SYNTHESIS OF ART AND SCIENCE IN CONSERVATION: TRENDS AND ACHIEVEMENTS
THE 9TH BALTIC STATES TRIENNIAL RESTORERS' MEETING
VILNIUS 2011

Abstract

R. Pukienė, D. Baubaitė

Identification of Wood Species of Waterlogged Archaeological Artefacts and its Role in Choosing the Conservation Method

In 1988–2009, during investigations into the Palace of the Grand Dukes of Lithuania more than 1700 archaeological artefacts from the 14th–18th century containing waterlogged wood were collected. Sucrose (according to Pečeliūnaitė, Vedrickiene, 1998) and cold PEG (according to a description by Håfors, 2001) treatment methods were used for their conservation. In 2004, the analysis of wood species was started. Wood species was identified using the standard micro-analysis method (according to Hather, 2000; Panshin, De Zeeuw, 1980; Schweingruber, 1982). A small size of samples, deterioration of wood, and sometimes compression or mineral replacement of the cell tissues posed major difficulties in the analysis.

A total of 572 wooden or partly wooden artefacts were analysed and eighteen wood species were found. Most often the artefacts were made of pine (32.34 %), oak (22.03 %), maple (11.71 %) and ash (9.62 %) wood. Less common wood species were birch (5.77 %), lime (4.02 %), spruce (2.8 %), elm (2.62 %), and boxwood (2.1 %). Less than 2 % of the artefacts were made of aspen/poplar (1.22 %), willow (1.22 %), hazel (1.05 %), Rosacaea (1.05 %), fir (0.87 %), alder (0.52 %) and spindle tree (0.35 %).

Different wood species prevail among the artefacts for various purposes and made by means of different techniques. The presence of alien tree species – boxwood and fir – testifies to the fact that trade in wooden goods was carried on with distant countries during the medieval and post-medieval period.

As wood of various tree species has different resistance to deteriorative agents, artefacts made of different wood species have a different degree of degradation and behave differently in the process of conservation. It was found that the sucrose method was suitable for the most stable species like pine, oak, ash. But the most sensitive species such as maple and, especially, lime are better conserved and retain more structural stability when treated with PEG.