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The Fortifications of the Late Scythian Settlement at Konsulivske

Marcin Matera[a] and Nadiya Gavrylyuk[b]

Konsulivske belongs to the group of Late Scythian hillforts located in the lower Dnipro area. Since 2015, a Ukrainian–Polish archaeological team has been carrying out the investigation of the site. The article presents the results of these studies focused on fortifications of the citadel and the main line of defence.

KEY-WORDS: Konsulivske, lower Dnipro, Late Scythian culture, hillfort, fortifications

INTRODUCTION

The group of Late Scythian[1] hillforts, inhabited in the Late Hellenistic and Early Roman[2] periods, were situated along the banks of the lower Dnipro River, to

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1 N. A. Gavrylyuk and V. V. Krapivina have proposed the term post-Scythian culture for the Late Scythian culture of the Lower Dnipro area (2005: 66; 2007a: 52; 2007b: 563; see also: Gavrylyuk and Matera 2016). The opposite point of view was expressed by A. V. Symonenko (Symonenko *et al.*, 2015: 7; Symonenko 2016: 476–477).

2 Various scholars have differently determined the chronology of these sites, as the genesis and features of the Late Scythian culture in the territory of the Lower Dnipro were perceived in different ways (Viazmitina 1969a; 1969b; Shul'ts 1971; Symonovich 1971; Wąsowicz 1975: 113–116; Viazmitina 1986; Dashevskaya 1989: 140–145; Gey and Bazhan 1990; Abikulova and Bylkova 1994; Bylkova 1998; Gudkova 1998; Bylkova 2002; Bylkova 2005; 2007a: 112–118; 2007b; Gavrylyuk and Krapivina 2007a; Gavrylyuk and Krapivina 2007b; Gavrylyuk 2009; Bylkova 2010; Polin 2017: 232–234; Symonenko 2020; Symonenko and Sikoza 2020). According to the new analysis of archaeological materials, the Late Scythian settlements of the Lower Dnipro area were founded in the 2nd century BC or at the turn of the 2nd and 1st century BC (Gavrylyuk and Abikulova 1991: 29–30; Bylkova 2007a:

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the north-east of Olbia Pontica (Fig. 1).[3] Two other enclaves of Late Scythian culture were located on the Crimean Peninsula and between the lower Dnister and Danube rivers (Dashevskaya 1989: 140; Polin 2017: 224; Symonenko 2021: 69). Strabo (VII, 4, 5) called these three regions by a common term "Scythia Minor" (Μικρά Σκυθία). Hillforts of the lower Dnipro area extend from the bend and the first rapids of the Dnipro on the north to the beginning of the Dnipro estuary on the south (Gavrylyuk and Krapivina 2007b: 564), creating a defence system. Most of these sites were located on the right bank of the river. Only five of them were situated on the left bank (Gavrylyuk and Krapivina 2007a: 54). Such a localization gives the impression of a defensive line against a threat from the east. The rise of Late Scythian fortified settlements on the lower Dnipro roughly corresponds to the appearance of Sarmatian tribes in the Don and Dnipro interfluves, after the middle of the 2nd century BC (Polin 1992: 117; 2017: 224; cf., Bylkova 2007a: 43–44 and 111–114). However, there are no archaeological traces of the destruction of Late Scythian hillforts at this time (Symonenko 2020: 304) and the relationship between the Sarmatians and the Late Scythians has been perceived differently by scholars – from hostile (Abramova 1962: 283) to friendly (Viazmitina 1972: 174). Moreover, some of the hillforts were founded slightly later, i.e., in the 1st century BC (Bylkova 2007a: 113–114; Polin 2017: 233).[4] It cannot be ruled out that their foundation was related to the events that led to the destruction of Olbia by the Getae.[5]

The reasons for the mentioned above spatial arrangement and location of these sites are unknown. There is no doubt, however, that they remained in the zone of mutual intervisibility,[6] allowing at least the transmission of signals, for example by means of smoke or fire and making the entire system of hillforts on both banks of the Dnipro an excellent tool for controlling this part of the river – both for navigation and for crossing (Gavrylyuk and Krapivina 2007a: 54). However, this issue is difficult to resolve due to the complete change in the hydrological situation as a consequence of the construction of the dam in Nova Kakhovka and creating the Kakhovka Reservoir in the 1950s of (Bylkova 2007a: 40). Cartographic sources can prove how much the geographic conditions have changed in the lower Dnipro region. For example, on the map of the territories of the Grand Duchy of Lithuania (also known

114). Such a chronology is confirmed by materials from cemeteries (Symonenko and Sikoza 2020: 289).

3 Detailed information about particular settlements, see: Gavrylyuk and Olenkovskyi 1992: 36 sq.; Gavrylyuk 2013: 543 sq).

4 In the opinion of M. I. Viazmitina (1969a: 65): "Such a difference in the timing of the construction of defensive walls on the hillforts was obviously connected with the varying degrees of danger periodically approaching either from the Sarmatians or from the Celts and Getae".

5 On the Getic sack of Olbia, see: Vinogradov 1989: 263 sq.; Krapivina 1993: 139–141.

6 The exception are three hillforts located outside the zone of direct visibility – Zolota Balka, Kozatske and Poniativske (Lech 2019: 19 and 20, tab. 2).

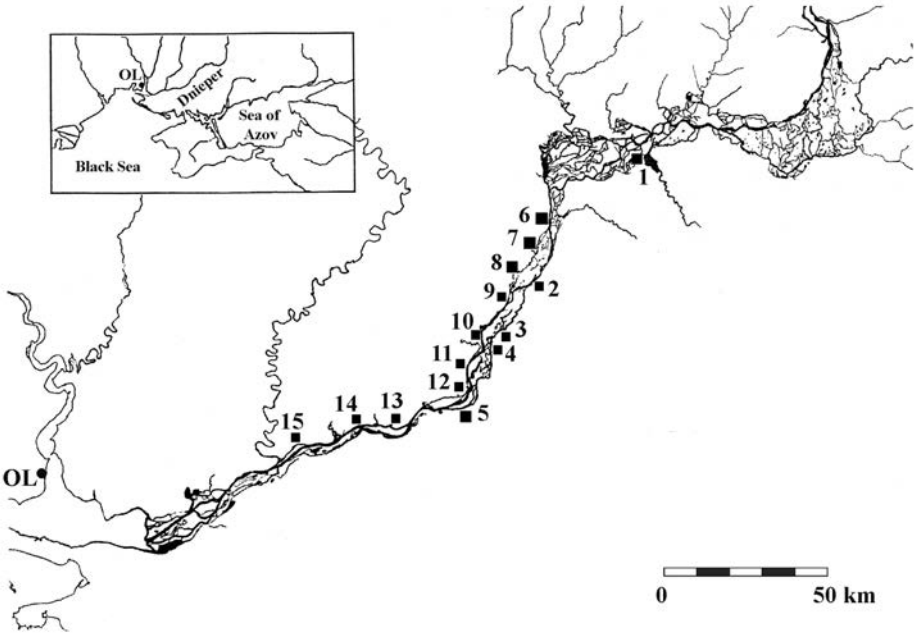

Fig. 1. Late Scythian hillforts in the lower Dnipro area and Olbia (on the basis: Bylkova 2007b: 91): **1 –** Znamenske; 2 – Velyka Lepetikha; 3 – Hornostaivske; 4 – Kairske; 5 – Liubimivske; 6 – Zolota Balka; 7 – Havrylivske; 8 – Annivske; 9 – Sablukivske; 10 – Konsulivske; 11 – Chervonyi Maiak; 12 – Zmiivske; 13 – Kozatske; 14 – Lvovo; 15 –Poniativske; OL – Olbia. Graphic design: Authors.

as the Radziwiłł map), published in 1613,[7] a number of islands and islets are visible. These details are visible in the attached map of the lower Dnipro with a much larger scale than main map.[8] These islands are also visible on the map by G. de Beauplan, published in 1650. The Beauplan map is considered to have fairly accurately reflected the water network, the most important roads, features of the terrain relief, river crossings etc. (Alexandrowicz 1978: 112). There is no doubt that Late Scythian fortified settlements were established in places with natural defensive properties – on the high bank of the river, often between deep gullies (Bylkova 2000: 132).

The Konsulivske site belongs to the group of Late Scythian hillforts in the lower Dnipro area. It is located on the river's right bank close to Respublikanets village,

7 The first lost edition of this map was printed probably in 1603 but not even a single copy of this edition is known (Alexandrowicz 1978: 110). For a detailed discussion of this issue, see: Alexandrowicz 1968.

8 On the Radziwiłł map, see: Alexandrowicz 1965. Detailed description of Radziwiłł map, see: Merczyng 1913: 416–431.

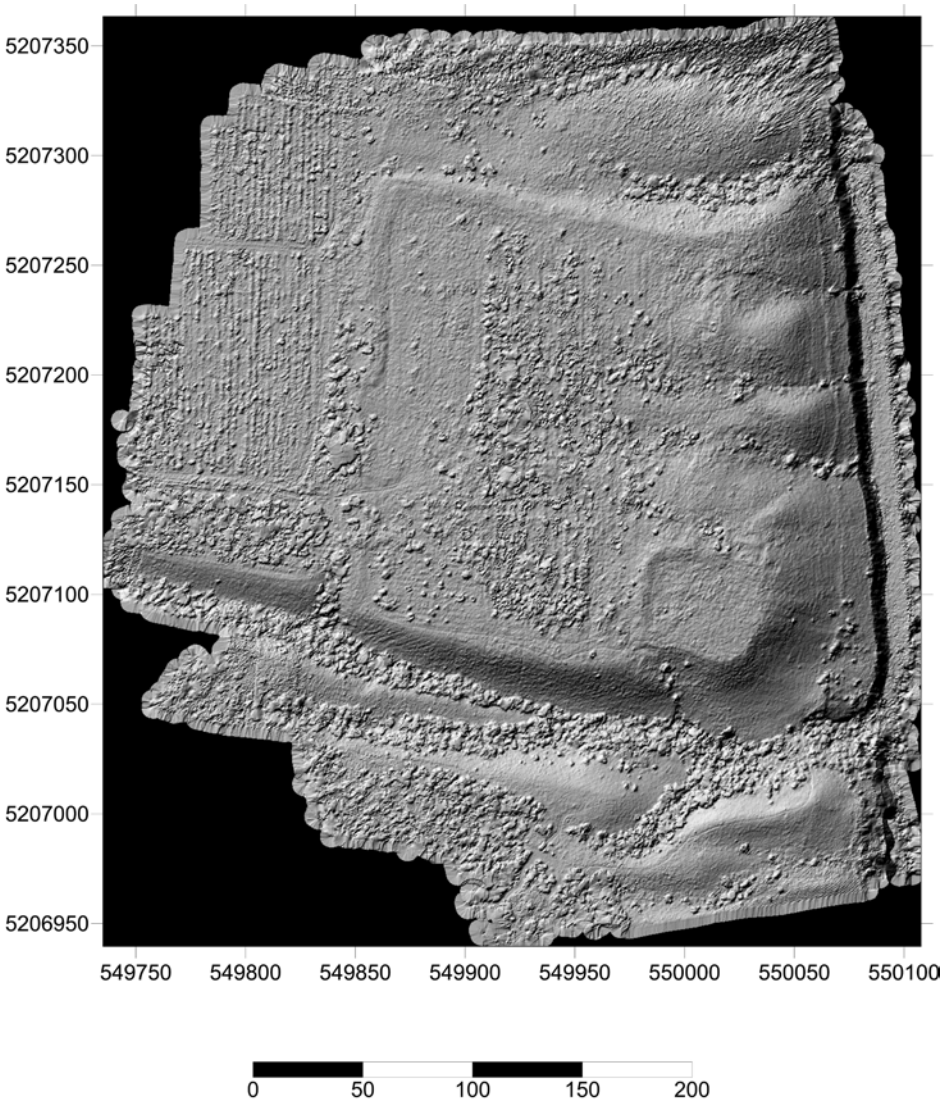

Fig. 2. Digital Terrain Model of the Konsulivske hillfort, Berislav region, Kherson oblast. Graphic design: M. Bogacki.

in the Berislav District of Kherson Oblast, in southern Ukraine (Gavrylyuk and Olenkovskyi 1992: 44; Gavrylyuk 2013: 556). The hillfort is situated on a high limestone terrace, surrounded from the north and south by deep gullies that descend towards the Dnipro (Figs 2–3).

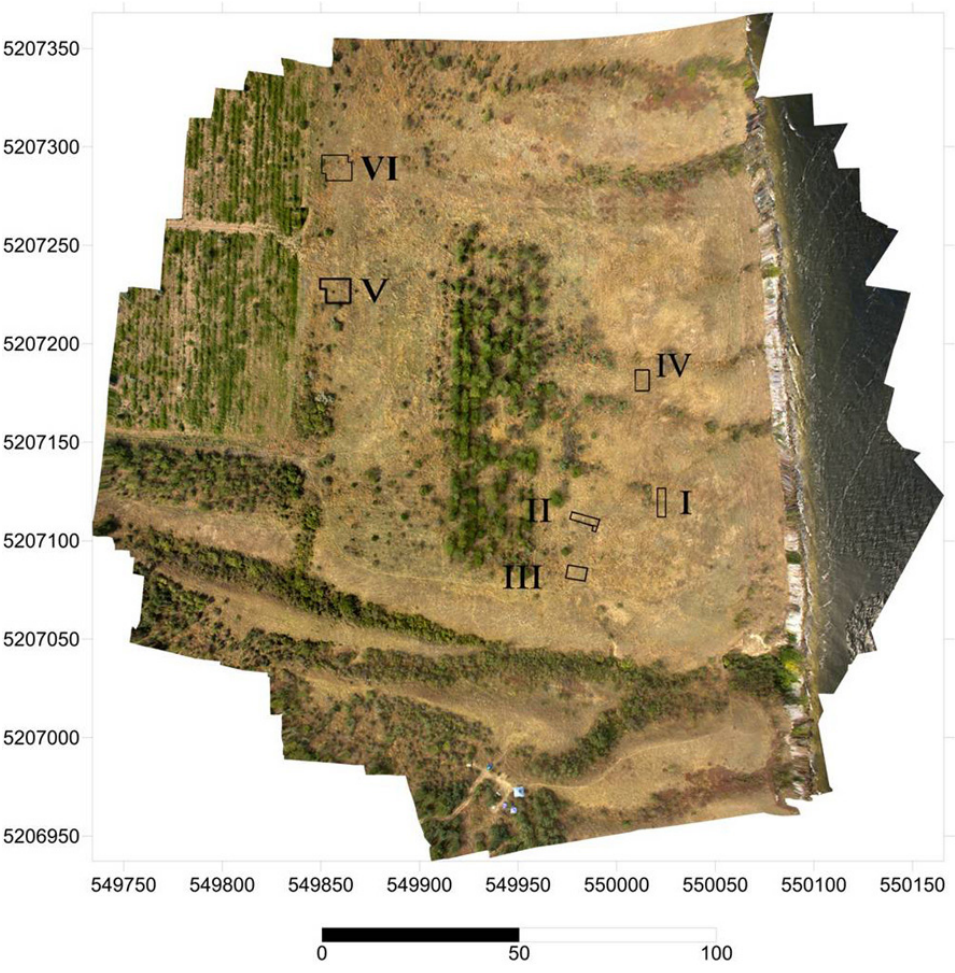

Fig. 3. Konsulivske hillfort. Orthophotomap with the localization of trenches. Graphic design: M. Bogacki, M. Matera.

The first information and descriptions of the lower Dnipro Late Scythian hillforts date back to the 19th century (Bylkova 2007a: 6; Gavrylyuk and Krapivina 2007a: 54–55; 2007b: 564–565; Popova 2011: 137; Nykonenko 2015: 91). At this time the Konsulivske site was first mentioned in scientific literature (Myshetskiy 1851: 71; Chirkov 1867: 546; Yastrebov 1894: 117). The archaeological work on the site started at the beginning of the 20th century. As a result, the description (Goshkevich 1913: 138–139; cf., Gavrylyuk and Krapivina 2007b: 565; Nykonenko 2015: 91)

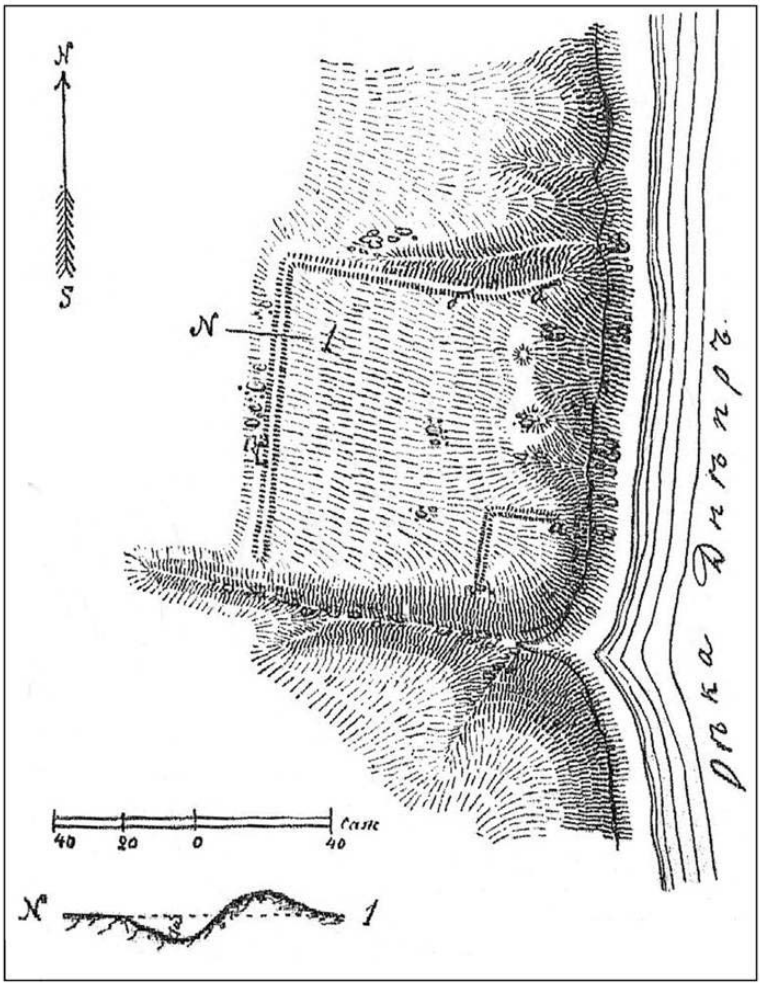

Fig. 4. Konsulivske hillfort. Topographical plan (after Goshkevich 1912, fig. 3).

and the plan of the site were created (Goshkevich 1912: 8, fig. 3; Fig. 4).[9] During the excavations carried out in 1915, a section of the stone defensive wall dated to the turn of the eras was discovered (Goshkevich 1915: 6–7; cf., Nykonenko 2015: 91). The information published by Viktor Ivanovich Goshkevich on the results

9 This plan was then republished in later works by Goshkevich (1913: 138, fig. 57; 1915: 6, fig. 3). The first schematic plans of the site were on Russian military maps created in the mid-19th century (Nykonenko 2015: 92).

of the excavations was very laconic, but their importance cannot be overestimated. Until the commencement of modern excavations in the 21st century this was the only information about the fortifications of the hillfort. It is also worth emphasizing that the citadel located in the south-eastern corner of the site was marked on the plan created by V. I. Goshkevich. Later on, no excavations were carried out. In the second half of the 20th century only some test pits and surveys were conducted on the Konsulivske site (Gavrylyuk and Olenkovskyi 1992: 44; Gavrylyuk 2013: 556; Nykonenko 2015: 91–92), but their results have never been fully published.

Modern archaeological research at the Konsulivske site started in 2014. An expedition from the National Reserve "Khortytsia" in Zaporizhzhia started the excavations from five test pits (Nykonenko 2015: 91). Since 2015, the investigation has been realised as a joint Ukrainian-Polish project in cooperation between the National Reserve "Khortytsia", the Institute of Archaeology, the National Academy of Sciences of Ukraine and the Faculty of Archaeology (former Institute of Archaeology) and the Antiquity of Southeastern Europe Research Centre – the latter two institutions associated with the University of Warsaw. The main purpose of the joint work was to study the fortification system.

Before the commencement of the excavations, non-invasive survey such as aerial photography, topographical measurements, and geophysical prospection with the use of magnetic and electrical resistivity measurements was carried out (Matera *et al.*, 2017; Nykonenko *et al.*, 2018a). The initial stage of archaeological research confirmed Goshkevich's plan and the presence of the rectangular citadel in the south-eastern corner of the site (Matera *et al.*, 2017: 126 and 129). The dimensions of the citadel were 50 (N–S) x 60 (E–W) metres (Nykonenko 2015: 95).

The results of magnetic and resistivity surveys also brought the first information about the construction of the fortifications. During the magnetic research, especially in the area of the citadel, a number of parallel linear anomalies were recorded (Fig. 5). They were also recorded (Fig. 5) during the resistivity measurements in the area of the citadel fortifications (E1 and E3 sectors) and the northern defence line of the main part of the hillfort (E5 sector). This led to the assumption that the defensive walls were double-faced structures, which was confirmed by the follow-up excavations (Matera *et al.*, 2017: 129–137; Nykonenko *et al.*, 2018a: 382–386; Matera *et al.*, 2022: 613).

FORTIFICATIONS OF THE CITADEL OF THE HILLFORT

Systematic archaeological excavations on the site of the Konsulivske hillfort started in 2015. In Trench I, laid out on the northern line of citadel fortifications, poorly preserved defensive wall remains were discovered. In 2016, Trench II was created

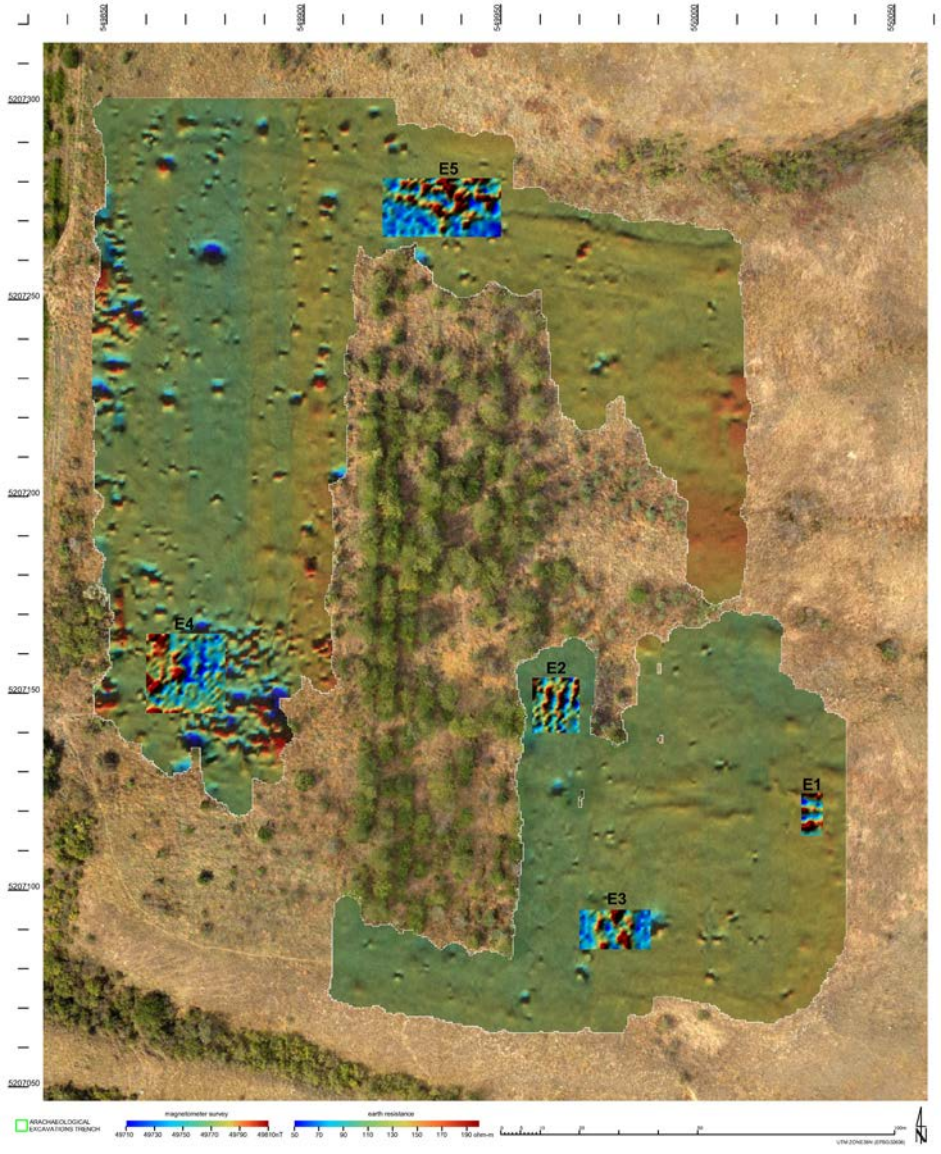

Fig. 5. Konsulivske hillfort. Orthophotomap with the results of magnetic and electrical prospection. Graphic design: M. Bogacki, W. Małkowski.

Fig. 6. Trench II with discovered remains of defensive wall.
Photo: D. Nykonenko.

to investigate the area of the western defensive line of the citadel. A part of double-faced defensive stone wall with a clay and stone filling was discovered there (Fig. 6). The wall was *c.* 2.60 m wide, constructed of big and medium irregular stones bonded with a clay. The masonry of both wall faces was irregular (Figs 7–8); stones were laid in quasi-rows, matching the size and shape to the stones next to them. The space between the facing was filled with clay and small to medium-sized stones. On the outer face the remains of loess plaster approximately 0.07 m thick was recorded. The defensive wall discovered in Trench II was built on a substructure 0.50 m height in a shape of a low earthen bank (Fig. 9). No traces of foundation or footing were observed. On the inner wall face a stone buttress supporting it was revealed (Fig. 7). Its construction was laid on alternate layers of ash and loess, resembling the technique used for foundations known from Olbia. The buttress is preserved to the height of one row of masonry. Perhaps its upper part was made of loess blocks. Its width is from 0.40 to 0.70 m. In front of the defensive wall protecting the citadel, a drainage ditch 1.30 m wide and 0.40 to 0.60 m deep was dug in the virgin loess. It cannot be ruled out that it was also of strategic importance. Together with the earthen bank protruding in front of the outer face of the defensive wall at 1.10 m, it significantly complicated a direct approach to the fortification line. This drainage ditch cut (Matera *et al.*, 2017: 137; Nykonenko *et al.*, 2018b: 389; Nykonenko and Matera 2019: 283; Matera *et al.*, 2022: 614) the mouth of Pit 5/2017 (Fig. 6).

Fig. 7. Eastern facade of defensive wall and a stone buttress discovered in Trench II. Photo: M. Matera.

Fig. 8. Western facade of defensive wall discovered in Trench II.
Photo: M. Matera.

In 2018, during the excavations in Trench III, located also in the area of the western defensive line of the citadel, the remains of the gateway were investigated. The state of preservation of the structures discovered in Trench III allowed only a general picture of this part of the fortifications to be obtained. The 1.60 m wide gate was flanked on the north by the curtain of the defensive wall and on the south by a tower without an internal room (Fig. 10). As in the case of the defensive wall discovered in Trench II, the defensive wall flanking the gateway on the north was built on a substructure in the form of a low bank. The preserved height of the bank was 0.32 m, but had probably originally been slightly higher. The surface of the entrance to the interior of the citadel was covered with an artificial layer of loess. This either functioned as a surface in its own right, or was possibly the substructure under some form of paving

Fig. 9. Earth-bank on which the defensive wall discovered in Trench II was built. Photo: M. Matera.

Fig. 10. Konsulivske hillfort. Orthophotomap of Trench III with discovered remains of fortifications and gateway. Photo: P. Lech.

Fig. 11. Trench III. The drainage ditch cut through the earlier Pit 2/2018. Photo: M. Matera.

that had not been preserved. Along the outer side of the tower the drainage ditch 0.70 m wide and 0.55 m deep was registered, as in the Trench II. Also in this case, the drainage ditch cut (Matera *et al.*, 2022: 614) a pit, Pit 2/2018 (Fig. 11).

FORTIFICATIONS OF THE MAIN PART OF THE HILLFORT

The fortifications of the main part of Konsulivske site were investigated in 2019 and 2021. In 2019, a section of the western defensive wall, reinforced with a tower was investigated (Trench V). In 2021, excavations were conducted in the northwestern corner of the hillfort (Trench VI).

The building technique and masonry of 12 m long segment of defensive wall discovered in Trench V (Fig. 12) were analogous to those known from the citadel. The wall in Trench V was also built as double-faced construction. However, its width was narrower – in some places only *c.* 2.0 m. In the entire section uncovered in 2019, the wall was built directly on a cultural layer. There were no traces of the earth-bank on which the walls of the citadel had been built. As in the case of the defensive walls of the citadel, no trace of a foundation trench and footing were registered. In

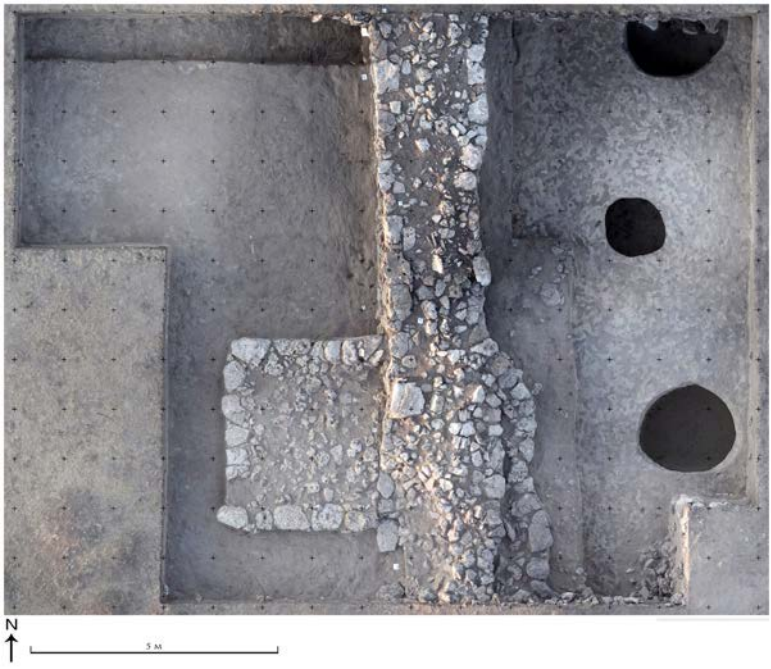

Fig. 12. Konsulivske hillfort. Orthophotomap of Trench V with discovered remains of fortifications – defensive wall and flanking tower. Photo: P. Lech.

some places beside the outer facade of the defensive wall a layer of leached loess was observed (Fig. 13). It was most likely created as a result of the erosion of loess plaster originally covering the face of the wall. A tower without an internal room was later added to the outer face of the defensive wall. The dimensions of the tower were 3.10 x 3.60 m. The differences in the chronology of both structures were evidenced by different levels of their foundations (Fig. 14). However, the complete lack of dating archaeological materials did not allow establishing the precise absolute chronology of neither the building of the wall nor the tower (Matera *et al.*, 2022: 614). Despite the fact that on the outer side of the defensive wall, the area was investigated at a distance of 7.0 m, the presence of the defensive ditch was not recorded. It is puzzling that at the beginning of the 20th century, Goshkevich saw the rampart and a ditch on its western side on the surface of the site (Goshkevich 1913: 138, fig. 57).

The excavations carried out in Trench VI led to the discovery of the northwest corner of the main line of the fortifications (Fig. 15). In this place, the western curtain

Fig. 13. Layer of leached loess beside the outer facade of the defensive wall discovered in Trench V. Photo: M. Matera.

Fig. 14. Orthophotography of western facade of defensive wall and flanking tower with different levels of foundations. Photo: P. Lech.

of the defensive wall changed direction and turned east. Interestingly, the defensive wall was built here on a curving line, to the top of which a tower was added. This corresponded to the theoretical assumptions put forward by Vitruvius, who wrote: "conlocanda

Fig. 15. Aerial photography of the Trench VI with the remains of defensive wall, flanking tower and gateway. Photo: A. Volkov.

autem oppida sunt non quadrata nec procurrentibus angulis sed circinationibus, uti hostis ex pluribus locis conspiciatur. in quibus enim anguli procurrunt, difficiliter defenditur, quod angulus magis hostem tuetur quam civem" [in English: Towns should be laid out not as an exact square nor with salient angles, but in circular form, to give a view of the enemy from many points. Defence is difficult where there are salient angles, because the angle protects the enemy rather than the inhabitants] (Vit. 1.5.2). The building technique used for construction of the wall and the tower was the same as in other places at Konsulivske hillfort. The wall of 2.20 m width was a double-faced construction with a clay and stone filling, built using large and medium-sized stones bonded with clay. The tower was rectangular in plan, measuring 3.30 x *c.* 4.00 m.

Fig. 16. Trench VI. The wall limiting the gate from the west. Photo: M. Matera.

Similarly to other towers discovered on the site, it has no internal room. Approximately 4 metres to the east of the tower, the gate leading to the inside of the hillfort from the north was discovered. So far, only the wall limiting the gate from the west has been discovered (Fig. 16). Therefore, it is not possible to determine the width of the gate (thought the width of the gate leading to the citadel was 1.60 m, so it may be assumed that the width of the gate uncovered in Trench VI was at least the same). To the north of the gate and the tower, the presence of a defensive ditch was recorded (Fig. 17). So far only its counter-scarp dug in the virgin loess has been discovered. The total width of the ditch and its full depth are still unknown. However, by subtracting the deepest point of the ditch that has been reached so far from the foundation level of the defensive wall, its depth must have been at least 2.50 m. The uncovered section of the ditch runs along the N–S line. Towards the east, it probably turns into a natural gully that limits the hillfort from the north. It seems to continue its course towards the open steppe on the west. Neither the bend of the ditch towards the south nor the ditch in the foreground of the defensive wall on the west has been recorded. Perhaps the defensive ditch continued to the west, then turned south and further east to join the gully, limiting the site on the south. In this way, an area surrounded by a ditch and perhaps an earth rampart (with or without stone wall) would be created on the western side of the hillfort. This space could have been used as a refuge or for herds. Regardless of its function, the surrounding ditch and perhaps the rampart served as the first line of defence. Similar solutions are known from some other Late Scythian

Fig. 17. Trench VI. The counterscarp of defensive ditch. Photo: M. Matera.

hillforts on the lower Dnipro area – Annivske (Goshkevich 1913: 140, fig. 59), Kozatske (Goshkevich 1913: 119, fig. 2 and 131–132), Sablukivske (Goshkevich 1913: 139, fig. 58), and perhaps Havrylivske (Goshkevich 1913: 141, fig. 60). However, already V. I. Goshkevich noticed that the first line of defence in many Late Scythian hillforts in the lower Dnipro area could have been destroyed due to the intensive economic activity in modern times (Goshkevich 1913: 142–143).[10]

The archaeological materials obtained during excavations in the Konsulivske hillfort enable establishing only a general chronological framework for the site. Due to the lack of precisely dated finds, it is impossible to establish a detailed absolute chronology of the construction of individual phases of fortifications. The largest group of finds was the assemblage of fragments of hand-made pottery. The amphorae assemblages included primarily examples of containers produced from the 1st century BC to the 2nd century AD. Fragments of Vnukov CI amphorae and sub-Koan amphorae of unknown provenance prevailed in this group of material. Fragments of greyware pottery were also relatively frequent finds. The group of fine ware was represented by examples of Pergamene and Pontic pottery. Among other finds, ceramic spindle

10 Archaeological investigations of this structure carried out in the 1950s showed its natural origin (Pogrebova 1958: 174–175). However, the natural form of the relief of the terrain, in this case a longitudinal rise and a depression in front of it, could have been used as an additional line of defence, and they certainly increased the defensive value of the place where the hillfort once existed.

whorls, loom weights, bone artefacts, beads, jewellery are worth mentioning. There were also some interesting examples of the re-use of pottery fragments. Taking into account the fact that the settlement of the Konsulivske hillfort should be dated from the 1st century BC to the 1st century AD (and maybe even later), i.e., for a relatively long period (Matera *et al.*, 2022: 615), the historical interpretation of the discoveries on this site is significantly more difficult.

The Konsulivske hillfort was one of the elements of the defence system of the lower reaches of the Dnipro from its estuary on the south to the rapids on the north. A site with natural defensive values was chosen for its foundation. The river was a natural barrier on the east, and natural gullies limited the territory of the site on the north and south. The northern gully was most likely extended by digging a defensive ditch. Only the western side of the site was devoid of a natural barrier.[11]

The defence system of the Konsulivske hillfort consisted of at least two, if not three lines of fortifications. The presence of an outer first line in the form of a defensive ditch and an earth rampart(?), with or without a stone wall, is very likely but requires archaeological confirmation. This could be partially confirmed by the results of research in Trench VI as well as the site plan made on the basis of an aerial photo by Shyshkin (Dzneladze and Sikoza 2020: 201 and 203, fig. 12.4). The second one was a main line of defence consisted of stone walls strengthened in a later period with towers. The fortifications of the citadel constituted a third line of this system.

The most important element of the fortifications of the Konsulivske hillfort were the curtains of the defensive walls both in its main part and in the citadel. These were double-faced walls with a clay and stone filling, a construction technique well-known from the Late Scythian hillforts on the lower Dnipro area and in the Crimea. Such defensive walls have been discovered at the hillforts of Annivske (Bylkova 2007a: 44), Havrylivske (Brede 1960: 193; Vetshtein 1960: 204; Gavrylyuk and Abikulova 1991: 15), Kairske (Elagina 1962: 74), Kozatske (Goshkevich 1913: 125), Liubimivske (Dmitrov *et al.*, 1961: 80), Znamenske (Pogrebova 1958: 110–114), and Zolota Balka (Viazmitina and Furmanskaya 1955: 41; Viazmitina 1962: 25–26) hillforts. Their characteristic features are irregular masonry and the lack of foundations (Koltukhov 1999: 60–61). According to Serhii Georgievich Koltukhov (1999: 61), the height of this type of walls should be calculated according to the 1:2 ratio proposed by Serhii Dmytrovych Kryzhytskyi for the Hellenistic walls of Olbia (Kryzhytskyi 1985: 142; Kryzhytskyi and Leypunskaya 1988: 27). Therefore, the walls of 2.0 to 2.60 m wide, discovered at the Konsulivske site, were originally approximately 5 m high.

The towers were another very important element of the fortification system of the Konsulivske hillfort. So far, three towers have been discovered – two

11 The location of Late Scythian hillforts in places with natural defensive values was already noted by Avksentii Pavlovich Chirkov (1867: 547).

of them strengthened the main defence line of the hillfort, and one was an element of the citadel's fortifications. All towers were rectangular in plan without internal rooms. The tower discovered in the citadel flanked the gateway. The tower discovered in Trench VI had a similar function, it was at the same time a corner tower. Both towers, in accordance with the principles of the art of fortification of the Classical world, were located to the right of the gate (Koltukhov 1999: 63). A tower flanking the gate to the citadel was also discovered at the Annivske hillfort (Gavrylyuk and Abikulova 1991: 16). At Kozatske hillfort, a gateway 1.0 m wide flanked by two towers was discovered (Goshkevich 1913: 127–128 and tab. V). The third tower known from the Konsulivske site was added to the defensive wall of western, main line of fortifications. Considering the fact that, apart from this tower, the corner tower discovered in Trench VI was a part of the same defence line, it can be assumed that, at least on the west, the fortification system of the Konsulivske hillfort was reinforced by towers. The distance between these towers was about 60 m. At the current stage of research, we are not able to say whether there were other towers between them and how many. For Late Scythian hillforts of lower Dnipro the only information on the distances between the towers is known from the Kozatske site, where they were 6 to 16 m apart (Goshkevich 1913: 127–130 and tab. V; cf., Koltukhov 1999: 63). In the fortifications of Late Scythian hillforts in Crimea the distance was more enormous – from 20 to even 75 metres (Koltukhov 1999: 63).

At the present research stage, estimating the width and depth of the defensive ditch is difficult. As mentioned above, the depth of the defensive ditch was at least 2.5 m. However, there is no evidence about its width. Some information on this subject may be provided by data from other Late Scythian hillforts in the lower Dnipro area. The data presented in Table 1 show great diversity, especially in terms of the depth of the defensive ditches. The width of the narrowest of them was 5.9 m while the widest was 14 m.

The overall picture of the fortifications of the Konsulivske site gives the impression of a well-thought-out and planned system. However, a closer look at the construction technique shows a certain carelessness, for example in the vertical deviation of defensive walls, which resulted in the need to support their facades. Structures serving as buttresses were discovered in Trenches II and V. It is difficult to say what caused this situation. It cannot be ruled out that the diligence of the construction works was influenced by the haste of the builders or lack of necessary technical knowledge. However, it is worth noting that several interesting solutions were used during the construction of the fortifications of the Konsulivske hillfort, such as the use of loess plaster and the building of defensive walls on the substructures in a shape of low earthen banks.

The use of loess plaster covering the outer facades of defensive walls registered in Trenches II, V and VI was intended to protect the wall from weather conditions,

Table 1. Depth and width of defensive ditches discovered on Late Scythian hillforts in the lower Dnipro area.

Site	Width of defensive ditch	Depth of defensive ditch	References
Annivske	6 m	3.7 m	Gavrylyuk 2013: 552
Annivske	11.5 m	2 m	Bylkova 2007a: 44
Chervonyi Maiak	no data	4.25 m	Gavrylyuk 2013: 556
Havrylivske	7–8 m	up to 2m	Brede 1960: 193
Havrylivske	9.5 m	2.5–3 m	Pogrebova 1958: 176; Gavrylyuk 2013: 552
Havrylivske	13–14 m	up to 3 m	Vetshtein 1960: 206
Kairske	5.9 m	3.2 m	Elagina 1962: 74
Kozatske	no data	up to 3 m	Goshkevich 1913: 130
Liubimivske	no data	6 m	Dmitrov *et al.*, 1961: 81
Znamenske	11–11.5 m	3–3.2 m	Pogrebova 1958: 114
Znamenske	8 m	1.3 m	Gavrylyuk 2013: 543

especially from the adverse influence of water (water percolation) and low temperature (freezing). It is puzzling, however, that only the outer faces of the defensive walls were secured in this way. Perhaps the function of this solution was therefore completely different. Similar praxis is, however, known in Late-Scythian hillforts in Crimea, where the traces of leached clay mixed with stone debris were recorded near the defensive walls. In the opinion of S. G. Koltukhov, it should be interpreted as examples of coating the facades of defensive walls with clay plaster (Koltukhov 1999: 50).

Other examples of setting defensive walls on banks of earth are known from several Late Scythian hillforts located along the lower Dnipro. This situation has been met at Annivske (Gavrylyuk and Abikulova 1991: 15; Gavrylyuk 2013: 552; Gavrylyuk and Matera 2016: 124), Chervonyi Maiak (Gavrylyuk and Olenkovskyi 1992: 44; Gavrylyuk 2013: 556),[12] Havrylivske (Brede 1960: 193; Gavrylyuk 2013: 552), Kozatske (Gavrylyuk 2013: 556; Gavrylyuk and Matera 2016: 124) and Znamenske (Gavrylyuk and Abikulova 1991: 24, see also: Gavrylyuk 2013: 543). The use of this

12 The authors provide this information citing V. I. Goshkevich's work. However, in his description of Chervonyi Maiak (Goshkevich 1913: 135) only the wall is mentioned: "[…] the wall rises above the ground level by 2.13 m".

practice on the territory of Konsulivske hillfort is therefore no exception. This type of solution was often used when the defensive wall could not be built on the stable surface (Lawrence 1979: 202–203). This is exactly the case of the fortifications of the Konsulivske site, where the virgin soil is a layer of loess. Furthermore, the use of earthen banks as the substructure for defensive walls was supposed to protect its construction from sliding into the direction of the defensive ditch (Blavatskiy 1954: 94–95). In the case of the Konsulivske site, this could protect the walls from slipping towards the valley of the Dnipro. The surface of the site, especially in its eastern part, is characterized by a steep slope towards the river.

An important conclusion from the archaeological research at the Konsulivske site is that the area of the citadel was separated and fortified later than the main part of the hillfort. This is evidenced by the discovery of two pits (5/2017 and 2/2018) cut by the drainage ditch surrounding the citadel. Due to the lack of precisely dated materials, it is not possible to determine the absolute chronology of this event. Perhaps it took place at the same time as the reinforcing of the main defence line by the addition of towers, and it was part of a wider action to increase the defensive capabilities of the hillfort.

Based on the results of the research conducted so far, it can be concluded that the fortifications of the Konsulivske hillfort constituted a well-planned defence system consisting of at least two lines of fortifications. Each of them was made of a defensive wall reinforced with towers. The main line of fortifications additionally had an external defensive ditch. However, a few key points and several specific issues still need to be clarified. One of the most crucial questions concerns the presence and potential form of the third line of defence. The absolute chronology of the individual phases of the construction of fortifications also requires clarification and further investigations. The same applies to the question of the influence on the Late Scythian hillforts of the thought in the Classical world on the topic of fortification. Certain elements show a striking resemblance to the fortifications of Olbia (Pogrebova 1958: 242; Viazmitina 1962: 105; Wąsowicz 1975: 111).

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