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DEPARTMENT OF QUATERNARY GEOLOGY
KVARTÄRGEOLOGISKA AVDELNINGEN
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8 November 2021

Nationella Laboratoriet för Vedanatomi och Dendrokronologi, rapport nr 2021:98
Hans Linderson & Johannes Edvardsson
DENDROCHRONOLOGICAL ANALYSIS OF CHURCH ORGAN IN
TORRLÖSA, SKÅNE, SWEDEN

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Märk "Torrlösa orgelprojekt". Svalövs pastorat kontaktperson Outi Ben Ammar

Område: Skåne **Prov nr:** 56040 - 56059

Analysed object: Church organ and items in Torrlösa kyrka, Skåne, Sweden

Resultat:

Dendro identity no:	Sample no	Tree Species	No Yrs; No radii measured	Sapwood (Sp) Bark (B) Waney edge (W)	Dating of the outermost (youngest) annual ring in the sample	Estimated felling year E(Efter/After) / V(Winter) Period	Approximated felling period for the trees in each of the groups
56040	1	Oak	111;3	-Sp, -W	Not dated	---	---
56041	2	Oak	105;2	-Sp, -W	1583	E 1592	E 1592
56042	3A	Oak	248;3	-Sp	1613	E 1623	1619–1633
56043	3B	Oak	204;2	-Sp, -W	1590	E 1600	1619–1633
56044	3C	Oak	105;2	Sp 4	1613	1626±7	1619–1633
56045	3D	Oak	204;2	-Sp, -W	1599	E 1609	1619–1633
56046	4A	Oak	102;2	-Sp, -W	1614	E 1623	1630–1647
56047	4B	Oak	97;2	-Sp, -W	1620	E 1630	1630–1647
56048	4C	Oak	167;3	-Sp, -W	1609	E 1619	1630–1647
56049	5	Oak	89;2	-Sp, -W	1544	E 1551	E 1592
56050	6A	Pine	158;2	-Sp, -W	(1562)	(E 1600)	(E 1600)
56051	7	Oak	184;2	-Sp, -W	Not dated	---	---
56052	8A	Pine	95;2	-Sp, -W	1504	E 1554	1580–1620
56053	8B	Pine	142;2	-Sp, -W	1530	E 1580	1580–1620
56054	8C	Pine	82;2	-Sp, -W	1482	E 1532	1580–1620
56055	9A	Oak	103;2	Sp: 7, -W	Not dated	---	---
56056	9B	Oak	128	-Sp, -W	Not dated	---	---
56057	6B	Pine	71(+10);2	-Sp, -W	(1497+10)	(E 1550)	(E 1600)
56058	10	Oak	77;2	-Sp, -W	Not dated	---	---
56059	11	Oak	60;2	-Sp, -W	Not dated	---	---

For the dates that are in parentheses, a sufficiently high statistical significance was not achieved. They are therefore considered insignificant.

Results

A total of 20 samples from the church organ and the church interior in Torrlösa church were dendrochronologically analysed. The samples came from 11 different parts of the organ or interior. Of these, a total of six parts (1, 2, 3, 4, 5 and 11) were related to the owl. These parts consisted of a total of 11 analysed oak samples. The remaining five parts (6, 7, 8, 9 and 10), which in total consists of 9 analysed wood samples, were linked to the church's balustrade and decoration. A total of 15 of the samples were oak (*Quercus* sp.) while the remaining 5 samples were pine (*Pinus* sp.). No coring of wooden samples or cookies (discs) were taken from any of the analysed objects. Instead, a photo documentation of all the samples was carried out and the later analysis and measurements of the annual rings was performed on calibrated images.

Dating of the church organ

Object 1, (56040), the 45° angle impost joint on the organ, neither show significant cross-date statistics to the other samples or the reference chronologies. The sample is therefore considered as undated at present.

Object 2, (56041), the back side moulding on the organ, is an oak sample without sapwood. The outermost ring is dated to 1583, which gives an earliest possible felling year for the tree to 1592. The tree-ring data correlates to chronologies developed from oak material exported from non-specified areas in the Baltic region. Object 5 (56049), also show weak correlation to reference chronologies from similar material, and when sample 56041 and 56049 are merged into a joint tree-ring record, the correlation increased.

Object 3 and 4 (56042-48), the panel disassembled from the church organ and the panel fixed on the church organ, consist of 8 oak planks, of which 7 have been analysed. The samples 56042, 043, 045, 047 and 048 cross-date, and a chronology has been developed from the samples. This chronology cross-date with oak-reference chronologies from Skåne, Halland, Denmark and Västergötland.

Object 11 (56059), the post inside the church organ, neither show significant cross-date statistics to the other samples or the reference chronologies. The sample is therefore considered as undated at present.

Dating of the church interior

Object 8, consist of three join pine planks (56052-54) with the text "Johannes Buxtehüde" and the year 1641. Since sapwood is missing on the three planks, only an after dating (*terminus post quem*) is possible. If the outermost ring in the youngest dated pine plank is close to the sapwood boundary, a likely felling year for tree 8B (56053), and thereby the other trees in the same construction, between 1580 and 1620. However, there might be missing heartwood rings as well, which can give a later interval for the tree felling. The pine trees correlate to reference chronologies from Norway.

Object 6, 7, 9 and 10, neither show significant cross-date statistics to the other samples or reference chronologies. These samples are therefore considered as undated at present.

With regard to the samples that have received an uncertain date or the samples that we have not been able to be date, a supplement consisting of more samples can be a possibility to date these samples with search.

Sample description

Church organ

- Sample 1: (56040), "Brebos", 45° angle impost joint on the organ.
Sample 2: (56041), Loventz back side moulding on the organ.
Samples 3A-D: (56042-45), Panel disassembled from the church organ.
Samples 4A-C: (56046-48), Panel, fixed on the church organ.
Sample 5: (56049), Post lower case on the organ. "Brebos"
Sample 11: (56059): Impost "Loventz". Post inside the church organ.

Church interior

- Samples 6A-B: (56050 and 56057), Posts balustrade (right and left).
Sample 7: (56051), Top flügeltüve, Jungfrau Maria
Samples 8 A-C: (56052-54), "Büxtehüde 1641
Samples 9A-B: (56055-56), Panel, "Landate second"
Sample 10: (56058), Separate balustrade "Matthaeus"



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"Dendro identity number", is a unique identity for each sample handled in the laboratory.

"Number of years", the number of annual rings that have been analysed in the sample. In some cases, it has not been possible to measure the annual ring width, then the annual rings have been counted, which has been marked with "+ n".

In the same column, the note "ew" or "lw" sometimes occurs, these terms are derived from the English early wood (spring wood) and late wood (summer wood) and describe the degree of development of the youngest / last annual ring. Early wood does, for example, indicate that the tree was harvested in the summer.

"Sapwood (Sp), Waney edge (W), bark (B)" are features that indicate if we have the last formed ring or might indicate how many annual rings we are missing in the sample. Provided that the sample can be dated and there is waney edge or bark on the sample, you get an exact year of dating (extreme exceptions exist). "Close to W" is stated when there are indications for this, for example in field notes or if a saw blade follows a natural curvature in the round timber. If the edge (the rounded end of the wood where the bark has disappeared) is missing and the sapwood is visible, the felling year can be calculated with the help of the sapwood statistics for different tree species and conditions. Usually, 17 ± 7 years are used on oak and a more varied image on pine with a maximum variation of ± 20 years. If the sapwood ("- Sp") is missing, a so-called "post-update" (*terminus post quem*) is specified. The wood then gets the oldest possible dating. Theoretically, the wood can be as young as you like, but more likely it is about up to a few decades later felling than the specified post-date. This is usually discussed in the report.

"Dating of the outermost annual ring in the sample", is always yearly exact when dated. If the sample cannot be cross-dated with a dated dendrochronological series, "no dating" is indicated. This

usually occurs with a small number of annual rings (young / fast-growing / heavily degraded trees), odd tree species (in Sweden, oak and pine are best), too few samples from the examined structure, disturbed growth, etc.

"Estimated precipitation year" here a calculation is made based on the dating of the outermost annual ring in the sample and how many annual rings that are calculated are missing in the sample. The margin of error indicated covers more than 95 percent of the samples. If the bark or waney edge remains on the sample, the date is given the following winter if no other notes have been made. The winter half refers to the tree's dormant period so that no annual ring formation takes place in the trunk, the rest period normally begins in August and lasts until May south of the Norrland border (approximately Dalälven). The dormant period of the trunk timber gradually becomes longer towards the tree line of the mountains.

In the column on the far right, an alternative dating has been noted as well as the trees' estimated seedlings.

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