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LOWER DNIPRO REGION HILEIA IN ANTIQUITY TIMES

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With the discovery of Yahorlyk settlement, the Kinburn Peninsula has recently attracted a great deal of attention in studying the colonization process in the northern Black Sea region. In particular, the comparison of archaeological and ancient Greek literary sources with paleogeographic data makes it possible to restore the dynamics of changes in the geographical situation in antiquity times in the Buh-Dnipro estuary region and gives additional information on forming Greek-barbaric relations in the region. The natural conditions in the Buh-Dnipro estuary region have changed much over the past millennia due to fluctuations in the Black Sea level. In antiquity times, the Kinburn Peninsula was known in the antiquity literary tradition as Hileia, i.e. wooded area, Polissia. But the configuration of the coastline was completely different, and the area was covered with deciduous forest. The Tendra Spit (Achilles' Run in antiquity times) was connected to the mainland by an isthmus. In addition, the arms of the Dnipro delta flowed through the peninsula, and they might have been navigable in antiquity times.

At the early stage of Greek colonization, namely at the end of the 7th century BCE, on the bank of one of the Dnipro delta arms a settlement was found, which by its morphological characteristics, is defined as a temporary seasonal marketplace where craftsmen worked in the warm season, and according to the typological characteristics of their products the conclusion is made that they were natives of the Dnipro region, the Balkans, the North Caucasus, and the far eastern regions like the Volga region, the Cisurals, and even Southwestern Siberia. The marketplace functioned for a century and its decline was associated with the founding of Olbia, where craftsmen from afar could stay longer than in the temporary marketplace regardless of seasonal weather changes, and rent premises for placing temporary workshops. From Olbia, those craftsmen could spread their activities to the chora settlements, supplying the local population with small production items, as evidenced by solitary worn-out with use casting molds at some of them, as well as by the burial of a barbarian metalworker in Marytsyne burial ground near Olbia. After the craftsmen had left, the constructions were cleaned and all the remains of the workshops were dumped in specially dug garbage pits, similar to the one excavated in the central part of the city in 1982, or in the cellar under the destroyed construction, also excavated in the central part of Olbia in the 1950s.

Keywords: *Kinburn Peninsula, Achilles' Run, Tendra Spit, Tendra Bay, Yahorlyk Bay, Oleshky Sands, Yahorlyk settlement, Berezan island, crafts center, seasonal marketplace*

Relevance of the research. The Kinburn Peninsula is a unique area of the Lower Dnipro region with peculiar natural and climatic conditions, the geographical situation in which has changed radically over the past three millennia. The study of this process allows us to shed light on some issues related to the development of the Lower Buh region by Greek colonists, in particular, the formation of Olbia chora and the establishment of Greek-Scythian relations in the region.

The goal of the paper is to highlight the dynamics of changes in the geographical situation in the lower reaches of the Dnipro, in particular on the Kinburn Peninsula in antiquity times, and the development of the region amidst the Greek colonization of the Lower Buh region.

Results and Discussion. The Kinburn Peninsula is a land steeped in ancient legends and narrations, located between the Dnipro-Buh estuary and the Tendra Bay. Administratively, this area is within the Kherson oblast, only the western end of the Kinburn Spit is a part of Ochakiv raion of Mykolaiv oblast.

The geological origin of the peninsula is associated with numerous fluctuations in the Black Sea level and the effects of the Dnipro delta on the local visual environment. In this case, we are interested in the time of the Greek colonization of the Lower Buh region, i.e. the middle of the 1st millennium BCE, and contemporary changes in the local visual environment.

In the 2nd millennium BCE, after a long Phanagoria regression, the last Nymphaion transgression of the sea began, i.e. the rise in water level, during which a large sandy plain in the lower reaches of the Dnipro was submerged. The water continued to rise, 'pushing up' the old Dnipro delta and wedged far into the land. Then the sea withdrew, leaving behind the present-day Dnipro-Buh estuary, and on land – the lines of small estuaries and lakes. Although experts say that the present-day view of the peninsula was formed about 1500-2000 years ago, the Dnipro or some arms of its delta probably changed their flow many times and the present-day Yahorlyk Bay was formed not later than the 18th or even 19th century. Thus, on the maps compiled by French cartographers Nicolas Sanson (1600-1667) (Fig. 1) and Guillaume Delisle (1675-1726) (Fig. 2), it is absent. The Tendra Spit (Achilles' Run) was connected to the mainland with an isthmus at that time, as Strabo wrote (VII, 3, 19), and as it is shown on the mentioned maps compiled by Sanson and Delisle. Now the coastal shelf ends just outside the present-day very shallow Yahorlyk Bay, on the edge of which the remains of the ancient coastal land, small islands of Dovhyi and Kruhlyi, which separate the bay from the sea, are preserved. Farther, the depth of the sea reaches 20 m and more.

The rising sea level in recent centuries is evidenced by the fact that in September 2020, the underwater archaeological expedition of the Institute of Archeology of NASU (National Academy of Sciences of Ukraine) found at a distance of 70 m off the shore of Kinburn Spit in the sea, at a depth of 2.1 m remains of a stone building of the late 18th century, which was probably a part of the Kinburn fortress complex during the Russo-Turkish War of 1787-1791[1].

The geographical past of the island of Berezan, which is located at the mouth of the Dnipro-Buh estuary, is worth mentioning as well. M.F. Boltenko calls it a block of Odesa limestone, which broke away from the main mainland limestone massif, ending near Cape Adzhyiask, on which the present-day village of Rybakivka is situated[2]. The same author tells about the size of the island: its length from north to south is 852 m and width – 350 m. However, these data were published in 1960, and due to abrasiveness, according to experts, the sea every year 'eats' on average up to 0.3 m of the island shore.

In 645 BCE, an ancient Greek settlement appeared on the island, which is identified with the city of Borysthenes. As of today, city blocks with stone buildings have been studied, at least two temples, a pottery workshop, and several workshops where iron was processed and possibly casted.

At the beginning of its existence, Borysthenes was a busy trade center, where local merchants and artisans from the Dnipro region and the Balkans arrived. But a natural

[1] Taking the opportunity, the author wants to express his sincere gratitude to the head of the underwater detachment *V.Ye. Herasymov* for the information provided.

[2] Болтенко М.Ф. Исторические судьбы острова Березань // Записки Одесского археологического общества. Одеса: Одесское книжное издательство, 1960. Т. 1 (34). С. 38.

question arises: why was the city founded on such a small piece of land? If it was dictated by security measures, then how did the population provide itself with everything necessary? After all, no matter how important the settlement center on the island was at that time, it is difficult to imagine that its inhabitants lived only using imported products. And one more important issue – there is no drinking water on the present-day island. Not surprisingly, that as early as the beginning of the 20 century, when the first archaeological excavations were started on the island, the assumption was made, that at the time of the first Greek colonists in the Lower Buh region, the island of Berezan was connected to the mainland. To confirm this, S.D. Papadimitriou gives the data on the depth of the strait between the island and the mainland, and according to his evidence, it is mostly 1 m and only in the middle of the strait reaches 2 m. This allowed the inhabitants of the surrounding villages less than a century ago even to drive cattle to the island for grazing[3].

In M.F. Boltenko's report, there is a photograph of the early 1930s, in which a spit from the mainland towards the island of Berezan emerged during a sharp downsurge of water because of a strong coastal wind (Fig. 3). And on the map compiled by French cartographer F.P. De-Volan in 1791, part of this spit was still part of the mainland coast (Fig. 4).

Today, most of the Kinburn Peninsula is covered with alluvial sand and in some places, saline steppe, including salt lakes, which may be the remains of one of the Dnipro delta arms, which flowed into Yahorlyk Bay or into the area that later became a bay, and flowed into the sea and about which Herodotus wrote that in the mouth of the Borysthenes (Dnipro), there was the countless amount of self-settling salt (IV, 53). At the same time that could not be the main course of the Dnipro, because, as Herodotus mentioned in the same source, the Borysthenes near the sea was already a mighty river and was known from the sea for forty days of sailing to the land of Herr (Γέρρος), and also there in the mouth was the estuary in which the Hipanis (Southern Buh) met the Borysthenes. So, it was a navigable part of the river, and, taking into account the depths, it was simply impossible to extract salt there. Despite the great differences between N. Sanson's and G. Delisle's maps, we can only say that the configuration and natural conditions of the Kinburn Peninsula have undergone significant changes in recent centuries.

K.K. Shylik, who studied in detail the paleography of the antiquity times Lower Buh region, believes that the total width of the Buh estuary at that time was less than 1.5 km, and the Dnipro estuary was 3-4 km[4]. The scholar also extends the length of the Kinburn Spit by almost 45 km and places its edge near the Gulf of Odesa (Fig. 5).

M.M. Iievliev also believes that the water area of the Berezanka and Buh estuaries was much narrower and, referring to the evidence of French engineer and cartographer of the first half of the 17th century Guillaume Le Vasseur de Beauplan, places sandy islands at the mouth of the Buh estuary, and, in fact, describes the estuary itself as a system of arms that form the delta[5].

Significant changes in the coastline of the Dnipro-Buh estuary and the Kinburn Peninsula are noted by I.V. Bruiako and V.A. Karpenko (Fig. 6)[6].

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[3] Лапин В.В. Греческая колонизация Северного Причерноморья. Киев: Наукова думка, 1966. С. 129.
[4] Шилик К.К. К палеографии Ольвии // Ольвия. Киев: Наукова думка, 1975. С. 89.
[5] Ієвлєв М.М. Природні умови та господарська діяльність Ольвійської держави у VII-V ст. до н.е. // Стародавнє виробництво на території України. Киев: Наукова думка, 1992. С. 132.
[6] Бруяко І.В., Карпенко В.А. Древняя география и колебания уровня моря (на примере Северо-Западной части Черноморского бассейна в античную эпоху) // Вестник древней истории. 1992. № 2. С. 89.

However, since the reconstruction of the geological and hydrological situation in the Lower Buh region was of interest to researchers only in the context of the topography of Olbia and its surrounding areas, the left bank of the Dnipro estuary, the southern part of the Kinburn Peninsula, and Yahorlyk Bay were left unstudied.

Herodotus was perhaps the first of the antiquity authors to write about the Kinburn Peninsula, which in ancient times was called Hileia. Thus, in the Greek version of the legend of the origin of the Scythians, this historian says that Hercules, having performed his next labor and obtaining the cattle of Geryon, drove them to the Mycenaean king Eurystheus, but one nasty night he lost the horses yoked to his chariot. Searching for them, Hercules reached a land called Scythia and finally came to the territory called Hileia, where in a cave he met a strange creature – half-maid, half-serpent. Her upper body was female and her lower was serpent-like. That creature had got his horses, which, according to legend, she gave back to Hercules only after he entered into relations with her and she bore him three sons. All the Scythian gods were descended from the youngest of the sons, whose name was Scythian (IV, 9). The legend had been popular in the northern Black Sea region for a long time. The image of the serpent-like ancestress of the Scythians can be seen in the works of Scythian-ancient toreutics of the 4th century BCE, for example, on gold plaques from the mounds of Kul-Oba and Velyka Blyznytsia or on a horse browband from the mound of Tsymbalka.

According to the legend, Hileia was well known to both Greek colonists and Scythians. This is evidenced by another text by Herodotus about the tragic fate of the Scythian Wiseman Anacharsis, who, although being a member of the royal family, did not have pretensions to power in Scythia, but went on a journey, visited many countries, and learned many new and interesting things. Being in Greece, Anacharsis showed himself as a prominent philosopher and was reckoned as one of the Seven Sages of Greece. He made friends with Solon and took part in his reform activities. Poems were written about him, and even in the schools of Greece, the biography of Anacharsis was studied.

While still being in Greece, Anacharsis made a vow that if he was destined to return home alive, he would perform rites similar to Asia Minor celebrations in honor of the Mother of the Gods. Returning to Scythia, he went to Hileia, which, according to Herodotus, was near the Achilles' Run, and there during a religious ceremony on the Greek model was killed by his brother, the Scythian king Saulus, who zealously protected the patriarchal customs of the Scythians (IV, 76).

Both legends written down by Herodotus show that Hileia was a deserted, uninhabited area, because, firstly, according to mythological tradition, the contacts of demigods with humans were limited and they had to live in remote desert areas. For example, we can mention the legend of the wise centaur Chiron, who lived in one of the caves of Pelion – a wooded mountain range in Thessaly. Secondly, Anacharsis came to the uninhabited land secretly to perform his rites. After all, he probably guessed what would await him if the Scythians learned that he was betraying Scythian customs.

Herodotus further rather accurately describes the location of Hileia among the Scythian lands and rivers. According to him, it was located to the south of the area where the agricultural Scythians lived, whom the Olbiopolitans called Borysphenites. "If you cross Borysthenes, the first country from the sea will be Hileia" (IV, 18). On the other side, Hileia is bounded by the river Hipakiris, which, according to Herodotus, outflowed from the lake and streamed in the middle of the lands of the nomad Scythian, flowing into the sea near the city of Karkinitida (IV, 55). It is unclear which of the existing rivers

Herodotus called the Hipakiris. Scholars suppose that it may be Inhul, Inhulets, Molochna, or Siverskyi Donets. Each of these hypotheses has weaknesses and the final issue of identifying the Hipakiris is still unresolved[7].

Thus, the territory of Hileia, bounded by the Borysthenes River on one side and the Black Sea on the other, started from the Tendra Spit (Achilles' Run) in the west and occupied the Kinburn Peninsula in the south of the Kherson oblast, stretching to the mysterious river Hipakiris. M.I. Sokolskyi tried to estimate the length of Hileia from west to east in 140 km[8], but, having measured this distance, did not find the Hipakiris.

According to Herodotus, the Panticap River flowed into that land (in the other variant of translation, it flowed through that land), which, like the Hipakiris, outflowed from the lake and is not identified with any of the currently known rivers. The Panticap separated the lands of the agricultural Scythians from the Scythians nomads (IV, 47). It was accessible to ships from the sea. But now none of the tributaries of the Dnipro is accessible to ships from the sea.

Speaking of Hileia, Herodotus emphasized that there were many different kinds of trees, and in Scythia nowhere, except Hileia, you would not find any trees (IV, 19). In the notes of travelers of the 14th – 15th centuries, F. Brun, a member of the Odesa Society of History and Antiquities, found evidence that in the Middle Ages there were many conifers in the woods of Herodotus' Hileia, the woods were thicker and occupied a much larger area than in the 19th century[9]. Odesa archaeologist P.A. Burachkov, who worked in the south of Ukraine in the 19th century, also mentions the stories of his great-grandfather that in the 18th century from Cape Kinburn to the town of Oleshky on the banks of the estuary was a thick, though with glades wood, where oak, birch, alder, and ash tree grew. There were many wild goats, wild boars, and even deer in the wood. In addition, there were many old stumps in the wood, which meant that it was once much thicker[10]. This information is confirmed by the studies of biologists and soil scientists. Pollen analysis at the Kardashynka peat bog near Tsiuriupynsk confirmed that oak, elm, alder, birch, hornbeam, maple, linden, and pine grew here during the Late Holocene[11].

The name Hileia itself is translated from ancient Greek as a wooded area, polissia. It is reflected in the present-day toponymy of this area. For example, the former name of the town of Tsiuriupynsk, on the banks of the Konka River in Kherson region, was Oleshky, and it came from the name of the geographic area – Polissia, Olissia, Oleshshia. Oleshky Sich was located in this area in 1711-1728, and now the large surrounding sand massif is called the Oleshky Sands. Although the lack of woods in the early 19th century led to a misinterpretation of the name of the town – Oleshky derived from the name Oleksii. In the Russian-language edition of the 'Bolshaia Sovetskaia Entsiklopediia', an article about Tsiuriupynsk states that the former name of the town was **Aleshky**, although in another volume there is a separate article just about the town of **Oleshky** (*highlighted by the*

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[7] Доватур А.И., Каллистов Д.П., Шишова И.Л. Народы нашей страны в «Истории» Геродота. Москва: Наука, 1982. С. 287.

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[10] Бурачков П.О. О местоположении древнего города Каркинитеса и монетах ему принадлежащих // Записки Одесского общества истории и древностей. 1875. Т. IX. С. 3.

[11] Островерхов А.С. К вопросу о сырьевой базе античных ремесленного производства в районе Днепровского и Бугского лиманов // Вестник древней истории. 1979. № 3. С. 116.

author), which current name is Tsiuriupynsk[12]. I.S. Zabelin in the 19th century supposed that the name of the town could be Aleshky or Oleshky, but associated the origin of the name with the annalistic Oleshshia – a port-settlement in the lower reaches of the Dnipro, where in 1084 Prince Davyd Ihorevych captured and plundered the Greeks or Hrekovychis. That Rus trading settlement was located in the middle of a thick forest and the name Oleshshia meant wooded area[13]. Currently, forest restoration attempts are being made on the Kinburn Peninsula, but due to changes in climatic conditions and the visual environment caused by sea level fluctuations, this can be performed only partially.

Now this territory is covered with saline steppe, and in some places, the salt lakes are preserved, where residents of coastal villages still extract salt. In some places, not very large, recently planted forests are growing. In the coastal part, the Kinburn Peninsula is covered with sand dunes, from which the wind sometimes blows away ancient items and even individual burials dated to different eras, but they are not related to specific sites.

Local long-term residents tell that the Dnipro Strait, called the Cossack Strait, really flowed over the Kinburn Peninsula and through which, long ago, the Cossacks, making their sea voyages, got from the Dnipro into the sea, bypassing the Turkish fortress Ochakiv. But neither on present-day maps nor on the above-mentioned maps compiled in the 17th – 18th centuries no straits are marked. The only notable thing is that there was no Kinburn Spit or Yahorlyk Bay. However, on the maps compiled by K.K. Shylik, I.V. Bruiako, and V.A. Karpenko with present-day reconstructions of paleogeographic conditions of the Lower Buh region of the 7th – 5th centuries BCE, as well as in a collective monograph on the rural outskirts of Olbia, on a map charted by M.M. Iievliev, two straits that flow over the Kinburn Spit are marked, connecting the Dnipro estuary with the sea (Fig. 7)[14].

So, what role did this territory play in antiquity times, if it was often mentioned in antiquity mythology and historical tradition?

Until recently, only the Bronze Age mounds and some Scythian finds were known on the Kinburn Peninsula, but they are not related to specific settlements or ancient towns. Sometimes the wind blows out from the sand dunes separate items from the burials of different eras. But in 1972, during the reconnaissance survey at the area of deep-plowing which was 12 km north of Ivanivka village of Hola Prystan raion, on the shores of Yahorlyk Bay, Kherson Archaeological Expedition of the Institute of Archeology discovered a settlement of the archaic period, which dated back to the end of the 7th – 4th centuries BCE[15]. The site was introduced into scientific circulation under the name Yahorlyk settlement.

The topographic conditions of the settlement are difficult. Located in the coastal sands of Yahorlyk Bay, it has only some indistinct concentrations of the cultural layer. No residential or utility constructions were found, but many fragments of pottery, glassware, iron, copper, and lead produced items were blown out of the sand by the wind.

Thus, the beginning of settlement existence chronologically coincides with the beginning of the Greek colonization of the Lower Buh region, but unlike Borysthenes on

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[15] Рубан В.В. О датировке Ягорлыцкого поселения // Исследования по античной археологии Северного Причерноморья. Киев: Наукова думка, 1980. С. 122.

the island of Berezan or Olbia, Yahorlyk settlement was purely of craft character. Studies have shown that its inhabitants were engaged in glassmaking and glassware production, worked with non-ferrous metals and iron, cast metal, as evidenced by iron and copper slag, bronze splashes, amorphous ingots of copper, lead, tin, pieces of silicate, and small pieces of glass with fused edges. Some bronze items have casting seams, uncut runners, or have remained semi-finished products, i.e. their processing was unfinished.

It is impossible to determine the boundaries of the settlement or to say anything specific about the population or population density. But bronze produced items have analogies in the Middle Dnipro region, the Thracian Basin, the North Caucasus, and even Eastern Siberia. It is noteworthy that with a large number of produced items, that should be considered the products of local craftsmen, and production waste at the site of the settlement, almost no tools were found. Only a hammer punch, a half of a casting mold for arrowheads, and fragments of a crucible with traces of copper oxides either flowed metal or silicate can be mentioned. No traces of melting furnaces or workshops with them were found. According to such morphological features, namely: the absence of a cultural layer, long-term housing, and stationary workshops, it can be assumed that the settlement was temporary, probably seasonal in nature and just itinerant craftsmen worked in it. The lack of craftsmen tools can be explained only by the fact that all the equipment was imported for work or selling of produced items made on site, and after the end of the working period, the craftsmen left, taking everything with them. The commercial nature of the settlement is also evidenced by ceramic material, which was mainly imported highly artistic painted tableware and amphora containers[16], while all other finds are clearly of barbaric origin, indicating trade contacts of Greek colonists with the local population.

Mobile or itinerant way of production and trade at different times was a peculiar feature not only of nomadic peoples. For example, for the Bronze Age, we can note the burials of metalworkers, containing casting equipment as well as separate finds of casting molds in settlements where no other traces of local crafts were found, which can be explained with the work of itinerant craftsmen. Numerous treasures of late Bronze Age metalworkers in the Northern Black Sea region are also associated with itinerant craftsmen. Even recently nomadic gypsies, having arrived in a settlement, sold horseshoes, sickles, scythes, knife blades, etc. made in a few hours, and stayed in one place till their produced items were in demand[17].

The place for the temporary craft settlement-marketplace was chosen not by chance. The local wood provided a sufficient amount of charcoal, local sodium-calcium sands were used for glassmaking, on the coast of the Dnipro-Buh estuary, there are deposits of hematite sands, which, according to A.S. Ostroverkhov, could be used by itinerant metal-makers to produce iron. That is, when establishing the settlement, first of all, the raw material base was taken into account. In addition, one of the arms of the Dnipro delta flowed near the settlement, from where freshwater could be taken, and there were also several salt lakes nearby, from which salt was extracted in ancient times.

What is the reason for the recession of life in such an important and well-placed settlement? Most likely, this was due to the founding of Olbia in the lower reaches of the Buh in the early 6th century BCE. Until recent times, that Greek colony has been considered a developed crafts and trade center, with which Yahorlyk settlement could

[16] Рубан В.В. О датировке Ягорлыцкого поселения… С. 105.
[17] Бонковська С.М. Ковальство на Україні (XIX – початок XX ст.). Киев: Наукова думка, 1991. С. 22.

not compete, because, from the very beginning of its existence, Greek craftsmen seemed to have established the production of barbaric produced items to meet the needs of the local population. Moreover, it was about the appearance of a special Olbia school of artistic processing of non-ferrous and precious metals[18]. But the situation with non-ferrous metal processing in Olbia is not so clear.

With at least five archaic metalworking workshops known to date, no specialized casting tools have been found in Olbia. There are only a few (up to a dozen) fragments of molds for casting arrowheads which were not related to specific workshops, and recently at the excavation unit R-25 (ukr. P-25) was found a half of a casting mold for producing plaques with the image of a wolf and the heads of a predatory bird, though, dated to the 5th century BCE[19]. The workshops themselves look rather strange. Their production purpose is evidenced by the remains of crucibles, but the cultural layer with a specific filling of coal, slag, metal splashes, etc., such as were found in the workshops in Bosporus and Scythia, is absent. It seems that a thorough cleaning was carried out in these workshops.

At the same time in Olbia in the 50s of the 20th century in the central part of the city, three adjacent cellars, which functioned at different times, were excavated. One of them had long been used to dump metalworking waste. Up to a depth of 1.40 m, it was filled with pieces of copper slag with the remains of metal, burnt walls and fragments of crucibles with flowed copper, pieces of charcoal, as well as broken and defective copper produced items[20], i.e. what actually should have to form a cultural layer in workshops.

And in the course of the works in 1982 in the Upper Town, a pit with a similar filling was found. Along with the slag, burnt pieces of the crucibles' walls, a dolphin and arrow coins were found in the pit, which may indicate that the dumping of production waste was carried out there for a long time[21]. Nowhere else, neither in Bosporus nor in Scythia, workshops were so thoroughly cleaned. And this may evidence that not local permanent craftsmen, but temporary itinerant ones worked in Olbia workshops.

Thus, it can be concluded that with the improvement of living conditions in Olbia, the craftsmen who worked in Yahorlyk marketplace began to move to the city, where with a large population and higher organization of economic life comparing to Berezan settlement and Yahorlyk marketplace, there was a wider demand for their produced items. Craftsmen could stay in the city, renting premises where they set up workshops, which were also ergasteria shops. From Olbia, itinerant craftsmen could spread their activities to the outskirts, working for the rural population of Olbia chora. This is evidenced by separate finds of clay molds in Olbia nearby settlements, where no other traces of metal processing were found, as well as the burial of a barbarian metalworker in Marytsyne burial ground near Olbia, containing a casting mold. Opinions that it is a burial of Greek craftsman are unsustainable, as it was performed in accordance with the burial ritual of early Scythian mounds discovered in the Sula region[22].

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After the craftsmen had left, the workshop was cleaned, throwing away all the remains of production activities, for which the above-mentioned objects with casting waste were used.

Conclusions. Natural conditions in the Dnipro-Buh estuary region have changed many times over the millennia, due to fluctuations in the Black Sea level. Significant changes have been observed even in recent centuries. From antiquity times, the Kinburn Peninsula was known in the antique literary tradition, but then it had a completely different configuration of the coastline and was covered with deciduous wood.

At the end of the 7th century BCE on the banks of one of the arms of the Dnipro delta, there was a settlement, which by its morphological features has been defined as a temporary seasonal marketplace, where craftsmen worked in the warm season, and according to the characteristics of their produced items the conclusion has been made that they were natives of the middle Dnipro region, the Balkans, the North Caucasus, and even the far eastern territories like the Cisurals and Western Siberia. The decline of activity in the marketplace was associated with the founding of Olbia, where with the improvement of living conditions, itinerant craftsmen from Yahorlyk settlement-marketplace moved over time. They could stay for a long time in Olbia, where they established the production of their produced items, and at the same time, spreading their activities to the settlements of the chora.

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Нижньодніпровська Гілея античного часу

У вивченні колонізаційного процесу у Північному Причорномор'ї, у зв'язку із відкриттям Ягорлицького поселення, останнім часом велику увагу привертає Кінбурнський півострів. Зокрема співставлення археологічних і давньогрецьких літературних джерел із палеогеографічними даними дозволило відновити динаміку змін географічної ситуації в античний час у районі Буго-Дніпровського лиману та значно доповнити уявлення про формування греко-варварських зв'язків у регіоні. Так природні умови в районі Буго-Дніпровського лиману неодноразово змінювалися протягом останніх тисячоліть, що було пов'язано із коливанням рівня Чорного моря. З античного часу Кінбурнський півострів був відомий в античній літературній традиції як Гілея, тобто лісиста місцевість, Полісся. Але конфігурація берегової лінії була зовсім іншою і територія була вкрита листяним лісом. Тендрівська коса (Ахіллів біг в античний час) була з'єднана із сушею перешийком. Крім того, через півострів протікали рукави дніпровської дельти, які, можливо, в античний час були судноплавними.

На ранньому етапі грецької колонізації, а саме наприкінці VII ст. до н.е., на березі одного з рукавів дніпровської дельти з'явилося поселення, яке за своїми морфологічними ознаками було визначено як тимчасове сезонне торжище, на якому в теплу пору працювали ремісники, за типологічними ознаками продукції яких було зроблено висновок, що це були вихідці із Подніпров'я, Балкан, Північного Кавказу і навіть далеких східних областей – Поволжя, Приуралля та Південно-Західного Сибіру. Проіснувало торжище протягом століття і затухання життя на ньому було пов'язано із заснуванням Ольвії, де прибулі здалеку ремісники могли затримуватись на більш тривалий час, ніж на тимчасовому торжищі, не залежачи від сезонних змін погоди й орендуючи приміщення для облаштування там тимчасових майстерень. Із Ольвії ці майстри могли розповсюджувати свою діяльність і на поселення хори, забезпечуючи тамошнє населення дрібною продукцією, про що свідчать поодинокі зношені ливарні форми на деяких з них, а також поховання варварського ливарника у Марицинському могильнику неподалік від Ольвії. Після від'їзду майстрів у приміщеннях прибирали і всі рештки майстерень скидали у спеціально викопані сміттєві ями, подібні розкопаній на центральній ділянці міста у 1982 р., або у льох під зруйнованим приміщенням, розкопаний також у центральній частині Ольвії у 50-х рр. XX ст.

Ключові слова: Кинбурнський півострів, Ахиллів біг, Тендрівська коса, Тендрівська затока, Ягорлицька затока, Олеські піски, Ягорлицьке поселення, острів Березань, ремісничий центр, сезонне торжище

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Fig. 1. Map of the Lower Dnipro region compiled by the French cartographer Nicolas Sanson, published by Pierre Mariette in 1663.

Fig. 2. Map of the Lower Dnipro region compiled by the French cartographer Guillaume Delisle, and published by Johannes Covens and Cornelius Mortier in the 30s – 40s of the 18th century.

Fig. 3. A spit from the mainland and the village of Rybakivka to the island of Berezan uncovered by the downsurge of water.
Photo from the report of M.F. Boltenko, the 30s of the 20th century.

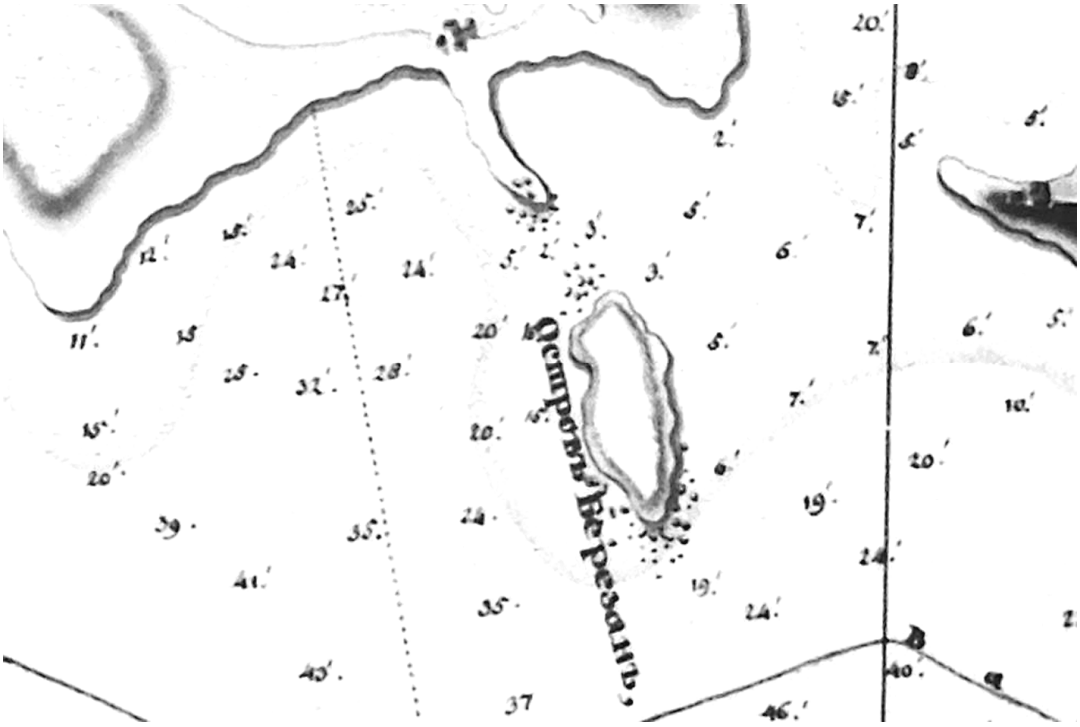

Fig. 4. Map of Berezan island compiled by French cartographer F.P. De-Volan 1791.

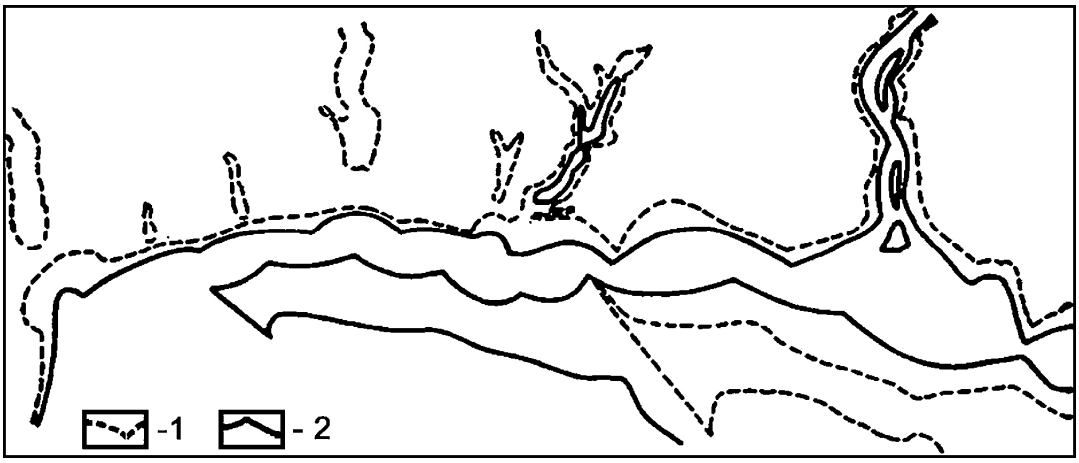

Fig. 5. Reconstruction of the coast configuration of the Buh-Dnipro estuary. 1 – present-day coastline; 2 – coastline during Phanagoria regression (according to K.K. Shylik).

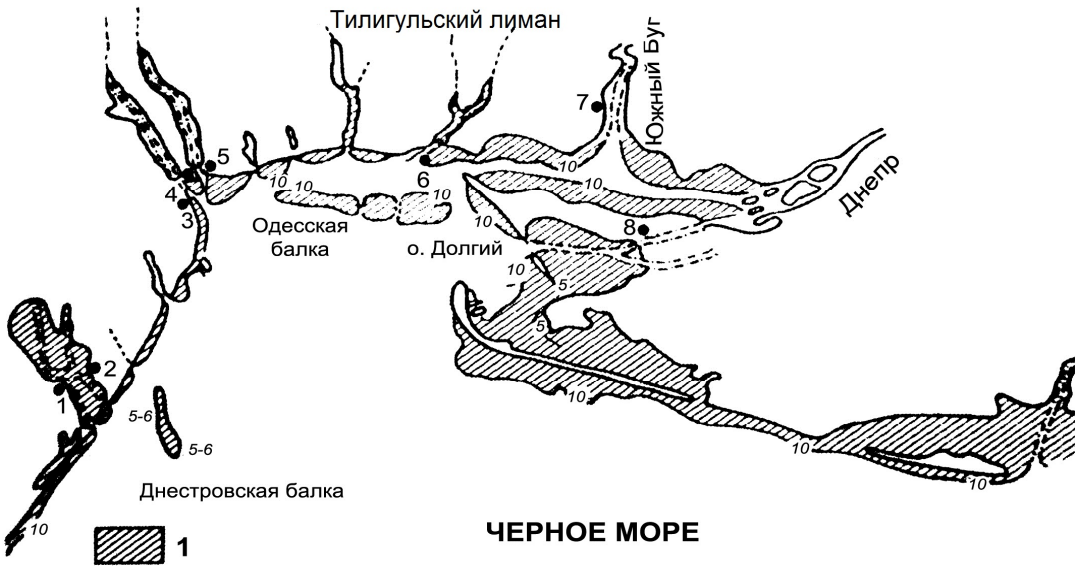

Fig. 6. Coast of the North-Western Black Sea region in ancient times (according to I.V. Bruiako and V.A. Karpenko).

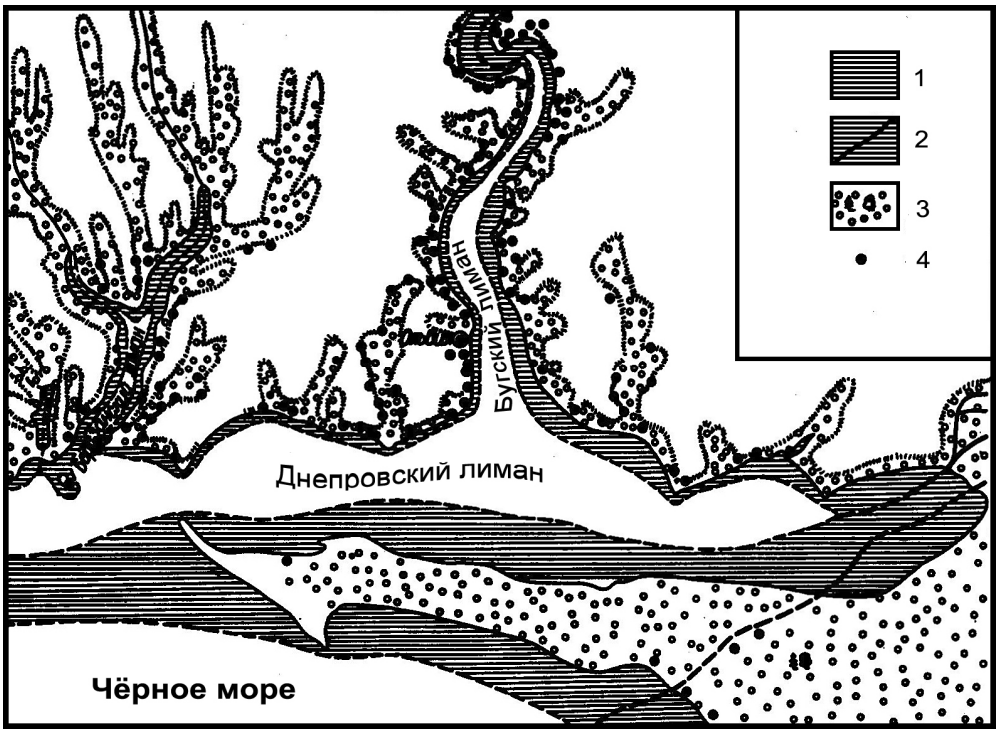

Fig. 7. Paleogeographic reconstruction of the coast of the Buh-Dnipro estuary of the 7th – early 5th centuries BCE.
1 – the area of the submerged part of the land; 2 – ancient straits of the Dnipro delta; 3 – floodplain woods; 4-7 – settlements and temporary encampments of Olbia chora (according to M.M. Iievliev).