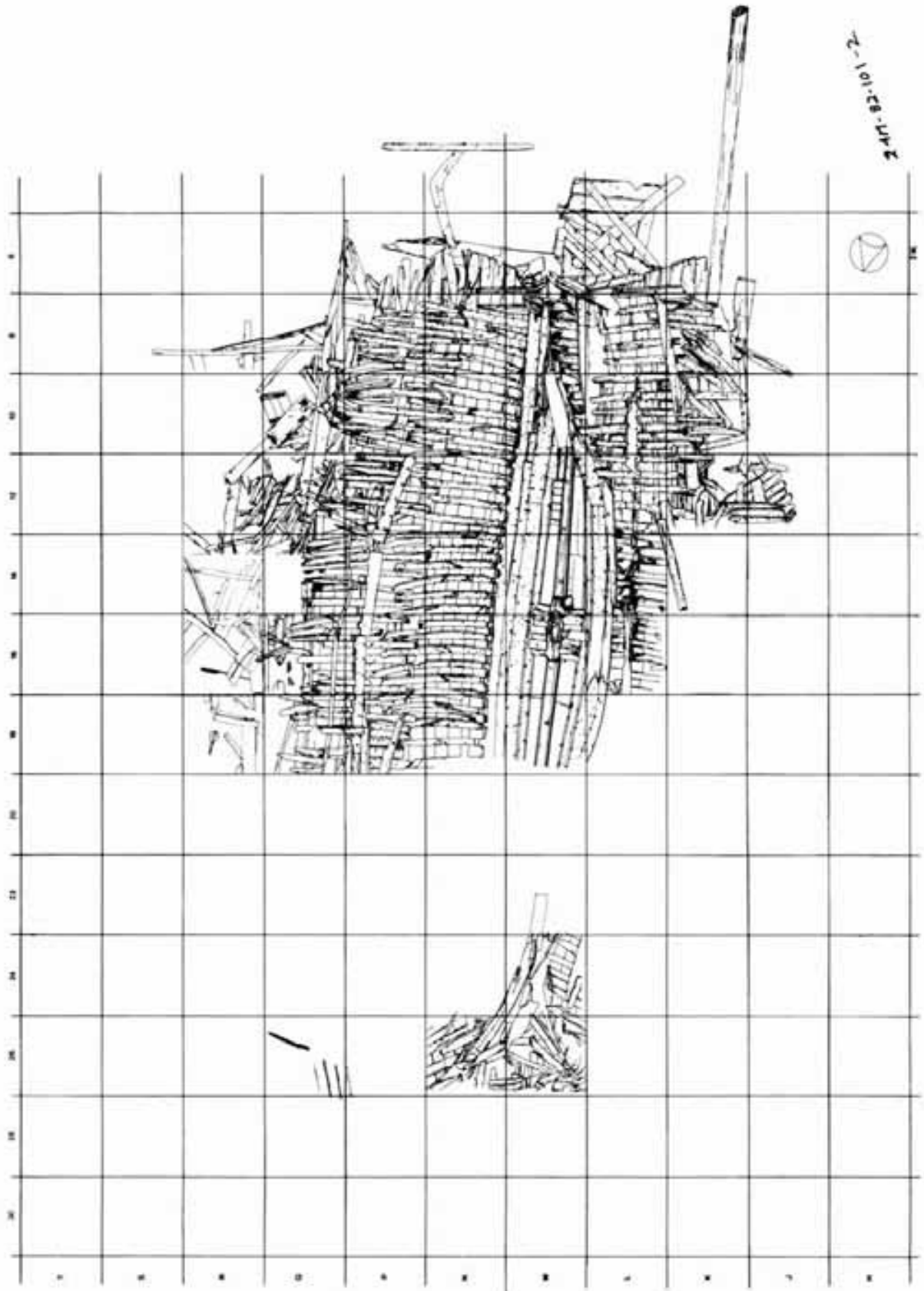


FIGURE 3  
Single structural plan of the San Juan

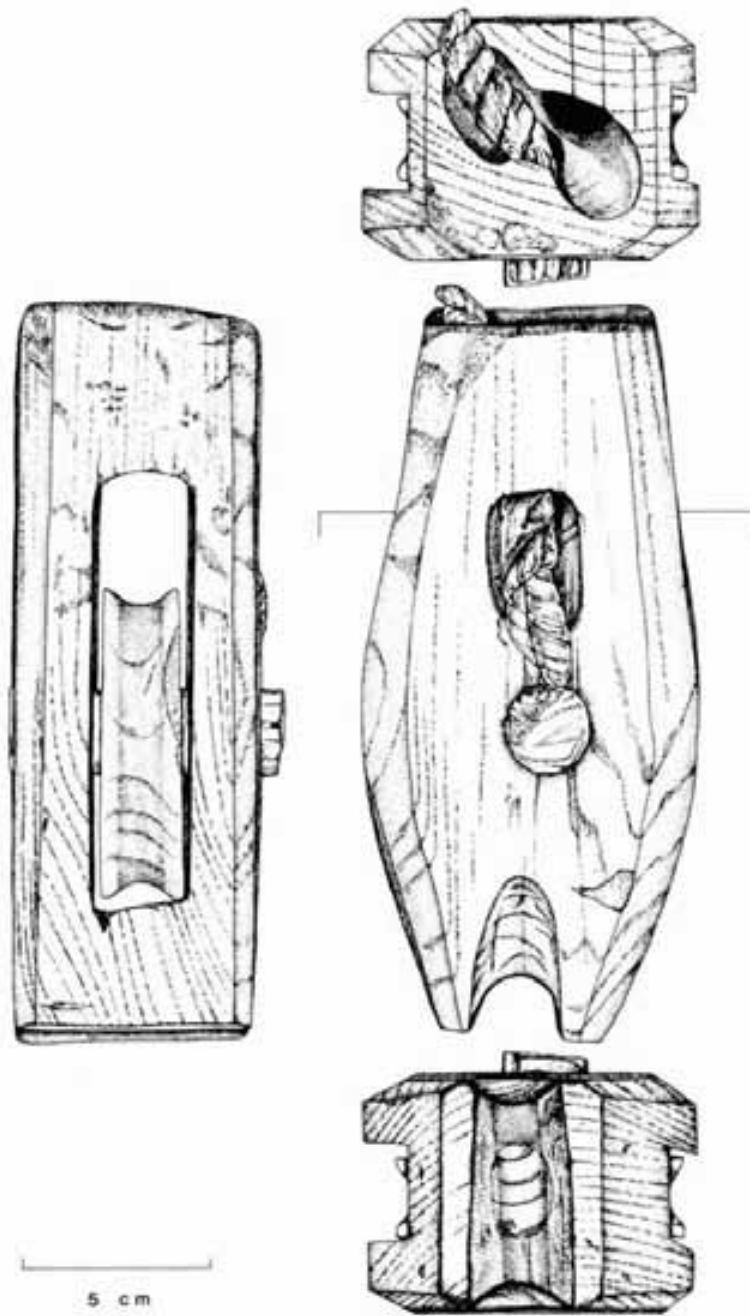


FIGURE 4  
Single-sheaved block with double strop holes

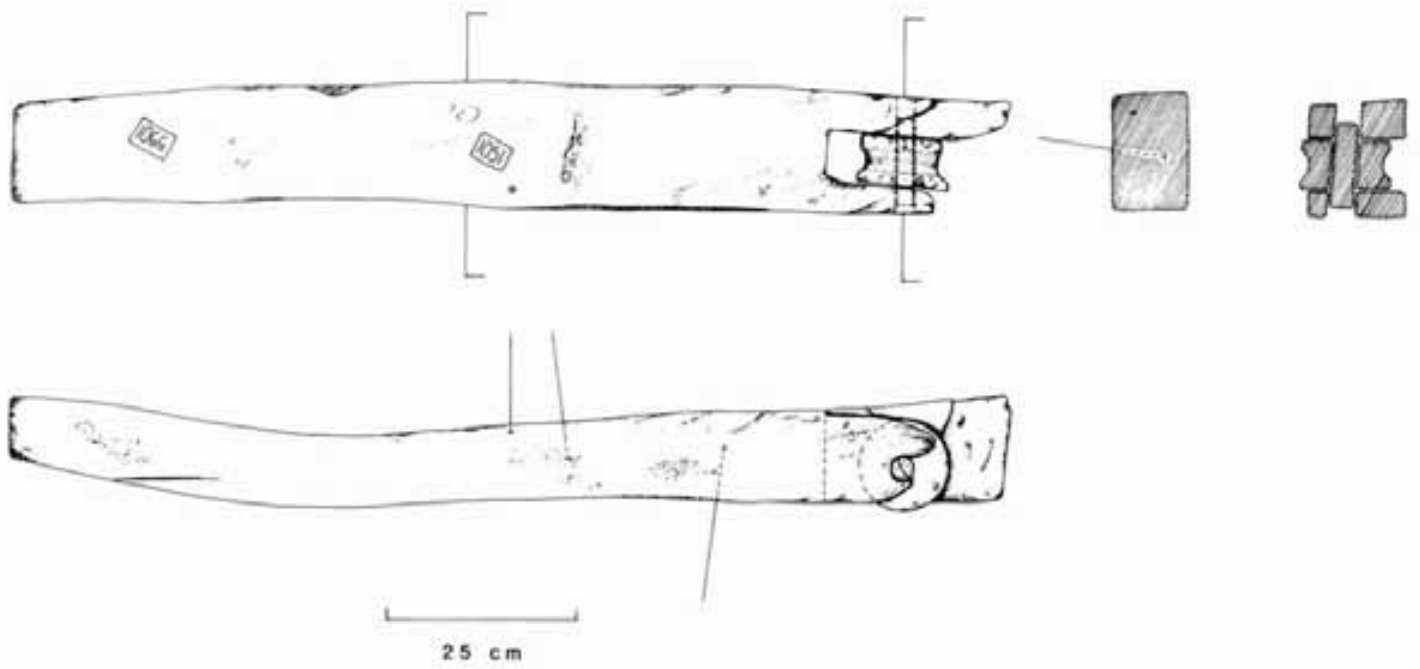


FIGURE 5. Possible knightshead or kevel block

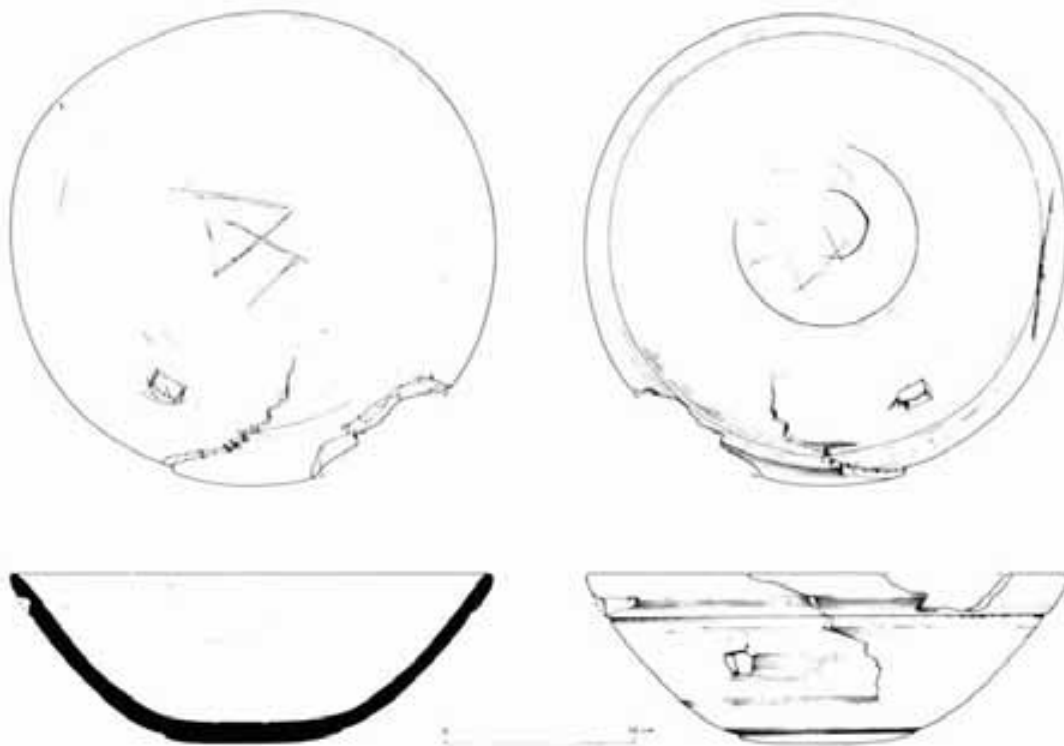


FIGURE 6. A turned wooden bowl

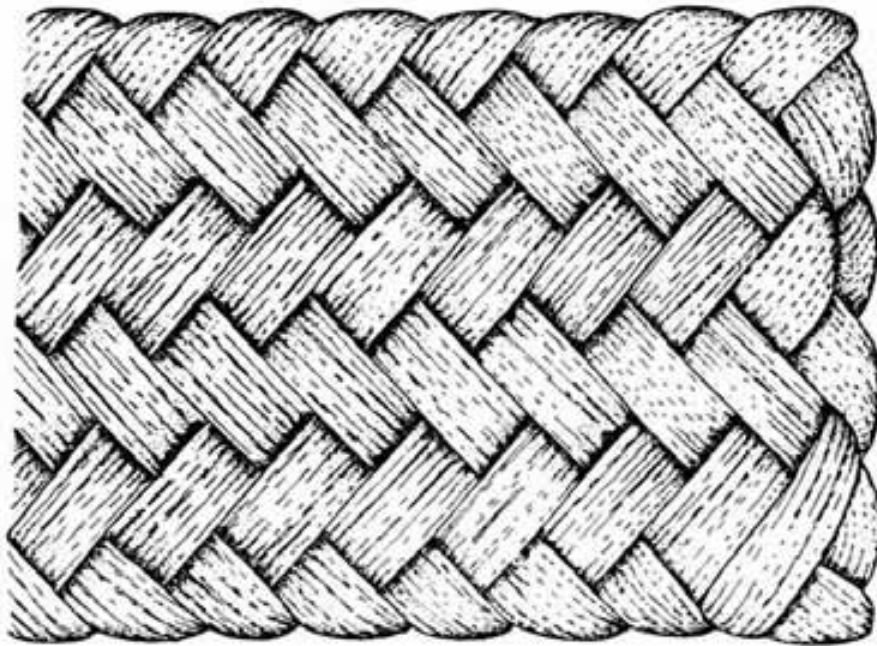


FIGURE 7. Detail of weave from organic mat

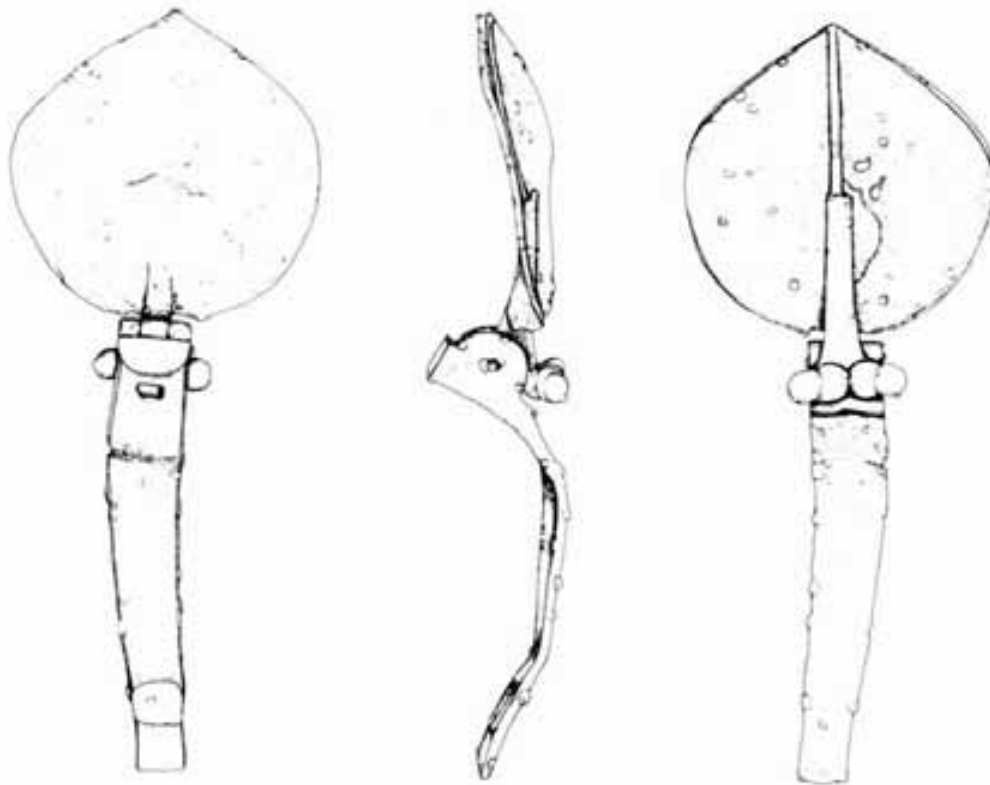


FIGURE 8. Handle and lid assembly from a pewter tankard



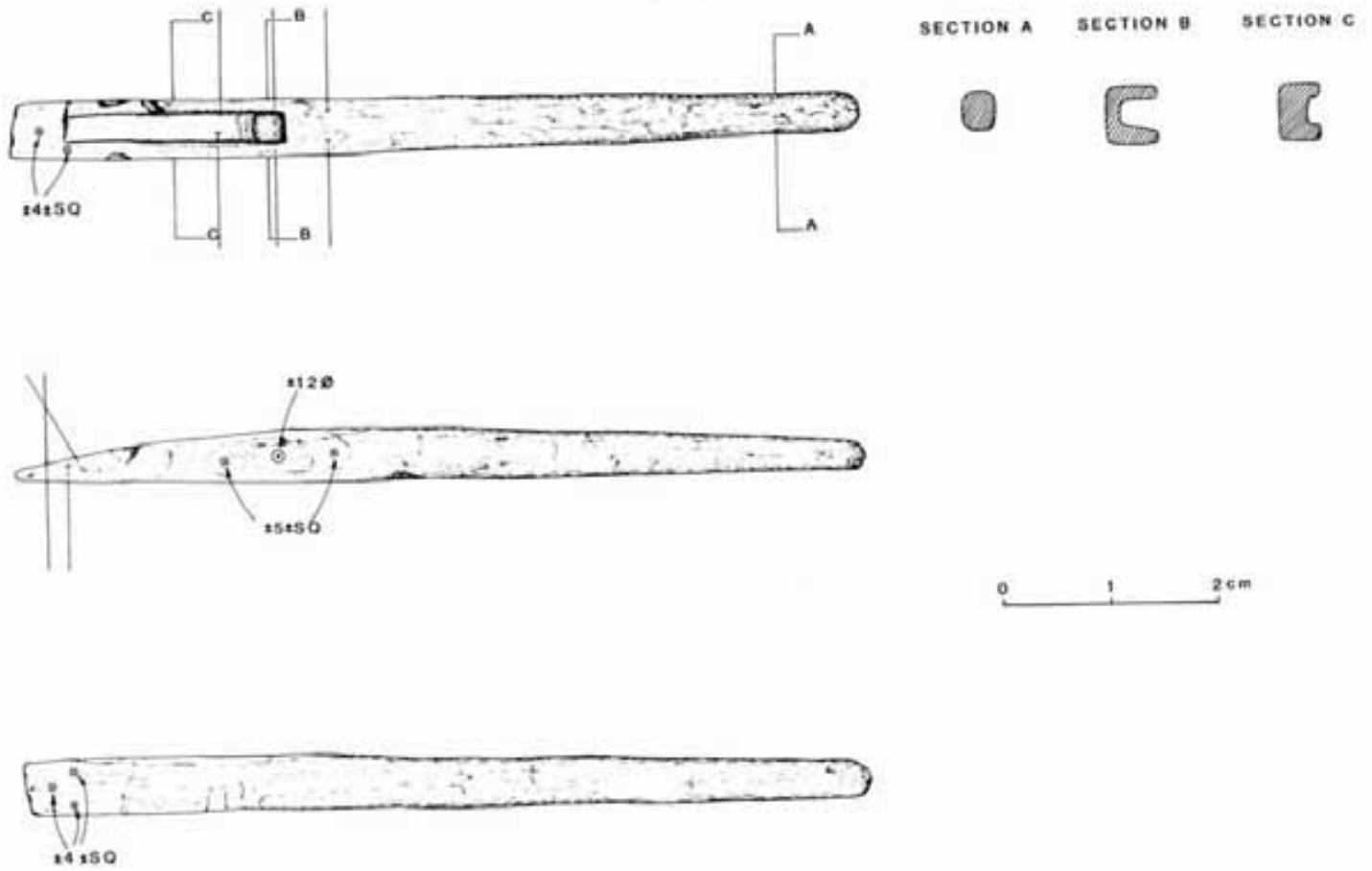


FIGURE 9. A cask hooping tool

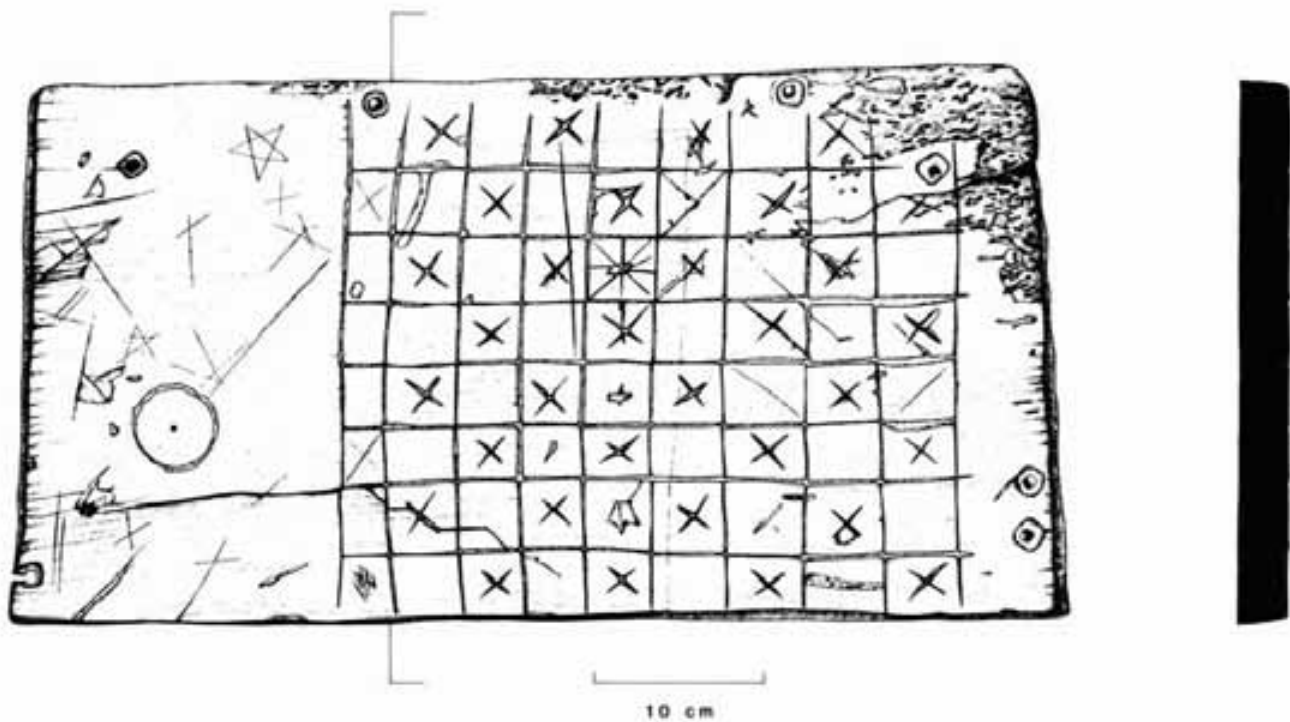


FIGURE 10. A game board, possibly for chess

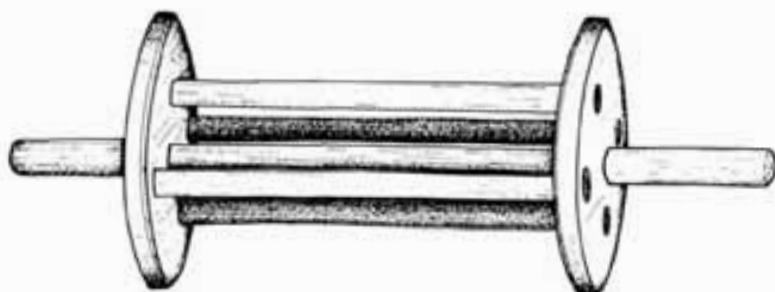


FIGURE 11. Reconstruction of a log reel

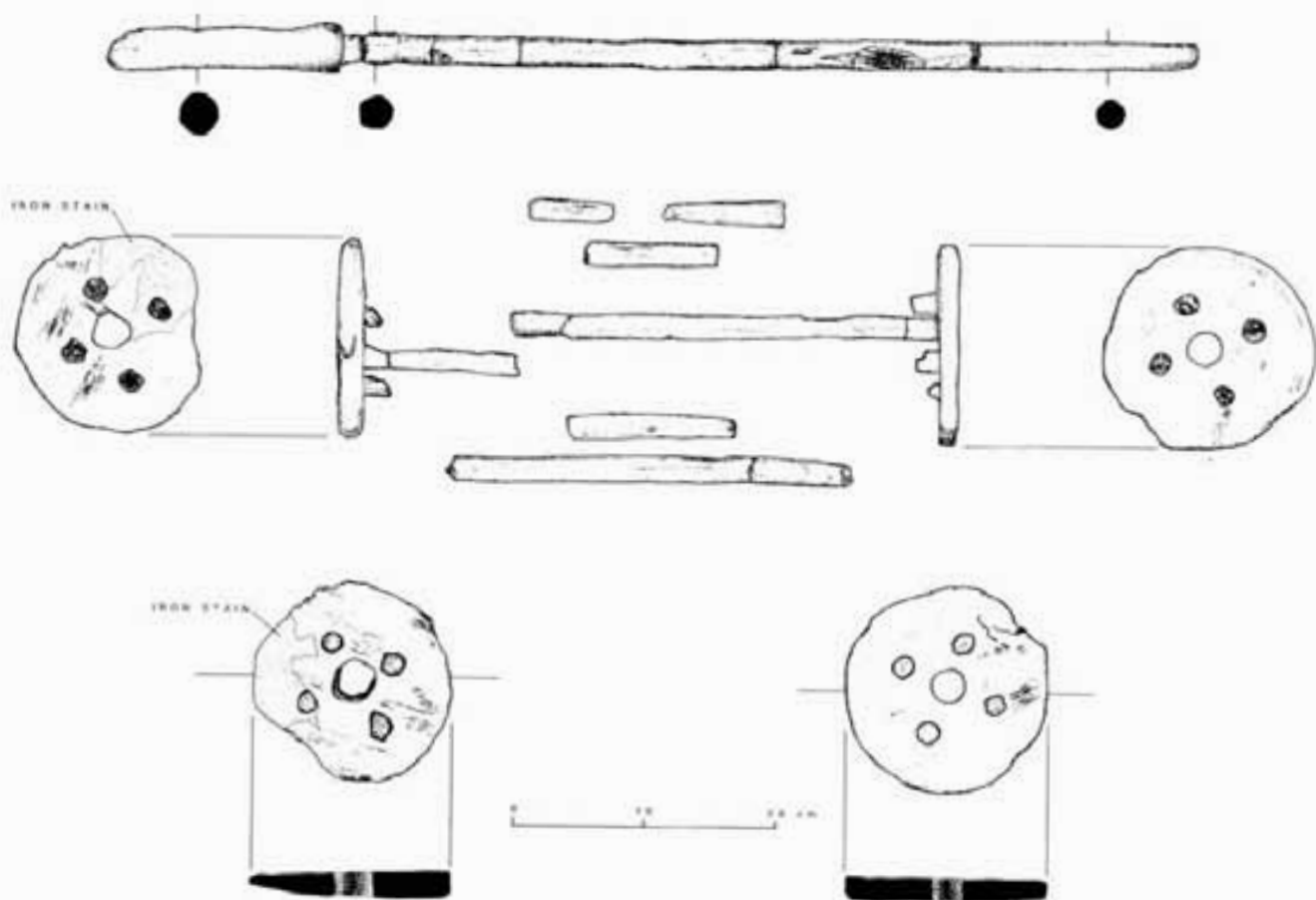


FIGURE 12. Recovered parts of log reel



FIGURE 13. Ground tier casks from the mid-section and stern of the San Juan. Also shown is the billet concentration behind the stern casks.

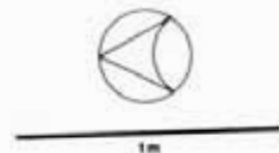
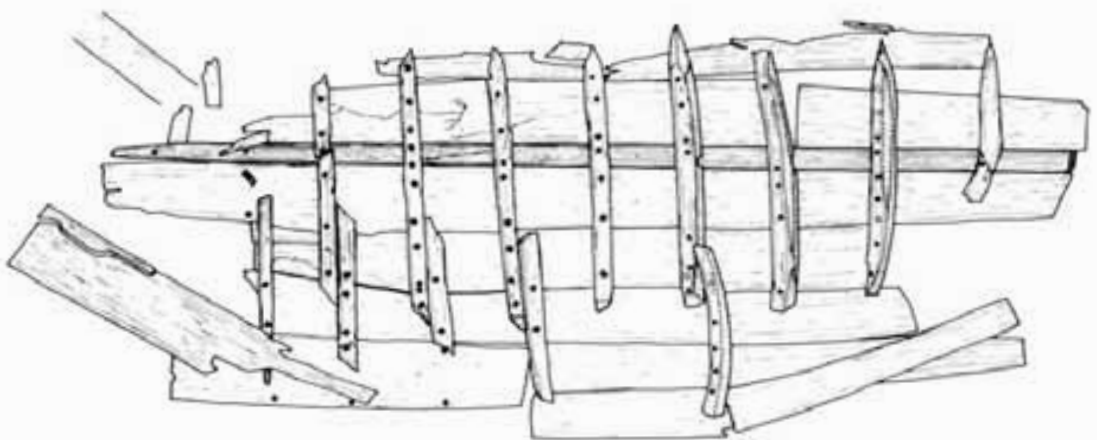


FIGURE 14. Remains of the small boat