

THE FORTIFICATIONS OF GRAND DUKE VYTAUTAS IN THE NORTHERN BLACK SEA REGION – THE RESULTS OF ARCHAEOLOGICAL INVESTIGATIONS

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This article presents archaeological research into the line of fortifications erected in the northern Black Sea region during the time of Vytautas, Grand Duke of Lithuania. A comparative analysis of the planning structure and design features of several fortresses from the late 14th–15th centuries is presented, featuring stone tower-type castles characteristic of the early stages of artillery development. The distinctive traits of each fortress, as well as their common features, are also identified.

Keywords: fortifications of Grand Duke Vytautas, Northern Black Sea region, archaeological investigations.

Šiame straipsnyje pristatomi Lietuvos Didžiojo kunigaikščio Vytauto laikų įtvirtinimų linijos, buvusios Juodosios jūros šiauriniame regione, archeologinių tyrimų rezultatai. Pateikiama XIV a. pabaigos – XV a. tvirtovių – bokštinio tipo akmeninių pilių, būdingų ankstyvajam artilerijos vystymosi etapui, planinės struktūros ir projektavimo ypatybių lyginamoji analizė. Nustatyti ne tik kiekvienos tvirtovės individualūs bruožai, bet ir bendri jų ypatumai.

Reikšminiai žodžiai: Vytauto Didžiojo laikų įtvirtinimai, Juodosios jūros šiaurinis regionas, archeologiniai tyrimai.

INTRODUCTION

In the history of the Grand Duchy of Lithuania, a special place belongs to its southern region during the life of Grand Duke Vytautas. This relatively short chronological period – the end of the 14th century and the first three decades of the 15th century – had a significant impact on the historical development of both Lithuania and Ukraine. The duke's goal of creating defensive points on the southern frontier of the state had important defensive, strategic, and economic significance, and both land and sea trade flourished under the protection of these newly built fortresses (Русина 1998, 106).

After the Battle of Blue Waters in 1362, the Tatar era ended in a political sense, and the steppe between the Dniester and the Dnieper came under the control of the Grand Duchy of Lithuania (Моця,

Рафальський 2014, 5). At the behest of Grand Duke Algirdas, representatives of his dynasty exercised control in territorial centers, and a new border was established through fortification. From the point of view of administrative division, the Principality of Lithuania incorporated not only Chernihiv-Siverskyi, but also the Principality of Kyiv and Podolia, and therefore practically the entire Dnieper basin (Черкас 2015, 68).

Trade routes connecting the Baltic and Black Seas passed through this region: the Dnieper – “from the Varangians to the Greeks”; and the Dniester–Vistula. The lower part of the latter, headed by the fortress at Bilhorod (ukr. Білгород-Дністровський), was controlled by the Nogai Tatars (Черкас 2015, 69). This territory became an object of competition between the Lithuanians and the Tatars. Thanks to the successful campaign of Yury Koryatovych against



Fig. 1. 14th-15th century fortifications in the North Black Sea region.
1 pav. XIV-XV a. įtvirtinimai Juodosios jūros šiauriniame regione.

the Tatars in 1374, the Lithuanian rulers occupied both banks of the Dniester, including Bilhorod, which received the honorary title of “key to Lithuania” (Русев 1999, 389). According to Sht. S. Gorovey, after the premature death of Yury Koryatovych, Bilhorod and the surrounding lands came under the rule of Moldova in 1377–1378 (Шлапак 2001, 26). At the same time, Moldavian ruler Petro Mushat became a vassal of King Jogaila in 1378. His successor, Roman, tried to take advantage of Vytautas’ successes and even opposed King Jogaila, but at the beginning of 1393 was forced to swear allegiance to him. Roman’s next unsuccessful move – supporting the Podolian prince Fedor Koryatovych against the combined forces of Jogaila and Vytautas – ultimately cost him the throne (Русев 1999, 397).

At the beginning of the 15th century, Ottoman pressure on Hungary and Wallachia increased. In response to these geopolitical circumstances, treaties were signed in Lublin in 1412 between Grand Duke Vytautas, King Sigismund of Hungary, and King Jogaila of Poland. The primary content of these documents was the regulation of relations regarding Moldova, whose ruler was considered a vassal of the Polish king and who was obliged to provide military assistance to Sigismund in the event of a war with the Turks (Білецька 2004, 137).

During Vytautas’ time, the strategic and economic importance of Transnistria and the entire Black Sea coast can be seen through the numerous construction projects that he undertook (Русина 1998, 106). Vytautas sought to subjugate the Black Sea region, “pave a trade route along the Dniester to the Black Sea and secure it with castles and guard posts” (Грушевський 1995, 59). As a result, small fortress-castles were built from Lithuania in the north to the mouth of the Dnieper in the south in the late 14th and early 15th centuries (Fig. 1). This is well documented by the numerous toponyms that feature the name of Vytautas across a significant geographical area: cities, castles, and customs houses at crossings and

bridges (Грушевський 1993, 315). Archaeological research in recent decades has established that a characteristic feature of this stage in the development of fortifications was the transition to a tower-type castle system using stone, the presence of multi-tiered stone towers, and the need to resist artillery.

THE NORTHERN BLACK SEA FORTIFICATION LINE

Looking to the south-west, the construction of Bilhorod Castle by Moldavian builders did not escape Vytautas’ attention. This fortress was most likely erected between 1414 and 1420 after the introduction of cannons in Moldova, which occurred no earlier than 1407. Their arrival contributed to the organization of a strong defense against the Turks during the siege of 1420 in the reign of Alexander the Good (Красножон 2018, 52–53). It was after the events of 1420 that major defensive works were carried out in the fortress under the supervision of the governor of Podolia, Hedygold (Geldingold), with the support of Grand Duke Vytautas (Шлапак 2001, 27). Moldavian construction continued in the following years until the Ottoman conquest of 1484.

Archaeological excavations, including the investigations of the Southern Medieval Expedition of the Institute of Archaeology of the NAS of Ukraine (1999–2010, directed by S. O. Biliaieva), have established that the citadel, fortress courtyards, curtain walls, towers, and barbican were built during this period. The fortress covers an area of 9 hectares, and its architecture reflects the main features of defensive construction during the early artillery era and provides an important example for the comparative analysis of fortifications in this period (Fig. 2).

Some authors associate Vytautas’ defensive activities with the construction of a fortress on the left bank of the Dniester Estuary, opposite Bilhorod. Its construction was joined by Hedygold, the governor of



Fig. 2. Bilhorod (Akkerman) fortress, the view from estuary. *Photo by V. Kesar.*
 2 pav. Bilhorodo (Akermano) tvirtovė, vaizdas ties upės žiotimis. *V. Kesaro nuotr.*

Podolia, acting on the orders of Vytautas (Брун 1853, 439–440). This fortress could have been Chornohorod Castle (Грушевський 1995, 59). However, different interpretations remain concerning the name and location of the town built by Hedygold (e.g., Білецька 2004; Красножон 2018; Полехов 2015; Шлапак 2001). Unfortunately, the archaeological investigations necessary to determine its exact location continue to lack support.

The existence of Kotsiubiyiv (also known as Kochubiyiv or Kachubiyiv) is likewise linked to the time of Vytautas. This seaport was first mentioned in 1415 in the chronicle of Jan Dlugosz as the port of the Polish king, but it was more likely a Lithuanian-Polish port (Красножон 2018, 105). It later became

known as Khadjibey (ukr. Хаджибей) during the Crimean Khanate and the Ottoman period, and is today called Odesa, renamed by order of Russian Empress Catherine II at the end of the 18th century.

There are different opinions in the literature concerning the date of construction and the localization of the earliest fortifications at Kotsiubiyiv (e.g., Брун, 1853; Красножон, 2018). A number of archaeological studies of varying scale have been carried out, but most conclusions have been drawn on the basis of cartographic sources, plans, and drawings. According to Krasnozhon (2018, 76), the port appeared here before the castle. The author also argues that “dating the castle to the second quarter of the 15th century (1421–1442) fully corresponds to

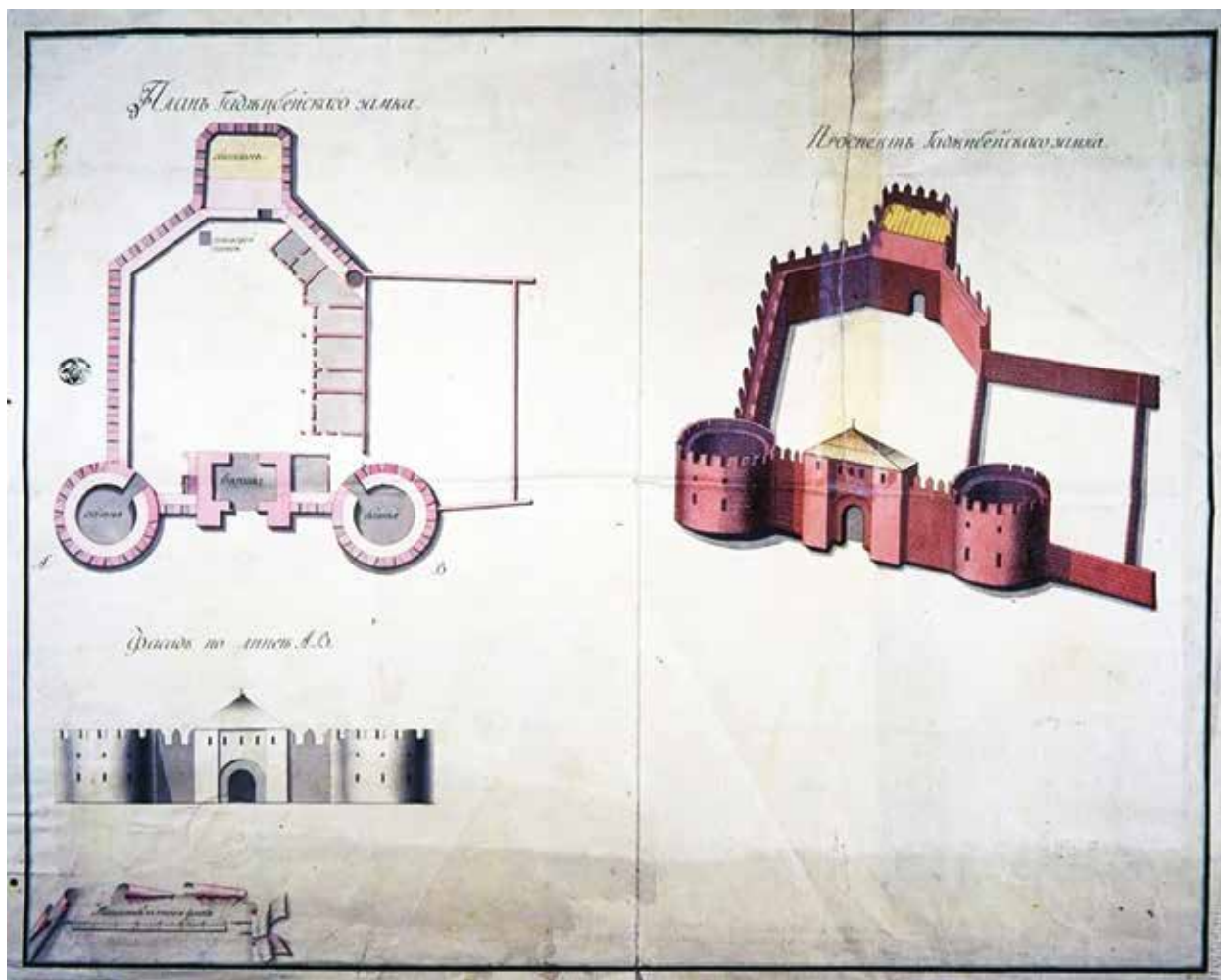


Fig. 3. The plan of the fortress at Kotsiubiyiv (Khadjibey). By A. B. Krasnozhon.
3 pav. Kociubijivo (Chadžibėjaus) tvirtovės planas. A. B. Krasnožono brėž.

the chronological characteristics of its constructive, planning, and architectural elements, and also has a political basis. The castle was built on a cape formed by the present-day Military Beam and the seashore, approximately 200 m southeast of its edge, near the cliff of a natural plateau, with its façade and gate tower facing southeast. The construction of the castle was prompted by the threat of an Ottoman invasion of the region and by the desire of Poland and Lithuania to resist it from the sea...” (Красножон 2018, 107).

The Lithuanian-period castle survived until the end of the 18th century in an almost unchanged form (Красножон 2018, 89). However, these structures were

characterized by an extremely archaic appearance and did not meet the requirements of resistance to 18th-century artillery (Fig. 3): “Merlons at the ends of the walls, towers as flanking nodes – a structure with such defensive characteristics could only have appeared in the period preceding the widespread use of siege artillery in the Modern Age” (Красножон 2018, 90).

Krasnozhon rightly emphasizes that the Kotsiubiyiv-Khadjibey Castle has much more in common with Lithuanian or Polish castles of the 14th–15th centuries: “In the territory of Lithuania, regular-plan (square or rectangular) fortifications prevail, in which towers usually do not protrude beyond the

curtain line. Among the features in common with the Khadjibey Castle is the donjon, moved to the rear of the fortified area. This characteristic is well illustrated by Vytautas' castle in Trakai (first quarter of the 15th century). Here the donjon is placed on the most protected side, covered at the front directly by the castle" (Красножон 2018, 103).

It should be noted that among the fortresses of this period there also exist examples of the Constantinople-type layout, such as the castles of Grodno in Belarus, Bilhorod-Akkerman, or Tiahyn in Ukraine. The relatively thin curtain walls are characteristic of the 15th century: 1.6 m in the Bilhorod-Dniester fortress, and 1.0–1.1 m in Dashiv and Tiahyn. Merlons at the upper end of the wall, typical from the early stages of fortification, are still visible on the defensive wall of the lower courtyard of the Bilhorod-Dniester fortress. As for the placement of the keep in the most well-protected part of the complex, a similar arrangement can be observed at the Tiahyn fortress.

Krasnozhon also argues that other features of the planning of Khadjibey Castle – its position on a hill, on a cape, between two ravines – produced an irregular, often wedge-shaped layout. This is a characteristic feature of Podolian castles, which allows the fortress to be attributed to the monumental construction traditions of Podolia in the 14th–17th centuries (Красножон 2018, 104).

According to the "List of Cities, Castles and Lands of Podolia", these territories included the Black Sea region, which belonged to the Lithuanian Grand Duke Švitrigaila in 1432. Chornohorod and Kotsiubiyiv are mentioned as distinct points, alongside castle towns such as Mayak and Karaul (Полехов 2015, 523). Information is also available on Mishuryn Rih, Chichakleya, and other fortifications that marked the southern border of the principality. However, further research is still needed to determine the precise location and area of the fortified site of Khadjibey Castle.

In the Tokhtamysh label, among the cities granted to Grand Duke Vytautas was the Dashkov (Dashiv) fortification at the mouth of the Dnieper River, near its outlet into the Black Sea. This fortification must have existed before 1399, that is, before the Battle of Vorskla River (Петрунь 1929, 185). In 1431, it appears in the lists of Polish castles as a fortress called Dashov (Dassova) (Середа 2015, 16). Its construction can be associated with the central section of the Black Sea fortification line of the late 14th–15th centuries. However, there is some confusion between Dashov in Podolia and Dashov in the Northern Black Sea region (Молчановский 1885).

Over the many years of research in Ochakiv, sections of a rampart that can conditionally be attributed to the Lithuanian period under the name Dashov have been documented. These fortifications are not mentioned in Ottoman sources in the history of Ochakiv, and are not associated with any Turkish structures. Another important discovery was made at the edge of the Old Fortress: a wall (of mixed stone and mudbrick) preserved for 6–7 courses. As in Bilhorod, a stone core (15 cm in diameter) was found in the masonry, which may represent an element of early artillery-era construction and serves as evidence of the close chronological relationship between these structures.

This feature somewhat resembles the outer walls or ramparts of the Bilhorod fortress from the Moldavian period. Finally, in the same part of the Old Fortress, which had a rectangular plan (Fig. 4), masonry remains were uncovered in situ beneath layers dated to the 16th–17th centuries. These were aligned in a straight line, at a depth of 1.5 m below the surface, at elevations of 2.0–2.1 m and 1.85–2.10 m. The masonry was built of partially worked shell and limestone, bonded with a lime-sand mortar. The preserved length of the masonry line exceeds 10 m, albeit with gaps caused by destruction. The maximum length of a preserved segment reaches 2.5 m, and the masonry represents an orthostatic system with a rubble core, and a width of 1.0 m.

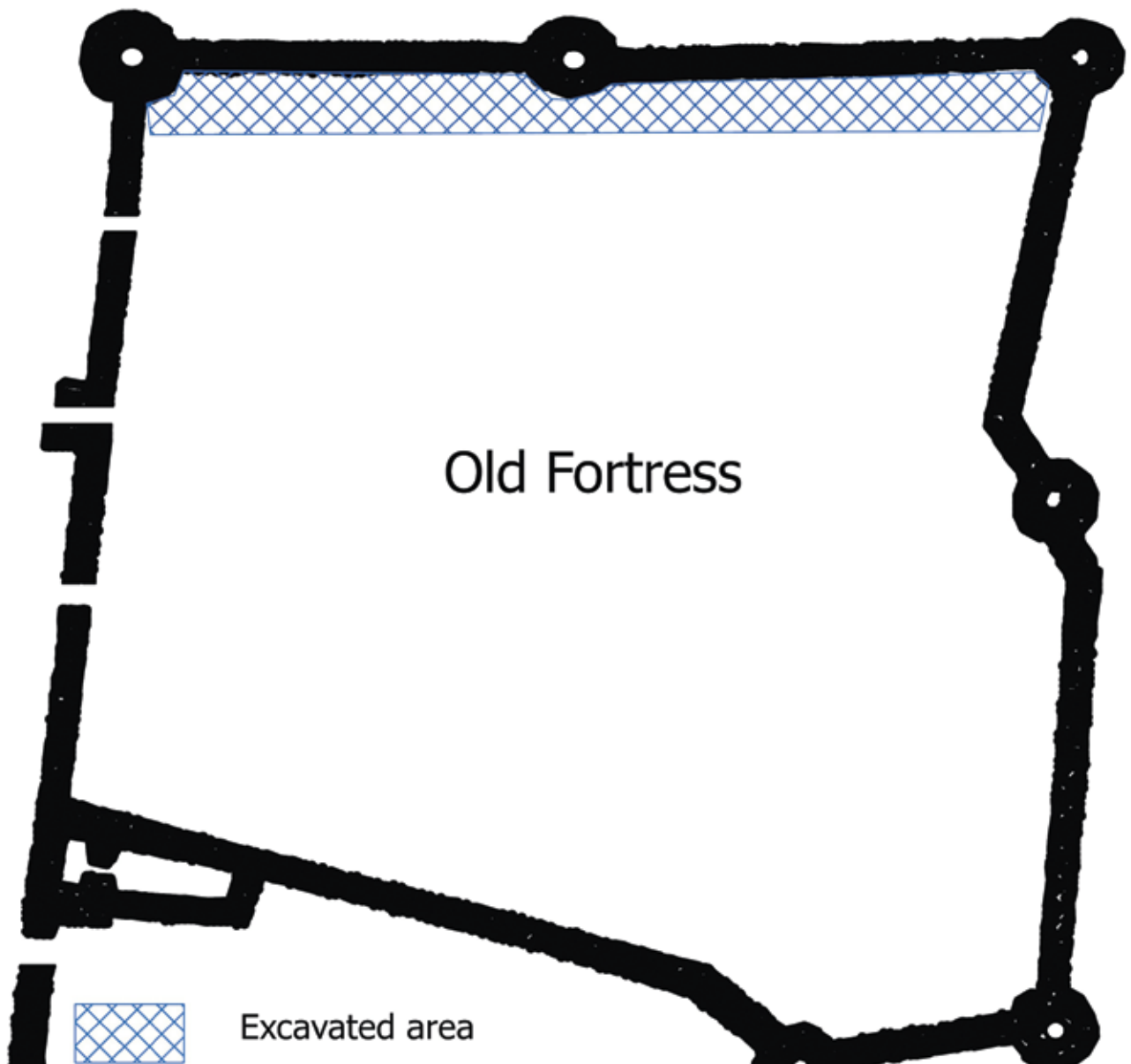


Fig. 4. The plan of Old Fortress at Dashov. *By A. V. Krasnozhon.*
4 pav. Senosios Dašovo tvirtovės planas. *A. V. Krasnožono brėž.*

It is particularly significant that at the natural ground level, in a depression (Pit No. 4) at a depth of 2.25 m, sgraffito vessels from the 14th–15th centuries were found in situ. According to stratigraphic observations, a later structure cut through Pit 4, which was recorded between depths of 1.9 and 2.25 m. Here, too, fragments of sgraffito ceramics were discovered,

datable to the 14th–15th centuries. These architectural remains correlate with the sgraffito finds, which have parallels above all with Crimean material, particularly from Mangup (14th–15th centuries) (Герцен, Науменко 2005, 257–287), Aluston (Тесленко 2005, 324–348), and other contemporary sites and layers (Тесленко 2018, 7–83). Analogies to this type of ceramic were

also found at the Tiahyn Great Hillfort, together with a Lithuanian cruciform-shaped mount for a leather bag.

The discovery of in situ sgraffito ceramics from the 14th–15th centuries in the territory of the Old Fortress corresponds both to the first documentary mention of Dashov and, in historical terms, to the Lithuanian period of the fortress' functioning.

All of the above-mentioned castles and fortresses were located at strategically important points, which allowed them to control trade routes and directly participate in transnational operations. As a result of bathymetric studies near several fortresses in the Dnieper basin, the locations of piers and crossings on the East–West transnational trade route were identified (Ієвлев, Чубенко 2018, 43–46). First and foremost, this includes the Tiahyn crossing and customs house, the construction of the Tiahyn fortress, and the Burgunka fortifications, which were recently discovered but remain unstudied. Possibly, the Vytautas Tower (in Vesely village), which preserves both earlier and later construction phases but is still insufficiently researched, may also be included. In particular, the dating of the lower part of the tower has not yet been conclusively determined. However, certain architectural details are striking. In particular, the arch-like windows of the lower tier resemble the arched window of the Bilhorod-Akkerman barbican in design, though they are smaller in size (Біляєва *et al.* 2008, 352–353). Medieval towers of a similar form are known both in Ukraine and abroad (Симоненко *et al.* 2018, 49).

Further archaeological confirmation of written reports concerning the construction of castles in southern Ukraine during the time of the Grand Duchy of Lithuania, and Vytautas in particular, is still needed. Reports from chroniclers and travelers about the construction of castles and towns are often formulaic: they usually describe a castle being completed in less than a month, with 12,000 builders, and mention identical volumes and compositions of materials (4,000 carts loaded with stone and wood). This may

reflect the construction of fortresses according to a single plan, though it cannot be excluded that such information was simply copied from one source to another.

The participation of the Knights Hospitaller is sometimes mentioned, particularly in connection with the construction of the city of St. John on the Lower Dnieper. Some scholars associate this city with the Tiahyn fortress (Ильинский 2010, 308–313). Archaeological study of the fortress was first undertaken by V. I. Goshkevych in 1914 (Гощкевич 1916), and was continued by various researchers in the 20th and early 21st centuries, including S. O. Sekretny, M. I. Olenkovska, M. P. Olenkovsky, S. V. Bakhmatov, and V. E. Il'insky. Important work on the analysis of the physical condition of the fortress, its fortifications, and its buildings was carried out based on photogrammetric measurements in 2017 (Кобалія 2018, 172–196).

As in the case of Dashov, historiography sometimes confuses two fortresses with nearly identical names: Bendery (Tighina) in the west, and Tiahyn in the east, located on opposite banks of the estuary.

Between 2016 and 2021, comprehensive studies of the Great Hillfort and of the Tiahyn fortress, situated in its southern part on the banks of the Tiahynka River, were conducted by the Southern Medieval Expedition of the Institute of Archaeology of the NAS of Ukraine, headed by S. O. Biliaieva (for results, see Biliaieva, Bimbirayte 2022).

Thanks to geophysical surveys and low-altitude drone photography, highly important data were obtained. These formed the basis for the creation of the “Archaeological Complex Tiahyn” GIS system, which integrated all of this information and made it possible to refine the plan of the fortress, establish its area (0.73 hectares), and determine the area of the hillfort (17.55 hectares). This presents significant potential for further research, reconstruction, and modeling (Манігда, Грабовська 2018, 28–30; Ієвлев, Чубенко 2018, 37–39) (Fig. 5).



Fig. 5. The plan (drone photography) of the fortress at Tiahyn. *By O. V. Chubenko.*
5 pav. Tiagino tvirtovės planas (drono fotografija). *Aut. O. V. Čubenko.*

As in the Bilhorod-Akkerman fortress, the structure of the plan of Tiahyn is based on the classical Constantinopolitan type, with a triangular plan and a square stone citadel or donjon (9 × 9 m) with a gate. The citadel was located on a rectangular platform, surrounded by partially preserved stone walls and a moat. This part of the fortress was connected to the other courts of the stronghold by means of a wooden bridge, a practice well known in European castle construction.

The entire perimeter of the Great Hillfort measures 378 m. The dimensions of each wall of the fortress are particularly important in order to establish a more precise understanding of its planning structure and the distribution of yards and buildings,

and ultimately to create a model of the fortress – a task which is especially relevant in the context of the ongoing Russian–Ukrainian war. The basis for reconstructing the general appearance of the fortress comes from the excavated sections of its stone walls: the southern wall (up to 35 m preserved out of a total length of 109 m) and the eastern wall (up to 10 m preserved out of a total length of 66 m, up to the beginning of the citadel platform) (Fig. 6).

The masonry technique is orthostatic: rows of large stones set in limestone mortar on the sides, with a rubble infill of smaller stones between them. This method finds analogies in other fortresses of the north Black Sea region from the time of Vytautas. Particularly important for the comparative analysis



Fig. 6. The south wall of the fortress at Tiahyn. *Photo by O. V. Chubenko.*
6 pav. Tiagino tvirtovės pietinė siena. *O. V. Čubenko nuotr.*

of fortress architecture is the presence of mixed timber and earth structures along the southern wall of the Tiahyn fortress, erected to reinforce the stone curtain. In addition, a system of stone buttresses was constructed perpendicular to the wall. Such wooden-earth defensive structures originated in the Kyivan Rus' period and continued in the fortifications of the Kyivan lands under Lithuanian rule. As for the buttress system, parallels can be observed in Trakai Castle.

Excavations of the tower in the southeastern corner of the fortress provided valuable data on its planning, square layout, and construction features. They revealed that the tower had at least two tiers, supported by three thick wooden posts. The discovery of bombard fragments on the first tier, and

the subsequent hypothetical reconstruction of the weapon and its barrel (Мальченко 2021, 56–61), allow for analogies with artillery types from the Bilhorod fortress. This also concerns the placement of similar guns in corresponding towers and the distinctive method of mounting bombards on wooden platforms or logs. Comparable artillery arrangements have been documented in both written and archaeological sources from across the Grand Duchy of Lithuania, particularly in Kyivan fortresses during the 14th–16th centuries.

The internal structure of the fortress is of great interest, as excavations allowed for the reconstruction of its division into several yards and courtyards. This is evidenced by the remains of stone houses built of



Fig. 7. A model of the fortress at Tiahyn. *Developed by N. D. Bimbirayte.*

7 pav. Tiagino tvirtovės modelis. *Sudarė N. D. Bimbiraytė.*

large, partially worked limestone blocks. Characteristic features of these blocks include functional adaptations such as window and door openings, gutters, and artistically decorated exterior details in the Seljuk style. A similar composition was recorded at the Bilhorod fortress, where architectural elements with Seljuk decoration were also found. However, unlike at Bilhorod, the Lithuanian presence in Tiahyn is directly attested by written sources. Not only were cross-shaped overlays for leather bags discovered, but the heraldic emblem of a Lithuanian noble family was also carved on one of the stone houses in the eastern courtyard of the fortress.

Thanks to the integration of GIS data with archaeological evidence, it has become possible to create a model of the fortress (Fig. 7).

CONCLUSION

The historical destiny of the heritage associated with the name of Grand Duke Vytautas in the northern Black Sea region was diverse. In the near term, the Bilhorod fortress remained under the rule of the Moldavian princes until its capture by the Ottomans in 1484. Throughout the entire Ottoman period it retained significant strategic, political, military, and economic importance.

Kotsiubiyiv, a port from the first half of the 15th century, fell into decline by the century's end. Written

sources attest that its ruins were still visible in the 16th–17th centuries. Nevertheless, its location was of great significance for the further development of international contacts, and it preserved a multi-layered potential for the future which endures to this day.

As for Dashiv, by the late 15th century it had become a site of Crimean Tatar expansion under Mengli Giray and the Ottomans. In the first half of the 16th century it emerged as an important stronghold for the Ottoman Empire.

The Tiahyn fortress, which had been part of the Grand Duchy of Lithuania, became a contested point between Lithuania and the Crimean Khanate at the end of the 15th century. Later, it was incorporated into the Ottoman Empire, where it remained until the period of Russian expansion.

In conclusion, the creation of the fortification line in the Northern Black Sea region under Grand Duke Vytautas held crucial strategic, political, defensive, and economic significance – not only in his time, but also from a long-term historical perspective. This line played a major role in the expansion of Lithuanian influence in the southern part of the principality, the assimilation of its territories by the settled population, the strengthening of its political and economic position, and the development of international relations.

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KUNIGAİKŠČIO VYTAUTO DIDŽIOJO LAIKŲ ĮTVIRTINIMAI JUODOSIOS JŪROS ŠIAURINIAME REGIONE REMIANTIS ARCHEOLOGINIŲ TYRIMŲ DUOMENIMIS

Svitlana Biliaieva

Santrauka

Po 1362 m. Mėlynųjų vandenų mūšio stepė tarp Dniestro ir Dniepro atiteko Lietuvos Didžiajai Kunigaikštystei. Ten nuo XIV a. pabaigos iki 1430 m. Lietuvos didysis kunigaikštis Vytautas pradėjo kurti tvirtovių ir jūrų uostų gynybinę ir ekonominę liniją (1 pav.). Praktiškai tai reiškė gynybinių statinių išplėtimą visame regione nuo Bilhorodo vakaruose iki Žemutinio Dniepro rytuose. Pastaraisiais dešimtmečiais atlikus istorinius, architektūrinius ir archeologinius tyrinėjimus, išsiaiškinti pagrindiniai fortifikacijų bruožai. Šie objektai buvo statomi pagal vieną planą, remiantis to meto gynybinės architektūros pasiekimais. Taip tvirtovės įgavo panašią planinę struktūrą ir konstrukcinius ypatumus. Bilhorode įtvirtinimai padalyti į keturis kiemus su citadele ir barbakanu. Tvirtovės aikštė užėmė 9 ha plotą. Tvirtovė įkūnija pagrindinius ankstyvosios artilerijos raidos laikotarpio

gynybinės architektūros bruožus (2 pav.). Tai puikus pavyzdys lyginamajai šio laikotarpio įtvirtinimų analizei. Nuo 1415 m. Kociubyjivo (Chadžibėjaus) jūrų uostas minimas kaip svarbūs grūdų prekybos vartai (3 pav.). Prie Dniepro upės žiočių, ties jos ištekėjimu į Juodąją jūrą minimas Daškovo (Dašivo) įtvirtinimas (4 pav.). 1431 m. Lenkijos pilių sąrašuose jis nurodytas kaip tvirtovė. Senosios tvirtovės pakraštyje išliko siena, panaši į XV a. Bilhorodo ir kitų tvirtovių mūrus. Be to, Nikolajevo ir Chersono srityse yra su Vytauto vardu siejamų vietovių. Tarp jų ir Tiagino tvirtovė (5–7 pav.), kurios tyrimas leido rekonstruoti sinkretinį įtvirtinimų rytuose planavimą ir raidą šiuo laikotarpiu: nuo Lenkijos, Genujos ir Lietuvos iki seldžukų ir osmanų. Taigi didžiojo kunigaikščio Vytauto paminklinio paveldo tyrimas parodė strateginę ir istorinę Europos civilizacijos raidos perspektyvą.