



CASTELLA MARIS BALTICI 6

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Front cover: Castle of Trakai

Photos by Albinas Kuncevičius

Back cover: Royal palace in an Upper castle.

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On September 18–22, 2001 the Symposium Castella Maris Baltici VI was held in Lithuania. This is already the 6th symposium for the researchers of the medieval castles. The first symposium was held in Turku, Finland in 1991, the second – in Nyköping, Sweden in 1993, the third - in Malbork, Poland in 1995, the fourth - in Estonia in 1997, and the fifth – in Denmark in 1999.

The topic of the conference held in Lithuania was “Contacts and Genetically Dwellings in the Castle Buildings”. Over 40 scientists participated in the conference from Denmark, Belarus, Finland, Sweden, Switzerland, Germany, Russia, Great Britain, Poland, Latvia, Estonia, and Lithuania. In the conference there were not only reports presented but also the most famous castles of Lithuania visited in Vilnius, Trakai, Kernavė, Kaunas and Klaipėda.

The time of this conference coincided with the European Heritage Days “Defensive Fortifications in Lithuania”.

This conference was organised by the Public Institution Academy of Cultural Heritage established by Vilnius University, Vilnius Academy of Arts, Vilnius Gediminas Technical University, Ministry of Culture of the Republic of Lithuania and Department of Cultural Heritage Protection. The Symposium Castella Maris Baltici VI was sponsored by the Department of Cultural Heritage Protection.

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Especial thanks deserve my colleagues who organised this event Rita Mosiejienė, dr. Justina Poškienė and dr. Gintautas Zabiela.

Dr. Albinas Kuncevičius

the tactical objectives of reinforcing positions in Panemunė.

The unsuccessful defence at the brick castle of Kaunas made it possible for the Order to destroy the Lithuanian wooden castles in Lower Panemunė and transfer the war actions further into the depth of the country. Lithuania regained actual control of this region only after the battle of Tannenberg in 1410.

During the battles lasting for more than 100 years Lithuania demonstrated considerable receptivity to various novelties in the military sphere. This became especially noticeable in around the middle of the 14th century. As regards castles, this was basically manifested in the construction of brick castles and the motte and bailey-type castles. The efforts of the Order, in the meantime, and construction of brick castles of Gotteswerder and Marienwerder close to Kaunas

did not bring about the expected results. The motte and bailey type castles reinforced with brickwork were still too weak compared to the input of resources. After a while, therefore, the Order returned to wooden castles of this type, which seem to have been considerably modified and displayed more resemblance to fortifications built on plain localities.

The available data on the castles of Lower Panemunė testify to their fairly complicated development during a relatively short historical period, and we have just embarked on revealing its aspects in more detail.

1. I'm grateful to Mgr. T. Baranauskas for consultations in this case.

Algirdas Žalnierius

THE FIRST CASTLE OF KAUNAS

Die erste Burg von Kaunas

Die erste Burg von Kaunas entspricht dem Typus des viereckigen Kastells, die im Territorium des Grossfürstentums Litauen in der Mitte des XIV. Jahrhunderts gebaut wurde. Die Burg stand am linken Ufer des Flusses Neris, ungefähr 600 Meter nach Nordosten vom Zusammenfluss von Neris und Nemunas, am Platz einer frühgeschichtlichen Siedlung. Gemäss den Funden datiert man die Siedlung ins X. bis XII. Jahrhundert. Bis ins XIX. Jahrhundert schwemte der Fluss den grössten Teil der Burg weg.

Den Verteidigungskomplex der Burg, der etwa 4 ha umfasst, bildete ein Viereck in Trapezform. Die Höhe der Umfassungsmauer beträgt 12 m, die Stärke 2,5 m. Die Mauern der Burg bestehen aus Stein, aus Ziegeln die Schiessöffnungen, das Tor, vielleicht der Oberteil der Mauern und der Mauerschalen auf der Aussenseite. Die Fläche des Burgdorfes misst 5200 Quadratmeter. Gemäss den Forschungsergebnissen wurden bis zur Belagerung von 1362 nicht alle geplanten Befestigungen beendet. Für den Bau der Burg dürften ungefähr 16000 Tonnen Baumate-

rial verbraucht worden sein, aus dem Verteidigungsgraben etwa 70000 Kubikmeter Kies ausgehoben. Im Dorf der Burg standen Wohn- und Wirtschaftsgebäude.

Während der Untersuchung kamen sehr wenig Funde zum Vorschein. Das waren Kochtöpfe mit dem Stempeldekor. Den grössten Teil der Funde von 1362 bildeten die während der Belagerung verlorenen Spitzen für Armbrust-Bogen- und Ballistenpfeile.

Am Ende der Regierungszeit des Fürsten Gediminas ergaben sich reale Möglichkeiten und Bedingungen, um in Kaunas eine erste Burg zu bauen, und die Voraussetzung ergab sich nach 1348, nach der Schlacht von Strevo, weil dieser Feldzug des Deutschen Ordens eine ernste reale Gefahr für die Hauptstadt des Grossfürstentum Litauens Vilnius bildete. Vorbereitungsarbeiten für den Bau der ersten Burg von Kaunas setzten 1359 bis 1360 ein, der Bau dauerte bis 1361 und war im Frühling 1362 noch nicht abgeschlossen.

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In the 14th century territory of the Grand Duchy of Lithuania were built four masonry *castellum* castles. Today Lithuania has a well preserved Medininkai castle. No traces of the first Kaunas castle can be found on the surface of the ground as on the remains of the first castle the second Kaunas castle was built. The castles of Lyda and Kréva are in the territory of contemporary Belarus. (Fig. 1). These entire castles have received lots of attention from researchers. The purpose and the beginning of construction, as well as the evolution of the castles, has been interpreted and explained variously.

When in 1989–2000 the archeological excavations were renewed, an area of 1265 m² was explored. The latest investigations added extra information to the already known data concerning the beginning of habitation of Kaunas castle, as well as the stages of the first and second phases of construction and the process of development. However, regarding the beginning of construction and the stages of development of both castles, the new findings in many ways contradict the opinion that has been dominant until recently.

The greatest influence, which had to do with the dating of Lithuania's first masonry castles, was of archeologist K. Mekas, who researched the castles of Kaunas, Biržai, Medininkai, Liškiava, the peninsula

of Trakai, and Klaipėda. All of it is an his archeological heritage and authority (Mekas 1960, 1971, 1993) Perhaps, K. Mekas was paying tribute to romanticism and the wish not to be inferior to neighboring countries while he was dating the first masonry castles of the GDL of 13–14th centuries. But the methodology of his research, rational attitude towards the archeological layers and dependency on architectural feature, substantiated further investigation as much of the castles as Lithuanian medieval towns.

The prolific writings of architecture history experts also had its say on the dating of the early first Lithuanian brick castles. But there was a lack of criticism on their part of the 16–17th century historical sources and the 19th century authors since most of their attention was devoted to the planning of structures, the development of construction stages, masonry constructions and techniques (Abramauskas 1963; Baglasov, Trusov 1981; Lietuvos 1987:37–38; Raulinaitis 1964; Tkačou 1977; 1978; 1988). Probably the only person, who had doubts about the early dating of Medicinal castle was J. Jurginis (Jurginis 1971:171–174).

Today in the castle you can see the masonry of the second Kaunas castle, which was built on the remaining remains of the first castle underground. In the castle site there was a 1.80–3.50 m thick layer of

cultural strata. In the surrounding defences its thickness reaches up to 10 m. Now we can divide the formed layer of cultural strata of the castle site into 5 corresponding horizons of the development stages of both castles:

1. The ancient settlement layer dated to the 10–12th centuries;
2. The horizon of the first castle construction and ruins dating to the 14th century–1362;
3. The horizon of wooden fortifications that was formed after the first castle was ruined and the second was built;
4. The horizon that formed during the construction and existence of the second castle dated around the 14–15th and mid of the 17th centuries;
5. The horizon of falling apart of the second castle dating to the 17th–mid 20th century.

According to the archeological research findings of many years, the location of first confluence of the Nemunas and Neris Rivers in the 14th century was quite different from the present one (Fig. 2). In the very confluence of Nemunas and Neris rivers there existed an island of about one hectare size. The slope of the first floodplain terrace of the left bank of Neris River was about 40 meters to the East from the present watercourse. The lower floodplain terrace

was around 20 meters level. The Nemunas and Neris rivers were flowing much lower. According to the opinion of geologists, the initial surface of the Neris River bed was 17.0 at the water level of 19.0–19.5 meters. Until the beginning of the 20th century the bed of Neris river was silted up and rose 2.5–3.0 meters. At the 14th century Neris River was already flowing not too far from the wall of the first castle.

In the castle site, the surface of over-floodplain terrace is at the level of 26.20–26.70 meters, i.e. around 7m higher than the former Neris River watercourse surface. The surface of the terrace in the east somewhat rises and in a larger part of the old town of Kaunas that is closer to Nemunas River is at the height of 27.00–27.50 m.

The first Kaunas castle was built on the first Neris River ver-floodplain terrace slope, which is about 600 m northeast from Nemunas and Neris Rivers confluence and about 450 m to the north from the watercourse of Nemunas. The site of Kaunas castle was not selected coincidentally. The purpose was to a state fortress in order to defend from the water way along Neris river that leads to the capital Vilnius, crossings and fords, which were in Neris River not too far from the confluence. Attention was paid to the relief of the confluence's ground, building the castle in the narrowest place between Neris river and the castle

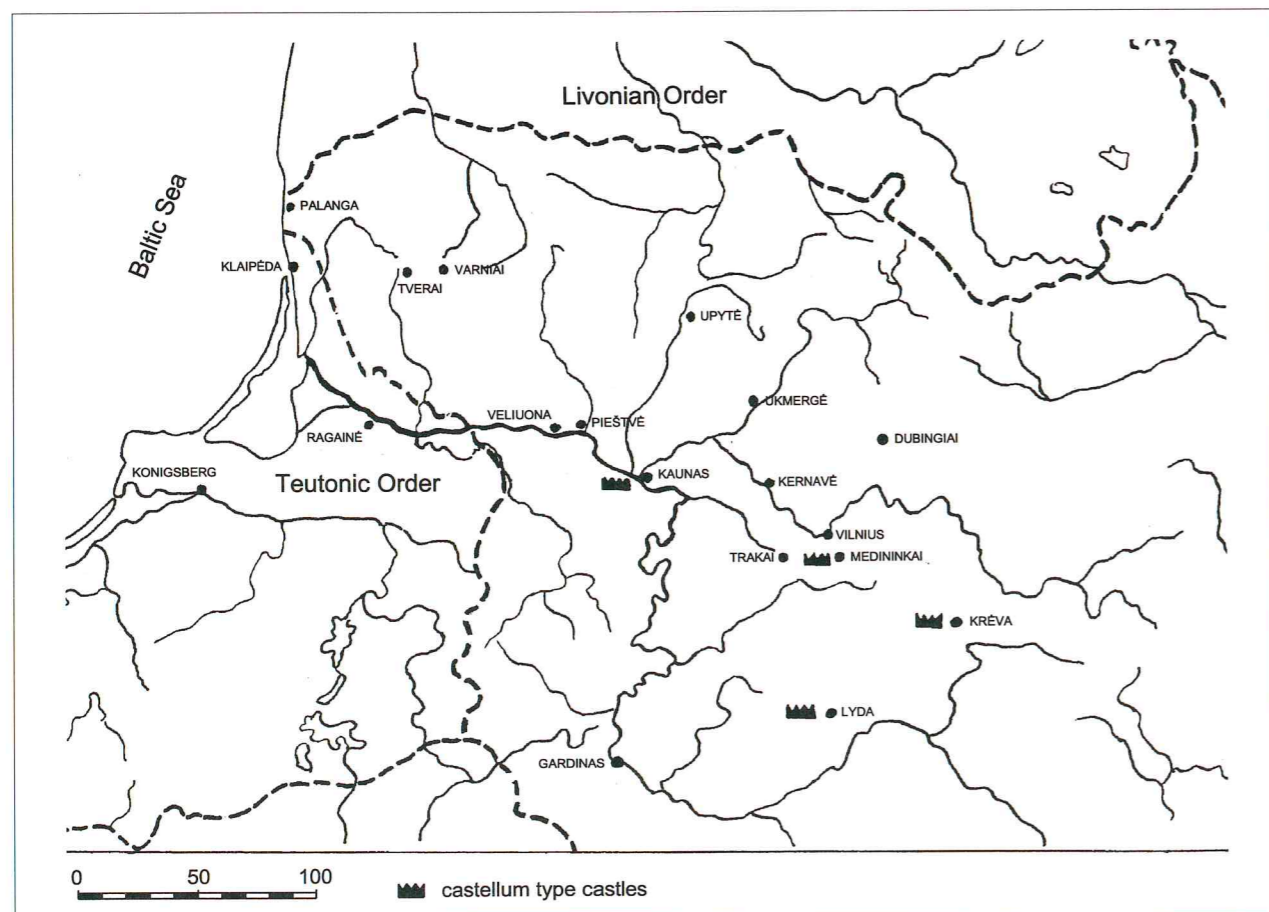


Fig. 1. The 14th cent. Castellum type castles in the Great Duchy of Lithuania

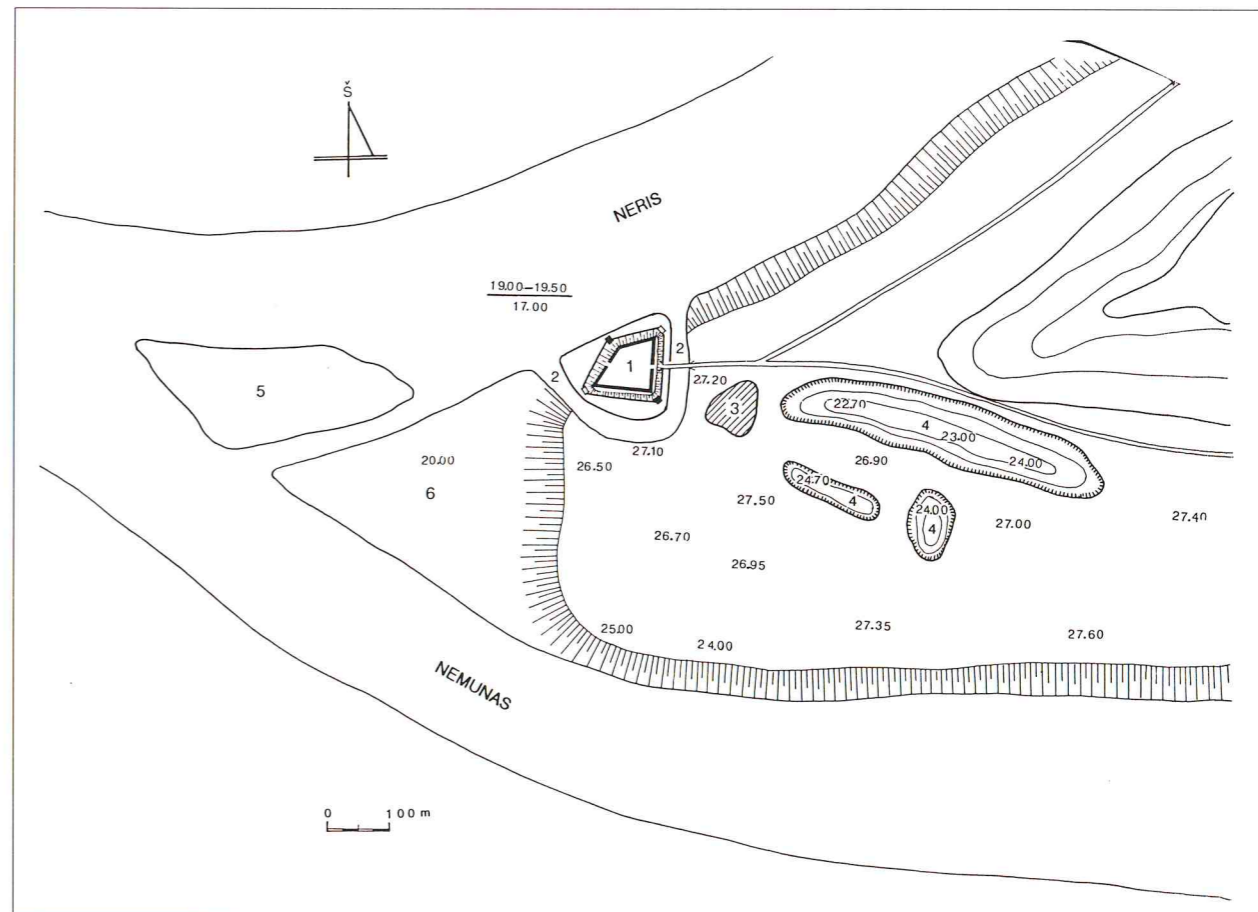


Fig. 2. The first Kaunas castle and the territory in confluence of the Nemunas and Neris rivers in 14th cent. 1. castle 2. defensive ditch. 3. the settlement of XIV century 4 the old riverbed survival 5 the island. 6. the first floodland.

site's former remains of the old riverbed to the East. The remains of the old riverbed eased the control of the passage to the left bank valley of Neris River.

The first Kaunas Castle was erected in the place of the ancient settlement. During the excavations, the entire grounds castle territory was found up to 40 centimeters thick stratum of gray brownish mould with burnt traces. The layer of the settlement was not found that could have been outside the castle's southern defence ditches. In the settlement were found the traces of wooden constructions, but there is no information regarding possible fortifications (Žalnierius 1990:168–170).

The main part of the findings consists of thrown and molded edges and pot-sherds of cooking pottery. In the mass of vessels there was a lot of burnt and ground granite mixture; the walls were grey brownish, and a brownish colour, ornamented with parallel 3–4 line stripes. The top part of the vessels and the rims are barely profiled, and seem to have the shape of a bucket. The pot-sherds that were found were made using the same technology, the shape and ornaments (Fig. 3). The ceramics do not have typical characteristics of the 13–14th century pottery and should be dated back to the 10–12th centuries.

Judging by the intensity of the cultural layer, the number of findings, limited variety, and the small territory of the settlement, the settlement should be classified as ordinary, and for a short period of time existing mid Lithuanian settlements should be dated back to the 10–12th centuries. The settlement was abandoned much before the building of the first castle started.

To the east of the castle site there were found the layers of a settlement, the existence and foundation of which was directly connected with the stages of the first Kaunas castle building, as it became clear later (Žalnierius 1989:145–149).

The layer yielded few tens of the fragments of pots and the point of an arrow. The larger part of the pottery was moulded and thrown out of the clay mass along with the mixture of burnt and ground granite crystals. Most of the pottery was ornamented with the dented stamps of oblong triangles, and rows of rectangular and round holes. Using this ornament, the sides of the pottery were decorated from the edge to almost the very bottom of the vessels.

The settlement was about 1,5 ha and was burnt in 1362 during an attack. Some of the findings that were discovered on the surface of the layer allow us to state that people lived in the settlement before the building of the second castle. We are talking about well prepared clays, which were burnt in a reduction environment.

During the building of the second Kaunas castle, while widening the eastern defence ditch, excavated gravel was spread over the neighboring territory and buried the cultural layer of the settlement.

Neither Kaunas nor its names are not mentioned in a single historical source or chronicle 13–14th century date. A long and difficult conquest of Prussia did not allow the Teutonic Order to devote extra time to Lithuania and this protected it from more significant attacks till the very ninth decade of the 13th century. Until the fourth decade of the 14th century the Livonian Order had limited its activity to the pestering of

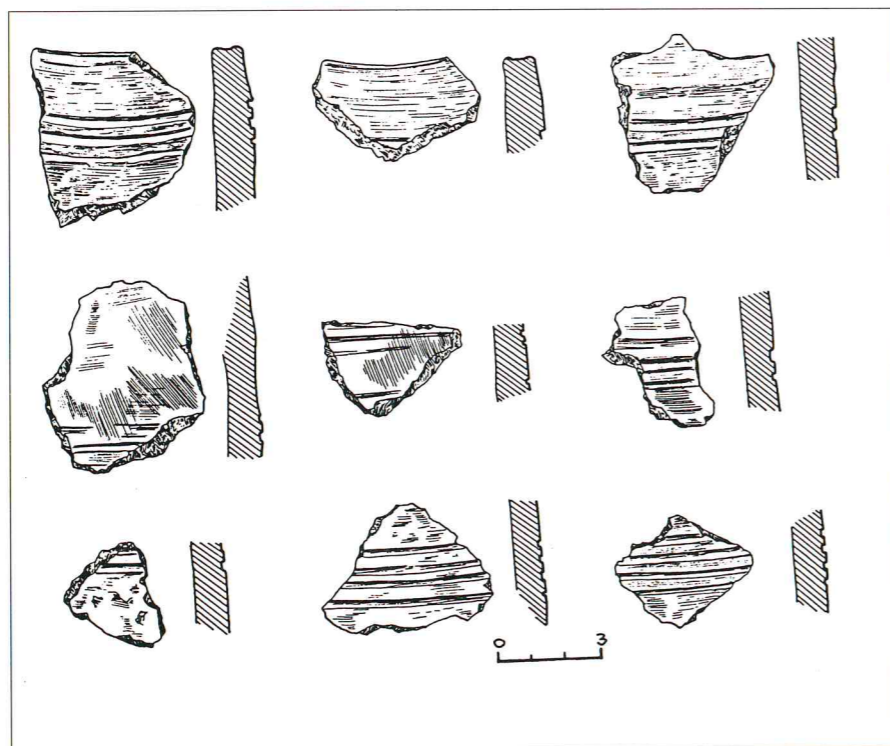


Fig. 3. The ceramics from the archaic settlement

the northern part of Lithuania. Besides it was forced to defend itself from the successful Lithuanian crusades. Only in 1333 did the Master of Livonia managed to reach Ukmergė and in 1334–Dubingiai. This fact in the chronicle bares the tone of bragging: "And then he and his followers were only four miles away from Vilnius." (Latvis, Vartbergė 1991:180).

The main strikes of the Teutonic Order at the end of the 13th and the first half of the 14th century had to withstand Žemaitija and in the direction of Gardin castle. Already in 1384 the castle of Bisenė in Žemaitija was attacked. The castle of Gardin was burnt (Dusburgietis 1985:213–214). In 1389 the Teutonic Order had built the castles of Ragainė and Skalvė on the left bank of Nemunas River. On the right bank Kristmemelis castle was built in 1313; in 1336 – Marienburg castle between Veliuona and Pieštė; in 1337 – the castle of Bajenburg; in 1343 – the castle of Jugenborg (Dusburgietis 1985:219, 261–262). Even though Lithuanians destroyed a part of these castles, the strategy of the Teutonic Order was obvious: to get deeper into Lithuania while building the castles of the frontier.

Built in 1291 Junigėda castle (since 1336 called Veliuona) was attacked 11 times before 1319. In 1292 there was an attempt to siege the castle twice (Dusburgietis 1985:224–272). At the same period towards Kaunas direction there were ravaged the regions of Gaižuva and Paštuva, which were located between Dubysa and Nevėžis Rivers.

There are two events at the end that are connected with the confluence of Nemunas and Neris Rivers and the closest surroundings of Kaunas of the 13th century: in 1294–1300 the Comture of Ragainė burnt the sacred Romainių village, which is located in the orther confluence Nemunas and Nevėžis Rivers. During the crusade of 1295, the Teutonic Order was devastating the surroundings of Gardin and then, using boats, tried to reach the domains of the Order. However, the squad was captured at Junigėda and only a part of it managed to escape (Dusburgietis 1985:233–234).

The Veliuona castle had been attacked in the years of 1337, 1339, 1348, 1357, and 1360, but only once – in 1348 – it was captured. It was rebuilt in 1349. Almost alongside it, the name of Pieštė (Seredžiaus) castle is mentioned as well (Marburgietis 1999:85–108).

As we see, at the end of the 13th century and until the very middle of the 14th century, the crusades of the Teutonic Order in the direction of Kaunas were withheld by the wooden castles of Junigėda (Veliuona) and Pieštė, which was standing until 1363 (not allowing for the Teutonic Order to move freely along Nemunas River). The name of Kaunas in these battles is not mentioned. The extensive research on Kaunas old town doesn't explain that in the first half of the 14th century there was a somewhat more extensive area live of Nemunas and Neris Rivers. not

to mention the existence of a larger settlement or town.

The name of Kaunas is mentioned for the first time in 1361. The Marshal of the Order had sent head of Įsrutė to Kaunas, but during the crusade the Teutonic Knights did not manage to cross the Nemunas River (Marburgietis 1999:109). In the same year, the Comture of Ragainė, "obying to the order and having the permission of higher officials, departed with masters to survey and estimate the thickness, depth, and hieght of Kaunas castle's masonry, and then to make wall demolishing mashines, etc., and to inform the Master of this data, as there was a plan to attack Kaunas the coming winter" (Marburgietis 1999:114).

In March of 1362, the highest officials of the Teutonic Order "and the best its subordinates, the Master with the armed forces of Prussia, departed (to the Crusade) against Kaunas, taking along guests from England, Italy, and Germany" (Marburgietis 1999:114).

It is interesting to note that not a single chronicle that was written in the territory of the Teutonic Order that doesn't mention the participation of the Master of Livonia attacking Kaunas castle. It is mentioned only in H. Vartbergė "Chronicle of Livonia" (Latvis, Vartbergė 1991:186).

The offence of the castle started after the 13th of March, when the army of Kęstutis was forced to retreat. From the Neris to the Nemunas Rivers, evidently using the remains of the old riverbed, there was constructed a ditch with rampart and sharp-pole picket fence. The storm of the castle continued for more than a month. As we can judge from the chronicle of V. Marburg, the castle was taken after great efforts and losses.

The meticulous preparation for the siege tells us that it wasn't an ordinary crusade of the Order in Lithuania. Reconnoitering beforehand and the production of machinery and equipment of the siege, the participation of all armed forces of Prussia and Livonia, reveal the extent of danger that the built masonry walls of Kaunas castle threatened. V. Marburg, describing the attack of the castle, mentions a crew of 3500 people (Marburgietis 1999:119). It is an unrealistic and atypical tendency to enlarge the forces of your enemy while at the same time giving prominence to your own victory. The same V. Marburg, describing the foray of the Teutonic Order that took place in winter of 1364, mentions that in the country of Žeimiai there was caught Hanke Pašedach the servant of Livonia's Marshal. "When he was asked how many (Lithuanians) were killed in Kaunas, he said the truth – at least 350" (Marburgietis 1999:122). Having in mind the perimeter of the castle and the width of the courtyard (according to our calculation – 5200 square meters), this number of defenders is the most optimal. This number of the defenders corresponds to the opinion of Dr. G. Zabiela who has researched late hill-forts, - which is that one soldier was defending 1–2 meters of the castle's wall (Zabiela 1995:157–158).

Today we cannot know, and probably will never know, the exact plan of the first castle, because Neris till the end of the 20th century has washed out the bigger part of the castle site along with the towers, walls, and buildings of the first and second castles. Only the southern wall of the first castle and the wall of the second castle remained, as well as the western and eastern wall. The length of the remaining western wall is 29 m, the eastern – 29 m, the southern – 98 m. The part that survived along with the walls of the castle takes up to 2500 square meters territory.

A sort of reference regarding the shape of the castle's plan we get from the direction of the walls and the fact that the castle was built on the first overfloodplain terrace slope. The angle of the eastern and southern wall of the castle is upright, the western and southern make 60° angles. It would seem that the castle had an irregular trapezium shape with an upright south eastern angle. If the purpose of the castle was to control the navigation of Neris and defend fords and crossings, its western and northern walls had to be turned towards the watercourse of Neris River. Hypothetically, it is possible to assess the length of the walls. If the western and northwestern walls constituted an angle of no less than 120°, then their length should have been 75–65m, and the eastern wall – 90 meters. In this case, the perimeter of the castle's walls

would be 328 m, the territory about 6000 square meters, the territory of the yard about 5200 square meters. The whole castle site, with the defensive ditches, had to comprise about 3.5–4.0 hectares. It is only one out of possible versions of the first Kaunas castle's shape and size. The first castle's defense complex was comprised out of a wall, pre-castle and defensive ditches from the sides along the east and south (Fig. 4).

At first there the walls of the castle were built, then a defence ditch was excavated and the walls of the pre-castle set. Also there built two towers on a foothill of defense trench in the southeastern and northwestern corner of the pre-castle's walls. The other two towers, which most likely were supposed to be built in the southwestern and northeastern corner of the pre-castle's walls till the attack of 1362, were not built because of lack of time. The construction material from the surroundings of Kaunas was delivered to the castle site using Neris and Nemunas Rivers.

The foundations of the castle's walls were set out of various field boulders, which were piled up in an excavated trench of vertical sides. The excavated earth was spread out along the sides of the foundation trenches. Setting the foundations, there was no applied system of laying down field boulders; only

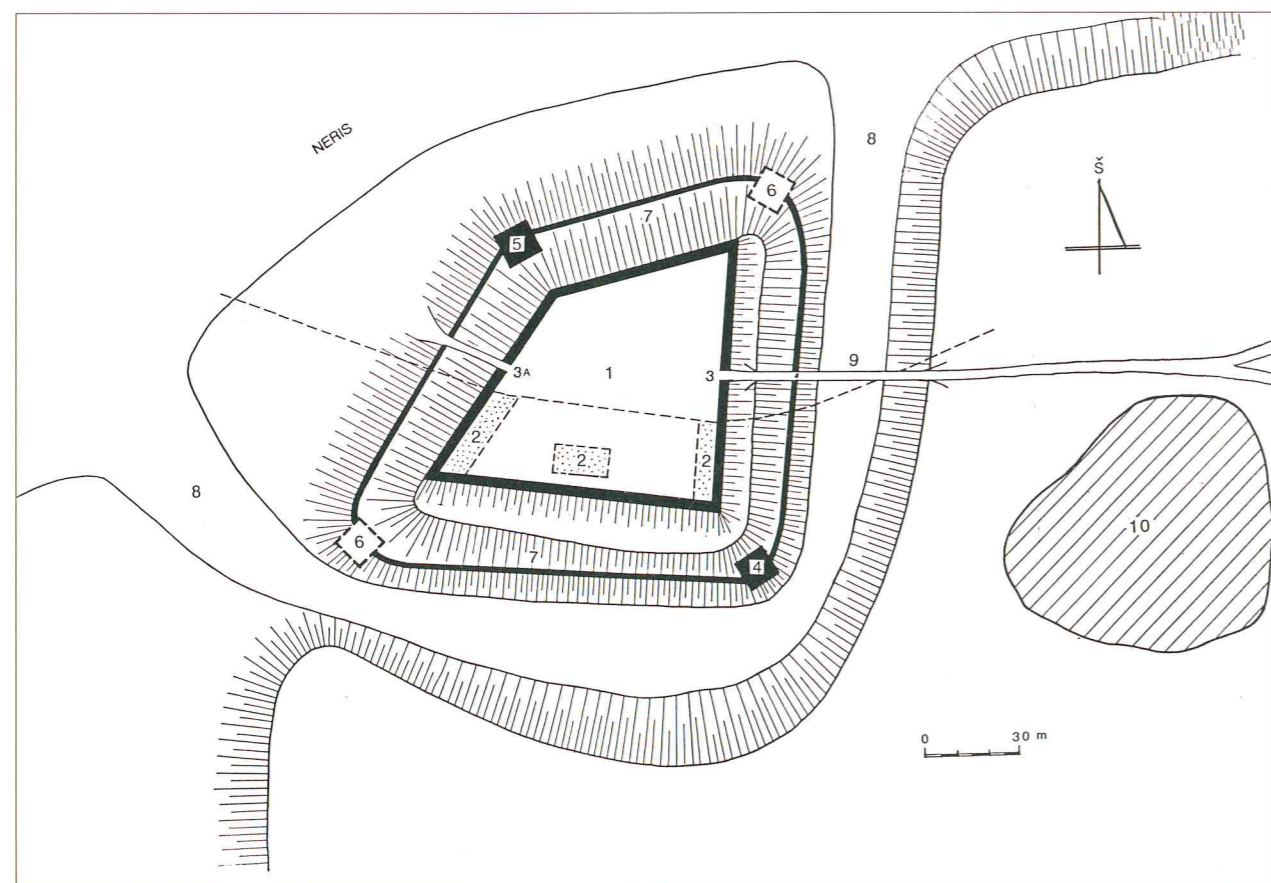


Fig. 4. The first Kaunas castle reconstruction. 1. the castle 2. the buildings 3. the gates 4. the Nemunas tower 5. the Neris tower 6. no build towers 7. pre-castle walls 8. the defensive ditches 9. the bridge 10. the settlement of 14th cent. – the line of the rinsed castle territory

the top of the foundation was leveled when smaller stones were being placed. The surface of the lower part of the foundation was not daubed, and whiting was placed only on the spots where smaller stones were touching. The thickness of the foundation fluctuates from 2.40 to 2.60m. A wall was set out of field boulders, cemented with white and greasy whiting grout. Field boulders were set with their flat side in an exterior position. Clearly set rows are not detectable. The surface of a wall was levelled, covering the cracks with macadam and blurring out the surface with whiting grout. Masonry construction is of a shell type: the sides of the walls are set with larger field boulders, the inside is filled up with smaller stones and whiting grout, which had brick splinters.

There is no information about the exterior of the walls, because the walls were made thicker on the outside side while building the second castle, covering the extant wall of the first castle. During the research it was set that on the outside side of the walls rammed earth was made into mounds, the height of which was from 1.5 to 2.00 m.

When in 1362 the Crusaders destroyed the castle, the debris formed 1.5 m thick layers in the courtyard. Underneath the layer of the debris there were collected and measured a few hundred unbroken bricks that were found on the exterior side of all walls. The bricks were made in a rough style, having rough surface, but well burnt. Some bricks have scratches, some don't. The format doesn't influence it. There are two format types of the bricks:

1. 29.0–31.5 X 13.7–17.5 X 6.0–9.1 cm.
2. 25.2–28.8x 12.5–13.5 x 6.1–8.0 cm

Since the bricks lie underneath the debris, they are taken out of the upper part of the walls. Two bricks were measured at the castles of Medininkai, Lyda, and Krėva (Abramauskas 1963:80-81, Baglasov, Trusov 1981:35). In the castle of Medininkai the larger bricks were used to fill the edges of shooting apertures and the gaps of the gates, corners, and the top of the walls. The smaller bricks were used as a trim on the northern and eastern walls (Abramauskas 1963:80). The same elements of construction, architecture, and defence were used at Kaunas castle two.

On the size of the castle we can only judge by comparing the height of the walls of the castles of Medininkai, Lyda, and Krėva. Those walls were as high as 14–15, 15, and 12–13 m (Abramauskas 1963:80; Baglasov, Trusov 1981:29–30; Tkačov 1978:36). Since the area of Kaunas castle was the smallest among castellum castles, its wall height had to be no less than twelve metres. There were no towers in the castle. Neither there was found two gates that the chronicles mention.

The remaining part of the first Kaunas castle's yard, which wasn't washed out, takes up to 2150 square meters. Same strata of cultural layers and a small number of archeological findings in the whole yard of the first castle make us doubt the now accepted da-

ting of the castle, – the end of the 13th and the beginning of the 14th century. Most of the doubts regarding the dating arise from the fact that in the yard there was not found at least a noticeable cultural layer, which had to have formed if the castle was built at the end of the 13th century. Next to the walls of the castle were found foundations excavated and aside spread out grit and the strata of whiting grout that fell during the construction of the ditch. To the east from the western wall yard, the layer can be traced only from obscure traces of burnt earth. The layer reaches 1–2 cm. of burnt earths even next to the former buildings of the eastern wall (Žalnierius 1996:186).

Closer to the walls of the castle, on the above mentioned layers, there are fallen down former buildings or the remains of a shooters' gallery. They are covered with burnt, grit, and the layer of field boulders that cracked due to the heat. This layer at places is 40 cm thick. Further from the wall of the castle the layer becomes thinner and disappears as it gets closer to the middle of the yard. This layer was formed in 1362 during the attack on the castle.

There is little information about the buildings that stood in the yard of the castle. Most of the household and habitable wooden buildings stood next to the walls of the castle, even though few post holes were found in the central part of the yard.

In 1989–1998 a 400 square meter area of the yard was investigated and in the yard's layers were found only over 40 pot-sherds, few remains of bronze decorations, and fragments of knives. In the layer of the yard were also found cooking pots that were moulded and later thrown. Their shape and decorations differ from the ceramics that existed in ancient settlement of the castle site. It is 26 cm height and 31 cm diameter pottery of inflated profiled sides and brightly expressed rims. Their sides, from the shoulder to the bottom, were decorated with stamped oblong triangles and hole rows. The shoulder pot-decorated with triangles are in the top part, the pottery decorated with hole rows have more inflated sides (Fig. 5). Perhaps, different purpose pottery had different functions and shape. Only some pottery fragments were decorated with parallel and horizontal line decoration.

Identical cooking pottery fragments were found at the above mentioned the 14th-century settlement territory formerly located eastward from the castle site. Not having done wide scope research, it is hard to say whether the builders of the castle lived here or the crew or whether people who served in the castle founded the settlement. At any rate, the castle and the settlement (until the castle was destroyed in 1362) comprised a complex of functional ties. Perhaps, this settlement is the beginning of Kaunas city.

The other and the basic part of the first Kaunas castle's findings consists of crossbow, bow arrowheads and spearheads, some axes, steel boarding of wooden constructions, the purpose of which is not

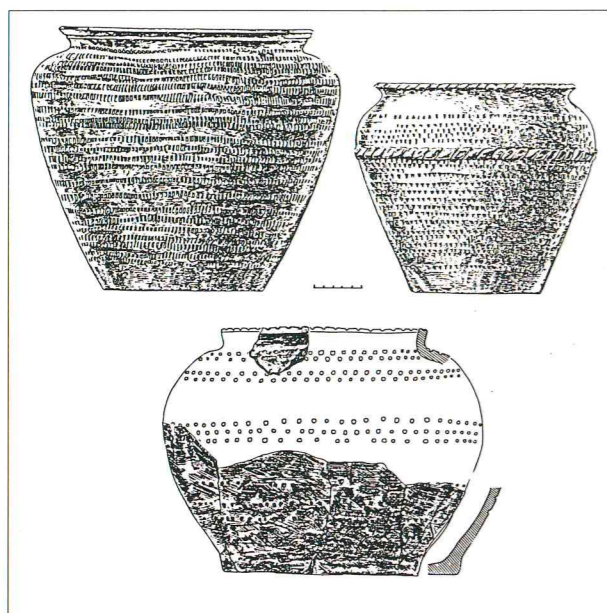


Fig. 5. The cooking-pots reconstructions

clear, and other works used in 1362 at the time of attack and defence of the castle. Arbalist and bow arrowheads alone produced about 180. The largest amount of them was found next to the castle's southwestern corner. Here in the yard and on the outside of the walls were found about 120 arrowheads and some spearheads. Here were found four arkubalista

arrowheads, which are very rare in Lithuania. The larger part of crossbow and bow arrowheads is ascribed to munitions of the Crusaders (Fig. 6).

The amount of findings in the yard is related to the existence of the castle and comprises the smaller part of all the findings. These findings are household ceramics and some metal artefacts that are contemporaneous in their form, decoration, production technology, and purpose. If the castle had existed for a longer time, the total amount of findings and their variety would have been larger indeed. This argument would be supported, even though indirectly, the amount of discovered eaten and thrown away bones of animals that are counted only in few tens, whereas the layer of the second Kaunas castle of the first half of the 15th century yielded an amount of bones that can be counted in hundreds, and they were found in the area of about 90 square meters. It should be noticed, that as much in the first castle's yard, as in the second, the larger part of found bones belonged to domestic cows, sheep, goats, birds, and only about 15% to hunted animals (Žalnierius 1998:266, 2001:212).

Once the walls of the castle were built, defence ditches were excavated next to the eastern and southern walls of the castle. Joining with the watercourse of Neris River, they separated and defended the castle site from the land's side. We don't have clear information about the width of the first castle because during the construction of the second castle the de-

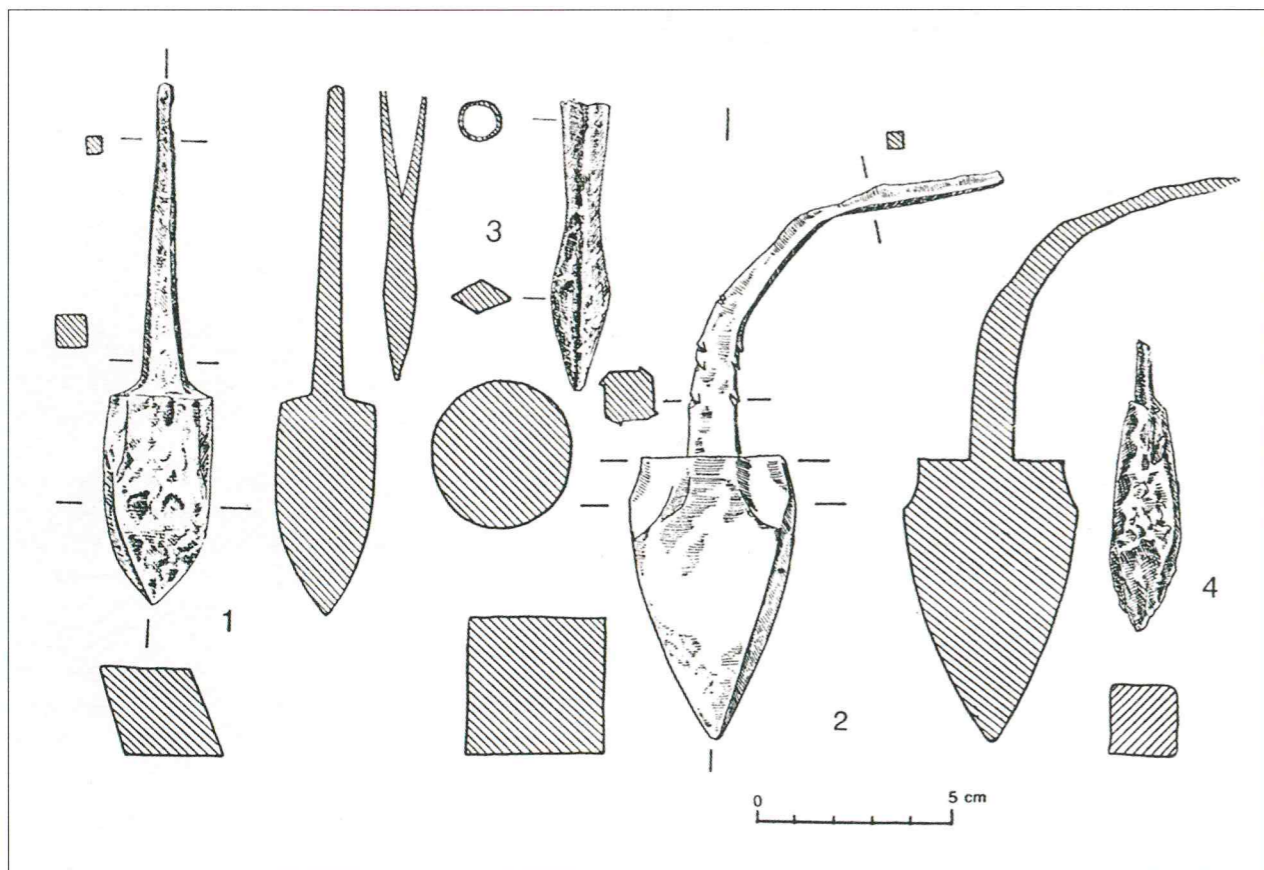


Fig. 6. 1-2 The arcubalista arrow heads 3-4 the crossbow arrow heads

fence ditches were widened. The defence trench's width above the middle of the southern wall's at the top reaches up to 65 m. and 52–54 m in width at the castle southeastern corner. The narrowest spot has remained at the western end of the southern defence ditch. Here the width of defence ditch of the second castle reaches up to 40 m. Perhaps this is the width of the first Kaunas castle's defence ditch. Its length could have reached about 300 m. In installing defence trenches, about 70 000 m³ of grit could have been excavated.

The eastern and western ditch of the castle yielded a mud layer, the width of which in the corner of southeastern ditch reached up to 2.10 m. On the surface of mud the findings are dated to the second half of the 16th and the beginning of the 17th centuries. But even in this case there is a question whether there was water in the trenches of the first castle, because the main mass of mud settled during the existence of the second castle. The bed of the defence ditch that was found in the corner of southeastern trench is about at the level of 18 m., 4.50 m. deep measuring from the bed of the present ditch's bed. Most likely, during the construction of the second castle the depth of the ditch remained the same, maybe even there were saved parts of the walls of the pre-castle. The very trenches were widened about 15–20 m. This is why, even if the bed of Neris River at the 14th century was about 17 m. and the water surface at the level of 19.0–19.5 m., thus, the bed of the first castle could have constantly had about 1.0–1.5 m. water.

The first Kaunas castle was built next to the edge of floodplain terrace of Neris River left bank. To the west and northwest from the walls of the castle used to descend a natural valley of the river. Between the western wall and the edge of the valley the remaining 6 m wide site was covered with earth forming about 4 m. in width and 1.9–2.0 m in height mound next to the Western wall of the castle. From the watercourse bank of Neris River to the walls of the castle there was a sloping 9 m high slope.

Today the upper site of the pre-castle is almost intact, which is next to the southern wall, as well as a part of the site next to the eastern wall of the castle. The sites included mounded mound of 1.70–1.80 m in height and 5–7 m in width next to the walls of the castle. The purpose of the mound was to fortify the wall and at the same time to aggravate the access to the wall for the siege's towers and battering-rams while being under siege. Once there mounds were mounds next to the wall and on the edge of the ditch, the surface of the castle's yard turned out to be two meters lower.

The slope of the southern ditch has remained the same as it was excavated during the construction of the first castle. Its angle of descent into the ditch is 30° and on the surface were noticed the traces of burnt and green clay. The layers of clay were used to fortify the slope that was made out of grit on the edge of the ditch.

The thickness of the wall of the pre-castle is not the same: in the Southern trench its thickness fluctuates between 1.20 and 1.40 m; in the eastern – 1.50 m. The thickest wall was bricked in the western pre-castle where its thickness is about 2.0 m. The structure of the wall's masonry is of a shell type: the sides set out of larger field boulders, the flat sides facing the outside, stuffing the cracks filled with chopped stones. The interior was filled with rich whitening grout. The walls of the pre-castle were set using the same technique as of the castle's walls except for the sides that were not daubed with the whitening grout. When the walls were built, on the inside there was formed 2.0–2.6 m wide sites, which could have had the defensive purpose as well. The height of the eastern and western walls of the pre-castle was not higher than 2 meters. The western and northwestern wall of the pre-castle could have been higher. On the outside of the foundation of the wall are bulked small mounds of rammed grit and sandy loam what descend into the bed of the defence ditch at the angle of 40°–45°. The surface of the mounds is about 1.2–1.6 m. lower than the surface of the sites.

The purpose of the southern and eastern pre-castle walls was double. Since the defence trench was excavated on the layer that was silted up with grit of the river, the walls were protecting the inside slope from possible landslips. This was discovered during the investigation of the western corner of the castle site. The walls could have been used for the defensive purposes either during attacks on the castle's walls or during critical moments. The western wall of the pre-castle is more adept for active defense since it was built on the bottom of the natural slope that was descending off the walls of the castle. Only the slant protected the castle from the river as one could get to the walls after landing on the bank of the river. For that reason there was built the pre-castle's wall equal to the thickness of the castle's masonry. When during the investigation the pre-castle's wall was excavated, on the outside of the wall was found a pile of variously sized field boulders. If it was piled debris of the pre-castle's walls deconstruction, there would have been whitening grout and the remains of the inside masonry fillings. It seems like the field boulders were piled up and prepared for the construction of the wall, but during the attack in 1362 the corner of the castle site wasn't completed. Perhaps Kaunas castle was taken only because the construction of fortifications that was planned wasn't completed until the beginning of the attack in 1362 (Žalnierius 2001).

There is an opinion that the walls of the pre-castle could not have been lower than 10–11 m. height (Meikas 1993:8). It is doubtful that this kind of wall could have been set on a powdery and sloping ground. Besides, the thickness of southern and eastern pre-castle's walls and foundations reaches up to 1.5 m. and the length of the walls was 115–120 m. Abutments were necessary to build such high walls,

however, there are no traces of the them today.

Exploring the eastern defence trench produced the remains of an older building. A bastion the 16th century, its walls were made out of the remaining masonry. Only the base of the building has remained and about 2.0 m high terraneous part. The width of the building is 10.75 m. Its remaining side faces southeast. The foundation of the building is most likely monolithic and the terraneous part is the same. The brick laying technique is the same as the one of the pre-castle and castle's walls. There is same small mound going down to the bottom of the ditch at the foundations as it was with the walls of the pre-castle (Zalnierius 1996:189–191).

According to the masonry technique of the, and the strata of the cultural layers, the discovered building at the bottom of the ditch should be ascribed to the Nemunas River side tower that V.Marburg mentions. It seems, that the tower, at least at the bottom was quadratic, 10.75X10.75 m. size. The upper part of the tower had to ascend above the site of the pre-castle by 5–6 m. In this case the height of the tower from its foundations could have been 13–14 m. There was enough room to make 3–4 floors with joist ceilings. The tower was built about 14m southeast off the castle's southeastern corner. Its purpose was to defend the corner of the castle and the gates of Nemunas River, that was the eastern wall of the castle. The wall of the pre-castle was joined with the sides of the tower, turning inside at the southeastern corner of the pre-castle.

The chronicle of V.Marburg mentions the second tower as well, which stood most likely in the northwestern corner of the pre-castle (Marburgietis 1999:115). According to the pre-castle's plan, two more towers had to be built in the southwestern and northeastern corner.

There is no information about the bridges of the castle, which were supposed to exist. Most likely there was only one wooden bridge built, which led to the castle's Nemunas River gates through the eastern defence trench. The settlement that existed in the 14th century north off the castle site would support this hypothesis. Perhaps there was some kind of bridge construction at the western wall pre-castle in front of Neris River gates.

None of the *castellum* castles that were built in the territory of GDL hadn't such pre-castle fortifications. Only Medininkai castle had two: the surrounding defence trenches with a mound between them. Only defense trenches and natural water barriers were found at Krėva and Lyda castles.

Most of all, the first Kaunas castle is related to other GDL period *castellum* castles of Medininkai, Lyda, and Krėva, by quite the same plan, thickness of the walls, depth of the foundations, similar masonry technique. These similarities allow us to talk about the contemporaneity of the castles' construction. Secondly, the reliable sources of the 14th and 15th century mention them only in the second half

of the 14th century. Kaunas castle is mentioned in 1361, Krėva in 1382, Medininkai in 1385–1392, Lyda in 1394 (Marburgietis 1999:109,113,182, 202, 206). It is hardly a coincidence.

What makes Kaunas castle distinct and different from other *castellum* type castles, is the fact that it was the only castle that managed to withstand the siege of the united Crusaders and Sword-bearers army for more than a month (from 13 March to 16 April 1362). The castle was conquered, destroyed and never rebuilt (Fig.7).

The castles of Medininkai and Lyda participated in war activities only during the late 14th to early the 15th centuries. The castle of Krėva is not mentioned at all in the descriptions of the battles. During the attack of the Crusaders in 1385 and 1392, only the land of Medininkai was mentioned, even though in 1392 the Crusaders together with Vytautas could have conquered the castle. Medininkai castle in 1402 was mentioned as a military site (Jurginis 1971:172–173). In the same year the Crusaders being unable to take Vilnius, conquered Medininkai and burnt the castle. The castle of Lyda is mentioned only once in 1394 describing the military march to Naugardukas. On their return, the Crusaders found the castle of Lyda burnt by the castle's defenders (Marburgietis 1999:206).

The construction of masonry castles was a necessity due to the danger of the state's survival. The castles were built in an urgent period in clearly set strategic directions in order to effect specific tasks. Perhaps they should not be called the castles, but the state's fortresses, since, having neither material nor physical possibilities, the local or land communities were able to build such fortresses.

About 16 000 m³ in construction materials could have been used to build Kaunas castle. It is field boulders, whitening, sieved grit, sand. About 70 000 m³ of earth was excavated out of ditches. However, even these numbers don't tell us much without deeper analysis of the preparation work scope. According to calculation, the castle of Lyda needed nearly 1.5 million bricks (Tkačou 1978:32) – there had to be excavated clay, then delivered and prepared using a complicated technology, then it had to be shaped and dried in a brick form. Furnaces had to be built for brick burning, which required a large amount of firewood as well. Same could be said about whitening burning, since about 2000m³ of whitening material was needed for the construction of the castle, not to mention wood preparation, transportation of construction material, and housing and feeding people. Masters – craftsmen of the region, specialist of masonry castle building were needed to make bricks, burn whitening, process wood, set the walls and perform other works of construction.

It is doubtful that building of the masonry castles could have taken a longer period of time, because the Crusaders built their Bajerburg wooden castle in 1337 on artificially made hills in two months, the castle of Jur-

genborg (rebuilt castle?) in 1343 was built in eight weeks, masonry castle of Marienwerder the confluence of Nemunas and Neris Rivers in 1384 was built in four weeks (Marburgietis 1999:85, 268; Annalita Thorunensis 1866:73,129). Besides, it is unreasonable to assume that delayed construction works would not have been noticed by the Order's scouts and that then the Crusaders would have allowed the completion of the castle having in mind that Kaunas was so significant from the strategic point of view. As we see, the building of the masonry castle required large sources of material and workforce resources, specialists and professional work organization. It could had been done only well functioning coercive mechanism of the state and stable central government.

Professor E.Gudavičius believes, that in the mid 13th century the duty system of Lithuania was starting to develop and "by the third decade of the 14th century Lithuania had functioning duty system with clearly set service and angary forms." (Gudavičius 1998:111).

Further regulation of the state's activities, including castle buildings, are yielded by Jogaila's privilege in 1387 exempting the noblemen from a part of duties, "except the construction of a new castle when the entire Lithuania's countryside is being called to work, as well as all the population to effect the construction or repair works of an old castle" (Lietuvos 1955:57). However, professor E.Gudavičius interestingly remarks, "peasant duties of Grand Dukes differ in the

country's privileges that were given to provide the constructions of a masonry castle, which even in the first half of the 15th century were called "new and less legitimate". (Gudavičius 1998:108). It seems that the 15th century masonry castles construction was new in the state's duty system, whereas the larger part of angary duties consisted of wooden castle construction and the repair of related works.

In conclusion, it could be said that real possibilities and conditions for building masonry castles most likely formed at the end of Gediminas rule, but the necessity for it rose after Strėva battle in 1348. This Crusade was the first real threat to the capital of GDL Vilnius (Marburgietis 1999:98–99)

Kaunas castle was built first. Preparatory works most likely started in 1359–1360, and the construction of the castle followed in 1361, not being able to finish it till the spring of 1362. The castles of Krėva, Lyda, and Medininkai were built somewhat later, around 1370–1380.

Of course, according to various speculations, analogies, examples of neighboring countries, the construction dates of GDL masonry castles could be earlier, but it would be only hypothetical, unsupported and subjective.

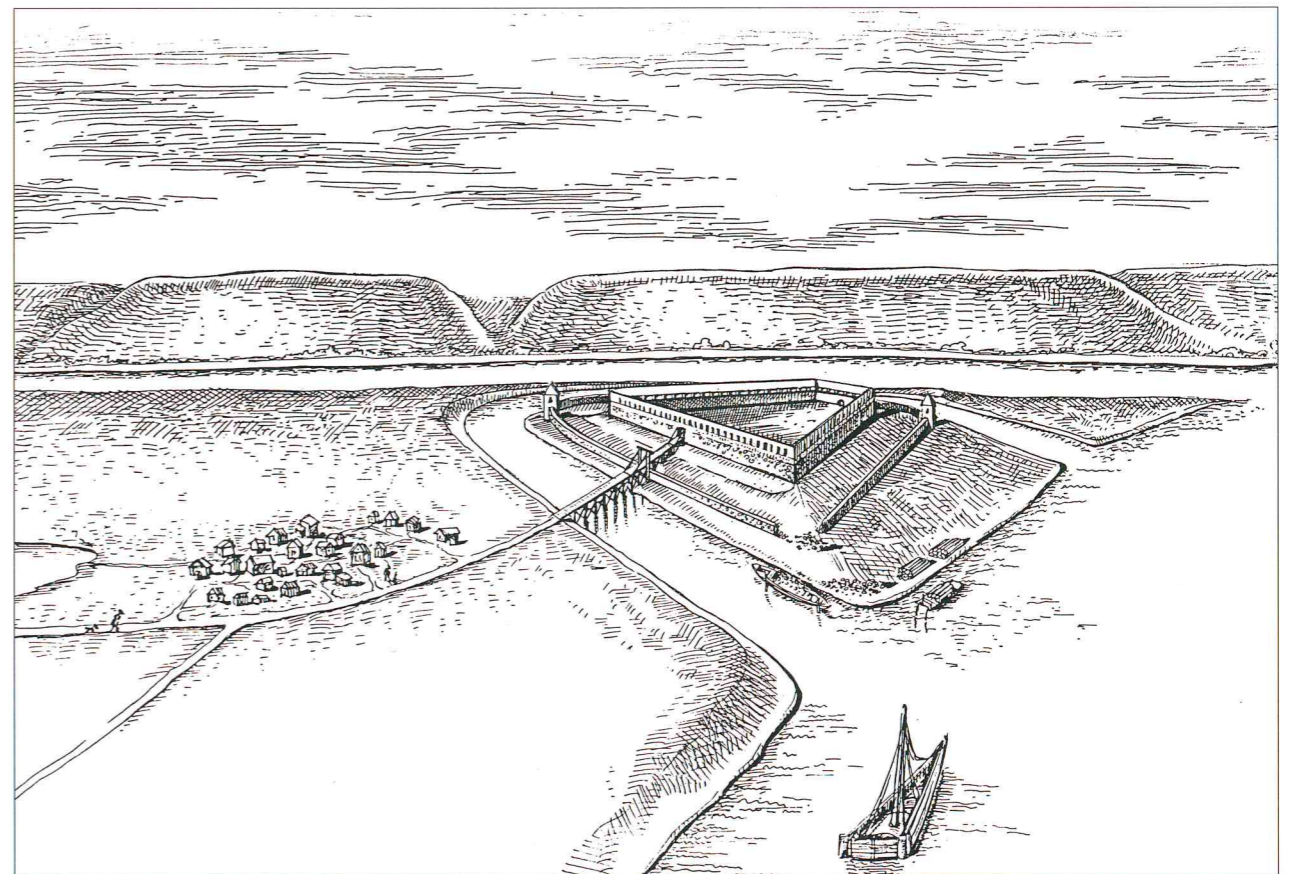


Fig. 7. The first Kaunas castle reconstruction in 1362