

a	b	c	d	e	f	g	h	k	l
A.D.	Y.N.	CHARACTERISTICS OF RING (r),	MEAN	SIGN	DEV.	BIEN-	5-YEAR	DEV.	10-
TRUE	YEAR	LINE (l), ETC.	WIDTH	CHAN-	FROM	NIAL	MEAN	FROM	YEAR
DATE	NUMBER		TENTH-	GES	3-YEAR	INDEX		5-YEAR	MEAN
			MM.		MEAN			MEAN	
896		Wet	12	+2	0	+1	13	-1	
897	95 <sup>1</sup>		15	+3	+2	+3	12	+3	
898			12	-3	0	+1			
899			10	-2					
c. 906		Felling date estimated							

## CROSS CORRELATION

Cross-correlation is useful when agreement coefficients are indeterminate and when no master curve is available. Sign changes can be weighted (1, 2, 3) and multiplied together, as explained previously.<sup>99</sup> For example, a rapid rise in one curve ( $x = +3$ ), correlated with a moderate fall ( $y = -3$ ) in another curve, yields a product moment  $xy$  of  $-6$ . Totals of positive and negative scores are obtained and percentages calculated.

This method suffices for preliminary cross-dating. However, the programme developed by M. G. L. Baillie and J. R. Pilcher<sup>100</sup> is recommended for definitive work. They express the deviations from five-year means (cf. Table, column  $k$ ) as percentage departures and use logarithms to base  $e$ .

Percentages cited here are based on weighted coefficients of inter-annual sign changes. These are normally distributed with respect to zero and have no trend and, given these two conditions, skeleton plots of ring-widths or other arithmetical properties of tree-ring curves (cf. Table, columns  $g$  and  $h$ ) can be used in addition.

The products ( $xy$ ) are summed for all possible visual matches and oscillate near zero, except that they are strongly positive at the correct 'cross-dating' lag.

The product moment correlation coefficient is defined as

$$r = \frac{\sum xy}{\sqrt{\sum x^2 \sum y^2}}$$

The probability of the observed value of  $r$  having arisen by chance is given by the Student  $t$ -test, where

$$t = \frac{r \sqrt{N-2}}{1-r^2}$$

and  $N$  is the number of years of overlap between the two curves. The result can be used to calculate the significance level. These methods were used to cross-date the skeleton plots for Southampton and Schleswig.

D. J. SCHOVE

## THE SOUTHAMPTON CONFERENCE, 1974

The 17th Annual Conference of the Society, attended by about 120 members, of whom 20 were from abroad, was held at Southampton University from 5-8 April 1974. The theme was 'Medieval trade; the archaeological evidence'. On 5 April a lecture by Laurence Keen, Director of the Southampton Archaeological Research Committee, on recent archaeological work in Southampton was followed by a civic reception in the

<sup>99</sup> *Geografiska Annaler*, LIIIA (1971), 217 ff.

<sup>100</sup> *Tree-Ring Bulletin*, XXXIII (1973), 7-14.

Maritime Museum. Lectures on 6 April included one by M. Daniells on pottery from the St. Michael's House site, one by P. Faulkner, 'Medieval domestic buildings: the standing remains', and one by P. Chapelot on French medieval pottery. J. G. Hurst summarized problems and recent work in pottery studies. The University of Southampton gave a reception in the evening. On 7 April the Society visited Titchfield Abbey, Portchester Castle and church, where S. E. Rigold and R. D. H. Gem acted as guides. A lunchtime reception was given at the City Museum and Art Gallery, Portsmouth. In the afternoon members visited the monuments of Portsmouth, the Garrison Church (guide, S. E. Rigold), St. Thomas's Cathedral (guide, R. D. H. Gem), the fortifications, which Alderman Emery-Wallace introduced, excavations in the High Street, and Southsea Castle (guide, A. Corney). On 8 April the Society visited the museums of Southampton, and Laurence Keen conducted members around his excavations in the Saxon and later medieval towns. The Society must record its gratitude to Mr. Keen who acted as local secretary to the Conference.

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