12th Annual Public Lecture – 2002

Leafing Through Time

Mr Nigel Nayling

The importance of dendrochronology, known as tree ring dating, in maritime archaeology was the subject of the 2003 lecture. Nigel Nayling, dendrochronologist and lecturer at University of Wales, Lampeter, discussed its use in dating structures from the past and as an indicator of past climate and environmental change.

Some of the earliest datable trees have been recovered from inter-tidal sites in the Severn Estuary. Here oak trees aged up to 466 years old have been sampled about 1/ 2 a mile from the current coastline. The trees date to approximately 8,000 years old and are associated with a landscape containing a raft of information. Even older trees are found off Bouldnor Cliff, Isle of Wight which lie 11m below ordnance datum and can only be accessed by divers. These provide the oldest tree ring sequence currently available in the UK., dating from c.8350BP.

Submerged forests are relatively widespread around our coasts. Sections of trees collected from the intertidal forest off Wootton Quarr, near Ryde, have pushed the continual dendrochronological sequence back to the middle of the 4th century BC. It should be stressed that tree ring dating can be very accurate and valuable but the dates are only as good as the samples from which they are derived. It takes a trained eye and good quality material to be sure of good results.

Dendrochronological dating of the Roman waterfront in London demonstrated a period of large scale riverside consolidation and quay building only five years after their arrival. Dating the waterfront timbers has provided an accurate gauge of shoreline development during the Romano-British period which itself would have reflected both social and maritime influences. The Blackfriars Boat (130-175AD) is constructed in the heavily built Romano-British technique, which was adapted well to the tidal British waters. Comparing this boat to the lighter build of the Mediterranean style employed in the County Hall ship of 285AD (vessels designed to run alongside quay walls) suggests a development in infrastructure that supported extensive maritime interaction and trade.

On discovery of the Magor Pill boat in the Severn Estuary, the opportunity was taken to conduct as much timber analysis as possible. Study showed oak members for the vessel were felled between September and April AD 1239-1240 while the beech planks primarily came from two trees harvested in the summer of 1240. A reused Irish timber was incorporated as a repair. This information helps to open a book on the past, not just chronological but offering insights into communication between areas and the organisation of boat building.

A much larger discovery from AD 1468 was the Newport ship, revealed during construction work for a new Arts complex on the edge of the River Usk. Wales. Over 1500 timbers were excavated from the ocean going ship which contained artefacts suggesting links with Portugal. The largest Medieval ship preserved in Britain is the Grace Dieu built in

Southampton in 1418 and lost in 1439 when it was burnt to the waterline on the River Hamble. Timbers from this vessel have been investigated to tell us about ship building in a period when we have little more than iconographic evidence from town Seals. Study of the wood tells us about the trade, local economies as well as commercial and social organisation that facilitated construction.

Shipbuilding sites provide further evidence of local economies and by studying the remains at sites such as the 18th century Bucklers Hard on the Beaulieu River we can learn about timber employed by shipwrights. The need to import timber was a major political issue during the Napoleonic wars which makes interpretation of the archaeological evidence important as it often paints a different picture!

Mr Nayling concluded that we should also look at living trees to see how they can help provide an insight into the past. They can tell us about the management of woodlands and offer an insight into previous environmental conditions. They are also the front line of any dendrochronological sequence. The future of the study of the past should include development of methodologies employed in the discipline, revisiting existing finds that have not yet been under the saw and enthusing a new generation of tree ring specialists to take the sequence forward.