



Original article

Dendrochronological analysis of 19 Norwegian grain chests



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ARTICLE INFO

Article history:

Received 17 November 2014
 Received in revised form
 16 November 2015
 Accepted 16 December 2015
 Available online 14 January 2016

Keywords:

Grain chests
 Dating
 Medieval
 Provenance

ABSTRACT

Nineteen Norwegian grain chests made of Scots pine (*Pinus sylvestris* L.) were analyzed by measuring tree-ring widths on photographs and scanned pictures. Seventeen of the chests were successfully dated by dendrochronology. Two of the dates are corrections of an earlier dating; the ages of these two chests were verified by radiocarbon dating. The grain chests were expected to be medieval, but four, all without carvings, proved to be post-medieval. The mean curve constructed from the dated chests matches all regional Scots pine chronologies in central and southern Norway and several from southern Sweden. All the chests were probably constructed in central Norway. Originally only sixteen chests were known, but several new ones were discovered in the course of this project.

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1. Introduction

This paper is a continuation of a previous article (Thun and Alsvik, 2009) on dendrochronology performed on four solid wooden grain chests which were constructed in an unusual manner; nineteen have now been analyzed. They were expected to originate from Oppdal in central Norway (Fig. 1), but over time the construction technique is likely to have been adopted in other areas. The technique is based on quadrangular, vertical corner posts (Fig. 2), while the fronts and backs normally consist of one or two broad boards. The bottom is fastened with pegs and strengthened with hooks of wood or iron.

Many of the chests have impressive carvings (Fig. 3) whose style, according to Anker (1961), clearly indicates a medieval date (AD 1030–1537 in Norway). Anker (1961) also described some of the chests, including the carvings, in detail and referred to them as “grain chests” (Norwegian: “kornbyrer”; more recently called “kornkister”), as he believed they were used to store grain.

All the chests are made from Scots pine (*Pinus sylvestris* L.). This enables dendrochronological analysis based on regional Norwegian chronologies (Thun, 2002, 2005), most of which go back to the early Viking period. Some of the chests (nos. 11–15 in Table 1) are now kept near Molde (Fig. 1).

Planing of the outer wood has removed tree rings from the boards in most of the chests and a dendrochronological dating of

the last remaining ring would therefore indicate their age as a “*terminus post quem*”. Four of the chests were dendrochronologically analyzed and described by Thun and Alsvik (2009). This gave a surprising result as two were apparently post-medieval (nos. 1 and 4 in Table 1). This result was strongly at odds with the construction technique (Thun and Alsvik, 2009). A project was therefore started that included dendrochronological analysis of more chests, measuring all the available radii. It also included ¹⁴C dating of chests 1 and 4 (Table 1). The ¹⁴C dating was performed by the SUERC Radiocarbon Dating Laboratory at the University of Glasgow.

Originally, only 16 chests were known (Thun and Alsvik, 2009), but new ones were discovered while those chests were being analyzed (Table 1).

1.1. Aims

The main aim of this study was to find out whether all the chests were medieval in origin, or if the construction techniques were copied in the post-medieval period. We also wished to test the provenance of grain chests of this type which are found stored at several locations.

2. Method

As the chests are items of archaeological significance it was not possible to take cores. Tree-ring widths were therefore measured on photographs and scanned pictures from various radii on all the available boards. Originally, the tree rings were measured *in situ* with a micro-lens, but this did not permit any check of the measurement after returning to the laboratory. Instead, the radii were

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Fig. 1. Map showing places referred to in the text.

photographed and even very narrow tree rings could successfully be measured. The cross-section is often not available due to the construction technique (Fig. 2). Therefore the only available radii are along the longitudinal section of the board. Measurements along

the longitudinal section have been successfully used to date planks from various building phases in the walls of three Norwegian stave churches (Bartholin, 2002, 2008, 2014, Stornes et al., 2013; Thun, 2012; Thun and Stornes, 2014) and wooden artefacts from Scots

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