



## Summary :

Although almost all of the ancient Greek cities of the northern Black Sea were fortified, there is limited information available about those constructions. The parts of the fortifications revealed by archaeological excavations usually prevent the full reconstruction of the defensive system of each city. They, however, provide an indication of their general development, covering the period between the foundations of the colonies in the 6th c. BC and the 4th c. AD, when most of the cities had already disappeared.

## Date

6th c. BC – 4th c. AD

## Geographical Location

Black Sea

## 1. Northwestern Black Sea

The description of the remains of the ancient fortifications in the northern Black Sea follows the path preferred by the ancient writers of the “*Peripli*”, namely from east to west.

### 1.1. Tyras

Two sections of the fortifications of [Tyras](#) constructed in different periods have been revealed so far. They cannot be identified since their largest part was destroyed during the construction of the medieval Akkerman fortress, as it happened with the entire city.

According to the evidence available today, the city’s first fortification is dated to the mid-4th c. BC. It includes the partially preserved northern and southern walls (2.20 m thick). The faces of the walls were constructed from rectangular middle-sized blocks without any binding material, and were filled with rough stones and clay. Some believe that the southern wall ended in a gate still unrevealed.<sup>1</sup> The walls, which seem to have been restored, were used until the mid-3rd c. AD.<sup>2</sup>

During the second construction phase (first half of 3rd-2nd c. BC), the fortifications were extended to the southeast due to the expansion of the city. The wall of this period has also partially been preserved, as it happens with the 11.25m-diameter circular tower erected on a flattened rock, according to the *isodomic system*, from well-dressed limestone slabs up to 4 m long. The 0.73m-entrance to the tower has been preserved, while the thickness of the walls ranges from 1.30 to 2.25 m.<sup>3</sup>

### 1.2. Olbia

Although [Herodotus](#)<sup>4</sup> reports the existence of fortifications in [Olbia](#) in the 5th c. BC, no remains have been excavated so far. The city had an extensive fortification system that started to be constructed in the 4th c. BC. Unlike other cities of the northern Black Sea, the fortifications of Olbia were founded on successive layers of clay and pebbles like all city buildings. Among the earliest fortifications of Olbia preserved to date are the northern and the western gates, dated to the late 4th-early 3rd c. BC and early 4th c. BC, respectively, as well as parts of the walls.

The double northern gate, whose foundations is the only part preserved, had a walled courtyard and was fortified with four towers. Alongside there was a side (auxiliary) door used in emergencies. At this point the walls were approximately 4.30 m thick.

Only a few remains of the walls between the towers (curtains) and the two towers protecting the gate, constructed without foundations from mud bricks, have been preserved from the complex of the western gate. The latter was burned during a fire in the second half of the 4th c. BC and a temporary wall was erected on its site, which was replaced by a new one towards the end of the same century. The subsequent wall was made of stones and was 3.50 to 4.50 m thick; it was made from well-dressed stones and



was fortified with towers. The curtain was 60 m long, while the four-sided towers measured 14.5X14 and 15.7X16.6 m.

The destruction of the early fortifications and the ensuing interventions were probably associated with the siege of Olbia by Zopyrion in 331-330 BC. According to sources, Zopyrion failed to capture the city, which proves that Olbia was strongly fortified. This particular part of the fortification enclosure remained in use until the early Christian centuries.

In the 2nd c. AD, when a Roman legion was stationed in Olbia, a donjon consisting of a system of walls, towers and a moat was constructed in the upper city. The walls were made from huge blocks, whose front side was covered with well-dressed limestone slabs.

## 2. Western Taurica

### 2.1. Kalos Limen

Very few parts of the early fortifications of [Kalos Limen](#) have survived, dating to between the last quarter of the 4th c. BC and the first third of the 3rd c. BC.

The walls had mud bricks in their lowest parts and two faces 1.10-1.60 m thick made of well-dressed stones. The gap in-between the faces was filled with stones and clay.

A special feature of this fortification system was the long distance between the towers, reaching 100-150 m. There were at most 6 or 7 towers, which probably had four sides and were rather small (about 5X5 m), constructed like the walls.

The main gate of the fortification (3.20 m wide) was built in the eastern part of the wall in the 3rd c. BC together with an additional protective tower. The gate led directly to the main street of the city.

Towards the 2nd third of the 3rd c. BC Kalos Limen was attacked during the [Scythian](#) campaign against the chora of [Chersonesus](#) and, as a result, its fortifications were partly ruined. Later, after things had settled down, fortifications were restored. A powerful donjon and a wall with two stone faces were erected on a base from huge stones on the northwestern corner of the fortification. The wall was 2.80-2.95 m thick and the curtain ranged from 25 to 40 m.

The two surviving towers, consisting of high, stone made, stepped bases and upper parts from mud bricks, measured 7.25X10.25 m and 9.80X10.25 m, respectively.

The donjon had two gates facing the city and a side door leading outside the enclosure. One of the towers was fortified with a monumental pyramidal buttress supporting the retaining wall, made from huge well-dressed limestone slabs with peritainia (smoothly sculpted bands on the periphery of the facing side of a stone block). The base of the retaining wall was thus between 1.85 and 2.0 m thick, while the upper part was between 0.80 and 2.0 m thick.

In the mid-2nd c. BC the city was occupied by the Scythians, who restored the fortifications that had partly been destroyed during the capture of the city. More substantial completions of the fortification system were made in the second period of the Scythian occupation, as the conquerors surrounded the city with a moat and an embankment. Though slightly changed, this fortification system remained in use until the early Christian centuries.<sup>5</sup>

### 2.2. Cercinitis

The construction of the fortifications of [Cercinitis](#) started in the 5th c. BC. Two parts of the fortification wall have survived, 11.5 m and 25.5 m long and 1.25-1.48 m and 1.56-1.58 m thick, respectively.



The first part of the wall has two faces and is dated to the first half of the 5th c. BC. Its facade is built according to the **pseudo-isodomic** system and consists of three rows of stone slabs with **orthostates**, 0.76-0.78 m high, and an internal face from rough stones. The gap between the faces was filled with stones and clay. The surviving masonry forms the base of the wall, while the upper part was made from mud bricks. The second surviving part of the enclosure, dated to the late 5th c. BC, was similarly constructed, though the front blocks were adorned with peritainia.

Towards the mid-4th c. BC, after the city was expanded, a new fortification enclosure was built, including 1.60-1.80 m thick stone walls with two faces. There were four-sided towers measuring 6X6 m, while the walls were only 0.70-0.75 thick.

The weakest points of the enclosure were fortified in the late 3rd c. BC with inclined buttresses supporting the walls, therefore increasing the thickness of the lower part of the enclosure to 2.5-3 m. At the same time, a powerful double-faced cross-wall with a maximum thickness of 2.70 m was erected in the middle of the fortification, following the isodomic rectangular system of masonry. According to estimates, the perimeter of the fortification enclosure of Cercinitis was 1.2 km long in the 4th c. BC. There were twelve towers reaching 10-12 m in height.<sup>6</sup>

### 2.3. Chersonesus Taurica

The fortification system of Chersonesus is extremely complex with regard to chronology and correlation of its parts due to the repeated modifications it suffered in Antiquity and the Byzantine years.

The city was fortified already from the late 5th-first half of 4th c. BC, although no traces have been brought to light, with the exception of a minor part at the centre of the city revealed towards the end of the 19th century.

The earliest fortification enclosure of Chersonesus is probably correlated with the remains of a tower with a rectangular top view, measuring 6X8 m. The tower is made from rough stones and clay, while its walls are 1.2 m thick.<sup>7</sup> The enclosure offered protection to the harbour, the most significant part of the city.

A new fortification enclosure with four-sided and circular towers, which surrounded the city to the west and north in the coastal area while its southern part followed the stream to the south of the city, was built to the west of the first enclosure in the second half of the 4th c. BC. The overall perimeter was now 3.5 km, with its walls and towers reaching a height of 10 and 12 m, respectively.

In the 3rd c. BC fortifications were improved in the southeastern part of the city, for it was the most defenceless of all because of the adjacent mound.

Here was created the most powerful defensive complex of the fortification, including the gate, more than ten towers and a mighty wall. The base of the double-faced wall was made from exceptionally dressed massive blocks with peritainia, though without any binding material. At a later moment, possibly in the Roman years, a rampart was added to this part of the defensive front.

The same part also accommodates the main gate-entrance to the city. It is the mightiest segment of the wall, with a maximum thickness of 4 m. The 2.87 m-wide gate is constructed from well-dressed blocks with peritainia.

Two pylons measuring 4.80X3.14 m were constructed behind the gate and inside the enclosure; there was a stair at their side leading to the wall battlements.<sup>8</sup>

In the 2nd c. BC the southeastern part of the fortification wall was extended to the east and included the earlier eastern wall. As a matter of fact, a sort of donjon was created after the extension, whereas an 8 m-diameter circular tower was erected on its southeastern corner.

In the 5th-6th c. AD, during the rule of Emperor Zeno, the tower was enclosed with new masonry, while in the 9th-10th c. AD, a



third wall was built and, as a result, the overall diameter of the tower reached 23 m.

Though with some modifications, the fortification system of Chersonesus was used until the 15th century before it was finally destroyed during the [Tatar](#) invasion.

### 3. Cimmerian Bosphorus

#### 3.1. European Bosphorus

##### a. Theodosia

Judging from information provided by Polyaeus,<sup>9</sup> towards the late 5th-early 4th c. BC [Theodosia](#) had powerful fortification walls that helped the city endure the long years of siege laid by the tyrants of the Bosphorus. No remains have been revealed so far because the ancient city has not been thoroughly excavated.

##### b. Cimmericon

The earliest fortification system of [Cimmericon](#) remains unknown. In the Hellenistic period, the city extended over a mound and was surrounded by a Cyclopean wall to the south, east and north. The wall was made from huge rough blocks and smaller stones in-between to fill the gaps. A similar wall, 2.5 m thick, also existed in the area of the harbour. On the eastern edge of the plateau of Mountain Opuk, the city was protected by a fortress made of blocks, with a donjon to the north. The donjon walls were 4 m thick. The fortress, which remained in use until the 3rd c. AD,<sup>10</sup> was built in the 1st c. BC.

##### c. Cytaea

Towards the late 4th c. BC double-faced, 2.20-2.50 m thick fortification walls were built in [Cytaea](#). The external face was made from roughly dressed stones, while the internal was from rough stones and the gaps in-between were filled with quite large stones. The walls were fortified with towers and a moat 6 m wide was created.

The most powerful walls were on the coastal, eastern and northern sides of the city (thickness ranging from 3.20 to 2.90 m, respectively). The western wall was constructed in the 2nd c. BC. It was 1.7 m wide and only parts have survived.

The western tower, which protected the northern gate, was made from large limestone blocks with well-dressed front sides. In the beginning the tower measured 5.00X4.20 m.

In the 1st c. AD the original wall was strengthened with a 3 m-thick extension from massive, rough limestone slabs and stone filling. In the 3rd-first half of the 4th c. AD, the tower was surrounded with a 1.50-2.50 m thick buttress, while a rampart was constructed along the boundary of the northern gate.<sup>11</sup>

##### d. Nymphaion

[Nymphaion](#) was certainly fortified in the 4th c. BC. Mainly the foundations of the fortification wall built in the second half of the 4th c. BC have survived along a length of 98 metres. The double-faced wall was 2.36 m thick and was made from rough stones, while the gap in-between the faces was filled with smaller stones and clay. The projecting lower row of the masonry of the front face was made from large, rough stone slabs of a maximum length of 1 m and served as a base. At certain points the wall was supported by abutments. The wall had an opening-gate 1.16 m wide, while a side door 0.63 m wide existed within 3.36 m from the gate.<sup>12</sup>

##### e. Tyritake



[Tyritake](#) had a fortification enclosure already from the 5th c. BC. Two segments of the wall of that period have been revealed in the south of the city. It was a double-faced wall made from roughly dressed stones, filled with stones and clay in-between the faces. At the turn of the 3rd c. BC the fortifications were reconstructed. Large blocks up to 1 m wide with peritainia were used for the erection of the walls. The enclosure was fortified with rectangular and trapezoid towers from squared blocks.

Another part of this enclosure, up to 2.30 m wide and strengthened with towers, was brought to light in the north of the city. The masonry consisted of large blocks with binding mortar and was covered with a second, external wall 1.6 m thick. One of the towers had a rectangular loophole 0.15 m high and 0.24 m wide. The towers and the wall were similarly constructed, except for the fact that the internal wall was made from rough stones. The fortification system of Tyritake remained in use until the early Christian centuries.<sup>13</sup>

#### f. Panticapaeum

[Panticapaeum](#) was one of the very few cities of the northern Black Sea that had an acropolis situated in the east of the plateau, at the highest point of the Mithridates hill, known as “Pervoje kreslo”. The fortification of the acropolis, which is possibly dated to the 5th c. BC and included towers and a wall, occupied a position important for the defence of the city as it allowed control over the entire plateau and any points of access to the hill. The acropolis was crowned with a donjon – a tower built on natural rock.

The northwestern corner of the plateau was protected by an enormous tower covering an area of over 400 square metres. The base of a similar tower was revealed within 150 m to the north of the first tower, although the wall that connected the two towers (curtain) has not been excavated yet.

To the west of the acropolis excavations carried out in the last decades have revealed the ruins of a fortified structure of the 4th c. BC, which is identified with the palace of the [Spartocids](#) of the Bosphorus. The east part of the plateau, where the above structure stood, was divided from the acropolis by a stone wall with towers.

In the 3rd c. BC the fortification system of the Mithridates Hill was extended and included the remaining, unfortified part of the plateau, known as “Vtoroje kreslo”. This part of the fortification wall included two gates, from where two roads leading to Theodosia and Tyritake started. The walls were up to 3 m thick and were fortified with circular towers.

The fortification system protecting the acropolis and the Spartocid palace was twice destroyed in the 2nd c. BC, but was later restored though with slight modifications. At a subsequent moment, in the years of [Mithridates VI](#), some lookouts were added to the fortification system of the acropolis.

Fortifications also existed in the lower city, where a part of a wall from well dressed blocks with peritainia was traced. Some of the blocks were even 3 m long.<sup>14</sup>

#### g. Myrmekion

[Myrmekion](#) had one of the oldest fortification systems of the northern Black Sea, with a part of a wall approximately 12 m long and 3-3.2 m thick surviving today. It was a double-faced wall from rough stones with coarse fronts. The gap between the faces was filled with alternate layers of stones and clay. The wall was erected circa 470 BC.<sup>15</sup>

In the early 4th c. BC Myrmekion was surrounded with a fortification enclosure with towers, part of which was revealed on the northern edge of the city. The enclosure was 2.50 m thick. Among the findings were also the remains of a tower from the enclosure, measuring 6.0X6.20 m. It had four sides and two faces, and was made from large stones with dressed front sides and clay serving as binding material. Another part of a 4th c. BC wall was also traced in the east of the city, which was demolished in the mid-3rd c. BC before a new one 3.80 m thick was constructed on its site.<sup>16</sup>

#### h. Porthmeion / Porthmeia



Recent research in [Porthmeia](#) has brought to light the remains of one of the earliest fortification systems in the Cimmerian Bosphorus. A part of the base of the eastern fortification wall, consisting of large limestone slabs (wall dimensions: approx. 13 m long, 1-1.1 m wide, preserved height up to 1.2 m), was revealed. The upper section of the wall was possibly made from mud bricks. Ruins of a similar wall of the second half of the 6th c. BC were also found in the south of the settlement, though in very poor condition.<sup>17</sup>

In the mid-3rd c. BC, together with the reconstruction of the urban network, the city was enclosed with a new fortification wall, 2.4-2.5 m thick. The walls were made from massive limestones, roughly hammered on the front side, and clay as binding material, according to the irregular masonry system. In-between the faces there were stones and clay.

The ruins of a tower with a rectangular top view, which protected the minor gate-entrance, were traced on the northwestern corner of the fortification system. The tower measured 9.75X9.0 m and was constructed similarly with the wall. The external northern wall of the tower was 2.5 m thick, while the other walls were 2.25 m thick. The tower had a buttress 0.6 m wide and its interior was paved with tiles. Inside the wall and before the gate there was a tiled yard covered with a layer of shards (vessel fragments) and clay. A similarly constructed paved spot, with an enclosure and an area of approximately 50 square metres, opened before the gate.<sup>18</sup>

## 3.2. Asian Bosphorus

### a. Kepoi

No information is provided in the sources about the fortifications of [Kepoi](#). According to excavation evidence, in the 1st c. AD the city was surrounded with a fortification embankment to the north, which was constructed very fast perhaps due to an emergency reason.

### b. Patraeus

At the turn of the 1st c. AD a moat was dug around the city of [Patraeus](#), and the extracted soil was used for the construction of a defensive embankment 2.60 m high. A fortification wall from mud bricks measuring 0.52X0.52X0.07 m, 3.60 m wide, was built on top of the embankment. The fortification probably had a rectangular top view. The entrance gate was in the eastern part of the wall; it was 3.65 m wide and was fortified with two pylons measuring 6.70X1.90 m.

### c. Phanagoria

The earliest fortifications of [Phanagoria](#), with parts of their wall bases surviving today, are made from massive rough sandstone slabs, while the upper part is 1 m thick and made from mud bricks; they are dated to the early 5th c. BC. The threshold of the main gate of the city has been revealed. The gate was 2.55 m wide.<sup>19</sup> In the 4th c. BC the city was possibly unfortified. The old wall must have been demolished and covered by the urban network.<sup>20</sup>

The city was once again encircled with a fortification enclosure up to 4 m thick in the 3rd c. BC. The foundations of that wall, made from slantingly positioned rough stones, have survived. The wall was pulled down in the 1st c. BC.<sup>21</sup> As evidenced by sources, in the 1st c. BC the city had a wooden fortification, which was burned during the revolt of Phanagoria against Mithridates VI Eupator.<sup>22</sup> In the early 2nd c. AD the fortification enclosure of the city was reconstructed and possibly remained in use until the 4th c. AD.<sup>23</sup>

### d. Gorgippia / Syndikos Limen

The early fortifications of [Gorgippia](#) perhaps included the part of a 5th c. BC wall whose base is the only segment surviving along a length of 18 m. The wall was 1 m thick and was constructed in the first half of the 5th c. BC on a site earlier occupied by dwellings that had been pulled down. Towards the late century, the city was fortified with a mighty 2.4 m-thick wall, preserved along a length of only 5 m.<sup>24</sup>





The part of a fortification enclosure (1.8 m thick, preserved length 15 m), revealed in the southeastern quarter of the city, was constructed in the 3rd c. BC. The wall had two faces and was made from large, roughly dressed blocks measuring 1.0X0.5X0.3 m, with peritainia on their fronts, and possibly consisted of stones all along its height.<sup>25</sup>

According to an inscription from the years of King Sauromatos I (93-123 AD), the fortifications of Gorgippia were reconstructed in the late 1st-early 2nd c. AD.<sup>26</sup>

#### e. Hermonassa

As regards the fortifications of [Hermonassa](#), there is only an epigraphic testimony<sup>27</sup> referring to the reconstruction of a tower, which proves the existence of fortifications towards the late 1st-early 2nd c. AD or even earlier.

#### 4. General Remarks

The development of fortifications in the ancient Greek colonies of the northern Black Sea was to a large extent connected with changes in the tribal composition of the region, the level of economic growth of the cities and general political developments.

During the colonization of the region, the selection of a strategic position for the foundation of the cities doubtlessly played an important role. However, the colonies of the northern Black Sea were more frequently founded in areas without permanent population, where nomadic tribes rarely appeared.

Most of the northern Black Sea colonies were founded towards the mid-6th c. BC, while the first fortifications appeared after half a century had passed from the foundation of the colonies, in the late 6th or the early 5th c. BC.

Two main reasons triggered the construction of fortifications. On the one hand, it was the arrival of the Scythians, whose presence in the steppes of the northern Black Sea became permanent from the late 5th c. BC onwards. On the other hand, it was the development of the colonies, which achieved a level of prosperity that brought about the development of the cities and the implementation of new building practices.<sup>28</sup>

Early fortifications are described by somehow temporary structures due to the relatively limited economic power of the cities. However, already from early on there were certain local features that clearly affected the fortification architecture of some regions of the Black Sea, as it happened with the fact that stone-made fortifications appeared quite early in areas rich in rocks, otherwise mud bricks were used.

In most cases, the inhabitants of the colonies followed the general principles of the Hellenistic fortification architecture and at the same time continued Greek building traditions, which they adapted to the conditions of the new nomadic environment and a different war tactic of the tribes.

In the late 5th and particularly in the 4th c. BC, when the cities achieved economic prosperity and, as a result, people acquired wealth and population increased, fortification systems were further developed. Old fortifications were reconstructed and new were built. At this stage, the political factor occasionally would play some role in the issue of either reconstructing or pulling down fortifications, since it was the time for the formation of powerful states, such as the state of Chersonesus and the state of the Cimmerian Bosphorus.

When [Sarmatian](#) tribes appeared in the northern Black Sea in the 3rd c. BC, the threat of war became increasingly obvious and was immediately reflected in the reconstruction of fortification systems in the cities and the strengthening of rural settlements, in which the introduction of new siege weapons was taken into account.

Towards the late 1st and the early 2nd c. BC a new period of turmoil started for the cities of the northern Black Sea, associated with



the second wave of moving Sarmatian tribes. This period is correlated with the construction of fortifications primarily on the eastern defensive line of the Cimmerian Bosphorus. However, the cities were unable to intercept the steady nomadic pressure and were finally destroyed by the [Huns](#) towards the late 4th c. AD.

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28. It was noted that the early developmental stage in most northern Black Sea colonies lasted 70 years on average. Throughout that period, people lived in subterranean dugout or semi-dugout dwellings, while masonry and subsequent urbanization appeared towards the end of the period. Y. Vinogradov called it "period of adjustment"; see Виноградов, Ю.А., "К проблеме становления древнегреческих городов в районе Боспора Киммерийского", in Буев В.Ю. (edit.), *ΣΥΣΤΙΤΙΑ: Παмяτι Юрия Викторовича Андреева* (Санкт-Петербург 2000), pp. 230-231.

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## Glossary :

 **isodomic masonry (opus quadratum)**

A type of masonry in which blocks of equal length and thickness are laid in courses, with each vertical joint centered on the block below.

 **orthostate**

A course of blocks laid on edge, normally in the lower part of the wall of a building.

 **periplus, the**

From the greek word "περίπλους" (sailing-around), roughly corresponding to the Latin circum-navigatio. For Phoenicians, Greeks, Romans and Byzantines it was a manuscript document belonging to ancient documentary genre that survived in late antiquity. used as a guide for sea travelers. The periploi listed in order the ports and coastal lines, with approximate distances between, even shelters, that the captain of a vessel could expect to find along a shore, market towns, neighboring tribes and their wares. They also contain historical and mythological information and for the most part they are works of erudition.

 **pseudo-isodomic masonry**

Masonry built of blocks of the same height within each course , but each course varying in height.

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