

‘The Monk’s Boat’—a Roman-period relic from Lough Lene, Co. Westmeath, Eire

P. O hEailidhe

21 Newgrove Avenue, Sandymount, Dublin 4, Ireland

A recent article in this journal by A. L. Brindley and J. N. Lanting drew attention to a report on a plank boat from Lough Lene, Co. Westmeath. (Brindley & Lanting, 1991: 69–70; Farrell, 1989). They compared the techniques used in the construction of this boat with those used in Mediterranean lands, and concluded that the boat belonged to the period of the Roman occupation of Britain, and was the work of Roman craftsmen. A sample submitted for radiocarbon dating gave a date for the felling of timber for this boat in the 1st century AD at the latest. As their article does not discuss in detail the construction of the boat, this report gives a survey of the complicated joinery used in the vessel, together with a note on its location and discovery.

The boat was first reported by Robert Acton of the Mullingar Subaqua Club, whose members discovered it on about the 28th August 1968. It lay in 4–5 m of water, and was about 70 m from the end of a small headland in the townland of Cumberstown (Fig. 1).

The existence of the boat was known to local people who believed that it had belonged to the monks of Fore Abbey. According to local tradition, the monks used one of the islands in Lough Lene as a refuge during troubled times. On this occasion they were attacked while trying to get to the island with property belonging to the abbey, and their boat sank. About a hundred years ago a local man fixed a rope to it, and tried to draw it out with a horse, but was unable to shift it.

The boat was moved by the Subaqua Club to a shallower spot, and on the 28th September 1968 was brought ashore so that a survey could be carried out. When the bottom portion was first moved two broken oars were found underneath

it. The boat consisted of one long plank and one short piece forming the bottom, and one long plank forming a side. Since the boat is broken away at both ends, it is impossible to distinguish the prow from the stern.

The bottom

The bottom, which is made up of two parts scarfed together, is 7.9 m long, 1 m wide and 90 mm thick (Fig. 2). It is slightly concave in cross-section (10 mm lower at the centre), and turns up at each side to a height of 120 mm to form the lower part of the sides. These parts slope outwards at an angle of about 60° to the horizontal, and are 70 mm thick along the top edge where the sheer strake was joined on (Fig. 3). Along the midline of this edge, and of the corresponding edge of the upper piece a V-shaped groove 20 mm wide and 10 mm deep has been worked, apparently to contain some sealing material.

The sides were secured to the bottom by a series of keys or tenons fitting into corresponding mortises in both members. These mortises are 65 mm long, 20 mm wide and 130 mm deep, and are irregularly spaced along the line of the V-shaped groove in each member. There are traces of 23 along one side of the boat, 17 along the other, and 18 along the lower edge of the surviving strake. The shortest distance between two mortises is 110 mm and the longest is 360 mm, the overall average being 276 mm. This irregular spacing enabled the detached side strake to be correctly fitted into its original position on the boat (Fig. 4).

The mortises are neatly cut and are tapered towards the bottom in each case. They appear to have been drilled with a 10 mm bit and finished with a flat chisel. The tenons are 260 mm long

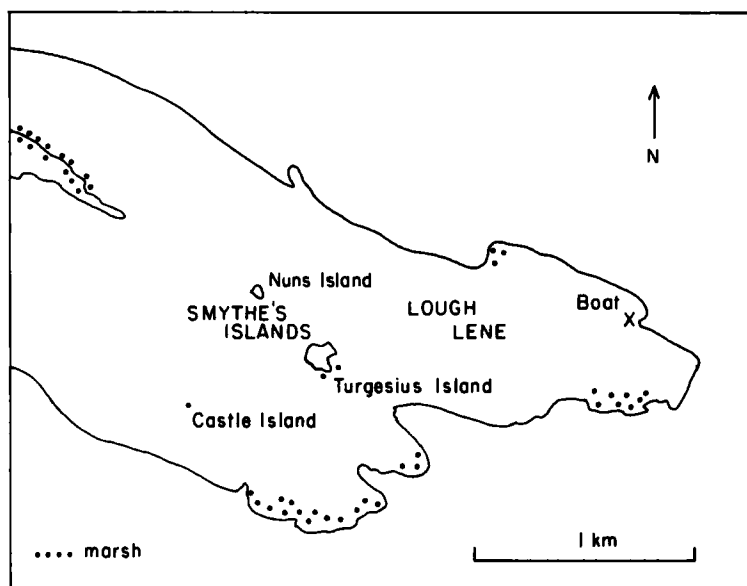


Figure 1. Sketch map of Lough Lene showing the site of the boat (after Farrell).

and, at their centres, are 65 mm wide and 20 mm thick, tapering towards each end. This taper can be seen along both edges and on the outboard face, the other face being quite flat from end to end. This is apparently dictated by the slight sheer of the side strake. Eight of these tenons remain *in situ* and a number of others were found detached nearby. When the tenons were in position and the joints closed two pegs or dowels were driven through each tenon, one above and one below the seam. These pegs are 15 mm thick at one end and 10 mm at the other, and are 70 mm long, passing right through the thickness of the strake. Some of those which remain *in situ* were driven from the inside and others from the outside of the boat. In all the scarfs of this boat there are traces of a white substance which was used as an adhesive or luting, a sample of which has been scraped off for identification (see below).

The two parts of the bottom are scarfed together by a complicated piece of joinery, skilfully carried out and incorporating both stitching and a 'dovetail' (Fig. 5). Each part is halved for a length of 77 cm, so that the scarf makes a right angle along the centreline of the boat. Along the centre of each face of the scarf is a half round groove 20 mm wide and 10 mm deep. This is also carried along the portion of the

scarfs which turn upwards to form the chines. This groove, like the V-shaped groove already mentioned, appears to have been filled with a luting material.

The timber stitches are formed from wooden withies of oval cross-section, 40 × 20 mm, and total nine in number. They are distributed as follows: two in the part of the scarf lying along the centreline of the boat; two in the part of the scarf at right angles to the centreline and nearest to the end; three in the part of the scarf at right angles to the centreline, and furthest from the end; and one each in the parts of the scarf which turns upwards to form the chines.

The holes which now contain the stitches are drilled into the half round groove in each face to a depth of 60 mm, where they meet holes drilled into the bottom of the boat at an angle of about 45°. The two parts of the bottom must, therefore, have been clamped into position before the stitches were inserted. The stitches, which would have been softened with steam, water or in some other way, must have been driven into the slanting holes on one side, through the faces of the scarf and up through the slanted holes on the other side. Both ends were then trimmed off level with the bottom of the boat.

The 'dovetail' is formed from a length of timber wedged in cross-section and driven



Figure 3. Bottom and chine of the boat showing tenons *in situ*. (Photograph: National Museum of Ireland.)



Figure 4. Detached strake with pegged tenons protruding from it. (Photograph: National Museum of Ireland.)

through the boat from side to side in a prepared rebate. This rebate, which cuts across the middle of the scarf is 22.5 mm deep, 60 mm wide at the bottom and 50 mm wide at the top. The length of timber is cut to fit into the rebate and to protrude 12.5 mm above the bottom, where it is rounded off so as not to form an obstacle to those using the boat. The ends of this timber pass right through the sides of the boat and finish flush with the outside of the chine.

There are a number of treenails in the bottom of the boat, the purposes of which are not in all cases obvious. Taken in order from the scarfed end, there are two 30 mm treenails directly beside the 'dovetail', one in the bottom 60 mm from the chine, and one above the chine about the same distance from the bottom (Fig. 2). The one above the chine passes right through it; the other cannot be examined from below. At a distance of 530 mm from the 'dovetail' there are four similar treenails, two on each side in positions similar to the first pair. One of those above the chine is a blind hole. At a point 500 mm beyond there is a 27 mm hole in the bottom 50 mm from the chine.

When the boat was first found there was a heavy timber fixed to the bottom 2.85 m from the 'dovetail'. This has since become detached and lost, but the position can be determined by two treenails which secured it and by the mark it left

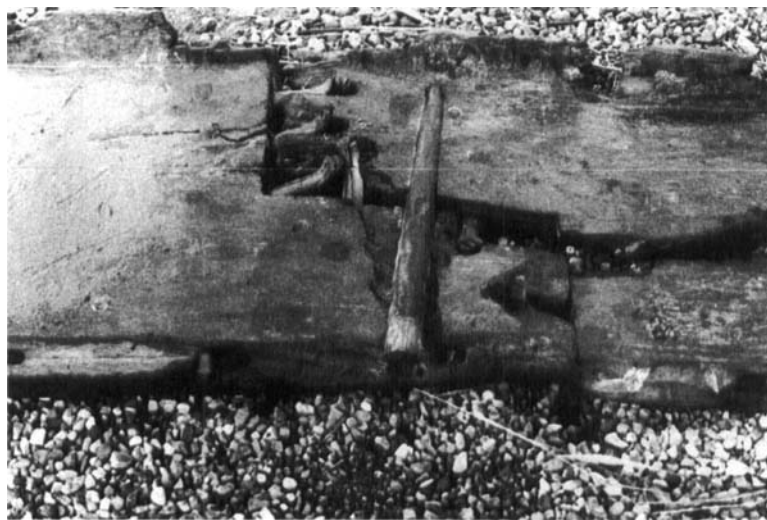


Figure 5. Scarf in the bottom of the boat with stitched dowels and dovetail locking-piece. (Photograph: National Museum of Ireland.)

on the bottom. This is 100 mm wide and 570 mm long. The one remaining treenail is 27 mm in diameter, and 100 mm high above the bottom (Figs 2 and 6). The missing timber is stated to have been higher than the top of the treenail and rounded in cross-section.

There are three more 30 mm treenails 200 mm beyond the location of the heavy timber. They are in formation similar to the previous ones and there was probably a fourth one in the part of the side-strake now missing. A further 1.53 m beyond this there is one 22 mm treenail near the centreline of the boat. Close to the end of the boat and 850 mm from the last mentioned treenail, there are two small holes through the bottom of the boat, one on each side and about 60 mm from the chine. One is circular, 45 mm in diameter, and the other is oval, 45 × 120 mm. These may have been treenail holes, enlarged by the action of water and sand.

This end of the boat is broken, and the fractured portion is worn down to a thin edge. Part of this edge is formed into rather regular notches, the spacing and length of which bear a superficial resemblance to that of the stitched holes at the other end of the boat (Fig. 2). It is possible that there was another section scarfed on at this end, in which case the overall length of the boat would have been at least 10 m.

The side-strake

The existing side-strake is 6.5 m long and was found lying beside the bottom portion. The greatest width is 600 mm at the centre, tapering to 300 mm at one end and 130 mm at the other (Fig. 4). It is 70 mm thick along the edge which was scarfed to the bottom where there are remains of 18 mortises in which seven tenons remain *in situ*. (Two of these were loose and have been removed for safety.) In addition to the pegs which secure each tenon there are four similar pegs spaced between the mortises.

The upper part of this plank is worn down to a thin edge, and it would appear that an additional piece was at one time scarfed along its upper edge with mortise-and-tenon joints similar to those along the bottom edge. Six of the mortises still remain, extending for a length of 2 m from the end. Below the second mortise there is a large treenail 35 mm in diameter, and below the sixth one is a round hole 50 mm in diameter.

At the top edge of the strake beside the sixth mortise there is a wooden stitch similar to those in the bottom of the boat. In this case its hole is drilled into the top edge of the strake and meets a slanting hole drilled in from outboard. It is stated by the members of the Subaqua Club that, when first discovered, there was one 'rowlock' still attached to the side-strake. This is now gone, and no one can say exactly where or how it was

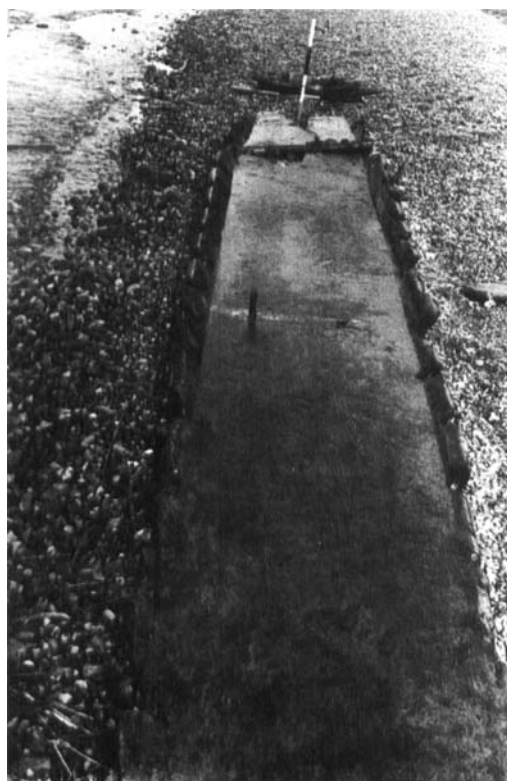


Figure 6. Bottom of the boat showing the remains of mortises above each chine. The projecting treenail secured a substantial cross-member which has now disappeared. (Photograph: National Museum of Ireland.)

fixed, but it is thought that it may have been attached in some way by this stitched dowel.

Near the other end of the strake and 330 mm from the bottom edge there is an oval hole 60 × 90 mm, which may be associated with a round pole also found beside the boat. This pole is 1.2 m long and tapers from 70 mm at one end to 50 mm at the other. At each end there is a treenail, 17.5 mm thick, driven through at right angles to the axis of the pole (Fig. 2). That at the thinner end is 40 mm from the end and is cut off flush. The other is 60 mm from the end and protrudes on one side for a length of 60 mm. The distance between the treenails is 1.07 m, which would be the approximate outside beam of the boat at the level of the oval hole in the side-strake.

The pole may therefore have been fixed in a horizontal position 0.43 m above the bottom with its ends passing through the side-strakes on both sides and secured outboard with a treenail.

In this position it would serve the dual purpose of a seat or support for the oarsman, and of a brace to prevent the sides from spreading apart.

The oars

When the two oar blades were found under the boat they were already broken into a number of parts, one of which retained the butt of a loom. These were put into a plastic bag with other small parts, but after a period of stormy weather were found to have suffered from abrasion. There are now eight separate pieces including two pointed ends. The lengths of these pieces are: 420, 190, 190, 170, 140, 120, 100 and 90 mm. No part of the loom now survives.

The maximum width of the blades is 110 mm and the thickness 35 mm. In cross-section both faces are convex curves which meet at a sharp angle along each edge. The width and thickness of the blades decrease towards the end and finishes in a leaf-shaped point. Mr Acton of the Subaqua Club has provided a rough sketch and states that the blade was about 2 ft 3 in (685 mm) long.

Other fragments

There are also two pieces of a plank 135 × 40 mm, the lengths of which are 470 mm and 210 mm. At the end of each there is half of a 35 mm hole. These fit together and may be two parts of the one plank.

A short piece of plank 15 mm thick, 430 mm long and 270 mm wide was also brought in with the boat. It has a very fine and even finish and does not appear to be as old as the other pieces.

In addition to the eight tenons found *in situ*, two of which were withdrawn for safety and one which was brought to the Museum, there are another six which were found around the site of the boat.

Samples of wood have been taken from the main section of the bottom, from the additional piece, and from the side-strake, as well as from stitches, tenons, and treenails, and a small tin of the white material found in all the scarfs and seams.

The following timbers have been identified by Miss M. J. P. Scannell:

Bottom of boat	<i>Quercus</i> sp. (oak)
Extension to bottom	<i>Quercus</i> sp. (oak)
Side of boat	<i>Quercus</i> sp. (oak)
Tenons	<i>Taxus</i> sp. (yew)
Treenails	<i>Taxus</i> sp. (yew)
Oar blades	Probably <i>Salix</i> sp. (willow)

The sample of luting material was submitted to the State Laboratory for identification and the following report received:

'We examined the sample of sealing material submitted by you on 21st January this year.

The sample consisted of a brownish organic material which is probably wood resin.

Analysis by X-ray fluorescence (XRF) spectroscopy showed the presence of significant quantities of iron—which probably resulted from rusting of the container, together with smaller amounts of calcium and sulphur.

The sample was extracted with acetone and on drying it was found that the residue was mainly linseed oil (see spectrum).'

References

- Brindley, A. L. & Lanting, J. N., 1991, A boat of the Mediterranean tradition in Ireland: preliminary note. *IJNA*, **20**: 69–70.
Farrell, R. T., 1989, The Crannog Archaeological Project (CAP), Republic of Ireland II: Lough Lene—offshore island survey. *IJNA*, **18**: 221–8.

Conclusion

The Lough Lene boat combines techniques of sewn boat construction together with that of mortise-and-tenon in a way which cannot be paralleled elsewhere at present. It may represent a fusion of indigenous and Mediterranean techniques at a time when Britain was under Roman occupation. It serves to draw attention to the paucity of boat remains from which inferences may be made.

Acknowledgement

This report and survey are published by courtesy of the National Museum of Ireland, for whom they were originally prepared.