

Ancient Monuments Laboratory
Report 174/87

EXAMINATION OF COFFIN NAILS FROM
BURIAL XK 239, YORK MINSTER.

Glynis Edwards and Jacqui Watson

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Summary

Eight sets of medieval clench nails were examined with mineral preserved organic material, which was interpreted as the remains of three oak planks joined together with animal fibres preserved between them. The type of nails used and the orientation of the planks supported the suggestion that the grave cover had originally been a section of a "clinker" built structure.

The report includes micrographs and drawings with contributions by P. Walton and H. Appleyard on the fibres.

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Examination of coffin nails from burial XK239, York Minster.

Eight sets of iron clench nails were found in the top layers of this inhumation, arranged in two parallel rows approximately 20cm apart (see grave plan, fig.1). On the nails are traces of mineral preserved oak (Quercus sp.), and there is sufficient wood remaining to comment on the original construction.

With the exception of 16, the clench nails appear to join together two pieces of oak with a fibre mat between them. As there are two rows of these clench nails, possibly there were three planks joined together. In this case the planks would have been approximately 25cms wide providing the planks overlapped for 2cm. The grain orientation of these boards suggests that they were originally radially cut - the varying thicknesses indicate that the planks taper in cross section, and this is characteristic of split rather than sawn timber.

In a few instances it was possible to examine the annual rings in the wood, these vary in thickness from 7-10 rings over 20mm to 28 over 32mm. This would indicate that the planking was made from slow grown oak. However, the variation over this small range is insufficient to say whether all the planks were made from the same tree or not, but it is tempting to speculate that the outer right hand plank was taken from a different tree to the other two?

Clench nail 16 is different from the others in that it pierces only one plank and is positioned between the two rows of nails. The thickness of the central plank at this point is greater than at nail 5, and indicates that the wide end of this plank was rebated to take the narrow end of the overlapping plank (see fig. 2).

The fibre mat between the planking appears to be made of coarse animal hairs of two different colours and possibly types (see figs. 3 & 4). Using the SEM it was possible to examine the scale patterns on the hairs, fig. 5. According to H.Appleyard, these fibres are most likely to be wool, probably of medium thickness. Recently P.Walton has been working on caulking fibres from sites in Newcastle, and she has found that wool was used for this purpose in the earlier periods, circa. C9-10th, and that other animal fibres were more common in the later periods. The fibres do not appear to have been impregnated with iron oxides in the same way as the adjacent wood, probably the result of a resin coating. Resins would have been impervious to the iron corrosion products, and have protected the fibres from bacterial attack. Unfortunately none of this resin remains in situ, so its presence could not be confirmed or identified.

The clench nails are of a clinker type, and the orientation of the planks along with the possible presence of caulking seem to confirm that this grave cover could originally have been a section of boat or similar clinker built structure.

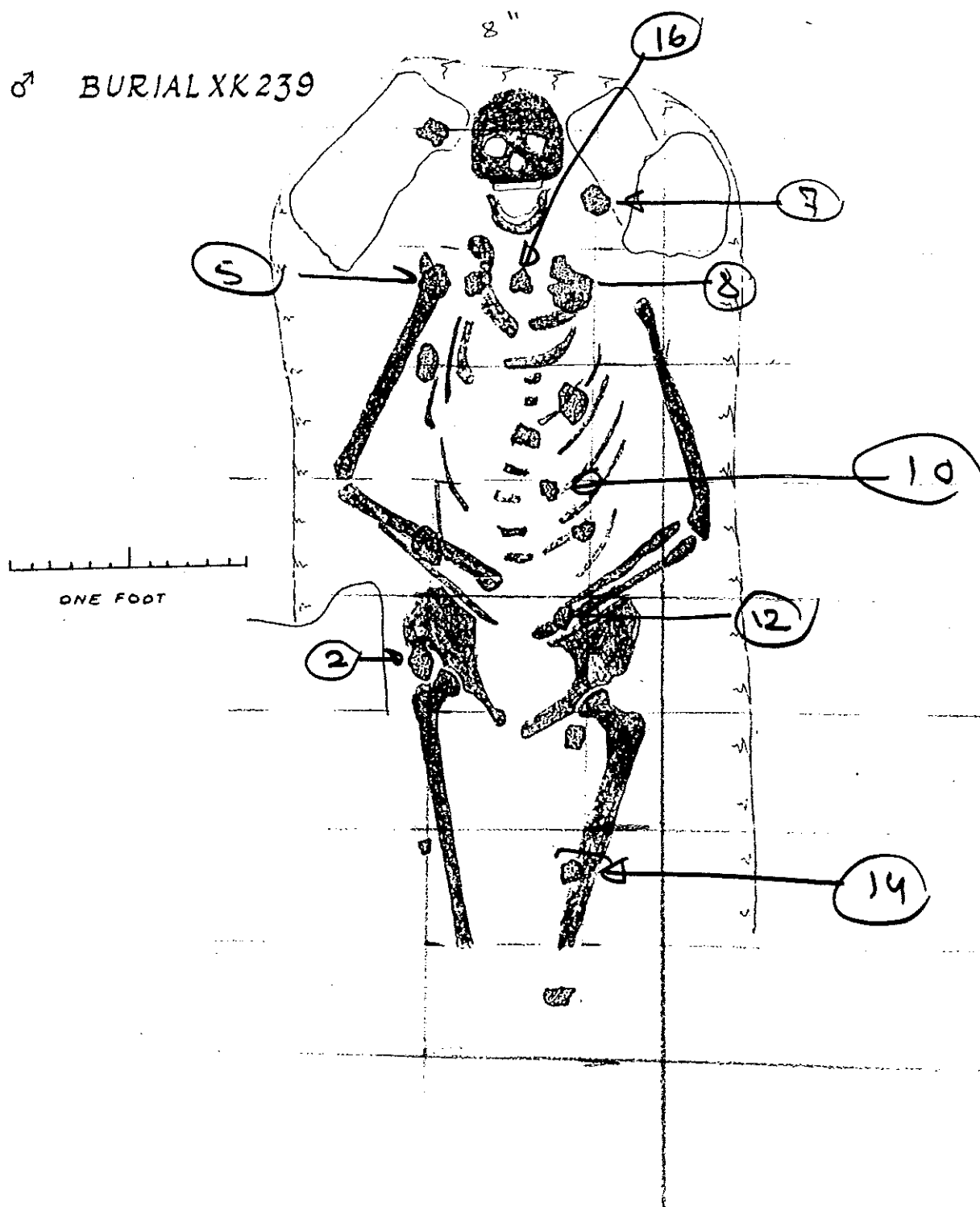


fig.1 Grave plan.

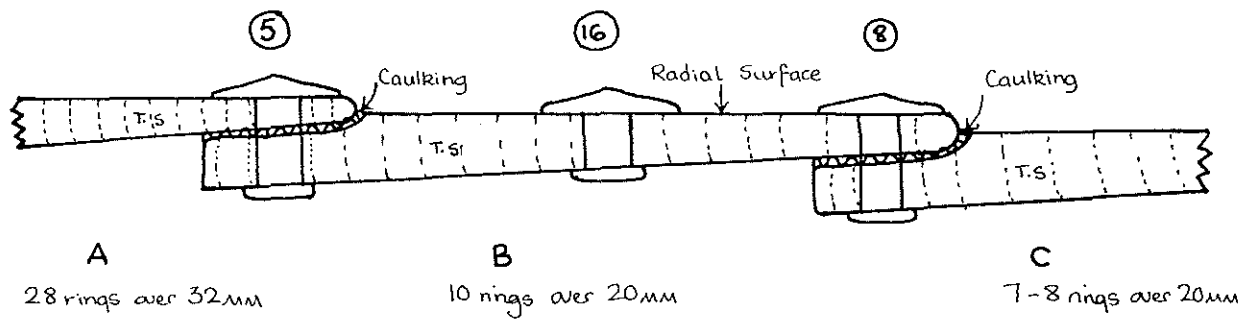


fig.2 Cross section of original structure, with clench nails 5, 16, and 8 in place.

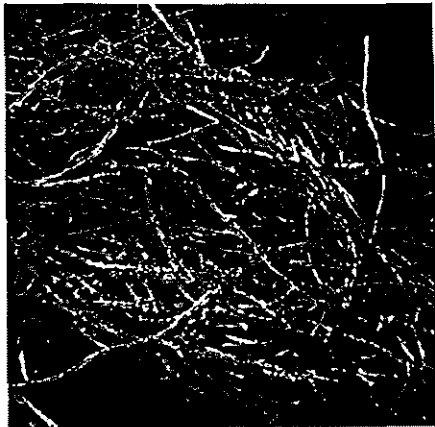


fig.3

fig.3 Dark and light fibres from clench nail 8.



fig.4

fig.4 Fibres from nail 7, which are finer than those from 8.

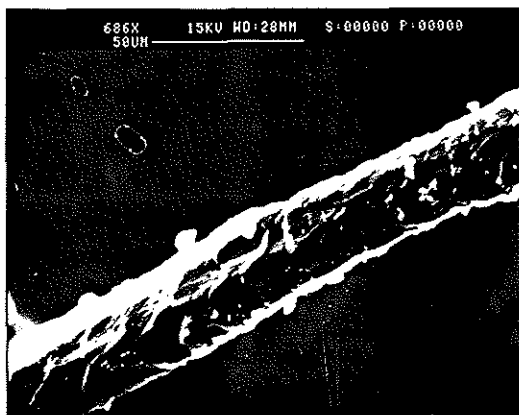
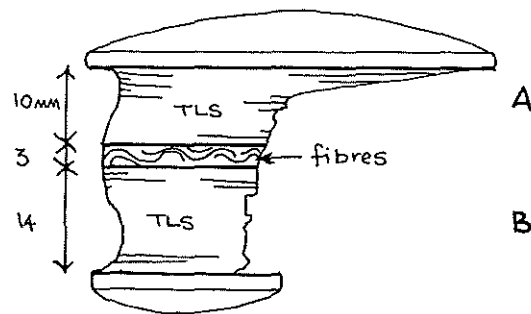


fig.5 Fibre with scales.

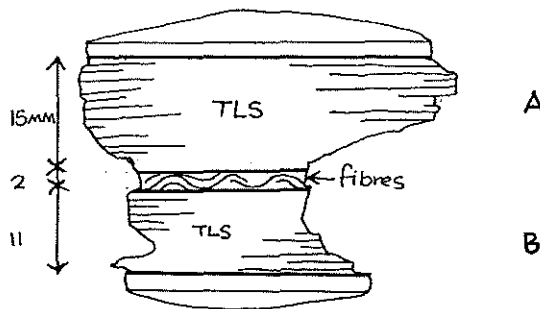
The organic material preserved on the individual clench nails.

5

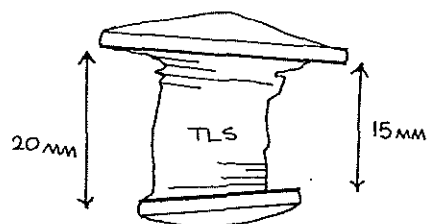


Plank A has 28 annual rings over 32mm.

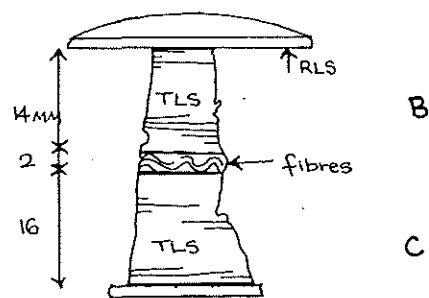
2



16



This nail only pierces plank B, which has 10 annual rings over 20mm.



Plank B has 8 annual rings over 23mm.