

## **Dendrochronological investigation on historical English oak (*Quercus robur* L.) in Lithuania and Latvia: problems and potential**

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Although the study of oak tree rings has been widely used to obtain long-term millennial chronologies in Europe, dendrochronological study of oak in the Baltic States has so far produced very limited results. Subfossil oak wood has been found in both countries in the past, and in some cases also at the present day, in bogs and sandy riverbank deposits, but the number of wood samples obtained is very small.

In Lithuania, the findspots of subfossil oak wood are located mainly in the northern part of the country. Seven samples have been radiocarbon-dated, indicating that some of the oak trunks discovered here date from the period 3300–6100 BC.

The findspots of historical oak wood in the area of present-day Latvia are very widely dispersed. The oak trunks found at these sites cover the period approximately from 4000 or 5000 BC up to the first half of the 14th century AD. These have not been dendro-dated so far, mainly because there has not been sufficient interest or funding.

Dendro-dating has so far been undertaken on extensive collection of wood samples from the gravel pit at Smurgainiai (western Belarus). As a result, 10 floating chronologies have been obtained, covering periods of 84–902 years within the time interval from 5300–5000 BC up to about 1325 AD (A. Vitas, Eurodendro 2004). These chronologies might be used for absolute dating of historical oak trunks found in the Baltic area.

Of course, the main sources of archaeological and historical samples of English oak in the territory of the Baltic States are historic structures and buildings. Unfortunately, there is also very little oak wood preserved in standing structures from the Historical Era. In large measure, this can be explained in terms of the rapid reduction of oak forest during the 2<sup>nd</sup> millennium AD. In the past, a considerable quantity of oak timber was also exported to Western Europe. A proportion of the structural timbers of oak recovered in the course of earlier archaeological excavation were not dendro-dated. However, although oak wood from the Historical Era is very rarely preserved, we now have the first successful dendro-dating results. So far, oak structural timbers from Vilnius Lower Castle have been dated and chronology covering 1202 - 1418 AD was compiled (R. Pukienė, Eurodendro 2005), and dating work is currently in progress on structural timbers from buildings in Klaipėda Old Town.

The chances are promising that the study of oak wood from buildings will permit us to compile chronologies by extending the series based on living oaks. Since the stocks of historical oak wood are gradually being lost, there is a pressing need for dendrochronological study of this material.