

THE DATE OF TIMBERS FROM THE SPIRE OF CHILCOMB CHURCH AND FROM THE WRECK IN THE RIVER HAMBLE:

SOME EVIDENCE FROM DENDROCHRONOLOGY.

By A. W. G. LOWTHER, F.S.A.

TIMBERS from both these sources were kindly sent to the writer by Mr. F. Cottrill, Curator of Winchester Museum, to whom thanks are due for thereby having made this work possible, as well as to Mr. J. H. Harvey, F.S.A., for his kind co-operation in recording the other timbers here described.

In a brief note of this nature it would not be desirable to discourse at length on the science of dendrochronology, but something must be said as to the methods employed in order to make any results understandable by those who have not made any special study of this subject.

As stated elsewhere¹ and for reasons there given the work done by the writer is confined to "oak" timbers, and only such timbers as have been grown on relatively dry, well-drained sites, and which have, in consequence, regular and fairly small rings, are suitable for this work. Also the piece, or "slice," of timber examined must be from the main trunk of the tree and not from either end, where the formation of roots or branches produces a disturbance of the rings which are thereby generally very distorted.

To produce the graph, or "plot" of the rings of a given slice of oak, the latter is first polished, or sufficiently smoothed to bring up the rings quite distinctly. The rings are then measured from the centre outwards (in millimetres, to the nearest .25 mm.) and, where possible, along several different radii so that several graphs of each slice are produced and can be checked to avoid any discrepancy. In the case of timbers from which slices cannot be cut for removal and work in a laboratory, these can be recorded either photographically or by "ticking off" the rings with a sharp point on a thin card (or stout paper) "straight-edge."

The measurements are plotted on squared paper (preferably divided into inches and twentieths) to a horizontal scale of one ring at each 1-10th inch interval, and a vertical scale (giving the exact width of each ring) of 1 inch to a millimetre. The resultant plot is then averaged, graphically (incidentally, the most tedious part of the work) so as to produce a curved-line graph (or "smoothed" graph, as American dendrochronologists have

1. *The Archaeological News Letter*, No. II, March 1949, pp. 1-3, "Dendrochronology," by A. W. G. Lowther.

termed it). Thereby a series of these graphs can, for purposes of comparison and the identification of similar plots from other sites ("cross-dating" as it is termed) be the more easily compared. It is probably obvious that the greater the length of any plot (*i.e.*, the greater the number of rings) the greater is its usefulness for purposes of cross-dating, and that short plots (30-50 rings, for example) are of little use unless their actual date is already known from some other factor.

From the plots already prepared by the writer (about 60 in all), several of them being from timbers of known date of use, or whose date was known approximately, it has been possible to produce two continuous series or "standard plots." The one from *circa* 160 B.C.—320 A.D., and the other from *circa* 850 A.D.—1500 A.D. The second of these is likely to have an error of between two and five years, and it will have no value for "exact" dating until work has been carried out on timbers grown between 1500 and the present day.²

Two of the plots which go to make up this curve for the mediaeval period. (WA/5 and H/2) are shown on the attached figure and cover the period *circa* 1230 - 1360. Tentatively cross-dated with them are the plots (H/5 and H/S2) for the timbers from the Hamble ship and from the spire of Chilcomb Church, and the measure of agreement between these four plots is considerable, especially seeing that they are, except, possibly, H/2 and H/S2, from fairly widely separated localities.

In view of the fact that much outer wood has been trimmed away when the ship's plank H/5 was "dressed," it is not possible to say at what date the log from which it was cut was felled. Probably at least 60 or 70 rings were so removed, so that an "early 15th century" seems to be most likely.

As regards H/S2, this timber still retains part of the original "sapwood," or outermost rings, of the tree,³ and it appears that only a few rings are missing. Hence a date *circa* 1350 A.D. for the felling of this timber seems most probable.

In conclusion the writer would stress once again the purely tentative nature of the results here set out. If, at some later date, a better specimen of timber from the Hamble wreck can be obtained (preferably a slice from a large baulk which still retains the outermost rings of the original tree from which it was cut) it should be possible to be more definite as regards the probable date of this vessel. From the present work all that one can say is that a date in the "early part of the 15th century" appears most likely.⁴

2. Apart from work on a few timbers of known 17th and 18th century date, the writer has done no work on oak of this period.

3. Forming a so-called "waxy edge" on the timber.

4. A second timber from this wreck was examined and plotted by the writer but, consisting as it does mainly of heartwood, and from a very large log, it adds nothing to the plot here figured and has been omitted.

Of the three timbers from the spire of Chilcomb Church sent to the writer, two had clearly been cut from the same tree (at the date when these timbers were originally prepared) and gave identical plots. The third, consisting almost entirely of heart-wood, may also have been from the same tree, but this is not certain, and it possessed too few rings to be worth plotting.

During the demolition of (or repairs to) early structures many oak timbers suitable for tree-ring work are likely to become available. It is to be hoped that wherever possible slices may be cut from any such timbers and the necessary plots made of their rings (or the slices stored until this work can be carried out) and it is to be hoped that as many persons as possible will assist in this manner, and some, it is to be hoped, may be sufficiently interested to take a more active part in the study of dendrochronology.

Particulars of Cross-dated Timbers.

(See fig. 1.)

No.	Origin	Description
H/S 2	Chilcomb Church Structural timber from the spire. Submitted to writer by Mr. F. Cottrill, M.A.	A squared (5½ in. × 6½ in.) oak timber, cut from the outer part of a tree of about 100 years growth. Only a few of the outermost rings appear to be missing; 119 rings present.
H/5	River Hamble Timber from the hulk in W. Hamble River. ⁵ Submitted by Mr. F. Cottrill, M.A.	Oak plank (1 in. × 8½ in.) from the inner part of a large tree. Many outer rings missing; 106 rings present.
WA/5	Westminster Abbey Rings recorded for writer by Mr. J. H. Harvey, F.S.A.	Timber forming part of an oak chest in Pyx Chapel. 175 rings present; many outer rings missing. Date of chest, <i>circa</i> 1480 A.D.
H/2	Winchester College Muniment Room. Rings recorded for writer by Mr. J. H. Harvey, F.S.A.	Timber forming part of an oak chest. 259 rings present; probably only a few outermost rings missing. Date, <i>circa</i> 1370 A.D.

5. Accounts of investigations of the remains of this wreck have appeared in *Mariner's Mirror* (R. C. Anderson, 193-) and *H.F.C. Proceedings*, XVI, 163-5.

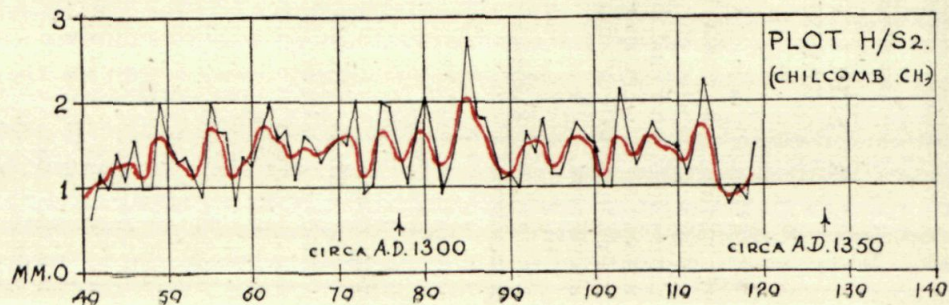
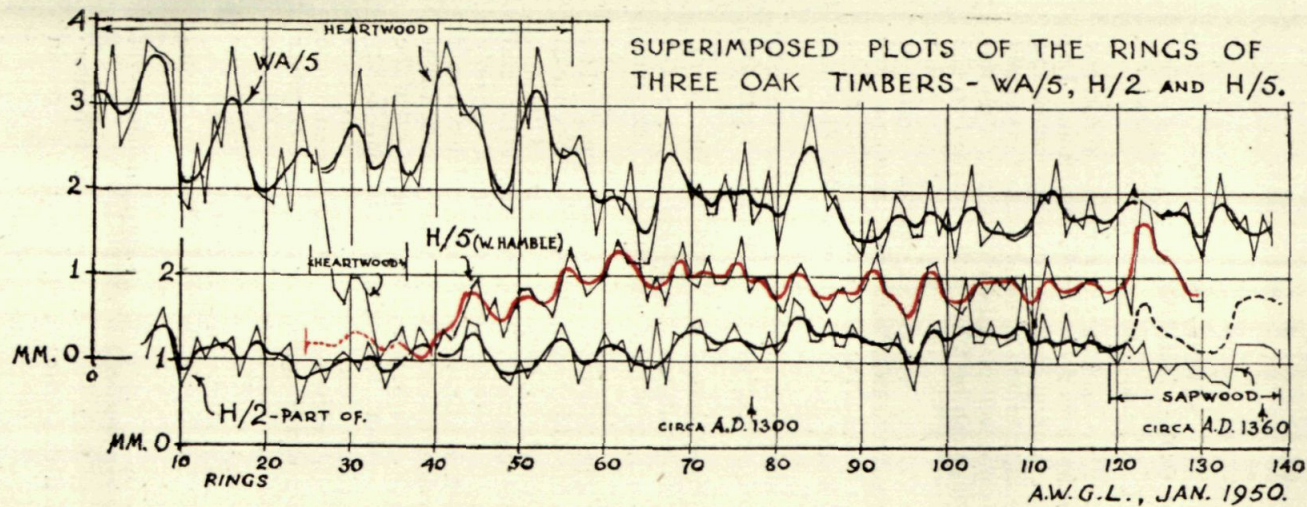


Fig. 1