



Archaeological investigations in Tarvastu Castle of the Teutonic Order

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INTRODUCTION

Knowledge about Tarvastu Castle (Fig. 1A) in Viljandi County has been relatively scarce. Essentially, most publications repeated the same information presented by Karl von Löwis of Menar (1922, 116) in the *Lexicon of Livonian Castles* and Armin Tuulse (1942, 246–247) in his research on Estonian and Latvian stone castles. This was primarily due to the scarcity of written sources.¹ The construction of the castle was believed to have taken place in the 14th century (e.g., Tuulse 1942, 246). It is known that Tarvastu Castle was under the authority of the Viljandi commandery of the Teutonic Order in Livonia (Löwis of Menar 1922, 116). The first written mention of Tarvastu Castle dates back to the year 1410 when the Livonian Master stayed at the castle (Löwis of Menar 1922, 116). Later references to the castle include its association with the stay of the Livonian Master as well as Russian (1480, 1560) and Lithuanian (1561) military incursions (Löwis of Menar 1922, 116; Renner 1995, 148, 170; Polska 1915, 17). According to written sources, the castle was destroyed by the Lithuanians in 1561 (Renner 1995, 148, 170). Additionally, it has been suggested that there was a hill fort at the same location in prehistoric times. Jaan Jung (1898, 157 and 169) already claimed this, loosely connecting it to the description of Bishop William of Modena's campaign to Sakala presented in the *Livonian Chronicle of Henry*, where he met the Estonians in the first parish along the shores of Lake Võrtsjärv (HCL XXIX: 3). This assumption persisted in subsequent references (Laid 1923, 56, 105; Tõnisson 2008, 279), but is likely to be incorrect (Valk *et al.* 2022, 126).

The first archaeological excavations at Tarvastu Castle were carried out in 2021 (Valk *et al.* 2022).² In the summer of 2022, archaeological monitoring took place in the castle ruins over an extensive area (approximately 1670 m²; Fig. 1C) in connection with the removal of soil and

¹ We will only briefly touch upon this topic because the comprehensive information from written sources was presented recently, see Valk *et al.* 2022, 113–114.

² In 2015, archaeological monitoring took place near the castle during the dredging of the Tarvastu River (Bernotas 2016).

construction rubble for conservation work (Fig. 1). All cleared structures and their parts were documented, and finds were collected. This article provides a brief overview of the results of these studies, focusing on architectural elements and construction details.

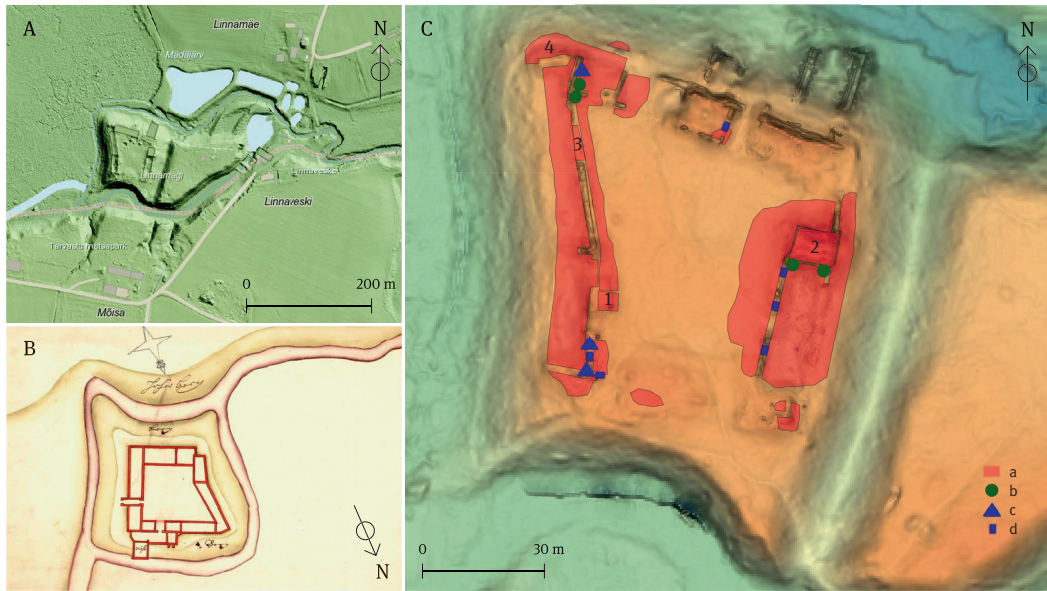


Fig. 1. A – location of the Tarvastu Castle of the Teutonic Order. B – plan of the castle, presumably from the 1680s (SE/KrA/0406H/28/049/001). C – investigated area in 2022 and significant exposed structures at Tarvastu Castle (1 – vaulted cellar, filled with rubble, 2 – the eastern gate, 3 – a presumed gate in the western wall, 4 – a presumed gate in the northwest corner of the castle). Legend: a – areas where rubble was removed during conservation, b – remains of a brick vault, c – a niche, d – a door or window opening.

Jn 1. A – Tarvastu ordulinnuse asukoht. B – tõenäoliselt 1680. aastatel tehtud linnuse plaan (SE/KrA/0406H/28/049/001). C – 2022. aasta uuringuala ja olulisemad avatud konstruktsioonid (1 – osaliselt rusuga täidetud võlvitud keldriruum, 2 – väravakäik idamüüris, 3 – oletatav väravakoht läänemüüris, 4 – oletatav väravakoht linnuse loode-nurgas) Tarvastu linnusel. Tingmärgid: a – alad, kust teiseldati konserveerimise käigus rusukihti, b – tellistest võlvijäänus, c – nišš, d – ukse- või aknaava.

Maps / Kaardid: A – Estonian Land Board / Maa-amet, B – The Military Archives of Sweden / Rootsi sõjaarhiiv, C – Valk et al. 2022, Fig. 4 / jn 4.

ARCHITECTURAL REMAINS AND THEIR COMPONENTS

Tarvastu Castle covers a relatively large area of 6555 m². Part of the castle follows the strict rectangular shape characteristic of castles, while the western side conforms to the natural contour of the hill. In addition, a dansker associated with a watermill was located in the northern part (Tuulse 1942, 146; Fig. 1).

The castle was constructed using crystalline stones bound with lime mortar, with bricks used sporadically (Figs 2, 3). At least in some places, the visible portions of the walls built on the plinth (Fig. 3) were made of larger stones, while smaller stones were used for the inner parts (Fig. 3). The outer wall was up to 2.2 metres thick. Mortar was applied between the larger stones to which smaller stones and brick fragments were added. Lining stones were hewn on the exposed sides. While most architectural elements and details were made of bricks, some were also carved out of lime- and sandstone. The bricks were in at least four sizes: 10 × 15 × 30 cm, 8 × 15 × 30 cm, 8 × 14 × 28 cm, and 9 × 12 × 26 cm.

Several places in the walls displayed stone laying horizons of a single construction season, the upper edges of which were levelled with mortar and smaller stones before drying. Based on these sections, it can be inferred that the walls of Tarvastu Castle were raised by up to two meters in height within a year. Some parts of the walls had hewn logs placed inside the walls during construction, which have decayed over time, leaving only hollows. These log hollows are visible in the western and northern walls of the castle as well as in the dansker. It is likely that these logs supported wooden frameworks. The walls have been rebuilt and made higher.



Fig. 2. Eastern part of the southern wall of the gateway in the eastern wall of the castle. Plaster has partially preserved on the wall.

Jn 2. *Idapoolne osa linnuse idamüüris asuva väravakäigu lõunaseinast. Seinal on osaliselt säilinud krohvi.*

Photo / Foto: Ragi-Martin Moon

A. Tuulse (1942, 247) assumed that the older parts consist only of crystalline stones, while in later ones, bricks are also present. Our data suggests that at least in the northwestern corner of the castle, there are extensions with no bricks. The castle walls were partially plastered.

The roofs were covered with ceramic roof tiles. During archaeological fieldwork in 2021 and 2022, several intact and broken monk-nun-style roof tiles were found. At least some of the windows had had lead frames and glass for some time, supported by fragments of window glass found during the 2021 and 2022 excavations and pieces of lead window comes (Valk *et al.* 2022, 119, 125).

The destruction of the castle was extensive, as it had burnt with such intense heat that the bricks in the walls partially became clinkered and even melted. In the case of Quaternary clays from which these bricks were probably made, this would mean that the temperature must have risen to over a thousand degrees (Kriiska 2008, 191–192 and references therein). Furthermore, the use of stones from the castle for the construction of the manor and church further contributed to the destruction of the castle (Valk *et al.* 2022, 114). However, during the fieldwork in 2022, a partially rubble-filled vaulted cellar room was discovered in the southwest corner of the castle, which has likely survived in its entirety (Fig. 1C: 1).

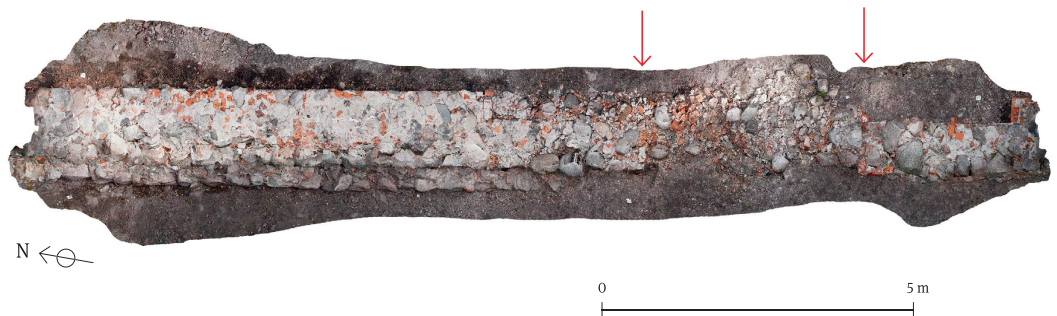


Fig. 3. A possible gateway filled with rubble in the western wall of the castle, marked with arrows.

Jn 3. *Rusuga täidetud arvatav väravakäik linnuse läänemüüris, tähistatud nooltega.*

Photo / Foto: Sander Jegorov

The largest partially investigated structures are the gateways. Clearing the gateway located in the eastern wall of the castle was undertaken. It is the only identifiable gate which is also the only gate shown on the oldest known plan of the castle which probably dates from the 17th century (Fig. 1B). The length of the passageway is 12 metres and its width is 4.4–4.6 metres, and 3.8 metres in the outer part. The southern wall of the gateway, part of which was exceptionally well-preserved, was plastered (Fig. 2). It is possible that the plaster was tinted red. The gateway has suffered significant damage from an explosion. In the central part, the walls have been pushed outward, and most of the lining stones on the northern wall have collapsed. The rubble layer filling the gateway contained, among other things, clinkered and powdered brick fragments. The appearance of natural limestone pieces³ in this layer suggests that the explosion may have mixed the soil up to the moraine (Fig. 5B: 1–2).

It is possible that there used to be another gateway in the western wall of the castle. A 3.4 m wide opening with brick lining⁴ filled with rubble is discernible (Figs 1C: 3; 3). From the northwest corner of the castle, another 2.6 m wide opening was cleared, possibly the site of a small secondary gate (Fig. 1C: 4).

In three rooms, brick vault supports were found (Figs 1C; 4), which were constructed later than the walls and confirm the previous assumption that the wooden beamed ceilings were replaced with vaulted ones (Tuulse 1942, 246).



Fig. 4. A room in the northwest part of the castle, in which remains of brick vault arches and a brick-lined niche were discovered.

Jn 4. Ruum linnuse loodeosas, millest leiti tellistest võlvijäänused ja tellistega vooderdatud nišš.

Photo / Foto: Aivar Kriiska

In two of the rooms, wall niches were discovered. In one case, it was constructed within the crystalline stone wall and lined with bricks, while the other two were built into the brick wall on either side of the door opening (Figs 1C; 4). In total, five door and window openings were cleared out in three rooms. They ranged in width from 0.85 m to 1.9 m and were mostly framed with brick jambs (Fig. 5A).

Most of carved limestone and sandstone details and their fragments are associated with door and window openings, with the exception of the gateway and its surroundings located in the eastern wall (Fig. 5). Sandstone has been used both for crafting carved details and, in some places, laid as pieces in the walls. Sandstone is either gray or reddish, rich in fine-grained more or less cemented aleurolite. The rocks are local and originate from the Middle

³ This is likely micritic limestone from the Upper Ordovician deposits (Fig. 5: 1, 3) and the Lower Silurian Raikküla Formation limestone (Fig. 5: 2).

⁴ The bricks measure 8 × 15 × 30 cm.

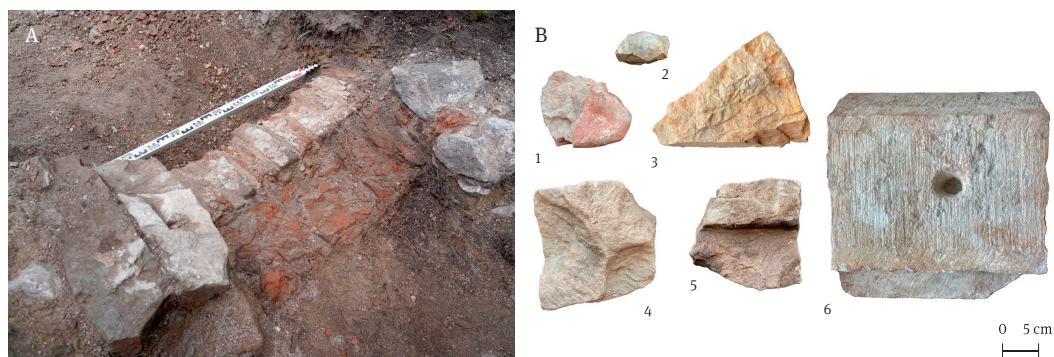


Fig. 5. Limestone and sandstone finds from Tarvastu Castle. A – a door opening uncovered in the southwest part of the castle, with carved sandstones on one side. B – examples of limestone and sandstone, 1–3 – pieces of limestone found in the rubble layer of the eastern gateway, possibly originating from the moraine of the castle hill, 4 – a fragment of carved sandstone found near the eastern gate, 5 – a fragment of carved sandstone found near the rubble layer of the eastern gate, 6 – a fragment of carved limestone found in the door opening uncovered in the southwest part of the castle.

fn 5. Lubja- ja liivakivi leiud Tarvastu linnuselt. A – linnuse edelaosas avatud ukseava, mille ühel serval on liivakivist raidkivid. B – näited paest ja liivakividest, 1–3 – idamüüris paikneva väravakäigu rusukihist leitud lubjakivi tükid, mis tõenäoliselt pärinevad linnuse mäe moreenist, 4 – idamüüris paikneva väravakäigu lähedalt leitud liivakivist raidkivi tükk, 5 – idamüüris paikneva väravakäigu lähedalt rusukihist leitud liivakivist raidkivi tükk, 6 – linnuse edelaosas avatud ukseavast leitud lubjakivist raidkivi tükk.

Photos / Fotod: Irina Khrustaleva, Sander Jegorov

Devonian Aruküla Formation of the Tarvastu Member, the closest outcrop of which is beneath the castle hill. Some of the carved stones (Fig. 5: 6) are from layered bioclastic gray limestone. These come from the Middle Ordovician Vão Formation outcropping in North Estonian Klint areas and were likely transported as finished products to Tarvastu.

FINDS

In total, 148 finds were obtained from the castle, with the majority coming from the inner courtyard. The predominant part (127) consists of fragments of simple wheel-made coarseware pots, supplemented by green-glazed grayware (TÜ 3056: 1), a sherd of Raeren stoneware (Fig. 6: 3), and a foot of a tripod pot (TÜ 3056: 113).

Of the 24 rim fragments of coarseware pots, at least 15 belong to Northwestern Russian-style ceramics group 5 (Tvauri 2000; 2004, 389–400) (Fig. 6: 2), characterized by a short outwardly turned rim. Considering typochronological datings and written records related to Tarvastu Castle, group 5 pottery fragments, as well as one sherd of green-glazed grayware, can be dated to a relatively short period in the 1560s when Tarvastu Castle was under the control of the Muscovite Tsardom's military. Based on the distribution of the finds, it appears that some of the debris was discarded in the corners of the castle's inner courtyard at that time.

Some pottery fragments (Fig. 6: 1) may originate from pots that were made before the events of the Livonian War (1558–1583). Finds that for certain date from the Medieval period are crossbow bolts (Fig. 6: 7–8). They originate from the 14th to 15th centuries according to analogies (Mäesalu 1991). Among other finds, it is worth mentioning a sandstone casting mould for making lead bullets with a maker's mark on one side (Fig. 6: 4), two lead bullets (Fig. 6: 5–6), a fragment of a small cannonball (TÜ 3056: 141), and an axe (TÜ 3056: 136) with preserved wood in its eye.

Our finds corroborate the results of the 2021 excavations (Valk *et al.* 2022) – we also collected domestic waste from a Russian military camp from the second half of the 16th century and a few earlier items, even though they are not older than the second half of the 14th century.



Fig. 6. Finds collected from Tarvastu Castle. 1–3 – pottery fragments, 4 – a casting mould made of sandstone for lead bullets, 5–6 – lead bullets, 7–8 – crossbow bolt tips.

Jn 6. Tarvastu linnuselt kogutud leide. 1–3 – savinõukillud, 4 – pliikuulide liivakivist valuvorm, 5–6 – pliikuulid, 7–8 – ammuooleotsad.

(TÜ 3056: 13, 45, 142, 140, 139a, 139b, 24, 27.)

Photos / Fotod: Aivar Kriiska, Ragi-Martin Moon

CONCLUSIONS

The sections of the wall opened during the 2022 fieldwork and the collected finds supplement significantly earlier information about Tarvastu Castle. Several architectural elements were excavated, such as door and window openings, niches, and remnants of brick vaults. In addition to the known gate passage in the eastern wall of the castle, another wider opening filled with rubble was found in the west and in the northwest corner of the castle, which could also potentially be gate passages. Construction details were documented, including the use of materials, stone laying horizons, and the use of local and imported stones in construction details etc.

The finds collected date from the 14th to the 16th centuries, confirming existing knowledge about the time of the castle's establishment and abandonment. Just as limited written sources and previous architectural observations have already suggested, we also observed that the castle was built in several stages and underwent multiple renovations. The clinker and even melted bricks in the walls testify of a significant and intense fire within the castle. The east gate passage, likely intentionally destroyed, shows considerable signs of damage as well. Both the inner part of the passage with collapsed and partially outwardly inclined walls and clinker and powdered bricks suggest a strong explosion.

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ARHEOLOOGILISED UURINGUD TARVASTU ORDULINNUSES

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2022. aasta suvel toimus Tarvastu ordulinnuse varemetes arheoloogiline jälgimine, sest konserveerimistöödeks eemaldati u 1670 m² suurusel alal müüride vastu kuhjunud pinnast ja ehitusrusu (jn 1).

Linnus on ehitatud lubimördiga seotud kristalsetest kivimitest (jn 2), kuid üksikutes kohtades on kasutatud ka telliseid. Paiguti soklile ehitatud müüride nähtavad osad on suurematest ja siseosas väiksematest kividest (jn 3). Välismüür on kuni 2,2 m paksune. Voodrikivid on enamasti välisküljelt tahutud. Osa ehituselemente ja -detaille on tehtud tellistest, veidi on kasutatud ka liiva- ja lubjakive. Müürides võis täheldada mitmel pool ühe ehitushooaja jooksul laotud löike (ladumiskordi), mis olid tasandatud mördi ja väiksemate kividega ning jäetud kuivama. Kohati on müürides olnud ladumise ajal tahutud palke, mis on ajapikku kōdunenud ja neist on jäänud vaid pesad. Sellised palgipesad on nähtavad nii linnuse lääne- kui ka põhjamüüris ja danskeris. Vähemalt osaliselt olid linnuse seinad krohvitud. Katusematerjalist leiti mitmeid terveid ja purunenud munk-nunn-tüüpi katusekive. Vähemalt osadel akendel (ja vähemalt mingil ajal) olid ees tinaraamid klaasid, mida kinnitavad 2021. aasta kaevamistel leitud aknaklaasi killud ja pliist klaasiraamide tükid. Linnuse häving oli mas- taapne, see on põlenud sedavõrd suure kuumusega, et seintes olevad tellised on osaliselt klinkerdunud ja

isegi sulanud. 2022. aasta välitöödel avastati aga linnuse edelaosast siiski üks osaliselt rusuga täidetud võlvitud keldriruum, mis on säilinud tõenäoliselt täismahus (jn 1C: 1).

Suurimad osaliselt uuritud konstruktsioonid on väravakäigud. Alustati linnuse idamüüris paikneva väravakäigu väljapuhastamisega. See on ainus tänini nähtav ja ka ainus vanimal teadaoleval, tõenäoliselt 17. sajandil tehtud plaanil (jn 1B) kujutatud värav. Käigu pikkus on 12 m ja laius 4,4–4,6 m, välimises osas 3,8 m. Väravakäigu lõunasein, millest osa oli erandlikult hästi säilinud, oli krohvitud (jn 2). Väravakäiku on väga tugevalt kahjustatud plahvatusega. Selle keskosas on müürid vajunud väljapoole ja enamus põhjaseina voodrikive varisenud sisse. Väravakäiku täitev rusukiht sisaldas muuhulgas klinkerdunud ja pulbristunud tellisetükke. Selles leiduvad loodusliku lubjakivi tükid (jn 5: 1–3) osutavad, et plahvatus võis pinnase segada kuni moreenini. Võimalik, et väravakäik oli ka linnuse läänemüüris (jn 1: 2). Seal eristus rusukihiga täidetud 3,4 m laiune tellistest põskedega avaus (jn 1: 3; 3). Linnuse loodenurgast puhastati välja veel üks 2,6 meetri laiune avaus, kus võis paikneda linnuse väike kõrvalvärav (jn 1: 4).

Kolmest ruumist leiti tellistest võlvide kanda (jn 1, 4), mis on rajatud müüridest hiljem ning kinnitavad senist oletust linnusest toimunud ümberehitustöö-

dest, mille käigus puittaladega laed asendati võlv-lagedega. Kahest ruumist avastati seinanišid (jn 1C, 4). Kolmest ruumist puhastati välja kokku viis 0,85 m kuni 1,9 m laiust ukse- ja aknaava. Ukse- ja aknaava-dega seonduvad ka enamik pae- ja liivakivist raidkive ja nende tükke (jn 5), erandiks idamüüris paiknev väravakäik ja selle ümbrus. Liivakivi on kasutatud nii raiddetailide tegemiseks kui ka pandud kohati tükki-dena müüridesse. Liivakivi puhul on tegemist kas halli või punaka vilgurikka peeneteralise rohkem või vähem karbonaadiga tsementeerunud aleuroliidiga. Kivimid on kohalikud, need pärinevad Kesk-Devoni Aruküla lademe Tarvastu kihistikust, mille lähim avamus on linnuse mäe all. Osa raidkive (jn 5: 6) on kihili-sest bioklastilisest hallist lubjakivist. Need pärinevad Kesk-Ordoviitsiumi Väo kihistikust ja on tõenäoliselt toodud valmistoodanguna Tarvastusse Põhja-Eestist.

Välitöödel koguti 148 esemeleidu. Valdava osa moodustavad lihtsad kedral valmistatud savinõude

killud, lisaks üks rohelise glasuuriga halli savinõu tükk, üks Raereni kivikeraamika kild ja üks graapeni jalg. Kedrakeramika 24-st servatükist kuuluvad vähe-malt 15 loodevenepärase keraamika rühma 5 (jn 6: 2). Arvestades tüpokronoloogilisi dateeringuid ja kirja-likke ülestähendusi Tarvastu linnuse kohta on need, nagu ka nimetatud rohelise glasuuriga halli savinõu kild dateeritav suhteliselt lühikesse vahemikku 1560. aastatesse, mil Tarvastu linnus oli Moskva tsaaririigi sõjaväe valduses. Osa savinõukilde võivad olla potti-dest, mis on valmistatud enne Liivimaa sõda (jn 6: 1). Keskaegsed on kaks rootsuga ammunooleotsa 14.–15 sajandist (jn 6: 7–8). Muudest leidudest on mainimis-väärsed pliikuulide valmistamiseks mõeldud liiva-kivist valuvorm, millel oli ühel küljel meistrimärk (jn 6: 4), kaks pliist püssikuuli (jn 6: 5–6), väike kahurikuuli tükk ja kirves, mille silmas oli säilinud puitu.