A comparative study of ancient Greek city walls in North-Western Black Sea during the Classical and Hellenistic times

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Abstract

Greek presence in the North Western Black Sea Coast is a fact proven by literary texts, epigraphical data and extensive archaeological remains. The latter in particular are the most indicative for the presence of walls in the area and through their craftsmanship and techniques being used one can closely relate these defensive structures to the walls in Asia Minor and the Greek mainland.

The area examined in this paper, lies from ancient Apollonia Pontica on the Bulgarian coast and clockwise to Kerch Peninsula. When establishing in these places, Greeks created emporeia which later on turned into powerful city states. However, in the early years of colonization no walls existed as Greeks were starting from zero and the construction of walls needed large funds. This seems to be one of the reasons for the absence of walls of the Archaic period to which lack comprehensive fieldwork must be added. This is also the reason why the Archaic period is not examined, but rather the Classical and Hellenistic until the Roman conquest.

The aim of Greeks when situating the Black Sea was to permanently relocate and to become autonomous from their mother cities. In order to be so, colonizers had to create cities similar to their motherlands. More specifically, they had to build public buildings, among which walls in order to prevent themselves from the indigenous tribes lurking to chase away the strangers from their land. In many cases, locals were attacking Greek cities in order to seize the Greek wealth and produce. As a result, walls were constructed so as to protect the cities and to ensure the fact that these would remain intact from barbarian attacks.

However the construction of walls in a faraway place was by no means the same with the exception of craftsmanship. Other than that, the materials being used and the morphology of the ground urged them to find new ways and to use new materials for the construction of walls.

In addition, by comparing this, useful realizations are made as to the origin of colonizers; the building techniques being used and the way location or indigenous tribes may have affected the construction of walls. Charts are given in the last pages of the dissertation comparing walls and their components, so as to extract more
information and to come down to useful realizations. Furthermore, a number of pictures of walls and their reconstructions as designed by scholars are added.

This paper was compiled with the hope to give an insight regarding walls of the North Western Black Sea coast in the Classical and Hellenistic times, and through their correlation with the Greek walls to ensure once more the impact of Greek colonization for in terms of the walls in the Black Sea. Finally, this paper was created with the wish to lay fundamental questions concerning defense systems in the area, which will be further explored by additional work done in the near future.
Foreword

The study of fortifications is an integral part of the study of ancient Greece. These are of the most impressive ancient remains that when found, attest the location of a city. Inscriptions and ancient writers referring to walls are also important, but nothing is so powerfully indicative and can make the hypothesis that a city is located in a certain place come true, such as the unearthing of ancient walls. Their study can lead us to serious realizations regarding not only the location of a city and how much organized it was, but also through their stratigraphy, it can reveal parts of history. The good condition or the opposite of walls, subjected to numerous factors such as the natural phenomena of earthquakes, changes in the sea level and human action meaning wars, which lead to demolitions and to reconstructions, is a factor related to the kind of information that walls can provide us.

However not only the stratigraphical evidence, but also the epigraphical evidence as well which is examined first, meaning the literary sources is an evidence for the existence of walls in an area. By walls we mean the fortification systems, the gates, the towers and the ditches that were made with the intention to protect the city from exterior enemies. Each Greek city state seems to have had its separate, well organized system, not only surrounding the city area but as well villages and farms subjugated to it. However in this paper we are going to analyze only the city walls as including suburban and rural walls is a vast matter that deserves to be a separate survey.

 Usually, the places where the Greek colonies were established were chosen under great consideration in order to protect a city through natural barriers making it thus were very suitable to establish. This is the reason why walls were not necessary in the first place since natural forms were replacing them. However, when enemies started appearing from the vast Steppes or the sea, these natural barriers were not enough, and walls became a necessity.

The area examined in this paper is from ancient Apollonia Pontica on the west Black Sea coast and clockwise (fig.1) until the western area where the Bosporan

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1 For a further analysis read McNickoll (1997) Hellenistic fortifications, from the Aegean to Euphrates, Oxford Monographs, pp. 2-14.
2 Wasowicz 1982, p.79.
Kingdom was developed- Kerch peninsula, contemporary border of Ukraine and Russia (fig.2). The north, the west Black Sea coast and Kerch³, part of the north Black Sea coast, are examined in separate chapters where colonies are presented individually. But before their examination, an analysis of the way walls in ancient Greece were constructed and matters regarding this issue, is given.

Regarding each colony, firstly some details are given concerning ancient sources that refer to the city, its foundation date and its location, and then walls of Classical and Hellenistic periods are presented. Sometimes, a reference is also made about the Archaic walls as well, but only if these are connected to the latter ones by means of rebuilds and reconstructions of older walls.

Since the area examined is a huge one, it is obvious that numerous factors contributed to the differentiation or similarity of walls in terms of dating, of reasons of their appearance, differences having to do with materials being used and why of each kind and as for construction methods. Moreover, one should think of examining repetitive patterns or look for similarities and differences in the size of walls. Factors such as the neighboring tribes and the relationship of the ancient Greek colonies of the Black Sea with them can be also examined helping shape the historical context and define the relationship between locals and colonizers.

A reference is also made concerning walls that haven’t survived up till the recent times and the reasons why. This happened mainly due to the submerging parts of cities into the sea, as the sea level changed over the centuries. Moreover, rebuilding on ancient times sometimes had to do with the use of pre-existing materials such as old walls and to their use in other buildings. Another reason is the fact that some of the walls were destroyed for the sake of the expansion of cities either ancient or modern, with the striking example of Odessos (Old Varna) which was destroyed in order to build the modern port of Varna and that we are going to analyze later on. Finally, the role of attacks and wars that has been proven sometimes destructive for the ancient walls should be also taken into consideration, with the most significant example for the north Black Sea, World War II that not only destroyed many parts of ancient buildings, but also held back research on the area for many years.

³ This distinction between north Black Sea and Kerch is based on geography, the fact that Kerch is located on a peninsula and on history, as in Kerch, Panticapaeum- the heart of the Bosporan Kingdom- was located.
Finally, cities that lacked a defensive system of walls are examined in a separate chapter as well as the reasons why this happened. Probably it was due to the fact that they were facing no imminent danger during their circle of life, or the fact that they were very well protected from natural borders such as rivers, mountains, natural ramparts and ditches constituting thus the existence of walls either complementary or not necessary at all.

All these matters are intended to be tackled in this paper by research based on ancient sources and descriptions of walls in literary texts as well as on modern bibliography through articles specialized in relevant matters, excavation reports included. Comparative charts are presented in the end of the paper, intending to lead us to useful realizations and to a further comparison regarding the walls of the north-western Black Sea cities. However, the above clues can lead us only to temporary results as one cannot exclude the fact that new data from excavations that are still ongoing will come to light and change our perspective on the matter.

My interest on this paper and most particularly on the subject itself stems from my educational background totally concerning the Black Sea and my lecturer’s passion for archaeology Dr. Manolis Manoledakis that passed over to me through his inspiring lectures and who I thank warmly for his advice throughout my effort. I would also like to thank for their valuable help Prof. Papuci-Wladyka Ewdoksia from the Jagiellonian University who helped me trace articles in Russian, and Mr. Ginchev Admissions Officer of the Balkan Heritage School, who provided me useful information concerning the city plan of ancient Odessos. Special thanks to my supervisor Prof. Ioannis Akamatis, for his encouragement and enlightenment in bibliography concerning ancient Greek walls. Finally I owe warm thanks to my family for their support and apprehension throughout all my years of study.
-List of contents-

1. Introduction............................................................................................................. 10

2. Ancient Sources.................................................................................................... 13

3. Constructing walls in ancient Greece................................................................. 14
   3.1. Types of walls.................................................................................................16
   3.2. Materials.........................................................................................................17

4. The west Black Sea coast..................................................................................... 19
   4.1. Apollonia Pontica.........................................................................................20
   4.2. Messambria.....................................................................................................22
   4.3. Odessos...........................................................................................................23
   4.4. Callatis............................................................................................................25
   4.5. Tomis..............................................................................................................26
   4.6. Histria............................................................................................................27

5. The north Black Sea coast................................................................................... 30
   5.1. Tyrs...............................................................................................................32
   5.2. Nikonion.........................................................................................................33
   5.3. Olbia...............................................................................................................35
   5.4. Kerkinitis.......................................................................................................39
   5.5. Chersonesos..................................................................................................40
   5.6. Theodosia.....................................................................................................48
6. Kerch Peninsula……………………………………………………………………….. 49
   6.1. Kimmerikon……………………………………………………………………….. 50
   6.2. Kytaion…………………………………………………………………………… 52
   6.3. Nymphaeum………………………………………………………………………… 52
   6.4. Tyritake……………………………………………………………………………… 53
   6.5. Panticapaeum……………………………………………………………………….. 55
   6.6. Myrmekion………………………………………………………………………….. 57
   6.7. Porthmeus……………………………………………………………………………. 58
   6.8. Kyta………………………………………………………………………………….. 59

7. Submerged walls………………………………………………………………………… 60

8. Unfortified cities………………………………………………………………………….. 62

9. Comparison……………………………………………………………………………… 63
   9.1. Walls………………………………………………………………………………….. 63
   9.2. Towers and gates……………………………………………………………………… 67

10. Conclusion……………………………………………………………………………… 68

11. Tables………………………………………………………………………………….. 70

12. Index of images……………………………………………………………………….. 74
1. Introduction

Greeks in the Black Sea for the first time appear in the 7th century BC, when a dense chain of emporeia and early towns is established by Greek colonizers. Greek’s growing need for expansion, political crisis in the motherland and the hope that in a new land one could live the life of the citizen were some of the reasons urging them to relocate. In addition, rich fishing and the agricultural potential, as well as the seeking for metals⁴, led to Miletians⁵ mostly, as well as Ionians⁶ and Megareians’ movement towards establishing new colonies in new lands, among which the Black Sea. Some of these emporeia soon turned into city-states (fig.3). As Aristotle wrote, these poleis created were an association of several villages that achieved almost complete self-sufficiency⁷. As that, they had to face various problems, among which the indigenous population and barbarian attacks.

In the Archaic and early Classical period, no serious threat existed in the area and each city was prosperous to becoming autonomous as colonizers settled the areas with the intention to stay permanently. Usually the places where the Greek colonies were established, were chosen under great consideration, and thus were very suitable, meaning they had natural barriers and as a result no walling system was needed. But, from the 5th century BC and on, unprecedented threats appeared destroying some of the cities, something obvious from the archaeological finds in the cities.⁸ In order to remain safe and to protect themselves from tribes such as the Odryssians on the west and the Royal Scythians on the north, cities had to build defensive walls. Especially to its north-west, population of the Black Sea was exceptionally heterogenous with Scythians, Thracians and Getai (fig. 1) prevailing as proven from handmade pottery found in the area⁹.

⁴ To this view disagrees G. R. Tsetskhladze as he finds it a simplified view for such a complex matter as colonialism (Tsetskhladze 1998, p. 9).
⁵ The foundation of the Greek cities in the Black Sea mainly has to do with the pressure that the Lydians put on Miletians during the 7th and 6th century BC (Hoddinott 2000, p.147).
⁶ On the whole, the first Ionian apoikiai were established in the second half of the 7th century BC almost all around Black Sea with the exception of its east side (Tsetskhladze 1998, p. 36).
⁷ Aristotle, La Politique, 1252b8, p. 25.
⁸ This is for example evident in the case of Olbia that was fortified at the same time that its chora was abandoned (Burstein 2006, pp. 137-139) meaning that it was facing a danger or from traces of fires in the walls.
⁹ Tsetskhladze 1998, p.44.
There are plenty of reasons why walls were constructed in the first place. In some cases, it was surely due to the imperialistic plans and the subsequent conflicts with the other ancient cities. The relationship of walls with history is more than obvious in most of the cases; however it is not a rule to follow. Most frequently, Black Sea Region’s fortifications were made only after attacks had happened or were about to happen. In the other case there was no need to fortify a city and it was rather impossible to do it immediately after the foundation because as we understand, the colonies were starting from zero.

Walls and location of cities of the west Black Sea often coincide with ancient Thracian villages. As for the north Black Sea, this rule applies as well. Greeks seem to have settled mainly in villages that were inhabited by locals before and this probably lies in the fact that these were best located. However, survey of the north Black Sea was limited up till the end of the 18th century. From then on however, archaeological survey bloomed and a number of institutes and universities started dealing with the ancient Greek cities of the area.

However, walls were just one part of the life in the city states and as Winter notes, poleis were much more than fortresses, they were complete social, political, and economical units. Yet again, the remains of the defensive system, as well as other constructions found, constitute undoubtedly an important archaeological finding in the survey of an area.

As regards sources for the completion of this paper, these can be divided in three parts. Ancient sources, by classical authors such as the Historian Herodotus, Xenophon, Strabo and Diodoros provide us with useful information. In addition, Athenian orators, such as Isokrates and Demosthenes also give us details on the issue, even though no ancient text was written with the intention to describe in particular the walls of a city. In addition, one should be careful when examining these sources as should take into consideration the fact that they are mostly strong Athenocentric views. They mainly provide us with information regarding the dates of foundation of cities, their founders and the legends concerning them, all in relation to Athens and Athens.

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10 McNickoll in his book (1997) *Hellenistic fortifications, from the Aegean to Euphrates*, Oxford Monographs, p.2 makes a short reference on the matter whether history should be correlated with the construction of walls or not.


12 Winter 1971, p.xvi.
intended to the Athenian reader not with the aim to describe what had happened in the 
Black Sea at that time.

The second source is archaeology, that through excavations and its findings helps cover the deficiencies created by ancient writers. Excavations concern the north and the west part of the Black Sea as the east and south are the least excavated and not many papers were published concerning them. Findings such as inscriptions and epigraphy are of utmost importance as well as remains of constructions that can actually attest the location of a city which combined with the finds, can lead us to useful realizations.

Finally, modern sources are also vital, mainly found in English, French and Russian and less often in Greek, as for Greeks the study of the Black Sea is relatively a new field of study. Apart from sources regarding specifically the Black Sea, books were also chosen regarding Greek fortifications in general so as to achieve the understanding and to make a comparison with main Greece. These were A.W. McNickoll’s dissertation published in the form of a book in 1997 under the name *Hellenistic fortifications, from the Aegean to Euphrates* and F.E. Winter’s *Greek fortification* of 1971. What is more, A.W. Lawrence’s monograph *Greek aims in fortification* of 1979 is also included as apart from the useful information concerning Greek walls, it also comments on Philon, also found in the work of Y. Garlan, who gives us translated abstracts from the *Poliorketika* of Philon in his *Recherches de Poliorcetique Grecque* of 1974. In addition, A. W. Lawrence offers a great number of illustrations showing the defensive systems of important ancient Greek cities, something that also is met in the work of J.P.Adam in his *L’architecture militaire grecque* published in 1992.

As for information regarding the Black Sea area in particular, the four volumes edited by Dimitrios V. Grammenos and Elias K. Petropoulos entitled *Ancient Greek colonies in the Black Sea* of 2003 and 2007 respectively and Tsetskhladze’s *The Greek colonisation of the Black Sea Area* published in 1998 were widely used. For the north Black Sea specifically, Maslennikov’s *Οι αρχαίοι Έλληνες στο Βόρειο Εύξεινο Πόντο* of 2000, also provided handful information. Finally, of utmost importance were the Russian sources, however difficult for the Greek reader to find, mainly written by scholars that have attended excavations in the areas. Of great importance for my research were undoubtedly, Krizhitskii’s *Архитектура античных государств Северного Причерноморья* published in 1993 and the proceedings of the International
Conference of Kraków that took place in 2006, where the Polish excavating team includes up-to-date information.

2. Ancient sources

Walls are described or referred to regarding their location in various ancient texts. For example, it is very common of Homer to describe walled cities\(^\text{13}\). Views on walls and their utility are also frequent. Aristotle in his *Politics* for example, states that walls are of utmost importance for the function of a city.

Concerning the construction of walls, Xenophon refers in his *Hellenika*\(^\text{14}\) to the people used to construct walls such as carpenters, stone-masons and architects, responsible for the final construction or repair of a wall. This fact is also quoted by Plato who states in his *Politikos* that the role of the architect is to supervise the workers and to provide knowledge and not manual labour. Usually, this architect was chosen by the assembly of the city as we get to know by an inscription\(^\text{15}\) found that states the following: “ἀγαθῆι τύχηι δεδόχθαι τῶι δήμωι τὸν μὲν ἀρχιτέκτονα τὸν κεχειροτονημέένον ὑπὸ τοῦ δήμου”\(^\text{16}\).

Finally, the orator Demosthenes, boasts that he took part in the construction of the walls of Athens by donating a sum of money\(^\text{17}\), something that as we have seen above, was very common for the wealthy citizens of ancient Greek cities.

As for testimonies concerning in particular walls of the Black sea, Herodotos refers mainly to the wall of Olbia in his fourth book\(^\text{18}\) as well as he provides us with information concerning the geography and the local tribes of the area. Other writers that we come across widely in this paper are pseudo- Arrian, Arrian, pseudo- Scylax, Thycidides and Aenias Tacticus.

Another undeniable ancient source is that of the epigraphic material found. Mostly such inscriptions are attributed to the Hellenistic and Roman period and refer

\(^\text{13}\) Fields 2006, p. 4.
\(^\text{14}\) Xenophon, *Hellenika*, 4.8.10, p. 36.
\(^\text{15}\) IG, ii" 463, 6-7.
\(^\text{17}\) Fields 2006, p. 9.
\(^\text{18}\) Herod. IV, 78-79, pp.85-86.
to the building or the reconstruction of existing walls. Such inscriptions were found regarding the walls of Olbia, of Chersonesos and the Bosporan Kingdom and most often they are honorary decrees in form\textsuperscript{19}.

All these sources consist one of the ways to date walls. As McNicoll states, this is the most difficult part when finding a wall, to date it, so the epigraphic material acts as an active discourse. Maier said that without a number of firmly dated walls, a description of the development of the Greek defences is almost impossible\textsuperscript{20}. Despite ancient literary sources and epigraphy, the unearthing of walls is the most important when examining them. Whatever the case, before analyzing the Black Sea walls, lets first refer to Greek walls in general.

3. Constructing walls in Ancient Greece

Constructing walls encloses ideas such as funding, labour, planning, materials being used, and various styles of construction. All these will be analysed concerning the broader area of Ancient Greece and its scattered city states, meaning not only the Greek colonies of the Black Sea, but other Greek colonies as well. By analyzing all these clues, we actually shape the framework and prepare our understanding on what is going to follow next, meaning the analysis of the walls of the north-western Black Sea coast.

When examining walls, the following questions rises. Why were walls built? Who paid for the constructions of walls? Was it a matter concerning the whole city or those governing it? The answer to the first question lies in the fact that walls were constructed as a means of protection rather than a frost of the city such as other impressive buildings of the Hellenistic period, meaning temples and monumental buildings. Yet, through their size these could be impressive and sometimes they were adorned as we are going to see later on. According to Pierre Ducrey walls were built

\textsuperscript{19} Lawrence 1979, p. 82.
for three reasons. Firstly, to ensure the safety of the city, secondly in order the city to
feel independent from the other cities surrounding it and lastly for military reasons21.

The relationship between cost and the effectiveness of walls lies in the fact
that contrary to the cost of armies and navies, the outline of the walls was set up only
once; still the cost remained an enormous sum of money. According to F.G. Maier,
there were three main sources for the financing of walls. These were the ordinary
sources, meaning from money that were already available, the extraordinary sources,
such as funding and loans and the exterior agents such as donations from kings and
the other royal members22. As a result, a great deal of money for their construction
was sponsored by public funds and smaller parts of the expenses were covered by
affluent citizens23, or by a group of citizens24. Such an example of a rich citizen was
Konon the younger who paid 10 talants for the repair of the walls in Athens. As we
mentioned above, this is also the case for the orator Demosthenes who gave 10000
attic drachmas for the repair of the walls of Athens25.

In some cases when there was a financial problem, walls were built in the
smaller height possible, and instead of long great circuits, they were built in straight
wall lines. Such examples are obvious in Perge and in southern Miletus. Straight walls
though meant unprotected areas in places where the ground was high. As a result tall
towers were built in order to contain heavy artillery as well26. When there was an
imminent danger ready to attack, walls were either built in a hurry, in the early
periods, or in the Hellenistic period and on were repaired and reconstructed27.

Regarding in particular the location chosen, it is a generally accepted fact
nowadays that Greeks chose the place to inhabit based on its suitability. Natural
barriers such as rivers, ravines and hills were widely chosen. Moreover, the majority
of these cities were coastal ones where a port was later on constructed to facilitate the
relationship with the metropolis and to enable trade. However, the fact that Greeks
chose as the place to live the best situated one, led to subsequent reconstructions of
later cities on top of the ancient ones, and that way cities exist today over the ruins of
the ancient with the example of Odessos and Messambria. However, usually the

21 Ducrey 1982, p. 133.
24 McNicoll 1997, p. 11.
decision of the construction of a wall was a matter decided by the monarchs of a city, who in turn also decided about the location of the wall and the resources available\textsuperscript{28}.

According to Fields the ideal city was located at the tip of a spur, which ran out from the flank of a mountain and was linked to the mass by a narrow ridge. Usually the nucleus of the ancient city and most particularly of the Classical one consisted of the acropolis, a defended hill that however was not too high and inaccessible\textsuperscript{29}. Whichever the case, it remains a fact that the layout of the defences, was of importance when it came to the course of the siege operations which were to take place\textsuperscript{30}.

3.1. Types of walls

Philon gives a detailed description as to the ideal size of city walls. He states that these should be less than 4.43\,m thick and 8.87\,m high. In the Classical period walls are not usual but in the Hellenistic they are very common. These can be found close together in places where firepower was required\textsuperscript{31}. Towers were of multi-angular and round shape especially towards the end of the Classical Period\textsuperscript{32}. Usually these were roofed over with wood and made of brick\textsuperscript{33}. The number of towers built at a certain place was in direct relationship to the terrain outside them. Towers had many roles, one of which was to house catapults in late antiquity, protecting them from the enemy. In addition, they used to give an extra range according to the height above ground and this is also the reason why many of the towers were not part of the initial construction plan, but were added later on\textsuperscript{34}.

Walls of the Hellenistic period in ancient Greece were mostly single lined and only in a few cases they were double lined. On the whole, these were low and powerful instead of being thick and high\textsuperscript{35}. However, the truth is that there was not a

\begin{footnotes}
\begin{enumerate}
\item McNicoll 1982, p. 306.
\item Fileds 2006, p. 10.
\item McNicoll 1982, p. 306.
\item McNickoll 1997, p.11.
\item McNicoll 1982, p.313.
\item Lawrence 1979, p. 219.
\item McNickoll 1997, p.11.
\item McNickoll 1997, p. 12.
\end{enumerate}
\end{footnotes}
single development of fortifications in the Hellenistic period, and this probably lies in
the fact that the cities had to face different enemies and dangers depending on their
geographical position. In addition, the existence or the absence of a royal patronage of
the city is also an indicator of the quality of walls built, as well as the supply of water
and mud, needed for making bricks\textsuperscript{36}.

According to McNickoll curtains, with or without towers, were the prevailing
Hellenistic defence systems\textsuperscript{37}. In contrast to the simple single storey walls of the
previous period, in the Hellenistic period straight line curtains were formed,
consisting of two or three storeys\textsuperscript{38}. However, some scholars believe that curtains
were diminished during this period as ditches and other works were carried to
reinforce walls\textsuperscript{39} and at the same time towers became more impressive. To this point
also agrees McNicolls, referring to the late Hellenistic period. He actually states that
walls impeded the garrison from sallying out to attack the invaders. So, in a way the
defensive system became sort of passive one\textsuperscript{40}.

Finally, towards the end of the Hellenistic period it is far more possible to
track towers separated from the walls, as in earlier times these were often
incorporated onto the walls. As for the gates, in spite of their role as entrances to a
protected area\textsuperscript{41} they were considered the weakest part of the defence of a city. As a
result, gates had to be enhanced with powerful towers constructed on the sides and in
close proximity of the gates. That way, enclosed walls were created, that were used in
order to restrain the enemy, sometimes even in the inside part of the gate. Such
examples are obvious in Messene and in Athens.

3.2. Materials

Materials being used were mainly taken from the areas around the city or in a
close distance from it. Carrying materials from faraway was very expensive and thus

\textsuperscript{36} McNicoll 1982, p. 306.
\textsuperscript{37} McNickoll 1997, p.11.
\textsuperscript{38} McNicoll 1982, p.312.
\textsuperscript{39} Lawrence 1979, p. 219.
\textsuperscript{40} McNicoll 1982, p.313.
\textsuperscript{41} McNicoll 1982, p. 313.
it was not a common policy to follow. As a result, local materials must have been the main source.

Greeks mainly used mud-bricks instead of fired bricks. Bricks were filled in their spaces with clay, however there are also cases that bricks were put one close to another without binding material being used. About the way bricks were put, Aristophanes gives us some details. The usual way was to clean the material and then add a bit of sand to the mixture if necessary. Then the mason was putting it into wooden moulds letting it dry afterwards in the sun or shade for some days or even weeks and months. Usually bricks were in size 40-50cm wide and 8cm height forming the wall when put together. However, no brickwork was formed as an entity but rather was interrupted or turning to other directions, creating thus the so-called defensive lines. As a result when talking about walls in this paper we mean the defensive lines rather than walls separately.

Fields distinguishes two types of materials employed in Greek fortification systems of Classical period. Sun-dried mud brick on a stone socle and walls made only from stone which were far more popular in ancient Greece. Mud bricks were cheap and easy to make, fireproof and strong in the weather changes. In addition they were safe in the case of an earthquake. However in order to be made these required a lot of water and clay and as a result stone was used instead which was easier to find. As we are going to see in the following chapters that analyze the ancient Greek colonies of the north-western Black Sea, this is the case for the Black Sea as well.

Untrimmed stone meant less time to prepare bricks, that’s why in cases where an imminent danger was about to attack, it was a quick solution. On the contrary, if fortification was to be built permanently and with convenience of time, then masons were built. When money was not a problem, blocks were dressed as well. On the contrary, if masonry replaced brick in a wall and was filled with rubble found in situ, then the wall was not strong and big enough to endure a battle. Dressing the blocks also meant that fortification was done under the thought to be permanent and to adorn them.

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42 Lawrence 1979, p. 208-211.
43 Fields 2006, p. 10.
44 There was found an Eleusinian inscription of 329/328 where it says that only 125 such bricks could be made in a day (IG, ii², 1672).
46 Lawrence 1979, p. 214.
Regarding the size of blocks of stone, these can actually reveal the current situation when walls were built. This means that if the walls were done strong, then a hard attack was expected to happen or a great enemy was living nearby and the opposite. As a result, the greater size, the less risk of its displacement by enemy action.

Finally, measurements of bricks were done in half-foot and foot sizes. These were subdivided into 8 or 16 fingers. To measure the block, it was placed on a rock and cut down vertically with a hammer and chisel until it took its shape. Notches were then chiselled under the block, wooden wedges were inserted and soaked in water, and they expanded and broke the block. The block was always quarried a bit bigger than the required size in order to protect it during its transportation to the place needed. The types of bricks varied making thus each wall part of the architectural constructions of a city. For instance these could be either polygonal, trapezoidal or ashlars. Whichever the type though, they were transferred by means of four welled wagons drawn by oxen.

4. The West Black Sea Coast

Being protected both by natural defense and by simple or sophisticated man-made constructions, the west Black Sea area contained a considerable number of fortified towns either recorded in ancient sources or archaeologically identified. However, these appeared only after 500 BC, when the cities were under the imminent danger of Odrysians. Thucydides says that their kingdom was spreading in the 420’s in the area from eastern Balkans and until the Danube, including Greeks and other tribes as well, paying tribute to the Odryssian King.

Strabo mentions some of the Greek colonies of the western Black Sea coast (fig.4) in his Geography where he refers to Ister (Histria), Tomis, Callatis and Apollonia in topographic order from the North to the South:

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49 Burstein 2006, p. 141.
50 Thucydides, II.96-7, pp.116-119.
51 Burstein 2006, p. 141.
“ἐστιν οὖν ἀπὸ τοῦ ἱεροῦ στόματος τοῦ Ἰστροῦ ἐν δεξιᾷ ἔχοντι τὴν συνεχὴ παραλίαν Ἰστρος πολίχνιον ἐν πεντακοσίοις σταδίοις, Μιλησίων κτίσμα εἰτά Τόμις, ἐτερον πολιχνιον ἐν διακοσίοις πεντήκοντα σταδίοις εἰτά πόλεις Κάλλατις ἐν διακοσίοις ὀγδοήκοντα, Ἡρακλεωτῶν ἄποικος εἰτ᾽ Ἀπολλωνία ἐν χιλίοις τριακοσίοις σταδίοις, ἄποικος Μιλησίων”52

Other two Greek colonies of the West Black Sea coast that are examined in this paper are those of Messambria and Odessos, as they were both important cities of the west Black Sea coast and could not be omitted. These colonies were mainly established by Megareian and Herakleots (fig. 5).

However, before analyzing each one of them, we should bear in mind that especially on the Bulgarian coast, all Greek colonies lie nowadays under the modern ones. The same is valid also for Romania, with the exception of Histria. As a result our knowledge about them is limited53.

The main cause leading to the construction of walls in the broader West Black Sea area was undeniably the presence of local tribes. Odryssians were on the south, Gettai and Scythians in the north and Odryssians in the south. Soon enough, by the middle of the fourth century BC, all major cities ended up being ruled by locals. Apollonia by Odrysians, Histria by Gettai and Kallatis by Scythians. However this situation changed when Macedonians appeared in the area around 430 BC54.

4.1. Apollonia Pontica (Ἀπολλωνία Ποντική)

The first site with significant importance regarding walls is Apollonia Pontica, nowadays Sozopol55. It was the earliest colony founded in the coast of today’s Bulgaria, in the end of the 7th century BC, when Ionians settled the rocky and well-protected area of Skamniy Peninsula and St Kirik’s Island56. The latter especially must have been the earliest location of the city57. Most specifically and according to

52 Strabo, VII, 6.1, p. 277.
55 Hind 1983-4, p. 72.
56 Nedev and Panayotova 2003, p. 95.
57 Boardman 1996, p. 311.
the testimony of Pseudo-Scymnos and due to archaeological findings it must have been founded around 610 BC\textsuperscript{58}. The convenient harbours and the natural resources of the area were the two main reasons for settling there\textsuperscript{59}.

Mesambria and on the whole the Bulgarian Black Sea coast is nowadays researched by NIAM and the Interagency Council of Field Research of NIAM which is appointed by the ministry of Culture, responsible for providing permits for archaeological work in the country. All information gathered are kept in the archives of NIAM and to a National Automated System called \textit{Archaeological Map of Bulgaria}. In addition, the Centre for Underwater Survey of Sozopol organizes underwater investigations and the symposia held under the name \textit{Thracia Pontica} and \textit{Pontica Mediaevi}\textsuperscript{60}. Finally, the centre of Maritime History and Archaeology is situated there since 1973 with surveys taking place in Apollonia and in other close cities of the West Black Sea Coast\textsuperscript{61}.

During the Classical period, a number of important historical changes happened in Apollonia Pontica and the areas around it. Two major battles took place in the Greek world, of Salamis and Plataea\textsuperscript{62} in 480 and 479 respectively. In 494 BC, the Ionian Rebellion was defeated and while Persians were pushed away, Athen’s influence became stronger. Greek poleis at that time were joining the Athenian League, going into its sphere of influence\textsuperscript{63}.

Because of all that and as we get informed from Aeneas Tacticus, Apollonia built strong fortification walls\textsuperscript{64}. The main part of the city was fortified with a wall that closed the isthmus as it was the only way to connect with the mainland. Moreover, a gate is believed to have existed near the harbour; however this is still not proven as no traces of it were found yet\textsuperscript{65}. The end of Greek life in Apollonia Pontica, and its surrender to the Romans took place in 72 BC, when Apollonia was sacked and its fellow cities such as Messambria were invaded by Roman army\textsuperscript{66}. Finally, as for the Hellenistic period the information is not enough to come down to useful conclusions.

\textsuperscript{58} Tsetskhladze 1998, p.35.  
\textsuperscript{59} Nedev and Panayotova 2003, p. 101.  
\textsuperscript{60} Bilde and others 2008, p. 118.  
\textsuperscript{61} Hind 1983-84, p. 72.  
\textsuperscript{62} For more information on the battle Fields 2006, pp.53-54.  
\textsuperscript{63} Nedev and Panayotova 2003, p. 101.  
\textsuperscript{64} Aeneas Tacticus, 20.4.  
\textsuperscript{65} Nedev and Panayotova 2003, p. 101.  
\textsuperscript{66} Hoddinott 2000, p. 223.
4.2. Mesambria (Μεσάμβρια)

Mesambria was founded by a joint group of colonizers coming from Megara, Byzantion and Chalkedon. The early fortifications of Mesambria were built around the centre of the antique polis, in a place that was chosen earlier as a habitable area by Thracians. It was designed in a way that it reinforced the natural defense of the peninsula where it was situated. This natural defense was protecting the city along the narrow isthmus which was connecting it to the mainland, forming two bays, a north and a south one (fig.6).

A gate of the Classical period was erected near the gate of a Thracian pre-existing one and found on the isthmus neck. Next to it, part of the wall also survived (fig.7-8). Along its straight parts, solid orthogonal towers were built, protruding from the wall line for decorative reasons. Ground curves that were shaped were dealt by changing the direction of the wall line with the aid of a saw cog or a similar instrument. Real towers were built only in places where they were of strategic importance, such as a hexagonal hollow tower which was protecting the city from the north. It was constructed in irregular rectangular pseudoisodomic ashlar style with white limestone, yellow clay brought by the hinterland and green limestone from Aitos.

During the Hellenistic period, the same walls were kept and lasted until the Roman years and until the second half of the 5th century AD, when new fortification enhancements were done. The same happened to the Classical walls which can now be found under the water.

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67 Preshlenov 2003, p.158.
68 Boardman 1996, p.311.
4.3. Odessos (Οδησσός)

The establishment of Odessos is believed to have been part of a chain wave that led to the foundation of most of the west Pontic cities like Histria, Apollonia and Tomis during late 7th and 6th century BC, and belongs to the second colonization wave on the Thracian coast. If this is the case, then Odessos is the third city established by Ionians on the west coast of Pontos, after Istros and Apollonia. As Skylax in his periplous says by the Pontos in Thrace are the following cities, Apollonia, Messambria, Odessopolis, Callatis and the river of Istros.

Odessos was founded somewhere around 585 and 570 BC. However, if we take into account the oldest vessel found, which is a Corinthian cylix, we will come to the conclusion that it was built before 560 BC. According to Ivanov though, this pottery is of uncertain origin and thus not reliable evidence. The most reliable is the testimony of Pseudo-Scymn who states that it was founded at the time when in Media ruled the Astyages meaning around 585-558 BC, something which meets the agreement of the anonymous author of the Periplous Pontii Euxinii. However, this testimony is not supported by archaeological data. Scholars haven’t concluded to a solid date, but the second quarter of the 6th century BC seems to be the most appropriate dating.

Unfortunately there is scanty information about the territory that Odessos occupied. It is believed though, that during the foundation of the city there was an agreement made with the chief of the local Thracian-Krobyzoi. However, a new inscription of the 1st century BC which was found in Dionysopolis, may shed some light as it refers to its own borders and the borders of the neighboring to it cities.

Regarding fortification, an enclosure wall of the Classical period must have existed in Odessos. The earliest found fortification is estimated to be of the middle of the 4th century BC. Parts of it were excavated at the second high terrace which overlooks Varna bay, the period 1980-1987. The wall was well-designed and

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72 Minchev 2003, p. 213.
73 Isaac 1986, p. 255.
74 Seylax, 67.
75 Hoddinott 1975, p.49.
76 Boardman 1996, p. 312.
77 Minchev 2003, p. 213.
78 Isaac 1986, p.255.
80 Zahariade Mihail 2008.
constructed and it was following the natural landscape. In front of it, two gulches existed one from the south and one from the west where streams were probably flowing, making it thus less accessible. Part of the west gulch which was also the junction to the South, was traversed by another wall. This fact led to its reinforcement by means of a large and square in shape tower, build on the north slope of the gulch. The dimensions of the tower were 10 by 10, 80m and it was 3.80m wide. It was built with large rectangular limestone blocks with no welding. The fortress wall was almost 3,80m wide. The stone used is believed to have been brought not by a distant place, probably located 30km away from Odessos. 81.

However, this was not the only tower existing as there was also another one in the corner of the fortress wall and in the beginning of the south gulch. Traces of walls also seem to have been partially identified on the Kniaz Boris I and Archimandrit Filaret streets, from where it runs eastward and then turns towards the south, where it disappears under the modern structures. Its line towards the south and the west remains unknown 82. The height of the wall close to Archimandrit Filaret Street is 1.30m 83.

According to the Balkan Heritage School and its administrator Ginchev, a plan of the city does not exist. There is only the case of a plan made by K. Škorpil 84 who has marked an area on a plan of the Turkish Fortress of 1909 85, that he believed was enclosed by walls. However this area has been proven to be from the wall findings in excavations in 1970 and 1980 much more to the south. In addition, Škorpil suggested that some of the rectangular stones found close to the southern city’s beach were the evidence of a wall existing there and that part of it was destroyed by the waves and later on fell apart in the sea 86, however this has not been proven yet. This hypothesis is rather wrong according to A. Minchev, as this area is far away from the area ancient Odessos is believed to have included 87.

81 Minchev 2003, p.240.
82 Zahariade Mihail 2008.
84 Škorpils were two brothers Hermenegild and Karel, Czechs, who decided to help Bulgaria learn and preserve its past after 1879 when it gained its independence. In fact Karel is the one who took the lead in most of the excavations there and who opted for the building of the archaeological museum of Varna (Hoddinott 1975, p.50).
85 This map can be found in Škorpil’s book The Turkish Fortifications of Varna. Explanations to the plan, 1909 p.54-56 and plan.
86 This theory can be found in Škorpil’s book The Turkish Fortifications of Varna. Explanations to the plan, 1909.
One can perceive the south and eastern walls of Odessos by noticing the natural relief of the city and the fact that the place is full of tombs and graves of the first half of the 4th century BC to the 2nd-1st century BC. If we consider these to be the border of the city, then the fortified area of ancient Odessos covered was of limited size, of ca 150 by 100m. which means that there was a citadel only or a barbican and that the whole city was not protected as houses from the Archaic until the Hellenistic period were found outside the city walls. If this is true, the fortress then probably prevented Phillip II from capturing Odessos in 339 BC.

At the end of Hellenistic period and towards the Roman times, one more fortress was constructed as a result either of the destruction of the walls by the invasion of Burevista in 63 BC, or due to an earthquake taken place at the same time. One can understand that the city probably expanded and that there was need of a greater area included inside the city walls. This must have happened beyond the period examined during the first centuries AD. Finally, sufficient vestiges of the Greek curtain walls have been found that were used as the basis of part of the Roman fortifications.

4.4. Callatis (Καλλατις)

Callatis is located under the present day Mangalia city, 44km south of Constanța city and about 10km north of the present border between Romania and Bulgaria. As a result, only small-scale excavations could be carried out. It was founded by Herakleia Pontica in the end of the 6th century BC and we know about it both by literary and epigraphical sources. Pseudo- Scymn wrote that the city of Kallatis, conoly of Herakleiotis, was done as a result of an oracle. The fact that the modern city is built over the ancient one obtrudes research. Much of the ancient town has fallen into the sea as the sea level rose to the land by 2m. Romania’s

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88 Opinion asserted by Preshlenov.
90 Hoddinott 1973, p.49.
91 Bilde and others 2008, p. 125.
92 Avraam 2007, p.245.
93 Hind 1983-4, p. 75.
archaeological survey in total is nowadays under the responsibility of the Ministry of Culture in consultation with the National Commission for Archaeology. Especially after 2000, there is direct political involvement in these actions.94

Regarding town walls, three main phases can be identified on its north, west and south sides. The earliest walls there must be of the beginning of the 4th century BC. Callatis seems to have been surrounded by a 3.75m thick defence wall built with large rectangular, well-chiselled limestone ashlars in the middle of the 4th century BC. In some marshy places, the entire construction was set on wooden beams forming a bed-like grid. Small drainage holes were opened from place to place. A 1st c. AD Callatian inscription records the partial reconstruction of the enclosure wall. It could have been in function until the Costobocae invasion in 170 AD. Shortly after this date it was replaced by a new defence wall which overlapped almost entirely the previous structure. An inscription dated to 172 AD records the governor of Moesia Inferior, Valerius Bradua, under whose auspice the new town wall was built.96

The north part, the wall which leads towards the sea shore is believed to have been done in the Hellenistic period and then corrected later on in the 2nd century AD when the city fell prey to the hands of Lysimachus (fig. 9).

4.5. Tomis (Τόμης)

Tomis was one of the best situated cities.97 The ancient ruins of Tomis are located under the territory of present day Constanța city. Its foundation date remains a mystery although by most scholars is placed to the 6th century BC by Miletians.98 The fact that the colony lies beneath the modern city has restrained archaeological excavations in the area (fig.10).

94 Bilde and others 2008, p. 124.
96 Zahariade Mihail 2008.
97 Boardman 1996, p.313.
98 Other scholars state that the city was not directly founded by Miletians but by Histria as an emporeion that turned into a city (Buzoianu and Bârbulescu 2007, p. 289).
The colony was called with different names throughout time, forms that can be traced on the coins issued by the colony. Literary sources that mention Tomis are Strabo\(^9^9\), Ptolemaeus and Pomponius\(^1^0^0\).

Information concerning the fortification system of Tomis, mainly derives from a decree of the middle of the 1\(^{st}\) century BC, issued by the town council of the city which alluded to the precinct wall (περίβολος της πύλεως). This seems to have been Tomi’s Hellenistic enclosure wall, of which Ovidius speaks in the early 1\(^{st}\) century AD. It encompassed over 17ha of the present day Constanța Peninsula. Finally, a new enclosure wall, whose traces are not yet identified, must have been built in the 1\(^{st}\) or in the early 2\(^{nd}\) century AD. This seems to have considerably extended the inhabited area of the Constanța Peninsula and defended the town only from land. An inscription of the second half of the 2\(^{nd}\) century AD speaks about repairs of short sections of the wall, probably during the reign of Marcus Aurelius, done by public executives (αστυνόμοι) and funded by their own financial resources\(^1^0^1\).

4.6. Histria (Ἴστρος)

Histria has taken its name from Danube which in Antiquity had the name Istros. As Strabo mentions, Histria was founded by Miletian colonists, information supported also by Herodotus\(^1^0^2\). The city was founded about 630 BC, as shown by thirty six items of Middle Wild Goat class pottery that were found\(^1^0^3\) or a bit earlier than that around the middle of the 7\(^{th}\) century BC\(^1^0^4\). Initially, Histria was located on the shores of a sea gulf which later on became Sinoe Lake due to the sand deposits brought by Danube River (fig.11). Nowadays, the ruins of the ancient colony are located 6km from Istria village and 50km north from the city Constanța\(^1^0^5\). In total

\(^{99}\) Strabo Geogr., VII, 6,1, p. 277.
\(^{100}\) Buzoianu and Bărbulescu 2007, p. 287; 289.
\(^{101}\) Zahariade Mihail 2008.
\(^{103}\) Tsetskhladze 1998, 35.
\(^{104}\) Condurachi 1968, p. 7.
\(^{105}\) In Greek also called Ἰστρία and Ἰστρόπολις.
one could say that the city survived for 1300 years of life\textsuperscript{106} and that it is the earliest Greek colony in the west Black Sea Coast\textsuperscript{107}.

The city was discovered and started being excavated in 1914\textsuperscript{108} by Vasile Pârvan\textsuperscript{109}. Before that, the exact location of the ancient city was unknown. The main city was uncovered very shortly and it was fully excavated by later archaeologists. After 1927 however, excavations were done less frequently to revive in 1948 from the Academy of Socialist Republic of Romania. Thanks to the state’s efforts, archaeological survey in the area developed and expanded\textsuperscript{110}. Since 1990 excavations were directed by P. Alexandrescu and A. Suceveanu and from 1999 and on only by A. Suceveanu\textsuperscript{111}.

As for walls found up till now, they can be discerned in five periods, the Archaic, the Classical, the Hellenistic, the early Roman and late Roman period (fig.12). In the Archaic period, the colony initially situated on the coastal plain was divided into two main distinct areas. The highest quarter was chosen for the erection of the acropolis and the large civil area to the west was surrounded by a 2.5m or less wide precinct wall that encompassed a surface of ca. 50ha\textsuperscript{112}. The Archaic wall was found on the west of the plateau and it is dated from the second quarter of the 6\textsuperscript{th} century BC\textsuperscript{113}. It consisted of a mud-brick and wooden superstructure, plated with square limestone plaques set in the pseudo-isodomic system of masonry on a bed of limestone and green schist ashlars. Both fortified urban cores were seriously modified in the late 6\textsuperscript{th} century BC\textsuperscript{114}. According to Hind, the Archaic wall consisted of blocks 1-1.2m long. All these constructions must have been destroyed though during Darius Scythian expedition and the consequent Scythian raids in ca. 513-510 BC\textsuperscript{115}.

In the Classical period, walls must have been built along the line of the sea however they are hard to locate\textsuperscript{116}. The demographic and economic progress that has taken place at that time, prompted for the building of a new 2.60m, green schist and

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\textsuperscript{106} Κορομηλά 1991, p.90.
\textsuperscript{107} Tsetskhladze 1998, 35.
\textsuperscript{108} Boardman 1996, p. 313.
\textsuperscript{109} Bilde and others 2008, p. 126.
\textsuperscript{110} Condurachi 1968, p. 7.
\textsuperscript{111} Bilde and others, 2008 p. 126.
\textsuperscript{112} Zahariade Mihail 2008.
\textsuperscript{113} Avraam 2003, p.281.
\textsuperscript{114} Zahariade Mihail 2008.
\textsuperscript{115} Hind 1983-1984, p. 77.
\textsuperscript{116} Boardman 1996, p. 314.
limestone wall, oriented from north to south that enclosed an area of ca. 35ha\textsuperscript{117}. The wall was uncovered in the borders of the plateau (sector Z2) and consisted of towers\textsuperscript{118}. It protected the main area of the town and was doubled by a 9m wide defensive ditch at 7-9m to the west of the wall. At least two gates pierced the precinct wall. This surrounding wall was destroyed in the second half of the 4\textsuperscript{th} century BC. The west edge of the plateau later on was fortified with a wall similar to that of the Archaic period, with minor repairs and a 3m wide ditch to the west\textsuperscript{119}. On the whole, the latest excavations focus on the west of plateau and the so-called sector Sg second wall of the third quarter of the 4\textsuperscript{th} century BC\textsuperscript{120}.

Two new defence walls were built during the Hellenistic period one protecting the acropolis and another to the west along the plateau edge, surrounding the same area as in the Classical period\textsuperscript{121}. The Hellenistic wall (fig.13-14) was found west of the wall that belongs to the later Roman period. This wall was built according to the best Greek technique of the time and was rebuilt several times after attacks that took place in the city. Later on and during the Roman period this wall was partly destroyed as buildings were built on it\textsuperscript{122}.

The acropolis' 4.50m wide precinct wall encompassed an area of ca. 9ha. The new layout of the defence wall was a continuous line interrupted by curtain towers. This wall consists of two trunks built of well-chiselled large-sized stone ashlars set alternatively on edge and width and bounded with clay and schist boulders. In the late 4\textsuperscript{th} or in the early 3\textsuperscript{rd} century BC the plateau edge was surrounded by a new 2.20m wide enclosure wall built of schist ashlars bound with earth and mud-bricks set in a rectangular moulds superstructure. The two double precincts ensured the town protection until the late 1\textsuperscript{st} century AD. Economic prosperity and demographic and urban development followed the 1\textsuperscript{st} century AD\textsuperscript{123}. In the end, the Hellenistic wall was destroyed by the invasion of Burevista\textsuperscript{124}.

In the 3\textsuperscript{rd}-2\textsuperscript{nd} century BC, the port of Histria was clogged with sand and tribes such as Celts from the Balkans and Bastarni at the mouth of the Danube appeared,

\textsuperscript{117} Zahariade Mihail 2008.  
\textsuperscript{118} Avraam 2003, p.282.  
\textsuperscript{119} Zahariade Mihail 2008.  
\textsuperscript{120} Avraam 2003, p. 282.  
\textsuperscript{121} Zahariade Mihail 2008.  
\textsuperscript{122} Condurachi 1968, p. 12; 17-18.  
\textsuperscript{123} Zahariade Mihail 2008.  
\textsuperscript{124} Avraam 2003, p.282.
alarming the city. Moreover, the city had to face an internal social and economic crisis as problems between slaves and rich people intensified. All these reasons led to the acceptance at the end of the 2\textsuperscript{nd} century BC of King Mithridates VI of Pontus as a saviour of the situation and that is why Histria allied with him. However he was defeated by Romans in 72-71 BC and the city had to comply with the rules of the Dacian King Burebista. But unavoidingly after the latter’s death, Histria passed over to the Roman rule\textsuperscript{125}.

Roman administration necessitated the reshuffling of the structure and layout of the entire occupied area. That’s why a new town wall was built in the late 1\textsuperscript{st} – early 2\textsuperscript{nd} century AD, which expanded considerably the activity on the large sandy plateau to the west. It encompassed a large area of ca. 30ha and cut the plateau roughly on a north-south direction\textsuperscript{126}. This wall was found nearly 300m west of the Hellenistic wall found\textsuperscript{127}.

The new precinct, built in opus caementicium of green schist ashlars set in regular horizontal courses bounded with mortar, was 1.80-1.90m wide and set on a ca. 2.10m deep socle-like foundation. The wall had two gates and interior bastions and rectangular towers built at regular intervals. The south gate was flanked by two protruding rectangular towers. The town wall seems to have suffered some damage in the second half of the 2\textsuperscript{nd} century, probably during the Marcommanic wars. Repair works implemented in a less careful technique were identified at some sections of the wall. However, in the mid-3\textsuperscript{rd} century, Histria started declining, a fact that rendered indispensable the construction of a new surrounding wall from the outset\textsuperscript{128}.

5. North Black Sea Coast

The north Black Sea coast (fig. 15) started being surveyed in the end of the 18\textsuperscript{th} century. The first scholar to deal with Greek colonization in the northern Black Sea Coast was S.A. Zhebelev in 1930. Later on, many scholars followed him and

\textsuperscript{125} Condurachi 1968, pp.12-13.
\textsuperscript{126} Zahariade Mihail 2008.
\textsuperscript{127} Avraam 2003, p.282.
\textsuperscript{128} Zahariade Mihail 2008.
from then on, archaeological survey bloomed and a number of institutes and universities started dealing with the area.

In 1947, A.A. Lessen wrote a book in Russian about the Greek colonization of the northern Black Sea coast, enhancing the theory of Greeks colonizing areas that were already inhabited by locals. In his view, locals at that time had achieved a high level of development. This theory is reflected according to D.P. Kallistov very well in myths. Unfortunately though, as the majority of the ancient cities built were chosen by colonizers with the criteria of the best place to live, rebuilds over the centuries in the same area destroyed great part of archaeological material.

Although early colonies on the north Black Sea coast had good relationships with the locals based on trade, one of the reasons that led to the construction of walls in its cities was the tribe of the Royal Scythians. They were starting off from the Steppes, exerting pressure to the cities of the north Black Sea Coast from the early 5th century BC.

Herodotus in his fourth book, tells the story of the Scythian King Skyles, from whom when Scythians learned that he was taking part in the rites of Dionysos, killed him. This story shows how unfriendly were Scythians to Greeks at that time. However, as Skyles had also a Greek wife and part of his year was spending it in Greek Olbia, shows perhaps a subtle subjugation from the side of Olbia. Whatever the case, it remains a fact that despite the tributes paid, still the Greek cities were in danger and as so, they built walls in order to protect their cities and their produce needed for the trade, the cornerstone of economy at that time.

The area examined starts from Tyras and reaches until the end of the Crimean Peninsula to the city that was called Theodosia. Kerch will be examined in a separate chapter later on due to its geographical peculiarity of being located in a peninsula and the fact that it had its own common history after the founding of the Bosporan Kingdom.

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131 Hoddinott 2000, p.147.
133 Herod., IV, 87-9, pp. 89-90.
5.1. Tyras (Τῦρα)

Ancient Tyras\(^{135}\) (fig. 16) was situated on the right of the mouth of Dnieper River (fig.17)\(^{136}\). Nowadays, it is overlapped by the city of Belgorod- Dniestrovsky of the Odessa district\(^{137}\). The city is referred to by various ancient authors such as pseudo- Scylax, Pliny, Arrian, Strabo, Claudius Ptolomeus and others. However up till now the foundation date and the origin of the colonizers which settled Tyras has not been defined\(^{138}\).

Archaeological interest for this city starts in the beginning of the 19\(^{th}\) century when the area joined the Russian Empire. Excavations done in 1920 by a Romanian archaeologist called Paul Nicorescu, revealed part of the walls\(^{139}\). More recent archaeological excavations in Tyras, carried out in 1960 and 1970 uncovered a round tower (fig.18-19) and defensive walls of the 5\(^{th}\)-4\(^{th}\) century BC\(^{140}\). Excavations were done mainly around the medieval fortress of Tyras and were taking place almost every year in this specific area where ancient constructions were found, mostly of the Hellenistic period\(^{141}\). After some years around 1996, archaeological survey continued under the leadership of Belgorod’s and Tyra’s expedition of the Institute of Archaeology HAH of Ukraine. Excavations were done earlier by S.D. Kryzhitskii and I.B. Kleyman revealing one of the best retained defensive systems of north and north-west Black sea\(^{142}\), and later on continued by T. L. Samoylova in collaboration with the Romanian Institute of Thracology and Brail Museum\(^{143}\).

Up till now, three main parts of the fortifications have been excavated which belong to different periods. The first area as we mentioned above is dated from the end of 5\(^{th}\) century BC – beginning of 4\(^{th}\) and is constituted by the north curtain and the walls numbered 231-235, 395, 409, a round tower and a ditch (fig. 20-21)\(^{144}\). Walls

\(^{135}\) The name Tyras probably derives from the ancient way of calling the river Dniester (Boardman 1996, p.316).

\(^{136}\) Maslemnikov 2000, p.43.


\(^{138}\) Maslemnikov 2000, p.43.

\(^{139}\) Samoylova 2007, pp.435-436.

\(^{140}\) Самойлова 2008, p.163.

\(^{141}\) Hind 1983-84, p. 78.

\(^{142}\) Самойлова 2008, p.164.

\(^{143}\) Bilde and others 2008, p.129.

\(^{144}\) Самойлова 2008, p.164.
were of 2.2m wide and the round tower was of 11m diameter\textsuperscript{145}. Their height was 5.5m and the foundation 2.2m wide on the base and 3.5m above\textsuperscript{146}.

The second area is dated in the last third of the 4\textsuperscript{th} century BC and it is situated in the north-west area, where a curtain was built. Finally, the third area built during the Roman period, lies in the south of the city (fig. 22-24)\textsuperscript{147}. These parts of the defensive line of Tyras are dated from the end of the 1\textsuperscript{st} century BC, until the 3\textsuperscript{rd} century AD. In the area of the wall, there was found a monumental building as well, of the 2\textsuperscript{nd} century AD, of a parallelogram shape. Its walls were of 2.3m high, its roof was made of tiles and most probably, it was the camp of the first Roman legion to settle in the area\textsuperscript{148}. During the latest excavations there the outer façade of a curtain was uncovered of 2.70m, a round tower and a pentagon tower opposite the round one and a wall incorporated to the tower. The curtain and the pentagon tower were constructed in a different way from the north-west area of the rest of the defensive system\textsuperscript{149}.

After the 3\textsuperscript{rd} century AD, the city’s organization stops existing and only plain buildings as habitations are built\textsuperscript{150}. In addition, it is believed that today’s Dniester and Budak estuaries did not exist as the sea level in antiquity was much lower by 5-8 m. and that the first had two arms into the sea between which there was an island. However it is estimated that there was a prompt increase in the sea level in the first centuries AD, flooding the island. Changes in climate must have happened as well as in the 7\textsuperscript{th} century there must have been a cold and arid time while in the 4\textsuperscript{th}- middle 3\textsuperscript{rd} century BC, it became warmer and wetter\textsuperscript{151}.

5.2. Nikonion (Νικώνιον)

Nikonion was situated on the opposite side of Tyra (fig.17), on the left bank of Dnieper estuary, where nowadays lies Roxolanskoye\textsuperscript{152}. Nikonion must have been
founded by Histria in the second half of the 6th century BC. Later on though, it became an independent city. In the third quarter of the 4th century BC, the city was destroyed to revive again until its end of life in the 4th century AD.  

Up until recently, Nikonion was the least excavated city of the northern Black Sea coast. Today, most of its remains have been destroyed and the rest lie at the bottom of Dniester River. The plan of the city was made in 1830 by hydrographers and topographers, in the middle of the 19th century by A. I. Uvarov and in 1910 by Goshkevich. In addition, excavations there started in 1957 and materials from the Classical to the Roman period were found. Currently, excavations are under the supervision of N. M. Sekerskaja of Odessa Archaeological Museum, together with the Polish University of Toruń.  

The remains of walls in the city of Nikonion were found in its north-western part (fig.25). They are dated from the second half of the 5th century until the first quarter of the 4th century BC as revealed during excavations of 1975 and 1976 in the area. There is a moat 5m wide and the groundwork of a wall of 2.5m width. In the end of the 4th century BC, this wall was demolished and the moat was filled with rubble. This was an inexpensive and the most common way of fillings. Whatever was not needed such as broken bricks, earth and so on was done a mixture to fill in spaces.  

Underwater excavations done in the site of Nikonion, were conducted very early in 1962 by V. D. Blavatskii and the department of Underwater Archaeology of the Toruń University. More information on the underwater findings is given in chapter 7.

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155 Bilde and others 2008, p. 129.
156 To this date agree both Maslennikov (Maslennikov 2000, p.46) and Hind (Hind 1983-4, p. 78).
157 Hind 1983-4, p.78.
158 Maslennikov 2000, p.46.
159 Lawrence 1979, p. 214.
5.3. Olbia (Ολβίία)

Olbia is considered to be the most important city of the north Black Sea Coast in terms of its beneficial location and economy. Its layout forms an isosceles triangle (fig. 26) which is protected from the north and west from ravines and from the east from Bug River. In addition it is the best excavated city, as it started being excavated in 1901 and passed over from three generations of scholars. These scholars were: 1) Pharmakovskiy and his school (1901-26), 2) Slavin with the Institute of Archaeology, Ukrainian Academy of Sciences (1936-71), Levi (1936-74) and Karasev (1936-72) with the Leningrad section of the Soviet Academy of Sciences and 3) Kryzhitskiy (1972-95) and Krapivina (from 1995 and on).

Olbia was located on the right side of Bug River, close to today’s village called Parutino. It was founded by Miletians in the first half of the 6th century BC, and is referred to by many ancient writers such as Herodotus, Strabo, Pseudo- Scymn, Arrian, Pliny and others. Herodotus in particular describes Olbia of the 5th century BC very clearly coinciding with the descriptions from the epigraphic data of that period. Olbia is considered that this city was the closest to barbaric tribes than any other city on the north coast of the Black Sea region, as it was situated close to the realm of Scythians and the vastness of the Steppes from where raids were frequently organized.

Early walls from the 7th to the 5th century BC were absent. This was probably due to the fact that its location was chosen carefully to be protected via natural defences. Walls actually appear not later than the middle of the 5th century BC or even 4th century BC (fig. 27), and as Herodotus mentions by this date already existed defensive walls and towers. In his fourth book where he mentions the story of Skyles, the words tower and gate in ancient Greek are used. This first wall must have been small height and situated in the limits of the city where the last houses were

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162 Braund Kryzhitskiy 2008, p. 8, article by Kryzhitskiy The main results of the excavation at Olbia in the past three decades pp.7-15.
163 Maslennikov 2000, pp.51-52.
164 Herod, 78.3-5,p. 85.
166 Sokolov 1974, p.6.
167 Wasowicz 1982, p.82.
168 Herod, IV, 78-80, pp. 85-86.
169 Kryzhitskyy and others 2003, p.414.
found\textsuperscript{170}. In addition, these walls were probably the result of Olbia’s effort to escape from Scythian rule imposed until then and their replacement with a native tyrant\textsuperscript{171}.

From the 4\textsuperscript{th} century BC and throughout the whole of the Hellenistic period, Olbia was protected by a solid wall that together with the deep ravines of the area resulted in a well protected city. Probably there were also two gates in this wall. The existence of a second or a third line during the same period remains a matter of dispute in our days. A. Karasev supports the view that according to the plans made by M. Muravev Apostol in 1820 and A.S. Uvarov in 1848, two defensive lines can be seen around Olbia\textsuperscript{172}.

Pharmakovskiy and his team that we referred to before were the first to establish the limits of the city by drawing a plan that however was not very precise\textsuperscript{173}. He and his team excavated the northern gates and some multi-roomed towers in the south west defensive line\textsuperscript{174}. Two gates were found in the Upper city, the Northern (fig.28) and the Western (I, X)\textsuperscript{175}. The western gate was located to the west of the agora\textsuperscript{176} (Sector X) (fig 29) and on the east slope of Zajachja ravine. The excavations there were conducted by N.A. Lejpunskaja in 1979-1084. There were found, three curtains and two flanked towers which despite being rebuilt and reconstructed, survived. On the slope of the same ravine in 1903-1904 excavated B.V. Farmakovskij. The thickness of the walls found there was 3.5m.

The curtains of Olbia are a significant example of layering. From the internal side big rectangular plates were placed fastened by means of metal clamps\textsuperscript{177}. Ruins of the defensive system are dated to the 4\textsuperscript{th} - 2\textsuperscript{nd} century BC and part of a wall of the 5\textsuperscript{th} century BC and are made of stone. The gate itself is dated to the 4\textsuperscript{th} century BC, consisting of fragments of masonry of curtains and two towers made of adobe bricks. The bases of these walls were destroyed in the big fire that broke in the second half of the 4\textsuperscript{th} century BC, probably during the siege of Olbia by Zopirion. After that, narrow walls were constructed there and from the end of the 4\textsuperscript{th} century BC, there were

\textsuperscript{170} Wasowicz 1982, p.82.  
\textsuperscript{171} Burstein 2006, p.143.  
\textsuperscript{172} Wasowicz 1982,pp. 82-83.  
\textsuperscript{173} Lawrence 1979, p.320.  
\textsuperscript{174} Braund Kryzhitskiy 2008, p. 8 article by Kryzhitskiy The main results of the excavation at Olbia in the past three decades pp.7-15.  
\textsuperscript{175} Kryzhytskyy and others 2003, p.414.  
\textsuperscript{176} Braund Kryzhitskiy 2008, p. 9 article by Kryzhitskiy The main results of the excavation at Olbia in the past three decades pp.7-15.  
\textsuperscript{177} Kryzhytskyy and others 2003, p.420.
executed substructions under stone walls and towers. According to Kryzhitskiy, the gates are of the 4th to 2nd century BC and the walls of c. 400-350 BC although a part of the wall is of earlier date, most probably of the 5th century BC. Walls were made of mud brick.  

The western gates and the layer foundations of two towers and a curtain wall of the late 4th century BC, probably endured until the 2nd or the middle of the 1st century BC. The gate, settled between the northern and southern towers, was adjoined to each other in longitudinal sides. Waters in this side of walls were allocated also as defensive walls. There is for example, a drain open in the area of the western gate acting as a defense measure. The width of the curtain walls 4.5m and the distance between the towers was about 60m. The towers were 14.5x14 and 15.7x16.6m respectively.

The northern gate (fig.28), constructed in the beginning of the Hellenistic time, at the end of 4th- beginning of 3rd century BC, was settled down to the south. It has been excavated by B.V. Farmakovsij in 1907-8 who together with K.K. Romanov reconstructed the plan of the defensive complex and towers. According to this reconstruction, there were many towers on the sides of the gate, making it therefore difficult for the enemy to approach. There was also a narrow wicket on its east side. The walls were 4.3m thick, made of stones and finished with merlons from the floor side and their height must have reached 9-10m tall.

Ruins of walls of north and western defensive lines of the Upper city belong in Hellenistic times (II, X, XVIII, XX, XXIV). On the central height of the Upper city, defensive walls and towers of the 3rd -1st century BC were found. Excavations in the Upper city were conducted in 1946. On the whole, we could say that in Hellenistic times, there was a reorganization of the defensive walls almost in the whole periphery of the city including also part of the estuary which lasted until the first half of the 1st century BC. These new wall erections made according to Maslennikov were the result of an imminent threat in the area, probably coming from the sea, as the wall was erected in the coastline.

178 Braund Kryzhitskiy 2008, p. 9 article by Kryzhitskiy The main results of the excavation at Olbia in the past three decades pp.7-15.
179 Hind 1983-4, p.81. To this information also agrees Kryzhyskyy and others, 2003, p.395.
180 Kryzhyskyy and others 2003 p.418; 420.
181 Kryzhyskyy and others 2003 p.419.
182 Kryzhyskyy and others 2003 pp. 394-395; 415.
At the beginning of the 4th century BC, Olbia has overthrown tyranny and has managed to deal with Scythians. That was when the city, wanting to express its independence, built city walls with towers and gates\textsuperscript{183}. Later on, probably at the end of the 3rd century BC or at the beginning of the 2nd century BC, a landslip must have caused a great deal of damage especially in the Lower city. The damaged area was abandoned afterwards, although some settlements related to the harbor activities continued existing\textsuperscript{184}. At the end of the 2nd century BC and in the first half of the 1st century BC, it was very common to use material from older monumental constructions as building material to repair the walls\textsuperscript{185}, something that is also met in the case of Chersonesos. Especially about Olbia, there is the idea that the Temples of the Central Temenos were disassembled for this reason. As for the Southeastern part of the citadel (Sector XXV), there were found remains of the southeastern walls and towers of the citadel\textsuperscript{186}.

From the decree of Protogenes (IPE 12 32), we are also aware of a rich citizen of Olbia with this name, who sponsored the fortification of the city walls with his own money\textsuperscript{187}. All construction activities ceased in the middle of the 1st century BC, when the first period of life of Olbia came to an end, to continue from the beginning of the 1st century AD. In the Lower city, a significant part was destroyed by the waters of the Bug estuary. Yet, on its preserved part, there are defensive walls of the Hellenistic time that are not opened. These and the submerged parts took the name quay (XXVIII). We can assume that this big object which is 90m in length, almost 30m in width and up to 1m thick and found there is probably the ruin of a big tower which is mentioned also in an inscription (IOSPE I(2), 179) as “surprising on a kind and defender of all cities”\textsuperscript{188}.

So, part of the Lower city was lost under the water. In 2003, the Danish National Research Foundation’s Centre for Black Sea Studies and the Institute of the Archaeology of the National Academy of Sciences of Ukraine, initiated the publication project called \textit{The Lower City of Olbia in the 5th century BC- 4th century}.
In addition, the expedition of the Institute of Archaeology of NAS of Ukraine, did underwater excavations found a number of constructions (fig. 30). The place of the Lower city together with the harbor and its warehouses must have then flooded by the waters of the Bug River. The first, who realized the need for an underwater survey, was S.D. Kryzhitskii. For a further analysis see chapter 6. Life in Olbia continued until the 4th century AD, when the city was totally abandoned.

5.4. Kerkinitis (Κερκινίτης)

Kerkinitis is nowadays city called Evpatoria. It used to be part of the Upper chora of Olbia. Numerous sources among which Hekataios the Miletian and two Chersonesian epigraphic documents refer to this city, showing the close relation between the two.

Excavations have taken place mostly in the North-Western corner of the ancient city, however they were restricted by the fact that the new city is built over the ancient. They started in 1917 by L. A. Moiseev who unearthed the western and the coastal fortification lines. In 1928, he conducted research in the north defenses too. The period 1930-1950, the city continued being excavated by L. A. Moiseev as well as M. A. Nalivkina. Later on in 1950-52, M.A. Nalivkina, found a part of the southern wall and a circled tower near the site. Excavations continued after 1980 with greater success by B. Kutasov, revealing new parts of the fortification wall.

The above excavations have revealed two cultural layers of Kerkinitis. The first is the Greek one, from the second quarter of the 5th century BC, until the 2nd century BC.
century BC, and the Scythian one from the 2nd century BC and on. The Greek period was divided in three sub-periods in relation to the constructing activity. The first is from 457 BC until the end of 5th century BC, the second until 325 BC and the last until the middle of the 2nd century BC\(^{199}\).

The earliest wall found belongs to the end of the first third of the 5th century BC and almost 70 years after the foundation of the city (fig.31). Towards the 4th century BC, new walls were erected something that coincides with the fact that from then on Kerkinitis had to pay a tribute to Scythians. According to Kutaisov, this is an evidence of dependence of Kerkinitis from the Scythians\(^{200}\).

From the second half of the 4th century BC, a major shift took place in the history of Chersonesos as Kerkinitis was annexed by it. We are aware of that fact that Kerkinitis is mentioned in the oath of Chersonesos as part of its polis\(^{201}\). However, we do not know if this annexation was peaceful or not\(^{202}\). This oath was found in the main square and it is attributed to the 3rd century BC. It was made of white marble slab decorated with cornice and pediment at the top\(^{203}\).

Walls and towers were partly excavated and show traces of destruction from the invasion of Scythians in the middle of the 2nd century BC. After its destruction and the expedition of Diophantes the city passed over to Chersonesos again, however it never revived\(^{204}\).

5.5. Chersonesos (Χερσόνησος)

Chersonesos is one of the greatest ancient Greek colonies of the Northern Black Sea region. It was situated in Crimea -which was then known as Tauric Chersonesos- on the cape formed by today’s Quarantine and Sandy Bay (fig.32). Dorians from

\(^{199}\) Maslenikov 2000, pp. 71-72.
\(^{200}\) Kutaisov 2003, pp. 563-568.
\(^{201}\) IosPE, I\(^{\circ}\), 401.
\(^{202}\) Kutaisov, 2003, p.569.
\(^{203}\) Chersonesos Taurica in Antiquity, 2010.
\(^{204}\) Maslenikov, 2000, p. 72.
Heracleia Pontica together with citizens from Delos\textsuperscript{205}, who were expatriated by the Athenians, founded the city. Chersonesos is the Greek word for peninsula and since it was located on the Heracleian peninsula, on the south-western part of Crimea, one can see the name was not accidental and that it describes the site on which the colony had been established. Quite often it is combined with the title Tauric to denote its location and differentiate it from other sites named Chersonesos elsewhere.

The exact time and the reasons which led to the foundation of the colony at the specific place constitute a problematic issue, from the perspective that no one can be absolutely sure about the accuracy of relevant conclusions. However, it is believed by some scholars such as Vinogradov and Zolotarev\textsuperscript{206} that at the end of the 6\textsuperscript{th} century BC a small Ionian settlement was established that for some reasons did not evolve and that later on the city was founded again in the 5\textsuperscript{th}- 4\textsuperscript{th} century BC by Dorians and Delians. According to Tsetskhladze, the reason was probably locals uneager to accept the newcomers\textsuperscript{207}. At this point, it should be underlined that though Crimea seemed to offer excellent potentials for the establishment of a colony, its indigenous population was in a way deterrent (at least initially) for a massive Greek settlement at the region.

As for the dating, Chersonesos is mentioned as a trading city already in the 4\textsuperscript{th} century BC in pseudo-Skylax \textit{Periples}. Also pseudo-Scymnus reports the fact that it was founded by Heracleians -whose origin was from Megara in mainland Greece- and Delians (due to a Delphic oracle). But Pseudo-Scymn is the one considered the main literary source for the foundation of Tauric Chersonesos. His testimony derives from Demetrios of Callatis, a geographer of the 3\textsuperscript{rd} century BC. Delians were expatriated from their island by Athenians in 422/21 BC, because they refused to recognize the Athenian hegemony; before that the Athenian General Lamachus had been sent to Heracleia in 424-423BC, devastated the city chora and a political struggle arose there; those who supported the democratic party were evicted to Chersonesos and thus the fate of both Heracleians and Delians coincided in a way. So, 422/421 BC (the period of the colonization, which actually took place by force) must be the answer to the

\textsuperscript{205} The participation of Delians did not seem to have a further impact on the development of the history or culture of Chersonesos, while Chersonesians maintained close ties with Heracleia Pontica, which they considered to be their metropolis.

\textsuperscript{206} Saprykin, 1998, p. 234.

\textsuperscript{207} Tsetskhladze, 1998, p. 46.
dating of the colonial foundation issue\textsuperscript{208}, at least this date is accepted by the majority of the scholars.

There are certain reasons that led to the choice of the specific place for the foundation of the colony, among which traditional sea-routes. However, we know that ships, which were sailing along the Crimean shores either from Cimmerian Bosporus to the West or from Olbia and Tyaras to the Taman peninsula eastwards, could not avoid the Chersonesian harbor\textsuperscript{209}. Zolotarev states that the route was coinciding with directions of the general system of the Black Sea streams. Another reason were the exceptionally auspicious ecology-meteorological peculiarities of the Heracleian Peninsula, which made possible to inhabit, develop and exploit successfully its waste lands\textsuperscript{210}.

So, its location was also very significant for the Greek maritime transit trade, affecting positively the economy of Chersonesos. The region offered other ideal conditions to potential inhabitants, for instance, a well-protected from the winds bay, where they founded their seaport and fertile lands to exploit. Last but not least, it was a point of strategic importance; that was both an asset and a drawback since one could control from it the North-western part of the Black Sea\textsuperscript{211} -as it was the only proper harbor in the area, where one could stop before sailing further along the shores of Crimea. But on the other side it meant that Chersonesos was easy to approach and thus much exposed to enemies.

Herakleian Peninsula was more of a plain without natural fortifications in order to prevent from the attacks of the local Tauri. That is why, from a very early date from the foundation, walls were erected on the western side, so as to protect the city from the sea, something that means that there was a certain danger coming from there. Tauri, Heniochi, Satarchi and others were pirates prevailing in the area. Were some of the enemies’ names. When these were about to attack, people from the rural areas moved towards the fortified part of the city to protect themselves\textsuperscript{212}.

\textsuperscript{208} Saprykin 1998, p.227-248.  
\textsuperscript{209} Saprykin 1999, p. 39.  
\textsuperscript{210} Zolotarev 1979, p. 94-100.  
\textsuperscript{211} Constantine Porphyrogenitus stated that whoever possesses this region actually controls the North-western part of Euzeinus Pontus.  
\textsuperscript{212} Saprykin 1998, pp.242-243.
As for the Archaic Chersonesos information is scanty. However, there is a lot of information concerning the Classical period\textsuperscript{213}. The heart of the earliest city of Chersonesos during this period was located on a small peninsula on the west side of Quarantine Bay (fig.34). Greeks chose this place in the shape of a small harbor, clearly because it was surrounded on three sides by water offering natural defense. In 1993-1994, part of a wall was found that is believed to have been an early city wall. In 2005, another part of early wall was found by Ryžov in the North of Chersonesos, almost 5m long\textsuperscript{214}.

By the late 4\textsuperscript{th} to the early 3\textsuperscript{rd} century BC powerful defensive walls (fig.33) were built in order to protect this area of the city and its buildings, as it was situated at the lowest part of the city. The towers and the gateway (fig.35) of the city are also dated from this period. Later on, a smaller gate was added\textsuperscript{215}. This southeastern defensive line (fig 36) can be considered as the earliest and the best preserved part of walls in Chersonesos. The building techniques used for the walls and their adjacent structures, help us date them. Numbering of the towers and curtains\textsuperscript{216} is used by scholars even in our days. The walls and towers were made of large, carefully trimmed limestone blocks, which reached up to 2m. long. These still look terrific, even though they lost almost half of their original height. Many phases and building styles can be detected, with the lower being typical of Greek defensive walls of the fourth century BC\textsuperscript{217}. One of the ancient writers referring to Chersoneso’s walls was Strabo who wrote “ἀποτειχίσαντα τὸν ἱσθμὸν τῆς χερσονήσου τὸν πρὸς τῇ Μαιώωτιδι τριακοσίων ὠντα καὶ ἐξήκοντα σταδίων, ἐπιστήσαντα πύργους, καθ᾽ ἕκαστον στάδιον ἕνα”\textsuperscript{218}.

Archaeological data have also brought to light details about the Hellenistic defensive wall. From this wall, a large square stone had been removed from the wall. Two depressions have been cut at the side of square and two Greek letters, M and N have been inscribed at the edge of stone. Scholars like E.l. Solomonik and Yu. G. Vinogradov have studied this issue thoroughly. The conclusion of this study was that these square stones could belong to the defensive wall, which had already started to be

\textsuperscript{213} Zolotarev 2003, p.606.
\textsuperscript{214} Bilde and others 2008, p. 138.
\textsuperscript{215} Sokolov 1974, p. 9.
\textsuperscript{216} Straight sections of a wall (Crimean Chersonesos 2003, p.61).
\textsuperscript{217} Crimean Chersonesos 2003, p.61.
\textsuperscript{218} Strabo VII.4.6, p.263.
erected even in the 5\textsuperscript{th} century BC. Its north-eastern part was made by trimmed limestone slabs closely adjusted. Due to sharp lowering in the subsoil there was difference in the walls’ quantity of rows. From the inside part well processed stones of wall-armor took place while the outside part was unprocessed. The south-eastern side of this wall had been erected in the same way of stone-blocks, although its front side was faced towards the town. The result was that both walls appeared as one, united. Indeed, it was a double armored wall\textsuperscript{219}.

Excavations have showed that the distance between the walls was 210m. The outside part of the wall was of 2.75m width and its inner side of 1.6m. The houses were constructed in the inner part of the wall. As Carter states beyond the city walls must have existed around 140 “total estates”\textsuperscript{220}. The space between the two walls was empty so the population could find a shelter there, in difficult situations\textsuperscript{221}.

Between the sixteenth (fig.37) and eighteenth curtain (fig.38), the ancient defensive line was excavated by Kostsyushko-Valyuzhinich during 1895-1905. In this area, three levels of walls can be seen, the Greek, the Roman and the Byzantine. We are aware of the fact that the lower part is Greek, due to the untrimmed upper sides of the slabs, typical of Greek manufacturing\textsuperscript{222}. According to Lawrence leaving the stone untrimmed means that it acquired less time to be done\textsuperscript{223}. This specific area of defensive line consists of blocks with long and flat sides and narrow ends. In addition, in Chersonesos itself, the same technique was used also in the walls of the barracks, a house of the 4\textsuperscript{th} to 3\textsuperscript{rd} century BC. and in the mint\textsuperscript{224}.

In the early 5\textsuperscript{th} or late 4\textsuperscript{th} century BC, the defensive line underwent reconstructions. A new defensive wall was built in the southeastern boundary of the city where later on the theatre was built. In the northwest side of the city, a wall is situated north of the early necropolis of 4\textsuperscript{th}-5\textsuperscript{th} century BC (fig.39). The early Hellenistic wall crossed the northern end of the peninsula, enclosing thus an area of about half the size of the final circuit. The location of this line has been uncovered during the joint NPTC and ICA excavations that have taken place in 2003\textsuperscript{225}.

\textsuperscript{219} Zolotarev 2003, Pp. 606-607.
\textsuperscript{220} Carter 2006, p. 176.
\textsuperscript{221} Maslennikov 2000, p. 70.
\textsuperscript{222} Crimean Chersonesos 2003, pp. 61-62.
\textsuperscript{223} Lawrence 1979, p.213.
\textsuperscript{224} Crimean Chersonesos 2003, pp. 61-62.
\textsuperscript{225} Crimean Chersonesos 2003, p. 62.
Important changes in fortification took place in the end of the 4th century BC. A new line of defensive walls has been erected in that period and the formation of the urban territory was approximately 30ha. In the first half of the 3rd century BC new defensive walls have been erected in the south-eastern side of town and that is how the city-citadel was formatted226.

When the city expanded in the 4th and 3rd century BC, there was a reconstruction of the defensive wall, meaning that the southern boundary moved to the narrow isthmus that Quarantine and Pesochnaya (Sandy) Bays were met and went even more to the north, being connected with the defensive line along the shore of Quarantine Bay. These walls are 900m long, 3.5-4m wide, and 8-10m high. In the port area, walls are even higher – and with towers of approximately 10-12m high. The city and the chora of Chersonesos seem to have been plan together as an entity as the area enclosed by the Hellenistic walls appears to be about one half of a large land plot in the chora proper. The defensive walls were extended towards the west as the city doubled in size, equaling thus to full chora plot of almost 620m x 420m. Finally, one more reconstruction took place in the mid 3rd century BC, when the area of the citadel (fig. 40) was annexed on the southeastern flank227. In the study by Carter the Early Hellenistic wall was crossing the Peninsula at about 500m to the north of the later wall and it can be dated to the late 4th or early 3rd century BC228.

Regarding city gates, the oldest and most significant one is located in the southeastern part of the defensive walls, leading to the port region and its residential area. The gates as well as the walls were excavated by Kostsyushko- Valyuzhinich in 1899. Its lower part is the earliest as well, made of carefully adjusted slabs without mortar, bonded together with lead clamps put into the spaces created between the slabs. Due to its construction technique, this lower part of the wall is dated in the second half of the 4th century BC. The width of the opening was almost 4m and the entrance was 9m long, with pylons creating something like a corridor, making it difficult for the enemy to cross. This is a double-gated entrance otherwise called dipylon and similar ones were also found at Troy and Pergamon on the Asia Minor coast, and at Athens229.

227 Crimean Chersonesos 2003, p. 63.
228 Carter 2006, p.183.
229 Crimean Chersonesos 2003, p.67.
The wider southern pylon has what was left from steps that ascend the wall and a trapezoidal opening where a beam had been inserted to block the gates. The gateway has vertical grooves on each side of the wall which was meant to be used for lifting and lowering of a heavy metal gate reasons, the cataract. The space created between the cataract and the sidewalls, was filled with stones and earth when additional protection was necessary. In the first centuries AD, the gate slowly stopped being used and the entrance of the city moved to the south and west\textsuperscript{230}.

The tower of Zeno (fig.41) was situated in the south-eastern region of the city. We assume that it took that name from the emperor Zeno who reigned during the 5\textsuperscript{th} century AD. Probably the tower was constructed during the 2\textsuperscript{nd} century BC while Chersonesos was threatened by the Scythian wars\textsuperscript{231}. It was a circular tower, meaning the best way to protect from rams and catapults. This tower is the seventeenth of the fortifications of Chesonesos and it is estimated that this was the place where the initial settlement and the core of everyday life existed. It stands in the angle created by the east-west curtain wall 19 and the north-south curtain 20. This tower is well preserved and most important of all, it is the largest structure of this type in the whole north Black Sea Coast\textsuperscript{232}. Its diameter was 8m. Some of his parts were decorated by colourful paintings. During Zeno’s reign a second ring of masonry was added and after its reconstruction in the 9\textsuperscript{th} - 10\textsuperscript{th} centuries AD the diameter was approximately 23m\textsuperscript{233}.

The tower consists of concentric cylindrical rings of masonry that grew outward from the centre. The first phase of the cylindrical tower is estimated to have been in the late 2\textsuperscript{nd} century BC. A more accurate date can be extracted by the fact that polychrome relief blocks have been reused in its construction dated back to the 3\textsuperscript{rd} century BC. Until the 15\textsuperscript{th} century when the walls and towers stopped being used, they suffered a number of reconstructions, usually due to barbarians threat such as late Scythians, Sarmatians, Huns and others. But since there is not much historical information on the political history of Chersonesos, it is difficult to date them based on these. In the 5\textsuperscript{th} century, possibly under the reign of Zeno (474-491), a second ring was added\textsuperscript{234}.

\textsuperscript{230} Crimean Chersonesos 2003, p.67.  
\textsuperscript{231} Chersonesos, History 2010.  
\textsuperscript{232} Crimean Chersonesos 2003, p.68-69.  
\textsuperscript{233} Chersonesos, History 2010.  
\textsuperscript{234} Crimean Chersonesos 2003, p.68.
This unexcavated tower was believed to be just a hill until its excavation by Kostsyushko- Valyuzhinich at the end of the 19th century and its total uncovering by his successor Robert Löper when he became the director of the museum. It was excavated from the inside in 1960-1961 under the command of Stanislav Strzheletsksiy. From the inner side (fig.42) there were brightly decorated stelai and polychrome relief blocks and235 (fig 43-44), taken by a necropolis nearby just outside the south wall and overlooking Quarantine Bay. The fact that they were colorful is clear evidence that they can’t have been exposed in the necropolis for long. Analysis on the stelai concerning their color, decoration and inscriptions, dates them back to the late 4th to the first half of 3rd century BC. The fact that these were used for the tower construction leads us to the conclusion that the city at that time was at a very sudden danger, probably the Scythian one236.

These stelai were found into the curtain wall XX. They belonged to a doctor, which is why on them there were found representations of medical instruments (forceps, pincers, spatula, cupping glass). The one refers to Leskhanoris, son of Eukles, a physician from Tenedos and the second to Dionysios, son of Pontagnostos237.

From the 3rd till the late 2nd century BC, Scythians were a constant danger for the Chersonesos and even earlier than that in the 3rd century, they had destroyed the chora and its possessions. A key defensive structure during this period was undoubtedly the citadel (fig.40&45). It was situated in the southeastern corner of the city wall beside Quarantine Bay. It was demarcated on the east by curtain wall 18 and making a rectangular closed area with towers XVI, XVII, XVIII and XIX and with curtains 19, 20 and 21. The reason of its construction was to protect the city from the port’s side in the second half of the third and early second centuries BC. Its line is nowadays inland due to the fact that the ancient coastline was farther south than the modern one238.

Finally, Zolotarev claims that there was also a system of city-gate lock at the South-Eastern part of the wall. This is based on the fact that near the turn of the wall existed many rock cuttings and “together with the water storage cistern probably were

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235 According to Hind these stelai were found later in 1969 (Hind 1983-4, p.85).
236 Crimean Chersonesos 2003, p. 69.
238 Crimean Chersonesos 2003, pp. 69-70.
the northern pylon\textsuperscript{239} of the city gates\textsuperscript{240}. These gates probably had a width of 3.8m and length of 8.4m. They were constructed probably between the 4\textsuperscript{th} - 3\textsuperscript{rd} century BC because of the thickness of the wall. In the first century AD the gates were blocked up, without knowing the reason and the entrance moved to the west\textsuperscript{241}.

5.6. Theodosia (Θεοδοσία)

Theodosia used to be one of the strongest cities of the Bosporan Kingdom, located in the south-eastern part of the Crimean peninsula. It was situated close to the shore in an area forming a bay which is nowadays smaller than what it used to be. To its north, the steppes were stretching while it was surrounded by the foothills of the Crimean Mountains. It was probably founded in the middle of the 6\textsuperscript{th} century BC by Ionians from Miletus around 700 stadia from Panticapaeum\textsuperscript{242}. The city probably had a short lifespan of until the 3\textsuperscript{rd} century BC. It is referred to by many ancient writers such as Arrian, pseudo-Scylax, Strabo, Demosthenes and others\textsuperscript{243}.

Survey was conducted by B.G. Peters, who found part of the medieval walls and citadel. It is believed that these constructions coincide with the ancient ones. Earthen ramparts built by a mixture of stones and earth over the slopes of the gullies must have existed along the periphery of the ancient city. Their length is estimated around 700m and their width of until 5m in the base. In its front row it must have had two rows of pine logs built tightly as identified in the layer of the bedrock clay.

In addition, it is believed that all the works were carried out in a hurry, something that can be interpreted as an imminent threat being present. In fact, some farmsteads were demolished in order the wall to be built. The threat we referred to before, was probably the war between Bosporus and Theodosia around the middle of the 4\textsuperscript{th} century BC. However, the analysis on the coins found in these areas

\textsuperscript{239} Pylons were usually used to enlarge the gates. They were special projections perpendicular to the wall (Chersonesos Taurica, city gates 2010).
\textsuperscript{240} Zolotarev 2003, p. 607.
\textsuperscript{241} Chersonesos, History 2010.
\textsuperscript{242} Koshelenko and Kuznetsov 1998, p. 251.
\textsuperscript{243} Maslennikov 2000, p.81.
contradicts this fact as the war seems to have happened at the end of the 4th century BC. Finally, part of it was submerged by the sea. 244.

6. Kerch Peninsula (Κιμμέριος Βόσπορος)

On the east of Crimea, a broad peninsula is formed that is known by the name Kerch peninsula (fig.46) which used to cover an area of almost 3000m245. Remains of ancient architecture are nowadays obvious both in Kerch and Taman peninsulas246. However, in this paper we are going to deal only with the European half of the Bosporan Kingdom that is Kerch peninsula and with the most well-known ancient Greek cities247.

As for archaeological investigation in general in the Kerch Peninsula, this started in 1930 from S.A. Zhebelev who dealt with Greek colonization in north Black Sea. According to Zhebelev’s opinion, Greek maritime traders must have visited these places far earlier than their foundation dates, something that seems true if we take into account that after the oracle given, a crew was sent to these places to investigate them first and then people to settle. This happened not only in the Black Sea area, but in all places that Greeks colonized such as for example Thera. Zhebelev draw conclusions by combining written sources with archaeological finds248. In later excavations and in most of the cases, it has taken more than a century of excavations in these areas in order to reveal layers of previous years, as these were often destroyed by later occupation on the site249.

The most important cities of this area altogether formed the nucleus of the Bosporan Kingdom which played an important role in the history of the area. Some of

244 Katyushin 2003, p.648; 665-666.
245 Maslennikov 2000, p.78.
246 Sokolov 1974, p. 9.
these cities were Nymphaion, Panticapaeum, Myrmekion and others, mostly founded by Miletians. These cities were established in places that were already inhabited by locals and were trading stations were already present. The earliest Greek city emerged was Panticapaeum around 540 BC and others followed later.

We should note here, that throughout the centuries the geographical situation of Kerch Peninsula has changed and that parts of it nowadays lie under the water as sea level rose. The soils at that time used to be fairly fertile and water from rivers was abundant while these days, there is water shortage in the area. Finally the climate was more or less similar to the one today only that it was cooler and damper. What is of most interest though is the fact that it is rich in limestone, high quality clays and wood, materials used for the construction of walls. However, especially the latter one disappeared due to human action.

It is obvious that in this area local nations lived as well. Raids were frequently taking place in the area, but despite them, from the 5th century and on trade started increasing and two self-contained political universes appeared, of the Aegean and the Black Sea basin. In 430 BC, Perikles led a powerful fleet into the Black Sea, as we learn from Plutarch’s Life of Pericles, in order to establish a good relationship between Panticapaeum, the capital of the Bosporan Kingdom and the controller of grain produce at that time. Athens was in need, especially after the outbreak of the Peloponnesian war in 431 BC. Cities threatened by their neighbors such as Theodosia and Nymphaion, probably were for this alliance, a situation though that quickly declined, after the Syracusan disaster. Just like in the other two areas examined, details of the walls of Kerch are given until the Roman conquest.

6.1. Kimmerikon (Κιμμερικόν)

Kimmerikon was a city probably on the southwest slopes or on the hill of Opuk (fig.47-48). The city appears for the first time through the writings of Strabo,

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253 Burstein 2006, pp.142-144.
Arrian and Ekateos the Miletian in the 6th century BC\textsuperscript{254}. It is a poorly studied city due to the fact that Opuk Mountain Region is hard to access and because from 1951 until 1991, it was under the control of the USSR Ministry of Defense\textsuperscript{255}. From 1991 though, it started being excavated by the late V.K. Golenko\textsuperscript{256}.

The defensive system of the city (fig.49) differs a great deal from its contemporary ones. The earliest fortification was found in the highest terrace of the Plateau of Opuk Mountain\textsuperscript{257}. The first to suggest that the remains of the ancient fortifications were located there was a Russian explorer and traveler called P. S. Pallas and the first small scale excavations were conducted by P. A. Dubrux, founder of Kerch museum of antiquities. Dubrux made plans of the city that were not very reliable and most of which were lost. Finally, Yu. Marti excavated mainly the fortifications of the city\textsuperscript{258}.

In Kimmerikon, there was found a wall starting from the hill and heading down the sea. However, it is difficult to date this wall. The only thing we know is that it was 300m long and 2.2m wide and that it probably protected the port of the city from its north side\textsuperscript{259}. Probably though, the earliest wall is of the late 6th century BC, located on the north slopes of the hill\textsuperscript{260}. At the beginning of the 20th century though, buildings of this area were pull down and destroyed by a local sulphur company obstructing thus research. Even so, under the ruins of these premises, there were found slightly damaged Hellenistic layers\textsuperscript{261}.

The fortress found in Kimmerikon, is dated back in the 1st century BC, and no other fortress is believed to have existed previously underneath it like in other cities or like in the case of walls. It covered an area of 5ha and cut off the peninsula from the rest of the Crimea. It was 3m wide and it consisted of four towers. The site from its north and west was well protected from rocky slopes\textsuperscript{262}.

Finally, ramparts were found of a maximum height of 0.3m and 2-3m wide. One of these ramparts is 75m long or even more. Another rampart is visible for 200-
300m to the south and the above mentioned height or more and on the extending for 450m\textsuperscript{263}.

6.2 Kytaion (Κυταιίον)

Part of Kytainon nowadays lies under the sea. The city (fig. 50). is referred to by many ancient writers such as Pliny, pseudo Scylax and pseudoArrian. The first plans were made in 1920 and excavations there started in 1970 and continue until today.

The first walls were built in the 4th century BC. They were 2.9-3.2m thickness and in the corners there were erected square towers. The main city was located close to the north walls. In the second half of the 1st century BC, there was built an extra wall making thus the thickness of the walls reach the 4.5m. There was also a gate (fig.50) where at the same period a tower with a small door was built. Basically, the city defended itself better from the 3rd-1st century BC. This is probably due to the fact that the city was under imminent attacks\textsuperscript{264}.

6.3 Nymphaeum (Νυµφαίίον)

Nymphaeum was founded in the middle of the 6th century BC\textsuperscript{265}, by Ionians\textsuperscript{266} in an area 17km south east of the city of Kerch. The city is mentioned by various ancient writers, among which Aeschines, pseudo-Scylax and Strabo\textsuperscript{267} who talks about its fertile lands and harbor. The city must have lasted until the 3rd century AD\textsuperscript{268}.

Survey begins with P. Dubrux who has identified the fortifications of Nymphaeum and I.P. Blaramberg the one who agreed with the location of the city and

\textsuperscript{263} Golenko 2007, p. 1065.
\textsuperscript{264} Maslenikov 2000, pp.85-86.
\textsuperscript{265} According to Sokolova it was founded in the end of the 6th century BC and more particularly in 580-560 BC (Sokolova 2003, pp.764-765).
\textsuperscript{266} Maslenikov 2000, p.88.
\textsuperscript{267} Strabo VII, 4, 4, p.235.
\textsuperscript{268} Sokolova 2003, p.763.
pointed out some stones on the sea water stating that there was located the port. In 1966 when N. L. Grach takes over research he examines deeper the various constructions of the city among which, its defenses.

The first walls must have been erected in Nymphaeum in the 4th century BC over the ruins of dwellings and public spaces. For the construction of the walls, stones from these buildings were used. Inside the wall there was a passage 1.16m wide which later on ceased to exist.

These first walls must have been 2.4m wide, however research is difficult as part of them lies underneath the sea. According to McNicoll, walls of Nymphaeum lie 24m above the sea level, however it is obvious that the walls were situated in an appropriately naturally defenced area where fortification had a complimentary role, enhancing the natural barriers and protecting the main part of the city.

6.4. Tyritake (Τυριτάκη)

The city of Tyritake was almost 11km from the city of ancient Panticapaeum and it was founded at the same time with Nymphaeum, meaning in the middle of the 6th century BC by Ionians. This date is coincidental for almost all Greek colonies located on the western coast of Kimmerian Bosporos. Unfortunately though, there are no written sources regarding the city with the exception of its name being mentioned by Pseudo-Arrian, Ptolemy, Pliny and a few others.

Regarding the location of the city, from its south it was well protected by a river and from its west and north via deep ravines. This natural defense was the prime protection of the city (fig. 51). The earliest walls of the city are attributed to the

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269 Sokolova 2003, p. 760; 763.
270 Maslenikov 2000, p.88.
274 Boardman 1996, p. 320.
275 According to Zinko the foundation date is a bit later in the second third of the 6th century BC (Zinko 2007, p. 827).
276 Zinko 2007, p. 827.
277 Zinko 2007, p. 827.
second quarter of the 5th century BC\textsuperscript{278} and are considered of the earliest defenses in the north Black Sea area. According to A. Karasev the first walls were modest and built around the houses\textsuperscript{279}.

Most particularly these were situated in the west of the city and it is estimated that they were built in a hurry. Walls of two Archaic houses where incorporated into the wall as well as a tower. The width of these walls was 1.7-2m\textsuperscript{280} and their height was 1m. According to Wasowicz, the role of this wall was probably more for prestige rather than for strategical reasons\textsuperscript{281}. However, despite the humble form of the wall, it is too early to think of adorns, if we take into account that colonizers came to this place having almost no possessions. As a result, Zinko’s opinion who notes that this first wall was done to face enemies coming from the Steppe seems more persuasive. This wall was repaired a century or two later\textsuperscript{282}.

The greatest walls though, were built during the 4th to 3rd century BC (sector 1,2). They were 2.4m wide and had square towers\textsuperscript{283}. More particularly, curtain 1 starts from tower 1 and runs from southeast to northwest to tower 2 (fig.52-53). The total length of the walls and towers is 41m. After tower 2 direction of walls changes and they run over the slope\textsuperscript{284}. A gate was also found. In the Hellenistic period these walls were enhanced and reached up to 3.9m width\textsuperscript{285}.

In Tyritake, 17.4m of the north part of the wall and 20m of the west part of the walls has been saved until today. The north part of the wall (fig.54) also includes a tower\textsuperscript{286}. The north and south part of the walls have been unearthed in 1932, made of limestone blocks, rustic from the outside. The wall was 2.3m wide and had coating armour of 1.35m wide\textsuperscript{287}.

In total in the south part of Tyritake there are four towers. From these, tower 1 (fig.55) is the most monumental one as its outer walls are made of massive slabs some of which are decorated with rusts on the front. It was rebuilt many times. On the contrary, tower 2 is plain, built close to the fortification wall. Its walls were rebuilt

\textsuperscript{278} Hind 1983-4, p. 87.
\textsuperscript{279} Wasowicz 1982, p.85.
\textsuperscript{280} Zinko 2007, pp. 828-829.
\textsuperscript{281} Wasowicz 1982, p.85.
\textsuperscript{282} Zinko 2007, pp. 828-829.
\textsuperscript{283} Maslennikov 2003, p.89.
\textsuperscript{284} Zinko 2007, 829.
\textsuperscript{285} Maslennikov 2003, p.89.
\textsuperscript{286} Hind 1983-4, p. 87.
\textsuperscript{287} Zinko 2007, p. 829.
three times and the walls were thickened with crude rubble. Tower 4, also incorporated on the wall, and was made with limestone slabs. For tower 3 there are no available information\textsuperscript{288}.

As for the west part of the city (fig.56), it was explored by V. Gaidukevich. It was 2.3m wide and built in different stages. This wall was adjoined with a rectangular tower forming an angle. This tower had thick walls and was thick on the inside. It was 4.53m wide and 6.05m long. Part of it was excavated in 1972 by D. Kirilin, more specifically in sector 23. Again the wall was rustic from the outside and made of limestone blocks\textsuperscript{289}.

6.5. Panticapaeum (Παντικάάπαιον)

Panticapaeum was the earliest city founded in Kerch peninsula around 540 BC. The reason of its founding lies in the fact that there was back then a tense social struggle in Miletus which is the mother town of Panticapaeum where Miletians fled due to the political and social situation\textsuperscript{290}. During the rule of Archaenaktids, and most particularly around 480 BC, it became the capital of the Bosporan Kingdom. What is striking about this city though is the fact that it is one of the few cities of the north Black Sea Region, where the acropolis is obviously distinctive\textsuperscript{291}.

In comparison to the other cities of the Black Sea, Panticapaeum constructed early walls in the middle of the 5\textsuperscript{th} century BC. Recent excavations agree to this fact. Ancient writers that refer to the walls and most specifically to the existence of an acropolis of Panticapaeum, were Strabo\textsuperscript{292}, Appian and Dion Cassius Cocceianus. In addition, Aristotle refers to the city of Panticapaeum as a good harbour and docks\textsuperscript{293}.

Concerning modern studies, Paul Du Brux and Ivan Stempkovsky compiled a handwritten layout of the site with a detailed description. However this plan was later

\textsuperscript{288} Zinko 2007, p. 829.
\textsuperscript{289} Zinko 2007, pp. 829-830.
\textsuperscript{290} Koshelenko and Kuznetsov 1998, p. 252.
\textsuperscript{291} Wasowicz 1982, p. 85.
\textsuperscript{292} Strabo, VII, IV, 4, p.245.
\textsuperscript{293} Koshelenko and Kuznetsov 1998, p. 250.
lost and trying to understand it through the description is tough (fig.57-58)\textsuperscript{294}. During the period 1970 and 1980 excavations were conducted by I. Marchenko and then in 1977 by V. P. Tolstikov. From these excavations have been unearthed parts of the citadel, of the curtain walls with their internal corridors, of towers and gateways. On most of these constructions, traces of destruction as a result of an earthquake around 63 BC and of a fire of the 2\textsuperscript{nd} century AD can be spotted\textsuperscript{295}.

Concerning the western city’s border, Du Brux refers to a fortification complex which is constituted by “a little acropolis” (fig.59), meaning the rocky second armchair in Mithridates hill. To the north of that hill, the fortification line was double with towers and along its edge there was a wide natural hollow, probably been made artificially and playing the part of a ditch. VI.V. Schorpil in 1905-07, excavated this area where he discovered a foundation of a fortress wall of 3m width. In 1923-24, J.J. Marty, discovered a new part of the wall which included a 12m in diameter round tower which had an inside room. Its foundation was made by rubble stone and the walls of carefully hewed and trimmed rectangular blocks that were put one across another, creating a wall of 1.8m thick. Both these people actually confirmed the description of Du Brux layout, making that credible.

The defensive system of Panticapaeum was protecting the city throughout the Hellenistic and Roman period. There must have been a double line of walls with towers and gates. The one was located in the in the mount of Mithridates, around the acropolis and the other one protecting the houses until the port\textsuperscript{296}.

Consequently, one could say that the fortification system of Panticapaeum was really strong, but this is very logical if we take into account that it was the capital city of the Kingdom of Cimmerian Bosporus. In addition it was exposed to imminent threats from the south- west and west steppes, where there were also gates as the two main roads of Panticapaeum started towards Theodosia and Tyritake respectively. These gates are probably those engraved in coins of the city of the first centuries AD. The walls were also dated in the first centuries AD; however, it is possible that they were earlier than that\textsuperscript{297}.

\textsuperscript{294} Tolstikov 2003, p.708; 722.
\textsuperscript{295} Hind 1983-4, p. 86.
\textsuperscript{296} Wasowicz 1982, p. 85.
\textsuperscript{297} Tolstikov 2003, pp. 712- 713.
6.6. Myrmekion (Μυρμήκιον)

Myrmekion (fig.60) was a small town of East Crimea situated close to Panticapaeum (fig.61). Ancient writers such as Pseudo-Scymn, Strabo and Pseudo-Arrian describe it. Myrmekion was considered by some scholars a city and by others a rural area of Pantikapaion, as their distance is estimated to have been only 4km. The city started being excavated in 1930 and the excavations were done both by Russian and Polish expeditions. Until 1994 excavations were conducted by Ju. A. Vinogradov.

It is very probable that the first walls here were erected in the last quarter of the 6th century BC, but destruction traces of fire prove that the city was destroyed and new walls were erected in the end of the first third of the 5th century BC. The causes of the fire still remain unidentified however it is believed that soon after this incident Myrmekion’s acropolis was fortified. This happened in the Classical period, in the end of the first half of the 5th century BC. The wall was 3m wide and encircled the area of the acropolis, but not the entire city as it covered only its west part. The acropolis is considered one of the earliest in the whole North Black Sea Region. Its walls now are with stone plinths; however it is believed that above they were built with mud-bricks. Plinths are of 1m thick.

It seems that towers did not exist in the Archaic period but new walls with square towers are erected in the beginning of the 4th century BC, 42m long and 2.2-2.5m wide. In the Hellenistic period there is a reconstruction of the eastern part of the site (trench M), (fig.62). This wall was 3.2-3.8m wide and went along the older one, changing direction a little in the east. Myrmekion walls differ from the walls

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298 Vinogradov and others 2003, p. 803.
300 Maslennikov 2000, pp.94-95.
301 Boardman 1996, p. 320.
302 Bilde and others 2008, p.145.
303 Maslennikov 2000, pp.94-95.
304 Vinogradov and others 2003, pp. 806-807.
305 Vinogradov and others 2003, p. 811.
306 Maslennikov 2000, pp.94-95.
307 Vinogradov and others 2003, p. 807; 811.
308 Vinogradov and others 2003, p. 807.
309 Maslennikov 2000, p. 95.
310 Vinogradov and others 2003, p. 813.
of the other cities as for its constructions were used big crude limestone blocks put
directly on the rock and small stones creating a mosaic appearance.\footnote{Vinogradov and others 2003, p. 807.}

6.7. Porthmeus (Πορθµµίιον)

Porthmeus was a small city at the north east tip of Kerch peninsula (fig63). It.
used to be the crossing point of ancient times as one can understand from its name.
The city was founded in the late 6th century BC and survived until the ca. 50 BC.\footnote{Hind 1983-4, p. 87.} It
is referred to mainly by Pseudo- Arrian in his Periplus under this name which
actually means passage or crossing.\footnote{Vinogradov and others 2003, p.821.}

Excavations in Porthmeus were directed by M. Vachtina and were resumed in
2002.\footnote{Bilde and others 2008, p. 145.} Up till now, the western wall, a tower and gates have been uncovered. The
city was excavated firstly in 1960, 1970 and 1978\footnote{Hind 1983-4, p. 87.} and according to Maslennikov
excavations started even earlier in 1953.\footnote{Maslennikov 2000, p.96.} Later on, in 1986 the base of the eastern
Archaic wall was unearthed, erected along the natural slope of the plateau. It was
made of limestone and it was forming a bastion in its south. Actually, Porthmeus
walls are the earliest walls found in the whole Black Sea Region, as they are dated
back to the second half of the 6th century BC.\footnote{Vinogradov and others 2003, p.822.}

The city was destroyed twice in the 5th and 3rd century BC, when it was
rebuilt, probably after a catastrophe and a big fire that took place.\footnote{Maslennikov 2000, pp.96-97.} After the fire
though, the city was rebuilt however not a lot of Classical Porthmeus has survived\footnote{Vinogradov and others 2003, p. 823.} with the exception of a wall 2.4-2.5m wide and a rectangular tower. Two gates also
existed of 2m width. The city must have been destroyed after the third quarter of the
1st century BC.\footnote{Maslennikov 2000, pp.96-97.}
Ancient Kyta was situated 40km south of modern Kerch. Almost half of its territory was lost under the sea. The city’s name can be found in Pseudo-Scylax’s periple, Plinium’s Natural History and others.

P.A. Dubrux was the first who made the city plan. He admits having visited the site in 1820 and being able to see the foundation and the walls by an arshin of about 71.12cm. However, one year later in 1821 when he returned to the site, most of the ruins disappeared, as locals have taken away stones for their own use. Even tough, he managed to make the city plan. On his plan he marked an area in the central part of the city that is surrounded by walls and a ditch. Kyta appears with a double fortress wall in the north and the east, a single in the west, a gate in the east, five towers and semi-towers and a moat along the line of the fortress walls. The north and east wall is 2.3m the external and 1.8m the internal wall deep respectively while the western wall was 2.8m deep. The moat, located in front of the external wall was 14.9m wide.

Regarding towers, all of them were in the plan semicircular or oval, with the exception of the north-western one that was rectangular. The total length of the fortification line was 416m. The acropolis was fortified as well, had two towers in the corners and a ditch 10.6m wide. From all the above we get the feeling that the main protection was catered from the north-west and north-east towers. What is of striking interest though is the north western tower of the acropolis. This was an oval tower incorporated into a square one of 10.5 x 10.5m, probably reconstructed. The other tower, the north-eastern one was an oval tower with two entrances from the inside. Finally the gate was located in the east of the city from where probably a road was staring.

Excavations there started in 1927-29 when piece of the fortress wall was found and the original plan of Dubrux was altered by Y. Y. Marti. According to the latter’s plan, the wall on the north is not straight as in the first plan but rather forms an angle. In addition, a gate appears in the north part of the line, having a moat of 3.2m wide and the eastern line consisted of two parallel walls. The inner one was of the 4th-3rd

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321 Although he was the one who made it, he was not the one to publish it as well as it was published by his immediate superior, I. P. Blaramberg.
322 Molev 2003, pp.842-843.
323 Molev 2003, p.843.
century BC, made of two rows of well cut stones with filling and 2.5m thick and the outer was of Roman times. Regarding towers, in the north the eastern line ended in an oval one which was 11m in diameter. Its foundation was of well cut square stones and the upper rows made from non treated rubble meaning that this part was added in the Roman times. The foundation though shows that the tower was built in the 5th-4th century BC.324

According to Molev, Kyta’s defenses can be discerned in three areas, the western (plot I), northern (plot III) and eastern (plot IV) (fig.64). The eastern one consisted of a wall, a shell and towers. Earlier than that there was a wall made of two shells from bryozoans limestone which was slightly cut from the front and slabs that were well cut from all sides. The space between them was filled with rubble which provides us the possible date of its erection and its height is 1.2m. The shell’s role must have been supportive to the wall. However, this wall was reconstructed in the 1st century BC. After the reconstruction the wall reached 4.5m depth.325

7. Submerged walls

The case of the Black Sea, which over the centuries was transformed from a lake into a sea, affected greatly archaeological exploration. The lack of oxygen in water actually helped the preservation of ancient artifacts.326 If we examine the area of the northwest Black Sea coast, we will conclude that the majority of cities have submerged parts of walls.

Starting from the west, segments of the walls of Messambria are found under the water. These exist along the entire length of the north coast of the peninsula where a wall of the Classical period existed.327 One of the most striking cases though of submerged walls is that of Olbia (fig.65). Underwater archaeological research has been conducted during 1971-1977 from the expedition of the Institute of

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324 Molev, 2003 pp. 844-845.
326 Czech, 2006 p. 49.
Archaeology of NAS of Ukraine—however interest on it started even earlier, in the beginning of the 19\textsuperscript{th} century. These excavations were led by Prof. S.D. Kryzhitskii who aimed to provide topographical and stratigraphic information about the submerged area. One of the plans made regards the period examined, as it suggests the location of the eastern boundary of the Lower city. This place is called “the landing stage” and contains remains of a defensive complex of the first centuries BC\textsuperscript{329}.

The part of the city that fall into the water is part of the Upper city described in a previous chapter. Methods that were used were those of light diving equipment and use of geoacoustic equipment. A map was drawn revealing the plan of the sight and part of the walls. Actually, the archaeological topography of the flooded part, allowed sketching the lines of the city during various times\textsuperscript{330}. The remains of a defensive complex were found almost all of which are made of stone taken by another place (Sector XXVIII)\textsuperscript{331}.

Underwater excavations were also conducted in Olbia by the Department of Underwater Archaeology of the Toruń University, after an invitation by the Institute of Archaeology of the Ukrainian Academy of Sciences in Kiev. The excavations took place in two seasons, in 2003 and 2004. The same department, earlier than that in 1962 under Blavatskii V.D, had investigated the submerged part of Nikonion. However, the site was damaged from the river and the erosion of the cliff, constituting thus further research almost impossible\textsuperscript{332}.

Olbia and Nikonion are two of the greatest examples concerning underwater survey in the North Black Sea coast. Concerning these two in particular and other cities located on the mouths (limans) of major Pontic cities, one could say that are some characteristics which make the underwater excavations here more peculiar than in other places. These are the shallow waters (up to 2m), low visibility (less than 0.5m), and pollution\textsuperscript{333}.

Underwater excavations in Chersonesos begin when around 1930 becomes known to professor Grinevich in 1930, that some fishermen’s net were caught in walls existing in the sea. When Grinevich learned about it, he sent divers to check the

\textsuperscript{329} Pydyn 2006, pp.137-139.  
\textsuperscript{330} Kryzhitskiy and others 2003, pp. 396-397.  
\textsuperscript{331} Braund Kryzhitskiy 2008, p. 13.  
\textsuperscript{332} Pydyn 2006, p.135.  
\textsuperscript{333} Pydyn 2006, pp.139-140.
rumors who told him that they saw towers, houses and parts of walls. It is said that he couldn’t believe it and that he had to dive himself to make sure that the remains of the ancient city were down there\textsuperscript{334}.

Finally, Nympaeum is also a city that hides part of its history underwater. It is estimated that if underwater survey is conducted it can reveal the actual size of the city and to determine the exact location of the harbor\textsuperscript{335}.

8. Unfortified cities

From the research conducted for the completion of this paper, it came up that all cities either built earlier such as Porthmeus or later on such as Chersonesos, were eventually fortified. This makes sense if we take into account that tribes pre-existed the colonization and in many cases, were not eager to accept the newcomers easily. Even farms and villages were fortified; but this is out of this research. However, two islands, that of Leuki and Berezan, both located on the North Black sea, remained unfortified each for its own reasons.

Leuki or the Island of Achilles, located east of the Danube Delta, was mainly a place where Achilles was worshipped and not an actual city. This is why, no walls exist in the area and the only construction anticipated to be found is mostly temples. Excavations took place in 1841 and in 1988 by the Odessa Archaeological Museum both on land and underwater. Research nowadays continues by S.B. Ochotnikov and A.S. Ostrooverchov. All the finds have been summarized in a short monograph under the name *Svjatilišče Achilla na ostrove Levke*\textsuperscript{336}.

There is also lack of walls in Berezan Island, which according to new surveys in antiquity was a peninsula. Excavations there started in the first half of the 19\textsuperscript{th} century, however only houses were found as regards constructions\textsuperscript{337}. Research was conducted by the Institute of Archaeology of the Ukrainian Academy of Sciences and the State Hermitage Museum in St Petersburg during the last two decades. The project

\textsuperscript{334} Rackl 1978, p.261.
\textsuperscript{335} Sokolova 2003, p.764.
\textsuperscript{336} Bilde 2008, p. 129
\textsuperscript{337} Maslennikov 2000, pp. 47-50
is currently under the authority of V.V. Krutilov and D.E. Čistov\textsuperscript{338}. Berezan seems most probably to have been an urbanized settlement of the chora of Olbia, rather than a city itself, belonging to the latter’s extended chora\textsuperscript{339}.

9. Comparison

If we take a closer look, we will find out that most of the ancient Greek cities founded in the Black Sea, belonged to the second colonial wave and that the majority of them where founded by Miletians. This implies that the colonizers brought with them traditions from their motherland. In our case, construction methods and techniques of building walls must have been transferred. However, these were modified to suit each places special needs. It must also be noted that as building materials were hard and costly to be transferred from the motherland, they were of local origin.

As for the Classical period, not all cities were fortified. Besides, one should not forget that foundation precedes fortification and in the case of no imminent danger, there was really no point in building walls in a hurry. Cities from the mainland Greece that remained unfortified in this period were for example Sparta and Elis. During the Hellenistic period though, the majority of the cities were walled (tables 2 and 3).

9.1. Walls

During the second phase of colonization, Greeks started spreading in the Black Sea and the broader Mediterranean founding colonies. In the beginning the area that Greeks used to cover with walls was of smaller size, the so-called acropolis\textsuperscript{340}, but later on this area expanded. Since these colonies were created by Greeks, it makes sense that they brought with them the Greek techniques and craftsmanship regarding

\textsuperscript{338} Bilde and others 2008, p. 129
\textsuperscript{339} Solovyov 1999, part 5
\textsuperscript{340} Botsford and Robinson 1977, p.60; 66.
the construction methods of walls and suiting it to the local requirements i.e. the local material and stone. And even though according to A. Ranovich these cities were short-termed, the Greek elements -especially the Hellenistic ones-of civilization managed to penetrate even in these far away places such as of Olbia and Chersonesos\textsuperscript{341}. So, the relationship between the motherland and the colonies is undeniable, and one of the reasons was trade\textsuperscript{342}.

As for walls, a comparison can be done in relation to walls of the northwest Black Sea and the other Greek colonies. Such an example constitutes Chersonesos. We are aware of the fact that the lower part of Chersonesos is of Greek origin, due to the untrimmed upper sides of the slabs, typical of Greek manufacturing. This means that the wall was built very quickly, however it also means that the wall could be easily taken apart by enemies\textsuperscript{343}. This specific area of defensive line consists of blocks with long and flat sides and narrow ends. This is a simple technique that avoids using limestone mortar. Still though, it creates a beautiful and accurate wall, similar to those found in Greek cities such as Pergamon, Priene and Assos which were all located in the Asia Minor coast, as well as in the island of Samos.

Priene was founded after the middle of the 4\textsuperscript{th} century BC. Its fortifications were probably of the period ca. 350- 4\textsuperscript{th} century BC. It is pretty obvious that the city can not have remained unwalled or partly walled for a long period of time\textsuperscript{344}. The fortifications were of blue-grey marble, in masonry of pseudo-isodomic quarry (fig.66) Of greatest importance for our comparison though, are the blocks used, of trapezoidal shape\textsuperscript{345} just like those of Chersonesos. Finally, when a danger was imminent, then people from the rural areas around Chersonesos found refugee behind the defensive parallel walls, a tactic that reminds us of the agrarian population of Attica, that used to cover behind the Long walls when wanted to take cover\textsuperscript{346}.

There are more similarities regarding the general plan of the city, such as the fact that both were of the Hippodamian system (fig.67), however walls are also similar. The difference though, lies in their length which is of 2500m in Priene

\textsuperscript{341} Τσιμπουκιώτης 1984, p. 336.
\textsuperscript{342} Botsford and Robinson 1977, p. 190.
\textsuperscript{343} Lawrence 1979, p.213.
\textsuperscript{344} Winter 1982, p. 25.
\textsuperscript{345} McNicoll 1997, pp.48-50.
\textsuperscript{346} Saprykin 1998, pp.242-243.
including as well the acropolis wall which is 600m long while in Chersonesos the defenses are 900m long\footnote{Zolotarev 2003, pp. 607-608.}.

Concerning Assos, it was located on the north of Troad and used to have well-preserved defences (fig.68), but a series of demolishions destroyed part of them. Assos was naturally defended (fig.69), protected by the sea and a hill\footnote{McNicoll 1997, p.183.}. Chersonesos was also naturally defended as it was located in a peninsula\footnote{Maslennikov 2000, p. 70.} which is also the case for Mesambria. In Assos, six different styles of construction were found by excavators, of which, one was common with Chersonesos as it was of isodomic ashlar hammer faced with headers and narrow string courses\footnote{McNicoll 1997, pp. 183-184.} (fig.70). The problem lies however in the dating of the main gate of Assos and its adjoining parts of wall\footnote{Winter 1982, p.24.}.

Another example of similarities between walls has to do with Panticapaeum. Judging from the relationship that Panticapaeum used to have with Athens, we could suppose that the first was affected and influenced by the latter in matters of defense and workmanship. These relations were obvious during the rule of Spartokids in the middle of the 4\textsuperscript{th} century BC. Tuplin and Chelov-Kovedjayev deal with this issue in two papers\footnote{Zeitschrift für Papyrologie und Epigraphik xiix (1982) and \textit{Les decrets bosporants et l'histoire du Bosphore cimmérien au 4 ème siècle avant J.C} (1982) respectively.} by extracting information from the decrees found there\footnote{Hind 1983-4, p. 86.}.

One should think as well that walls found up till now are not the only ones that one should consider when talking about a city. Meaning that in some cases such as for example in Olbia, earlier walls must have existed besides the ones from the Hellenistic period found, if one takes into consideration the fact that Olbia was founded rather early in the 7\textsuperscript{th} century BC and that like a city belonging to the Great Greek colonization, it is more than possible that after its establishment one of its first cares was to defence the city just like other Ionian cities used to do. According to Kryzhyskyy S.D, Krapivina V.V, Lejpunskaïa N.A. and Nazarov V.V, the first people to settle in Olbia in the 7\textsuperscript{th} century BC, were almost one hundred and chose as a first place to inhabit, the Lower Bug Region. It is very rational then, that earlier walls existed around this area\footnote{Kryzhyskyy and others 2003, p.397.}. On the contrary though, one could argue that it is
very early to talk about a defensive line as Olbia became a city state a century later in the 6th century BC.

A comparison can be done as well among the walls of the cities of the Black Sea Coast. For example, the walls of Myrmekion are considered by scholars such as Vinogradov355 very similar to those of Porthmeus which makes sense as the cities are located in a close distance. On the whole, the majority of the cities situated on the east side of the Crimean Peninsula that is Kerch Peninsula, are founded in the same date, the middle of the 6th century BC. Two other cities of the area that are very similar are those of Tyritake and Panticapeum which both use the same building method meaning the method of incorporating walls of earlier houses onto the walls built356.

One should also pay attention in similarities in the dating of the construction of walls or of their reconstruction. For instance, Myrmekion’s reconstructions of walls during the Hellenistic period and more particularly in the 3rd-2nd century BC actually coincide with the reconstruction of other cities of the Black Sea such as Porthmeus, Tyritakae and Porthmeus357. Moreover, one could see similarities between Myrmekion and Panticapeum (fig. 71).

The wall of Kyta, made of two shells from bryozoans limestone which was slightly cut from the front and slabs that were well cut from all sides. The space between them was filled with rubble, their length was 3.2m and the preserved height is 1.2m, reminds us of the walls of Myrmekion and Tyritake358. Furthermore, Tyritake was built in the middle of the 6th century by Ionians something that coincides with the foundation of the ancient Greek city Stageira in 655 century BC. Stageira was fortified in its peak time meaning around 500 BC and until the middle of the 4th century BC there was a strong precinct wall, round359 and square towers360. Tyritake’s walls which were built thirty years later and consisted of a square tower as well so we can assume that these two cities. However, their differentiation in the time of construction and of their wideness which is of 2.4m in Tyritake’s wall and 2m in Stageira’s wall does not allow us to correlate this two places with the only exception

357 Vinogradov and others 2003, p. 813.
359 Two semi-circula and one round tower.
that maybe these cities since founded in the same date and by the same tribe were founded as part of a certain policy.

9.2. Towers and gates

Towers, just like walls, presented differences in terms of size, layout and location. This diversity is obvious among the north-western Black sea towers. Their majority as we can see from table 5 is of square layout, however other shapes exist as well such as rectangular, round, pentagonal and hexagonal ones. These shapes were probably the result of the invention of new ballistic machinery such as catapults. When examining towers, we should bear in mind that they are not single defenses, but parts of a defensive system.

Square towers are often met in a city’s fortification system. For example, they are very common in Perge on the southwest Turkey (fig 72-75). Remains from Perge are from the Hellenistic period and most commonly, its towers project in front of the curtain line, and they are of rectangular-square layout, 6-7m wide and 8m deep. Towers were of 3-4 storeys where one could climb from the inside with the help of a wooden ladder. Such towers are also found in Amphipoli, Pella, Messini and Dion.

As for round towers we should note here that they were more traditional than the others with the angles according to Philo of Byzantium in his Poliorketika. They were widely built from the beginning of the 4th century BC throughout Greece. Similar towers to the ones found in Tyras, were the circular towers found at the port of Mantinea and several places of Argolis (fig.76).

Mantineia is located in Arkadia, Greece. It was fortified under the initiative of Epaminondas after the destruction of walls that took place in the 5th century. The

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362 By round towers in this paper I refer to all towers with a circular view, not only round but also semi-circular.
363 Philo was an engineer and his Poliorketika is considered to be the longest of his three works. The other two are Belopoiika and Pneumatika. (Lawrence 1979, p.69).
was naturally fortified, as it was encircled by Ophis River which was forming a ditch around it \(^{365}\) (fig. 77) and it was a plain area, that’s why walls had to be built deep in the ground\(^{366}\). Inside this encircled area, seven round towers were found, two of which were round and located in the port\(^{367}\) (fig. 78). These towers had the role to enhance the defensive power of the gates\(^{368}\). Xenophon refers to the walls of Mantinea when talking about a flood. According to his testimony one can imply that the walls were made of mud at the time and that this wall later on was incorporated into a newer and stronger one\(^{369}\). In Argolis, round towers are found in the entrance of the acropolis of Kastraki from where the enemy was attacked from the front and the back\(^{370}\) (fig. 79).

In addition, in Chersonesos as we mentioned above, existed a double-gated entrance otherwise called *dipylon*. Similar to this were also found at Troy and Pergamon on the Asia Minor coast, and at Athens\(^{371}\). Dipylon is as its name implies, a double gate. As a term it first appeared in Athens in a decree\(^{372}\) of 278/277 BC. This gateway was the largest in Greece of 1800m\(^2\), and used to be the main entrance to Athens, and during the Panathinaic Games (fig. 80). The fourcourt of the dipylon, had rectangular towers in its four corners and and between these, two flank walls run. What is obvious is the fact that the gate underwent two building phases of 478 BC by Themistokles and in the late 4\(^{th}\) century BC, it was rebuilt in stone by Demetrios Poliorketes\(^{373}\).

10. Conclusion

The Archaic period was undeniably the period of the formative stage and establishment of Greeks in the Black Sea, and as that no need for walls was created with the exception of Porthmeus and some of the cities of the West Black Sea coast.

\(^{369}\) Winter, 1971 p. 113.
\(^{371}\) Crimean Chersonesos 2003, pp. 61-62; 67.
\(^{372}\) IG, ii\(^2\), 673B.4.
\(^{373}\) Fields 2006, pp.22-23; 26.
But even if this need arose, the colonizers were unable to afford them in such an early stage as they were not financially able to. That is why they used trade as a vehicle of communication with the locals, in order to gain money and to have good relations with them. However this situation gradually changed and powerful cities emerged during the Classical and Hellenistic periods when cities felt the need to stand on their feet and prevail in the area.

Greeks influenced locals’ life in many ways, through trade and craftsmanship, but also got affected by them as well, in matters of religion and art. Greek craftsmanship was undeniably kept throughout the years, although adjusting to the local materials and ground, dictating the kind of walls erected. Sometimes walls had an adornishing character, however most of the times they were the result of an imminent threat ready to attack from the vast Steppes.

If we take all the above into account, we can come down to the realization that the Black Sea was not an extension of its mainland Greece, but rather a self sufficient form of Hellenism, located in the Black Sea. This is most probably the reason why the Greekness of these cities was doubted such as by Herodotus and Dio Chrysostomos.

Consequently, the study of walls is undeniably a vital issue when examining the history and the monumental topography of a city. Through their study we can gain an insight in further information which can be added to the epigraphical, literary and the rest archaeological material found. Numerous papers can be found referring to Greek walls in mainland Greece, however when it comes to the Greek Black Sea walls, papers found in English or Greek are few. On the contrary, Russian sources including archaeological reports from people who had joined the excavations at first hand are abundant. By translating such texts, the Greek archaeologists could be given the chance to get to know more about walls of the Black Sea area.

Finally we should bear in mind that while this paper was written, excavations are ongoing in the broader Black Sea area and as a result, new data from excavations may appear and new walls may be found in the near future, changing our perspective and broadening our knowledge on the matter.
11. Tables

Table 1. Walls of Classical Period

<table>
<thead>
<tr>
<th>Place</th>
<th>Period</th>
<th>Material</th>
<th>Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mesambria</td>
<td>Classical</td>
<td>White limestone, yellow clay &amp; green limestone from Aitos</td>
<td></td>
</tr>
<tr>
<td>Odessos</td>
<td>Mid 4&lt;sup&gt;th&lt;/sup&gt; century BC</td>
<td>Rectangular, well chiseled ashlars</td>
<td>3.80m</td>
</tr>
<tr>
<td>Callatis</td>
<td>Mid 4&lt;sup&gt;th&lt;/sup&gt; century BC</td>
<td>Limestone</td>
<td>3.75m</td>
</tr>
<tr>
<td>Histria</td>
<td>Classical</td>
<td>Green schist limestone</td>
<td>2.60m</td>
</tr>
<tr>
<td>Tyras</td>
<td>5&lt;sup&gt;th&lt;/sup&gt;-4&lt;sup&gt;th&lt;/sup&gt; century BC</td>
<td></td>
<td>2.2m</td>
</tr>
<tr>
<td>Nikonion</td>
<td>5&lt;sup&gt;th&lt;/sup&gt;-4&lt;sup&gt;th&lt;/sup&gt; century BC</td>
<td>Filled with rubble</td>
<td>2.50m</td>
</tr>
<tr>
<td>Olbia</td>
<td>5&lt;sup&gt;th&lt;/sup&gt;-350 BC</td>
<td>Stone</td>
<td></td>
</tr>
<tr>
<td>Kerkinitis</td>
<td>End of first third of 5&lt;sup&gt;th&lt;/sup&gt; century BC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chersonesos</td>
<td>5th century BC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nymphaeum</td>
<td>4&lt;sup&gt;th&lt;/sup&gt; century BC</td>
<td>Stones from previous buildings</td>
<td>2.40m</td>
</tr>
<tr>
<td>Tyritake</td>
<td>Second quarter of 5&lt;sup&gt;th&lt;/sup&gt; century BC</td>
<td></td>
<td>1.72-2m</td>
</tr>
<tr>
<td>Myrmekion</td>
<td>First third of 5th century BC</td>
<td>Mud-bricks</td>
<td>3m</td>
</tr>
</tbody>
</table>
Table 2. Walls of Hellenistic period

<table>
<thead>
<tr>
<th>Place</th>
<th>Period</th>
<th>Material</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mesambria</td>
<td>Hellenistic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Odessos</td>
<td>Late Hellenistic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tomis</td>
<td>Hellenistic</td>
<td></td>
<td>Enclosed 17ha</td>
</tr>
<tr>
<td><strong>Histria</strong></td>
<td>(2 double</td>
<td>Well chiseled large sized stone ashlars bounded with clay and schist</td>
<td>4.50m wide</td>
</tr>
<tr>
<td></td>
<td>precincts)</td>
<td>ashlars</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Olbia</td>
<td>4th-2nd century BC</td>
<td>Mud-brick stones finished with merlons</td>
<td>4.50m wide 4.30m thick 9-10m high</td>
</tr>
<tr>
<td>Chersonesos</td>
<td>4th-3rd century BC</td>
<td>Double armored wall with large trimmed limestone blocks</td>
<td>900m long 3.50-4.00m wide 8-10m high</td>
</tr>
<tr>
<td>Tyritake</td>
<td>4th-3rd century BC</td>
<td></td>
<td>2.40m- 3.90m wide</td>
</tr>
<tr>
<td>Kytaion</td>
<td>4th century BC</td>
<td></td>
<td>2.90-3.20m thick</td>
</tr>
<tr>
<td>Nymphaion</td>
<td>4th century BC</td>
<td>Stones from previous buildings</td>
<td></td>
</tr>
<tr>
<td>City</td>
<td>Shape</td>
<td>Size</td>
<td>Dating</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------------</td>
<td>--------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Tyras</td>
<td>Cylindrical tower</td>
<td>11m diameter, 5.5m height</td>
<td>1st century BC</td>
</tr>
<tr>
<td>Mesambria</td>
<td>Hexagonal hollow towers/square towers</td>
<td></td>
<td>Classical</td>
</tr>
<tr>
<td>Odessos</td>
<td>Square tower</td>
<td>10x10.8, 3.80m. wide</td>
<td>Classical</td>
</tr>
<tr>
<td>Histria</td>
<td>2 or more towers</td>
<td></td>
<td>Classical</td>
</tr>
<tr>
<td>Tyras</td>
<td>Cylindrical tower</td>
<td>11m diameter, 5.5m height</td>
<td>1st century BC</td>
</tr>
<tr>
<td>Chersonesos 1.</td>
<td>Tower</td>
<td>10-12m height</td>
<td>4th century BC</td>
</tr>
<tr>
<td>Chersonesos 2.</td>
<td>Circular tower</td>
<td>8m diameter</td>
<td>2nd century BC</td>
</tr>
<tr>
<td>Olbia</td>
<td>2 towers</td>
<td>14.5x14, 15.7x16.6</td>
<td>Classical</td>
</tr>
<tr>
<td>Tyritake</td>
<td>4 towers, a square one</td>
<td></td>
<td>4th-3rd century BC</td>
</tr>
</tbody>
</table>
Table 4. Gates

<table>
<thead>
<tr>
<th>City</th>
<th>Location</th>
<th>Dating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apollonia Pontica</td>
<td>Near the harbor</td>
<td></td>
</tr>
<tr>
<td>Chersonesos</td>
<td>Southeast part of walls</td>
<td>4th - 3rd century BC</td>
</tr>
<tr>
<td>(dipylon)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mesambria</td>
<td>On the isthmus neck</td>
<td>Classical Period</td>
</tr>
<tr>
<td>Olbia</td>
<td>West &amp; north of the city</td>
<td>4th century BC</td>
</tr>
</tbody>
</table>
12. Index of images

Fig. 1. Map of the most important ancient Greek colonies of the Black Sea Coast. Red= Classical walls, blue= Hellenistic walls, yellow= native tribes (Tsetskhladze, 1998, p.23).
Fig. 2. Kerch peninsula (on the left). 1= defences 2= cities 3= tumuli (Colloque international, 1982, fig.161).

Fig. 3. Emporeia and poleis of the Archaic-Classical period 7th-4th century BC (Κορομηλά, 1991, p.74).
Fig. 4. The West Black Sea Colonies (Hind, 1983-4, p. 72).

Fig. 5. Megareian and Herakleiot colonies in the Western Black Sea (Hind, 1998, p. 132).
Fig. 6. The peninsula where Messambria was situated. Mesambria’s city plan 5th c. BC-3rd c. AD (Preshlenov, 2003, p. 200).

Fig. 7. Late antique and medieval fortifications of Mesambria near the west gate. The view is from the south west side (Preshlenov, 2003, p. 202).
Fig 8. Fortifications on the west of Mesambria by architect L. Marinov (Preshlenov, 2003, p. 200).

Fig 9. Callatis (Condurachi, 1968, p. 10).
Fig. 10. Plan of Tomis, 6th walls (Condurachi, 1968, p.10).
Fig. 11. Plan of Histria (Avram, 2003, p. 336).

Fig. 12. Plan of Histria.

IIa= walls of the 5th-4th century BC
III= Hellenistic walls 3rd-1st century BC
Fig. 13. Map of the archaeological site of Histria. 10 = Hellenistic defensive walls (Condurachi, 1968, p. 11).

Fig. 14. The foundations of the Hellenistic wall of Histira (Condurachi, 1968, p. 36).
Fig. 15. Map of the ancient Greek colonies of the North Black Sea Coast (Hind, 1983-4, p. 78).

Fig. 16. Plan of Tyras (Samoylova, 2007, p. 466. Also in, Maslennikov, 2000, p. 156).
Fig. 17. Tyras 1. Map of the location of Tyras (Number 1) and of Nikonion (Number 2) (Maslennikov, 2000, p. 156).

Fig. 18. The round tower of Tyras (Самойлова, 2008, таблица 24)
Fig. 19. The defensive area around the round tower of Týrás (Самойлова, 2008, таблица 24).

Fig. 20. Defensive ditch in the north area of Týrás (Самойлова, 2008, таблица 26).
Fig. 21. The bottom area of the defensive ditch of north Tyras (Самойлова, 2008, таблица 27).

Fig. 22. Southern part of the defensive system. Reconstruction by S. D. Kryzhitskii.

Fig. 23. Defensive ditch in the south area of Tyras (Самойлова, 2008, таблица 27)
Fig. 24. View from the south of the ditch in the south area of Тура (Самойлова, 2008, таблица 27).

Fig. 25. Topographic plan of ancient Nikonion (Мaslennikov, 2000, p. 158).
Fig. 26. Plan of the city of Olbia with all the excavated sites

Fig. 27. Plan of the city of Olbia: 3= wall of almost 3 km of the Hellenistic period, boundaries of the third century BC (end of 4th - beginning of the 1st century BC), 4= Roman walls of the citadel, limited in size due to raids, 5= Final Roman walls around the acropolis (Коромелл, 1991, p. 131 Similar plan in: Sokolov, 1974, p.8).
Fig. 28. The restored plan of the north entrance (Lawrence, 1979, p. 321).

Fig. 29. The defensive walls, towers and western gates (Kryzhytsyy and others, 2003, p.493).
Fig. 30. The submerged part of the Lower city of Olbia (Pydyn, 2006, p.137).

Fig. 31. Siteplan of Kerkinitis of the end of 5th-third quarter of 4th century BC (Maslennikov, 2000, p.202).
Fig. 32. Plan of the city by Carter J. C. (2006), p. 182.
Fig. 33. Map showing the defensive walls of Chersonesos (National Preserve of Tauric Chersonesos, 2003, p. 94).

Fig. 34. The remains of a tower and the western wall that are gradually being claimed by the Black Sea (Crimean Chersonesos, 2003, p. 64).
Fig.35. The gateway. A clear example of layering. A Hellenistic gate (4th-3rd centuries BC) under an arched Byzantine entrance of the 488 AD constructed under the command of Zeno who ordered the walls to be repaired. 1899- NPTC archives (National Preserve of Tauric Chersonesos, 2003, p. 67).

Fig.36. Southeastern part of the defensive wall of Chersonesos, including the 16th curtain and the tower XV (Crimean Chersonesos, 2003, p.61).
Fig. 37. Detail of masonry work in the 16th curtain. The five lower rows are from the Greek period, while the next five from the Roman. What lies above is Byzantine. Drawing by G. Asmyakov, 1927. National Preserve of Tauric Chersonesos, 2003, p.62.

Fig. 38. Plan of the city of Chersonesos
1-XXIV= The 24 towers of the Byzantine era, many of which were based on the pre existing ones from the Hellenistic period (3rd-2nd century BC)
Fig. 39. The Necropolis just outside the city walls (Crimean Chersonesos, 2003, p.97).

Fig. 40. Plan of the citadel of Chersonesos based on a drawing by Grinevich (National Preserve of Tauric Chersonesos, 2003, p. 71).
Fig. 41. The tower of Zenon. Rebuilt and refortified at least five times from the mid-3rd century BC to the 10th century AD. Height: 9m. Diameter: 23m.

Fig. 42. Core of the Tower of Zeno constructed by gravestone monuments form a nearby necropolis 4th-3rd NPTC archives (National Preserve of Tauric Chersonesos, 2003, p. 68).

\textsuperscript{374} The reconstruction of the tower of Zeno

From: http://www.chersonesos.org/?p=ct\_map11&l=eng
Fig. 43. Reconstruction painting by A. Snezhkina of a grave stele of Herakleios son of Tibeios. It is one of the third stele that now exist in the Hermitage museum ca. 300 BC, height: 1.4 m (National Preserve of Tauric Chersonesos, 2003, p. 68).

Fig. 44. Ionic cornice with Lesbian and lotus palmette patterns that has been reused in a defensive tower- made by local limestone 3rd century BC (National Preserve of Tauric Chersonesos, 2003, p. 21).
Fig. 45. Aerial view of part of the citadel. A. Sobotkova (National Preserve of Tauric Chersonesos, 2003, p. 70).

![Aerial view of the citadel](image1)

Fig. 46. Kerch Peninsula (on the left) (Bilde and others, 2008, p. 142).

![Map of the Azov and Black Seas](image2)
Fig. 47. Kimmerikon. 1. Opuk hill 2. the acropolis 3. the excavation of the acropolis-hill a
(Maslennikov, 2000, p. 208)

Fig. 48. Plan of Kimmerikon city 2= western curtain, 4-5= remains of towers, 6= traces of southern
curtain, 7= northern wall, 9= traces of a gate- tower, 10= remains of outer fortification or tower, 11=
defensive wall 13= excavated wall, 18= excavated curtain and barracks, 22= ditch, 23= uncovered
section of proteichisma (Golenko, 2007, p.1081).
Fig. 49. The excavated site of Kytaion (Maslennikov, p.209).

Fig. 50. Kytaion, excavations in the north gate of Kytaion (Maslennikov, 2000, p. 210)
Fig. 51. Plan of the excavated cites of Tyritake (I-XXVI) (Zinko, 2007, p. 843).
Fig. 52. The northwestern tower of Tyritake. View from the west (Zinko, 2007, p. 848).

Fig. 53. Tower on the northwestern angle (Zinko, 2007, p. 848).
Fig. 54. Northern fortification wall of Tyritake (Zinko, 2007, p. 848).

Fig. 55. The south part of the fortification wall of Tyritake and tower 1 (Zinko, 2007, p. 846).
Fig. 56. Plan of the west walls of Tyritake and the north-western angle tower (Zinko, 2007, p. 847).
Fig. 57. Plan of Panticapaeum by Paul Du Brux (Tolstikov, 2003, p. 747).

Fig. 58. Plan of the city of Panticapaeum, 4= the ancient walls (Sokolov, 1974, p. 10 and Κορομηλά, 1991, p. 139).
Fig. 59. View of the Acropolis of the Hellenistic period from the northern side. Reconstructed by V.P. Tolstikov (Tolstikov, 2003, p. 753).

Fig. 60. Plan of Myrmekion site (Vinogradov, Butyagin, Vakhtina, 2003, p. 831).
Fig. 61 Map showing the close distance between Porthmeus and Myrmekion (Vinogradov and others, 2003, p. 831).

Fig. 62. Defensive wall from Hellenistic Myrmekion, section M (Vinogradov, Butyagin, Vakhtina, 2003, p. 837).

Fig. 63. Early defensive wall from Porthemus (Vinogradov and others, 2003, p. 840).
Fig. 64. Plans from the city of Kyta (Molev, 2003, p. 887).
Fig. 65. Submerged part of Olbia (Braund Kryzhitskiy, 2008, p. 8).

Fig. 66. Part of the defence of Priene, made of pseudoisodomic ashlar, some trapezoidal (McNicoll, 1997, p. 50).
Fig. 67. Sitemap of Priene where the division of blocks is obvious (McNicoll, 1997, p. 50).

Fig. 68. Assos. An example of the well preserved defensive system, a semi-circular tower and part of the wall (Cook, 1973, table 35).
Fig. 69. Siteplan of Assos (McNicoll, 1997, p. 183).

Fig. 70. Assos, masonries 4 and 5. The right side of the wall is the one resembling to Chersonesos.
Fig. 71. Comparative table of fortifications A= Philon, B= Euriale, C= Panticapaeum, D= Myrmekion, E= Vani, D= Esera (Colloque international, 1982, fig. 202).
Fig. 72. Square tower (number 31) from Perge (McNicoll, 1997, p. 129).

Fig. 73. Remnants from a square tower from Perge (Fortifications Antiquae, 1992, plate 71).
Fig. 74. Square wall on the east side of Perge (Fortifications Antiquae, 1992, plate 72).

Fig. 75. Square wall on the east side of Perge (Fortifications Antiquae, 1992, plate 73).
Fig. 76. City plan of Argolis. 11 and 12= round towers in the harbor gate (McAllister, 1972, p. 17).

Fig. 77. The defensive line of Mantinea. Gates A-B-D-F are enhanced with round towers. (Fougères, 1898, fig. VIII and similar plan in Adam, 1997, p.6 in Fortifications Antiquae and Winter, 1971, p.33).
Fig. 78. Round towers at the port of Mantineia (Adam, 1992, p. 31).

Fig. 79. Round towers in the entrance of the acropolis Kastraki of Argolis (Adam, 1992, p. 40).
Fig. 80. Dipylon Gate of Athens. Reconstruction. (Fields, 2006, p. 26).
13. Abbreviations

AD  Anno Domini
AR  Archaeological Reports
BSA  British School At Athens
ca  (circa), "around (about, approximately)"
ICA  The Institute of Classical Archaeology (ICA) University of Texas at Austin
IG  Inscriptiones Graecae
IOSPE  Inscriptiones antiquae orae septentrionalis Ponti Euxini Graecae et Latinae
MIET  Μορφωτικό Ίδρυμα Εθνικής Τραπέζης
NAS  National Academy of sciences of Ukraine
NIAM  National Institute of Archaeology of the Bulgarian Academy of Sciences
NPTC  National Preserve of Tauric Chersonesos
USSR  Union of Soviet Socialist Republics
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