# NEAR BUT FAR

## Finnish and Estonian church architecture in the Middle Ages

#### Abstract

The article focuses on comparisons of medieval stone churches in Finland and Estonia. The starting point is a study tour of 40 Estonian churches undertaken by the author in the spring of 1990. The first section of the article reviews previous studies concerning connections between Finland and Estonia in church architecture. The literature shows that contacts have been stressed since the 1930s. In the second section, the author presents central features of churches: the order of construction, the chancel, the tower and other aspects. On the basis of these features, the author concludes that the medieval stone churches of Finland and Estonia have very few features in common. Similarities are limited to a few constructional details in the churches along the northern shore of the Gulf of Finland and in Finland Proper. Differences cannot be explained by chronological factors. In conclusion, the author suggests certain analogies, including coin finds from churches, and suggests possible reasons for differences.

Markus Hiekkanen Koskelantie 46 A 00610 Helsinki Finland Tel. 358-0-40501

In March and April 1990 I had the opportunity to visit Estonia for the purpose of studying medieval church architecture\*in connection with my doctoral dissertation on medieval stone churches in Finland, and its section concerning churches in the coastal regions of the Baltic. The visit was made possible by the exchange programme of the Archaeological Working Group of the Finnish-Soviet Scientific-Technical Co-operation Committee. My official host was the Institute of History of the Estonian Academy of Sciences, but my visits to churches were arranged by the Estonian Heritage Association, with invaluable assistance from Jaan Tamm, Boris Dubovik and Kaur Alttoa, not the least in overcoming bureaucratic obstacles.<sup>1</sup>

My visit to Estonia has led me to revise many previous views concerning cultural connections between Finland and Estonia in medieval church architecture. After having seen forty of the over ninety preserved medieval churches of Estonia (fig. 2), I began to understand that beneath the often underlined connections between our countries run a number of opposing factors, which have not been pointed out to any major degree in research. Along with the joint features, emphasized in many studies, there are numerous differences. In further studies of the collected material, I began to doubt the existence of connections even in the material presented in studies so far.

<sup>\*</sup> This paper is a revised version of my lecture held at the meeting of the Finnish Antiquarian Society on 7 March 1991.



*Fig. 1.* The Church of Urvaste, southwest of Tartu, is one of the six basilica-type churches in Estonia, and the only one of its kind in the rural areas. The other five are the Cathedral of Tallinn, the Churches of St. Olaf and St. Nicholas in Tallinn, and the Cathedral of Tartu and St. John's in Tartu. The basilica in Pärnu was destroyed in World War II. — The only basilical church in Finland is the Cathedral of Turku. — Photo Markus Hiekkanen (= MH) 29. 3. 1990.

This paper consists of two parts. In the first, introductory, section I shall present an overview of what various researchers have seen as joint, or combining, factors in the church architecture of Finland and Estonia — or the Baltic region in general. The second part focuses on my main theme — the hitherto blank areas of comparative architectural studies.

### **PREVIOUS VIEWS AND CONCEPTS**

#### **Iikka Kronqvist**

The Baltic region was first cited as a source of influence in Finnish medieval architecture in connection with castles, and only later in the design of churches. Writing in 1914, *Juhani Rinne* underlined the connections of the present-day Castle of Hämeenlinna with the architecture of the Teutonic Order.<sup>2</sup> Contacts in the field of

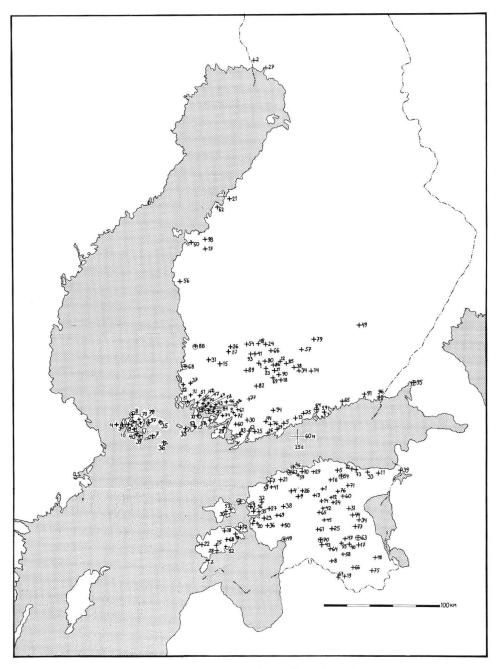
church architecture are mentioned sporadically in a few isolated texts from the early years of this century,<sup>3</sup> but were not systematically explored before *Iikka Kronqvist's* study of the architectural history of the church of Inkoo.<sup>4</sup> In his discussion of the second building stage of the church, Kronqvist pointed to spearhead-shaped rib bricks of Swedish type in the sacristy which was built at the time. Similar bricks were used in the sacristies of Parainen and Pernaja, which led to Kronqvist to link the second stage of construction not only to Swedish developments of the 14th century but also to church-building activity in the Province of Uusimaa. His somewhat obscurely worded conclusion was that whis resulted in large churches with naves and aisles, a development influenced by the architecture of the Teutonic Order on the opposite shore of the Gulf of Finland. In this connection, the monastery of Padise played a major role as an intermediary, and its influence through the ownership of land did not become decisive until now.» Kronqvist does not inform his readers of the actual criteria of this connection.

In 1938, the same year when his article on the church of Inkoo was published, Kronqvist held a series of lectures in Stockholm on the medieval church architecture of Finland.<sup>5</sup> In these lectures, he developed his views of the Baltic connection. A starting point was his observation of the specific window form of the chancel wall in the churches of Uusimaa. He maintained that it originally belonged to buildings of limestone and not brick architecture, and for this reason influences had to be sought from areas where this material was used. Gotland could be excluded for stylistic reasons, whereby Estonia remained a logical choice.

According to Kronqvist, the medieval church architecture of Estonia displays a regional division into two entities, corresponding to that of secular authority in the area. On the one hand, was the area of small single-naved churches in Western and Northern Estonia with influences from Riga, Denmark and Gotland. On the other hand, and more significant for Kronqvist's argument, Southern Estonia was dominated by the Prussia under the aegis of the Teutonic Order, and here a large church type with a nave and aisles was popular. After Denmark had relinquished control of Northern Estonia to the Teutonic Order, and the major period of construction had begun at the Monastery of Padise following the revolt of 1343, Estonia and the northern shore of the Gulf of Finland came into close contact with each other. In this period Padise obtained the right to name a priest for the parish of Porvoo and to exact taxes both from Porvoo and its chapels. Padise also acquired holdings in various parts of the Province of Uusimaa. As summarized by Kronqvist: »A relic of this period also appears to be the church architecture of Uusimaa, created as the result of the joint influence of the Monastery of Padise and the Teutonic Order, which in my view is clearly shown by the plans of the churches and their constructional properties».6

Kronqvist suggested that the influence of Estonia extended even further into Finland. In the west it could be seen in Finland-Proper, where the vaults of the nave of the church of Maaria have a St. Andrew's cross design similar to that in the sacristy of Pernaja. Kronqvist maintained that this was a clear indication of Estonian influence.<sup>7</sup> In other respects, Estonian influences could be seen mainly in the vaulting of older churches.<sup>8</sup>

In Häme, north of Uusimaa, Estonian influence could be seen as an explanation of the various features of the brick church of Hattula (fig. 21), where constructional and decorative details »derive from the same architecture as the Church of St. John



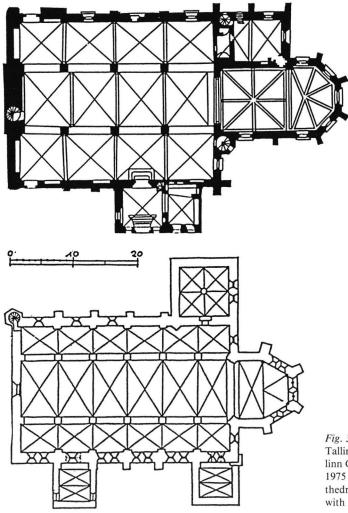
*Fig. 2.* Medieval stone churches and chapels of Estonia and Finland. — The Estonian material is given according to studies by Villem Raam and Kaur Alttoa, with reference to discussions with Raam and Alttoa in 1989—1991. The Finnish material is from the author's files on Finnish stone churches from before 1600 (compiled 1983—1991). — Estonia: 1 Ambla, 2 Anseküla, 3 Haapsalu, 4 Hageri, 5 Haljala, 6 Hanila, 7 Harju-Madise, 8 Helme, 9 Juuru, 10 Jôelähtme, 11 Jôhvi, 12 Järva-Jaani, 13 Järva-Madise, 14 Järva-Peetri, 15 Kaarma, 16 Kadrina, 17 Kambja, 18 Karja, 19 Karula, 20 Karuse, 21 Keila, 22 Kihelkonna, 23 Kirbla, 24 Koeru, 25 Kolga-Jaani, 26 Kose, 27 Kullamaa, 28 Kuressaare, 29 Kuusalu, 30 Käina,

in Tartu». This suggestion was supported by other experts. Fifteen years later *Lars Pettersson* observed that this church belonged to the sphere of Baltic High Gothic architecture but he also pointed to the features linking this church to the early churches of Finland Proper, with the church of Mynämäki as the closest example.<sup>9</sup> *Knut Drake* disproved any connections between the church of Hattula and St. John's in Tartu, or Baltic architecture in general. Drake demonstrated that any similarities between it and Hattula were only apparent. He also brought forth new aspects and, in agreement with Pettersson, emphasized the close ties with the churches of Finland-Proper.<sup>10</sup>

#### **Armin Tuulse**

Iikka Kronqvist's views led to a long-lived idea that the Cistercian monastery of Padise had a definite influence on church architecture in Finland. This concept was especially supported and broadened by *Erkki Kartano*.<sup>11</sup> I shall not discuss Kartano's theories in this connection, as they do not contain any essentially new features. However, I wish to mention a significant critic of these ideas — Professor *Armin Tuulse*, formerly of Tartu and later at the Department of Art History of the University of Stockholm. Writing in 1953, Tuulse focused on the role of Padise as a source of influences.<sup>12</sup> In his analysis, he unequivocally states that, with the exception of a few consoles (to be discussed below), where are hardly any connecting

31 Laiuse, 32 Lääne-Nigula, 33 Lüganuse, 34 Maarja-Magdalena, 35 Martna, 36 Mihkli, 37 Muhu, 38 Märjamaa, 39 Narva (town church and the Church of St. John), 40 Nôo, 41 Padise, 42 Paide, 43 Paistu, 44 Palamuse, 45 Pilistvere, 46 Pirita, 47 Puhja, 48 Pôlva, 49 Pärnu, 50 Pärnu-Jaagupi, 51 Pöide, 52 Püha, 53 Pühalepa, 54 Rakvere (town church and the Church of the Franciscan Convent), 55 Rannu, 56 Ridala, 57 Risti, 58 Rôngu, 59 Saha, 60 Simuna, 61 Suure-Jaani, 62 Tallinn (Cathedral, Church of the Holy Spirit, Church of St. Olaf, Church of St. Nicholas, Church of the Dominican Convent, Church of the Cistercian monastery), 63 Tartu (Cathedral, Church of St. John, Church of St. Mary, Church of the Cistercian Monastery, Church of the Holy Spirit, Church of the Franciscan Convent, Church of the Dominican convent), 64 Tarvastu, 65 Türi, 66 Urvaste, 67 Valga, 68 Valjala, 69 Vigala, 70 Viljandi (town church, Church of the Franciscan Convent), 71 Viru-Jaagupi, 72 Viru-Nigula, 73 Viru-Nigula Maarja, 74 Vormsi, 75 Vôru, 76 Väike-Maaria, 77 Äksi. — Churches, chapels and sacristies of Finland (Swedish place-names in brackets): 1 Akaa (Ackas), 2 Alatornio (Nedertorneå), 3 Eckerö, 4 Eckerö Signildskär, 5 Espoo (Esbo), 6 Finström, 7 Föglö, 8 Geta, 9 Halikko, 10 Hammarland, 11 Hattula, 12 Hauho, 13 Helsingin pitäjä (Helsinge), 14 Hollola, 15 Huittinen (Vittis), 16 Inkoo (Ingå), 17 Isokyrö (Storkyro), 18 Janakkala, 19 Jomala, 20 Kaarina (S:t Karins), 21 Kaarlela (Karleby), 22 Kalanti (Kaland, Nykyrko), 23 Kalvola, 24 Kangasala, 25 Karjaa (Karis), 26 Karkku, 27 Keminmaa, 28 Kemiö (Kimito), 29 Kirkkonummi (Kyrkslätt), 30 Kisko, 31 Kokemäki (Kumo), 32 Koroinen (Korois), 33 Korppoo (Korpo), 34 Koski (Koskis), 35 Kumlinge, 36 Kökar, 37 Laitila (Letala), 38 Lammi (Lampis), 39 Lemland, 40 Lemland Lemböte, 41 Lempäälä (Lembois), 42 Lemu (Lemo), 43 Lieto (Lundo), 44 Lohja (Lojo), 45 Maaria (S:t Marie), 46 Marttila (S:t Mårtens), 47 Masku (Maskom), 48 Messukylä (Messuby), 49 Mikkeli (S:t Michel), 50 Mustasaari (Korsholm), 51 Mynämäki (Virmo), 52 Naantali (Nådendal), 53 Nauvo (Nagu), 54 Nokia, 55 Nousiainen (Nousis), 56 Närpiö (Närpes), 57 Padasjoki, 58 Parainen (Pargas), 59 Pernaja (Pernå), 60 Perniö (Bjärnå), 61 Pertteli (S:t Bertils), 62 Pietarsaari (Pedersöre), 63 Pohja (Pojo), 64 Porvoo (Borgå), 65 Pyhtää (Pyttis), 66 Pälkäne, 67 Raisio (Reso), 68 Rauma (Raumo; town church, Church of the Franciscan Convent), 69 Renko, 70 Rusko, 71 Rymättylä (Rimito), 72 Salo, 73 Saltvik, 74 Sauvo (Sagu), 75 Sipoo (Sibbo), 76 Siuntio (Sjundeå), 77 Somero, 78 Sund, 79 Sysmä, 80 Sääksmäki, 81 Taivassalo (Tövsala), 82 Tammela, 83 Tenhola (Tenala), 84 Turku (Åbo; Cathedral, Church of the Dominican Convent), 85 Tuulos, 86 Tyrväntö, 87 Tyrvää (Tyrvis), 88 Ulvila (Ulvsby), 89 Urjala (Urdiala), 90 Vanaja (Vånå), 91 Vehkalahti (Veckelax), 92 Vehmaa (Vemo), 93 Vesilahti (Vesilax), 94 Vihti (Vichtis), 95 Viipuri (Viborg; town church, Church of the Dominican Convent, Church of the Franciscan convent), 96 Virolahti (Vederlax), 97 Vårdö, 98 Vöyri (Vörå). — Drawn by Tuula Toiviainen-Vij according to the author's instructions.



*Fig. 3.* Plans of the Cathedrals of Tallinn and Turku c. 1300. — Tallinn Cathedral according to Raam 1975 with alterations; Turku Cathedral according to Rinne 1941 with alterations.

points between the clearly defined limestone architecture of the Monastery of Padise and the greystone churches of Finland». Tuulse especially pointed to the lack of ribbed vaults at Padise and in the church architecture of its immediate sphere. Ribs first appeared in the second half of the 13th century, but the St. Andrew's cross motif of the vault was almost unknown in Estonian medieval architecture.<sup>13</sup> However, Tuulse did not wish to exclude the possibility of Padise having had some influence; its property may have permitted an intermediary role. But he did not present any examples of this.

Tuulse did point out a number of more or less clear connections in the church architecture of these respective areas, appearing in the late 13th and early 14th centuries, and again in the 15th century. He underlined Estonian features in the Cathedral of Turku, already mentioned by *Juhani Rinne*. These included the early vaulting of the church into nave-and-aisle form with square-based pillars. Especially the console

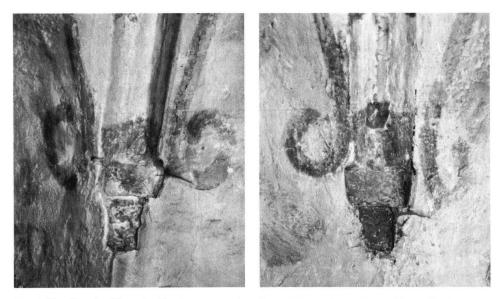


Fig. 4. The Church of Pernaja. Northwest (a) and northeast (b) consoles of the sacristy vault. Terracotta masks form the lower part of the consoles. - Photo MH 24.1.1991.

forms preserved in the aisles clearly derive from the masters of Tallinn. Other features indicating Estonian influence are the west tower, the five-sided chancel and the vaulting of sacristy, employing a central pillar. In these connections Tuulse refers to the Cathedral of Tallinn, and the Churches of the Holy Spirit, St. Nicholas and St. Olaf in Tallinn (fig. 3). More distant connections are Westphalia, later stressed by *Villem Raam*, and Visby in Gotland. Tuulse also points to the significance of Dominican and later Cistercian architecture in the subdued architectonic articulation of these churches. In the Cathedral of Turku all these features can be dated to before and after the year 1300.

The links of the brick parts of the Cathedral of Turku with the Cathedral of Tartu was emphasized already by Rinne. Tuulse adds that there were also connections with Tallinn, of which the north portal in Turku is a good example (fig. 5). Tuulse, however, overlooked the niches of the sides of the portal. Inspecting the portal in the autumn of 1990, *Silja Konsa* informed this author that to her knowledge corresponding portals in Tallinn do not have similar niches.<sup>14</sup> In the same connection, *Kaur Alttoa* pointed out that there are niches in the profiled parts of the west portal of the Cathedral of Tartu.<sup>15</sup>

Tuulse also refers to the master bricklayer Simon of Tallinn, who directed the repairs of the Dominican Convent of Turku. The convent burned down in 1429. According to him, Simon, or some other master from Tallinn, also carved the consoles of the extended sacristy of the cathedral. The closest parallels to their geometric forms and somewhat stylized plant motifs are in Tallinn and Northern Estonia.

That masters from Tallinn were employed in limestone work in the 15th century is also indicated by the piscinas of Turku and Naantali, which Kronqvist attributed to Estonia. Similar indications are the limestone traceries of the church of Pernaja and other churches, and the terracotta masks in the churches of Pernaja (fig. 4) and

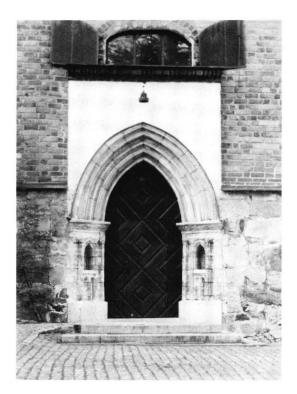


Fig. 5. The Cathedral of Turku. North portal. — Photo MH 26.7.1991.

*Fig. 6.* The Church of the Bridgettine Monastery of Naantali. South portal of the east wall. — Photo P.O. Welin 1964. National Board of Antiquities, Department of Monuments and Sites, Pictorial Archives no. 6539.



*Fig.* 7. The Church of Lüganuse, nave. Crosses of the west (a) and east (b) gable ends and text fragments on plaster and whitewash. — Photos MH 31.3.1990.

Nauvo.<sup>16</sup> Tuulse does not accept Kartano's suggestion that the convent of Naantali was linked to Baltic architecture. In his monograph on the convent church of Naantali, *Henrik Lilius* regards the influence of the Baltic region as insignificant. On the other hand, he and Tuulse regard the limestone east portal of the church of Naantali (fig. 6) as definitely the work of a master from Tallinn.<sup>17</sup>

Tuulse made an extensive search for influences from Estonia to Finland. He cites only one example of opposite influence: the church of Lüganuse (Luggenhusen), in Virumaa c. 100 km east of Tallinn. The main part of the church was built in the early 15th century, and it had twin-naved vaulting. Around the year 1500 a narrower chancel was added, as well as a sacristy and a west tower of round base. According to Tuulse, Finnish influences are especially the ornament of the west gable, consisting of a red-painted cross-niche surmounting a text engraved into the stucco and painted with red ochre (fig. 7).<sup>18</sup> There are no examples of similar niche ornament anywhere else in Estonia. In assessing the origin of these influences, Tuulse suggests that trading contacts between Finland and the Virumaa region were more important than façade inscriptions in Prussian church façades. Tuulse sees the prototype of the gable-wall ornament in the churches of Uusimaa, and especially Porvoo. In the concluding remarks of his article Tuulse assumes that other features will emerge especially when detailed studies are undertaken of churches in Tallinn. The Finnish material can also be expected to reveal many features that will either confirm or disprove these points.

#### C. J. Gardberg

After Tuulse's article, no comprehensive overview of Finnish and Estonian church architecture was published until 1988, when *C. J. Gardberg* reviewed architectonic influences from the Middle Ages to the 20th century. In addition to the abovementioned connections, Gardberg provides further information on the situation in the 15th century with his reference to the »Tallinn school», a useful concept introduced by *Villem Raam*. Gardberg attributes to this school the above limestone portals and piscinas following the reconstruction of the Dominican Convent of Turku after 1429. Gardberg has also pointed to the townscape of the Hanseatic towns, dominated by spired basilicas. He regards connections between Tallinn and Turku as important especially on this level.<sup>19</sup>

Unlike Tuulse, Gardberg also discusses the vaults of the nave in the Cathedral of Turku. Their details, especially the consoles, show that Petrus Murator was familiar with vaults of the convent church of Pirita. *Olavi Tapio*, however, does not mention such a connection in his graduate thesis from 1969, arguing that the vault forms derived from the southern shores of the Baltic.<sup>20</sup>

Gardberg also refers to Armin Tuulse's suggestion (published in Ålands kyrkor from 1973) concerning the church of Sund in the Åland Islands. The classicistic vaulting of this church is unique in Finland, and Tuulse feels that it is clearly linked to



*Fig. 8.* The Cathedral of Tallinn, the Rosenkrantz Chapel under restoration with upright niches on the gable. The upper parts of the niches were destroyed when the roof was lowered. — Photo MH 7.4. 1990.

the two-naved Church of the Holy Spirit in Tallinn. This is not a surprising connection, as peasant seafaring between the Åland Islands and Tallinn was to such a degree active that some twenty peasants from Åland are mentioned in promissory notes of Tallinn merchants.

In my view, Gardberg makes a significant point in referring to the brick ornament of the gables of the churches of Uusimaa. He observes that their niches of taperingarch and quadrifoil form do not have parallels in churches on the northern coast of Germany. Although comparisons between Estonia and Finland are difficult because of differences in materials — limestone in Estonia and brick in Finland — the similarities are surprising. Upright niches occur in the Rosenkrantz Chapel of the Cathedral of Tallinn (fig. 8), and motifs resembling organ-pipes appear in the west gable of the convent church of Pirita. The quadrifoil motif was also used in the gable of the Grand Guild building in Tallinn as well as in several churches in Southern Finland.\* In my view, Gardberg does not, however, present sufficient grounds, as in practice the various ornamental elements occur in almost all parts of the coastal regions of the Baltic.

#### DETAILS AND THE OVERALL CONCEPT

It is hardly necessary to reiterate that the connections posited by various researchers existed, at least partly, and it is also certain that more detailed analyses will reveal other, similar features. However, I feel that the similarities as described above are points of detail in two ways. First, they represent in each building only a single architectonic feature alongside many others. Second, each feature occurs in only a few churches. Thus for example, the influence of the Cathedral of Turku has achieved proportions that do not correspond to its real significance.

In my view, we should review all the churches of Estonia and Finland — i.e. rural churches as opposed to basilicas — to seek features that will provide a more general level of knowledge of the churches of both countries. In the following, I shall present some of the differences. These include the order of construction, chancels that are narrower and lower than the main part, and the west tower.

#### Order of construction

The first point of interest is the different order of construction. According to established views, the order of church construction on the Finnish mainland (the Åland Islands are excluded in this connection) followed a singular course throughout the Middle Ages. At first, a wooden church was built, to which a stone sacristy was later added on the north side (fig. 9). The sacristy had a number of functions: it was the vicar's study, and the place of storage for parish archives and the liturgical instruments and paraments. It was a secure place to store the property of the parish. After a longer or shorter interval, the main part was built of stone, and finally a porch was added in front of the south portal in many churches. In some cases a west tower was also erected.

<sup>\*</sup> I especially wish to thank Dr Gardberg for his kind advice in preparing this article.

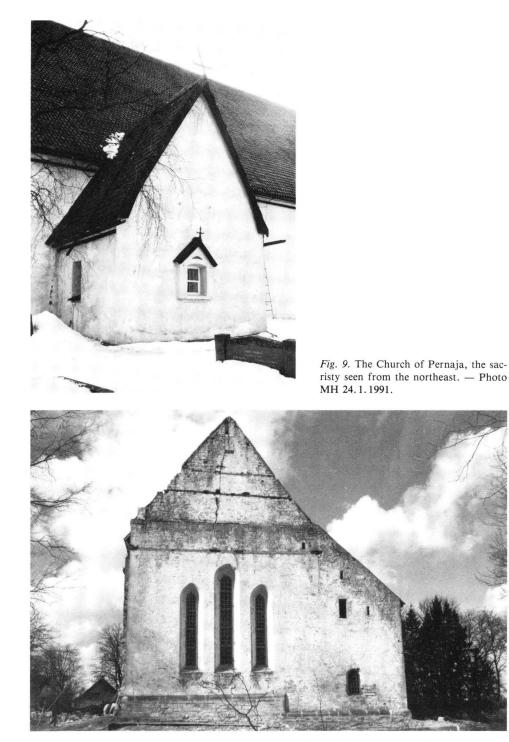
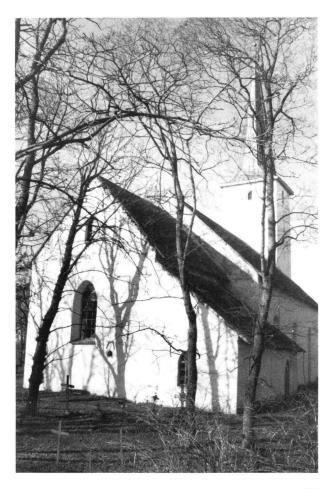


Fig. 10. The Church of Kaarma, east facade. The sacristy with its sloping roof was built to second-floor level together with the nave and chancel. - Photo MH 6.4.1990.

In my studies, a systematic survey of church architecture has begun to reveal a number of features showing that this almost stereotypical image is not necessarily as simple as previously assumed. It can be said, however, that the order of construction differs from the other coastal areas of the Baltic, with the exception of Uppland in Sweden.

The initial stage was completely different in Estonia. To my knowledge, there is not a single case among the medieval stone churches of Estonia where a stone sacristy preceded the main part built of stone. The order of construction was almost without exception the reverse, and the sacristy was built considerably later. A good example is Lüganuse, where the main part was built in the second half of the 14th century, but the sacristy was erected only around 1500.<sup>21</sup> Many similar examples can be mentioned. In some cases the sacristy was built at the same time as the nave and chancel. The only ones that I know of are the church of Ambla in Harjumaa, the church of Järva-Madise in Järvamaa, the bishop's church of Haapsalu in Läänemaa and the churches of Kaarma (fig. 10) and Karja in Saaremaa. The majority of the sacristies were built after the main part and the chancel (fig. 11).



*Fig. 11.* The Church of Viru-Nigula seen from the northeast. The sacristy with its sloping roof was built after the chancel was completed. The sacrament opening can be seen on the north side of the window in the chancel wall. — Photo MH 31.3.1990.

This can no longer be seen in the exteriors of the churches, as most Estonian churches have sacristies, often erected in more modern times. The structure of the sacristies displays, however, significant differences. Estonian sacristies have, almost without exception, ridged roofs, whereas the Finnish sacristies have saddle-back roofs (the only exceptions being the east and west sacristies of the Bridgettine church of Naantali and the sacristy of the church of Lemu). In Estonia, the sacristy is thus oriented east-west, while its Finnish counterpart is on a north-south axis. Because of the roof form, this difference is significant, for the Finnish sacristies are in most cases of almost square plan.

#### The chancel

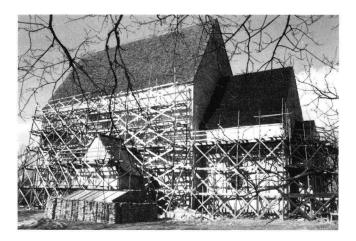
Let us go on from the sacristy to the main part and the chancel and their proportions. Most of the Finnish churches were built without a narrower chancel adjoining the east end of the body of the building (fig. 12). Of the 75 medieval churches in Finland with the main part (not only the sacristy) of stone, only one in the Åland Islands, four in Finland-Proper, one in Satakunta and two or three in Uusimaa can be shown to have definitely had a narrow chancel in their original state — a total of nine churches.<sup>22</sup> In the remaining churches the altar and the place of the sacrament were located in the easternmost quarter of the main part, or even in its easternmost third. The churches were of rectangular plan.

In Estonia the proportions of the main part and the chancel are the opposite (fig. 13). Of the 90 medieval stone churches (fig. 2), only some ten were built without a separate chancel, extending as a narrower volume from the body of the building. Although some of these were castle churches (e.g. at Haapsalu), this does not alter the situation.

The above point suggests a number of doubts. Churches with narrow chancel-parts belonged to the Romanesque tradition, which, in practice, continued until the end of the 13th century and even later. The hall church type of rectangular plan was developed in the 12th-13th centuries, with origins in the architecture adopted by the Cistercians and the Mendicant orders. As the stone churches of Estonia are known



*Fig. 12.* The Church of Rusko. SSE view with the belfry on the right. — Photo MH 18.10. 1990.



*Fig. 13.* The Church of Muhu under restoration, SSE view. — Photo MH 5.4.1990.



Fig. 14. The Church of Järva-Madise, ESE view. The porch is from the Late Middle Ages. — Photo MH 1.4. 1990.

to be partly older than those of Finland, a simple conclusion would be that this major difference in plan is a chronological point. A relatively large number of Estonian churches were built in the 13th century, when the Romanesque tradition still exerted its influence (fig. 14). On the Finnish mainland, medieval stone churches began to be built around the year 1300, and most of them are from the end of the 14th century and the 15th century.

Such a conclusion, however, is not possible. In Estonia, narrow chancels were built from the earliest stages in the mid-13th century (e.g. Ambla, Valjala) until the 16th century (e.g. Viru-Nigula, Haljala; fig. 15).

The Estonian material includes a series of churches without chancels, beginning from the late 13th century, when at least Pôide in Saaremaa and Haapsalu and Kullamaa in Läänemaa were built without a separate chancel.<sup>23</sup> In the case of Haapsalu, we must take into account that it was in connection with a castle, but it is a cathedral nonetheless. In the second half of the 14th century the churches of Märjamaa in Läänemaa, Lüganuse and Jôhvi (fig. 16) in Virumaa, and Jôelähtme and Keila in Harjumaa were built without narrow chancels. At Lüganuse and Jôelähtme a narrower and lower chancel was added at a later date. The chapel of Saha (fig. 17) in Harjumaa<sup>24</sup> and the town church of Narva were built without a chancel-part as late as the 15th century.



*Fig. 15.* The Church of Haljala, the chancel seen from the southeast. The chancel was built after the nave was completed. There is a limestone cross below the chancel window; similar crosses in corresponding locations are in the Churches of Korppoo and Vehkalahti in Finland. — Photo MH 31.3.1990.



Fig. 16. The Church of Jôhvi. View of the chancel from the organ gallery. - Photo MH 31.3.1990.

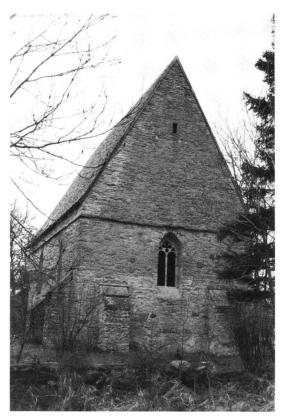


Fig. 17. The Chapel of Saha, ESE view. - Photo MH 2.4.1990.

Also in the monasteries and convents a plan without a chancel was used in a few cases. Early examples are the Cistercian church of Padise, and the Church of St. Michael and the now decrepit Dominican Church of St. Catherine in Tallinn. There is no doubt that architecture and construction programmes of monasteries — first the Cistercians, followed by the Dominicans — had a major influence on the emergence of churches without chancels and their development in Estonia, Finland, and elsewhere. As a result we may point out that differences in plan between Finnish and Estonian churches are not based on chronological factors. Both regions had their own, established traditions of design and construction, which appear to have been more rigid in Finland. This may have been due to differences in the territorial system of church administration. Finland consisted of a single diocese (Turku), whereas Estonia was broadly speaking divided throughout the Middle Ages into three dioceses (Tartu, Tallinn and Saaremaa-Läänemaa).

#### The tower

Our next point of interest is the westwork and the question of the tower. The areas of churches with west towers in Finland, or the Diocese of Turku, are easily listed. The first and oldest one is the Åland Islands, where nine churches have towers dating back to the Middle Ages (fig. 18). The earliest of these is the church of Jomala



*Fig. 18.* The Church of Lemland, NNE view. — Photo P.O. Welin 1986. National Board of Antiquities, Department of Monuments and Sites, Pictorial Archives no. 19560.

from the 13th century, and the latest is Finström from c. 1500. A second, less uniform and more indistinct, group consists of churches in Finland-Proper conventionally dated to the beginning of the 14th century, where a low tower was sometimes added to the west end. It is debatable whether these were actually towers (e.g. the churches of Vehmaa, Raisio and Mynämäki), and they are more like porch constructions. The towers of Turku Cathedral and the church of Korppoo are, of course, different. A third group consists of two churches in Ostrobothnia (Pietarsaari and Mustasaari). Of the 75 medieval churches of Finland fourteen have towers.

In Estonia west towers were erected clearly more often than in Finland (fig. 19). They may even have been part of the original plans, or were added during the Middle Ages. The form and size of the towers vary considerably. In most cases they were located next to the west gable wall of the body of the building, but they could also form its westernmost bay (fig. 20). In many cases the structure was a console tower or tower at the end of the building, a system which first seems to have developed in Tallinn (Church of the Holy Spirit, Town Hall). On the other hand, I feel that the console towers of Southern Estonia need not have links with Tallinn (fig. 22). There are c. 25 churches in Estonia without west towers of medieval date.

Towers can be briefly reviewed according to their function. In many cases the towers of Estonian churches were in some way related to defensive measures — although these do not necessarily require towers, as shown by churches in Saaremaa and Virumaa. Another, equally essential, function is for housing churchbells, which seems to have been more common than defensive purposes. A third alternative is that towers were erected to demonstrate the status of a *patronus*, which will not be discussed here because of insufficient source material. Suffice it to mention that this feature has been pointed out in recent Scandinavian studies. In the case of Estonian churches, we do not know whether they were built by leading local personages, the parish or possibly both.



*Fig. 19.* The town church of Rakvere, seen from the west from the east tower of the Castle of Rakvere. — Photo MH 30.3.1990.



*Fig. 20.* The tower of the Church of Ambla, NNE view. The tower rises from the westernmost vaulted part of the nave. The bell-storey was built after the Middle Ages. — Photo MH 1.4. 1990.



*Fig. 21.* The Church of Hattula, WSW view. The bells are in a separate belfry with a possibly medieval foundation (Markus Hiekkanen, investigation report 1989, National Board of Antiquities). Medieval gate structure to the right. — Photo P.O. Welin 1952. National Board of Antiquities, Department of Monuments and Sites, Pictorial Archives, negative 81422.



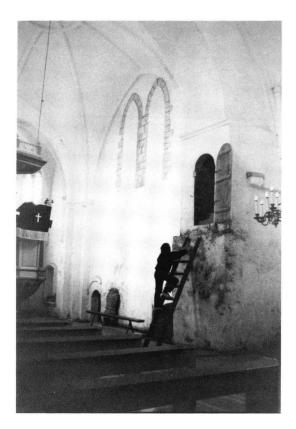
*Fig. 22.* Ruins of the Church of Rannu, southwest view. The lower part of the console tower is visible in the west gable end. The church was destroyed by Soviet artillery fire in the spring of 1944. — Photo MH 28.3.1990.

In Finland it has been possible to demonstrate — with certain reservations — a defensive role for a few church towers in the Åland Islands and in a couple of cases in Finland Proper (Korppoo, Turku Cathedral). Disregarding nationalistic-romantic views expressed by researchers in the Åland Islands, the defensive character of towers can be linked to alterations carried out in the Late Middle Ages, i.e. the 14th and 15th centuries. This applies to both the Åland Islands and Finland Proper. On the other hand, the west towers of the churches of Mynämäki, Maaria and Raisio (if they can be described as such) have not been seriously considered as defensive structures.

The defensive nature of church towers in Estonia is demonstrated by at least the churches of Ambla (fig. 20) and Haljala, but we must also take into account the fact that a tower, where used for military purposes, is only part of an overall defensive plan (fig. 23). In most cases, the whole body of the church forms a defensive structure (e.g. Valjala and Haljala). In Finland, such a design is known only from late medieval times from Jomala and the Cathedral of Turku.

In the majority of cases towers were erected to house churchbells. This brings us to a major difference, existing even today, between church sites in Estonia and Finland. In Finland separate belfries were built near the church (fig. 12), which was never done in Estonia. The Finnish belfries that have survived to this day were of course built in the 18th and 19th centuries, but many of them have a medieval foundation or documentary sources refer to an older wooden belfry nearby (fig. 21). In some cases it has been possible to demonstrate that bells were hung in the attic of the porch. For example, recent dendrochronological studies have shown that the bell-supports of the porch of the church of Sipoo were built in the 1480s.<sup>25</sup>

In Estonia separate belfries were not built in the Middle Ages in connection with churches.<sup>26</sup> The bells were hung in the west tower, which was erected at the same



*Fig. 23.* Boris Dubovik climbing to the attic door in the triumphal arch of the Church of Valjala. — Photo MH 5.4. 1990.

time as the body of the building or slightly later. This course of events is the same as at Mustasaari and Pietarsaari in Ostrobothnia, although the starting points were of course different.

The possibility of towers being built by leading local personages will not be discussed here, as it is difficult to assess because of limited sources. I shall only refer to a few points. According to *Lars Pettersson*'s studies, the timber tower of the former church of Saloinen (burned down in 1930) may have been related to the activities of Sten Sture the Elder in the 1490's.<sup>27</sup> The towers of the larger churches in Tallinn and the Cathedral of Turku may in turn be part of the basilica design (fig. 1).

Let us return briefly to the console and gable-wall towers, which occur in various parts of Estonia (fig. 22). In Northern Estonia they are probably related to developments that began in Tallinn in the 14th century, as shown by the Church of the Holy Spirit. Research conducted by *Maj Lumiste* has shown that the console tower, previously thought to be a secondary addition, was in fact built together with the main part. A similar system was employed in the towers of the Town Hall and the tower in the east end of the Church of St. Olaf. In Southern Estonia the two east towers of the Cathedral of Tartu may also have served as a starting point.

There are no console towers in Finland. The closest parallels to such are the towers built between the extended chancel and the old main body of the Cathedral of Turku. The bases of these towers extend down to the foundation. It is difficult to ascribe any definite function to these towers. They can be regarded as ornamental or mass-bell towers similar to wooden ridge turrets that have in most cases disappeared.

#### **Other differences**

To conclude this overview, I wish to mention a few other structural details. In the Estonian churches, porches were rarely built (fig. 14), and even then mostly in modern times. In Finland, the lack of a medieval stone porch is exceptional (e.g. Karkku and Pertteli). Another difference is in the proportions of church buildings. Because of the separate chancels the main body in Estonian churches is slightly smaller than in their Finnish counterparts. The ratio of width to length is also different; mostly less than 1:2 in Estonia. With the exception of the Åland Islands, this is not the case in Finland, where the respective ratios vary between 1:2 and 1:3<sup>28</sup>. This leads to a different kind of vaulting. It must also be pointed out that (with the exception of the Åland Islands) ribless vaults do not occur in Finland, whereas in Estonia there are only few cases of ribbed vaults. Other differences include gable ornament, the locations of portals, fenestration, attic openings in the gables, sacrament niches, articulation of doorways, niches forms etc.

#### DISCUSSION

On the basis of the above, medieval stone churches in Finland and Estonia display significant differences. I have pointed to these differences by referring to a number of features that have not been the subject of much attention. But why do these differences exist? According to *Kustaa Vilkuna* and *Gunvor Kerkkonen*, peasant seafaring (*Eino Jutikkala* prefers the term »rural seafaring»), was very popular in the Middle Ages in an area extending from the region of Ulvila on the Gulf of Bothnia to the eastern parts of the Gulf of Finland. Consistent records of this trading activity are available from the early 16th century, but it is certain that seafaring had been practised for centuries.

Material evidence of these contacts is to be found in various parts along the northern coast of the Gulf of Finland. Coins found in the archaeological excavations of medieval churches are perhaps the most impressive evidence of this activity. A good example is the church of Espoo where excavations carried out in 1981 brought to light a total of c. 550 coins.<sup>29</sup> According to studies by *Pekka Sarvas*, most of the coins are from modern times, but 20 specimens date back to the Middle Ages. In view of Finland's position as part of the Swedish realm we could assume that these coins were struck in Sweden. However, Swedish coins form a smaller group. The majority (12 coins) were struck in the various urban centres of the Teutonic Order (Riga, Tartu, Tallinn). There is a similar distribution in other studied collections of coin finds from medieval churches in the coastal region, as pointed out to this author by Sarvas.

The situation changes, however, in the inland regions. Of the c. 50 medieval coins found in the church of Renko in Southern Häme, only a few are from the regions of the Teutonic Order. In the church of Lempäälä, in Upper Satakunta on the Häme border, only Swedish coins were found.<sup>30</sup>

This observation brings us back to connections between the medieval churches of Estonia and Finland. The above review of past research shows that, according to scholars, only Uusimaa and the southern parts of Finland Proper were in architectural terms influenced by Estonia or the Baltic region in general. It is in this area that coin finds from churches contain a relatively large number of pieces struck in the area controlled by the Teutonic Order. All in all, Estonian influence did not extend beyond the churches of the southern and southwestern coastal region of Finland (fig. 2). Even here, it did not affect the overall design of the building, the plan or the specific configuration of parts, i.e. basic architectonic features. Contacts are indicated only by a few limestone details (consoles, portals and piscinas) in a few churches, for the often-quoted gable ornament may just as well derive from the southern shores of the Baltic as from Tallinn.

If we cannot demonstrate any undisputable connections across the Gulf of Finland, can such be seen even in relation to other areas? The starting points of Estonian church architecture appear to be in the areas from where the conquerors of this region originated: the central and northern parts of Germany; also Gotland has been cited as a source. The northern boundary of this influence appears to follow the corresponding boundary of political power. On the other hand, research has shown that also Finland was considerably influenced by the areas to the south of the Baltic; Northern Germany, and partly the areas controlled by the Teutonic Order. We must therefore ask why Finnish and Estonian churches display such marked differences, if the regional starting points of their architecture are to a large degree the same. Chronological differences are not a sufficient explanation.

It is hard to present any specific reasons. I would suggest, however, that in the Middle Ages each diocese or bishopric was a *patria* in the sense that a centuries-old tradition of written and unwritten rules controlled not only liturgy and organization but also ecclesiastical building activity. An example might be the order of construction followed in the Diocese of Turku, where the sacristy preceded the main part of the building. In Estonia, on the other hand, the lack of towers in the Diocese of Saaremaa-Läänemaa may have been a similar feature. Future Estonian research may possibly isolate the specific role of each diocese (Tartu, Läänemaa-Saaremaa and Tallinn) in the formation of the architectural tradition. But basically the concept of *patria* does not explain much.

Nor do the transmitting of style or cultural influence provide much explanation. Medieval architecture in Finland had sporadic and few contacts with Estonia. Political ties were lively at times and throughout history trading relations and rural seafaring maintained commercial contacts, but they did not bring about any significant links in the field of architecture. In the actual construction of churches, architectonic, structural and order-related features were decided upon locally and in the situation at hand. Contacts with Estonia any more than any other overseas areas were not important. In fact, the above material places considerable doubt upon the whole concept of relations of influence. I cannot, however, suggest any alternative interpretation, and my conclusion, viz. that there are hardly any contacts between the medieval stone churches of Finland and Estonia, must remain unexplained.

In conclusion, and to avoid any misconceptions, we must bear in mind that regardless of architectural or technical differences in the construction of churches both Estonia and Finland belonged to the cultural sphere of the Western church. Later developments or political changes have not been able to sever this connection.

#### References

<sup>1</sup> I wish to thank Dr Torsten Edgren, Chairman of the Archaeological Working Group of the Cooperation Committee. At the Estonian Institute of History Dr Jüri Selirand spared no efforts in assisting me. Lecturer Kaur Alttoa of the Department of Art History at the University of Tartu and researcher Boris Dubovik of the Eesti Mälestusehitus organization (RUPI) made my field trips a success. My guides in Tallinn and its environs were Dr h.c. Villem Raam, Silja Konsa and Aleksander Pandelenev, to whom I wish to extend my thanks.

<sup>2</sup> Rinne 1914. p. 284-289.

<sup>3</sup> E.g. Lindberg 1926, p. 145.

<sup>4</sup> Kronqvist 1938, p. 53.

<sup>5</sup> Kronqvist 1948, p. 34-38.

<sup>6</sup> Kronqvist 1948, p. 36—37. This section of Kronqvist's text is obscurely worded and in contradiction with his arguments concerning the vaulting of churches in Uusimaa. The text on page 37 suggests that nave-and-aisle vaulting dates back to the 14th century, while on page 39 it is dated to the mid-15th century and its latter half. Kronqvist does not appear to have noticed this contradiction, which is also his starting point in comparing the limestone details of the chancel window with the church architecture of Southern Estonia. In Southern Estonia churches were mainly of brick, although stone was also used, especially in late medieval times. The use of limestone is limited to the northern regions and the islands.

<sup>7</sup> Kronqvist is obviously mistaken in his reference to »the strong influence of the architecture of Uusimaa». Here, the subject is Estonia. Kronqvist 1948, p. 37.

<sup>8</sup> As examples of Baltic-influenced vaulting in older churches Kronqvist mentions the churches of Vehmaa, Parainen, Kaarina, and the renovations of the original vaulting at Nousiainen and Vehmaa. In the last-mentioned case Estonian influence is evidenced by the use of five-sided rib bricks, as similar ones had been used at Maaria and Hattula. This appears to be circular reasoning. — At Parainen an indirect indication of influence is the spearhead-shaped rib brick. Direct Estonian influence, on the other hand, is shown by the St. Andrew's crosses of the vaults and the brick colonnettes supporting the vaults of the nave, which immediately bring to mind Cistercian architecture and suggest Padise, which may have been an intermediaryw. The early 15th-century vaulting of the Church of Kaarina with its St. Andrew's cross motif is the latest example of this type. — On the Church of Nousiainen, see Tapio 1969. — On the wall paintings, see Riska 1987. — See also Kronqvist 1941, p. 44—64.

<sup>9</sup> Pettersson 1955, p. 565—579. — Pylkkänen 1954, p. 17—18. Edgren & Hiekkanen 1987, p. 87—97.
<sup>10</sup> Drake 1967, p. 145.

<sup>11</sup> Kartano 1948. Kartano 1951. — See also Rancken 1950, passim. Drake 1959. Pylkkänen 1954. Schmidt 1941.

<sup>12</sup> Tuulse 1953, p. 20–40.

<sup>13</sup> With reference to Erik Lundberg's studies, Tuulse mentions that the St. Andrew's cross motif came to Finland from Sweden, where it was widely used in churches from the end of the 14th century. Tuulse 1953, p. 22–26.

<sup>14</sup> Silja Konsa prepared her graduate thesis in art history at the University of Tartu on the medieval limestone ornaments of Tallinn. — See also Rinne 1935 and 1941.

<sup>15</sup> On the Cathedral of Tartu, see e.g. Alttoa 1980, p. 78-96.

<sup>16</sup> Kartano 1951, passim. — In a later connection, Sigrid Nikula has pointed to the connections of the limestone consoles and the brickwork of the west tower of the Church of Korppoo with the Monastery of Padise. Nikula 1973, p. 27—28. — On the attribution of the piscinas in Turku and Naantali see Kronqvist 1938 b.

<sup>17</sup> Lilius 1969, p. 37—38. — The south portal of the Church of Sund may also be classified as carved in Tallinn. The material, however, seems to be dolomite limestone. There are broken parts on the console level and in the base of the portal. This seems to indicate that the design of the portal has not originally been as simple as today. Author's observations 24. July 1991. — According to Tove Riska the south portal of the Church of Masku has been made of limestone. Riska 1961, p. 149.

<sup>18</sup> Because of the walls of the tower, the text is not completely visible, but may read: »(h)elp got un(d maria). When visiting the church on 31 March 1990 with Kaur Alttoa, he pointed out to me a cross of similar form in the east gable of the main part above a minuscule inscription in the stucco surface. At present, the gable can be seen only from the attic of the chancel, and is obscured by the roof trusses.

<sup>19</sup> Gardberg 1988, p. 189–200. — In an earlier connection, Gardberg has discussed the connections of the early stages of the Cathedral of Turku with Estonia. Gardberg 1973, p. 118–120. He has also pointed to the similarities of gable ornament in certain buildings in Tallinn and in churches in Uusimaa.

Gardberg 1976, p. 174-89. Knapas also mentions this point, without referring to Gardberg. Knapas 1987, p. 73-75. - Pirinen has discussed the possible connections of early taxation systems in Finland and Estonia. Pirinen 1987, cf. Vahtola 1984. - On Pirita, see Tamm 1980. - Following a dendrochronological dating of the church of Sipoo to around 1450 (See Zetterberg & Hiekkanen 1991), and the author's analysis of the medieval stone churches of Finland, it became evident that a new tentative chronological sequence could be proposed for the churches of Eastern Uusimaa (Helsinge, Pernaja, Porvoo, Pyhtää and Sipoo). My assumption is that these churches were built during a single generation, or a period of about thirty years, between 1440 and 1470. An analysis of the stylistic features strongly suggest that the nave of the Church of Pernaja is the oldest, thus having been built in the 1440s. This was followed by the Church of Sipoo and the extension of the Church of Porvoo – perhaps in this order. The Church of Helsinge can be regarded as slightly later (c. 1460?) that the Churches of Sipoo and Porvoo. The Church of Pyhtää is the most difficult one to place in this sequence, but its stylistic features and the documentary sources suggest that it was built last, i.e. in the 1460s but not later than 1470. This sequence is confirmed by a dating to the 1480s for the nave of the church of Espoo. The conventional, and reliable, datings of the churches of Laitila and Perniö to around 1470 also confirm the above points. Even the church of Vehkalahti to the east of this group, displays certain parallels with it.

20 Tapio 1969, p. 77, 80, 84.

<sup>21</sup> Raam dates the construction of the main part of the Church of Lüganuse to the mid-14th century. The vaulting is from the beginning of the 15th century, and the tower was erected at the beginning of the 16th century. Raam 1985, p. 25. — On the sacristies of Uppland, Sweden, see Bonnier 1987, p. 56.

<sup>22</sup> In the Åland Islands the Church of Jomala is the only one that can with any certainty be claimed to have had originally narrow chancel. The same has been suggested of the Church of Föglö, but here the chancel is hardly original, and the situation may be the same as at Hammarland, where the chancel was built in the first half of the 15th century in connection with the main part of the church that was erected in the 14th century. There may also have been a hall-type parish church in Kökar, to which a narrower chancel was added when it was taken over by the Franciscans with their specific needs for the mass. Other churches in the Åland Islands did not have narrow chancels. — In Satakunta the church of the Franciscan Convent of Rauma has narrow chancel. It dates from the late 15th century. — In Finland-Proper the Bishop's Church of Koroinen, the Cathedral of Turku and the churches of Nousiainen and Parainen have had narrow chancels. In Koroinen a stone main part was never built in connection with the narrow chancel. — In Uusimaa the churches of Inkoo, Kirkkonummi and Porvoo(?) had narrow chancels. The actual status of the Church of Porvoo still remains a problem of study. — Future studies may reveal other churches with narrow chancels. For example, the original narrow-chancel form of the Church of Parainen was not discovered until C. J. Gardberg's and Olavi Tapio's studies in 1962—63.

23 Raam 1975, p. 35-36.

<sup>24</sup> Raam 1988, p. 98-101.

<sup>25</sup> See Zetterberg & Hiekkanen 1991, p. 94—96. On the medieval foundation of some Finnish belfries see Knapas 1990.

<sup>26</sup> The bell-support of the Church of Kihelkond in Saaremaa is located apart from the church and was built in the 17th-18th centuries. Boris Dubovik, oral communication, 6 April 1990, Kihelkond.

<sup>27</sup> Pettersson 1985, p. 30-34. Pettersson 1987, p. 288, 314-316.

<sup>28</sup> Hiekkanen 1988a, p. 32-33. For the same book in Swedish, see Hiekkanen 1989, p. 32-33.

<sup>29</sup> Sarvas 1982, p. 42–46. Hiekkanen 1988a, p. 24–25, 48–52. Hiekkanen 1989, p. 24–25, 48–52.

<sup>30</sup> Hiekkanen 1986, p. 91–101. Hiekkanen 1987, p. 39–50. Hiekkanen 1988b, p. 119–121. Hiekkanen 1990, p. 247–255.

#### Literature

Alttoa, K. 1980. Tartu toomkiriku pikihoone kujunemisest. Töid kunstiteaduse ja -kriitika alalt 3. Artiklite kogumik.

Aluve, K. 1986. Uuringutest ja ennistustöödest Haapsalu linnuses 1–4. Töörahva Lipp 13.5., 1.7., 5.8., 28.10. 1986.

Bonnier, A.-C. 1987. Kyrkorna berättar. Upplands Kyrkor 1250—1350. Upplands Fornminnesförenings tidskrift 51.

Drake, K. 1959. Byggnadshistoria. Kyrkslätts kyrka. Byggnadshistoria och restaurering. Ekenäs.

Drake, K. 1967. Tegelkyrkan i Hattula. Nordisk medeltid. Konsthistoriska studier tillägnade Armin Tuulse. Stockholm.

Edgren, H. & Hiekkanen, M. 1987. Kapell eller inte kapell - det är frågan. Finskt Museum 1987.

Gardberg, C.J. 1973. Från mitten av 1100-talet till år 1366. Åbo stads historia I. Åbo.

- Gardberg, C.J. 1976. Byggnadsminnernas vittnesbörd om Finlands kulturkontakter under medeltiden. *Minjar og menntir*. Reykjavik.
- Gardberg, C.J. 1988. Der Einfluss der estnischen Baukunst auf Finnland. Beiträge zur Geschichte der baltischen Kunst. Giessen.
- Hiekkanen, M. 1986. Archaeology of the Medieval stone Church of Lempäälä in Satakunta, Finland. Finds from prehistorical and historical times. *Fennoscandia archaeologica* III.
- Hiekkanen, M. 1987. In formam octangularem exstructum Rengon kirkon pohjakaava. Muistomerkki, kirjoituksia Antero Sinisalolle.

Hiekkanen, M. 1988a. Polvesta polveen täällä. Espoon kirkon esiinkaivettua menneisyyttä. Lappeenranta. Hiekkanen, M. 1988b. The dating of the nave of the church of Lempäälä and the Medieval churches of the province of Satakunta. Fennoscandia archaeologica V.

Hiekkanen, M. 1989. Här har släkte efter släkte. Ur Esbo kyrkas framgrävda förflutet. Villmanstrand.

- Hiekkanen, M. 1990. Kring en problematisk grundplan. Rengo kyrka och andra senmedeltida polygonala byggnader i Finland. *Hikuin* 17.
- Hiekkanen 1987, see Edgren & Hiekkanen 1987.
- Hiekkanen 1991, see Zetterberg & Hiekkanen 1991.
- af Hällström, O. 1949. Hattulan vanha kirkko. Vanhaa nähtävää. Suomen Muinaismuistoyhdistyksen oppaita N:o 1. Helsinki.
- Kartano, E. 1948. Pernå kyrka. Finskt Museum LIV-LV.
- Kartano, E. 1951. Några sydfinska stenkyrkor. Finska Fornminnesföreningens Tidskrift XLIX: 3.
- Knapas, M.T. 1987. Den medeltida kyrkan i Borgå forskningsrön och nya alternativ. Finskt Museum 1987.
- Knapas, M.T. 1990. Om klockornas placering i finländska medeltidskyrkor. Hikuin 17.
- Kronqvist, I. 1938 a. Ingå kyrka. Finskt Museum XLV.

Kronqvist, I. 1938 b. Keskiaikaisen kirkkokaluston muistoja. Suomen Museo XLV.

Kronqvist, I. 1941. Hattulan kirkon pyhän ristin muistoja. Suomen Museo 1941.

- Kronqvist, I. 1948. Die mittelalterliche Kirchenarchitektur in Finnland. Jälkeenjääneitä tutkielmia. Suomen Muinaismuistoyhdistyksen Aikakauskirja XLVIII: 1.
- Lilius, H. 1969. Birgittinerkyrkan i Nådendal. Finska Fornminnesföreningens Tidskrift 69.
- Lindberg, C. 1926. Byggnadskonsten. Finlands konst från förhistorisk tid till våra dagar. L. Wennervirta ed. Helsingfors.
- Lumiste, M. 1976. Niguliste kiriku ehitusliku kujunemise móningatest probleemidest. Restaureerimisalaste artiklite kogumik. Tallinn.
- Mäeväli, S. 1986. Tallinnan rakennus- ja taidemuistomerkkejä. Tallinna.
- Niitemaa, V. 1959. Baltian historia. Historiallinen kirjasto XVI.
- Nikula, S. 1973. Korpo. Finlands kyrkor Suomen kirkot 7. Esbo.

Pettersson, L. 1955. Hämeen linna ja Hämeen keskiaikaiset kirkot. Hämeen historia I. Hämeenlinna.

Pettersson, L. 1985. Kyrkor och klockstaplar i svenska Österbotten. Svenska Österbottens historia V. Vasa.

- Pettersson, L. 1987. Templum Saloense. Pohjalaisen tukipilarikirkon arvoitus. Suomen Muinaismuistoyhdistyksen Aikakauskirja 90.
- Pirinen, K. 1955. Suomen lähetysalueen kirkollinen järjestäminen. Suomen kirkkohistoriallisen seuran vuosikirja 56.
- Pirinen, K. 1987. Koukkuverotuksen alkuperä. Muinaisrunot ja todellisuus. Suomen kansan vanhojen runojen historiallinen tausta. *Historian aitta* XX.
- Pylkkänen, R. 1954. Isokyrön vanha kirkko. Kytösavut VI. Vaasa.
- Raam, V. 1971. Kaarma kirik. Eesti NSV Ehitusmälestisi.
- Raam, V. 1975. Gootika. Eesti kunst kõige varasemast ajast kuni 19. saj. keskpaigani. *Eesti kunsti aja-lugu* I. Tallinn.
- Raam, V. 1983. Nelinurkse kooritüübi móningatest variatsioonidest Eesti keskaegses arhitektuuris. Kunstiteadus kunstikriitika 5. Artiklite kogumik.
- Raam, V. 1985. Keskaegsete linnuste ja kirikute arengujooni Eestis. Ehitus ja arhitektuur 1/2 85.
- Raam, V. 1986. Märkmeid Ambla kirikust ja Kesk-Eesti kirikute ehitusloost üldse. Kunstiteadus kunstikriitika 6. Artiklite kogumik.
- Raam, V. 1988. Sakraalehitised. Arhitektuuri- ja kunstimälestised. Harju rajooni ajaloo- ja kultuurimälestised. Kaitsetavad mälestised. Tallinn.

Rinne, J. 1914. Suomen keskiaikaiset mäkilinnat. Helsinki.

- Rinne, J. 1935. Gotiikan ja renesanssin mestareita rakennusalalla Turussa. *Historiallinen Aikakauskirja* 1935. Helsinki.
- Rinne, J. 1941. Tuomiokirkon rakennushistoria. Turun tuomiokirkko keskiaikana I. Turku.
- Riska, T. 1961. Lemu. Rusko. Suomen kirkot Finlands kyrkor 2.
- Riska, T. 1987. Keskiajan maalaustaide. Ars Suomen taide 1. Keuruu.
- Sarvas, P. 1982. Espoon kirkon rahalöydöt. Suomen numismaattisen yhdistyksen tiedotuslehti 2:1982.
- Schmidt, K. 1941. Die Zisterzienser im Baltikum und in Finnland. Suomen kirkkohistoriallisen seuran vuosikirja XXIX-XXX, 1939-1940.
- Sinisalo, A. 1983. När välvdes Åbo domkyrka? Finskt Museum 1981.
- Tamm, J. 1980. Pirita. Tallinn.
- Tapio, O. 1968. Petrus Murator -tyyppiset holvit Suomen keskiaikaisissa kivikirkoissa. Stencile. University of Helsinki.
- Tapio, O. 1969. Nousiaisten Pyhän Henrikin kirkko. Turku.
- Tuulse, A. 1953. Om konstförbindelserna Estland-Finland under medeltiden. Finskt Museum 1953.
- Tuulse, A. 1973. Die Kirchen auf Åland und im Norden. Ålands kyrkor.
- Vahtola, J. 1984. Tuomas-piispasta Birger-jaarliin näkökulmia Suomen varhaiskeskiajan kirkkopoliittiseen kehitykseen. *Historiallinen Aikakauskirja* 1/1984.
- Zetterberg, P. & Hiekkanen, M. 1991. Dendrochronological studies on the age and construction phases of the medieval stone church of Sipoo (Sibbo), southern Finland. *Finskt Museum* 1990.