FRAGILE FRAGMENTS
- A NEW PROVENANCE FOR THE LATE MEDIEVAL TRIPTYCH IN KINN CHURCH, NORWAY

Aoife Daly*, Tone M. Olstad*****
*Dendro.dk, Denmark
**Saxo Institute, University of Copenhagen, Denmark
***NIKU - Norsk Institutt for Kulturminneforskning, Norway

Abstract

The 12th-century church on the island of Kinn, off the west coast of Norway, still houses parts of a late-medieval triptych. The central section of the triptych was later built into an altarpiece from 1644, and three female sculptures from the triptych are still kept in the church. Since 1936 it has been suggested that the Kinn triptych belonged to a group of late-medieval triptychs kept in various churches along the coast and named the Leka group. The aim of the work presented in this paper is to re-examine that suggestion and the provenance of the triptych. A detailed study of the three sculptures and the remains of the central section has allowed a new assessment of the work. A dendrochronological examination of parts of the central section and one sculpture has been of vital importance for the study.

Olstad's suggestion, supported by Leeuwenberg, that the Kinn triptych differs from the rest of the Leka group is confirmed by the dendrochronological analysis. We propose that the provenance of the triptych should be revised. It seems more likely that this work did not originate in the northern Netherlands, but rather came from a northern-German workshop. Through a reassessment of all the dendrochronological data from the so-called Leka group, including data collected in 2015 from the triptychs in Leka, Røst, Ørsta og Hadsel churches, the origin of the oak for these works is also now clearer.

Keywords:

Altarpiece, late medieval sculpture, polychrome sculpture, dendrochronology, Baltic timber, timber trade.

Introduction

The aim of this paper is to describe how dendrochronology adds information to a continued investigation of the provenance of a selection of late medieval triptychs in Norway, known as the Leka group.

This group of triptychs was defined by the Norwegian art historian Eivind Engelstad in 1936, when he linked altarpieces at the churches of Leka, Røst, Grip and Hadsel (Engelstad 1936). He defined the altarpiece in Ørsta church as close to the Leka group and included the Kinn triptych sculptures in the group.Engelstad's definition of the group was based on formal and stylistic similarities of the central sections, the remaining wing paintings, and the sculptures in the triptychs. He dated the group to the first quarter of the sixteenth century and suggested a provenance of Northern Netherlands, but did not claim that they were all made in the same workshop (Engelstad 1936 p. 139-144). The Dutch art historian Jaap Leeuwenberg supported Engelstad and pointed to a connection between the so-called "Master of the female head in stone from Utrecht" and the Leka group (Leeuwenberg 1959 p. 80, p. 91-96). In Leeuwenberg's opinion, the Kinn sculptures were not part of the group, whilst the Ørsta sculptures were.

MOK

When discussing the origin of the Kinn triptych, it is primarily assumed that the triptych has been imported, but a Norwegian origin of production is still seen as a possibility (Kausland 2016 p. 247-48). The majority of altarpieces in Norway are generally said to have originated in Germany, especially Lübeck, but also other sites in Germany. A smaller part is thought to have been imported from the geographical area that today comprises Netherlands and Belgium (von Achen 1982 p. 27-28; Engelstad 1936 p. 141).

Trade with foreign countries was strictly regulated; this influenced the origins of imported ecclesiastical art in Norway. For most of the 15th century the Hanseatic League dominated trade with Bergen, Norway's most important international port, but regulations in the last decade of the 15th century increasingly favoured Dutch trade (von Achen 1982 p. 28).

Focusing on the Kinn triptych we ask if it shares a connection with the other altarpieces in Engelstad's Leka group, as Engelstad claimed, or if the Kinn triptych source is closer to the northern German production sites. We wish to find out to what degree the result of the dendrochronological examination is decisive for the provenance.

Dendrochronology has become an important tool for examining and dating polychrome wooden art objects. Dendrochronology as a non-invasive method and its use is described in several publications (Eckstein et al. 1986; Bauch 2002; Bill et al. 2012; Daly 2013a, 2019c; Daly and Streeton 2017). Previous research has shown that there is often a close correlation between dating by art historians based on style and comparative methods, and the dating results obtained by dendrochronological examination. Information on the source of the wood used might, in some cases, contribute to identifying the provenance of an object.

Background

The remnants of the Kinn triptych are still in Kinn church on the west coast of Norway (Figures 1a and 1b). According to the church's accounts, Peiter Bilthugger was paid to construct the altarpiece in 1644 which stands on the altar to this day. He included the central section of the Kinn medieval triptych as the lower central part in his new construction (Johansen 1971). The original medieval wings were probably lost when the new altarpiece was constructed. The altarpiece stood unpainted until 1703, contrasting both in colour and style with the reused medieval painted central section holding the three sculptures. It is believed that the sculptures were removed from the central section in 1703 (Christie 1977 p. 131, see Figures 1a, 2a and 2b). The sculptures have since been kept in the church, and since the late 1970s, they have been placed in a copy of the central section and hung on the south wall of the chancel. The sculptures are, to our knowledge, described for the first time in Urda in 1837 (Urda, Museum of Bergen, 1837) and later in 1862 with a comment that the congregation wishes to keep the sculptures (Nicolaysen 1866 pp. 488-89, 823, in these two references St. Catharina is referred to as St. Sunniva).

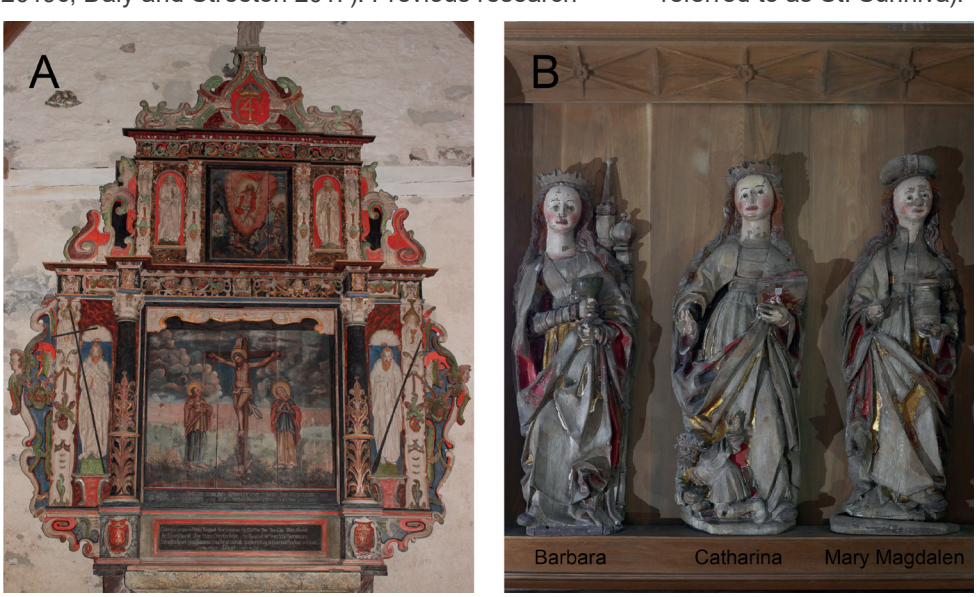

Figure 1. Views of the altarpiece at Kinn Church, Vestland county, Norway. A) The 1644 altarpiece in Kinn church (photo: TM Olstad 2018), the central section of which is the corpus in the Kinn triptych; B) The three female sculptures from the Kinn triptych placed in a copy of the corpus of the triptych. Photo: TM Olstad 2018.

Since Engelstad visited the church in 1935 and discussed and identified the Kinn sculptures in his 1936 publication, few art historians have studied the triptych (Engelstad 1936 p. 139, pp. 242-43). The Norwegian art historian Sigrid Christie was the first to suggest a connection between the reused central section in the 1644 altarpiece and the three sculptures, which then were kept in the nave (Christie 1977). Christie does not discuss Engelstad's provenance, however. In 2017 the sculptures are listed in an overview of medieval sculptures in Norway and the author refers to Engelstad (Hohler 2018 p. 12). To our knowledge, no art historian or conservator has confirmed Engelstad's provenance of the triptych, and Leeuwenberg still seems to be the only one who has questioned Engelstad's opinion.

Previously, polychrome medieval sculptures with no written documented attribution or dating were traditionally dated or given a provenance by art historians. Nowadays, examination of the construction, the wood and the decorative layer on a polychrome artefact add useful information to the art historians' dating and provenance. The importance of the conservator's skilled observations as a source for the understanding of art objects started to be acknowledged in Norway in the 1960s and is today an integrated component of research on medieval art objects together with the conservation scientists' work (Christie 1982 p. 243; Hohler 2018 p. 35).

The Lekagroup consists of four triptychs, plus the Ørsta and Kinn triptychs as explained in the introduction. Five of the triptychs in the Leka group were examined and conserved in the period 1982 and 2012, excluding Kinn. The result of this work questioned the Leka group, but proposed, as Engelstad did, a common workshop for Røst and Leka. Dendrochronological examination of Leka, Røst, Hadsel and Ørsta in 2014 confirmed the link between Røst and Leka, as well as Ørsta (Olstad 2014b pp. 175-177; Olstad, Stornes and Bartholin 2015 p. 168). The more the present authors learned about the other triptychs, the less they regarded Kinn as a possible member of the group. So, when they, in connection with conservation work on today's 17th century altarpiece in Kinn church, finally had the opportunity to examine the triptych, they initially favoured Leeuwenberg's theory over that of Engelstad.

Method

This is a comparative study, focusing on the wood, woodwork and construction as well as the design. The decorative layer is included as supporting evidence but is not regarded as a key focus of this study. The authors had only limited access and time to study the remaining parts of the Kinn triptych. The examination of the paint layer was done with close visual inspection and handheld XRF on selected parts of the paint layer (Handheld XRF: NITON XL3t GOLDD+). A few cross-sections had earlier been extracted with the aim of understanding the history of the triptych, however, this was not the focus of this paper. Only two of the sculptures could be taken out of the copy of the central section so only these could be studied dendrochronologically.

The use of dendrochronological analyses was vital for this project. The technique entails measuring the tree rings in a long, uninterrupted sequence, in the wooden parts, and comparing these to existing extensive tree-ring datasets, using correlation statistics. For dendrochronology in heritage research, the correlation statistic that is most frequently quoted is Student's *t*-test (Student 1908). When choosing suitable objects for analysis, wooden parts that contain, preferably, more than one hundred tree rings are selected. It is also important to explore whether objects have the outer sapwood, or even the natural outer surface under the bark, preserved. This technique can identify the precise age of the wood to the year. However, if some wood has been trimmed off the timber, in making a plank or sculpture for example, then this degree of accuracy is not possible and the felling date must be estimated. If sapwood is preserved, then the object is preserved close to the tree's outer edge, allowing an estimate of the felling date to be within twenty to thirty years. If the outer bark edge is preserved, then the dendrochronological dating determines the felling year of the tree. Through dendrochronological examination, we can date an object (potentially very precisely), identify the provenance of the trees used, and even link together elements made with wood originating from the same tree.

Therefore, to confirm the suggestion that the remains of the medieval central section are preserved in the newer altarpiece from the 17th century, and to examine the provenance of the oak wood used, two of the three Kinn sculptures and the plinth in the central section were selected for dendrochronological examination.

The aim of this study was to confirm that the remains of the medieval central section had been preserved in the newer altarpiece from the 17th century and to examine the provenance of the oak used. Two of the sculptures, St. Catharina and St. Mary Magdalen, a sculpture base-plank and three timbers in the plinth, all *Quercus* sp., oak, were identified as suitable and accessible for analysis. A narrow trajectory to make the tree rings clearly visible was pared on the surfaces to be analysed and the tree-ring measurements were taken from a series of macro-photographs (with a ruler for scale). Tree-ring measurements were taken of five of the six objects, and four of these were successfully dated (for a full list of examinations and for the raw tree-ring data see Tables S1 and S2 in the supplementary material). The photos were joined and marked using Photoshop and measured using the program "Able Image Analyzer". Analysis of the material utilized the program 'DENDRO' (Tyers 1997) and 'CROS' (Baillie and Pilcher 1973) for the calculation of the *t*-value. In the analysis master and site chronologies for Northern Europe were used.

The triptych; construction and decorative layer

Both the central section and sculptures are made from oak. No marks which could link the wood to the Baltic area are found. The accessible parts of the wood in the central section are straight-grained wood, free from knots. Sapwood, the living outermost portion of a stem or branch, is, however, found. Sapwood is quite often found, even if the guild regulations often banned its use because of its inferior quality. The wood in the sculptures is otherwise of good quality and seems to have grown under good conditions.

The central section is 180 cm high, 176 cm wide, and 15.5 cm deep (measured at the outer edge, by Rolf Johansen personal communication). The back wall is made from six boards of different widths and with variations in the surface texture. One is sawn, two have an unworked split surface, and three seem to have been planed. The boards have been glued together edge-to-edge to make a smooth panel inside the central section. The surface on the reverse was not worked after the boards were glued together. This corresponds with Tångeberg's comment, when describing the back wall of the triptychs, that working the reverse was seldom done (Tångeberg 1986 p. 189). The back wall is connected to the sides, top and bottom of the central section with a tongue-and-groove joint. The tongue is formed like a rebate; as found in other triptychs in Sweden originating from Northern Germany (Tångeberg 1986 p. 189) and in the Kvernes triptych in Norway, also identified as originating from Northern Germany. The side, top and bottom boards each consist of one piece of wood approximately 4 cm thick and are connected with dovetail joints. The actual dovetails are on the bottom board. The construction of the top corners is not currently accessible. For more information on wooden constructions in triptychs, see (Tångeberg 1986 pp. 180-190). The back is unpainted, but the sides have a residue of brownish-red paint (Figure 3a).

Mouldings in front of the central section's frame are today hidden behind elements belonging to the 1644 altarpiece. The central part is furnished with a canopy in the upper part. The canopy consists of one element divided into three parts with carving, to adapt the design to the three sculptures beneath (Figure 2a). The original plinth for the sculptures is not nailed or glued and is closed in the front by a board. Sapwood is found in small elements on the plinth.

The three female sculptures, St. Barbara, St. Catharina, and St. Mary Magdalen are about 120 cm high, 15 cm deep, and 44 cm wide (Figure 1b). The sculptures are each made from one piece of wood which seems to be half of a tree trunk. The centre of the trunk is at the front of the sculptures. Barbara's tower and Magdalena's base are additional parts. Only two of the sculptures, St. Catharina and St. Mary Magdalen, could be taken out and examined on the underside and backside, but there are photos from 1969 of the backsides of all three sculptures. The reverse sides are hollowed out and worked in the same way in all three sculptures, and therefore probably by the same hand. The tools used for hollowing out the wood are mainly used against the direction of the grain. This is faster and more efficient but gives less control than working with the grain. The back surface is worked only where necessary, and no attempt is made to even out the hollowed surface. The split flat surface of the wood (from the first splitting of the log into two halves) is left partly unworked on the upper parts and along the edges where the sculptures are not hollowed out. The deepest hollow is about 7 cm, about half the total depth of the sculpture. Three small holes on the back of Magdalena and one on Barbara, where the carving has made a hole in the sculpture, are covered with patches made from plant fibres and glue. No further analyses of these have been undertaken,

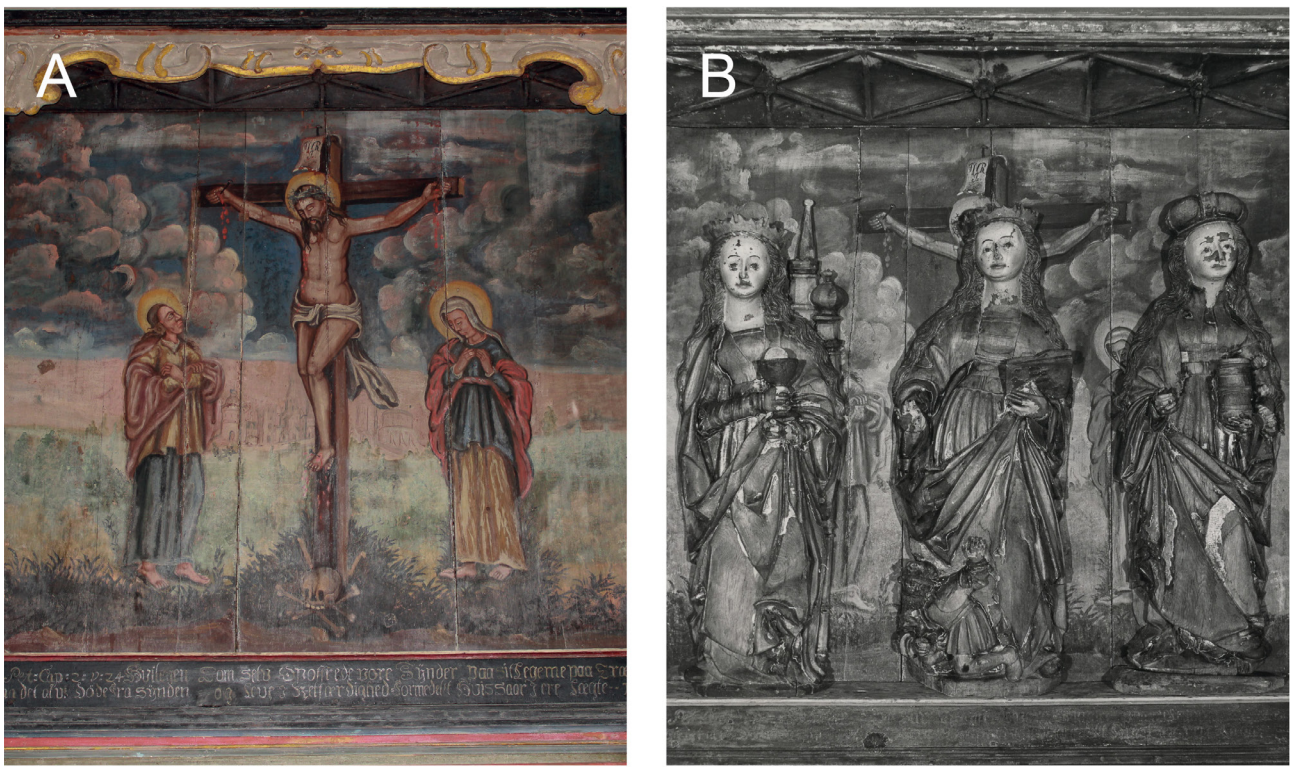

Figure 2. Views of the altarpiece at Kinn Church, Vestland county, Norway. A) The central section of the 1644 altarpiece which is the corpus in the Kinn triptych. Note the canopy in the upper part and the plinth in the lower part (photo: TM Olstad 2018); B) The sculptures were mounted into the original corpus in 1971 using the original nail-holes in the panel and the sculptures. Photo: R. Johansen 1971.

but there is no reason to believe that the patches are secondary (added later) (Figure 3b).

The undersides of the two sculptures have been sawn off (St. Catharina) or worked (St. Barbara) after the woodwork was finished and therefore has no marks from the workbench. St. Barbara's underside has two semi-circular holes for the wooden pegs in the separate base. All the sculptures have a plugged hole in the head, about 15mm in diameter. A plug in the head could have been used for holding the sculpture on the workbench during the carving, or, more likely, to get a handle during the paintwork (see for example Tångeberg 1986 pp. 16, 32, 175; Tångeberg 2000 pp.195-203).

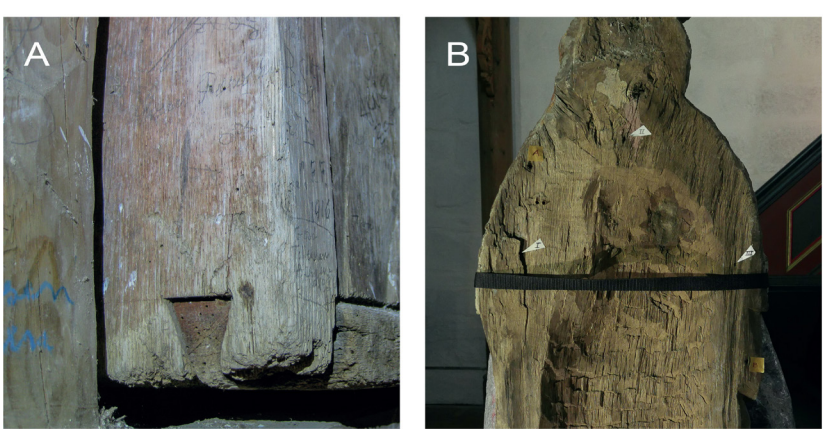

Figure 3. Detailed views of the altarpiece at Kinn Church, Vestland county, Norway. A) Part of the lower south corner of the corpus mounted in the 1644 altarpiece is seen from the back. One of the two dovetails in the corner connection is visible as well as the tongue and groove connection between the sides and the panel in the corpus (photo: TM Olstad 2018); B) The back of the St. Magdalen sculpture. Photo: TM Olstad 2018.

The sculptures are wide and impressively three-dimensional for their 15 cm depth. All the sculptures are presented in contrapposto, and with their attributes. St. Barbara holds the chalice with the host in front of her, with the tower behind her. St. Catharina has lost what she might have held in her right hand, the wheel or the sword, but she carries a book in her left hand. Maxentius is kneeling in front of her. St. Mary Magdalen is holding a jar in her left hand and lid in her right. Two of the sculptures have crowns, but they are very damaged and give no indication of the original level of richness. Mary Magdalen has a typical late-medieval headdress (see Voghtherr 1572). The faces are round with normal proportions and a little double chin, while the long necks and the narrow shoulders give the appearance that the heads are a bit too big for the bodies. The three female saints all have different dresses from the period the sculptures were made, and wide cloaks lifted in front and falling in draperies in the lower half of the sculptures. The design of the cloaks as well as the draperies varies from sculpture to sculpture.

The polychromy is as would be expected for a late-medieval triptych. Burnished gilding originally dominated the central section as well as the sculptures. The skin colour and the blue on the lining of the cloaks were important for the visual experience, as also the lost wings would have been. St. Mary Magdalen seems, as is often the case, to have had a more elaborate decorative layer than the other two sculptures (Figures 4a-4c).

The surviving paint on the central section and the sculptures are a mixture of remains of original and secondary paint layers. The original paint is barely visible. The sculptures are dominated by bare wood and secondary skin colour. The paint is better preserved where it is protected by the carved wooden form. The secondary paint seems to be oil-based. The same kind of secondary paint appears on the shoes of the sculpture and on the plinth, perhaps indicating that the sculptures were kept in the 1644 triptych when it was painted in 1703 and taken out at a later stage.

The sculptures have been consolidated with wax and the appearance of the colours has changed as a result, especially the small fragments of originally matt, blue paint.

The central section is repainted on all visible surfaces. The decorative layer on the back of its interior was scraped off and the holes for fixing the sculptures were covered with textile patches before the currently existing Crucifixion scene was painted.

Figure 4. Detailed views of the altarpiece at Kinn Church, Vestland county, Norway. A) Detail of the head of the St. Magdalen sculpture. What is left of the original pattern on the headdress is seen on the lower part of the headdress. The other remains of paint in the photo are assessed to be secondary (photo: TM Olstad 2018); B) Detail from the upper part of the St. Magdalen sculpture, of the remaining original blue and probably part gold pattern on the short jacket is seen on two spots on the jacket, and C) on the detailed photo to the right. The other remains of paint in the photo are assessed to be secondary. Photo: TM Olstad 2018.

The interior side walls and the canopy were originally gilded. No original paint or gilding remains on the back wall. The parts of the sides and back wall that are hidden by the plinth have never been painted, but a white ground layer, as well as an orange bole, have run down behind the plinth. Thus, one may assume that the back wall was originally gilded. The mouldings at the front of the central section are blue and gilded. It was a tradition of the Northern German polychromy that the cavetto – the deep concave curve of the frames and architectural lists – was painted a blue matte colour (Kausland 2020 p. 14). The blue cavetto is observed in triptychs examined by NIKU and attributed to Northern Germany but also in those made in Northern Netherlands. A probable former latticework at the upper front of the central section is lost and has been replaced by a carved board in baroque style in 1644.

It has not been possible to map the original colours and pigments on the sculptures, but small fragments of gold on the crowns, Magdalena's headdress and her hair, have been observed. Magdalena's headdress has, in addition, a pattern on the gilded area, using a kind of sgraffito technique. A red glaze was painted on the metal layer and then removed to form the pattern. The same technique is found in the triptych in Kvernes church, which is said to originate from Northern Germany, but also in triptychs from other areas. The cloaks and dresses were gilded, on what seemed to be a quite dark red bole. A blue line is painted along the edge of St. Magdalen's cloak, - and possibly St. Katarina's. The lining of all the cloaks was originally a matt, probably azurite blue. Azurite is the most probable pigment, both according to the XRF results and the availability of blue pigments in the period. The lining of Maxentius' cloak, however, has always been red. Too little original paint is left visible for us to tell how the details on the dresses were painted. St. Magdalen's short jacket has a small pattern fragment, probably a blue pattern on part gold, as the XRF examination detected gold, silver, and copper. Also, Catharina's belt has a pattern painted with black lines on golden metal. The bases were originally green. The original skin colour is totally overpainted.

Results

Dendrochronological examination of the Kinn triptych

The sculpture of St. Catharina was carved from one side of an oak trunk, therefore, a long series of growth rings are preserved and visible at the base of the object (Figure 5a). The sculpture contains 122 tree rings, all heartwood rings. The dated tree-ring curve covers the period AD 1335-1456. Allowing for missing

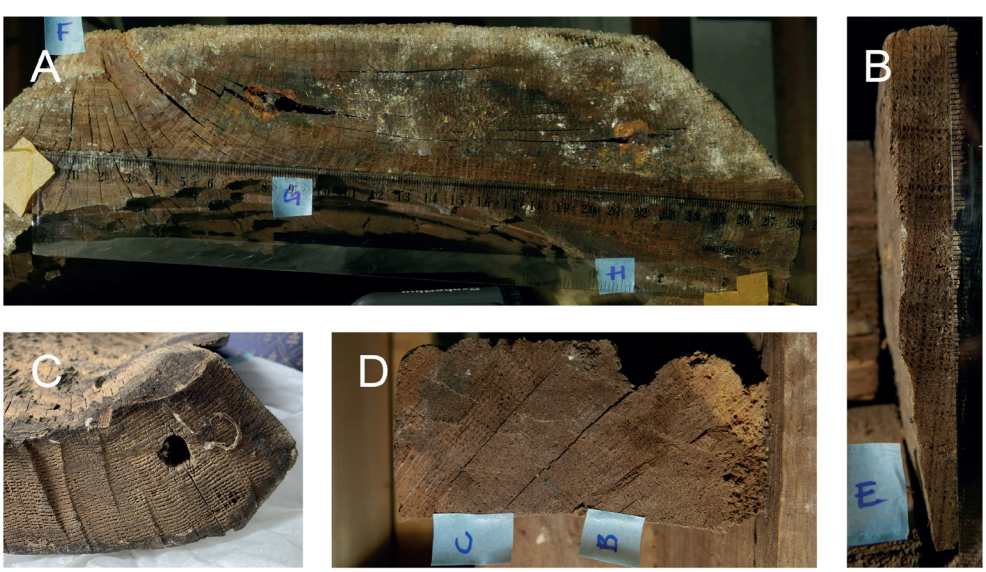

Figure 5. Macro-views of the end-grain of timber of the altarpiece at Kinn Church, Vestland county, Norway. A) The end-grain at the bottom of the west sculpture (photo: TM Olstad 2020); B) The end-grain of plank E is shown (photo: TM Olstad 2020); C) The bottom of the central sculpture (photo: TM Olstad 2020); D) The end-grain of the support block from the plinth that was analysed. Photo: TM Olstad 2020.

sapwood, the felling of the tree used for this sculpture took place after AD 1472 (Figure 6c).

The remains of the plinth in the central section consist of two boards (Figure 5b) supported by three wooden blocks (Figure 5d). The two planks and one block were analysed. One plank (plank D, not illustrated) is tangentially converted from the parent tree and contains 119 tree rings. A very slight colour change at the outermost ring of this plank might indicate that the plank is preserved to the heartwood/sapwood boundary. The tree-ring curve is dated, and covers AD 1366 to 1484. Allowing for missing sapwood, and if the outermost ring is indeed the heartwood/sapwood boundary, the felling of the tree for plank D can be estimated to be AD 1493-1507.

A second plank (plank E) is also tangentially converted from the parent tree. In addition, it is trimmed to fit in a groove carved along plank D (Figure 5b). It contains 103 tree-rings, all heartwood. The tree-ring curve from this plank is dated, and it covers AD 1394-1496.

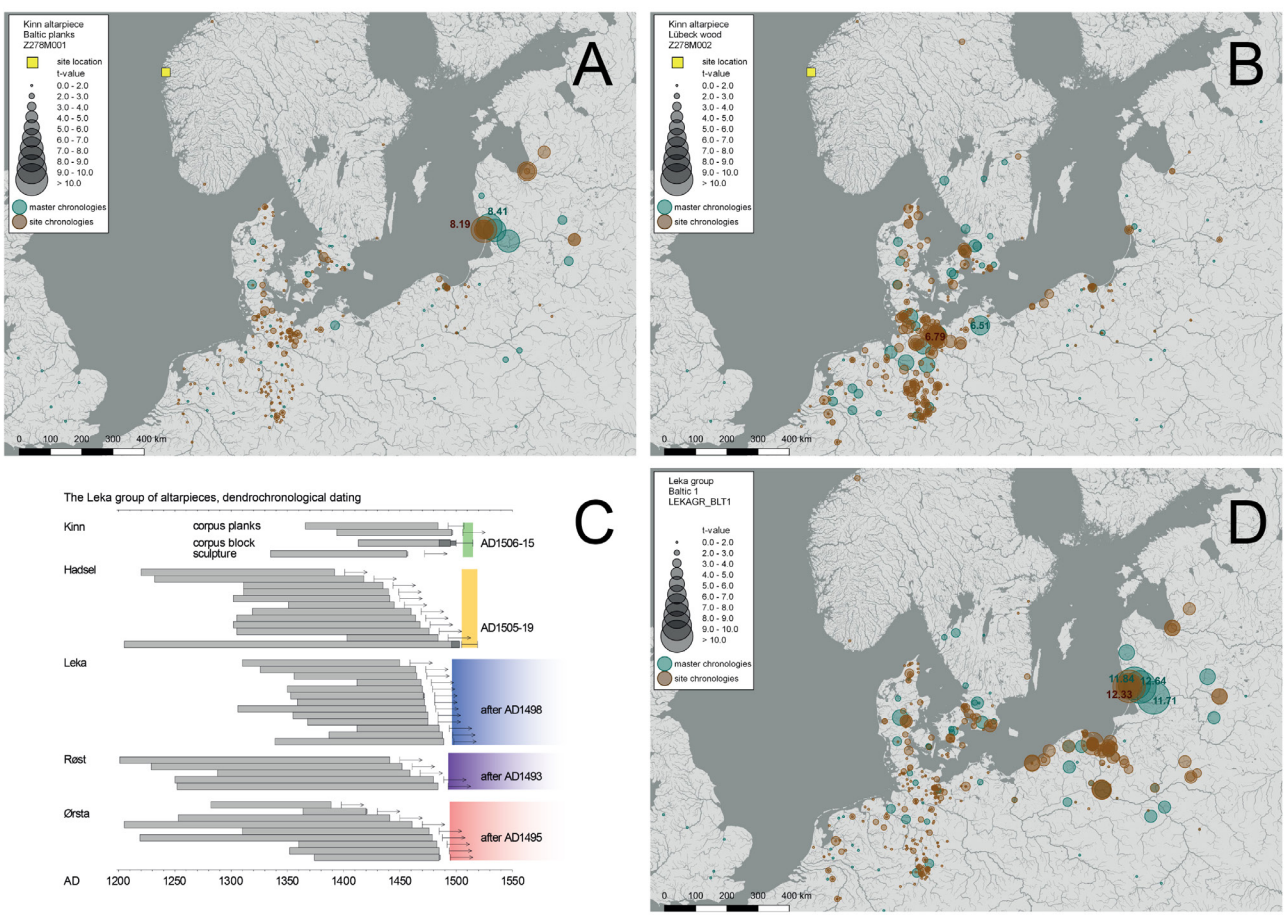

Figure 6. Timber provenance maps and dating diagram. In the maps, each dot represents the location of a site chronology (brown) or a regional chronology (turquoise). The t-value is the correlation measure used here (Student 1908; Baillie & Pilcher 1973), and each circle represents the t-value achieved with each dataset—the larger the circle, the higher the *t*-value. The underlying tree-ring dataset is described in Daly (2007) but recent additions to this dataset for Lithuania, Latvia and Russia are added. The background map is from Natural Earth. Free vector and raster map data @ naturalearthdata.com. Natural Earth (public domain): http://www.naturalearthdata.com. The river data is from Lehner and Grill (2013) (www.hydrosheds.org, accessed 3rd March 2020). The maps are generated using QGIS.org, 2021. QGIS Geographic Information System. QGIS Association. http://www.qgis.org. A) The Kinn Baltic group; B) The Kinn Lübeck group; D) the Leka group, derived from Bartholin's dataset (illustration: A Daly 2021). C) Depicts the chronological position of all dated timbers from the Leka group of altarpieces. The colours illustrate the estimated felling date for the works from each church.

Allowing for missing sapwood, the tree for this plank was felled after AD 1506 (Figure 6c).

One of the three supporting blocks of the plinth contains eighty-three measurable tree-rings, of which ten are sapwood rings (Figure 5d). An additional five sapwood rings are observed on the macro-images, the outermost, which could not be reliably measured. This timber is dated, where its tree-ring curve covers the period AD 1413-1495. The block is from a tree felled c. AD 1500-1515.

To estimate the felling date of the trees used in the triptych it was necessary to account for missing heartwood and sapwood. As the dated wood elements from the triptych demonstrate two different provenances, two different sapwood estimates were used. For the sculpture and the block, a statistic for Northern Germany is used (Hollstein 1980). Oaks of c. 100 years in age here have, on average, fifteen to thirty sapwood rings. For the two planks, a sapwood average for Northern Poland (fifteen years (-6/+9)) is used (Ważny 1990). The sculpture and base of St. Mary Magdalen could not be dated. It is carved hollow at the back so that the innermost rings of the original tree are removed. The preserved rings are relatively fast grown (average incremental growth rate, average ring width, of almost 2 mm per year). This means that there are only 44 tree-rings visible at the base of the sculpture (Figure 5c). The rings were clear enough to allow tree-ring measurement without paring of the surface, however, due to the very few tree-rings preserved in this object, it could not be dated. This sculpture made from a fast-grown tree in the composition suggests that oak from a relatively open landscape was used in the work.

Provenance of the wood

The correlations (t-values (Baillie and Pilcher 1973)) indicate that the four wood elements form two separate groups, and two averages are therefore made (Table 1). This strongly suggests two separate sources for the trees used in the work. One group, highlighted with blue in Tables 1 and 2 (Kinn group 1), consists of the two planks from the plinth. The average of Kinn group 1 (Z278M001) is 131 years in total, covering the period AD 1366-1496. The second group, highlighted with orange in Tables 1 and 3 (Kinn group 2), comprises the structural block in the plinth and the central sculpture. The average of Kinn group 2 (Z278M002) is 161 years in total, covering the period AD 1335-1495. That one of the parts of the plinth belongs in the same group as the dated sculpture indicates that these two structural elements, separate in the church now, could indeed have belonged to the same work.

The correlation between the plank average (Z278M001, Kinn group 1) and a range of tree-ring datasets for Northern Europe is shown in Table 2 and the distribution of the correlations is also illustrated on a map (Figure 6a). It correlates most closely with master and site chronologies derived from oaks representing the Baltic timber trade. Dendrochronology has, through several decades, documented extensive export of oak boards, planks and other converted timber products from the south and east Baltic region to western Europe for use as artists' material, for

Table 1. Kinn altarpiece, Kinn municipality, Norway. Result of the correlation (t-value) between the tree-ring curves from each dated sample with each other. The higher the t-value, the greater similarity between the series. The grey tone highlights the high t-values. The two planks (highlighted in blue) agree well, and the block and the central sculpture (highlighted in orange) are very similar, but no significant correlation is seen between these separate groups.

Dendrochronological grouping	Object	Filenames	Z278003a	Z278004a	Z278002a	Z278005a
Average Z278M001	plank D	Z278003a	*	5.55	1.46	1.85
	plank E	Z278004a	5.55	*	1.14	2.13
Average Z278M002	block	Z278002a	1.46	1.14	*	7.03
	Central sculpture	Z278005a	1.85	2.13	7.03	*

Table 2. Kinn altarpiece, Kinn municipality, Norway. The result of the correlation, using t-values, between the average from two dated planks used to make the plinth (Kinn group 1, Z278M001), and diverse site and master chronologies. The higher the t-value, the greater the similarity between Kinn group 1 and each chronology. This group is correlating best with chronologies from coastal Lithuania. The source of the chronologies is given. The grey tone highlights the high t-values.

Filenames	Start date	End date	Z278M001 2 planks AD1366-1496	Chronology site name
Master and site chronologies				
klaiped	AD1260	AD1536	8.46	Lithuania, Klaipèda (Vitas 2020)
21BLT1B	AD1181	AD1527	8.41	Panel chronology Baltic1, Bowhill-Vejdyb type, 81 trees (Daly and Tyers 2022)
2021BLT1	AD1143	AD1626	7.78	Panel chronology Baltic1, 552 trees (Daly and Tyers 2022)
jkdM1&2	AD1272	AD1479	7.59	Latvia, Riga, St Jakobs Church, door, 2 timbers (Zunde personal communication)
StJM2	AD1342	AD1514	6.55	Latvia, Riga, St Jakobs Church, tower, 12 timbers (Daly & Zunde unpublished)
StJM1	AD1284	AD1490	5.83	Latvia, Riga, St Jakobs Church, tower, 3 timbers (Daly & Zunde unpublished)
ZP08Q2C1	AD1266	AD1484	5.41	Lithuania, Vilnius Castle, well, 5 timbers (Puckiene personal communication)
Memel Klaipeda	AD1288	AD1580	5.21	Lithuania, Klaipèda (Brazauskas 2006)
Chronologies from art, shipwrecks and Baltic exports				
Z2261M03	AD1264	AD1537	**10.55**	Denmark, Køge, shipwreck, double plank layer, 7 timbers (Daly 2019a)
Z103M4&7&8	AD1351	AD1495	8.83	Norway, Slagen church, altarpiece, tracery, 3 timbers (Daly 2013a)
Z268M002	AD1215	AD1515	8.53	Norway, Ringsaker church, altarpiece, 4 timbers (Daly 2019b)
Z2261M01	AD1098	AD1522	6.48	Denmark, Køge, shipwreck, planks, 18 timbers (Daly 2019a)
Z256M001	AD1239	AD1479	6.36	Norway, *Missale Nidrosiense*, book bindings (CT), 5 timbers (Daly 2019c)
Z114&5 T1	AD1348	AD1542	6.34	Denmark, Vejle church, painted panels, Cranach, Luther Melancthon, Planks 1 & 3 (Daly 2014b)
HEADSx11	AD1304	AD1521	5.78	Scotland, Stirling Castle, heads, Baltic provenance (Crone personal communication)
H11EOM01	AD1260	AD1495	5.77	Germany, Schleswig, Bordesholmer Altar, 10 timbers (Hamburg University revised Daly (2007)
Z151M001	AD1310	AD1499	5.47	Germany, Schleswig, Lauenburg epitaph, 2 timbers (Daly unpublished)
stirlingdoorsM1	AD1270	AD1524	5.29	Scotland, Stirling Castle, doors, 10 timbers (Crone personal communication)
Z103M003	AD1234	AD1495	5.22	Norway, Slagen church, altarpiece, 14 timbers (Daly 2013a)
Z1812M03	AD1410	AD1578	5.20	Copenhagen, Kirkestræde 6, barrel, 3 timbers (Daly and Nielsen 2016)
Z0991M01	AD1328	AD1522	5.10	Copenhagen, Statens Museum for Kunst, painted panel, KMSsp739, Portrait of 27-year-old man, 2 timbers (Daly 2013b)

barrels, and even for ship planks. The continuity of the trade of oak boards from the south and east Baltic region has been demonstrated through dendrochronological research since the 1980s (Baillie et al. 1985; Eckstein et al. 1986). Based on tree-ring analysis of numerous oak boards from painted panels, groups were identified from this so-called Baltic oak material, taken to represent different sources in the wide region that lies adjacent to the south and east Baltic Sea coasts. These distinct groups were labelled 'Baltic1', 'Baltic2' and 'Baltic3' (Hillam and Tyers 1995). From historical sources, particularly from the Danish Sound toll records, that over several centuries registered the cargo of ships passing in and out of the Baltic Sea at the Sound at Elsinore, we see that Gdansk appears to be the last port of call for a great number of the voyages recorded, of ships sailing westwards into the North Sea and beyond (e.g., Bonde, Tyers and Ważny 1997). In former dendrochronological research, therefore, the boards identified in the artist materials in western Europe forming these groups were postulated to have been from trees harvested in the hinterland of the Vistula River, rafted to Gdansk for export. Recent research presents a quite different theory for the source of these groups, suggesting that the Baltic 1 and Baltic 3 groups represent oaks from the east in the region and that only the Baltic 2 group derives from the Vistula region (Daly and Tyers 2022). New robust, well-replicated Baltic datasets have now been built from the art-historical dataset (Daly and Tyers 2022) and these are consulted here.

Two different sources for the wood - one ecclesiastical artwork

The two planks from the Kinn plinth (Kinn group 1) correlate with ship planks, ecclesiastical furniture, and painting supports that are proven to be of Baltic oak. These two planks cross-correlate significantly with the new Baltic 1 group (2021BLT1) which we now place in Western Lithuania (Daly and Tyers 2022), and with a chronology from Klaipeda in Lithuania (Vitas 2020) and with datasets from Riga in Latvia (Zunde personal communication).

The second Kinn group (Z278M002), the structural block in the plinth and the sculpture of St. Catharina, corresponds to a geographically different dataset than the plank group (Kinn group 1) (Table 3 and illustrated in Figure 6b). The highest correlations for Kinn group 2 appear with tree-ring datasets from in and around Lübeck (Hamburg University), and with a group of sculptures from Skjervøy church, Norway that has been identified as oak from Lübeck (Daly and Streeton 2017). The correlations do not allow a more precise identification of the provenance of these two Kinn timbers, but we can suggest that the oaks for these components grew somewhere in North-eastern Germany.

The fact that the dendrochronological analysis demonstrates a clear correlation between one of the sculptures and a component of the plinth, does indicate that the plinth and the sculptures might have been part of one ecclesiastical artwork.

Dating of the felling of the trees

If the trees used for the Kinn altarpiece were felled at the same time, we might combine the felling estimates for each object, and suggest that the felling took place between around AD 1506 and 1507. But as the identification of sapwood on plank D is not confirmed, the dating could fall later; within the longer-range AD 1506-1515 (marked with green in Figure 6c). Of course, as two separate timber sources are identified, the felling of oaks for the work in Kinn church could have happened some years apart.

Discussion – comparison of the triptychs in Engelstad's Leka group

Construction and design

Construction, design, the use of the material, and marks on the altarpieces in the so-called Leka group are compared with the Kinn altarpiece to check if the comparison supports Leeuwenberg's statement and the result of the dendrochronological examination.

The variations in size in the group show that size is not an important factor in the link between Kinn and the rest of the Leka group. The Hadsel triptych is the biggest, at 190 cm high and 161 cm wide, while the ones from Røst and Leka are the smallest, at 114 cm high and 113 cm wide (wings closed). The Kinn triptych is 180 cm high and 176 cm wide (Olstad 2014b p. 164)

Marks related to wood sorted and shipped through Gdansk in Poland are found in Røst, Leka, Hadsel and Ørsta, and dendrochronological examinations confirm a Baltic origin (Rief 2006; Olstad 2008; Olstad, Stornes and Bartholin 2015). Two of the elements in the Ørsta triptych, the Christ sculpture, and the Calvary hill, are

Table 3. Kinn altarpiece, Kinn municipality, Norway. The result of the correlation, using t-values, between the average from the central sculpture and the oak block used in the plinth construction (Kinn group 2, Z278M002), and diverse site and master chronologies. The higher the *t*-value, the greater the similarity between Kinn group 2 and each chronology. This group is correlating best with chronologies from north-eastern Germany. The source of the chronologies is given. The grey tone highlights the high *t*-values.

Filenames	Start date	End date	Z278M002 2 timbers AD1335-1495	Chronology site name
Master and site chronologies				
H110AM01	AD1397	AD1506	6.79	Germany, Behlendorf Seestr., 6 timbers (Hamburg University, revised Daly (2007))
E_German	AD1343	AD1968	6.51	East Germany, numerous sites, 339 timbers (Daly 2007 & Daly unpublished)
DM100007	AD1080	AD1967	5.98	Germany, Hamburg (Hamburg University)
DM100006end	AD1330	AD1650	5.97	Germany, Lübeck (Hamburg University)
DM200005	AD915	AD1873	5.80	Germany, Northen Lower Saxony (Göttingen University)
G1201Z02	AD1318	AD1536	5.71	Germany, Wedel, 21 timbers (Göttingen University, revised Daly (2007))
DM200006	AD914	AD1873	5.68	Germany, Lüneburger Heide (Göttingen University)
H11HXM01	AD1380	AD1503	5.46	Germany, Untertrave Kaim, 2 timbers (Hamburg University, revised Daly (2007))
DM100008	AD457	AD1723	5.41	Germany, Lübeck (Hamburg University)
H112MM03	AD1416	AD1549	5.39	Germany, Moelln Hauptstr, 10 timbers (Hamburg University, revised Daly (2007)
DM100003	AD436	AD1968	5.25	Germany, Schleswig-Holstein (Hamburg University)
H112UM01	AD1391	AD1543	5.18	Germany, Niendorf Dörpstraat, 6 timbers (Hamburg University, revised Daly (2007)
H116AM02	AD1394	AD1575	5.11	Germany, Nuetschau Herr, 16 timbers (Hamburg University, revised Daly (2007)
H110GM01	AD1386	AD1511	4.99	Germany, Behlendorf Seestr., 10 timbers (Hamburg University, revised Daly (2007)
SMAQSP02	AD1257	AD1383	4.93	Sweden, Småland, Hemmessjoe Kirka (Bartholin personal communication)
H11EJM01	AD1466	AD1655	4.90	Germany, Molfs. Poggensee, 4 timbers (Hamburg University, revised Daly (2007)
H11HHM01	AD1379	AD1531	4.86	Germany, Langer Lohberg 47, 14 timbers (Hamburg University, revised Daly (2007)
midtjy17	AD536	AD1980	4.79	Denmark, Mid-Jutland (Christensen pers comm)
H1149M01	AD1432	AD1600	4.78	Germany, Klein Grönau, 9 timbers (Hamburg University, revised Daly (2007))
DM200001	AD1082	AD1972	4.77	Germany, Lower Saxony, coastal region (Göttingen University)
H11GPM01	AD1423	AD1571	4.75	Germany, Wahmstr. 33, 10 timbers (Hamburg University, revised Daly (2007)
H115YF01	AD1433	AD1649	4.71	Germany, Moelln Marktstr. + Haupfts., 11 timbers (Hamburg University, revised Daly (2007)
8105M003	AD1315	AD1423	4.66	Denmark, Albæk church, 5 timbers (Daly 1998)

Table 3 continued.

Filenames	Start date	End date	Z278M002 2 timbers AD1335-1495	Chronology site name
H1105M01	AD1437	AD1612	4.65	Germany, Moelln Hauptstr. 107, 2 timbers (Hamburg University, revised Daly (2007)
H1257M01	AD1378	AD1449	4.64	Germany, Besdorf Bokelrehmer, 2 timbers (Hamburg University, revised Daly (2007)
G3510Z02	AD1291	AD1451	4.60	Germany, Lüneburg, 9 timbers (Göttingen University, revised Daly (2007)
SM000004	AD1198	AD1495	4.58	Sweden, Skåne (Lund University)
Chronologies from art and shipwrecks				
SkjervøyCTM2	AD1359	AD1498	6.41	Norway, Skjervøy church, sculptures, 3 timbers (Daly and Streeton 2017)
Z043M002	AD1394	AD1589	4.78	Germany, Mecklenburg- Vorpommern, Darss, FPL 77 shipwreck, 3 timbers (Daly 2009a)
00651m07lubeck	AD1386	AD1586	4.67	Denmark, Copenhagen, B&W Grund, shipwreck 1, 2 timbers, Lübeck provenance (Daly 2007)
Z028M003	AD1277	AD1451	4.64	Norway, Ny Hellesund, shipwreck, 4 timbers (Daly unpublished)

made from linden. No engraved marks are found in the wood in the Kinn triptych.

For all the triptychs, all the elements of the central section's frame are made from one quarter-sawn board. Dovetail joints are used in the frame in Hadsel, Grip (the lower part) and Kinn. In the triptychs from Leka and Røst, the four sides of the frame of the central section are connected using housing joints: notches are cut into the side boards at the top and bottom, and the horizontal parts are fitted into the notches. Hidden wooden pegs have been used to hold the connection and the four parts of the central section together. In Ørsta the connection between the bottom and the sides seems to be the same as in Leka and Røst. The back walls of Leka, Røst, and Ørsta are vertical quarter-sawn boards connected with the same kind of tongue-and-groove joint, while the back walls of Hadsel and Grip (the lower part) have a frame-and-panel construction. All the back walls are nailed to the frame of the central section. The construction of the back wall of Kinn differs from the rest of the group but links the triptych to the North German-produced triptychs. The back wall is connected to the sides, top and bottom of the central section with a tongue-and-groove joint (Tångeberg 1986; Kausland 2016).

The altarpieces originally assigned to the Leka group are quite simple. The Leka, Røst, Hadsel and Kinn triptychs have a rectangular shape, while Ørsta and Grip are rounded on top. All the triptychs originally had wings. The surviving wings in Røst, Leka and Ørsta are a similar frame-and-panel construction. The interior of the central section in Kinn has nothing in common with the interiors of the other Leka group's triptychs. The central section in Leka, Røst, Grip, and Hadsel is divided into three niches with a sculpture placed in each niche. The niches are crowned by an open-worked carved arcade. The architectural design and the construction inside the central section in the Røst, Leka, Grip, and Hadsel triptychs are quite similar. The undivided central section of the Ørsta triptych comprises a Crucifixion scene, while Kinn had three female sculptures. No trace of niches is found in the Kinn triptych, and the existing canopy and the plinth in the lower part, which run in the total width of the central section, prove that the central section was not divided.

The Ørsta altarpiece's Christ sculpture (and Golgata hill) differs in the use of material (linden wood), design and expression (Olstad 2014a). The other sculptures in the Leka group, except for Kinn, are made from 'blocks' of two or more oak planks, glued together. Both the use of more planks for each sculpture and the fact

that the reverse is not hollowed, could be used as a benchmark for the Leka group. There are, however, sculptures from various sites, made the same way (Rief 1998; Ebert 2017; Daly and Ebert 2021). The sculptures in Kinn are each made from a split trunk, and they are hollowed out in the back. Hollowing out the sculptures was normal, and we see the same rough work on the reverse in, for example, the triptychs in Aure, Norddal and Kvernes churches, which are all attributed to North Germany and dated to the same period. The different woodwork of the sculptures of the Kinn triptych may indicate an origin different from that of the other triptychs in the Leka group, even if carving from a 'block' of glued planks may hardly be used as evidence of provenance from a restricted area or the same workshop (Olstad 2014b).

The decorative layer

Unfortunately, as we have limited information on the decorative layer for the Leka group as well as for Kinn, this element is the least important for our comparative work. The original decorative layer on the Leka group triptychs is, as expected, dominated by gilded surfaces. Sgraffito technique is found on the sculptures in Leka, Grip and Ørsta, and a variation is found in Kinn. Punch marks are found in all the Leka group triptychs, except for the Kinn elements. Applied tin relief is not found in the Leka group, and part gold is only found on the Kinn sculptures. Analyses of the pigments are limited, but only pigments typical for the period are observed in the triptychs.

The dendrochronological comparison between Kinn and the other Leka group altarpieces

The results of the dendrochronology of other altarpieces in the Leka group are presented in detail in Olstad, Stornes and Bartholin (2015). It is reported that all the material from the Leka altarpieces is dating with the so-called Baltic 1 and Baltic 2 chronologies (mentioned above), so Kinn stands apart in this respect, where two timbers are from further west. It was not previously reported in detail which timbers are from which Baltic group, however, Bartholin has kindly shared his tree-ring data from the Leka group altarpieces, namely Røst, Leka, Hadsel, Ørsta. It is therefore possible to assess the wood used, of almost the whole group (Grip is not yet analysed).

Only one altarpiece, from Hadsel church, had sapwood preserved, allowing an estimation of the felling date for the "youngest element" to 1516 (Olstad, Stornes and Bartholin 2015). This is based on an estimate of 20 sapwood rings, but it might be argued that this is a high estimate for Baltic oak (as mentioned above). Adding a sapwood estimate for Northern Poland (15 years (-6/+9)) (Ważny 1990) might suggest a dating range of AD 1505-19 for Hadsel and for the other three altarpieces felling of trees: Leka after 1498, Røst after 1493 and Ørsta after 1495.

The other timbers in the Leka group all lacked sapwood, but it is argued that, after trimming off the sapwood, the carpenters were using the maximum width of the planks. However, this argument is based only on the outermost ring in each work. Looking in detail at the dating of the outermost ring in all dated wood elements from all altarpieces belonging to the Leka group, one can see that several timbers are trimmed significantly in the making of the works. The altarpieces from Hadsel, Røst, Leka, Kinn, and Ørsta were made in the first quarter of the 16th century, so 100 rings and more were trimmed from some timbers (Figure 6c). It seems clear that considerably more than just the sapwood was removed from some elements, both to shape the planks and the composite-built sculptures.

By testing the correlation between all the dated Leka group timbers from the five churches, Leka, Røst, Hadsel, Ørsta, and Kinn, between each other, Bartholin's evaluation can be confirmed, that some timbers derive from the same tree (Table S3 supplementary material). While there is the remarkable observation that one timber from Ørsta is from the same tree as timbers from Leka, the groups of higher correlation are otherwise formed within each separate altarpiece. We have made chronologies of these different groups, (LEKGR1 to 6, as shown in Table S3 supplementary material) and these all correlate well together, except for the two timbers from Kinn group 2. So finally, a master chronology for the Leka Group (including the two Baltic timbers from Kinn) is made (LEKAGR_BLT1) of 303 years in length, representing twenty-nine trees. This series is correlating best with Baltic 1 chronologies, both the version from 1995 (Hillam and Tyers 1995) and the new up-to-date version (Daly and Tyers 2022). We also see a strong correlation with chronologies from Klaipeda on the West Lithuanian coast (Table 4 and illustrated in Figure

Table 4. The Leka group of altarpieces, Norway. The result of the correlation, using t-values, between the average from the five altarpieces (LEKAGR_BLT1), and diverse site and master chronologies. The higher the t-value, the greater the similarity between the Leka group average and each chronology. This group is correlating best with chronologies from coastal Lithuania. The source of the chronologies is given. The grey tone highlights the high t-values.

Filenames	Start date	End date	LEKAGR_BLT1 AD1201- 1503	Chronology site name
2021BLT1	AD1143	AD1626	**12.64**	Panel chronology Baltic1, 552 trees (Daly and Tyers 2022)
klaiped	AD1260	AD1536	**12.48**	Lithuania, Klaipèda (Vitas 2020)
21BLT1B	AD1181	AD1527	**11.84**	Panel chronology Baltic1, Bowhill-Vejdyb type, 81 trees (Daly and Tyers 2022)
KL15sALC1 short	AD1366	AD1536	8.31	Lithuania, Klaipeda Castle, 11 timbers (Pukiene 2016 personal communication)
PP106M01	AD1110	AD1399	7.14	Poland, Gdansk Parc. 6, 14 timbers (Wazny personal communication revised Daly (2007))
Memel Klaipeda	AD1288	AD1580	7.00	Lithuania, Klaipèda (Brazauskas 2006)
0628002M	AD1225	AD1445	6.21	Poland, Torun, Joh. K. (Wazny personal communication)
Ships, barrels & artworks of Baltic oak				
Z2261M01 ne...	AD1098	AD1522	**12.84**	Denmark, Køge, shipwreck, planks, 18 timbers (Daly 2019a)
H11EOM01	AD1260	AD1495	**11.74**	Germany, Schleswig, Bordesholmer Altar, 10 timbers (Hamburg University revised Daly (2007))
00751M01	AD1113	AD1463	**11.70**	Denmark, Vejdyb, shipwreck, 14 trees (Daly 1997)
Z226ST01 planks	AD1216	AD1523	**11.45**	Denmark, Køge, shipwreck, strong plank group (Daly 2019a)
stirlingdoorsM1	AD1270	AD1524	9.95	Scotland, Stirling Castle, doors, 10 timbers (Crone 2008; Crone and Mills 2012)
Z2261M03 do...	AD1264	AD1537	9.24	Denmark, Køge, shipwreck, double planks, 7 timbers (Daly 2019a)
Z054m001	AD1235	AD1448	9.24	Germany Ostsee VII Mönchgut FPL92, shipwreck, planks, 5 timbers (Daly 2010)
Z268M002	AD1215	AD1515	9.05	Norway, Ringsaker church, altarpiece, 4 timbers (Daly 2019b)
PERTHM6	AD1225	AD1499	8.49	Scotland, Perth Museum, panels, Baltic wood (Crone personal communication)
B0352M02	AD1386	AD1489	7.47	Denmark, Roskilde, Stændertorvet, barrel staves, 3 timbers (Daly 2015)
se613m01	AD1197	AD1464	7.11	England, Hull, Blaydes Staithe, 3 timbers (Sheffield University revised Daly (2007))
HEADSx11	AD1304	AD1521	7.03	Scotland, Stirling castle, heads, 11 components, Baltic (Crone personal communication)
B019M002	AD1374	AD1574	6.92	Denmark, Helsingør, Kulturværft, two barrels, 5 timbers (Daly 2009b)
Z117001a	AD1226	AD1470	6.72	Denmark, Statens Museum for Kunst, painted panel, Sittow, Portrait of Christian 2, base end, KMSsp789 (Daly 2014a)
H019M001 barrel	AD1355	AD1545	6.67	Denmark, Ålborg, Algade barrel, 5 timbers (Daly 2018)

6d p. 56). Contrary to the previous suggestion, there is no indication that any of the dated material from the Leka group comes from the Baltic 2 source area, which is most likely from the Vistula or its tributaries (Daly and Tyers 2022). The oaks for these altarpieces probably grew in Western Lithuania, and speculatively, they could have been shipped from Memel, or have been transported to Gdansk for shipping westwards.

Conclusion

The construction and design of the Kinn triptych differ from the others in Engelstad's Leka group. The Kinn triptych is the only one in the group where the back wall is connected to the sides, top and bottom of the central section with a tongue-and-groove joint. This kind of connection is found in triptychs originating from the Northern German area with Lübeck as the centre (see Kausland (2016) for a description of constructions typical for Northern Germany). Kinn has a canopy in the upper part and a plinth in the lower part that spans the entire width of the central section. This is not found in the other triptychs' central section in the Leka group, which are, except for Ørsta, divided into three niches, each with a canopy. The design is closer to triptychs from the same period in Norwegian churches or museums with an assumed Northern German provenance, including the Norddal, Aure and Skjervøy triptychs.

Another indication of a different origin is that the Kinn sculptures are made from half a trunk and hollowed out at the back, while the other sculptures in the Leka group triptychs are made from 'blocks' of two or more oak planks, glued together and not hollowed out. The style and expression of the sculptures differ between Kinn and the rest of the Leka group. One might say that the Kinn sculptures are more vivid and the other Leka group sculptures, in general, are better proportioned. Clothing as well as hair, crowns, hands, and other details separate the Kinn sculptures from the other Leka group sculptures.

The decorative layer for the Leka group and Kinn sculptures were originally dominated by burnished gilding. Clothing, crowns, and other elements were originally gilded. However, burnished gilding is found in almost all sculptures in Northern Europe in this period and, therefore, does not aid in the provenance of the triptychs. Punch marks and sgraffito technique are found in all the Leka group triptychs, except for Kinn. Part gold is only observed in Kinn. Details in the decorative paint on St. Mary Magdalen in Kinn are of a kind that is not found in the other Leka-group sculptures. However, the Leka-group triptychs have been repainted and restored, and details in the original paint layer may have been lost during treatment.

The dendrochronological analysis demonstrates a clear correlation between the St. Catharina sculpture and a component of the plinth which indicates that the plinth and the sculptures had, most probably, been part of one ecclesiastical artwork. This result supports Johansen, who in 1971 linked the three sculptures and the main central section, the late medieval central section, in the 1644 altarpiece.

The highest correlations for the wood from these elements appear with tree-ring datasets from in and around Lübeck (Hamburg University), and with a group of sculptures from Skjervøy church, Norway that has been identified as oak from Lübeck (Daly and Streeton 2017). These correlations could indicate that the work was from a Lübeck workshop, incorporating sculpture of relatively local oaks, alongside boards or planks imported from further east.

The authors' conclusion that the Kinn triptych differs from the rest of Engelstad's so-called Leka group is confirmed by the dendrochronological analysis, and it is proposed here that the provenance of the triptych should be revised. It seems more likely that this work did not originate in Northern Holland, but rather came from a Northern German workshop.

Research data

The supplementary material and the raw tree-ring data extracted from the Kinn objects is available in a perpetual repository: https://doi.org/10.5281/zenodo.6009140.

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